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INTERIM REPORT OF THE U.S. ANTI-DOPING AGENCY

TO

THE TEXAS MEDICAL BOARD

CONCERNING THE U.S. ANTI-DOPING AGENCY'S INVESTIGATION REGARDING DR. JEFFREY STUART BROWN, ALBERTO SALAZAR AND THE NIKE OREGON PROJECT

March 17, 2016

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Concerning Dr. Jeffery Stuart Brown, Alberto Salazar and the Nike Oregon Project

March 17, 2016

The U.S. Anti-Doping Agency (USADA), received a Subpoena Duces Tecum from the Texas Medical Board's (TMB) dated January 29, 2016 (the "Subpoena"), requesting a copy of USADA's investigative file regarding Jeffery Stuart Brown, MD, and/or Endocrinology Assoc. of Houston ("Dr. Brown"). This *Interim Report of the Investigation of the U.S. Anti-Doping Agency to the Texas Medical Board Concerning Dr. Jeffery Stuart Brown, Alberto Salazar and the Nike Oregon Project* (the "Interim Report") constitutes a summary of USADA's investigation (the "Investigation") to date concerning the relationship between Dr. Brown and United States track and field coach Alberto Salazar and regarding relationships between Dr. Brown and Salazar and various athletes, all of whom were members of a running group known as the Nike Oregon Project (referred to herein variously as the "Nike Oregon Project," "NOP" or the "Oregon Project"), and all of whom were coached by Salazar and became patients of Dr. Brown (the "Athlete-Patients").[1]

USADA's Investigation has also encompassed relationships between Dr. Brown and several individuals employed by Salazar (the "NOP-Employees") who received treatment and/or controlled substances from Brown and/or who may have been involved

[1] Dr. Brown's Athlete-Patients with the Oregon Project included: Lindsay Allen (D.O.B June 30, 1986), Jackie Areson (D.O.B. March 31, 1988), Alvina Begay (D.O.B. September 9, 1980), Amy Begley (D.O.B. January 11, 1978), Joaquin Chapa (D.O.B. November 1, 1984), Tara Erdmann (D.O.B. June 14, 1989), Mo Farah (D.O.B. March 23, 1983), Adam Goucher (D.OB. February 18, 1975), Kara Goucher (D.O.B. July 9, 1978), Dawn Grunnagle (D.O.B. November 29, 1977), Arianna Lambie (D.O.B. June 12, 1985), Steve Magness (D.O.B. October 11, 1984), Dathan Ritzenhein (D.O.B. December 30, 1982), Galen Rupp (D.O.B. May 8, 1986), Chris Solinsky (D.O.B. December 5, 1984).

in the possession, use, administration and/or trafficking of substances and/or methods prohibited under sport anti-doping rules or who may have engaged in complicity regarding anti-doping rule violations of themselves or others.[2] This Interim Report and the documents referenced herein, which are a part of a separate submission of supporting documents provided under separate cover (the "Supporting Documents") constitute USADA's response to the Subpoena (the "Response").

I. Confidentiality and Purpose of this Interim Report

As explained below, USADA understands that its Response to the Subpoena, including this Interim Report, is confidential and protected from disclosure by statute and practices of the TMB. This Interim Report is confidential and is made to the TMB only on the condition that it be kept confidential and not disclosed and be used only for internal investigative purposes. No authorization is given to the TMB to disclose this Interim Report.

This Interim Report is intended to provide an overview and guide to understanding some aspects of the Supporting Documents and to provide context and information regarding some aspects of USADA's ongoing investigation. As stated, USADA's investigation is continuing. No final decisions have been reached concerning the outcome of USADA's investigation and any conclusions reached in this Interim Report are subject to change. At this preliminary stage USADA specifically reserves the right to revise, adjust, modify or change any conclusion or opinion expressed herein.

Moreover, USADA understands that the TMB will exercise its own independent judgment and expertise regarding Texas law, the standard of care, and other matters

[2] Individuals in the NOP-Employee category include, but are not necessarily limited to: Steve Magness (listed above as an Athlete-Patient), Alex Salazar and Tony Salazar.

within the TMB's exclusive expertise and purview and will apply its judgment and expertise to the full scope of all the evidence that the TMB may gather in its independent investigation. Nothing stated herein is intended to express an opinion by USADA or any person involved in writing this Interim Report or in USADA's investigation on Texas law or on the ultimate conclusions that should be reached by the TMB following its investigations. USADA expects that the TMB will independently investigate, assess and evaluate the matters discussed in this Interim Report and encourages the TMB to do so.

II. Background Concerning USADA

USADA is the independent, congressionally authorized, national anti-doping agency for Olympic and Paralympic Sport in the United States. USADA's congressional authorization can be found at 21 U.S.C.A. § 2001. USADA conducts drug testing of U.S. athletes and investigates the potential use of banned, performance enhancing drugs and methods in sport in compliance with standards set by the World Anti-Doping Agency (WADA) and with United States treaty obligations under the UNESCO International Convention Against Doping in Sport (the "UNESCO Convention"). The UNESCO Convention, for instance, requires that all signatories, including the United States, comply with the World Anti-Doping Code (the "Code") and empower a national anti-doping organization to ensure compliance with the Code by athletes, coaches and sports organizations within that country.

As the national anti-doping organization in the U.S., USADA's mission is to preserve the integrity of competition, to inspire true sport and protect the rights of athletes. Through its anti-doping programs USADA seeks to preserve what is

intrinsically valuable about sport, often referred to as "the spirit of sport," through, among other things, protecting athlete health and wellbeing, promoting ethics, fair play and honesty and upholding applicable rules and laws.[3]

As part of its responsibilities USADA applies and upholds a set of mandatory international standards issued by WADA, which include, but are not limited to, the World Anti-Doping Code (which for instance defines anti-doping rule violations), the WADA Prohibited List (which sets forth the drugs which are banned in sport) and the WADA International Standard for Testing and Investigations (ISTI) which sets forth standards for conducting drug testing and investigations regarding potential anti-doping rule violations.

The ISTI requires USADA to "do everything in [USADA's] power to ensure that [USADA is] able to capture or receive anti-doping intelligence from all available sources, including Athletes and Athlete Support Personnel . . . and members of the public . . . laboratories, pharmaceutical companies, National Federations, law enforcement, other regulatory and disciplinary bodies, and the media."[4]

The ISTI further specifies that USADA shall engage in "the sharing of intelligence (where appropriate and subject to applicable law) with other Anti-Doping Organizations . . . and/or law enforcement and/or other relevant regulatory or disciplinary authorities (e.g., if the intelligence suggests the possible commission of a crime or regulatory offence or breach of other rules of conduct)."[5]

[3] *See* Fundamental Rationale for the World Anti-Doping Code (2015).
[4] ISTI, Art. 11.2.1.
[5] ISTI, Art. 11.4.2.

III. USADA's Determination Regarding Possible Commission of a Crime, Regulatory Offence or Breach of Other Rules of Conduct and Voluntary Information Sharing with TMB and Other Law Enforcement, Regulatory and Disciplinary Authorities and USADA's Assertion of Joint Investigative and Common Interest Privilege Over This Response

The TMB is legislatively mandated to set standards for approving physician licenses in Texas and to investigate and reprimand licensed physicians for conduct that violates Title 3 of the Texas Occupations Code ("TOC"). TOC § 164.010(c). Grounds for discipline include, but are not limited to:

- failing to practice medicine in an acceptable professional manner consistent with public health and welfare, TOC § 164.051(a)(6);
- failing to keep complete and accurate records of purchases and disposals of controlled substances, TOC § 164.053(a)(2);
- prescribing or administrating a drug or treatment that is nontherapeutic in nature or nontherapeutic in the manner the drug or treatment is administered or prescribed, TOC § 164.053(a)(5) and Board Admin Rules (BAR) 190.8(1)(K);
- and delegating professional medical responsibility or acts to a person if the delegating physician knows or has reason to know that the person is not qualified by training, experience, or licensure to perform the responsibility or acts, TOC § 164.053(a)(9).

In terms of the temporal scope of TMB investigations, the TMB can look into actions that occurred within 7 years of the date the complaint was filed, unless the victim is a minor or there is a pattern and practice of abuse, in which case the look back period may be longer. BAR § 178.9. Additionally, information outside any limitations

period that governs the TMB may be relevant for a variety of purposes other than to establish a grounds for discipline of a physician.

The TMB has strong investigative powers. The TMB (or its representative) may enter and inspect a physician's place of practice during normal business hours to verify the accuracy of records and perform an inventory of prescription drugs. TOC § 164.054(c); BAR 179.4(d). The TMB may require a physician to produce records within 14 days, BAR § 179.4(a), or provide information with 10 days, *id*. at (e). Additionally, the TMB has the authority to subpoena information from other sources. TOC § 153.007; BAR § 187.8. Significantly, the Board can obtain medical records without a patient's authorization. TOC § 153.007. These provisions mean that the TMB has the lawful authority to access and compel production of all, or virtually all, information in USADA's possession through lawful means in addition to the Subpoena. For instance, the TMB is fully authorized to access all of Dr. Brown's patient records and communications with the Patient-Athletes and NOP-Patients.

Additionally, the TMB has in place strong confidentiality protections regarding its investigative file and information received by the TMB during the course of an investigation, including through issuance of a subpoena. TOC § 164.007(c); *see also* § 160.006 and BAR § 179.3.

As explained above, USADA is authorized to share information received by USADA in its investigatory and regulatory capacities with law enforcement, regulatory and disciplinary authorities, including the TMB, where information received by USADA "*suggests* the *possible commission* of a crime or regulatory offence *or breach* of other

rules of conduct."[6] For the reasons set forth in this Interim Report this threshold has been easily met. Moreover, the TMB has a legal right to access the patient records and communications in USADA's possession. USADA is therefore authorized in its discretion to share the information set forth in this Interim Report with the TMB.

Because the standards set forth in the ISTI for the voluntary sharing of information with the TMB have been met, USADA is providing the Interim Report and Supporting Documents in response to the Subpoena. USADA also reserves the right to provide additional information to the TMB as USADA may see fit during the course of USADA's investigation or afterwards.

USADA observes that USADA has a variety of legal privileges related to its investigatory materials, including but not limited to the attorney-client privilege, work product doctrine and investigative privilege. Moreover, in addition to the foregoing privileges USADA notes that the Subpoena could potentially be subject to a number of additional objections such as vagueness, specificity, and that requiring a response thereto would be unduly burdensome and expensive. As well, various jurisdictional objections may exist that could permit USADA to avoid compliance with the Subpoena or parts of it. USADA specifically reserves and does not waive the foregoing objections and privileges. Nor should anything in this Interim Report be construed as a waiver of any privilege by USADA.

Nevertheless, in order to assist the TMB with its investigation and in conformity with USADA's duty under the ISTI to assist law enforcement and regulatory authorities USADA is reserving these objections and provides this Interim Report and the

[6] ISTI, Art. 11.4.2 (italics added).

Supporting Documents as its voluntary Response to the Subpoena. In providing this voluntary Response USADA hereby specifically retains and does not waive the foregoing privileges and objections and USADA's response is specifically subject to, and limited by, the foregoing.

Finally, USADA notes that the TMB is jointly investigating many areas which USADA is also investigating. Further, the investigation being conducted by the TMB clearly overlaps with USADA's investigation. Moreover, both the TMB and USADA have in place protections to protect the confidentiality of information shared between the TMB and USADA. Therefore, this Response by USADA is subject to the joint investigative and common interest privileges and is not discoverable by third parties. By providing this Response USADA specifically does not waive any and all applicable privileges and confidentiality protections with respect to any third parties, including, but not limited to, the individuals and entities whose conduct is described in this Response.

IV. Summary of USADA's Findings to Date Concerning Dr. Jeffrey Stuart Brown

As part of an investigation regarding the potential use of banned, performance enhancing drugs and/or methods in sport USADA has received credible information that Dr. Jeffrey Brown, MD (Dr. Brown), a board-certified endocrinologist based in Houston, Texas and practicing under the trade name "Endocrinology Associates of Houston" with an office located at 909 Dairy Ashford Street, Suite 205 Houston, Texas 77079, has engaged in a variety of medical practices and/or therapeutic interventions lacking independent medical justification and/or which are inconsistent with the prevailing standard of care and were, rather, undertaken for the primary purpose of enhancing athletic performance.

USADA is advised that such medical interventions have likely put the health and wellbeing of athletes who are and/or were patients of Dr. Brown at risk and that many were undertaken without providing adequate disclosure concerning potential health risks and side effects. Moreover, USADA is advised that a number of such treatments and interventions constituted new and experimental treatments for which inadequate disclosure and insufficient background information regarding potential risks and benefits to the patients was provided.

A. Potential Breaches of the Applicable Standard of Care

Dr. Brown's medical interventions and conduct which USADA believes may have been in breach of the applicable standard of care includes the following:

1. Intravenously infusing athlete patients in his medical office with a liquid solution, believed to have been compounded personally or at a Texas compounding pharmacy, containing the amino acid L-carnitine in suspension (the "L-carnitine Infusions") without any medical need or justification for the infusions;

2. Intravenously infusing athlete patients with L-carnitine Infusions without adequate background and work ups and despite knowledge that one or more of the patients suffered or may have suffered from potentially complicating medical conditions or had a family medical history of potentially complicating medical conditions such as diabetes and/or hypothyroidism;

3. Intravenously infusing athlete patients with L-carnitine Infusions without adequately advising them of the risks and of the experimental nature of the therapy and without obtaining adequate informed consent;

4. Conducting what amounted to an experimental therapy or medical trial of L-carnitine Infusions without adequate authority to do so;

5. Misdiagnosing athlete patients as having thyroid disease and mis-prescribing thyroid medication (including thyroxine, levoxyl and/or cytomel) to them outside the standard of care and for the primary purpose of enhancing their athletic performance;

6. Incorrectly advising patients that thyroid replacement therapy (i.e., the use of thyroid medication) boosts testosterone levels;

7. Prescribing thyroid medication in order to attempt to raise testosterone levels in an endurance athlete in order to enhance athletic performance;

8. Application of the controlled anabolic agent testosterone to one or more individuals who had no medical need for testosterone and solely to investigate the potential detectability of testosterone on athletic drug tests without obtaining authority to conduct a research study;

9. Prescribing high dose Vitamin D without adequate background and work ups;

10. Prescribing high dose Vitamin D without advising of the risk of Vitamin D toxicity;

11. Incorrectly advising patients that high dose Vitamin D boosts testosterone levels;

12. Prescribing high dose Vitamin D in order to attempt to raise testosterone levels in an endurance athlete in order to enhance athletic performance;

13. Prescribing nasal calcitonin spray without adequate background and work ups;

14. Prescribing nasal calcitonin spray without advising of the risks of its use;

15. Incorrectly advising patients that regular use of nasal calcitonin spray will prevent stress fractures;

16. Failing to disclose actual and potential conflicts of interest to patients;

17. Failing to advise patients of their right to a second opinion in circumstances where Dr. Brown was aware that a conflict of interest existed and did not inform his patient of that conflict or of the right to a second opinion;

18. Failure to keep adequate medical records;

19. Improperly altering medical records;

20. Failing to provide complete medical records when requested to do so by a patient;

21. Prescribing testosterone to Alberto Salazar with knowledge that another physician was prescribing testosterone to Alberto Salazar;

22. Prescribing testosterone to Alberto Salazar without an adequate medical work up or diagnosis concerning Salazar's need for testosterone;

23. Delegating authority for a lay person to deliver medical advice to a patient;

24. Delegating patient care to a non-medical professional;

25. Allowing a non-medical professional to make decisions regarding prescribing or dispensing prescription medication;

26. Seeking to use potentially dangerous or risky medical interventions to influence athletic performance without a potential health benefit for the patient; and

27. Publicly advertising and/or marketing the ability to enhance athletic performance through the diagnosis of thyroid disease and the administration of thyroid medication.

B. Potential Anti-Doping Rule Violations

As discussed herein, while USADA's investigation is continuing and no final determinations have yet been made by USADA, the potential exists that Dr. Brown may have participated in one or more violations of sport anti-doping rules. USADA believes that the possibility that Dr. Brown may have been involved in the violation of sport anti-doping rules may become relevant to the TMB for a number of reasons, including but not limited to, the considerations that:

1. As explained herein, Dr. Brown was, for much of the relevant time period, a member of USA Track & Field, the governing body for the sport of track and field in the United States, and therefore subject to sport ethical and anti-doping rules;
2. Given that Dr. Brown was providing care to athletes subject to sport anti-doping rules, such rules formed, in part, the standard of care against which Dr. Brown's conducted may be measured;
3. Given that Dr. Brown was providing care to athletes subject to sport anti-doping rules, understanding such rules may be integral to understanding the context in which Dr. Brown operated as a physician in providing care to athletes; and
4. As many of Dr. Brown's patients were athletes subject to sport anti-doping rules it is important to understand that one duty he had as a physician was

to ensure that nothing he did as a physician contributed to violating sport anti-doping rules.

V. Background concerning Dr. Jeffrey Stuart Brown

Dr. Jeffrey Stuart Brown, MD (Dr. Brown), is a board-certified endocrinologist based in Houston, Texas and practicing under the trade name "Endocrinology Associates of Houston" with an office located at 909 Dairy Ashford Street, Suite 205 Houston, Texas 77079. Dr. Brown has frequently used an email address of jbrownglands@aol.com and his assistant Diane Gonzales has frequently used an email address of diane.glands@hotmail.com.

Dr. Brown was a registered member of USA Track & Field (USATF), the national governing body for the sport of track and field in the United States during the following years: 2003, 2008, 2009, 2011, 2012 and 2013.[7] Dr. Brown spoke at a Podium Education Project conducted by USATF Coaching Education Department in December 2010 in Virginia Beach, Virginia. In addition, on occasion when athletes have requested to see Dr. Brown and they have qualified for medical funding USATF has facilitated travel and covered medical costs for some athletes.

VI. Background Concerning Alberto Salazar

A. Elite running career

Alberto Salazar is a well known former distance runner. He competed for Nike, Inc. as a sponsored athlete exclusively from approximately 1981 through 1992.[8] For a period beginning in about 1992 until about 1995 or 1996 Salazar both worked for Nike

[7] Information provided by USATF.
[8] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 27, lines 11-22.

as a consultant and as a sponsored runner.[9] Since approximately 1996 Salazar has been a consultant to Nike.[10] Salazar claims to be experiencing severe health impacts as a consequence of overtraining during his career.

B. Admitted testosterone use at the end of Salazar's running career

In his interview with USADA Salazar admitted using testosterone near the end of his competitive career in the mid-1990s. Testosterone was a banned doping substance in the sport of track and field at this time and has been a banned substance in sport continuously since before the start of Salazar's running career.

C. Coaching Relationship with Mary Decker Slaney

Salazar coached famed U.S. female distance runner Mary Decker Slaney in 1996 when she tested for and was subsequently sanctioned for an elevated testosterone/epitesterone ratio.[11]

VII. Background Concerning Nike Oregon Project

A. Athletics West

During his running career Salazar was a member of Athletics West, a running group funded by Nike, Inc. A 1992 book, *Swoosh, The Unauthorized Story of Nike and the Men Who Played There*, by Julie Strasser and Laurie Becklund, alleges that Nike arranged for under-the-table and illegal payments to athletes on the Athletics West team, and that athletes on the team used steroids with Nike's knowledge from 1977

[9] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 27, line 19 – p. 29, line 13.
[10] Id.
[11] *See*, *e.g.*, "Questions mount over Alberto Salazar's links to Mary Slaney," *BBC Sport*, by Matt Slater and Samuel Smith (June 12, 2015); Slaney Slows Down to Speed Things Up, New York Times, by Jere Longman (May 1, 1996).

through 1985. USADA has not investigated these allegations which are far outside the ten (10) year statute of limitations currently applicable to anti-doping rule violations.

B. Nike Oregon Project

Salazar is currently a coach for the Nike Oregon Project.[12] He is a registered coach with USATF.[13] He works in a department headed by John Capriotti who is the head of Sports Marketing for Track & Field for Nike.[14] The "Oregon Project" (also referred to as the "Nike Oregon Project" or "NOP") is the name given to the group of athletes that Salazar coaches.[15] Salazar's son Alex has an MBA and is the business manager for the Oregon Project.[16] Alex is also a registered coach with USATF.[17]

According to Salazar, "[t]he Oregon Project was developed to try to develop American athletes to be competitive in distance running, again . . . that's sort of the mission statement, Americans medaling in major international events."[18] However, Salazar conceded that the mission had, in effect, really shifted to simply improving Nike's shoe and apparel sales:

> Now occasionally we will bring in a foreigner, for some other reason, and for instance, Mo Farah was brought in because I knew that he would raise

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[12] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 27, lines 2-5.
[13] http://www.usatf.org/Resources-for---/Coaches/Coaches-Registry/Coaches-Registry.aspx?aliaspath=%2fResources-for---%2fCoaches%2fCoaches-Registry%2fCoaches-Registry On this USATF webpage, choose "Oregon" from the pulldown menu labeled "Choose Association…"
[14] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 29, line 15- p. 30, line 11; Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 10, lines 15 – 16.
[15] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 31, lines 6 – 18.
[16] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 32, line 1 – p. 34, line 16.
[17] http://www.usatf.org/Resources-for---/Coaches/Coaches-Registry/Coaches-Registry.aspx?aliaspath=%2fResources-for---%2fCoaches%2fCoaches-Registry%2fCoaches-Registry On this USATF webpage, choose "Oregon" from the pulldown menu labeled "Choose Association…"
[18] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 36, line 25 – p. 37, line 5.

> the bar for Galen Rupp, and the other distance runners, Dathan Ritzenhein, that we had at the time. So that made sense, when somebody said, well, why are you wasting time with this British athlete? Well, because he's going to make our athletes better. So I brought him over for that reason. And also because the London Olympics were coming up, and Nike said, hey it would be great if you could get this guy to run well. It's good for Nike. So sometimes, it's a business, I'll make an exception. So with that in mind, we have made a few other exceptions. One is Cam Levins, who is a Canadian, in Canada, our neighbors to the north. It's right close, having another good North American showing that he can compete against the Africans. It's good for Canada and U.S., so we brought in Cam. And then we brought in Suguru Osako, he's a Japanese runner, and that's good for Nike Japan. The 2020 Olympics are in Japan, and sort of grooming him for the marathon, which is a big deal in Japan. So Suguru is someone that we, could help Nike sales over there. We're blocked out by [Adidas], so he's the top young kid in Japan, so we've got him. And recently, although she's not going to be a part of the team officially, because I don't want to put that pressure on her, she's only an 18-year old girl, Nozomi Takamatsu -- I cannot pronounce, spell the last name – but she's an 18-year-old girl, probably the top young runner in Japan, so she's come over to train with us. So we are not going to put the Oregon project on her because I don't want her to get pressured, so that's...[19]

Indeed, while Salazar is known primarily to the outside world as head coach of the Nike Oregon Project, he also describes himself as "work[ing] for Nike in sports marketing in our world headquarters in Beaverton, Oregon USA."[20]

One of the focuses of the Nike Oregon Project for more than the last decade has been the career of home grown Portland, Oregon runner Galen Rupp. Rupp is the best known American distance runner of his generation and has been coached by Alberto Salazar since Rupp was fifteen (15) years old. Rupp won the silver medal in the 10,000m at the 2012 London Olympic Games alongside his Nike Oregon Project teammate Mo Farah who won the gold medal. Most recently, just last month Rupp won the 2016 U.S. Olympic Marathon Trials in his Marathon debut.

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[19] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 37, line 6 – p. 38, line 19.

[20] 1/26/2011 Email from Alberto Salazar to George Clouston.

Currently, the top Oregon Project runner is the Somalian born British runner Mo Farah who has been a part of the Oregon Project and coached by Salazar since late 2010. Farah is fast becoming considered one of the greatest distance runners in history. In addition to winning the 5,000m and 10,000m gold medals at the 2012 London Olympic Games, Farah has won both of these events at the last two IAAF World Championships in 2013 and 2015.

VIII. Relationships Between Salazar and Athletes Coached by Salazar

A. General

Salazar makes the "final decision" on whether an athlete will be permitted to join the Oregon Project.[21] Salazar focuses on identifying "an athlete that [Salazar] think[s] has a chance to be a finalist in the World Championships or in the Olympics, thereby meaning they have a chance of medaling."[22] Salazar said, "If I can"t project that they're going to be top 5 or 6 in the world some day, I don't really want to coach them."[23] As noted above, Salazar's decisions are also largely dependent upon his view of Nike's commercial interests.

Salazar is known for the way he drives his athletes with little regard for their health. Numerous athletes have told USADA they left the Oregon Project for this reason. For instance, Tara Erdman said she was never injured in college and did not become injury prone until working with Salazar. Dathan Ritzenhein had not been

[21] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 35, line 25 – p. 36, line 4.
[22] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 36, lines 9-12.
[23] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 32, line 1 – p. 34, line 16.

injured much during his prior career but after joining the Oregon Project was injured for much of the time until he left in early 2015.

Erdman reported that Salazar's workouts were extremely hard and if she was injured he would tell her to just run through it. As a consequence, Erdman felt that her body was never permitted to heal. Some of the injuries Erdman suffered while training under Alberto were Achilles injuries in 2013 and a stress fracture of her hip in the Fall of 2014 that had her on crutches and unable to train for 4 -5 months.

B. Economic Pressure and Coercion

Being a part of the Nike Oregon Project allowed access to some of the best training facilities and opportunities in the world. His runners recognized that Salazar "had a large budget to explore, basically, whatever he wanted, really."[24]

However, athletes were acutely aware that these opportunities could be withdrawn at Alberto Salazar's discretion and were dependent both upon Salazar's favor and their own athletic performance. These facts created huge pressure to conform to Salazar's wishes and use substances and training methods advocated by him.

Tara Erdman described Alberto Salazar's coaching style as "intimidating." She said when Salazar was present she felt the need to "prove something every workout." If she did not have a good workout then she felt that she was "in the dog house." Salazar would not communicate his displeasure directly but might not talk with you again until you had a good workout. Erdman also said that she learned with Alberto that you do not ask a lot of questions, so when he instructed her to visit Dr. Brown in Houston she

[24] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 12, lines 19-20.

went without asking many questions. She said she was thinking, “what is going on?” “why do I have to do this?” and “why do I have to see this doctor?” But she just did what she was told. She said it was “kind of scary.”

Furthermore, Salazar was not reticent about using the leverage he had to get athletes to conform to his wishes. Dathan Ritzenhein recalled:

> Alberto would often make comments that, you know, I can’t coach you, if you don’t do this, or you have to believe what we’re doing, otherwise, I can’t coach you, things like that.[25]

So, for instance, although the Oregon Project athletes thought that the L-carnitine drink known as “Nutramet” tasted notoriously badly they continued to use it because, “Alberto said so.”[26]

Another example of how institutional and economic pressure factored into athlete decision-making is Dathan Ritzenhein’s situation in 2011. Ritzenhein was injured throughout 2011, and, because he had consequently not been able to compete, he was potentially subject to having payments under his contract with Nike suspended or reduced.[27] At the end of 2011 Ritzenhein was given notice by Nike that his contract payments were “subject to” suspension due to non-performance.[28] As a consequence, Ritzenhein understood that to continue uninterrupted payments under his contract he likely had to qualify for the U.S. Olympic team in the upcoming 2012 Olympic Marathon

[25] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 39, lines 19-22.
[26] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 56, lines 8-10.
[27] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 8, line 2 – p. 9, line 24.
[28] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 8, line 15 – p. 9, line 15.

Trials.[29] He also understood that keeping Coach Salazar satisfied was part of the equation.

Oregon Project athletes were aware of their coach's influence at Nike and that he could intervene and keep contract payments flowing to an injured athlete.[30] Salazar's athletes understood that "Alberto was . . . very powerful."[31] Ritzenhein was therefore under extreme pressure to conform to Alberto Salazar's demands in late 2011 at the very time that Salazar was pushing him to use an L-carnitine infusion. Ritzenhein was uncomfortable with getting the infusion but he knew Salazar wanted him to have it and, therefore, "felt that I would lose favor with [Salazar] and I had already been out for a whole year, and kind of was aware of what repercussions that would mean in terms of my contract, probably, from Nike."[32]

Ultimately, Ritzenhein would succumb to the pressure to use the infusion but would miss qualifying in the U.S. Olympic Marathon Trials. After the Marathon Trials Nike suspended half his contract payments for the year and Ritzenhein was paid only $100,000 by Nike in 2012, one half the $200,000 he had been paid in 2011.

C. Supplement Use at the Oregon Project

Dathan Ritzenhein recalled that when he joined the Oregon Project in 2009 he "started taking a lot of supplements that Alberto had in a room in his basement, pretty much everybody on the team . . . took them. They were a broad range of things, of body

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[29] *Id.*
[30] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 40, line 4 – p. 41, line 7 (describing how Salazar had intervened to keep Kara Goucher's Nike contract payments flowing while she was pregnant and unable to run).
[31] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 40, line 14.
[32] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 40, lines 9-13.

building supplements to fat burning supplements, amino acids."[33] Some of these supplements included Terrestris Tribulus, Alpha Male and Testoboost.[34] The claim was that each of these supplements was a natural way to increase testosterone,[35] and Salazar and his athletes had many conversations that being "able to raise that [*i.e.*, testosterone] legally was a distinct advantage."[36] Salazar "had a room in his garage/basement and there was a whole bunch, all the stuff [the athletes] had taken. He had quite a bit in there at certain times."[37]

D. Allegations of Salazar's Disregard for Prescription Rules

A number of Oregon Project athletes have advised USADA of Alberto Salazar's regular disregard for prescription rules. Examples of Dr. Brown's involvement in the circumvention of prescription drug rules are set forth below at pp. 40 – 95. A few additional examples not directly tied to Dr. Brown are set forth below.

1. Celebrex

Celebrex (celecoxib) is a nonsteroidal anti-inflammatory drug (NSAID) and works by reducing hormones that cause inflammation and pain in the body.[38] A prescription is required to lawfully obtain and use Celebrex.[39] Serious side effects and drug

[33] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), pp. 13, line 21 – p. 14, line 2.
[34] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 14, lines 5 – 12.
[35] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 14, lines 10 – 12.
[36] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 14, lines 17 – 20.
[37] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), pp. 27, line 23 – p. 28, line 1.
[38] http://www.drugs.com/celebrex.html
[39] http://www.drugs.com/celebrex.html

interactions are possible with Celebrex and the product warnings are sobering. For instance:

> Celebrex can increase your risk of fatal heart attack or stroke, especially if you use it long term or take high doses, or if you have heart disease. Even people without heart disease or risk factors could have a stroke or heart attack while taking this medicine. . . . Celebrex may also cause stomach or intestinal bleeding, which can be fatal. These conditions can occur without warning while you are using Celebrex, especially in older adults.[40]

Additionally, there is additional risk in using Celebrex for individuals with asthma.[41] In fact, many of the members of the Oregon Project have been diagnosed with asthma and use inhalers.

Despite the foregoing risk factors for the prescription medication Celebrex several athletes have reported to USADA that Salazar had large quantities of this drug available and regularly gave this drug to athletes without medical supervision. Athlete descriptions of the free availability (without a prescription) and misuse of Celebrex within the Oregon Project is supported by emails obtained by USADA. For instance, on July 11, 2012, Salazar sent an email to Dathan Ritzenhein asking, "Yes, thx Spence! Dathan, do you have any celebrex with you that Matt can use? I'm bringing some., -Alberto"[42]

Steve Magness was concerned about the widespread use of Celebrex within the Oregon Project and consequently recommended that athletes not take it before their runs.[43] Tara Erdman recalled Salazar "abusing prescription medications." She said

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[40] http://www.drugs.com/celebrex.html
[41] http://www.drugs.com/celebrex.html
[42] 7/11/2012 Email from Alberto Salazar to Ricky Simms, Dathan Ritzenhein, Matthew Centrowitz, Andy Powell, CC: Spencer Barden Subject: Re: Matthew Centrowitz [Newly Added]
[43] 2/1/2012 Email from Steve Magness to Lindsay Allen Subject: Celebrex.

that he carried two large bags of medications that he would give to athletes. Erdman said that at first Salazar would give her Celebrex whenever she needed it. Eventually, Erdman got her own prescription of Celebrex.

Lindsay Allen first got Celebrex directly from Alberto Salazar. Salazar suggested that she use it. Salazar would generally give her a single pill or a few pills at a time. He may have once given her an entire bottle of pills, however.

2. Reliance on Asthma Inhalers within Oregon Project

Lindsey Allen recalls that Salazar was liberal with inhalers. If Salazar thought someone needed an inhaler, Allen says that Salazar would just get one from another athlete and giving it to the person who needed it. Lindsay recalled one instance when she was in Alabama, she believed, and getting over a cold. She was using Advair with a strength of 250/250. Salazar however wanted to increase her dosage so Salazar had her use Galen Rupp's 500/500 inhaler.[44]

Another example of Salazar's control of inhaler use within the Oregon Project was an instance in 2012 when Alberto Salazar informed Mo Farah's British physician that Salazar had added an additional inhaler to those already prescribed for the athlete. Salazar wrote:

> Mo is still taking all the inhalers you gave him. I only ADDED the QVAR for a little extra corticosteroid protection on top of his fluticacone since it alone didn't seem to be taking care of his symptoms.[45]

A detailed story by Pro Publica reporter David Epstein sets forth a first-hand account by U.S. runner Lauren Fleshman who alleges that Alberto Salazar instructed Fleshman on

[44] See 2/18/2012 Email from Lindsay Allen to Galen Rupp Subject: Qvar.
[45] 2/15/2012 Email from Alberto Salazar to Dr. Noell Pollock CC: Barry Fudge, Dr. John Rogers, Dr. Paul Dijkstra, Mo Farah, Dr. Robin Chakraverty, Ian Stewart, Ricky Simms.

how her inhalers could be used in excess of the prescription given by her doctor in order to enhance performance.[46] USADA subsequently interviewed Ms. Fleshman who confirmed her experience with Salazar in her interview with USADA. A number of other athletes interviewed by USADA have supported the position that Salazar has encouraged athletes to use inhalers and other prescription medications contrary to how they have prescribed in order to enhance athletic performance.

E. Secretive Environment at Oregon Project

Salazar had a rule that Oregon Project athletes were not to talk with others outside the group or even with each other concerning what products and what medical procedures they were using.[47] Each individual was instructed to, in effect, become a "silo" with respect to medical, and sometimes even supplement, information. This secrecy rule applied to "[a]bout . . . anything, whether it was thyroid medication, or your blood tests, or anything."[48] L-Carnitine and the Oregon Project athletes' access to the special Nutramet L-carnitine product was one of the things that Salazar wanted his athletes to keep a secret.[49]

Tara Erdman recalled that Salazar demanded that the runners be secretive about their training regimen and forbade them from posting what times they were running on social media. Erdman also reported that when completing her doping control form

[46] "Elite Runner Had Qualms When Alberto Salazar Told Her to Use Asthma Drug for Performance," *Pro Publica*, by David Epstein (June 17, 2015).
[47] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 56, lines 22-p. 57, line 6.
[48] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 57, lines 4-6.
[49] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 33, lines 18 – 24.

Salazar instructed her to check "no" in response to the question of whether she gave consent to have her sample used for research.

IX. Background Concerning USADA's Investigation

A. December 10, 2012 Email from Steve Magness to USADA "Play Clean" Email Address

On December 10, 2012, USADA received the following email from former Nike Oregon Project Assistant Coach Steve Magness sent to the USADA "Play Clean" Email Address –

> Look into the Nike Oregon Project athletes.
>
> I'm strongly suspicious of using testosterone cream as I saw it labeled in test results for Galen Rupp before. Along with the fact their head coach has a prescription himself for testosterone cream.
>
> Also, Hemoglobin levels are regularly in the 17-17.8 levels for athletes with total red blood cell mass as high as 1100g for an athlete like Galen Rupp. Those are pretty high levels, even with the use of altitude or simulated altitude. Unfortunately I was not privy to blood volume and therefore hematocrit levels.
>
> They're also pretty good at doing legal injections under 50ml instead of infusions. I know it's permitted, but they've done this with L-carnitine, Magnesium, and iron, plus a few others probably. L-carnitine they took an infusion protocol and instead went with 3-4 small injections while drinking a high glucose drink instead of the glucose+carnitine infusion that was done in the medical journals.[50]

Following receipt of the foregoing email USADA contacted Steve Magness for the first of multiple interviews. Although Mr. Magness has been helpful in many respects to USADA's investigation, his general cooperation has at times been marked by foot dragging and an apparent reluctance to discuss in detail the full extent of his role in apparent anti-doping rule violations and particularly his role in the L-carnitine infusion

[50] 12/10/2012 Email from Steve Magness to playclean@usada.org Subject: oregon project.

program discussed below. For instance, although Mr. Magness gave USADA access to his computer and allowed USADA to make a mirror image of his hard drive, he sometimes took long periods of time to respond to records requests and even months to provide USADA access to certain records. USADA considers that this "on again, off again" approach toward assisting USADA is likely the result of ambivalence caused by Magness's recognition of his own involvement in possible anti-doping rule violations and/or other conduct which may be regarded as suspect while at the Oregon Project.

B. Scope and Course of USADA's Investigation

To date, USADA has conducted interviews and meetings with more than forty (40+) individuals with information potentially relevant to the Magness allegations and to potential anti-doping rule violations discovered by USADA during the course of this investigation. Additionally, USADA has reviewed many thousands of pages of emails, text messages and medical records – all provided voluntarily to USADA pursuant to information requests made to individuals and entities with potentially relevant information.

As described herein, USADA has discovered evidence of several possible violations of sport anti-doping rules which USADA is continuing to investigate. However, USADA has found that these potential anti-doping rule violations appear to have wholly or largely occurred in the context of a larger conspiracy between Nike Oregon Project Coach Alberto Salazar and Houston endocrinologist Dr. Jeffrey Brown to collude in order to employ risky and untested alternative and unconventional (and sometimes potentially unlawful) uses of medical procedures and prescription medications (including both substances and methods prohibited under the rules of sport

and those that were not) to attempt to increase the testosterone, energy and blood levels of Nike Oregon Project athletes in order to boost athletic performance.

In order to best understand and appreciate the evidence in this matter it is helpful to understand some of the events that have taken place during USADA's investigation. For some time USADA's investigation was conducted largely under the radar, however, during the course of the investigation a number of journalists were contacted by individuals with concerns regarding the Oregon Project and ultimately a series of news articles were published which caused Salazar and others to take public positions that are important to understand. Some of the more important articles are discussed below.

1. April 10, 2013 – Wall Street Journal Article Concerning Thyroid Medication Use

On April 10, 2013, the *Wall Street Journal* published an article titled "U.S. Track's Unconventional Physician: Dr. Brown treats runners for a disorder not known to afflict them. His patients' medal count: 15 Olympic Golds," ("Unconventional Physician") by Sarah Germano and Kevin Clark. This article reported that Houston endocrinologist Dr. Jeffrey Brown regularly diagnosed hypothyroidism in young athletes and suggested that Brown's prescription of thyroid medication for athletes was largely intended to boost their athletic performance without a medical need for the medication and contrary to good medical practice.

This article brought a great deal of unwanted and critical attention to Dr. Brown's relationship with Alberto Salazar and the Nike Oregon Project and may have led to the public disassociation between Salazar and Oregon Project athletes and Dr. Brown which occurred in mid to late 2013. USADA is not aware of the extent or degree (if any) to which Dr. Brown and Alberto Salazar remain in contact.

As explained below, USADA's investigation has confirmed many of the basic claims made in the Unconventional Physician article.

2. March 22, 2015 – London Times Article Concerning L-Carnitine Use

On March 22, 2015, the *London Sunday Times* published a front page story entitled "Farah coach ordered super-supplement that can give athletes boost of up to 11%," ("Super Supplement") by George Arbuthnott, Iain Dey, Elizabeth Wilson and Robin Henry. This article alleged that Oregon Project athletes, including Mo Farah and Galen Rupp, had been given access to an L-carnitine supplement obtained by their coach Alberto Salazar which was believed to boost their performance up to 11%. The Super Supplement article further alleged that injections of L-carnitine by Oregon Project athletes "skirted the spirit of sport."

As explained below, USADA's investigation has confirmed many of the claims made in the Super Supplement article. In addition, USADA has found evidence that the L-carnitine injection program organized by Salazar, Dr. Brown and Steve Magness may have resulted in anti-doping rule violations both by them and by one or more of the athletes who were injected.

In an email prepared on Alberto Salazar's behalf by Nike and sent under Salazar's authority on March 27, 2015, by a Nike employee, Salazar represented to *London Sunday Times* reporter George Arbuthnott:

> . . . with respect to L-Carnitine, I confirmed the use and method with USADA in advance[.] As I've said, L-Carnitine is a widely available, legal nutritional supplement that is not banned by WADA. A few of my athletes tried it but found no benefit so they no longer use it. . . . ~ Alberto Salazar.[51]

[51] Documents produced by Nike, pp. OP-000168-169 (emphasis added), pp. USADA 005895 – USADA 005896.

As explained below, Salazar's claim to Arbuthnott that he confirmed the use and method of L-carnitine in advance with USADA is not supported. Salazar's claim that a "few" of his athlete's tried L-carnitine is misleading, as at one point in 2011-2012 may if not all of Salazar's athletes appear to have been using it.

In an email sent by Galen Rupp to Arbuthnott on March 27, 2015, Rupp said:

> I have worked and trained hard for over a decade to get to where I am today. I am completely against the use of performance enhancing drugs. L-Carnitine is a widely available, legal nutritional supplement that is not banned by WADA. The first time I tried L-Carnitine was in mid 2011 as a drink and I stopped taking it in 2012. I did not get any infusions or injections in 2011. I found no benefit so I stopped using it.
>
> - Galen Rupp[52]

As explained below, Galen Rupp's claim that the first time he tried L-Carnitine was in mid-2011 was false. The evidence described below reflects Rupp's L-carnitine use began in 2010 or earlier. Rupp's claim that he did not get any infusion or injection of L-carnitine in 2011 is also seriously misleading. Rupp, in fact, received an L-carnitine infusion on January 5, 2012, in an amount that USADA believes, for the reasons set forth below, may have exceeded the WADA 50 mL limit and may therefore have constituted an anti-doping rule violation.

3. June 3, 2015 -- BBC/Pro Publica Investigation and stories

In early June of 2015 the *British Broadcasting Center* (*BBC*) program *Panorama* aired a documentary which alleged widespread use of banned drugs in track and field. The principle BBC reporter was Mark Daly and he was joined in his investigation by *Pro Publica* reporter David Epstein who issued a series of articles focusing on doping

[52] Documents produced by Nike, pp. OP-000170 (3/28/2015 email from Galen Rupp to George Arbuthnott, Subject: Response to your inquiry), p. USADA 005897.

allegations concerning the Nike Oregon Project and Alberto Salazar. Sources for the BBC and Pro Publica reporting apparently included former Nike Oregon Project Assistant Coach Steve Magness and former Oregon Project runners Adam and Kara Goucher.

The allegations made in this series of programs and articles included references to the term "testosterone medication" in Nike blood testing records associated with Galen Rupp, allegations of testosterone use by Oregon Project members, a claim that a tube of testosterone gel had been found in a room used by Galen Rupp and Alberto Salazar at a high altitude training camp, reports of prescription drug misuse, including the misuse of thyroid medication, and reports of IV infusions given to Oregon Project athletes in violation of the anti-doping rules among other things.

4. Salazar issues "Open Letter" on June 24, 2015 in response to media stories

The foregoing news articles and programs generated a great deal of media attention and many follow up stories. Included among these follow up stories were media accounts that double London Olympics gold medalist Mo Farah (5,000m, 10,000m)[53] might leave the Oregon Project if Salazar did not come forward and disprove the allegations.

On June 24, 2015, Alberto Salazar issued what he referred to as an "Open Letter" in which he provided his response to the various allegations made in the recent articles and programs about the Oregon Project and particularly the BBC/Pro Publica stories. The Open Letter ran some thirty-two (32) pages and included thirty exhibits.

[53] In addition to winning the 5,000m and 10,000m gold medals at the 2012 London Olympic Games, Farah has won both events at the last two IAAF World Championships in 2013 and 2015.

C. Impediments to USADA's Investigation

1. Resistance to Efforts to obtain documents from Salazar and Rupp

Alberto Salazar and Galen Rupp have strongly resisted, delayed complying with and only partially and selectively responded to USADA's efforts to obtain relevant documents from them. For instance, as explained herein, Salazar has been staunchly resistant to USADA's requests to review medical records substantiating his claims that he has a valid medical justification to possess and use testosterone. In response to USADA's request that he turnover relevant emails he claimed that he was unauthorized to do so because his emails were on the Nike server system. Consequently, Salazar insisted that USADA must work with Nike to attempt to obtain the documents. Nike initially sought to place numerous conditions on USADA's receipt of documents from Nike that would have greatly restricted USADA's use of the documents. Eventually, Nike and Salazar dumped some 5,000 pages of documents on USADA less than three (3) business days before Salazar's interview, affording USADA insufficient time to review the documents in advance of the interview.

For his part, Galen Rupp has steadfastly refused to provide USADA any access to his medical records since Rupp learned of USADA's investigation. The only medical records of Rupp that USADA has been able to review are records obtained by USADA in 2013 in relation to a separate investigation into Rupp's use of a prescription asthma medication. In response to USADA's request for relevant emails Rupp has made only a limited response and, to date, has only provided one hundred (100) pages of emails.

2. Resistance to Efforts to interview Salazar and Rupp under oath

USADA first requested that Salazar and Rupp submit to an on the record under oath interview on June 8, 2015. From that point, it took many months to agree on the terms of what eventually came to be called a "proffer agreement," by which Salazar and Rupp each agreed to testify under oath in response to USADA questioning but on the condition that the proffer could not be used against the individual making the proffer in a case alleging an anti-doping rule violation by that individual unless the individual was demonstrated to have testified falsely in his proffer.[54]

3. Salazar's Solicitation of Athletes to Be Represented by Salazar's Lawyer

Once Alberto Salazar, through media reports, became aware of USADA's investigation Alberto Salazar and/or Salazar's attorney, John Collins, began contacting athletes in the Oregon Project requesting that they allow Salazar's attorney to represent them in any communications with USADA regarding USADA's investigation. For instance, at 7:00 p.m. Pacific time on March 26, 2015, Salazar sent Dathan Ritzenhein and Alvina Begay the following email:

> Hi Dathan and Alvina, please send an email to John Collins along with your phone number. If you like, tell him that you'd like him to represent you in all talks with USADA or anyone else regarding anything to do with your running careers. Thanks, Alberto[55]

About 3 hours later, at 10:19 Pacific time on March 26, 2014, Salazar sent Ritzenhein and Begay this follow up email:

[54] The Salazar and Rupp proffer letters are Bates labeled USADA 010681 – USADA 010682, USADA 009343 – USADA 009344.
[55] 3/26/2015 Email from Alberto Salazar to Alvina Begay CC: Dathan Ritzenhein, John Collins Subject: Legal counsel.

> Hi Dathan and Alvina, have you contacted John Collins? Make sure you send him any emails you're received recently. Thx -Alberto[56]

As a consequence of these types of communications from Salazar, Alberto Salazar's lawyer is currently representing at least seven (7) current or former Oregon Project athletes, including Alvina Begay (former),[57] Mary Cain (current),[58] Matt Centrowitz (current),[59] Dawn Grunnagle (former),[60] Jordan Hasay (current),[61] Galen Rupp (current),[62] and Shannon Rowbury (current).[63] As a result of the involvement of Salazar's lawyer, and with limited exceptions as described herein, the foregoing athletes have largely refused to permit USADA to review their medical records.

Of this group of mostly current athletes only Begay, Grunnagle, Rowbury and Rupp are understood to have been patients of Dr. Brown, although Centrowitz was with the Oregon Project during a time period when it is highly likely that his blood records would have been reviewed by Dr. Brown and Dr. Brown may therefore have had a patient-physician relationship with Centrowitz. Cain, Hasay and Rowbury have each joined the Oregon Project since 2013.

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[56] 3/26/2015 Email from Alberto Salazar to Alvina Begay, Dathan Ritzenhein, John Collins Subject: [none].
[57] Until March 11, 2016, Begay refused to provide her medical records to USADA. On that date she made a limited production of records related to her L-carnitine infusion from Dr. Brown.
[58] Cain has refused to provide her medical records to USADA.
[59] Centrowitz has refused to provide his medical records to USADA.
[60] USADA contacted Dawn Grunnagle before she retained John Collins to represent her. Grunnagle followed through on her commitment made to USADA to provide her medical records from Dr. Brown.
[61] Hasay has refused to provide her medical records to USADA.
[62] Rupp has refused to provide additional medical records to USADA since he became aware of USADA's investigation. USADA has a limited set of his medical records from the 2011-2013 time frame which were obtained in connection with a prior investigation of his use of a prescription medication. Rupp, through his attorney, has produced a limited subset of his emails, totaling one hundred (100) pages.
[63] Rowbury has refused to provide her medical records to USADA.

Other impediments to USADA' investigation includes the likely alteration of medical records by Dr. Brown discussed below.

D. USADA's investigation continues

USADA's investigation is ongoing and cases involving anti-doping rule violations and other potential sport disciplinary proceedings are possible.

X. Relationship Between Dr. Brown and Alberto Salazar

Alberto Salazar appears to have first met Dr. Brown in late 2004 or perhaps early 2005. Salazar was apparently introduced to Brown by Adam Goucher, a runner who joined the Oregon Project in the summer of 2004. Goucher had begun seeing Dr. Brown shortly before joining the Oregon Project and Goucher has told USADA that he told Salazar about Dr. Brown soon after coming to the Oregon Project and that Salazar traveled to Houston to meet with Dr. Brown relatively shortly thereafter.

Within a short time of meeting Dr. Brown, Salazar appears to have become closely involved in the hormonal treatments that Brown was providing to Oregon Project athletes including Adam and Kara Goucher, Amy Begley and others. Oregon Project athletes report that Salazar was soon making referrals to Dr. Brown. Galen Rupp is understood to have been diagnosed with a thyroid condition soon after Salazar met Dr. Brown.

Eventually, Salazar employed Dr. Brown as a paid consultant to the Oregon Project. Salazar said that Brown's role was to review the blood testing results of Oregon Project athletes. Regardless of whether Dr. Brown was providing patient care to the athletes whose blood results he was reviewing, under basic ethical principles applicable to the medical profession Brown still owed a duty of care to the individuals

whose records he was reviewing. American Medical Association Code of Medical Ethics Opinion 8.02 states:

> The ethical obligations of physicians are not suspended when a physician assumes a position that does not directly involve patient care. Rather, these obligations are binding on physicians in non-clinical roles to the extent that they rely on their medical training, experience, or perspective. When physicians make decisions in non-clinical roles, they should strive to protect the health of individuals and communities.[64]

Brown also became Salazar's personal physician and at some point began prescribing Salazar testosterone. As discussed herein, Brown's prescriptions of testosterone for Salazar apparently overlapped with the period of time when a Portland, Oregon physician was prescribing testosterone to Salazar.

XI. Conflicts of Interest Arising From the Brown-Salazar Relationship and Dr. Brown's Treatment of Salazar-Coached Athletes

The American Medical Association (AMA) recognizes the foundational ethical principle that "a physician must recognize responsibility to patients first and foremost."[65] "A physician . . . caring for a patient [must] regard responsibility to the patient as paramount."[66]

In the case of Dr. Brown and his myriad interlocking relationships with Nike, Inc., Alberto Salazar, the Nike Oregon Project, and Nike Oregon Project Athletes, there existed a plethora of conflicting loyalties and potential conflicts of interests. Salazar was a well-known track and field coach who provided Dr. Brown patient referrals of big name

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[64] AMA Code of Medical Ethics (Opinion 8.02 - Ethical Guidelines for Physicians in Administrative or Other Non-clinical Roles) http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/opinion802.page

[65] AMA Principles of Medical Ethics (Preamble). http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/principles-medical-ethics.page?

[66] AMA Principles of Medical Ethics (Principles of medical ethics, VIII). http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/principles-medical-ethics.page?

athletes, invitations and tickets to track and field competitions, and insider status within the close knit Oregon Project circle which Brown used to increase his reputation within the track and field community as a guru who had the expertise to change the athletic fortunes of his clients. USADA has discovered that Brown was the personal physician of Salazar. At the same time, Brown was also hired by Salazar as a consultant on a monthly retainer to provide consulting services to the Nike Oregon Project. Simultaneously, Brown was serving as a personal physician to many NOP athletes coached by Salazar and giving Salazar unfettered access to medical information of these athletes.

Dr. Brown does not shy away from claiming personal responsibility for the athletic success of his patients. For instance, Brown was quoted as telling the *Wall Street Journal*, "[t]he patients I've treated have won 15 Olympic gold medals."[67] In PowerPoint presentations to sports organizations Brown suggests that his treatment of Carl Lewis's hypothyroidism resulted in Lewis winning his eighth and ninth gold medals at the Atlanta Olympic Games. Brown's conduct indicates he likely viewed his association with the Oregon Project as a marketing opportunity.

Substantial risks can be associated with an overly close relationship between sports coaches and doctors, particularly when the physician treats athletes being coached by their friend. As noted by Texas Medical Board Executive Director Mari Robinson, "When physicians treat anyone they have a close, personal relationship with,

[67] "U.S. Track's Unconventional Physician," *The Wall Street Journal* (April 10, 2013), by Sara Germano and Kevin Clark.

the danger comes when they find it impossible to maintain an objective grip on the relationship."[68]

British sports medicine physician John Rogers, who was interviewed under oath by USADA, had, before medical school, been an elite athlete. After medical school Dr. Rogers was employed by British Athletics as a physician working with elite distance runners. Dr. Rogers well understood the type of pressure that could be placed on a physician by an ambitious athletics coach and specifically raised this concern when discussing his observations of Alberto Salazar. Dr. Rogers observed:

> in sports medicine, you know, it is slightly different to other aspects of medicine at times in terms of . . . there are pressures from . . . coaches and athletes to intervene at times, where . . . as a doctor, you know, your – first and foremost . . . priority is to the patient or to the athlete and to their health and wellbeing . . . But there are other interested parties who . . . focus on performance and sometimes there are . . . challenging situations which arise as a result of that.[69]

In the summer of 2011 Dr. Rogers was working with British athlete Mo Farah[70] who was being coached by Salazar. Consequently, Dr. Rogers found himself together with Salazar for several weeks in July, 2011 at a high altitude training camp in Font Romeu, France. This occasion gave Dr. Rogers the opportunity to observe first hand Alberto Salazar and his training methods as well as Salazar's interactions with athletes and medical professionals. Dr. Rogers testified that "[t]hose conversations I had with

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[68] "Treating Your Own. It's Legal, But It Can Be Risky," Texas Medicine, Practice Management Feature, October, 2011 (by Crystal Conde) https://www.texmed.org/Template.aspx?id=22563#sthash.P9ercGER.dpuf

[69] Transcript of Interview (Under Oath) of John Rogers (July 30, 2015), p. 46, lines 6-18.

[70] Mo Farah was described by Salazar in correspondence in 2011 as the top distance runner in the world. Farah took gold in the 5,000m race and silver in the 10,000m at the 2011 world championships in Daegu, South Korea. Farah would go on to win gold medals in both the 5,000m and 10,000m races in the 2012 London Olympic Games and has subsequently won both races at each of the last two world championships, at Moscow in 2013 and in Beijing in 2015.

Alberto in . . . July 2011 gave me concern."[71] As a result of this "feeling of concern,"[72] Dr. Rogers wrote an email to his colleagues after he had been with Salazar for about two weeks.[73] In this email dated July 26, 2011 and sent to his other physician colleagues at UK Athletics Dr. Rogers detailed a panoply of sports medicine practices used with Salazar's athletes that prompted Dr. Rogers' concern.[74]

Dr. Rogers was told by Salazar about off label and unconventional uses of the prescription medications calcitonin (to attempt prevent stress fractures) and thyroxine (to boost testosterone levels) and of high doses of vitamin D (also thought to increase testosterone levels) and ferrous sulphate. Although Dr. Jeffrey Brown was not identified in Rogers' letter by name, the conversations with Salazar clearly referenced Dr. Brown's role with the Oregon Project. In his email Dr. Rogers refers to "the endocrinologist they use in Houston," – Dr. Brown is the only one who fits this description.[75] Salazar told Dr. Rogers that Farah had not been placed on thyroxine, and Rogers immediately sought to discontinue Farah's use of each of the three (3) other substances that Salazar had started Farah on, each of which Dr. Rogers considered to be potentially injurious to Farah. Dr. Rogers reported back to his colleagues that:

Main points of interest were –

[71] Transcript of Interview (Under Oath) of John Rogers (July 30, 2015), pp. 44-45, lines 24-25, 1-2.
[72] Transcript of Interview (Under Oath) of John Rogers (July 30, 2015), p. 46, line 4.
[73] Transcript of Interview (Under Oath) of John Rogers (July 30, 2015), pp. 48-49, lines 24-25, 1-5.
[74] July 26, 2011 Email from Dr. John Rogers to Drs. Noel Pollock, Paul Dijkstra and Rob Chakraverty (Exhibit J)
[75] Prescription records obtained by USADA confirm that Dr. Jeffrey Brown prescribed calcitonin, thyroxine and high dose Vitamin D to Oregon Project athletes just as Alberto Salazar apparently mentioned in his conversations with Dr. Rogers in France in 2011.

they use nasal calcitonin on all their group to prevent stress fractures and Mo has been using this. I asked Mo to stop this whilst we discussed given his hx of hypercalcuria which Alberto was not aware of.

if TSH is > 2.0 (with or without any clinical suggestion) the endocrinologist they use in Houston considers this as evidence of hypothyroidism and uses low dose thyroxine. With Alberto's working for Nike and the Texas connection I wonder if this is based on what Lance Armstrong was doing. **Alberto believes this has a beneficial effect on serum testosterone.** Havent (sic) had a chance to search for evidence on this but dont (sic) see the mechanism here. Apparently Mo's TSH was > 2 but as he was running so well they didnt (sic) want to interfere with anything. As you know thyroxine is not currently on the banned list.

They use high dose vit D replacement – d3 50000u twice weekly. Mo had been on this regime for 8 weeks. I advised stopping and checking bloods to see where his vit D and calcium levels were at.

They aim to keep vit D level at top of reference range and again he felt this had an effect on testosterone levels. Have not seen anything in literature to this effect but again havent (sic) looked as yet.
In terms of training – high volume – up to 130 miles/week with some XT. Mo currently does 2 x 20 mins/week on underwater treadmill. Also strength work x 4 / week – this involves 2 lifting sessions and 2 core sessions. In touch with speed throughout the year – 200s at race pace weekly. Hypoxic tent use day and night and they go quite high – 12000ft equivalent. Barry spoke with him about this at more length,

Mo has been on 4 x 160mg ferrous sulphate and ferritin from 2 weeks ago was >200 so advised stopping for now.

They have specific specialists they use for medical related issue ie. Orthopaedic, endocrine and respiratory consultant with an interest in allergies. Sport science/physiology input from Nike sports research lab.

His attention to detail, medical and sport science knowledge was considerably better than any other endurance coach I know. After discussion he seemed to have a low threshold for asking for advice on any minor medical or MSK issues and was very keen to have UKA input with Mo. I felt reassured after speaking with him that he was very frank and open about the methods they were using.[76]

[76] July 26, 2011 Email from Dr. John Rogers to Drs. Noel Pollock, Paul Dijkstra and Rob Chakraverty (Exhibit J), emphasis added.

Dr. Rogers' evidence strongly supports the conclusion that Alberto Salazar and Dr. Jeffrey Brown specifically employed alternative and unconventional uses of prescription medications and supplements to attempt to increase testosterone levels in order to boost athletic performance. Dr. Rogers' evidence is also consistent with the conclusion, discussed in more detail below, that Alberto Salazar was able to influence and manipulate physicians, including Dr. Brown, to prioritize Salazar's personal interest in the athletic performance of Salazar coached athletes and Salazar's ability to control those athletes over patient confidentiality, patient loyalty, and patient health and well-being.

XII. Evidence That Salazar Colluded with Dr. Brown to Access Patient Medical Information and Participate in Dr. Brown's Treatment of Patients

A. Alberto Salazar was highly focused on boosting the testosterone levels of his athletes and consequently sought to involve Dr. Brown in a variety of schemes to use Dr. Brown's prescription writing authority to seek to boost athlete testosterone levels.

Testosterone is a powerful, dangerous, federally controlled drug which may not be distributed without a prescription. Testosterone is also prohibited in sport due to its powerful anabolic (i.e., muscle building) and regenerative qualities and because of the extreme health risks (including cancer, organ failure and endocrine system dysfunction) associated with testosterone abuse.[77]

Testosterone is a known drug of misuse in distance running. The administration of testosterone permits distance runners to recover faster from strenuous workouts, increase strength, stamina and energy levels and boosts red blood cell production, which is essential to endurance.

[77] Testosterone is prohibited under Category S1, Anabolic Agents, of the WADA Prohibited List.

The evidence gathered by USADA in the course of our investigation reflects that Alberto Salazar was highly focused on boosting the testosterone levels of his athletes because he believed that boosting his athletes' testosterone levels was integral to enhancing his runners' performance. For instance, as noted above, Salazar regularly supplied athletes with supplements he believed would increase their testosterone levels. As described herein, he also enlisted physicians such as Dr. Brown to participate in several dubious schemes to use prescription medications to attempt to boost or regulate testosterone and athlete energy levels.

Although low testosterone levels are recognized to be a potential sign of overtraining, rather than recommend reduction in workloads for his athletes, the evidence indicates Salazar regularly sought pharmacological assistance to attempt to boost testosterone levels. Salazar has admitted supplying supplements marketed as enhancing testosterone production to Galen Rupp when Rupp was sixteen (16) years old. The administration of testosterone boosting supplements to a teenage male likely undergoing puberty is one more indicator of Coach Salazar's obsession with his athletes' testosterone levels and of the depth of Salazar's belief that testosterone levels are critical to the success of his athletes. As described herein, Salazar's obsession with testosterone levels led him to push several medically risky plans to boost testosterone levels in his athletes.

The best medical and scientific evidence is that Salazar's effort to push risky therapies on his athletes in the hope for boosting their testosterone levels was a search for fool's gold. Dr. Todd Nippoldt of the Mayo Clinic warns that "[a]side from making healthy lifestyle choices and addressing medication side effects or untreated medical

conditions, there's little you can do to naturally boost your testosterone level."[78] In any case, even if, as may have been the case, Salazar's limit pushing techniques produced increases in his ability to tweak his athletes' endocrine systems and perhaps for a time boost their recovery capacities, these performance gains came at the cost of substantial potential long-term health risks that were never fully or impartially explained to the Athlete-Patients.

Salazar repeatedly ignored the medical evidence and his athletes' long term health prospects in a quixotic and dangerous search for better performances in a bottle or a pill. To obtain access to the prescription substances that he hoped would fuel his athletes Salazar required the complicity of physicians willing to set aside medical ethics and good patient care practices in order to assist him. Salazar found one such physician in Dr. Jeffrey Stuart Brown of Houston, Texas.

1. Dr. Brown participated in Alberto Salazar's risky plan to have Salazar's athletes rely on prescription strength levels of Vitamin D supplementation in order to attempt to boost testosterone levels

As noted by Dr. Rogers in his July 26, 2011, email to his physician colleagues at UK Athletics (set forth above), Alberto Salazar believed that supplementation with extraordinarily high levels of Vitamin D would boost testosterone levels. Salazar evidently convinced UK athlete Mo Farah to begin "high dose" Vitamin D supplementation, and Farah was on this program of supplementation for eight weeks before Farah's UK Athletics doctors found out about it and put a stop to it.

[78] http://www.mayoclinic.org/healthy-lifestyle/sexual-health/expert-answers/testosterone-level/faq-20089016

According to the Mayo Clinic website, Vitamin D toxicity, also called hypervitaminosis D, is a rare but potentially serious condition that occurs when an individual has excessive amounts of vitamin D in their body. [79] The condition only occurs as a result of Vitamin D supplementation.[80] The Recommended Dietary Allowance (RDA) of Vitamin D for adults is 600 IU of vitamin D a day. According to the Mayo Clinic, "[d]oses higher than the RDA are sometimes used to treat medical problems such as vitamin D deficiency, but these are given only under the care of a doctor for a specified time frame. Blood levels should be monitored while someone is taking high doses of vitamin D."[81]

The 50,000 IU Vitamin D pills given to Oregon Project runners were prescription strength pills that can only be obtained with the authorization of a doctor. Prescription records indicate that one of the physicians who authorized Oregon Project runners to obtain high dose Vitamin D pills was Houston endocrinologist Dr. Jeffrey Brown.[82]

Oregon Project runners were encouraged by Alberto Salazar to use 50,000 IU pills of Vitamin D several times per week.[83] Salazar confirmed in a September 18, 2012, email sent to Dr. Brown that although Tara Erdman's "Vit D levels were not checked [Salazar] had her take one 50,000 iu Vit D pill per week which everyone of our

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[79] http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-answers/vitamin-d-toxicity/faq-20058108
[80] *Id*.
[81] *Id*.
[82] *See* Galen Rupp medical records (p. USADA 001606).
[83] Both Oregon Project runner Amy Begley and her husband Andrew Begley have told USADA that Salazar told the Begleys that Nike had tested Galen Rupp and several Nike employees after the administration of various doses of vitamin D to determine what effect it had on their testosterone levels. Andrew Begley said that he had low testosterone and Salazar said that mega dosing Rupp's vitamin D had resulted in a dramatic increase in Rupp's testosterone levels. Salazar asked the Begleys to keep the information confidential because it was, according to Salazar, Nike's proprietary information.

athletes takes at a minimum, most take two."[84] In his zeal to increase his athlete's testosterone levels Salazar had his runners use high dose Vitamin D supplementation without specific and regular monitoring of the vitamin D levels in their blood. Moreover, Dr. Brown was aware that Oregon Project athletes were getting high dose Vitamin D pills without regular monitoring of their Vitamin D levels.

For instance, Galen Rupp filled prescriptions from Dr. Brown for 50,000 IU tablets of Vitamin D in 2011 on January 3, February 4, March 15, April 26, May 15, June 30, August 1, October 2 and November 14. However, the medical records produced to USADA reflect only a single blood test for Galen authorized by Dr. Brown in 2011 and this single blood test on December 19, 2011 did not test for Rupp's Vitamin D level. According to the records provided to USADA, Dr. Brown continued prescribing Vitamin D to Rupp in April of 2012, yet the blood test authorized by Dr. Brown for Rupp in April 2012 did not test Rupp's Vitamin D level. Likewise, in October 2012 Rupp filled a high dose Vitamin D prescription from Brown, however, the records reflect no blood testing in that month. Similarly, Rupp filled high dose Vitamin D prescriptions from Brown in February and April of 2013. Yet, no blood testing appears to have been ordered by Brown for Rupp during these months. Thus, the records made available to USADA indicate that Oregon Project runners were taking prescription strength doses of Vitamin D without monitoring of the Vitamin D levels in their blood. This conduct was potentially dangerous and was certainly contrary to good medical practice.

The Mayo Clinic advises that the "main consequence of vitamin D toxicity is a buildup of calcium in your blood (hypercalcemia)."[85] Individuals at greater risk of

[84] Tara Erdman medical records, p. USADA 001187.
[85] *Id*.

vitamin D toxicity from Vitamin D supplementation are those with liver and kidney conditions.

One of the reasons that British physician John Rogers acted quickly to stop the high dose vitamin D supplementation that Salazar was giving to Mo Farah is that Farah had been previously diagnosed with hypercalciuria. Hypercalciuria is the condition of elevated calcium in the urine and patients with hypercalciuria have kidneys that put out higher levels of calcium than normal. Chronic hypercalcinuria may lead to impairment of renal function, nephrocalcinosis, and renal insufficiency. Dr. Rogers recognized that an individual like Farah who has hypercalciuria should not be taking high dose Vitamin D. Salazar's failure to clear high dose Vitamin D with Farah's UK Athletics physicians before giving that prescription drug to Farah potentially put Farah at medical risk.

Emails between Salazar and several Oregon Project athletes reflect that one source which Salazar touted as confirming his belief that testosterone levels could be boosted by Vitamin D supplementation was an April, 2010 BBC article entitled "Sunbathing ups men's testosterone."[86] The BBC synopsis for this article, which was downloaded by Salazar, reports, "A spot of sunbathing may be just the thing to lift a man's libido, say experts after a study finds testosterone is boosted by vitamin D."[87] On April 9, 2010, Salazar forwarded the BBC article to Oregon Project runners Dathan Ritzenhein and Alan Webb and to Nike Researcher Dr. Loren Myhre with the following comment:

> Hi Alan and Dathan, **We may be on to something here! Google Vitamin D and effect on testosterone.** There's lots of articles that talk about their relationship. **Both of you have had low testosterone and**

[86] April 9, 2010, email from Alberto Salazar to Alberto Salazar, forwarding "BBC E-mail: Sunbathing ups men's testosterone." Email #1.
[87] *Id*.

> **low Vit. D and stress fractures**. Galen has been on Vit. D for the last two months, his testosterone levels two days ago are the highest they've been since highschool and he's training very hard right now. Dathan, do you know what your latest Vit D levels were?
> Loren, could you check on Dathan's last blood tests and see if we got a Vit D and testosterone level on him? Thanks! - Alberto[88]

After receiving Salazar's April 9, 2010, email and comments on the BBC article, Ritzenhein reviewed his past blood testing records and emailed Salazar that he noticed he had never gotten a stress fracture in the middle of the summer. Salazar's response was to immediately start Ritzenhein on prescription strength Vitamin D:

> HI Dathan, Good, I think we're on to something here! **Forget the blood tests this monday, let's have you start on Vit. D now**, you've had enough tests that show you in the lower range of normal for Vit. D and with very low testosterone levels, so we'll know if you get an increase in testosterone from the Vit. D, and even if you don't , you still need to have higher levels of Vit. D. **I've left a bottle with one Vit. D pill in it just inside our front door**. (never locked) **I'm getting my prescription for them refilled and will get you more, but you only need to take one per week**. Talk to you later- Alberto[89]

As the foregoing email from April 10, 2010, indicates, Salazar believed it within his competence to determine without medical consultation whether an athlete coached by him should begin using prescription levels of Vitamin D. The foregoing email, as well as Dathan Ritzenhein's subsequent emailed response that he would "grab them after I workout,"[90] indicates that Salazar got Dathan Ritzenhein started on prescription strength Vitamin D on April 10, 2010, by giving Dathan pills from Salazar's own prescription.

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[88] 4/9/2010 Email from Alberto Salazar to Dathan Ritzenhein, Alan Webb and Dr. Loren Myhre Subject: BBC E-mail: Sunbathing ups men's testosterone. (emphasis added). Email #2.
[89] 4/10/2010 Email from Alberto Salazar to Dathan Ritzenhein Subject: BBC E-mail: Sunbathing ups men's testosterone (Email #4) (emphasis added).
[90] 4/10/2010 Email from Dathan Ritzenhein to Alberto Salazar Subject: BBC E-mail: Sunbathing ups men's testosterone (Email # 5).

A little more than a month later, on May 12, 2010, Salazar emailed Ritzenhein to "send me your date of birth, and your preferred pharmacy. I'll have Dr.Cook call in a longterm prescription for Vit D for you. they're really cheap, about $2 per pill."[91] Dr. Robert Cook is an Oregon physician who regularly works with Oregon Project athletes. This email is indicative of the sort of control Salazar believed he could exercise over physicians associated with the Oregon Project. Numerous emails demonstrate that Salazar expected to be able to call up a physician and fill a long term prescription for an athlete without the physician even speaking with the athlete.

Whether Dr. Cook ultimately filled a prescription for Dathan Ritzenhein to receive high dose Vitamin D is unknown at this time as Ritzenhein's records from Dr. Cook have not been requested. It is known, however, that Dr. Brown was a prescriber of high dose Vitamin D to multiple Oregon Project athletes. Prescription records obtained from Galen Rupp indicate that on January 3, 2011, Rupp filled a prescription from Dr. Brown for high dose Vitamin D at the Walgreen's Pharmacy located at 4816 NW Bethany Road in Portland, Oregon.[92] Chris Solinsky's medical records from Dr. Brown indicate that Solinsky was instructed to start high dose vitamin D (10,000 IU weekly) on February 11, 2010.[93] Adam Goucher's medical records reflect Dr. Brown prescribing Goucher high dose Vitamin D in March, 2008.[94]

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[91] 5/11/2010 Email from Alberto Salazar to Dathan Ritzenhein Subject: RE: Dathan Ritzenhein (Email #7).
[92] Galen Rupp medical records, p. USADA 001606 (Prescription profile for Galen Rupp from Walgreens, 4816 NW Bethany Blvd.
Portland, OR 97229 (503) 439–9014.
[93] Chris Solinsky medical records, p. USADA 000962 (Progress Note dated 2/11/10).
[94] Adam Goucher medical records, p. USADA 000387 (March 26, 2008 email from Dr. Brown to Adam Goucher).

Contemporaneous email records from May, 2010 also support the conclusion that Dr. Brown was consulting with Alberto Salazar concerning Salazar's administration of high dose Vitamin D to athletes who were not at that time patients of Dr. Brown. On May 18, 2010, Salazar sent Brown an email with the subject line: "Dathan results."[95] In this email Salazar forwarded Brown blood test results for Dathan Ritzenhein, an athlete who at that time, according to Dr. Brown's medical file for Ritzenhein, was not yet a patient of Brown's. The content of the emails sent to Dr. Brown concerned only testosterone results. Specifically, Salazar was concerned that the Nike lab had sent Salazar only a number for "free testosterone" and not a number for "total testosterone." Therefore, Salazar asked Dr. Brown:

> Hi Dr.Brown, I don't know why all of a sudden Nike is only asking for Free testosterone. can you tell me what 7.5 for free testosterone equals in total? – alberto[96]

With no other context within the email chain other than the foregoing concerning the testosterone measurement used, Dr. Brown delivered a seemingly incongruous response referring specifically to the effect on testosterone of Vitamin D. Dr. Brown wrote:

> Alberto,
> **This testoterone effect of Vit. D would take a while to work**, if there is no other cause for low testosterone such as thyroid or pro[l]actin issues.
> Jeff[97]

Without even addressing Salazar's testosterone measurement question, Dr. Brown raised the issue of the impact of Vitamin D supplementation on testosterone levels. Dr.

[95] 5/18/2010 Email from Alberto Salazar to Dr. Brown Subject: Dathan results (Email #16).
[96] 5/18/2010 Email from Alberto Salazar to Dr. Brown Subject: Dathan results (Email #16).
[97] 5/18/2010 Email from Dr. Brown to Alberto Salazar Subject: Dathan results (Email #15) (emphasis added).

Brown's response therefore demonstrates that Brown was well aware of why Salazar was concerned with Ritzenhein's testosterone level, and that Brown had evidently been consulting with Salazar on Salazar's plan to give athletes (including athletes Brown did not have a patient relationship with and whose medical history he did not know) high dose Vitamin D on the spurious and medically unsubstantiated theory it would boost their testosterone levels.

Having received the above response from Dr. Brown, Salazar advised Ritzenhein to continue to use prescription levels of Vitamin D, a course of action the medical records appear to indicate was not supervised by a physician. Salazar instructs Ritzenhein:

> Hi Dathan. **You need to just stay the course with the Vit.D at these levels until hopefully your testosterone levels rise.** Galen started on Vit.D way back in december, so maybe it does take all those months because it wasn't until April that we started noticing higher testosterone levels. - Alberto[98]

Although the high dose Vitamin D being taken by Salazar athletes was obtained by prescription from physicians, apparently most frequently from Dr. Brown, Salazar was often the one who set the dosage levels of prescription Vitamin D that would be taken by these athletes. For instance, on July 29, 2010, Dr. Brown's assistant Diane Gonzales sent directly to Alberto Salazar an email with the subject line: "Dathan's Vit D."[99] The email from Dr. Brown's assistant contained Ritzenhein's blood test results for July 27 showing his Vitamin D level.[100] Salazar subsequently passed the blood test results on to Ritzenhein with the comment: "Hi Dathan. Your vit d is 75, about the same

[98] 5/18/2010 Email from Alberto Salazar to Dathan Ritzenhein Subject: Dathan results (Email #18) (emphasis added).
[99] 7/29/2010 Email from Diane Gonzales to Alberto Salazar Subject: Dathan's Vit D (Email #31).
[100] *Id*.

as before. that;s good. – Alberto."[101] Ritzenhein's response was, ". . . I think I was 87 last time on Vit. D but I went back to one pill a week"[102] to which Salazar instructed him, "**go back to two pills per week!** . . . **I'm having Galen go up to four pills per week** because he's remained at 70 on three pills per week."[103] These emails demonstrate that by inserting himself as the go between between his athletes and their doctor Alberto Salazar was able to personally instruct Rupp and Ritzenhein on the number of pills they should take from their Vitamin D prescriptions.[104]

While it might be contended on behalf of Dr. Brown or Alberto Salazar that it is not unusual for a track coach to be concerned with the vitamins and supplements being taken by his athletes, such a response would miss the points that the Vitamin D pills at issue here were available only with a doctor's prescription, that Vitamin D dosages at these levels carried health risks that Salazar was not competent to appreciate and evidently did not understand and that Salazar did not explain these risks to his athletes. Indeed, the situation of Mo Farah and his hypercalciuria demonstrates the rather egregious risks that wittingly or unwittingly Alberto Salazar was taking by controlling his athletes' usage of prescription strength Vitamin D and the potential for serious harm that existed by virtue of the failure of Dr. Brown, and perhaps other physicians, to become

[101] 7/29/2010 Email from Alberto Salazar to Dathan Ritzenhein Subject: Dathan's Vit D (Email #32).
[102] 7/29/2010 Email from Dathan Ritzenhein to Alberto Salazar Subject: Dathan's Vit D (Email #33).
[103] 7/30/2010 Email from Alberto Salazar to Dathan Ritzenhein Subject: Dathan's Vit D (Email #34) (emphasis added).
[104] An email from Dr. Brown to his assistant on November 12, 2010, indicates that Brown was also the source of prescription Vitamin D for Dathan Ritzehein. In this email Dr. Brown instructed his assistant to "cal in for Dathan for Levoxyl 0.088 every other day and Vit. D 50,000 units every other day." 11/12/2010 Email from BrownJ to GonzalesD CC: RitzenheinD Subject: None.

adequately involved in the dispensing of the Vitamin D prescriptions and to understand how the medication was being used by the Athlete-Patients.

Salazar's plan for Oregon Project athletes including Galen Rupp, Dathan Ritzenhein and Mo Farah to take prescription levels of high dose Vitamin D in order to increase their testosterone levels was an experimental therapy, undertaken without adequate research or medical supervision, involved the abuse of prescription rules, and was inconsistent with medical ethics and good patient care. Although physicians such as Dr. Jeffrey Brown allowed themselves to be used in Salazar's plan to attempt to boost testosterone through high dose Vitamin D supplementation, it is apparent that this experiment was not adequately supervised, that the athletes were not fully advised regarding the risks of high dose Vitamin D supplementation, and that adequate and thorough investigation was not undertaken into the medical history of all the athletes who would be using high dose Vitamin D for possible drug interactions or conditions which would contraindicate and make medically risky high dose Vitamin D usage, such as Mo Farah's diagnosis of hypercalciuria.

2. Alberto Salazar relied upon Dr. Brown to provide thyroid hormones such as levoyxl, thyroxine and cytomel to athletes based on Salazar's and Brown's theory that these drugs would boost athlete testosterone levels.

a. Salazar's participation in Dr. Brown's thyroid treatment of numerous NOP athletes

In his Open Letter Alberto Salazar claimed, "[s]o the record is clear, I have coached 55 professional athletes in my career. Of those 55 athletes **only 5 have been diagnosed with hypothyroidism after I had started coaching them**[.]"[105] Yet, there

[105] Salazar Open Letter (June 24, 2015), p. 1-4 (emphasis added). Interestingly, in an email prepared on Salazar's behalf by Nike and sent under Salazar's authority on March 27, 2015, by

is a logical fallacy inherent in Salazar's contention. Salazar focused on an irrelevant sample size. The allegations asserted against Salazar have been that his source for suspicious thyroid diagnoses and his means of manipulating athlete thyroid levels was Dr. Jeffrey Brown. Therefore, the relevant time frame for analysis consists only of that period of time during which Salazar was actually working with Dr. Brown, a period of time which is considerably shorter than Salazar's entire coaching career which has ranged over an approximately twenty-one (21) year period from 1995 – 2016.

USADA has not been able to obtain the medical records of every Salazar-coached athlete who ultimately became a patient of Dr. Brown. Yet, from the limited records that USADA has been able to review and from the interviews we have conducted, it appears that at least six (6) athletes, including Amy Begley, Kara Goucher, Arianna Lambie, Galen Rupp, Dathan Ritzenhein and Chris Solinsky began taking thyroid medication from Dr. Brown while being coached by Alberto Salazar. Additionally, Salazar conceded in his interview that a seventh NOP athlete, whose medical records USADA has not seen, Joaquin Chapa, was treated by Dr. Brown for alleged hypothyroidism while being coached by Salazar.[106] Thus, Salazar has plainly

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a Nike employee, Salazar inaccurately represented to London Times reporter George Arbuthnott:

> **Only 3 of the 44 professional athletes I've coached were diagnosed with hypothyroidism after starting to train with the Oregon Project**. Other Athletes were diagnosed and treated for the condition by multiple doctors prior to joining the Oregon Project. Thyroid medication is not banned by WADA and **I am not aware of any performance enhancing benefits**. Currently only one athlete within the Oregon Project has been diagnosed with hypothyroidism and is being treated by a Board certified endocrinologist at OHSU in Portland, ORE. ~ Alberto Salazar

Documents produced by Nike, pp. OP-000168-169 (emphasis added).

[106] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), pp. 55-56, lines 17-25, 1-18.

undersold the number and significance of the hypothyroid diagnoses made by Dr. Brown on NOP athletes.

Salazar indicated in his interview with USADA that Kara Goucher and Amy Begley were diagnosed with hypothyroidism before Salazar began coaching them.[107] However, judging from their medical files with Dr. Brown and from their statements to USADA, this appears not to have been the case. Kara Goucher joined the NOP in 2004 and Begley in 2006. Begley's file with Dr. Brown reflects that her first visit with Dr. Brown was on December 18, 2006,[108] and she had a TRH stimulation test on that same date and appears to have been thereafter diagnosed by Brown as hypothyroid and started on thyroid medication.[109]

The Gouchers joined the Oregon Project in 2004, apparently shortly after the U.S. national championships in late June.[110] Kara Goucher's first visit with Dr. Brown appears to have been on August 3, 2004.[111] On that date Kara Goucher had a TRH stimulation test and appears to have been thereafter diagnosed by Brown as hypothyroid and started on thyroid medication.

Adam Goucher's medical records indicate that his first visit with Dr. Brown was on May 3, 2004.[112] On that date Adam Goucher had a TRH stimulation test and appears to have been thereafter diagnosed by Brown as hypothyroid and started on thyroid medication.

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[107] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 55, lines 12-16 (Amy Begley), p. 55, lines 8-9, p. 56, lines 13-14 (Kara Goucher).
[108] Amy Begley Medical records, p. USADA 000279-282.
[109] *Id*.
[110] Additional research is needed to ascertain the date on which they began to be coached by Alberto Salazar.
[111] Kara Goucher Medical records, p. USADA 000633.
[112] Adam Goucher Medical records, p. USADA 000347.

Adam Goucher was referred to Dr. Brown by his prior coach Mark Wetmore and wrote the following letter to Brown on April 26, 2004, only *one week before Adam Goucher would meet Brown* and be told that he required thyroid replacement therapy:

> Dear Dr. Brown:
>
> Hello, I am writing to you today in hopes that you may be able to help me with some problems that I have been dealing with for quite some time. My name is Adam Goucher and I am a professional track athlete. I graduated from the University of Colorado in December of 1998 where I won 4 National Championships in Cross Country and Track. In the past 6 years I have won 3 US Cross Country Titles, and 3 USA track Championships including the 5000m title at the 2000 Olympic Trials. Since competing in the 2000 Olympic Games, I have struggled with injury and fatigue.
>
> My coach, Mark Wetmore, recommended that I contact you. He has sent an athlete to see you before and says that you are the best Endocrinologist in the country. I'm not sure exactly what is going on, but over the past four years I have repeatedly had blood tests come back with high CPK levels and low testosterone levels. I also have had low ferritin levels at times. Another concern for me is that I take Effexor for depression, and I worry that it dulls my bodies ability to compete.
>
> I just opened up my 2004 season this past Saturday in Eugene. I ran a 3:55 1500, 20 seconds off my personal best in the event. My coach and I could see running 10 seconds or so slower than my best as a season opener, but the time I ran is inexplicable to me. My workouts have been going well, and to race such a slow time, and have it feel difficult, is very confusing.
>
> I know that you are a very busy person. I would truly appreciate any input that you may have. With eleven weeks to go until the Olympic Trials, I am in need of some guidance. I would be more than willing to come and see you in Houston, if you were able to see me. Please let me know if there is anyway that we could work something out. I appreciate your time. Thank you.
>
> Sincerely,
>
> Adam Goucher[113]

[113] Adam Goucher Medical records, p. USADA 00037.

Exactly one week after Adam Goucher penned the foregoing desperate plea for "any input that you may have" Goucher was in Dr. Brown's office in Houston, Texas taking a TRH stimulation test.[114] Despite the fact that Goucher's previous blood tests from August, 2001[115] and from April, 2003[116] and August of 2003[117] had shown TSH values well below 2.00, within days Goucher had received a prescription from Dr. Brown for thyroid medication.[118]

The Gouchers told USADA that during their initial consultations with Dr. Brown he instructed them to "tell me everything you're on – whether legal or not" and asked if they had made any visits to the Bay Area. The Gouchers understood Dr. Brown's questions about visits to the Bay Area to be a reference to the Bay Area Laboratory Cooperative (BALCO) doping scandal and reported links of BALCO to U.S. track and field athletes. Dr. Brown's statements caused the Gouchers to believe he had previously worked with doped athletes.

Alberto Salazar inaccurately claimed in his USADA interview that he "did not meet [Dr. Brown] until 2006, late 2006, 2007."[119] Salazar's testimony was that Brown became one of Salazar's "personal physicians" in late 2006 and began prescribing Salazar testosterone around that time.[120] Salazar further testified it was not until December of 2008 that Dr. Brown became a consultant for the Nike Oregon Project.[121]

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[114] Adam Goucher Medical records, pp. USADA 000343, 000347.
[115] Adam Goucher Medical records, p. USADA 000357.
[116] Adam Goucher Medical records, p. USADA 000357.
[117] Adam Goucher Medical records, p. USADA 000366.
[118] Adam Goucher Medical records, p. USADA 000402.
[119] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 261, lines 2-3.
[120] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 260, line 14 – p. 261, line 15.
[121] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 51, lines 19-25 – p. 52, line 2.

Yet again, however, Salazar was mistaken and has misleadingly minimized Dr. Brown's involvement with both Salazar and the Nike Oregon Project.

Adam and Kara Goucher both recollect distinctly that they told Alberto Salazar about Dr. Brown soon after they joined the NOP, that Salazar visited Dr. Brown shortly thereafter, and that not long after that visit Salazar began referring NOP athletes to consult with Dr. Brown. Indeed, the Gouchers' recollection is that Dr. Brown was practically on the NOP staff after Salazar visited him and that within a relatively short time Dr. Brown had diagnosed many of the NOP athletes with a thyroid condition.

Alberto Salazar's curiosity about his athletes' medical conditions is well known. For instance, former Oregon Project runner Dorian Ulrey has told USADA that on his first day with the Oregon Project, as Dorian and Alberto were traveling from Albuquerque to Portland, Salazar asked him what, if any, rumors he had heard about him and the NOP and then quickly stated, "I'm sure you've heard about thyroid medications." Ulrey said that Salazar then "grilled" him about what medications and medical conditions Ulrey had. Other athletes also describe that within a short time of meeting Salazar he debriefed them concerning all medical conditions and treatments they were receiving, as well as whether they had investigated a variety of medical areas that Salazar brought up such as asthma and thyroid conditions.

It is, therefore, not plausible to believe that the Gouchers joined the Oregon Project in 2004, shortly after Adam Goucher's old coach had referred Goucher to a new endocrinologist to attempt to improve Goucher's athletic performance and just months after Goucher had been placed on thyroid therapy with Dr. Brown, and that it took years thereafter before Alberto Salazar became acquainted with Dr. Brown. Salazar's current

recollection is inconsistent with Salazar's personal coaching practices and with his pattern of insatiable medical curiosity, as well as with the recollections of several former NOP athletes and indeed with the documentary record left in some of Salazar's athletes' medical records.[122]

As noted above, Amy Begley became a patient of Dr. Brown in late December 2006, sometime after she had joined the Oregon Project. Many of the laboratory documents in Amy Begley's medical file reflect that the blood work apparently relied upon by Dr. Brown for her diagnosis came from the Nike laboratory. Additionally, Begley's medical file contains two electronic communications from 2007 from Dr. Loren Myhre, the head of the Nike research laboratory, asking Dr. Brown for advice concerning other Nike runners.[123] Most tellingly, Begley's medical file contains an August 1, 2007, email from Begley to Brown in which she wrote:

> Hey Dr. Brown
>
> My Achilles is flared up so **Alberto put a cortison** (sic) **patch on Sunday and Monday**. **He told me that I needed to let you know about it**.
>
> Talk to you later.
> Amy Begley[124]

Amy Begley has told USADA that in 2006, Alberto Salazar suggested that Begley begin seeing Dr. Brown and that at that time Salazar told her that Dr. Brown was the doctor of choice for NOP athletes (including Galen Rupp, and Kara and Adam

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[122] As noted above, Salazar has resisted providing medical records to USADA and the athletes represented by Salazar's lawyer have almost uniformly refused to provide their medical records to USADA. Thus, USADA's window into the medical records of the Athlete-Patients is incomplete and it would therefore appear likely that the opportunity to review additional records would yield further records which undercut Salazar's testimony.

[123] Amy Begley Medical records, p. USADA 000121 (September 4, 2007 email), p. USADA 000253 (November 16, 2007 fax).

[124] Amy Begley Medical records, p. USADA 000122 (August 1, 2007 email) (emphasis added).

Goucher). Thus, Amy Begley's testimony directly contradicts Salazar's claim that Dr. Brown did not begin officially working with NOP athletes until late 2008.

Like he had with the Gouchers, during Amy Begley's initial consultation with Dr. Brown, the doctor asked her if she was using any performance enhancing drugs. Begley said the question was asked matter-of-factly, and she did not detect any judgment in the way Dr. Brown addressed the subject. Amy recalled that when she responded that she had never used any performance enhancing drugs, Dr. Brown appeared to accept her answer.

Begley also told USADA that Kara Goucher told Begley that Salazar regularly encouraged Goucher to take more thyroid medication than prescribed in order to lose weight and that Salazar told Goucher that Rupp used the medication for that purpose all the time. Goucher has confirmed to USADA that Salazar instructed her to use cytomel specifically in the Spring of 2011 in order to lose weight following her pregnancy.

Returning to the subject of when Salazar first met Dr. Brown, emails in the Gouchers' medical records confirm communications between Alberto Salazar and Dr. Brown concerning Oregon Project Athletes from as early as 2005. For instance, there is this November 15, 2005, email from Salazar to Dr. Brown:

> **Hi Dr. Brown. It was good talking to you this morning**. Below are Caitlin's[125] latest blood tests and the previous two tests. The Gouchers are slated to have their blood tests on Monday here at Nike, where we look mainly their (sic) RBC, HGB, Blood volumes, etc., but **if you can email me and Dr. Myhre in our Lab with what you would like also done, please do so by Monday**. Dr. Myhre's email is loren.myhre@nike.com Thanks! – Alberto[126]

[125] Caitlin Chock was the first American high school girl to break 16:00 for 5000 meters. Caitlin joined the Nike Oregon Project in 2004 while a teenager after being recruited by Alberto Salazar.

[126] Adam Goucher Medical records, p. USADA 000392 (November 15, 2005 email) (emphasis added).

On December 9, 2005, Alberto Salazar sent Dr. Brown the following email:

> Hi Dr. Brown and Vicki! I hope this finds you both doing well. **I just got the results of the Free T-4 tests for Adam and Kara Goucher** that were mistakenly omitted from the blood tests done a few weeks ago. On Dec. 6th **the blood drawn for Adam showed a free T-4 of 1.6, and for Kara, a value of 1.3**. I will have a hard copy of the actual results faxed to you when I return to the office on Tuesday morning. Thanks! – Alberto Salazar[127]

Emails sent to Dr. Brown from the Nike Oregon Project in 2006 include additional thyroid hormone levels from Oregon Project athlete Caitlin Chock that were obtained by the Nike Lab and on which Alberto Salazar was copied[128] and another email from Alberto Salazar to Dr. Brown about Kara Goucher's thyroid hormone levels in which Salazar wrote:

> Hi Dr. Brown, **Do you think that Kara's low Free T3 could be why she doesn't feel good? Could the Yaz have suppressed her TSH, so it really isn't indicative?** Thanks – Alberto[129]

The foregoing emails conclusively establish that Alberto Salazar was involved with Dr. Brown's care of Oregon Project athletes years before when Salazar now claims that his involvement with Brown began. Moreover, the emails establish Salazar's specific early involvement with Brown's thyroid treatment of Oregon Project athletes, which dates to no later than 2005 and more likely began in 2004 shortly after the Gouchers began with the Oregon Project, as the Gouchers have told USADA.

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[127] Adam Goucher Medical records, p. USADA 000392 (December 9, 2005 email) (emphasis added).
[128] Adam Goucher Medical records, p. USADA 000390 (November 17, 2006 email from Loren Myhre to Dr. Brown) (emphasis added).
[129] Adam Goucher Medical records, p. USADA 000390 (November 17, 2006 email) (emphasis added).

b. Salazar and Dr. Brown apparently believe that thyroid medication can be used to boost athlete testosterone levels and thereby enhance athletic performance

As noted in the email that Dr. Rogers sent his colleagues at UK Athletics in the summer of 2011, Alberto Salazar believed in using thyroid medications to boost his athletes' testosterone levels and increase their athletic performance. Also as noted by Dr. Rogers, Dr. Jeffrey Brown (the endocrinologist in Houston referenced in Dr. Rogers' letter) was for years an integral component of Salazar's plan to use thyroid medications to attempt to boost testosterone levels in Salazar's athletes.

Dr. Brown willingly hawked thyroid therapy to athletes and coaches as a means of improving athletic performance. For instance, in 2009 Dr. Brown gave a PowerPoint presentation to the USA Track & Field High Performance Program which describes six different cases in which treatment with thyroid medication allegedly improved athletic performance.[130] One of Brown's patients is well known Olympic sprinter and long jumper Carl Lewis. In Brown's PowerPoint presentation a picture of Lewis pointing to the sky after winning a gold medal at the 1996 Atlanta Olympic Games is located directly underneath the bold caption: "**Thyroid Replacement Therapy**."[131] Another slide contains a picture of Carl Lewis and Dr. Brown holding a baton under the caption "**BEFORE**" and a picture of Lewis celebrating his Olympic victory under the caption "**AFTER**," communicating the unmistakable message that Brown claims credit for Lewis's athletic triumph.[132] The last substantive slide in Brown's presentation captures his sales pitch to athletes – this slide features a representation of a human thyroid

[130] Redacted documents produced by Nike, OP-000409 – OP-000486, pp USADA 006136 – USADA 006213.
[131] Redacted documents produced by Nike, OP-000482, p. USADA 006209.
[132] Redacted documents produced by Nike, OP-000483, p. USADA 006210.

below the caption: "**When the Performance Doesn't Match the Athlete CONSIDER THYROID**."[133] Brown sent this PowerPoint presentation to Salazar in early February, 2010 and encouraged Salazar to view it.[134]

While Brown's PowerPoint presentation said athletes should "consider thyroid," when it came to Nike Oregon Project athlete Dathan Ritzenhein he was apparently not given any option other than thyroid replacement therapy with Dr. Brown to address his allegedly flagging testosterone levels. Ritzenhein has testified that Salazar always "claim[ed] . . . that there was **a natural way to increase testosterone levels**."[135] Ritzenhein said

> we had many conversations about [that], we had blood work done regularly, and just being able to, **to be able to raise that [testosterone level] legally was a distinct advantage**.[136]

At first these conversations were about supplements that would boost testosterone levels. But then in June, 2010 the conversations about boosting testosterone changed. Ultimately, these conversations involved Salazar talking with Ritzenhein about "going on synthetic thyroid . . . to **help with low testosterone levels**."[137] Ritzenhein said that the "biggest reason"[138] he was referred to Dr. Brown for

[133] Redacted documents produced by Nike, OP-000485, p. USADA 006212.
[134] Redacted documents produced by Nike, OP-000409, p. USADA 006136, February 8, 2010 email from Dr. Brown to Alberto Salazar, Subject: Emailing: usatf, Attachment: usatf.ppt.
[135] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 14, lines 10 - 12.
[136] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 14, lines 17 - 20.
[137] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 15, lines 3 - 6.
[138] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 15, line 10.

thyroid treatment "was the belief that I had a lot of **injury problems related to high thyroid levels and low testosterone levels**."[139]

c. Dathan Ritzenhein's rushed thyroid diagnosis

At the time of the referral to Dr. Brown Ritzenhein was unaware and was not told that Alberto Salazar had Dr. Brown on a consulting contract with the Nike Oregon Project.[140] Nor presumably did Ritzenhein know that Dr. Brown was Salazar's personal physician. Salazar had a strong personal interest in Ritzenhein's athletic success that could potentially run counter to the interest to protect Ritzenhein's long term health. Therefore, the fact that Dr. Brown had a financial relationship with Salazar and was being paid a monthly retainer by Ritzenhein's coach to consult with the Oregon Project was obviously material information that Ritzenhein should have been told before Dr. Brown entered into a patient-physician relationship with Ritzenhein and certainly before Brown advised Ritzenhein regarding the serious and life-altering prospect of thyroid replacement treatment that Coach Salazar clearly favored. However, both Dr. Brown and Alberto Salazar failed to advise Ritzenhein of the inherent conflict created by Salazar's payments to Brown, and Ritzenhein only found out about this conflict after he had made the fateful and inalterable decision to begin taking synthetic thyroid medication.

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[139] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 15, line 10 - 12.

[140] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 16, line 2 (When asked if he knew at the time that Salazar referred him to Dr. Brown that Dr. Brown was under contract with Nike, Ritzenhein responded, "At the time, I didn't know that[.]").

Ritzenhein was also not told by either Brown or Salazar that he should seek a second opinion regarding being placed on thyroid medication.[141] The AMA Code of Medical Ethics states that "[p]hysicians should recommend that a patient obtain a second opinion whenever they believe it would be helpful in the care of the patient."[142] Particularly given the inherent conflict that Dr. Brown had in working for the Nike Oregon Project and Alberto Salazar at the same time that he was providing care to Dathan Ritzenhein, Dr. Brown should have recommended that Ritzenhein get a second opinion regarding thyroid treatment. Ritzenhein now wishes he had been given the opportunity to have a second opinion.[143] Now, however, after having been on thyroid replacement therapy for six years, it is too late.

Ritzenhein's emotional state at the time Salazar was encouraging him to seek thyroid replacement treatment should also be considered. At the time in June, 2010 that Salazar referred Ritzenhein to Dr. Brown for thyroid treatment Ritzenhein had been with the Oregon Project for a year[144] and had not been as productive as he had hoped due to a series of reoccurring injuries. Ritzenhein's emotional state is apparent in a rambling email he sent to Salazar on June 10, 2010:

> Thanks for setting that stuff up Alberto**. It has been a very difficult seven months. I never thought that it would be this trying** after finally getting to where I always wanted to be last fall. I didn't think I would never get hurt again but I sure felt like I had already paid my dues with having gone through all this before, but **this has been a true test and I have finally broke**. We did everything we could and that is what is particularly difficult

[141] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 16, lines 5 – 10.
[142] AMA Code of Medical Ethics (Opinion 8.041 - Second Opinions) http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/opinion8041.page
[143] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 16, lines 11 – 17.
[144] Ritzenhein joined the Oregon Project at the end of June, 2009. *See* Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 13, lines 12-15.

> because it is not like I just sat on my ass and have up. **I have tried to put on a good front and not bring other people down this whole time** but I am afraid I am not that good at faking it. **I didn't tell anyone how bad I have felt**, even Kalin or you because **I didn't want you to worry and become consumed with it because that is what has happened to me and it is unhealthy and I know you don't need the stress either**. Mostly I just did not want to have a sob story because like you say I have so many things to be thankful for. You know more than anyone how hard it is when you will do anything you can but your body just does not let you. I know I need to crawl out of this whole I just did think the rug would be pulled out so many times. **Watching everyone get so much better is hard, not because I wish that against them but because I can't do anything to about myself**. I just need a day to regroup and try to pick myself back up again. It is hard to think there is a reason for this, and I know God does not care if I run well or not, but trying to understand why is still so hard. Sorry for the long rambling email but Kalin said I need to just let her know how I'm feeling so that I don't hide it and **I think it is good for you to know too why I feel so bad now**. On to the MRI and I will dust myself off again. Thanks so much for putting up with all this my bad attitude! Dathan[145]

Ritzenhein's emotional state is relevant because Dr. Brown should have recognized the tremendous practical control that Salazar exercised over the daily affairs and life decisions of his athletes. Salazar was the head of the prestigious Nike Oregon Project and athletes were part of the Oregon Project or not a part of the Oregon Project at Salazar's sole bidding. Salazar's athletes recognized that the Oregon Project afforded them a host of training opportunities they could never hope to be able to afford on their own or that would be very difficult to obtain outside the Oregon Project such as: altitude camps, Alter G treadmills, underwater treadmills, altitude tents, the Nike Sports Medicine Laboratory and a full staff, including trainers, massage therapists, physiologists, nutritionists, a sports psychologist and other professionals. Further, Salazar was a powerful and influential individual at Nike who could influence renewal of

[145] 6/10/2010 Email from Dathan Ritzenhein to Alberto Salazar Subject: [blank] (Email #19) (emphasis added).

an athlete's sponsorship contract, bonuses and other aspects of remuneration. Therefore, if an Oregon Project runner wished to disregard Salazar's advice they knew that a prospect existed that they might lose the opportunity to continue in the Oregon Project with all the benefits to their career this association could provide them. If Brown took the time to fully understand the needs of his Oregon Project patients he would have understood that they operated in an environment where Alberto Salazar exercised substantial control over their daily activities and could, if he so chose, exercise influence over their health care choices. This recognition should have made Dr. Brown less willing to defer patient communications and discussions regarding treatment options to Salazar but it evidently did not. The records reflect that Dr. Brown utterly failed in his duty to obtain a full and accurate understanding of all information relevant to the care of those of his patients who were Oregon Project athletes.

The email correspondence which has been reviewed by USADA reflects that on the topic of whether Dathan Ritzenhein should be given thyroid replacement therapy Dr. Brown is brought into the picture by Alberto Salazar on the afternoon of June 10, 2010 within hours after Ritzenhein sent the above emotion laden email to Salazar. At 4:37 p.m. Houston time on the very afternoon of Ritzenhein's emotional email Dr. Brown sent an email to the Nike Lab Director, Brad Wilkins stating:

> Brad,
> Dathan is coming into your lab tomorrow for blood draw. Please get standard thyroid, prolactin, total and free testosterone, cbc, urinalysis ESR, Intact-PTH, 25-vit D, 1,25 dihydroxy vitamin D, osteocalcin, N and C telopeptide, cortisol, thyroid antibodies, chemistry profile, 24 hour urine calcium level, serum protein electrophoreses
> Thanks
> Jeff[146]

[146] 6/10/2010 Email from Dr. Brown to Brad Wilkins CC: Alberto Salazar Subject: [blank].

According to Dathan Ritzenhein's patient file obtained from Dr. Brown's office, at this time (i.e., on June 10, 2010) Dathan Ritzenhein was not at that time a patient of Dr. Brown.[147] The first entry in Dathan Ritzenhein's medical file indicating that Dr. Brown was Dathan's physician is June 30, 2010, which happens to be one of only two dates in the file on which Dr. Brown apparently ever had an office visit with Dathan Ritzenhein.

In fact, it is Dathan's coach Alberto Salazar who is directly communicating with Ritzenhein regarding blood test results and thyroid stimulating hormone (TSH) levels during the June 10-30, 2010, time frame. Ritzenhein's medical records reflect that on June 11, 2010 Dathan had the blood draw at the Nike Lab referenced in Dr. Brown's email to Brad Wilkins the day before.[148]

The results from the June 11, 2010, blood draw were not reported by the laboratory until June 19, 2010. Ritzenhein's TSH level on his June 11, 2010 blood draw is 3.070, which is well within LabCorp's reference range of 0.450 – 4.500 uIU/mL. On this draw Ritzenhein's Thyroxine (T4) level was 1.34 ng/dL which is also within the LabCorp reference range of 0.82 – 1.77. Notably as well, given Salazar's insatiable focus on testosterone levels, was that Ritzenhein's serum testosterone level was 461 ng/dL, well within the reference range of 280 – 800 ng/dL.

For most medical practitioners Dathan Ritzenhein's TSH and T4 levels would be considered indicative of a normally functioning thyroid. For instance, an online website discussing the use of TSH and T4 levels in diagnosing thyroid disease states:

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[147] Nevertheless, Dr. Brown owed Ritzenhein ethical duties because he was participating in his care as a consultant to Nike.

[148] The blood analysis was done by LabCorp. The physician listed on the laboratory documentation is Dr. Robert Cook. The account listed on the blood work is the Nike Sports Research Lab. Date of collection is 6/11/2010. Date received is 6/12/2010. Date reported is 6/19/2010. Document No. USADA 000945.

- 0.4 mU/L to 4.0 mU/L is considered the reference range (there may be slight variation depending on the laboratory), and people who have a normally functioning thyroid gland usually fall within this range.

- If TSH measures >4.0 mU/L, a second test (T4) is performed to verify the results. TSH >4.0/mU/L with a low T4 level indicates hypothyroidism.[149]

Both Ritzenhein's TSH and T4 levels from June 10, 2010 were within the normal range, therefore, a conclusion that he should consider being placed on thyroid medication for life based on these values would appear to be anomalous and unfounded.

Yet, on June 15, 2010, Salazar sends another email to Wilkins the Director of the Nike Lab, asking for another blood draw on Ritzenhein. Salazar's email reads:

> Hi Brad. Can Dathan come in on Tuesday the 15th and get his blood drawn? Dr.Brown would like to have his thryoid levels checked, TSH, Free T4, Free T3 and his testosterone levels rechecked. Thanks! - Alberto=[150]

Significantly, this request for a "recheck" of Ritzenhein's blood levels came even before the results from his June 11, 2010 blood draw had been reported.

The results from Ritzenhein's June 15 blood draw are reported the very next day, on June 16, which is much more quickly than those from his June 11 blood draw which will not be reported until June 19. Salazar apparently does not recognize this, but mixing up the blood tests is the least of the concerns with Salazar's involvement in communications that should have been between patient and physician rather than between coach and athlete.

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[149] http://www.endocrineweb.com/conditions/hypothyroidism/how-doctors-diagnose-hypothyroidism-0

[150] 6/15/2010 Email from Alberto Salazar to Brad Wilkins CC: Dathan Ritzenhein Subject: [None].

On June 16 Salazar is sent Ritzenhein's blood results by Dr. Brown's office assistant Diane Gonzales. A copy of the blood test results is not sent to Ritzenhein by Brown's office.

Salazar takes until June 18 to pass the blood results on to Ritzenhein. The June 18 blood test results are not out of the ordinary. In fact, Ritzenhein's TSH level is decreased from the June 11 draw (the results of which have not by this time been reported) and is at a level of 2.860, well within the LabCorp reference range of 0.450 – 4.500 uIU/mL. Likewise, Ritzenhein's Thyroxine (T4) level was 1.36 ng/dL, almost exactly as measured on the June 11 draw, and well within the LabCorp reference range of 0.82 – 1.77. Furthermore, Ritzenhein's testosterone level is 428 ng/dL, also within the 280 – 800 ng/dL reference range. The picture seen in Ritzenhein's blood results is therefore of a normally functioning endocrine system.

Yet, Salazar prefaces the blood results he is sending to Ritzenhein with medical advice that is stunning both for its inaccuracy and for its cavalier treatment of the serious decision to undertake thyroid replacement treatment. Salazar's comments are as follows:

> HI Dathan, Below are your test **results from last week**:
> **Testosterone - up still from normal so that's good**
> **TSH- still too high**, **let's check it once more** in a week **just to make sure this isn't a transitory "stress" thing**. **Once you go down the road of thyroid replacement you're committed for your running career**.
> You will never be worse off no matter what but **you will have to take a pill until you're finished running**. We can talk more about it tomorrow.
> **It's actually good because this will help your testosterone levels if it is accurate**. We just need to make sure. – Alberto

Thus, Salazar is, without any scientific or medical basis, advising that a TSH level that is within the reference range and considered normal by most endocrinologists is "still too

high," indeed, suggesting that the level is so high that Ritzenhein should consider going on thyroid medication. Salazar's explanation in this email of the factors to consider when deciding whether to use thyroid replacement medication is abysmal. He incorrectly states that Ritzenhein "will never be worse off no matter what" if he goes on thyroid medication, as if shutting off one's natural thyroid production and having to take a pill every day for the rest of one's life is insignificant.

While Salazar states that once Ritzenhein "go[es] down the road of thyroid replacement" he is committed, he incorrectly advises this commitment will only last for the length of his "running career." Salazar represents "you will have to take a pill until you're finished running," as if Ritzenhein's body's ability to produce thyroxine will somehow magically come back after Ritzenhein is finished running

Finally, Salazar finishes with the *coup de grace* of bad advice, stating, entirely without a sound scientific basis, that the use of synthetic thyroid medication by Ritzenhein would be "actually good because **this will help your testosterone levels if it is accurate**." Far from being a good thing, and Alberto Salazar's wrongheaded medical advice to the contrary, taking thyroid medication without a medical need condemns the patient to a life of thyroid medication dependency without any appreciable increase in testosterone levels.

Salazar's appalling medical advice is precisely why a doctor should never turn over the interpretation of blood test results and the dispensing of medical advice to a layman, much less to a track coach, who has a personal stake in the patient's athletic performance. As the June 18, 2010, email from Salazar to Ritzenhein indicates, it is often Salazar rather than Dr. Brown who is interpreting the blood test results for Oregon

Project athletes and explaining what those results mean to the athletes for their thyroid medication and treatment. Indeed, for many of the Oregon Project athletes who are seeing Dr. Brown, Dr. Brown sends their blood test records directly to Salazar rather than to the athlete, thereby, encouraging Salazar to dispense medical advice to Brown's patients.

Having received Ritzenhein's blood test results directly from Brown's office, Salazar tells Ritzenhein that his TSH is "still too high" even though it is within the lab reference range and that another blood test will be done to "check it once more in a week just to make sure this isn't a transitory 'stress' thing." Thus, it is Alberto Salazar and not Dr. Brown who is informing Dathan Ritzenhein that only a single additional blood test is need to confirm whether Ritzenhein should be placed on thyroid medication for the rest of his life.

Dathan Ritzenhein's medical records reflect this one additional blood test was collected on June 21, 2010 and reported on June 24, 2010. On this blood draw Ritzenhein's TSH level had decreased to 2.120 uIU/ml, clearly within the reference range, and his T4 was measured at 1.31 ng/dL, also within range.

Thus, Dathan Ritzenhein's three (3) blood test results over ten days in June, 2010 demonstrate TSH levels that were all well within the reference range and were, in fact, decreasing. His TSH level on June 11 was 3.070. On June 15 the level was 2.860, and on June 21 it was 2.120. Throughout this time period his T4 levels were consistent and solidly within the middle of the reference range.

Nevertheless, Ritzenhein's medical records indicate that apparently sometime after June 21 Ritzenhein traveled to Houston, Texas, because on June 30, 2010, for the

first time, according to Dr. Brown's file on Dathan Ritzenhein, Dr. Brown examined Dathan Ritzenhein in Brown's Houston office. Brown's chart notes from that visit are sketchy and for the most part difficult to read. However, one aspect entry of his entry appears clear – an upwards pointing arrow next to the letters T-S-H. Dr. Brown's chart note reads "↑TSH." Yet, as Dathan Ritzenhein's blood test records clearly reflect, TSH for Dathan Ritzenhein is not going up; it has declined over three successive blood tests.

Blood test records from June 30, 2010, from Dr. Brown's office indicate that while in Dr. Brown's office starting at 9:20 am Ritzenhein is apparently given a TRH stimulation test and his TSH and prolactin levels are measured. According to the laboratory report from the June 30 sampling, the results from the testing were reported at 4:16 p.m. on Thursday, July 1, 2010. The notations in Ritzenhein's medical records also appear to reflect that on July 1, 2010, Dr. Brown authorized a prescription for .1 mg (i.e., 100 micrograms) of Levoxyl, a synthetic thyroid medication. It appears, however, that the hard copy of the June 30 blood testing records was not received in Dr. Brown's office until July 6, 2010, when the blood results were stamped as received. Therefore, it is unclear whether the June 30 testing results were even consulted before Dr. Brown issued his first prescription to Dathan Ritzenhein for Levoxyl.

As indicated above, the records obtained by USADA reflect that, at least with respect to Dathan Ritzenhein, Dr. Brown appears to have largely abdicated his responsibility to interpret blood tests results and discuss them with his Oregon Project patient and rather left the lion's share of such communications up to Alberto Salazar. As discussed above, Dr. Brown had apparently neither seen nor discussed any diagnosis with Dathan Ritzenhein during the June 11 – June 21 period when Salazar

was interpreting Ritzenhein's blood results and telling Ritzenhein that it appeared his TSH was too high. Indeed, there appears to have been little or no communication between Dr. Brown and Ritzenhein until June 30, 2010, and on the very next day Brown prescribed Ritzenhein synthetic thyroid medication.

While Dr. Brown might wish to disavow or absolve himself of any responsibility for Alberto Salazar's poor medical advice to Ritzenhein during the June 10-30, 2010, timeframe because Ritzenhein had not yet met Brown and become a patient of his, Dr. Brown cannot legitimately do so. As noted above, under applicable American Medical Association standards, Dr. Brown became responsible for Ritzenhein's care immediately upon Salazar's disclosure of confidential testing information for him to Brown.[151] Furthermore, it is clear that during the June 10-30, 2010 time frame Brown was operating in the background as a Nike medical consultant setting up blood tests at Nike for Ritzenhein and communicating with Salazar about Ritzenhein. The mere fact that Ritzenhein was at the time unaware of Brown's involvement did not lessen Dr. Brown's duty to Ritzenhein.

[151] *See*, *e.g.*, American Medical Association Code of Medical Ethics Opinion 8.02 which states:

> **The ethical obligations of physicians are not suspended when a physician assumes a position that does not directly involve patient care**. Rather, **these obligations are binding on physicians in non-clinical roles** to the extent that they rely on their medical training, experience, or perspective. When physicians make decisions in non-clinical roles, they should strive to protect the health of individuals and communities.

d. Dr. Brown frequently permitted Alberto Salazar to be the intermediary between Brown and NOP athletes for conversations regarding patient medical care

Even after Ritzenhein had visited Dr. Brown and considered Brown his endocrinologist, Brown's office continued to communicate blood test results directly to Salazar rather than to Ritzenhein. For instance, on September 2, 2010, Diane Gonzales emailed Ritzenhein's blood test results to Salazar with the message, "Dr. Brown is decreasing his Levoxyl to 75 mcg once daily."[152] There is no signed consent form in Ritzenhein's file with Dr. Brown, authorizing Brown to communicate with Salazar concerning Ritzenhein's medical care. Such communications directly from Dr. Brown or his office staff to Alberto Salazar without including the Athlete-Patient in the communication were a common occurrence in Brown's professional relationship with Oregon Project athletes.

At other times Ritzenhein would direct medical questions to Dr. Brown but it was Alberto Salazar who would answer them. An example of this is an email exchange on October 5, 2010. Dathan initiated the following inquiry to Dr. Brown in an email on which Salazar was copied:

> Hi Dr. Brown. Is the low WBC probably just a result of to high thyroid med? Also I see that total testosterone dropped to almost out of normal, is that a product of just heavy training do you think? I see that Hemoglobin and Hematocrit are up a lot, but that can be a product of hydration level right? I don't think I was dehydrated but still. Also I was asking Alberto is it ok to have my ferritin up really high like that? I will call tomorrow but I am going back to Beaverton on thursday for the day just to do a workout, can we go ahead and call the new dose of levoxyl into the usual Rite Aid and I can get it then. Thanks, talk to you tomorrow.[153]

[152] 9/2/2010 Email from Diane Gonzales to Alberto Salazar Subject: Dathan's results (Email #35).
[153] 10/5/2010 Email from Dathan Ritzenhein to Dr. Brown CC: Alberto Salazar Subject: Dathan's results (Email #40).

To the foregoing email Salazar responded:

> Hi Dathan, **I talked to Dr.Brown about this already**. I'm sure he'll tell you this also, but **your thyroid levels are going in the right direction**, **let's give it one or two more weeks to let it stabalize and know for certain**., **If he can get you to a TSH of .4 that will be a the bottom range of normal**. **The low TSH would not cause low testosterone**. that was probably caused by the overall high workload even if you hadn't run a hard workout in three days. . The HGB an HCT levels being that high are from the first week of being at altitude and your blood dumping plasma volume. Overall your bloodwork looks good and as expected. Talk to you tomorrow! - Alberto[154]

Salazar's involvement in the interpretation of blood test results and management of Dr. Brown's thyroid patients was not limited to Dathan Ritzenhein. For instance, on July 1, 2010, Salazar received an email directly from Dr. Brown's assistant Diane Gonzales, forwarding to Salazar Oregon Project runner Galen Rupp's lab test results.[155] Later that afternoon Salazar forwarded the blood test results to Rupp with the comment, "Hi Galen, FYI -- you're definitely not too low on thyroid meds. – Alberto."[156]

e. Dr. Brown allowed Salazar to use NOP athlete's thyroid medication levels to try to influence their athletic performance

Salazar would even take it upon himself to challenge Dr. Brown's thyroxine dosage recommendations for reasons related to his athlete's sport performance. For instance, on November 11, 2010, Dr. Brown communicated that he was increasing Ritzenhein's to 88 mcg every other day.[157] Salazar quickly responded, however, asking Brown:

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[154] 10/5/2010 Email from Alberto Salazar to Dathan Ritzenhein, Dr. Brown Subject: Dathan's results (Email #41).
[155] 7/10/2010 Email from Diane Gonzales to Alberto Salazar Subject: Lab results (Email #26).
[156] 7/1/2010 Email from Alberto Salazar to Galen Rupp Subject: Lab results (Email #27).
[157] 11/12/2010 Email from Dr. Brown to Diane Gonzales CC: Dathan Ritzenhein Subject: None.

> Hi Dr.Brown, Can we let Dathan stay on the current 75 mcg dose for just another week? I would like to know what his TSH "probably" was when he ran in NY. The last few days he's only been running about seven miles a day, while next week he'll be back up to 70 miles for the week so it will be more representative. **Basically I want to know if perhaps his TSH had something to do with his performance.** Thanks! - Alberto[158]

Salazar's reference to wanting to known what Ritzenhein's TSH level was "when he ran in NY" is Salazar wanting to know what Ritzenhein's TSH values were when Dathan ran the New York City Marathon on Sunday, November 7, 2010. According to an email Salazar sent on November 8, Ritzenhein's worse than expected performance in the 2010 NYC Marathon had left Salazar "shock[ed] and disappoint[ed]."[159] Salazar's November 12, 2010, email to Brown, therefore, is a request that he be allowed to alter Brown's medical judgment regarding thyroxine dosage so that Salazar can attempt to discern the impact thyroid levels may have played in Ritzenhein's NYC marathon performance.

Five days later on November 17, 2010, Dr. Brown asks Salazar if Dathan can get his blood tested the next day.[160] Salazar's response to Dr. Brown is, in essence: "No." The reason for Salazar vetoing Dr. Brown's desire to obtaining a blood sample again relates to Dathan's training and Salazar wanting to understand Ritzenhein's TSH values in the NYC Marathon. Salazar's full response was:

> Hi Dr.Brown, **Let's wait for him until the end of another two weeks of training so we can really get an accurate picture of where he probably was at NY**. This week he's running 70 miles and some light interval workouts, Next week it will be around 90 and harder workouts. . . .[161]

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[158] 11/12/2010 Email from Alberto Salazar to Dr. Brown CC: Dathan Ritzenhein Subject: [None] (emphasis added).
[159] 11/8/2010 Email from Alberto Salazar to Dathan Ritzenhein Subject: Moving forward.
[160] 11/17/2010 Email from Dr. Brown to Alberto Salazar Subject: Re: Blood test for Galen.
[161] 11/17/2010 Email from Alberto Salazar to Dr. Brown CC: Dathan Ritzenhein Subject: RE: Blood test for Galen (emphasis added).

Finally, on November 29, 2010, the blood testing that had been delayed for two weeks by Coach Salazar was conducted.[162] Ritzenhein's TSH level was 2.360. Coach Salazar forwarded the blood results to Ritzenhein (with a copy to Dr. Brown) and provided the following medical advice:

> Hi Dathan, **You're definitely on too low a dose right now**. About a week before NY your TSH was 1.4, and then Dr.Brown had you increase your dose for that week, so I think it probably stayed at 1.4 or perhaps went a little lower. **I don't know if your thyroid being off caused what happened in NY, but it might of**. Either way, Dr.Brown will fix that end of it in case that was it, and I'll continue to try to fix my end of it which is the training I give you. **Eventually we will have ironed out every possible factor and you will run great!** - Alberto[163]

In his Open Letter (and speaking of Galen Rupp) Salazar claimed, "Galen takes his thyroid medication so that his body can function normally – not for any competitive advantage."[164] However, the foregoing effort by Salazar, in November, 2010, to alter Dathan Ritzenhein's thyroid medication dosage supports the conclusion that Salazar sought to be able to "tweak" his athletes' thyroid medication levels in order to enhance their sport performance and that Dr. Brown permitted Salazar to do this.

It is apparent that Salazar was also keeping on top of Galen Rupp's TSH level and viewed thyroid medication as a means of ensuring that Rupp would feel energetic and compete well. For instance in a February, 2011, email Salazar wrote:

> Hi Dr.Brown, Galen had great results from his blood tests yesterday. Hightest HGB levels ever, total testosterone of 617 just two days after a hard workout and after months of 130 miles per week. Ferrtin of 230, TSH of .07 and Free T3 of 500. Vit D of 66. **Do you want him to cut back on the Cytomel now and go back to the one compounded pill in the morning that he was on prior to taking prednisone? He will start**

[162] 12/1/2010 Email from Diane Gonzales to Alberto Salazar Subject: Dathan's results
[163] 11/17/2010 Email from Alberto Salazar to Dr. Brown CC: Dathan Ritzenhein Subject: RE: Blood test for Galen (emphasis added).
[164] Salazar Open Letter (June 24, 2015), p. USADA 001764.

dropping his mileage now so we don't want him getting hyper.
Thanks! - Alberto[165]

Another example of Salazar seeking to tweak an athlete's thyroid levels for the benefit of athletic performance is evidenced by a series of blood tests given to Dathan Ritzenhein in December 2011 and January 2012 in which Ritzenhein's TSH level is repeatedly measured in advance of the January 14, 2012, U.S. Olympic Marathon Trials. During a one (1) month time frame in advance of the Olympic Trials Ritzenhein's TSH level was tested six (6) times on: December 7, 13, 22, 28 and January 6 and 11 (3 days before the Trials). In contrast, Ritzenhein's TSH level was checked only twice more in 2012 and twice in all of 2013. Dathan Ritzenhein believes these tests in December 2011 and January 2012 were conducted to ensure that Ritzenhein's TSH level reflected a value that Salazar considered indicative of good athletic performance.

Ritzenhein recalled that during December 2011 Salazar "start[ed] taking blood tests every week or so."[166] Ritzenhein was prescribed Cytomel by Dr. Brown "after [his] blood test had started to go up . . . just prior to Christmas."[167] Dathan said, "[i]mmediately, I felt really good . . . but then it was too high of a dose."[168] Ritzenhein asked to come off the drug but Dr. Brown told him to stay on it.[169] Dathan believed both Dr. Brown and Salazar were wanting Ritzenhein to stay on the Cytomel but Dathan

[165] 2/4/2011 Email from Alberto Salazar to Dr. Jeffrey Brown Subject: Galen Blood Test Results (emphasis added).
[166] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 84, lines 13 – 14.
[167] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 83, lines 7 – 12.
[168] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 83, lines 15 – 17.
[169] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 83, lines 17 – 19.

wanted to come off of it.[170] Eventually, Ritzenhein took himself off the medication without telling Salazar and Brown.[171] Ritzenhein said this was one of those difficult high pressure situations faced by Oregon Project athletes where "you just have to tell Alberto you are doing whatever he wants you to do, and you don't[.]"[172] Asked later about this incident Ritzenhein said:

> I felt like **that was a point when he [Salazar] tried to abuse that [i.e. thyroid medication] for a game, and that's the time that I really felt like he [Salazar] was was trying to do that instead of just whatever was best for my health** on that.[173]

Ritzenhein was then asked – "[W]hat are the factors that caused you to reach that conclusion that he [Salazar] was pushing you to use a medication to enhance performance, rather than to help your health?"[174] Ritzenhein responded:

> Because I just felt like I was telling them [Salazar and Dr. Brown] **that I didn't feel good on this amount [of thyroid medication]**, and that it was, that concern was disregarded, and **told to just continue on it**, and so, that was contrary to what I was telling him how I felt.
>
> And he **[Salazar]** was paranoid, I believe, from the year before the rise [in TSH] that I had had right around the time of the New York City Marathon, and I think that he **told me at one point**, it's better to be, **it's better to be a little low** [in terms of TSH level], b**ecause it's easy to back off** [on thyroid medication], **but if you are high**, if your TSH is, like once you start feeling bad, **it takes awhile to start feeling good again**, so it's easier to back off than it is to take more [thyroid medication].[175]

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[170] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 84, lines 1 – 16.
[171] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 84, lines 15 – 18.
[172] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 84, lines 11 – 14.
[173] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 85, lines 2 – 6 (emphasis added).
[174] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 85, lines 7 – 10.
[175] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 85, line 11 – p. 86, line 2.

So, in December 2011, before the all-important U.S. Olympic Marathon Trials, athlete and coach, Dathan Ritzenhein and Alberto Salazar, fought over who would control the throttle of the athlete's endocrine system. In this situation the athlete found that athletic performance was so important to the coach that the only way the athlete's health would take priority over his coach's desire for performance enhancement was if the athlete lied to his coach and disobeyed the instructions of the coach and the doctor tied to the coach.

Asked how important Dathan Ritzenhein's performance in the 2012 U.S. Olympic Marathon Trials was to Salazar, Ritzenhein recalled:

> **That was what mattered.** He felt like I had been through so much that year before, and he told me that many times, you know, that **this was so important**, how important this was to him. . . . so, yeah, **it was very, very important to him**.[176]

f. Uncharted waters and incomplete disclosure – what happened when two novel medical programs to enhance athletic performance (the unconventional use of thyroid medication and the use of L-carnitine infusions) collided

In fact, as explained below, the 2012 U.S. Olympic Marathon Trials immediately preceded a series of furtive, "hush, hush," ill planned, ethically dubious, and potentially rule breaking, intravenous infusions of the amino acid, L-carnitine, which were given by Dr. Brown at Alberto Salazar's instruction to Oregon Project athletes, including marathoners Ritzenhein and Alvina Begay. During this time period Dathan Ritzenhein raised concerns with Dr. Brown that the L-carnitine infusion experiment, another Salazar-Brown experiment in using novel and untried medical therapy to seek to

[176] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 86, lines 13 – 19 (emphasis added).

enhance the athletic performance of Oregon Project athletes, might even be working at cross purposes to the effort to rev up athlete endocrine systems using thyroid medication.

Ritzenhein's own research led him to believe that L-carnitine might be dulling the impact of his thyroid medication and driving up his TSH level.[177] Accordingly, in mid-December of 2011 Ritzenhein sent Salazar and Dr. Brown an email which said:

> Hey Alberto and Dr. Brown. I am sure you already know but **I was reading on L Carnitine** because I have been having heartburn and it is a side effect but **it also said it can interfere with thyroid medication making it less effective. A possible reason for the increase in TSH?**[178]

Salazar immediately responded by discounting Ritzenhein's concerns. Salazar's emailed response on December 16, 2011, three (3) days after Ritzenhein had received an L-carnitine infusion from Dr. Brown was:

> Hi Dathan, **I think your TSH was already a bit high before the infusion? Even if it did affect it for a day while the LCarnitine was in your blood, remember you've had high levels in your blood for months from the drink, so I don't think that the higher LCarnitine stores in your mitochondria now would be affecting your thyroid levels.** I bet the heartburn was from the drink? -Alberto[179]

Likewise, Dr. Brown apparently "told [Ritzenhein], basically, no . . . that thyroid, hormone and L-carnitine . . . couldn't counteract each other."[180]

Yet, USADA has found that just a few days later, on December 20, 2011, Salazar took an absolutely contrary position on the effect of L-carnitine on TSH levels with

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[177] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 76, line 22 – p. 79, lines 25.
[178] 12/16/2011 Email from Dathan Ritzenhein to Alberto Salazar, Dr. Jeffrey Brown Subject: L Carnitine side effects (emphasis added).
[179] 12/16/2011 Email from Alberto Salazar to Dathan Ritzenhein CC: Dr. Jeffrey Brown Subject: Re: L Carnitine side effects (emphasis added).
[180] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 77, lines 3 – 7; *see also* p. 79, lines 10-13.

another NOP athlete. On that date Salazar surmised that the L-carnitine that Galen Rupp was taking *had* caused an increase in Rupp's TSH level and instructed Rupp to "take a full extra levoxyl tonight and start on cytomel right away." Salazar's complete email to Galen Rupp reads as follows:

> Hi Galen , **take a full extra levoxyl tonight and start on cytomel right away**. We're **not going to wait for another TSH test**. You've been sick before and never had a TSH go to 3.0. **It's got to be the Lcarnitine. This is great news! no one else will know this possible side effect of the drink**. -Alberto. Ps – vie [I've] got cytomel. If you don't have it, call me and I'll drive it over. I have to drop Maria off at a party anyways.[181]

The foregoing email from Salazar is unconscionable on several levels. First, obviously, is Salazar acting the doctor and instructing Rupp to go on a stronger thyroid medication. Second, is the fact that Salazar says he has a supply of the prescription thyroid medication cytomel and is willing to give it to Rupp without the involvement of a physician. Third, Salazar views news that L-carnitine effects thyroid hormone levels as a *competitive advantage* that "no one else will know" and to be kept secret, rather than as important medical information that should be shared with others to prevent the L-carnitine from having adverse effects on others. This email provides an indication of how unbalanced Salazar has become in the pursuit of an "edge" for his athletes.

What has also become clear is that neither Dr. Brown, nor Alberto Salazar, ever came clean with Ritzenhein regarding what was apparently Salazar's revised view (based on his emphatic advice to Rupp in the foregoing email) that L-carnitine *does* impact L-carnitine levels. The motive for Salazar's and Brown's apparent failure to be transparent with Ritzenhein regarding their evolving view of the impact of L-carnitine on

[181] 12/20/2011 Email from Alberto Salazar to Galen Rupp.

TSH levels is unclear. Rupp was certainly the most favored Oregon Project athlete, so it could have been a case of favoritism.

Salazar, however, was also heavily invested in Ritzenhein. Ritzenhein recalled that his performance in the Olympic Marathon Trials was so important to Salazar that when Ritzenhein did not make the U.S. team at those Trials, Salazar "was really devastated . . . just completely in shock."[182] Also, Salazar's and Brown's efforts later in the month of December, 2011 to push Ritzenhein to stay on cytomel run counter to any theory that Salazar was seeking to favor Rupp over Ritzenhein in this instance.

Thus, the best explanation for the failure to be forthcoming with Ritzenhein is probably that Salazar and Dr. Brown simply never felt the need to give Ritzenhein a full explanation of their revised view on the interaction between L-carnitine and thyroid medication and why they were now pushing Ritzenhein to stay on cytomel. They just assumed that what Salazar told Ritzenhein to do he would do and did not see the need to confess to Ritzenhein that their prior advice about the impact of L-carnitine on TSH levels had likely been inaccurate. Of course, such a lack of transparency and forthrightness, however, constituted a breach of Dr. Brown's ethical duties to his patient, Dathan Ritzenhein, to be honest, to keep him fully informed and to act always in Ritzenhein's best interest.

The foregoing is strong evidence that Dr. Brown allowed Alberto Salazar to exercise control over communications and medical decision-making related to Oregon Project patients on thyroid medication including Dathan Ritzenhein and Galen Rupp. Moreover, it is apparent that Dr. Brown sometimes deferred to Salazar and failed to be

[182] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 86, lines 17 – 18.

fully transparent with his Oregon Project patients regarding the degree of involvement Salazar was having in their care and concerning how Dr. Brown's medical judgment was being influenced by their coach.

As explained above, USADA has been unable to review all of the records related to Galen Rupp's care with Dr. Brown because once he learned of USADA's investigation Alberto Salazar's attorney – who is also Galen Rupp's attorney – refused to provide USADA Rupp's complete medical file with Dr. Brown. Nevertheless, from the limited records that USADA has reviewed, as described above, it is apparent that Dr. Brown improperly allowed Alberto Salazar to exercise control over communications and medical decision-making related to Rupp's thyroid replacement therapy.

Rupp's and Salazar's lawyer has also refused to produce email correspondence between Rupp and Salazar and between Rupp and Dr. Brown regarding any diagnosis of Rupp's claimed thyroid disease and concerning any prescription for thyroid medication. Further review of Rupp's entire medical file may therefore result in additional evidence of Dr. Brown's failure to adequately manage and supervise Rupp's thyroid treatment.

g. Ariana Lambie appears to have been unnecessarily put on thyroid medication by Dr. Brown

USADA has also interviewed Oregon Project runner Arianna Lambie who was with the Oregon Project during the 2008-2009 time frame. Lambie told USADA that Salazar was searching for a reason her athletic performance was diminishing and sent her to Dr. Brown. Lambie said that Brown conducted testing on her and told Lambie that she did not have a thyroid condition. Brown told Lambie that her TSH level was 1.00.

According to Lambie, Brown also told Lambie that most endocrinologists consider any TSH level below 5.00 to be normal but that athletes require treatment at much lower levels. Lambie told USADA that, despite telling her that her thyroid was functioning normally, Dr. Brown prescribed Lambie Levoxyl at a high dose.

Lambie's statements to USADA are confirmed by the records in her medical file with Dr. Brown. Lambie had only a single in person visit with Dr. Brown, which occurred on July 9, 2009. She was prescribed thyroid medication by Brown shortly after this visit. Lambie's medical file with Dr. Brown reflects that during a less than one year period prior to her visit with Brown (and during which time Brown was a consultant reviewing Oregon Project athlete blood results) Lambie had no less than five (5) separate measurements of her TSH level as recorded in the following table:

Arianna Lambie TSH measurements prior to being prescribed thyroid medication by Dr. Brown:

Date of blood draw	TSH measurement
9/1/2008	1.048[183]
12/17/2008	0.864[184]
1/12/2009	0.670[185]
3/11/2009	1.098[186]
6/2/2009	1.430[187]
Average TSH	**1.022**

[183]Arianna Lambie Medical records, pp. USADA 000783-785 (September 1, 2008 blood test).
[184] Arianna Lambie Medical records, p. USADA 000775 (December 17, 2008 blood test).
[185] Arianna Lambie Medical records, pp. USADA 000794-796 (January 12, 2009 blood test).
[186] Arianna Lambie Medical records, pp. USADA 000768-770 (March 11, 2009 blood test).
[187] Arianna Lambie Medical records, pp. USADA 000765-767 (June 2, 2009 blood test).

Thus, Lambie's medical file demonstrates that Dr. Brown was willing to, and did, prescribe thyroid medication to Oregon Project athletes with recorded TSH levels at or below 1.00.

Lambie reported to USADA that about two weeks after starting on thyroid medication she began to feel sick and exhibit signs of hyperthyroidism. Lambie said that she then went to another endocrinologist who immediately took her off the thyroid medication.

In her interview with USADA Amy Begley confirmed that during the time period of the foregoing events Arianna Lambie told Begley about Dr. Brown mis-prescribing thyroid medication to Lambie and that Lambie told Begley she had been taken off that medication by another physician. Begley also told USADA that Lambie's situation was made more awkward by the fact that Lambie is apparently married to the son of Alberto Salazar's best friend.

h. Chris Solinsky also appears to have been unnecessarily put on thyroid medication by Dr. Brown

Chris Solinsky is yet another Oregon Project athlete who was referred to Dr. Brown by Alberto Salazar. Salazar referred Solinsky, who lived in Portland, Oregon, to Brown in March, 2009. Later that month Solinsky traveled to Houston for the obligatory visit with Dr. Brown before Brown prescribed him thyroid medication.

Like the other Oregon Project athletes discussed above, Solinsky also apparently did not have hypothyroidism and did not require thyroid medication. Solinsky's medical file obtained from Dr. Brown's office reflects that Solinsky had had his TSH level measured at least four (4) times within four (4) months of his March 25, 2009, trip to see Dr. Brown. On each of these tests Solinsky's TSH level was less than 3.00. His five

values ranged from 2.024 to 2.810.[188] Nevertheless, Dr. Brown prescribed thyroid medication to Chris Solinsky.

i. Conclusions regarding Salazar's involvement in Dr. Brown's treatment of NOP athletes for purported thyroid conditions

As explained above, USADA's investigation has identified strong evidence that Dr. Jeffrey Brown regularly prescribed thyroid medication to Oregon Project athletes who were not suffering from any thyroid malfunction or disease. It is also clear from the evidence of Dr. John Rogers and from numerous emails from Alberto Salazar to his athletes that Salazar believed that giving his runners thyroid medication would boost their testosterone levels and that this would enhance their athletic performance. The evidence confirms that Salazar colluded with Dr. Brown to improperly prescribe thyroid medication to Oregon Project athletes for athletic performance rather than health reasons.

Salazar's emails confirm that with Dr. Brown's help Salazar closely monitored TSH levels in his athletes (particularly Rupp and Ritzenhein) and that Salazar apparently believed that by changing the amount and kind of thyroid medication they received he could manipulate their energy levels. For these Oregon Project runners who were patients of Dr. Brown and should have been protected by him, thyroid medication became a kind of throttle to be used by Salazar to try to rev up the runners and help them recover from a hard workout or prepare for an important competition. Through attempting to control energy levels by changing thyroid hormone levels Salazar

[188] Chris Solinsky Medical records, pp. USADA 000995-001006; see especially p. 001003 (12/2/2008 blood test, reflecting TSH level of 2.024), p. 001006 (2/27/2009 blood test, reflecting TSH level of 2.565), p. 000989 – 0001000 (3/11/2009, reflecting TSH level of 2.348), p. 000995, 000997 (3/19/2009, reflecting TSH level of 2.810).

sought an advantage that ethical coaches did not have and would never obtain. The evidence is therefore strong that Salazar sought to use his athletes' own endocrine systems and thyroid medication as a throttle to attempt to drive their performance and that Dr. Brown willingly handed Salazar the keys to do so. These conclusions are based on USADA's review of just a sampling of medical records and emails between Salazar and Brown and between several athletes and Salazar and Brown. The Texas Medical Board has an ability to access medical records not available to USADA and to subpoena additional emails and may therefore be able to discover additional evidence of this practice.

USADA's investigation establishes that Dr. Brown and Alberto Salazar colluded to provide thyroid medication to Oregon Project athletes who lacked a substantial need for the medication. The transparent purpose for mis-prescribing of thyroid medication was a scheme of Salazar, in which Brown participated, to use thyroid medication to attempt to enhance and control the athletic performance of Oregon Project athletes and their ability to recover from difficult workouts and be prepared for key competitions. As a result of this scheme, Salazar was permitted by Dr. Brown to improperly exercise a degree of control over medical decisions related to Salazar's athletes. This scheme further compromised Brown's judgment and objectivity, undermining his duty of loyalty to his Athlete-Patients and the quality of care that Brown provided to them.

B. Salazar pushed Dr. Brown to organize and run a testosterone testing program that involved giving testosterone to subjects in their twenties who had no medical need and no prescription for the drug.

One of the allegations reported in the BBC/Pro Publica stories in early June 2015 was that Alberto Salazar set up an experiment to determine the clearance times for

testosterone gel and what amount of testosterone gel would cause a positive drug test. In his Open Letter Salazar conceded involvement in such a test. However, Salazar's explanation was that the testosterone testing was undertaken, not to develop information that could be used to avoid a positive drug test from illicit use of testosterone by athletes, but, rather, "to ensure [the NOP] post-race protocol was structured to eliminate the risk of sabotage."[189]

Salazar wrote, "we decided to see if rubbing Androgel on an athlete after a race could cause a positive test."[190] He said, "I was a bit naïve and let my paranoia get the best of me here but there was never intent to do anything illegal."[191] Salazar placed ultimate responsibility for the administration of testosterone to individuals who had not been prescribed the drug upon Houston endocrinologist Dr. Jeffrey Brown. Salazar claimed in his Open Letter that "Dr. Jeffrey Brown set up the experiment."[192]

Salazar was specifically questioned regarding this incident during his interview with USADA on February 4, 2016. Mr. Salazar acknowledged that the testosterone experiment was really a series of two experiments, both of which took place in July, 2009. Each experiment involved the application of testosterone gel to two subjects, Salazar's sons, Alex and Tony Salazar,[193] neither of whom had a prescription for

[189] Salazar Open Letter (June 24, 2015), p. USADA 1771.
[190] Salazar Open Letter (June 24, 2015), p. USADA 1771.
[191] Salazar Open Letter (June 24, 2015), p. USADA 1771.
[192] Salazar Open Letter (June 24, 2015), p. USADA 1771.
[193] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 257, lines 1-14.

testosterone.[194] Salazar testified that Dr. Brown was physically present for the first experiment which took place in Oregon on the Nike campus.[195]

Salazar told USADA that the testosterone used in the experiments came from Alberto Salazar's personal prescription for testosterone gel,[196] and Salazar directly and personally applied on his sons testosterone from his personal prescription.[197] Salazar also acknowledged that at the time of the experiments Dr. Brown was one of Salazar's personal physicians and was prescribing Salazar testosterone gel.[198] That Dr. Brown was Salazar's personal physician and prescribed him testosterone was not previously known. Salazar had previously stated publicly, in the Open Letter, that he was under the care of Portland physician Kristina Harp for hypogonadism and that Salazar was prescribed testosterone gel by Dr. Harp.

In his USADA interview Salazar reaffirmed that the testosterone experiments were set up and controlled by Dr. Brown.[199] About Dr. Brown's involvement in designing the testosterone testing protocol Salazar said:

> Dr. Brown came up with the protocol that he said we wanted to mimic what could happen after competition when an athlete comes off the track, he or she is running for a certain amount of time, maybe 15 to 30 minutes. They're hot and sweaty, and they're coming off the track . . . So the test was, would AndroGel that was rubbed or testosterone, whatever was rubbed on somebody, in this case, AndroGel, would it, if somebody

[194] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 257, lines 19-21.
[195] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 262, lines 16-18.
[196] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 259-60, lines 25, 1-6.
[197] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 261, lines 19-21, p. 264, lines 10-12.
[198] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 260-61, lines 7-25, 1-15 (Dr. Brown was Salazar's personal physician and prescribed him testosterone from late 2006 or early 2007 to 2013.).
[199] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 254, lines 16-25, p. 256, lines 10-23, p. 263, lines 5-8.

> rubbed it on an athlete, would it show up in that test that was taken and hour later? And how much would it take to show up? What are the minimum amounts?[200]

Regarding Dr. Brown's involvement in the testosterone testing Salazar was specifically asked the following questions and gave the following answers:

> **Q** Are these reasons for the test that you gave your reasons or are they Dr. Brown's reasons?
>
> **A** They are Dr. – by reasons, what do you mean by reasons?
>
> **Q** Well, you explained why the test was set up?
>
> **A** Right.
>
> **Q** Was that because Dr. Brown said, let's figure this out, or because Alberto went to Dr. Brown and said let's figure this out?
>
> **A** Dr. Brown figured out the protocol. I don't remember when I first spoke to him about looking into this possible sabotage.[201]

Salazar said, "I don't know how you usually select people for a medical study."[202] Regarding how Salazar's sons Tony and Alex were selected for the study, Salazar said: "he (Brown) may have said, Hey, we can use your sons? I don't know."[203] Salazar also conceded it may have been Salazar who selected his sons for the testosterone testing.[204]

Salazar acknowledged that his sons certainly were not informed of any risks of the administration of testosterone without a medical need for the substance, as Salazar

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[200] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), pp. 254-56, lines 21-25, 1, 25, 1-6.
[201] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 256, lines 10-23.
[202] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 258, lines 1-2.
[203] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 258, lines 2-4.
[204] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 258, lines 13-16.

himself did not believe there were any risks.[205] Salazar, in fact, said that Dr. Brown had informed him that there was no risk for his sons to have the testosterone gel applied to them.[206] Recalling his conversation with Dr. Brown, Salazar said:

> **Dr. Brown explained to me** – and I don't know if he talked to them, he may have just told me – that **there was no risk in a** one-time, **two-time use of small, normal daily, you know, amounts of testosterone gel**.[207]

Salazar testified that if Dr. Brown had told him there was any risk that Salazar would not have permitted the experiment to go forward.[208] Salazar also did not recall any sort of consent form being signed by his sons in relation to the testing.[209]

Thus, the picture presented by Salazar is that the testosterone testing was undertaken under the direct supervision and control of Dr. Brown who designed the experiment, was present for the application of the testosterone (at least on the first occasion), was fully aware that the subjects being given testosterone did not have a prescription for testosterone and that no consents had been obtained to perform a medical experiment on Salazar's sons. If he was Alberto Salazar's personal physician and had in fact been prescribing him testosterone, Dr. Brown would have certainly realized that the testosterone being administered to Salazar's sons was obtained from Salazar's own prescription and was thus a misuse of that prescription.

However, Salazar's claim in his USADA interview that he had a prescription from Dr. Brown for testosterone gel and that he had merely used testosterone from his own

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[205] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 259, lines 10-21.
[206] *Id.*
[207] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 259, lines 13-17 (emphasis added).
[208] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 259, lines 18-21.
[209] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 259, lines 1-9.

prescription for Androgel from either Dr. Brown or another of Salazar's physicians, Dr. Kristina Harp, is at odds with testimony given to USADA by another Oregon Project athlete and her husband. Both Amy Begley and her husband Andrew have told USADA that in 2009, during one of their visits to Dr. Brown's office in Houston for a physical, Dr. Brown gave Andrew and Amy a package containing testosterone which Dr. Brown told them to transport to Alberto Salazar.

When the testosterone was delivered to Salazar in Oregon Salazar explained to the Begleys that he needed the testosterone because he wanted to test it on his sons in order to determine if it was possible for someone to sabotage an athlete after a race by rubbing a testosterone cream on their skin. Salazar said he was worried about the possibility of one of his athletes testing positive due to this type of sabotage and encouraged Amy to consider wearing long sleeves during victory laps in order to protect herself.

This evidence from the Begleys is important for several reasons. First, it means that not only did Dr. Brown direct the testosterone testing experiment and understand that testosterone was going to be applied to individuals who lacked a prescription in violation of federal law, he also personally procured the testosterone to be used in the experiment. He did not merely potentially provide a prescription that was misused, he actually was the source for the testosterone.

Second, if Alberto Salazar was untruthful about how he procured the testosterone in 2009 and in fact had to be sent testosterone by Dr. Brown through intermediaries it begs the question of whether Salazar had a valid prescription for testosterone gel in 2008 and 2009 when multiple witnesses have reported seeing him in

possession of Androgel (as reported in the BBC and ProPublica articles in June, 2015). Light might be shed on these questions through examination of Salazar's medical records with Dr. Brown concerning any diagnosis of hypogonadism and/or androgen deficiency that has allegedly resulted in Salazar using testosterone replacement therapy. Yet, Salazar has steadfastly refused to submit those records to USADA for examination.[210]

Finally, according to Salazar, Dr. Brown had the ability to prevent the testosterone testing experiment from going forward. Salazar testified that if Dr. Brown had only objected or discussed the risks of using testosterone without a medical need with Salazar and his sons, as was Dr. Brown's duty, the experiment would allegedly not have gone forward. Therefore, substantial blame for the unlawful experiment must be shared by both Salazar and Dr. Jeffrey Brown.

C. Additional concerns regarding the use of testosterone by Alberto Salazar and regarding testosterone provided to Salazar by Dr. Brown

1. Concerns regarding Salazar's potential access to compounded testosterone

As noted above, Salazar's claim that Dr. Brown was Salazar's physician and had given him a prescription for Androgel begs the question of why Dr. Brown would have asked Amy and Andy Begley to transport testosterone from Houston to Portland for Salazar. Presumably, if Salazar had a prescription for testosterone he could have simply picked up Androgel by going to a pharmacy in Portland.

[210] USADA has repeatedly requested these records from Salazar's lawyer since June, 2015. Most recently, Salazar's lawyer said that he would provide a further response to USADA on this topic by Friday, March 11, 2016, but he did not. On March 11 he sent an email stating that the response would be sent on Monday, March, 14, 2016. As of Tuesday, March 15, 2016, the response has still not been received.

One reason for having testosterone delivered to Salazar could be that the testosterone was specifically compounded and therefore different than testosterone gel commonly available by prescription. A possibility that compounded testosterone may have been transported to a track and field coach raises serious concerns.

It is known within the athletic community that compounded testosterone has been used to try to "beat" standard athletic drug testing methods used for the detection of testosterone in athlete samples. For instance, in the Bay Area Laboratory Cooperative (BALCO) doping conspiracy testosterone was compounded with epitestosterone because a regularly used athletic drug testing method is to monitor an individual's testosterone/epitestosterone ratio in order to evaluate whether they may be using synthetic testosterone.

When a standard synthetic testosterone product such as Androgel is used the use will increase the absolute level of testosterone but will leave the individual's level of epitestosterone unchanged. Because most individuals have a testosterone/epitestosterone ratio (i.e., a "t/e ratio") of 1:1, when an increase in the t/e ratio of an athlete is observed this can lead to the discovery of the use of synthetic testosterone. However, in the BALCO conspiracy athletes were supplied with a testosterone cream specifically compounded to include epitestosterone. As a consequence, the compounded testosterone cream used by BALCO clients would not alter an athlete's t/e ratio and it became more difficult to detect that the athlete had used synthetic testosterone.

Thus, it is possible to compound testosterone in such a way as to make detection of the use of that testosterone product by an athlete undetectable or very difficult to

detect on anti-doping tests. If Dr. Brown has provided Alberto Salazar compounded testosterone it would therefore raise significant concerns regarding the reason for the compounding and the manner in which the testosterone product was compounded.

Additionally, a number of Oregon Project athletes have reported to USADA that in advance of significant competitions Alberto Salazar has established a frequent practice of giving a massage to Galen Rupp. Salazar has acknowledged that Rupp has a favored status within the Oregon Project. Salazar's massages of Rupp have been considered suspicious because Nike employs massage therapists but Salazar has insisted on personally giving the massages to Rupp. Certainly, if it were found that Salazar had received compounded testosterone from Dr. Brown the nature of these massages and the use to which the compounded testosterone was put would be highly relevant. Moreover, if the testosterone transported from Dr. Brown to Salazar for the testosterone testing program was in fact compounded testosterone, as is suggested by the fact that it had to be delivered to Salazar, this fact would cast further doubt on the rationale given by Salazar for the testosterone testing program. If protecting against sabotage were the motive, there would be no reason to test whether specially compounded testosterone can be detected. The only purpose for testing specially compounded testosterone would be to try to determine whether the specially compounded testosterone product is detectable.

2. Salazar's personal use of testosterone

Because he is an athlete support person within the meaning of the World Anti-Doping Code Alberto Salazar is not entitled to possess testosterone, a substance prohibited at all times in sport (in and out of competition), without "acceptable

justification."[211] According to the Comment to this rule, "Acceptable justification would not include, for example, buying or Possessing a Prohibited Substance for purposes of giving it to a friend or relative, except under justifiable medical circumstances where that Person had a physician's prescription."

a. Salazar's admitted use of testosterone

In his Open Letter on June 24, 2015, in response to allegations in the BBC/Pro Publica stories that testosterone gel or cream had been found in his room by a masseuse Salazar provided the following explanation:

> First, I have a valid prescription for Androgel. See Exhibit 26. While this is something I would not like to air publicly, I am forced to do so to protect my athletes. As I stated above, my excessive training as an athlete did extensive damage to my body. One of the lingering negative effects from which I still suffer today is hypogonadism with significant symptoms, including multiple low testosterone serum levels. See Exhibit 26. Additionally, I have suffered from primary pituitary insufficiency, hypothyroidism and adrenal insufficiency as a result of my excessive training. These conditions are not new. I have been under the care and treatment of licensed medical doctors for them for approximately the past 25 years. They are also no secret. I fully disclosed and documented my conditions with the USATF, IAAF and USOC decades ago. There is no question that I have a valid justification for my possession of Androgel as defined by the WADA Code.
>
> Second, I did **not** tell John Stiner that my Androgel was for my heart. It isn't. It is for my overall health. I have fully disclosed my Androgel prescription to my cardiologist, Dr. Todd Caulfield. Dr. Caulfield and I fully discussed the risks and benefits of my continued Androgel therapy. See Exhibit 27. My treatments also were discussed with my primary internal medicine physician, Dr. Kristina Harp. See Exhibit 26. Ultimately, it was decided the benefits of preserving my energy and ability to exercise outweighed the small risk of continued Androgel use. See Exhibit 27. For these reasons, the BBC and ProPublica stories' innuendo that I do not have a valid justification is simply wrong. Their attempt to imply that because I have an Androgel prescription I must be giving it to my athletes is even more wrong. It is hurtful and completely baseless. It not only inappropriately smears me and belittles me for my medical conditions, it harms innocent athletes. I have never given Androgel to any of my

[211] World Anti-Doping Code, Art. 2.6.2.

> athletes. As my pharmacist attests, my Androgel prescription has been filled consistent with my personal prescribed use. See Exhibit 28.[212]

Thus, in his Open Letter Alberto Salazar gave "hypogonadism with significant symptoms, including multiple low testosterone serum levels" as his basis for possessing testosterone. However, the only documentation provided by Salazar to substantiate his claims in the Open Letter that he allegedly has hypogonadism and possesses "a valid prescription for Androgel," is a single one paragraph letter from a general practitioner in Portland, Oregon, Kristina Harp, and a one paragraph letter from a pharmacist in Portland.

In relevant part Dr. Harp's letter (dated June 5, 2015), states:

> To Whom It May Concern:
>
> Mr. Salazar has been my patient since 02/07/2005.
>
> I have provided primary care an [sic] internal; [sic] medicine physician for Mr. Salazar. Mr. Salazar has a long history of hypogonadism with significant symptoms. This is evidenced medically by low testosterone serum levels, along with typical symptoms seen with this condition. For treatment of this condition, I have prescribed testosterone replacement therapy. This treatment has been reviewed with Dr. Caufield, the treating cardiologist for Mr. Salazar's cardiac condition, a [sic] deemed to be medically safe given the well controlled nature of the historical cardiac condition. The prescription is carefully monitored and filled at the same pharmacy always used by Mr. Salazar, and in a quantity sufficient to treat only Mr. Salazar. I carefully monitor the level, and with blood tests have shown efficacy and safety. This is, [sic] the testosterone level is replaced to a normal level. The testosterone replacement therapy has been ongoing as medically indicated and necessary since at least 2005.[213]

The one paragraph letter (dated June 5, 2015) from Portland pharmacist Tyler Treharne states:

> To whom it may concern:

[212] Alberto Salazar Open Letter (June 24, 2015), p. 2-9.
[213] Alberto Salazar Open Letter (June 24, 2015), Exhibit 26 (Letter from Kristina Harp, M.D., P.C.).

> The patient Alberto Salazar (DOB: 8/7/58) has been prescribed and has been using Androgel from 2003 to the present under the treatment of his physician. The dosing of this medication is appropriate for testosterone therapy and the frequency in which the medication filled [sic] is appropriate for his testosterone therapy.[214]

Several interesting observations can be made about the foregoing brief letters, including: (1) they do not set forth the basis for Salazar's purported diagnosis of hypogonadism, (2) they indicate that Dr. Harp apparently is not the physician who diagnosed Salazar with hypogonadism (as she has been seeing him since 2005, but the pharmacist states Salazar has been filling a prescription for testosterone since 2003), and (3) they place substantial weight on the premise that this physician and pharmacist in Portland, Oregon are the only physician and pharmacist from whom Salazar has been receiving testosterone. For instance, Dr. Harp states "[t]he prescription is carefully monitored and filled at the same pharmacy always used by Mr. Salazar, and in a quantity sufficient to treat only Mr. Salazar. I carefully monitor the level[.]" Similarly, the pharmacist opines, "the frequency in which the medication filled [sic] is appropriate for his testosterone therapy."

b. Salazar's admissions regarding dual prescriptions for testosterone from physicians in different states and other concerns related to his possession of testosterone

However, in his interview with USADA Salazar did much to undermine any confidence that could be placed in the foregoing letters as reliable indicia of whether Salazar has an acceptable justification to possess testosterone. First, Salazar admitted

[214] Alberto Salazar Open Letter (June 24, 2015), Exhibit 28 (Letter from Tyler Treharne PharmD).

that he first started using testosterone in the mid-1990s.[215] Salazar was still competing as an active athlete in the mid-1990s. Therefore, his testimony raised the question of whether he personally used testosterone in sport in violation of the anti-doping rules. Accordingly, USADA asked Salazar to rule out personal use of testosterone before the last major race that he won. Mr. Salazar, however, did not entirely dispel the possibility he used testosterone while he was competing, as he claimed to be unable to recall when he first used testosterone and refused to state that his first use of testosterone came after his participation in the Comrades Marathon, a race he won in late 1994.[216]

Of course, the fact that Salazar began using testosterone in the mid-1990s and only began receiving testosterone from Dr. Harp in 2005 also begs the question of Dr. Harp's level of familiarity with his alleged hypogonadism diagnosis.

Further, when Salazar was asked who provided the prescription for the testosterone used in the so-called "sabotage test" in 2009 he said, "I don't know if it was Dr. Kristina Harp or Dr. Jeff Brown."[217] Salazar went on to admit that Dr. Brown "was one of my personal physicians for a five to six-year period"[218] and that he had obtained testosterone prescriptions from Dr. Brown. Salazar placed this five to six year period during which he was obtaining testosterone from Dr. Brown in Houston, Texas as "approximately 2007 to 2013"[219] which is squarely within the time frame that Dr. Harp in

[215] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 115, lines 6-9, p. 116, lines 6-8.
[216] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 115, line 2 – p. 117, line 20.
[217] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 260, lines 7-13.
[218] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 260, lines 16-17.
[219] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 260, lines 20-21.

Portland, Oregon apparently believes she was the sole physician prescribing Salazar testosterone. Dr. Harp's letter indicates that it was important to her that Salazar's "prescription [be] carefully monitored and filled at the same pharmacy always used by Mr. Salazar, and in a quantity sufficient to treat only Mr. Salazar." Yet, Salazar's recent testimony established that this was simply not the case – Salazar was being prescribed testosterone from a physician in Houston, Texas at the same time he was prescribed testosterone from a physician in Portland, Oregon.

Of course, there are a host of other questions raised by Alberto Salazar's testimony and other known evidence about Dr. Brown, testosterone, and the Salazar-Brown relationship. Already discussed above is the fact that in his USADA testimony Salazar inaccurately minimized the time period that he worked with Dr. Brown. One also wonders why Dr. Brown would have traveled to Oregon to monitor a testosterone testing experiment if it was truly as routine as Salazar makes it out to be. Of course, there are the questions about why Dr. Brown would have an athlete transport a package of testosterone from Houston, Texas to Salazar in Oregon. Having an athlete transport testosterone to Salazar seems even more suspicious now that it has been learned that Dr. Brown was purportedly dual prescribing testosterone to Salazar simultaneously with Dr. Harp. There are also the suspicions and concerns which arise from numerous reports of Salazar giving personal massages to Galen Rupp before key competitions. This is all before even mentioning the Nike Oregon Project document which lists Galen Rupp as having received "testosterone medication" when he was a sixteen year old and being coached by Salazar, as well as Mary Decker Slaney's sanction for an elevated testosterone level while she was being coached by Salazar.

Under these circumstances, and given the foregoing background, USADA is entitled to evaluate the complete set of medical records related to Alberto Salazar's alleged diagnosis of hypogonadism and all available records related to his testosterone prescriptions and use of testosterone. This information is necessary in order for USADA to evaluate whether Salazar's admitted possession of testosterone throughout the time period he has been a track and field coach and within the ten (10) year limitations period has been "in accordance with . . . acceptable justification."[220]

c. USADA's requests to Salazar in 2015 for records regarding testosterone use

On June 8, 2015, the USADA requested in writing that Alberto Salazar provide the following documents:

1. All records in the possession of, or under the control of, you and/or the Nike Oregon Project and/or any physician, contractor, employee, consultant of, or any person affiliated with you or the Nike Oregon Project listing "testosterone," "testoboost" or any other product containing the words "testo" in relation to use of such product(s) by you or by any athlete coached by you or who is affiliated with the Nike Oregon Project.

2. All medical records for you referring to, relating to, or resulting from, any diagnosis of a hormonal deficiency or other condition for which you have been prescribed testosterone or any other anabolic agent or hormone, including but not limited to prescriptions, chart notes, reports, evaluative documents, testing records and other such documents.

3. All records relating to your purchase and/or use of any product labeled or referring to testosterone, testoboost or any similar name (i.e., any product with the word "testo" as part of it).

On November 11, 2015, USADA made a written follow up request for Alberto Salazar to provide, among other documents requested of him, the following:

1. All healthcare provider records and other documents for the past ten (10) years related to Alberto Salazar's use of testosterone and all records at

[220] Code Art. 2.6.2.

any time related to any diagnosis which led to Mr. Salazar's use of testosterone at any time.

2. All documents related to the testing of testosterone creams (what is referred to as "The Sabotage Test" in Mr. Salazar's Open Letter, dated June 24, 2015).

3. All documents that refer to, relate to, or explain the notation referring to "testosterone medication" in records related to Galen Rupp's hemoglobin levels.

d. Salazar's insufficient January 30, 2016 response to USADA's requests for records regarding testosterone use

On Saturday, January 30, 2016, about five days before Salazar's scheduled interview with USADA, Salazar's lawyer sent an email on behalf of Salazar in which he referenced seven (7) attached documents and stated:

> These documents make it abundantly clear that Alberto has suffered from hypogonadism with significant symptoms that required testosterone replacement therapy. No additional documents are needed.[221]

The documents provided by Mr. Salazar's lawyer, however, in fact, do not establish that Mr. Salazar has suffered from hypogonadism and/or androgen deficiency or that he requires testosterone replacement therapy. Despite USADA's request that he do so, Mr. Salazar has still produced no laboratory testing records, blood test data, examination notes, chart notes or differential diagnosis substantiating that Mr. Salazar suffers from hypogonadism and/or androgen deficiency requiring administration of exogenous testosterone. Rather, in response to USADA's request for relevant healthcare and medical records, on January 30, 2016, after more than half a year of waiting on him, Mr. Salazar's lawyer provided only a few conclusory letters from three (3) doctors.

[221] January 30, 2016, letter from John Collins to William Bock

The letters Mr. Salazar's lawyer provided do not satisfy well accepted Endocrine Society Guidelines concerning the diagnosis of hypogonadism and androgen deficiency and the administration of testosterone to treat hypogonadism and/or androgen deficiency. In fact, the cursory letters provided by Mr. Salazar's lawyer suggest that Mr. Salazar may not have been diagnosed with hypogonadism and/or hypogonadism, let alone been properly diagnosed with such a condition.

As part of his response, Mr. Salazar's lawyer re-forwarded two, one-paragraph letters, both dated June 5, 2015, from Mr. Salazar's current physicians, Drs. Harp and Caulfield which were previously attached to Salazar's Open Letter. As noted above, these one paragraph letters are not medical records but were rather written "to whom it may concern" for publicity purposes and to be disseminated to the media in order to advance Mr. Salazar's public claims that he has an acceptable justification for possessing testosterone while he is working with elite athletes.

These letters, which were procured by Mr. Salazar for internet distribution and in order to be attached to his publicly disseminated "Open Letter," do not attempt to explain a differential diagnosis for hypogonadism. Nor do these letters claim that Mr. Salazar was diagnosed with hypogonadism by either Dr. Harp or Dr. Caulfield. The only symptoms even mentioned in the June 5, 2015, publicity letters is low serum testosterone and fatigue. No documentation regarding what is considered a low serum testosterone level is provided. Low serum testosterone and fatigue can have many causes and are not necessarily indicative of hypogonadism and/or androgen deficiency or the need for exogenous testosterone.

Neither Dr. Harp nor Dr. Caulfield claim to have diagnosed Mr. Salazar with hypogonadism, and, in any case, a diagnosis based purely on functional symptoms and low blood levels would not satisfy the Endocrine Society Clinical Guidelines. Therefore, the publicity letters from Drs. Harp and Caulfield provided by Mr. Salazar's lawyer are not an adequate basis on which to conclude that Mr. Salazar has an acceptable justification to possess testosterone as an athlete support person.

The only other information provided by Mr. Salazar's lawyer in response to USADA's request for medical documentation consists of letters sent by a physician named Jan Smulevitz to insurance providers in 1992 and to USA Track and Field (USATF) in 1995. None of these letters from Dr. Smulevitz are medical records. Nor do these letters set forth an adequate basis for a diagnosis of hypogonadism or provide adequate support for a claim that Mr. Salazar has an acceptable justification to possess testosterone as an athlete support person working with elite athletes.

In fact, Dr. Smulevitz's 1995 correspondence with Dr. C. Harmon Brown of USATF reflects that Alberto Salazar had specifically not provided to Dr. Harmon Brown sufficient documentation to permit Dr. Harmon Brown to advance to the IAAF a request that Mr. Salazar be permitted to use HCG (not testosterone) to treat what he claimed was a pituitary-gonadal failure. Dr. Brown stated that from the information provided to him "One could as easily argue that this picture could be seen after withdrawal from exogenous androgen therapy, while the pituitary-gonadal axis was still suppressed."

Dr. Smulevitz's April 20, 1995, letter does not clear up concerns regarding the insufficiency of medical data to support a diagnosis of hypogonadism and/or androgen deficiency. In fact, Dr. Smulevitz confirms that the first documented testosterone level

for Mr. Salazar which Dr. Smulevitz considered “low” was a level of 250 ng/dL taken in November, 1990, when Mr. Salazar was 32 years old. The reference to a testosterone level of 250 ng/dL as low is questionable. In fact, there is insufficient information to substantiate that this level taken in 1990 is indicative of any suppression in testosterone production whatsoever. There is no indication of when the testosterone level was measured. To demonstrate consistent androgen deficiency serum testosterone level measurements must be conducted on blood drawn in the early morning and on a minimum at least two occasions at least a minimum of a week apart within a four-week period. A single isolated serum testosterone measurement whenever it is taken (morning, afternoon or evening) is insufficient to establish androgen deficiency.

According to the relevant Endocrine Society guidelines, testosterone measurements for the diagnosis of hypogonadism should be performed in the morning because serum testosterone levels exhibit a circadian rhythm and normal ranges for serum testosterone are typically established using morning blood samples.[222] The guidelines proceed to explain the importance of obtaining multiple testosterone measurements in order to confirm low testosterone concentrations due to the variations in testosterone levels that can occur on a day-to-day basis. Testosterone measurements derived from blood samples drawn in the afternoon are not useful as the medical literature indicates that in the afternoon testosterone levels may significantly decrease from their early morning peaks. The information provided does not indicate when during the day any blood draws from Mr. Salazar have been taken.

[222] *See* Testosterone Therapy in Men with Androgen Deficiency Syndromes: An Endocrine Society Clinical Practice Guide.

Just as importantly, in evaluating testosterone levels it is essential that a patients' entire health history and current potential impacts on testosterone levels be considered. There are a variety of transient factors which can dramatically influence serum testosterone levels and the impact of these factors must be assessed and excluded in order to reach a proper diagnosis. A diagnosis based simply on a functional disorder does not satisfy the clinical guidelines in part because such diagnoses often do not consider environmental factors such as diet, stress, intense training, exposure to alcohol and glucocorticoids and other lifestyle factors which can have negative influences on testosterone levels. Rather, functional diagnoses often focus solely on low testosterone levels and generalized symptoms.

Significantly, in 1994, after each of the endocrine levels set forth in Dr. Smulevitz's correspondence were recorded, Alberto Salazar won the prestigious Comrades Marathon which is an ultramarathon of some 90 kilometers or 56 miles run annually in the KwaZulu-Natal Province of South Africa between the cities of Durban and Pietermaritzburg. As the letter from USATF's Dr. Harmon Brown indicates, Mr. Salazar did not have a therapeutic use exemption or approval from the IAAF to use any anabolic agents at this time. Furthermore, in his recent USADA interview, although he could not recall when he began using testosterone, Mr. Salazar denied using testosterone while he was actively competing. Therefore, when he was competing in 1994 Mr. Salazar was presumably not using synthetic testosterone.

According to publicly available information, the 56 mile Comrades Marathon is the world's largest and oldest ultramarathon race. It is counterintuitive that a 36 year old man suffering from hypogonadism could win, let alone be competitive or even complete,

such a difficult race. Therefore, the best explanation for any prior low testosterone levels in Mr. Salazar's records prior to 1995, should they exist, would appear to be environmental and/or lifestyle factors rather than hypogonadism.

Alberto Salazar was training and competing in difficult endurance events during much of the time period around when the endocrine testing referenced in Dr. Smulevitz's letters was performed. Mr. Salazar is famously known, through his own often repeated claims, to have over-trained and pushed his body to run perhaps far past its capacity. Thus, any low testosterone levels during his career as an elite competitive athlete may be explained with reference to environmental facts and do not necessarily establish hypogonadism or a current need for testosterone. Accordingly, Dr. Smulevitz's correspondence is no evidence at all that Mr. Salazar was suffering from hypogonadism up through 1993 which is the last period of records mentioned in Dr. Smulevitz's April 20, 1995 letter.

e. USADA's February 15, 2016, follow up request for Salazar's records regarding testosterone use

On February 15, 2016, USADA sent a follow up request for records to Salazar's lawyer, stating in part:

> USADA respectfully disagrees that the seven (7) letters you provided on January 30, 2016, establish that Mr. Salazar suffers from hypogonadism or that he has valid justification for possessing testosterone gel. Nor are the letters an adequate or complete response to USADA's longstanding written requests to Mr. Salazar referenced above. We have been patient to date with the very deliberate pace of Mr. Salazar's responses. However, USADA's patience has unfortunately not been rewarded with a fulsome or adequate response. USADA will permit Alberto Salazar one final opportunity to provide to USADA:
>
> - All medical records referring to, relating to, or resulting from, any diagnosis of a hormonal deficiency or other condition for which Alberto Salazar has been prescribed testosterone or any other

anabolic agent or hormone, including but not limited to prescriptions, chart notes, reports, evaluative documents, testing records and other such documents; and

- All healthcare provider records and other documents for the past ten (10) years related to Alberto Salazar's use of testosterone and all records at any time related to any diagnosis which led to Mr. Salazar's use of testosterone at any time.

Please provide the foregoing records to USADA no later than Monday, March 1, 2016.[223]

USADA subsequently extended until March 11, 2016, the deadline for Mr. Salazar to provide the records requested by USADA. However, as of March 17, 2016, Mr. Salazar's lawyer had still not provided additional documentation to USADA.

Because Mr. Salazar and his lawyer have, to date, refused to provide adequate documentation USADA is unable to substantiate that Alberto Salazar has ever received a diagnosis for hypogonadism and that his possession of testosterone as an athlete support person working with elite athletes has been with acceptable justification. USADA therefore considers that as of this date Mr. Salazar has not established acceptable justification for possessing testosterone and his admitted possession of testosterone appears to have been violation of sport anti-doping rules.

D. Salazar pushed Dr. Brown and Dr. Robert Cook to prescribe calcitonin to athletes based on Salazar's untested premise that the prescription medication would help his athletes avoid stress fractures from overtraining.

Calcitonin is a hormone that helps regulate calcium levels in the body and which is involved in the process of bone building.[224] Calcitonin medication can be obtained in spray or injectable form and is a prescription medication used in men and women with

[223] February 15, 2016, Letter from William Bock to John Collins.
[224] http://www.webmd.com/osteoporosis/calcitonin-for-osteoporosis

osteoporosis to help reduce bone loss.[225] When taken by shot or nasal spray it slows the rate of bone thinning.[226] It can also be used to relieve pain arising from a spinal compression fracture.[227]

According to Dr. John Rogers, calcitonin is "quite a rarely used drug"[228] and not one with which he was familiar being used as a preventative therapy on young, healthy, elite runners.[229] Nevertheless, as reported by Dr. Rogers, during 2011 Alberto Salazar advocated the off label use of calcitonin by Oregon Project runners to prevent stress fractures.[230] Dr. Rogers observed:

> they use nasal calcitonin on all their group to prevent stress fractures and Mo has been using this. I asked Mo to stop this whilst we discussed given his hx of hypercalcuria which Alberto was not aware of.[231]

While studies have indicated that calcitonin can improve bone density in amenorrheic female athletes[232] and assist with the healing process after a fracture, (for instance, Dr. Rogers was familiar with calcitonin being used by sports physicians "to treat pain *following* a stress fracture"[233]), calcitonin is not indicated for stress fracture prevention in general.[234] USADA has had this confirmed by several physicians. Moreover, as with

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[225] http://www.webmd.com/osteoporosis/calcitonin-for-osteoporosis
[226] http://www.webmd.com/osteoporosis/calcitonin-for-osteoporosis
[227] http://www.webmd.com/osteoporosis/calcitonin-for-osteoporosis
[228] Transcript of Interview (Under Oath) of John Rogers (July 30, 2015), p. 52, lines 21-22.
[229] *Id*.
[230] July 26, 2011 Email from Dr. John Rogers to Drs. Noell Pollock, Paul Dijkstra and Rob Chakraverty (Exhibit J).
[231] July 26, 2011 Email from Dr. John Rogers to Drs. Noell Pollock, Paul Dijkstra and Rob Chakraverty (Exhibit J).
[232] A female athlete who is not experiencing her period.
[233] Transcript of Interview (Under Oath) of John Rogers (July 30, 2015), p. 50, lines 22-23.
[234] *See* http://www.rheumatologynetwork.com/articles/managing-stress-fractures-athletes ; http://www.nursingcenter.com/cearticle?tid=1354607 ; http://www.medicographia.com/2010/07/fracture-healing-and-antiosteoporotic-treatments/ .

other prescription medications, calcitonin has a variety of side effects and potential interactions with other medicines, supplements, vitamins and herbal products.[235]

Dr. Rogers was specifically concerned that Salazar giving the prescription medication calcitonin to Mo Farah was potentially harmful to Farah due to Farah's hypercalciuria diagnosis of which Salazar was entirely unaware.[236] Rogers reviewed the British Athletics medical records for Farah and there was no record of a prescription for calcitonin.[237] Therefore, Dr. Rogers presumed that Farah's access to calcitonin, and any prescription he may have gotten for it, came at Alberto Salazar's direction.[238] Of concern as well is the fact Mo Farah apparently continued to use calcitonin at Salazar's direction even after his British Athletics physician asked him to stop. Farah listed calcitonin as a medication being used by him on August 11, 2011 and October 11, 2011 doping control forms *after* Dr. Rogers' July, 2011 instruction to Salazar and Farah to discontinue use of the drug.

In an August, 2011 email exchange with Dathan Ritzenhein about what supplements and other products Ritzenhein should be taking, Salazar asked if Ritzenhein was taking calcitonin daily and Ritzenhein confirmed that he was.[239] Salazar then advised:

> Hi Dathan, I think beta alanine, aminos, fish oils, iron, calcium for you, possibly magnesium- am checking with UK docs on this, **calcitonen, vit d , and then this new stuff** [i.e., Nutramet]. **I don't think I'm going to reorder any more of the other herbal stuff. There is just no hard**

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[235] http://www.everydayhealth.com/drugs/calcitonin
[236] Transcript of Interview (Under Oath) of John Rogers (July 30, 2015), p. 52, lines 4-23.
[237] Transcript of Interview (Under Oath) of John Rogers (July 30, 2015), pp. 36-37, lines 14-25, 1-6.
[238] **Id**.
[239] 8/5/2011 Email from Dathan Ritzenhein to Alberto Salazar Subject: Re: Nutramet Invoice [Newly added]

> **evidence it does anything for testosterone levels or recovery**, - Alberto[240]

As Ritzenhein was a patient of Dr. Brown during this time frame, it is likely that Brown was prescribing calcitonin for him.

On March 31, 2012, Alberto Salazar sent an email to most of his Oregon Project runners at the time, including: Mo Farah, Galen Rupp, Dathan Ritzenhein, Lindsay Allen, Dawn Grunnagle and Matt Centrowitz. Salazar instructed:

> Hi Everyone, you should make sure you get on the Calcitonen (sic) nasal spray to prevent stress fractures. Matt, send me your pharmacy number so Dr.Cook can call it in, also make sure you are all on Vitamin D. Thx - Alberto[241]

Although Galen Rupp never listed calcitonin on his doping control forms, Rupp's prescription records indicate that on June 30, 2012 and December 21, 2012, he filled prescriptions in Oregon for calcitonin nasal spray that was prescribed for him by Dr. Jeffrey Brown. USADA has received Rupp's records from this time frame. However, there is, no indication in the medical records from Dr. Brown's office that were provided by Rupp that Dr. Brown ever saw Rupp for stress fractures during 2010-2013. Indeed, the only visit to Brown's office by Rupp in the records provided to USADA is the January 5, 2012, visit by Rupp to have an L-carnitine infusion. Therefore, it appears that Dr. Brown's prescriptions of calcitonin for Galen Rupp is just one more example of Brown prescribing unnecessary medications for Oregon Project athletes in order to indulge Alberto Salazar's bizarre and untested theories on how his athletes could contain a competitive advantage through the misuse of prescription medications.

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[240] 8/5/2011 Email from Alberto Salazar to Dathan Ritzenhein Subject: Re: Nutramet Invoice (emphasis added) [Newly added]

[241] 3/31/2012 Email from Alberto Salazar to Mo Farah, Galen Rupp, Lindsay Allen, Dathan Ritzenhein, Dawn Grunnagle, and Matt Centrowitz Subject: Calcitonen (sic) nasal spray.

The NOP calcitonin experiment came to an ignominious end in late 2012 when, after receiving an NOP email encouraging him to use calcitonin, NOP athlete Dorian Ulrey apparently brought to the attention of the NOP coaches the salient fact that research had established an increased cancer risk associated with using the drug. This brought a quick retraction email from NOP Assistant Coach Pete Julian, withdrawing the advice to use calcitonin:

> Hi Team,
> We sent out an email earlier today requesting that you begin (or continue on) a calcitonin nasal spray for bone health.
> Dorian wisely pointed out that there has been some very recent research showing that long term use of calcitonin may slightly increase cancer risk over time.
> Although the FDA has not restricted calcitonin at this time, it does appear that it is revisiting the long term safety of this drug.
> If you are currently taking calcitonin, we recommend that you immediately stop taking this prescription until the FDA brings more clarity to the matter.
> In the meantime, we will look to explore some alternatives to managing good bone health.
> PJ[242]

Pete Julian's retraction email prompted immediate reaction from Dathan Ritzenhein, who seven minutes later plaintively inquired, "Is this some kind of joke? I have been taking this for the last four years!"[243] Unfortunately for Dathan it was not a joke. And, unfortunately for Galen Rupp he apparently did not even get the message concerning the increased cancer risk for calcitonin, as Rupp's medical records indicate he filled a prescription from Dr. Brown for calcitonin on December 21, 2012, well after the emailed warning from Pete Julian.

[242] 11/29/2012 Email from Pete Julian.
[243] 11/19/2012 Email from Dathan Ritzenhein to Pete Julian.

E. Salazar pushed Dr. Brown to perform multiple untested L-carnitine infusion protocols on athletes for no medical or health benefit to the athletes

As mentioned briefly above, in addition to using products such as thyroid medication, prescription Vitamin D and calcitonin to attempt to increase testosterone, improve energy levels and otherwise enhance athletic performance USADA has found that Dr. Brown participated with Alberto Salazar in an L-carnitine infusion program which was designed to try to boost energy levels and enhance athletic performance. This program as well was undertaken contrary to good medical practice and in violation of ethical standards and the standard of care. There is also significant evidence that this program may have violated sport anti-doping rules. USADA is continuing to investigate potential anti-doping rule violations related to the L-carnitine program. Following is an overview of medical records and other documentation reviewed by the USADA as part of USADA's investigation of intravenous (IV) administrations of L-carnitine given by Dr. Brown to NOP athletes.

1. Background Concerning Potential Use of L-Carnitine to Enhance Athletic Performance

A group of British researchers at the University of Nottingham in England has over the past decade published a series of articles on the storage of L-carnitine in muscle and the potential impact of L-carnitine on energy metabolism.[244] For instance,

[244] Francis B. Stephens, Benjamin T. Wall, Kanagaraj Marimuthu, Chris E. Shannon, Dumitru Constantin-Teodosiu, Ian A. Macdonald and Paul L. Greenhaff. **Skeletal muscle carnitine loading increases energy expenditure, modulates fat metabolism gene networks and prevents body fat accumulation in humans**. *J. Physiol*. 591, 18 (2013) pp. 4655-4666. Benjamin T. Wall, Francis B. Stephens, Dumitru Constantin-Teodosiu, Kanagaraj Marimuthu, Ian A. Macdonald and Paul L. Greenhaff. **Chronic oral ingestion of L-carnitine and carbohydrate increases muscle carnitine content and alters muscle fuel metabolism during exercise in humans**. *J. Physiol*. 589.4 (2011) pp. 963-973, first published online Jan. 4, 2011; Francis B. Stephens, Dumitru Constantin-Teodosiu, and Paul L. Greenhaff. **New insights concerning the role of carnitine in the regulation of fuel metabolism in skeletal**

on January 4, 2011, these researchers published online a peer reviewed research article stating that human muscle total carnitine "can be increased by dietary means and results in muscle glycogen sparing during low intensity exercise . . . and a better matching of glycolytic, PDC and mitochonridal flux during high intensity exercise, thereby reducing muscle anaerobic ATP production"[245] and that "these changes were associated with an improvement in exercise performance."[246]

The Nottingham group found that recreational athletes who had received carnitine supplementation "reduced perception of effort and increased work output during a validated exercise performance test."[247] In early 2011 these researchers opined that "a major finding of the present study has to be that the increase in muscle [total carnitine] content after 24 weeks of supplementation resulted in a 35% increase in work output compared to Control (and an 11% increase from baseline)."[248] They concluded that, "[c]ollectively, these findings have significant implications for athletic performance and pathophysiological conditions where fat oxidation is impaired or

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muscle. *J. Physiol.* Published online Mar. 1, 2007; Francis B. Stephens, Claire E. Evans, Dumitru Constantin-Teodosiu, and Paul L. Greenhaff. **Carbohydrate ingestion augments L-carnitine retention in humans**. *J. Appl. Physiol* 102: 1065-1070, 2007, First published Nov. 30, 2006; Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006; Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **Insulin stimulates L-carnitine accumulation in human skeletal muscle**. The FASEB Journal, published online Dec. 20, 2005.

[245] Benjamin T. Wall, Francis B. Stephens, Dumitru Constantin-Teodosiu, Kanagaraj Marimuthu, Ian A. Macdonald and Paul L. Greenhaff. **Chronic oral ingestion of L-carnitine and carbohydrate increases muscle carnitine content and alters muscle fuel metabolism during exercise in humans**. *J. Physiol*. 589.4 (2011) pp. 963-973, 963-64 first published online Jan. 4, 2011.

[246] *Id*. at 964.

[247] *Id.* at 963.

[248] *Id*. at 971.

anaerobic ATP production is accelerated during exercise."[249] In laymen's terms, the authors' conclusion meant that the Nottingham Group's L-carnitine research might have applicability to athletic performance in endurance sports such as distance running.

USADA has discovered that hard on the heels of the publication of the Nottingham group's research concerning the potential impact of L-carnitine supplementation on improving athletic performance Alberto Salazar was making arrangements for his athletes to receive an L-carnitine supplement developed in coordination with Dr. Paul Greenhaff, one of the researchers in the Nottingham group. USADA has reviewed product literature and emailed advertising claims for this product which was initially called "Be Supreme" and ultimately came to be referred to as "Nutramet."

> Claims made on behalf of this product included that:
>
> . . . the clinical trials demonstrated that the product has a dual action that is exercise intensity dependent:-
>
> 1. During moderate intensity exercise (50% VO2max) it spares muscle
> glycogen stores by increasing fat oxidation, thereby delaying muscle glycogen depletion during prolonged exercise. In clinical trials, athletes fed with be supreme exhibited 55% less muscle glycogen utilisation compared with those fed with carbohydrate alone (control).
>
> 2. During high intensity exercise (80% VO2max) it lowers muscle lactate accumulation thereby offsetting fatigue development associated with high intensity work. In the clinical trials muscle lactate content was 44% lower in athletes consuming the be supreme formula compared to control.
>
> These metabolic responses were directly associated with a 10% increase in work output in a performance trial.
>
> The technology will provide major benefits for endurance athletes:-

[249] *Id*. at 971.

> It will enable athletes to conserve glycogen stores by increasing fat utilisation during long periods of moderate intensity work, thereby preserving carbohydrate availability for the latter stages of a race.
>
> Endurance sports often require short bursts of intense work for sprint finishes etc. During these short bursts of high work output be supreme will offset muscle lactate accumulation thereby offsetting fatigue development.[250]

The combination of the research of the Nottingham Group as well as the involvement of Nottingham Group researcher Dr. Paul Greenhaff in the development of the product initially referred to as "Be Supreme" and later called "Nutramet" or "Nutra Met"[251] stimulated a substantial degree of enthusiasm within the Oregon Project that L-carnitine supplementation using Nutramet would provide a significant potential competitive edge for Oregon Project athletes. For instance, USADA has identified emails sent by Alberto Salazar, the head coach of the Oregon Project, during 2011 in which Salazar described the product, or his feelings about the product, in the following terms:

- "what will probably be the greatest legal sports supplement ever"[252]
- "Could be a game changer"[253]
- "I'm very excited to get the product!"[254]
- "Hi OP Marathoners! The greatest sports endurance supplement is on the way."[255]

[250] 1/26/2011 Email from George Clouston to Alberto Salazar.
[251] For consistency, "Nutramet" is generally used throughout this Interim Report.
[252] 3/11/2011 Email from Alberto Salazar to Lance Armstrong.
[253] 3/26/2011 Email from Alberto Salazar to Lance Armstrong.
[254] 6/30/2011 Email from Alberto Salazar to George Clouston.
[255] 8/5/2011 Email from Alberto Salazar to Dathan Ritzenhein and Kara Goucher, Subject: Nutramet Invoice.

- "if the product really does do what the studies show, it will revolutionize endurance sports"[256]

- "I believe that this supplement is the real thing and want to have it ready to use in my runners that are doing the Olympic Trials Marathon on Jan. 14th."[257]

- "Lance, call me asap! We have tested it and it's amazing. You are the only athlete I'm going to tell the actual numbers to other than Galen Rupp. It's too incredible. All completely legal and natural! You will finish the Iron Man in about 16 minutes less while taking this."[258]

From early 2011 Oregon Project runners were being told by Salazar about a new L-carnitine product that was coming from England that was "supposed to be much more effective."[259] It was explained that the supplement would "increase. . . use of fat oxidation, and . . . lower . .. muscle lactate accumulation."[260] Salazar told Dathan Ritzenhein that the new product would help him in the closing stages of the marathon.[261] His runners knew that Alberto Salazar "was very excited about it."[262] The were also told by Salazar to keep the product secret to maintain a competitive advantage over their rivals.[263]

In the late Spring of 2011, the Swiss pharmaceutical company, Lonza, which produced the L-carnitine product which was infused by the Nottingham Group

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[256] 11/17/2011 Email from Alberto Salazar to Brad Wilkins.
[257] 11/17/2011 Email from Alberto Salazar to Brad Wilkins.
[258] 12/1/2011 Email from Alberto Salazar to Lance Armstrong.
[259] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 17, line 16.
[260] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 18, lines 13 – 15.
[261] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 35, lines 14 – 20.
[262] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 19, line 2; see also p. 21, lines 14-18 (Salazar was the Oregon Project coach most excited about L-carnitine); p. 47, lines 9-11 ("This was the only supplement that I can really recall him thinking that was so much new or cutting edge, really.").
[263] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), pp. 33, line 18 – p. 34, line 23.

researchers issued a press release touting the Nottingham Group research in a press release headlined – “New Study Shows Carnipure™ Tartrate Increases Muscle L-Carnitine Content.” The Lonza press release quoted Nottingham Group research Paul Greenhaff and read as follows:

> Basel, Switzerland, 07 June 2011 – A new study shows that long-term L-Carnitine supplementation in the form of Carnipure™ tartrate manufactured by Lonza coupled with the intake of carbohydrates increases muscular L-Carnitine content in recreational athletes. The randomized, double-blind, placebo-controlled study was conducted by the School of Biomedical Sciences at the University of Nottingham Medical School in England and published in the Journal of Physiology (589.4 (2011) pp 963-973).
>
> “This is the first study in healthy humans showing that muscle L-Carnitine content can be influenced by dietary means and that L-Carnitine plays a dual role in skeletal muscle fuel metabolism during exercise that is dependent on exercise intensity”, comments Prof. Paul Greenhaff, lead author of the study. During low intensity exercise increasing muscle L-Carnitine content led to glycogen sparing and increased fatty acid oxidation. In high intensity exercise it led to a decrease in anaerobic energy production, including a decrease in muscle lactate accumulation. Furthermore, during a performance test, L-Carnitine supplementation resulted in lower perceived exertion as well as increased work output. **This novel technology is protected by a patent application WO/2004/082674 owned by the University of Nottingham.**
>
> Previous studies show that Carnipure™ tartrate supplementation can increase fatty acid oxidation in a non-athletic population. The current study is the first to show the same effect in recreational athletes. These findings together with previous findings demonstrate that Carnipure™ supplementation may lead to a decrease in the production of free radicals, less tissue damage and reduced muscle soreness after exercise. **Carnipure™ supplementation can play an important role for sports nutrition supporting both exercise performance as well as the subsequent recovery process.**
>
> L-Carnitine, a nutrient produced in the body and found in dietary sources, plays a critical role in fat and energy metabolism. It shuttles long-chain fatty acids into the cells’ mitochondria where they are broken down for energy generation, as well as maintaining muscle carbohydrate oxidation and offsetting lactate production during intense exercise. Extensive research shows that supplementary Carnipure™ may play a supportive

> role in many areas of health, including cardiovascular health, weight management and healthy aging. **Carnipure™ is easily integrated into dietary supplements and functional foods and beverages**.[264]

The Lonza press release noted that the Nottingham Group's research suggested that L-carnitine supplementation could play an important role for sports nutrition and exercise recovery. However, in a line that must have been frustrating for anyone who lacked access to the L-carnitine/carbohydrate product being developed by the University of Nottingham, Lonza acknowledged that the "novel technology is protected by a patent application owned by the University of Nottingham." In other words, whomever hoped to incorporate this "novel technology" into their preparation for the coming year's London Olympic Games would likely have to work with the University of Nottingham. At the time of the Lonza press release Alberto Salazar was already doing just that, and had been working on this project for nearly five months.

2. Background Concerning 24 Week Minimum Period of Time to Load L-Carnitine in Muscle Via Oral L-Carnitine Supplementation

While the Nottingham Group found that if L-carnitine stores in the muscle could be increased that a performance gain could be realized, the Group's research built upon prior research that had found that increasing muscle carnitine content is incredibly difficult. The Nottingham Group confirmed that "[i]ncreasing plasma carnitine per se to a supraphysiological concentration for 5 h[ours] has no impact on muscle total carnitine content."[265]

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[264] http://www.lonza.com/about-lonza/media-center/news/2011/new-study-carnipure-tartrate-increases-muscle-l-carnitine-content.aspx (emphasis added)

[265] Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **Insulin stimulates L-carnitine accumulation in human skeletal muscle**. The FASEB Journal, published online Dec. 20, 2005, p.9.

The initial breakthrough by the Nottingham Group, however, was the realization that "human skeletal muscle total carnitine content can be acutely increased after L-carnitine administration and that this occurs as a result of an insulin-mediated augmentation of muscle carnitine accumulation."[266] In other words, the Nottingham researchers were the first to establish that l-carnitine administered simultaneously with increased insulin levels was the key to increasing the carnitine level in muscles. They found that increasing insulin levels by infusing insulin at the same time that high levels of l-carnitine were being infused could increase muscle total carnitine content by 13 – 15%.[267]

Insulin levels can also be increased naturally through carbohydrate ingestion. Therefore, the next area the Nottingham group studied was whether an increase in muscle carnitine retention could be achieved through l-carnitine supplementation in conjunction with a dietary-induced elevation in insulin brought about through carbohydrate ingestion.[268] The researchers' effort to confirm the hypothesis that an effective means of orally supplementing L-carnitine might be found were rewarded when they found in 2007 that "the whole body retention of orally supplemented L-carnitine can

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[266] *Id.* at p. 6.

[267] Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **Insulin stimulates L-carnitine accumulation in human skeletal muscle**. The FASEB Journal, published online Dec. 20, 2005, p.9; Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006, p. E637.

[268] Francis B. Stephens, Claire E. Evans, Dumitru Constantin-Teodosiu, and Paul L. Greenhaff. **Carbohydrate ingestion augments L-carnitine retention in humans**. *J. Appl. Physiol* 102: 1065-1070, 2007, First published Nov. 30, 2006.

be augmented if accompanied by carbohydrate ingestion"[269] and that "this retention is likely to reside in skeletal muscle."[270]

Further research in this area by the Nottingham Group resulted in a 2011 paper in which they reported that an "increase in muscle [total carnitine] content after 24 weeks of supplementation resulted in a 35% increase in work output compared to Control (and an 11% increase from baseline)."[271] Interestingly, for the first 12 weeks of supplementation using the Nottingham researchers' protocol there was no absolutely no difference in total carnitine content of the subject's resting muscles between a control group and those receiving the oral carbohydrate/l-carnitine supplementation.[272] However, after 24 weeks muscle carnitine content in the group receiving l-carnitine supplementation was 30% greater, representing a 21% increase from baseline in this group.[273] Thus, the researchers found no change in muscle carnitine content for the first three months of using their oral supplementation protocol but that significant muscle loading of carnitine was observed after six months (i.e., 24 weeks) of oral supplementation using their protocol. In other words, the 2011 research of the Nottingham Group established that gains in muscle carnitine loading through oral supplementation were tedious. Appreciable increases in muscle carnitine content would

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[269] *Id.* at 1069.
[270] *Id.*
[271] Benjamin T. Wall, Francis B. Stephens, Dumitru Constantin-Teodosiu, Kanagaraj Marimuthu, Ian A. Macdonald and Paul L. Greenhaff. **Chronic oral ingestion of L-carnitine and carbohydrate increases muscle carnitine content and alters muscle fuel metabolism during exercise in humans**. *J. Physiol*. 589.4 (2011) pp. 963-973, 971 first published online Jan. 4, 2011.
[272] *Id.* at 967,
[273] *Id*.

come only after many months, and their research suggested at least six months of oral supplementation using their carbohydrate/l-carnitine protocol was required.

The slow pace of oral L-carnitine loading was recognized by the operators of the company who set out to market the Nutramet product. In his January 26, 2011, email to Alberto Salazar, George Clouston wrote:

> In order to achieve the maximum benefit from the nutritional programme we recommend that the product is taken in the same way as in the clinical trial. This requires athletes to consume the product on a regular basis over an extended period of time. **The clinical trials demonstrated that the performance benefits were obtained when athletes consumed 2 doses per day over a 24 week period. It takes this time to load the muscle with carnitine. Clearly the athletes you mentioned would not gain any performance benefits in the 6 weeks leading up to their next races.** However I would like to discuss with you how we could work with you and your athletes over a longer period of time to really gain the benefits from the technology.[274]

The lengthy period of time required for l-carnitine loading through oral supplementation was also recognized by Oregon Project Assistant Coach Steve Magness[275] who wrote Alberto Salazar in February, 2011, that:

> The retention rate of the carnitine ingested is incredibly small and cumulative. You need a high spike in insulin to get the carnitine into the muscle. And unfortunately the only natural/legal way to do that is by taking some simple sugars. Even when studies infused carnitine and insulin through IVs the retention of the carnitine in the muscles was only 15%. With taking the supplement, you get about 0.1% increase in the muscle carnitine pool per day. So that's why it takes so dang long to see

[274] 1/26/2011 Email from Georege Clouston to Alberto Salazar. (Emphasis added).
[275] Steve Magness is a former elite athlete. His athlete profile is available on the IAAF website. http://www.iaaf.org/athletes/united-states/steve-magness-195338 His personal bests on the IAAF website are 4:01:02 in the mile and 3:43:87 in the 1500 meters, both set on May 24, 2003. His time in the mile run is the seventh fastest in U.S. history for a high school athlete. Magness ran for the University of Houston Cross Country and Track teams in 2007-2008 and named to the U.S. Track and Field and Cross Country Coaches Association All-Academic teams. http://www.uhcougars.com/sports/c-xc/mtt/steve_magness_819296.html As explained below, during a significant period of the time that he worked for the Oregon Project as Assistant Coach Magness was also competing in USATF sanctioned cross country competitions subject to sport anti-doping rules.

> big effects. The good news is that it's a steady accumulation. It just takes a long time because we can't get much more in the muscle than that with ingesting it.[276]

3. Background Concerning Receipt of Nutramet Product by the Oregon Project Being Delayed Until September 28, 2011

Alberto Salazar apparently understood early in 2011 that he was going to have exclusive initial access to the Nutramet L-carnitine supplement developed by Nottingham Group researchers, providing a competitive edge to Oregon Project athletes. Salazar wrote on March 11, 2011, "We . . . are getting full batches for my athletes before anyone else."[277]

Salazar believed he would receive his first shipment of Nutramet in March, but then was told it would come in early April. Salazar commented on March 26, 2011, "I should have it in the next two weeks. They were supposed to have it produced around now, but then they are batch testing every lot to make sure it doesn't have any banned substances, then they'll ship it to me."[278]

On June 30, 2011, George Clouston told Salazar "I apologise for the delays but it has been quite a struggle to get everything up and running."[279] Nevertheless, Clouston said that he was "still committed to manufacturing a special batch for you and your athletes."[280] He told Salazar that the product would "be blended and packed the week commencing 18 July"[281] but due to necessary testing could not be shipped until August

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[276] 2/24/2011 Email from Steve Magness to Alberto Salazar.
[277] 3/11/2011 Email from Alberto Salazar to Lance Armstrong.
[278] 3/26/2011 Email from Alberto Salazar to Lance Armstrong, CC: Steve Magness, Fred Herlitz.
[279] 6/30/2011 Email from George Clouston to Alberto Salazar.
[280] *Id.*
[281] *Id.*

8.[282] Clouston offered, helpfully, that "[t]he product will not be commercially available until October 2010 [sic] so your athletes will still gain an advantage."[283]

However, the Nutramet product was not delivered to Salazar until September 28, 2011. On that date Salazar wrote to his athletes:

> Hi Everyone, I'm bringing a box of the new sports drink we got from the UK to Nike tomorrow. I've got enough for six months for each of you. It takes up to four months to take effect, so for the marathoners you need to start now. It definately will help a 10k runner. Possibly a steepler and 5k runner. Steve, is it worth giving to milers? All of you need to get it from me tomorrow.[284]

4. Background Concerning Consideration of L-Carnitine Infusions for Oregon Project Runners Based on the "Titration Study" Provided by Dr. Paul Greenhaff

Upon receipt of the Nutramet product Salazar apparently read the product literature and began to worry that there was insufficient time for the L-carnitine loading from the product to take place before the Olympic Marathon Trials set to occur in just over three months (i.e., 109 days), on January 14, 2012. The day he received the Nutramet shipment Salazar immediately wrote his Assistant Coach Steve Magness the following email:

> Ho Steve, read thru this. I'm worried that it's going to take 24 weeks for dathan to get results. **In their article it talks about getting the same results in a few days with infusions. Please check into those asap with Dt. [sic] Brown to see if he can do it and of course if it's Wada legal.** For everyone else we have time for the supplement to work, for dathan we may not. This has to be a top priority for you this week. Jackie, ciaran, even Galen and mo take backseat to getting dathan ready. I don't care if you come to work, just get this figured out asap. Thx![285]

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[282] *Id.*
[283] *Id.*
[284] 9/28/2011 Email from Alberto Salazar to Dathan Ritzenhein, Galen Rupp, Alvina Begay, Lindsay Allen, Steve Magness Subject: New sports drink.
[285] 9/28/2011 Email from Alberto Salazar to Steve Magness Subject: Nutramet Invoice (emphasis added).

As noted in the foregoing email, on September 28, 2011, Alberto Salazar asked Steve Magness to check into the prospect of infusing L-carnitine.

On October 7, 2011, Steve Magness reached out to Nottingham Group researcher, Dr. Paul Greenhaff, asking for Dr. Greenhaff's advice on how to increase the rate of loading of l-carnitine. Mr. Magness wrote:

> Hi Paul, Steve Magness from the Nike Oregon project here again. We have a runner who has about 15 weeks[286] until the marathon trials. We know that your research shows a longer loading time and I know this is a theoretical question, but is there any way to potentially increase the rate of loading? Either by taking a third drink during the day or perhaps trying to load more carnitine in with the insulin spike/drink? Or do you have any research showing changes in shorter time periods? Any opinions or advise would be appreciated.[287]

After a series of communications between Magness and Dr. Greenhaff, including a phone call between them, Steve Magness sent an email to Dr. Greenhaff on October 13, 2011, in which he confirmed that he and Salazar were leaning towards proceeding with L-carnitine infusions on Oregon Project athletes in the U.S. In his email to Dr. Greenhaff, Steve Magness wrote:

> Hi Paul, Thanks for taking the time to answer my questions the other day. I was wondering if you could **send me the protocol for the carnitine infussion. We are going to look at doing it here** first to save on travel and to see if that is a possibility.[288]

Dr. Greenhaff responded by sending Magness the "protocol for the carnitine infusion" that Magness had requested:

> Hi Steve, **If you use the carbohydrate feeding from the "feeding study" attached and the CARNITINE infusion protocol from the attached "titration study" (not the insulin and glucose infusions**

[286] Actually, October 7 was ninety-nine (99) days or about 14 weeks before the U.S. Olympic Marathon Trials.
[287] 10/7/2011 Email from Steve Magness to Dr. Paul Greenhaff.
[288] 10/13/2011 Email from Steve Magness to Dr. Paul Greenhaff Subject: L-Carnitine (emphasis added).

> **obviously) that should work** – having never done it I can't be sure. One infusion period should work – followed up with the normal daily feeding protocol.[289]

Dr. Greenhaff recommended using "the carbohydrate feeding from the 'feeding study' attached to his email and "the CARNITINE infusion protocol from the attached 'titration study.'" Because Dr. Greenhaff attached both of these documents to his email, it is clear that:

- the "feeding study" refers to this paper – Francis B. Stephens, Claire E. Evans, Dumitru Constantin-Teodosiu, and Paul L. Greenhaff. **Carbohydrate ingestion augments L-carnitine retention in humans**. *J. Appl. Physiol* 102: 1065-1070, 2007, First published Nov. 30, 2006; and

- the "titration study" refers to this paper – Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006 (hereafter "Titration Study").

Therefore, it is apparent that Dr. Greenhaff was recommending the ingestion of carbohydrates to stimulate an insulin response coupled with the infusion methodology set forth in the *American Journal Of Physiology-Endocrinology And Metabolism* paper entitled "**A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans**." The l-carnitine infusion protocol is described in the "Titration Study" paper as follows:

> Following a 1-h equilibration period, a 5-h intravenous infusion of 60 mM L-carnitine (Lonza, Basel, Switzerland) was begun in conjunction with the insulin clamp. First, a bolus dose of 15 mg/kg was administered over 10 min to reach a plasma concentration of ~550 μmol/l. This was followed by a constant infusion at 10 $mg \cdot kg^{-1} \cdot h^{-1}$ for the next 250 min to maintain a supraphysiological steady-state plasma carnitine concentration. At t = 6 h both insulin and L-carnitine infusions were stopped, and subjects were

[289] 10/14/2011 Email from Dr. Paul Greenhaff to Steve Magness Subject: L-Carnitine (emphasis added).

free to leave the laboratory once their blood glucose concentration was stable.[290]

The basic principle of the L-carnitine infusion recommended by Dr. Greenhaff to Steve Magness was to maintain a continuous plasma L-carnitine concentration of approximately 550 µmol/l (micromols per liter) for a 5 hour period while carbohydrate is being administered to the individual, driving up insulin levels and thereby causing L-carnitine to be drawn into the muscles. The volume of L-carnitine infused in the Titration Study was dependent upon the weight of the individual.

In the Titration Study plasma L-carnitine concentrations were initially driven up through a larger initial bolus infusion of 15 mg/kg over 10 minutes. As an example, for a 140lb individual (approx. 63.54 kg) this initial bolus infusion would have been 952 mg (or 0.9525 grams) of L-carnitine and would likely involve an infusion of **98.5 ml**. of a 60mM (9.67mg/mL) solution. For a 100 lb (45.4kg) individual the initial infusion would likely have been **70.4 ml (0681g) of a 60mL solution**.

Supraphysiological plasma carnitine concentration levels were maintained by continuous infusion at a rate of 10 mg·kg−1·h−1 over the next 4 hours and ten minutes (250min). For a 140lb individual the volume infused over the more than four hour period would have been **274mL (2.65g) of a 60mM solution.** For a 100lb individual the volume of the 250 minute infusion would likely have been**195mL (1.89g) of a 60mM solution. Taken together, this represents a total infused volume of at least 372.5mL and 265.4mL, for a 140lb and 100lb individual, respectively.**

[290] Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006, p. E638.

After receiving Dr. Greenhaff's Titration Study Magness forwarded the Titration Study to Alberto Salazar with the message, "Hey Alberto, Here is what Paul said about the carnitine. Follow the protocol in the study attached minus the insulin and glucose."[291] Several weeks later, Salazar indicated in an email to Geoge Clouston that he was contemplating using the Titration Study L-carnitine infusion protocol recommended by Dr. Greenhaff on Oregon Project athletes. Salazar said:

> For my marathon runners **we may try an infusion** as they'll only have bee[n] taking it [i.e., the Nutramet product] for four months[292] by the date of our Marathon Olympic trials -Jan.14. **Professor Greenhalf has told us a way to do the infusion using a special drink rather than insulin**.[293]

5. Background Concerning WADA Infusion Rule in 2011

At the outset of 2011 the WADA Prohibited List provided that "Intravenous infusions are prohibited except for those legitimately received in the course of hospital admissions or clinical investigations."[294] This rule was altered in the 2012 WADA Prohibited List which was circulated in September, 2011 and read as follows: "Intravenous infusions and/or injections of more than 50 mL per 6 hour period are prohibited except for those legitimately received in the course of hospital admissions or clinical investigations."[295] This definition of prohibited infusions and injections was being applied by the last quarter of 2011 and remains the rule in the current WADA Prohibited List. As a point reference, 50mL of volume is equivalent to roughly 3.4 US tablespoons.

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[291] 10/19/2011 Email from Steve Magness to Alberto Salazar Subject: L-carnitine Attachment: Titration study.pdf.
[292] Actually, the period between when the runners received the Nutramet on September 29, 2011, and the U.S. Olympic Marathon Trials on January 14, 2011, was only a period of 106 days (or about 3 ½ months).
[293] 11/14/2011 Email from Alberto Salazar to George Clouston.
[294] 2011 WADA Prohibited List.
[295] 2012 WADA Prohibited List.

The relevant WADA guidance document provided the following explanation of the terms "intravenous infusion" and "intravenous injection" –

> By definition, an IV infusion is the supply of fluids or other liquid substrates via the insertion of a specialized needle into a vein and infusing fluids at a predetermined rate from a reservoir usually situated above the level of the body. An intravenous injection is the supply of fluid or medication by means of a syringe with a standard or butterfly needle, directly into a vein. Infusions or injections are permitted if the infused/injected substance is not on the Prohibited List, the volume of intravenous fluid administered does not exceed 50 mL per 6-hour period.[296]

6. Background Concerning Houston Endocrinologist Jeffrey Brown's Willingness to Provide Oregon Project Athletes L-Carnitine Infusions Using the "Titration Study" Procedures

Email messages from Steve Magness in November, 2011, state that Magness had been tasked by Salazar to determine whether either Dr. Kristina Harp (a Portland, Oregon general practitioner) or Dr. Jeffrey Brown (a Houston, Texas endocrinologist) could perform the infusion protocol set forth in the Titration Study. Magness sent both Dr. Harp and Dr. Brown the Titration Study and Dr. Greenhaff's email explanation of how to use the Titration Study "not [using] insulin and glucose infusions" and asked if they could perform the procedure. For instance, Magness's message to Dr. Brown was:

> Hey Dr. Brown, Alberto wanted me to check with you on the plausibility of doing this L-carnitine procedure. It's explained in the procedures of the attached study, without the glucose and insulin as explained below. We're looking at for Dathan, or maybe testing it on myself to [s]ee if there are any measurable performance changes.[297]

[296] WADA Medical Information to Support the Decisions of TUECs – Intravenous Infusions (Version 3.0) (September 2011).
[297] 11/14/2011 Email from Steve Magness to Dr. Jeffrey Brown Subject: Dr. Harp- Oregon Project Attachment: Titration Study.pdf.

The extent to which discussions may have advanced with Dr. Kristina Harp regarding giving L-carnitine infusions based on the Titration Study is not known. However, extensive communications ensued with Dr. Brown regarding giving L-carnitine infusions to Oregon Project athletes.

Dr. Brown read the Titration Study and initially expressed reluctance to perform the infusions. Dr. Brown's response to Magness's initial inquiry was:

> Steve, I read the article. This study was done using insulin and glucose clamping. In order for this to work out practically, the insulin levels would have to be at a level that would cause other metabolic problems especially in fat accumulation. Also, in someone who has a thyroid problem, the ef[f]ects of a long distance run would cause insulin resist[a]nce thus negate the effects of any small effect of gi[v]ing carnitine. This does maybe explain when Athletes load up with insulin or insulin secretogouges [sic] prior to an event besides the well know growth hormone effects. In other words, not a good idea.[298]

Alberto Salazar quickly responded to Dr. Brown, and Salazar demonstrated a good understanding of Dr. Greenhaff's explanation of how to implement the infusion protocol in the Titration Study. Salazar wrote:

> Hi Dr.Brown. **The very high concentration glucose drink is only done the one time with the concurrent Lcarnitine infusion in order to get the LCarnitine levels up in the muscle cells**. After that the athlete takes the special Lcarnitine drink twice per day to maintain it without doing the infusion it takes up to six months to build up the Lcarnitine levels in the muscle cells we don't have enough time for D[a]Than to get it up there because the marathon trials are in two months.[299] Thx![300]

[298] 11/14/2011 Email from Dr. Jeffrey Brown to Steve Magness Subject: Dr. Harp- Oregon Project (emphasis added).
[299] The U.S. Olympic Marathon Trials were two months to the day from this email.
[300] 11/14/2011 Email from Alberto Salazar to Steve Magness CC: Dr. Jeffrey Brown Subject: Dr. Harp- Oregon Project (emphasis added).

Dr. Brown responded by noting potential issues with the effectiveness of combining the L-carnitine infusion procedure in the Titration Study with use of a high glucose solution to drive up insulin levels in individuals who have hypothyroidism. Brown said:

> Alberto, It's the very high glucose solution that increases the insulin concentration that force the carnitine into the cells. But again the insulin response in a person with hypothyroidism[301] isn't as predictable. The pancreatic insulin secretory response can be impaired.[302]

In response, Salazar implored Dr. Brown to try the L-carnitine infusion on Dathan Ritzenhein anyway. He said:

> Hi Dr.Brown, what if we just try it with Dathan? We have nothing to lose, if it works it will get his Lcarnitine levels up quicker. If it doesn't, there's no harm. Thx![303]

Dr. Brown then agreed to perform the infusion on Ritzenhein, saying:

> Alberto, As long as he is well hydrated, and we do blood tests, i.e. a basic chemistry prior to the infusion, I don't think it will harm him in any way, but do it quite soon. I have my doubts about how well it will work however.[304]

7. Alberto Salazar Discusses With Athletes the Need for Them to Have L-Carnitine Infusions

In November of 2011, Alberto Salazar had conversations with Dathan Ritzenhein about Ritzenhein having an L-Carnitine infusion.[305] Emails indicate that Salazar was priming other athletes to have an L-carnitine infusion as well. For instance, on November 14, 2011, Salazar sent an email to Oregon Project runner Alvina Begay,

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[301] Dr. Brown was, at the time, treating Dathan Ritzenhein for hypothyroidism diagnosed by Dr. Brown.
[302] 11/14/2011 Email from Dr. Jeffrey Brown to Alberto Salazar and Steve Magness Subject: Dr. Harp- Oregon Project.
[303] 11/14/2011 Email from Alberto Salazar to Dr. Jeffrey Brown, Dathan Ritzenhein CC: Steve Magness Subject: Re: Dr. Harp- Oregon Project.
[304] 11/15/2011 Email from Dr. Jeffrey Brown to Alberto Salazar CC: Steve Magness Subject: Re: Dr. Harp- Oregon Project
[305] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), pp. 23, line 24 – p. 24, line 17.

asking her to try a new high sodium drink to be used in competitions and told her, "Between this drink and the L-Carnitine drink (infusion) I believe that you and Dathan can each get about a 2-3 minute advantage."[306]

During his interview with USADA Salazar conceded that the purpose of the L-carnitine infusions "was an effort to try and get the same absorption of the L-carnitine" as in Dr. Greenhaff's study.[307]

8. Monday, November 28, 2011 – Dr. Brown Administers L-Carnitine Infusion to Steve Magness Using Dr. Greenhaff's Titration Study Protocol

Once Dr. Brown had agreed to perform the L-carnitine infusion on Dathan Ritzenhein, Alberto Salazar wasted no time in arranging for a test infusion to be performed on Oregon Project Assistant Coach Steve Magness. Magness was originally from Houston, Texas where Dr. Brown was located (and Magness's parents still resided in Houston). Magness had also been previously treated by Dr. Brown for hypothyroidism. Salazar's next communication also reveals that he and Magness had been communicating about doing before and after treadmill tests to attempt to measure the impact that an L-carnitine infusion would have on athletic performance. Salazar's next email stated:

> Thanks Dr.Brown! Steve, do you want to go home for thanksgiving? **We could do the pre-LCarnitine exercise tests prior to Thanksgiving**, then you fly there, **get the Lcarnitine infusion**, come home and **retest**.[308]

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[306] 11/14/2011 Email from Alberto Salazar to Alvina Begay, Dathan Ritzenhein and Steve Magness Subject: FW: High sodium drink Attachment: HFL certificate pre race drink.pdf.
[307] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 168, lines 16 – 17.
[308] 11/15/2011 Email from Alberto Salazar to Dr. Jeffrey Brown CC: Steve Magness Subject: Re: Dr. Harp- Oregon Project.

Next, Salazar tells Magness that Magness should "try and get the infusion done by Dr.Brown"[309] over the Thanksgiving holiday and states that Magness "could even do the insulin infusion since you're not competing anymore?"[310] Magness, however, was unwilling to have an insulin infusion and said that Dr. Brown recommended against the insulin and had told him "we just have to order medical grade L-carnitine and then we can get this set up for after thanksgiving."[311]

a. Salazar asks Dr. Brown to perform L-carnitine infusion on Alvina Begay

In another email to Dr. Brown the day after Brown had agreed to undertake the L-carnitine infusion on marathoner Dathan Ritzenhein, Salazar reveals that he would also like to have Dr. Brown perform an L-carnitine infusion on female Oregon Project marathoner Alvina Begay. Salazar explained:

> Hi Dr.Brown, we've already got several tubs of the new sports drink which contains the LCarnitine. The athletes have been started, the problem is that their studies show it takes up 6 months of taking the drink to have the LCarnitine levels build up to the needed levels in the muscle cells. **W[e] don't have time for that buildup for Dathan and Alvina who are running the Marathon. If we can do the infusion with you, it will get their levels up immediately much like an iron infusion gets ferritin levels up quickly**. Once up, they can keep the levels there by continuing with the drink twice per day. We would have to order some pharmaceutical grade LCarnitine.[312]

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[309] 11/16/2011 Email from Alberto Salazar to Steve Magness Subject: Re: Dr. Harp- Oregon Project.
[310] *Id.*
[311] 11/16/2011 Email from Steve Magness to Alberto Salazar Subject: Re: Dr. Harp- Oregon Project.
[312] 11/15/2011 Email from Alberto Salazar to Dr. Jeffrey Brown CC: Steve Magness Subject: Re: Dr. Harp- Oregon Project (emphasis added).

b. Dr. Brown has L-carnitine IV solution prepared at a compounding pharmacy but omits the compounding pharmacy records from patient files

The medical records provided by Dr. Brown in response to USADA's request for medical records for Steve Magness, Dathan Ritzenhein, Dawn Grunnagle, Lindsay Allen and Tara Erdman, all athletes who received L-carnitine infusions from Dr. Brown, fail to identify the source of the L-carnitine used by Dr. Brown for their infusions. This omission is puzzling.

Emails between Steve Magness and Dr. Brown indicate that Brown likely had the L-carnitine infusion solution prepared by a Texas compounding pharmacy.[313] On November 18, 2011, in response to an email by Magness forwarding L-carnitine preparations found on the internet by Salazar, Brown said, "Steve, you can't inject this stuff. I will contact Monday the people who make our TRH[314] and see if they can get it."[315] USADA has identified Compounding Corner Pharmacy, 1730 Williams Trace Blvd., Suite K, Sugarland, Texas 77478-4055 Phone: (281) 494-7777 as a compounding pharmacy used by Dr. Brown to compound T3 for athletes. On March 15, 2016, counsel for Galen Rupp produced a document indicating that the L-carnitine infusion solution for Rupp's January, 2012, L-carnitine IV infusion from Dr. Brown was prepared at the Compounding Corner Pharmacy in Sugarland, Texas.[316] It is therefore

[313] Dathan Ritzenhein also testified in his interview that Dr. Brown told him the L-carnitine infusion bag was prepared for him by a compounding pharmacy.
[314] Thyrotropin-releasing hormone (TRH).
[315] 11/18/2011 Email from Dr. Jeffery Brown to Steve Magness Subject: L-carnitine.
[316] This document from the "COMPOUNDING CORNER PHARMACY, INC." is entitled "Logged Formula Worksheet" and references "L-CARNITINE (NS) 9.67GM/45ML INJECTABLE . . . Quantity Made: 100 ML . . . Date made: 1/4/2012." The document also indicates that four (4) 100 mL IV infusion bags of injectable L-carnitine were prepared. The document has been included as Appendix C to this Interim Report.

reasonable to believe that Dr. Brown may have had IV bags containing L-carnitine infusion solution prepared at the Corner Compounding Pharmacy. In any case, the compounding pharmacy should have been identified in the Steve Magness medical records provided by Dr. Brown's office to USADA but was not.

Emails from Nike Oregon Project employees related to a search for L-carnitine to be used in an infusion to be given to Oregon Project athlete Mo Farah in 2014 in advance of the London Marathon reflect that L-carnitine generally cannot be purchased directly by a medical practitioner in the United States. Rather, Oregon Project employees were told in 2014 that injectable L-carnitine could only be obtained by an entity authorized to prepare the infusion solution.

Therefore, it is unlikely that in 2011 Dr. Brown could have directly obtained injectable L-carnitine and for this reason as well Dr. Brown would likely have had to have purchased the infusion solution he used for the Steve Magness infusion pre-made from a compounding pharmacy. Consequently, records from the compounding pharmacy which prepared the infusate used in the L-carnitine infusions given to Steve Magness, Dathan Ritzenhein, Dawn Grunnagle, Galen Rupp, Lindsay Allen and Tara Erdman should have been contained in Dr. Brown's patient files for these patients. The absence of the infusion solution preparation records from the compounding pharmacy (which should have also contained information about the concentration of the L-carnitine solution and the volume of the infusion bags) raises questions about the sufficiency and completeness of the medical files forwarded by Dr. Brown's office to USADA and regarding whether those files were altered before submitting them to USADA.[317]

[317] The complete medical files for each Athlete Patient can be found in the Supporting Documents with the following page numbers USADA 000001 – USADA 001762. As noted

c. Magness does pre-infusion treadmill testing

The email correspondence between them reflects that Alberto Salazar and Steve Magness were both quite interested in discovering objective evidence of the impact that the L-carnitine infusion would have on Magness's exercise performance. On November 16, 2011, the very day that Dr. Brown agreed to perform the L-carntine infusion on Magness, Magness sent an email to the Brad Wilkins, Director of the Nike Sports Research Laboratory, asking if Wilkins was willing to do treadmill testing on Magness to confirm the impact of the infusion. Magness wrote:

> Hey Brad, We wanted to look into the possibility of testing whether an L-carnitine drink and/or infussion works to improve performance or not. There's been some good research, which I've attached, that shows that it can read to changes in fuel utilization that may delay glycogen depletion in marathoners and that it may alter fatigue mechanisms by altering muscle lactate accumulation. We wanted to test the drink ourselves by having me go through a baseline test, then **get an infussion of L-carnitine and then do a follow up test to see if any of the underlying physiology changed**.
>
> So, what we'd like to do is just use **a simple step test measuring gas exchange at paces that would range from sub-max to marathon effort to right below lactate threshold to see if there is a change in fuel utilization**. I'm thinking possibly a continuous 3min step test starting at around 6:00miles and working down to below 5:00 miles (about where my threshold should be). Of course, youre [sic] expertise on the chosen protocol would be great. Then follow that up with a way to test higher end fatigue. I'm a short max anaerobic test to exhaustion measuring post test blood lactate. So something like 5x3min step test followed by a max anaerobic test, maybe something that fatigues me in 60-90sec. I'm thinking the following:
> 3min- 6:00 pace
> 3min-5:45
> 3min-5:30
> 3min-5:15
> 3min-5:00
> 3min-4:45

previously, the medical records of Galen Rupp, Alvina Begay and Dawn Grunnagle were forwarded by their attorney to USADA and were not obtained directly from Dr. Brown's office.

> **We're looking at doing the infussion in TX after thanksgiving, so we'd have to do the test sometime this week or early next week if at all possible** I've attached the journal article on the drink. Let me know your thoughts. Open to any and all suggestions if this is feasible.[318]

Ultimately, Wilkins was unavailable to do the treadmill testing on Magness so it was done at another Nike laboratory on the Beaverton, Oregon Nike campus in November, 2011.

d. Brown administers an L-carnitine infusion to Magness on Monday, November 28, 2011 that is fully consistent with Dr. Greenhaff's Titration Study and exceeded WADA 50 mL limit

According to medical records obtained by USADA, Steve Magness received an L-carnitine infusion in the Houston office of Dr. Jeffrey Brown on November 28, 2011. The medical records from this infusion procedure include pre and post infusion blood testing records which identify Magness's levels for both insulin and carnitine (both free and total) before and after the infusion.[319]

In addition to the blood testing records, Steve Magness's medical file with Dr. Brown contains Dr. Brown's chart notes regarding the infusion procedure. These chart notes for the infusion procedure are set forth below so that they may be referred to in relation to the commentary that follows.

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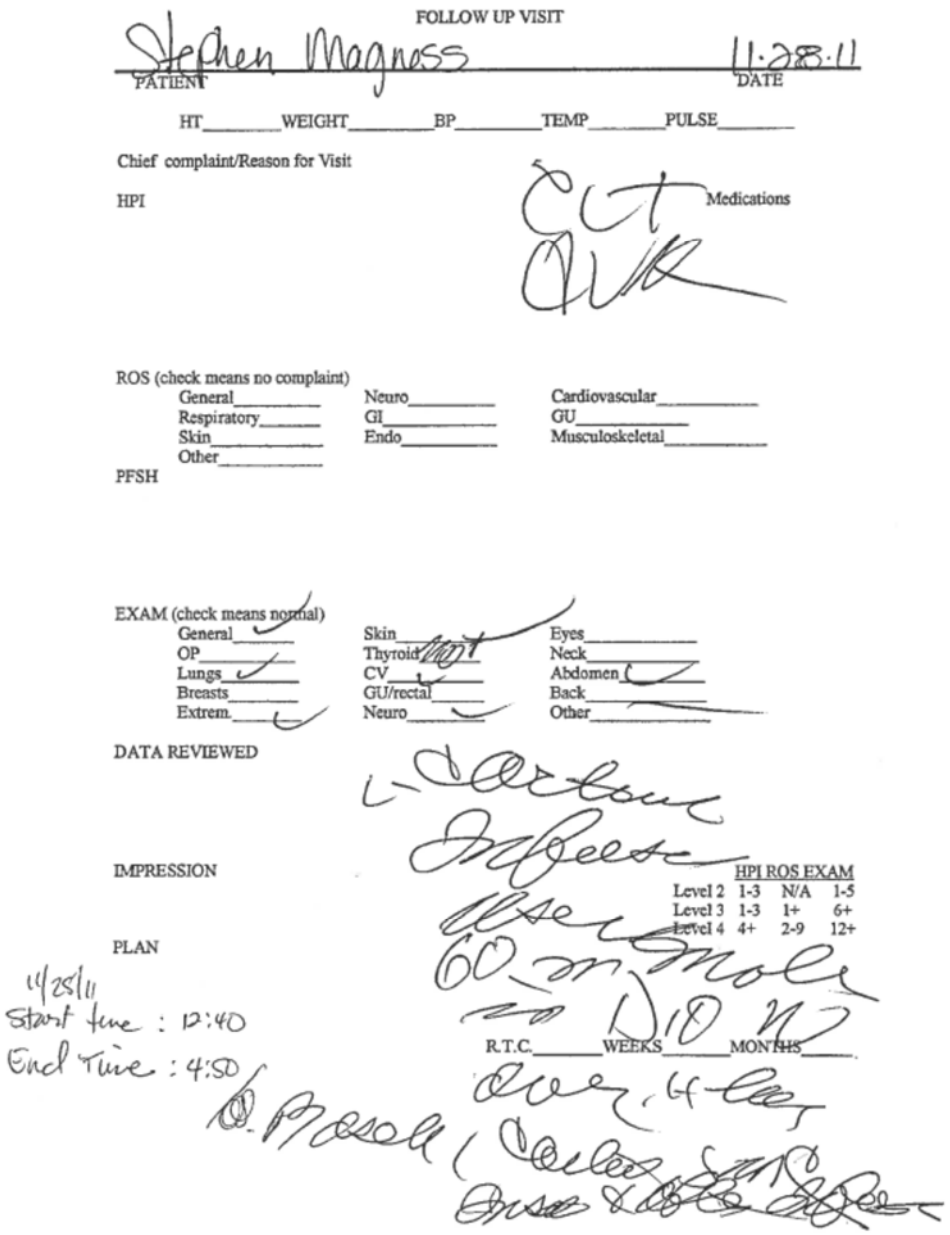
[318] 11/16/2011 Email from Steve Magness to Brad Wilkins Subject: testing Attachment: L-carnitine supplement research.pdf (emphasis added).

[319] A table which summarizes blood testing values for the infusions received from Dr. Brown by Oregon Project athletes as well as other information found in the patient records for each infusion is provided supra at p. 218. This chart entitled "Recorded Athlete Infusion Values" also permits a comparison of the various infusions, particularly with regard to what records are available from each infusion.

L-Carnitine Infusion Chart Notes for Steve Magness



FOLLOW UP VISIT

Stephen Magness — 11.28.11
PATIENT — DATE

HT_____WEIGHT_____BP_____TEMP_____PULSE_____

Chief complaint/Reason for Visit

HPI

Medications

ROS (check means no complaint)

General_____	Neuro_____	Cardiovascular_____
Respiratory_____	GI_____	GU_____
Skin_____	Endo_____	Musculoskeletal_____
Other_____		

PFSH

EXAM (check means normal)

General_____	Skin_____	Eyes_____
OP_____	Thyroid_____	Neck_____
Lungs_____	CV_____	Abdomen_____
Breasts_____	GU/rectal_____	Back_____
Extrem._____	Neuro_____	Other_____

DATA REVIEWED

IMPRESSION

	HPI	ROS	EXAM
Level 2	1-3	N/A	1-5
Level 3	1-3	1+	6+
Level 4	4+	2-9	12+

PLAN

11/28/11
Start time : 12:40
End Time : 4:50

R.T.C._____WEEKS_____MONTHS_____

Photo: Dr. Brown's 11-28-11 "Follow Up Visit" Note for Steve Magness (p. USADA 001017).

As explained above, Dr. Brown had been instructed by Magness and Salazar that the infusion was to be conducted in accordance with the Titration Study forwarded by Dr. Greenhaff. We also know that Dr. Brown must have had intravenous l-carnitine prepared at a compounding pharmacy with which Dr. Brown was familiar. Although Dr. Brown apparently removed the compounding pharmacy records from Steve Magness's medical file or never included them in the file, we know from Steve Magness that the l-carnitine solution was prepared in one or more IV bags and infused in him at Dr. Brown's office through a continuous gravity drip infusion from the IV bag and into his arm through a butterfly needle connected to the IV bag through plastic tubing.

According to the medical records, Dr. Brown and his office staff collected pre-infusion data on insulin, glucose and L-carnitine serum concentrations. Pre-Infusion insulin from Steve Magness was 11.1 mIU/mL which is normal for a non-fasted individual. Magness's glucose was 79 mg/dL, also normal for a non-fasted individual. His pre-infusion total carnitine level was 81 umol/L, slightly high, possibly due to pre-infusion use of the oral L-carnitine supplement.

As confirmed in the medical records, the L-carnitine infusion began at 12:40pm and ended at 4:50pm for a total infusion time of 4 hr 10min (i.e., 250min) which is identical to the duration of the infusion in the Titration Study. The medical notes also confirm Dr. Brown's use of a 60mM[320] L-carnitine solution mixed in 10% Dextrose water. The 60mM concentration of the L-carnitine solution is precisely the same L-carnitine

[320] The abbreviation "mM" refers to "Millimolar" (mM), a unit of concentration of a solution.

concentration that was used in IV solution used in the Titration Study by the Nottingham Group.[321]

The Swiss pharmaceutical company Lonza which manufactured the L-carnitine used in the Titration Study does not manufacture an injectable L-carnitine solution, rather, Lonza produces two L-carnitine products under the brand name "Carnipure." "Under the Carnipure™ brand, Lonza offers Carnipure™ crystalline, which is pure L-Carnitine, as well as Carnipure™ tartrate, a nonhygroscopic form made of L-Carnitine and tartaric acid."[322] Thus, for this reason as well, to perform the L-carnitine infusion on Magness, Dr. Brown would have required the assistance of a compounding pharmacy.

A "Follow Up Visit" note dated "11-28-11" in Steve Magness's records from Dr. Brown's office indicates: "L-carnitine infusion . . . 60 mMole in D10 over 4 hrs [.]" A handwritten note on the same page states: "11/28/11 Start time: 12:40 End time: 4:50 [.]"[323] This would be a period of 250 minutes which, again, is identical to the length of the L-carnitine infusion in the Titration Study.

As discussed above, "60 mMole" is a reference to the concentration of the L-carnitine solution. 60mMol is the equivalent of 9.67 mg/ml. 1,000 milliliters are

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[321] Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006, p. E638 ("Following a 1-h equilibrium period, a 5-h intravenous infusion of 60mM L-carnitine (Lonza, Basel, Switzerland) was begun in conjunction with the insulin clamp.").

[322] *See* http://www.lonza.com/about-lonza/media-center/news/2011/110215-lonza-eva-e.aspx .

[323] *See* Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006, p. E638 ("First, a bolus dose of 15 mg/kg was administered over 10 min to reach a plasma concentration of ~550 μmol/L. This was followed by a constant infusion at $10 \cdot mg \cdot kg^{-1} \cdot h^{-1}$ for the next 250 min to maintain a supraphysiological steady-state plasma carnitine concentration.").

contained in a liter and 1,000 milligrams are contained in a gram. Therefore, 9.67 grams dissolved in 1 liter of liquid would create a 60mMol solution.

"D10" is a common abbreviation for 10% dextrose IV solution.[324] These aspects of the records from the L-carnitine infusion on Magness are reproduced below.

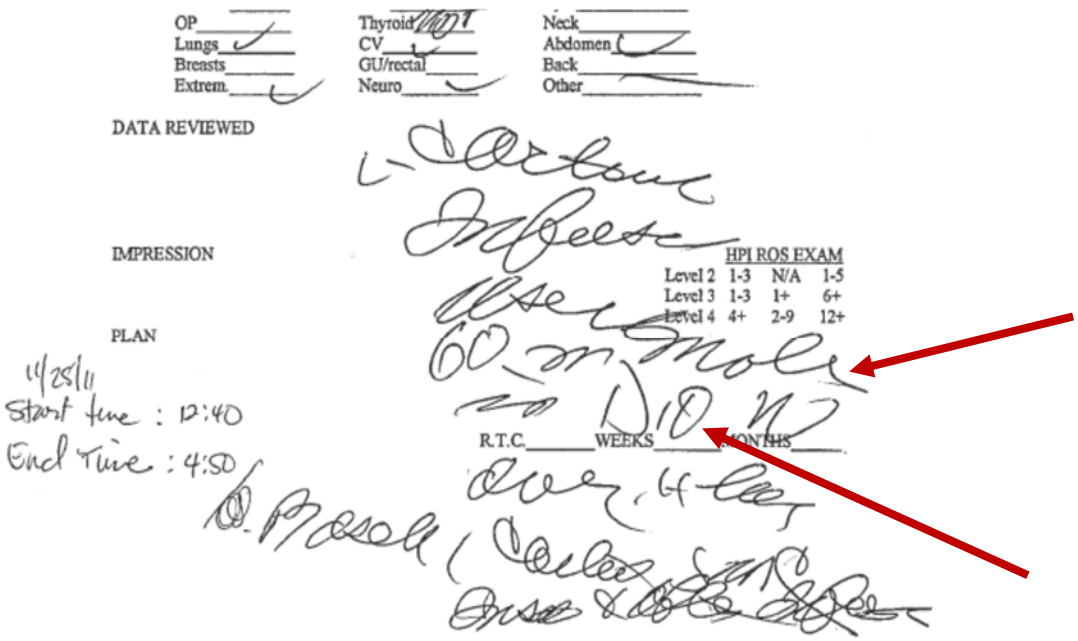

Photo: Excerpt from Dr. Brown's 11-28-11 "Follow Up Visit" Note for Steve Magness (showing references to concentration of L-carnitine – top arrow, and D10 (i.e., 10% dextrose solution) – bottom arrow).

Using the data in the Titration Study as well as the information in Steve Magness's medical records the volume of the Magness l-carnitine infusion can be estimated as exceeding the 50 mL limit for infusions applicable to athletes and athlete support personnel by the World Anti-Doping Code.

[324] *See, e.g.*, http://www.ncbi.nlm.nih.gov/pubmed/24735872; http://www.old.health.gov.il/units/pharmacy/trufot/alonim/1574.pdf .

As noted above, the 60 mMol solution used in the Magness L-carnitine infusion would result in an infusion of approximately 9.67 grams of L-carnitine if 1 liter of 60 mMol solution is used. Dr. Brown's notes from Dathan Ritzenhein's records from Ritzenhein's L-carnitine infusion indicate that Ritzenhein was administered "9.67 grams of L-carnitine over 1 hour."[325]

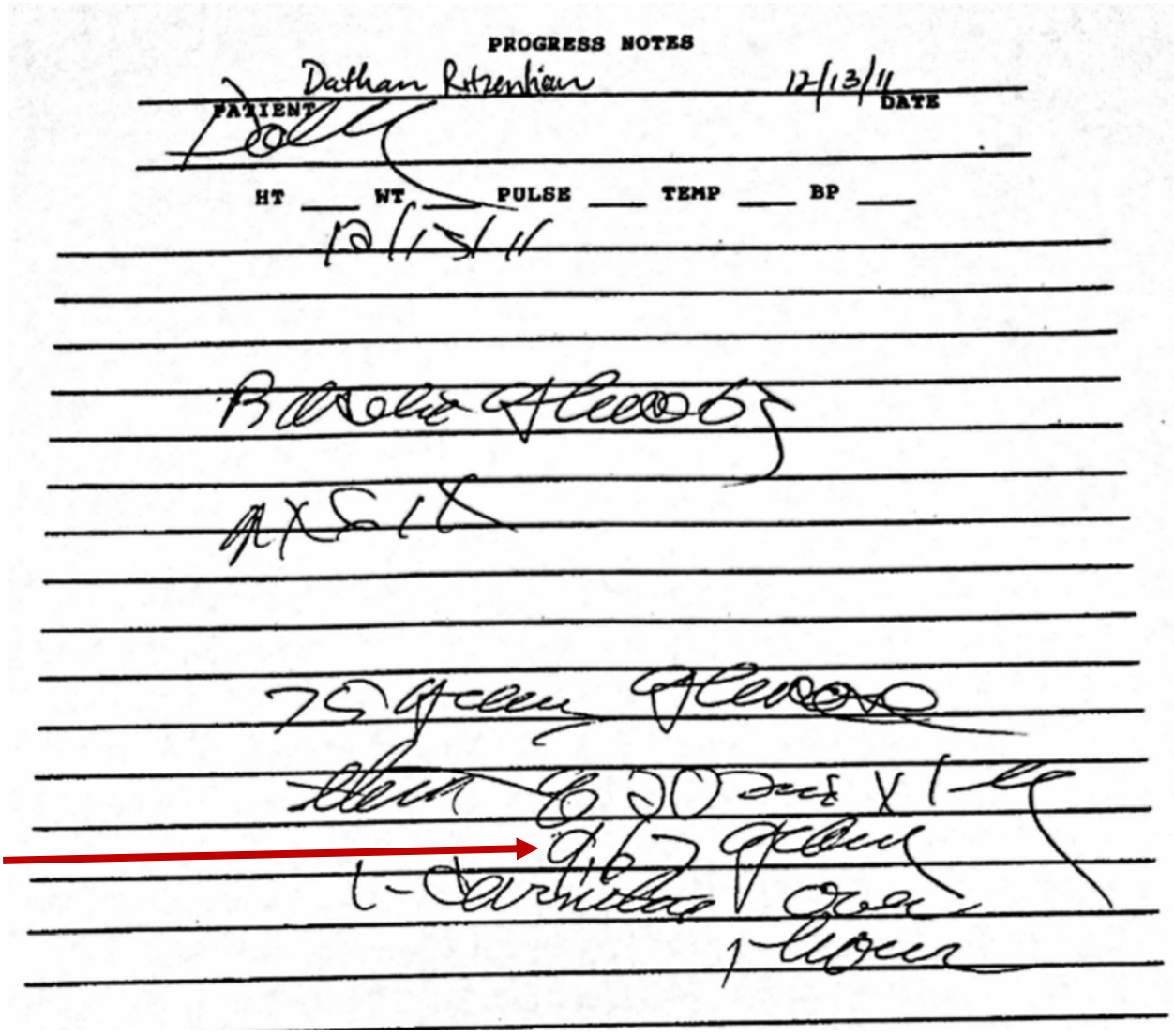

Photo: Excerpt from Dr. Brown's 12-13-11 "Progress Notes" Note for Dathan Ritzenhein (showing reference to "grams L-carnitine over 1 hour").

[325] *See* Dathan Ritzenhein medical records, p. USADA 000804.

As we shall see in the discussion that follows, there was no effort with Steve Magness's infusion to keep the volume of the infusion below any arbitrary limit, such as the 50 mL WADA infusion limit. Moreover, the point of the L-carnitine infusion and pre and post administration treadmill testing on Magness was to see if the effects of the Titration Study could be replicated and L-carnitine could be driven into the muscles through use of an infusion. There was no volume limit set forth in the Titration Study and it is clear that the Titration Study was being closely followed as the model for the L-carnitine solution received by Steve Magness. Thus, there is no reason to believe that Steve Magness would have received any less L-carnitine by weight than Dathan Ritzenhein and every reason to believe that, if anything, he would have received more.

Steve Magness's weight in close proximity to the time of the L-carnitine infusion, and as reflected in his medical records with Dr. Brown, was 150 pounds.[326] Dathan Ritzenhein's weight was about 17% less than Magness. Ritzenhein weighed in at 127 pounds the only time before the infusion that he was apparently weighed by Dr. Brown.[327] Accordingly, to obtain an equivalent L-carnitine plasma concentration from an infusion, Magness, the larger individual, would have required a greater amount of L-carnitine. Thus, for this reason as well, it would be unreasonable to believe that Steve Magness would have received less L-carnitine by weight than Dathan Ritzenhein. For these reasons it is safe to assume that Steve Magness received at least 9.67 grams of L-carnitine through a 60 mMol solution.

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[326] *Compare* Steve Magness medical records, p. USADA 001018 (Magness's weight on 8/15/2011 was 150 lbs.) and p. USADA 001021 (Magness/s weight on 8/19/2010 was 150 lbs.) *to* p. USADA 001016 (Magness's weight on 8/7/2012 was 150 lbs).
[327] Dathan Ritzenhein medical records, p. USADA 000802.

As explained above, using a 60mMol solution of L-carnitine and administering 9.67 grams of L-carnitine would require an infusion volume of 999.7994 mL or essentially exactly 1 liter. The most common sizes for infusion bags are 250 mL, 500 mL and 1000 mL.[328] Therefore, an infusion of 9.67 grams of L-carnitine at a concentration of 60mMol within a 10% Dextrose intravenous solution could be easily compounded to fit within the most typically available infusion bags; i.e., within 4x 250 mL infusion bags, within 2x 500 mL infusion bags or within 1x 1000 mL infusion bag. Thus, it appears very likely that the infusion volume administered to Steve Magness by Dr. Brown was at least 1000mL (i.e., one liter).

The conclusion that Magness received an infusion in excess of 50 mL can also be mathematically proved through calculation of the minimum amount of L-carnitine that would have been required for Magness to have registered the plasma L-carnitine levels that were measured in his blood sample drawn after his L-carnitine infusion. Magness's medical records include L-carnitine plasma levels both pre and post infusion. Pre-infusion total carnitine for Magness was measured at 81 H umol/L.[329] Post-infusion total carnitine for Magness was determined to be 2822 H umol/L,[330] reflecting at least a 3,348% increase[331] in the total carnitine level in his blood plasma brought about by the infusion.

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[328] *See*, *e.g.*, http://www.bbraunusa.com/products.html?id=00020743040000000427 (advertising that "10% Dextrose Injections" are "Available in 250 mL, 500 mL, and 1000mL EXCEL® IV Containers").
[329] Steve Magness medical records, p. USADA 001053.
[330] Steve Magness medical records, p. USADA 001056.
[331] Percent (%) increase = difference (increase) between the two numbers comparing; then, divide the increase by the original number and multiply the answer by 100.

Of course, the 3,348% increase is just a snapshot in time reflecting his increased plasma carnitine at the very end of the infusion procedure. The percentage increase may well have been higher at other points during the procedure.

By estimating the plasma volume of a 150 lb (68 kg) individual, we can estimate the minimum amount of L-carnitine that would be required to increase plasma carnitine levels by 3,348%. Of course, the resulting number will vastly underestimate the amount of L-carnitine used during the course of the *entire* infusion because it will not take into account the key aspect of the *length* of the infusion. Rather, it will only allow you to estimate the amount of L-carnitine needed to cause L-carnitine plasma concentration to peak for one brief moment in time.

However, as explained in the Titration Study, the point of the L-carnitine infusion is to "maintain a supraphysiological steady-state plasma carnitine concentration."[332] The point is not to merely bring plasma carnitine concentration to a peak and allow it to dissipate, rather the whole point of the procedure is to keep the plasma concentration at a "supraphysiological" level the entire time that insulin levels are being driven up, because it is only the combination of very high plasma carnitine concentrations and high insulin levels that permit carnitine to be loaded into the muscles. Therefore, estimating the amount of L-carnitine necessary to bring carnitine to a peak will underestimate the amount of L-carnitine used over the course of the procedure because much more L-carnitine will be required to sustain a peak plasma carnitine concentration.

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[332] Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006, p. E638.

Nevertheless, for our purposes determining the minimum amount of L-carnitine necessary to bring about the increase in plasma carnitine concentration observed between the pre and post infusion measurements is useful because it establishes a floor for the minimum amount of L-carnitine necessary to cause the increase. While we know that the actual amount of L-carnitine used will have been several times this floor, nonetheless, this floor can give us some insight into the amounts of L-carnitine that must have been used to generate the plasma carnitine concentrations that were measured in Steve Magness's blood plasma.

It is estimated that Steve Magness as a 150 pound (68 kg) individual would have a plasma volume of approximately 2805 mL. Using conservative calculations, with all inferences drawn in favor of the least possible amount of l-carnitine having been used, it can be calculated that Magness had to have been administered at least 3.85 grams of l-carnitine (and likely considerably more) in order to bring about the 3,384% increase in total carnitine concentration observed. Therefore, using the 60mM concentration of L-carnitine solution referenced in Magness's medical records we can conclude that, at a minimum, Magness must have received at least 400 mL of infusate in order to reach the total carnitine level measured in his medical records. Again, Magness may certainly have required several times this amount of L-carnitine to "maintain a supraphysiological steady-state plasma carnitine concentration."[333] Nevertheless, as explained above, a volume of 400 mL of infusion solution is within the range of the volumes used in the Titration Study and is consistent with an amount of L-carnitine reasonably expected

[333] Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006, p. E638.

based on the Nottingham Group's experience in the Titration Study to bring plasma carnitine concentration level up to the appropriate level for carnitine loading to occur.

These calculations from the plasma carnitine measurements obtained from Steve Magness at the time of his L-carnitine infusion therefore corroborate and confirm the conclusions that (1) Dr. Brown followed the Titration Study, and (2) on November 28, 2011, gave Steve Magness an l-carnitine infusion far in excess of the 50 mL per 6 hour limit set forth in the WADA Prohibited List.

In addition, Steve Magness has confirmed to USADA, and to others, that he is aware that he received an L-carnitine infusion in excess of the allowable limit under the WADA rules. For instance, on May 15, 2015, journalist David Epstein who wrote the Pro Publica stories concerning the Nike Oregon Project investigation and collaborated on the BBC documentary on the same topic asked Magness in an email about the L-carnitine injection Magness received:

> **The whole carnitine thing** won't be in the film at all. In case it's in written companions--not as something nefarious, but just noting what has recently been reported--**wanted to clarify: You were given injections at a volume that would've been banned for the active athletes, is that correct? And it improved your efficiency at lower paces?** ...I'm not sure if any of this would be mentioned, but just in case, **want to make sure**.[334]

Magness's response to Epstein was – "Those are correct."[335] Therefore, there can be no question that Steve Magness was aware that the L-carnitine infusion he received exceeded the WADA 50 mL per hour limit.

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[334] 5/15/2015 Email from David Epstein to Steve Magness Subject: three more quick fact checks.

[335] 5/6/2015 Email from Steve Magness to David Epstein Subject: Re: three more quick fact checks.

It is also clear that Dr. Brown and Alberto Salazar were aware that the infusion to Magness exceeded the 50 mL per hour limit. Dr. Brown had to have known the volume of the infusion as he was administering the infusion. As explained above, even though Dr. Brown may have removed the compounding pharmacy records from Steve Magness's medical file provided to USADA, it is still clear from the information that is in the records that were provided that the infusion exceeded 50 mL.

It is also apparent that Alberto Salazar knew that Magness got an L-carnitine infusion in excess of allowable limits. Salazar had received the Titration Study from Magness on October 19, 2011, and knew that the infusion to be given Magness would follow the Titration Study. Additionally, Salazar is the one who on December 3, 2011, sought permission from USADA to conduct L-carnitine infusions as a "clinical study." As Salazar knew that L-carnitine was not a prohibited substance, the only reason to seek authorization from USADA was if Salazar realized the proposed infusion volume exceed 50 mL. Further, Salazar's response to USADA's advice on the 50 mL limit confirms that Salazar was aware that the infusion given to Magness had exceeded 50 mL. Within hours of receiving USADA's advice Salazar wrote Dr. Brown:

> Hi Dr.Brown, I got this from USADA, so we can keep this for our records. **We will have to try the " less than 50 ml L-carnitine infusion "** after drinking that special medical drink designed to raise his Insulin levels.[336]

Plainly, if they were going to "have to try" a "less than 50 mL L-carnitine infusion" Salazar was aware that the prior infusion had exceeded 50 mL. If the prior infusion had equaled or been less than 50 mL there would have been no need to change the infusion

[336] Email from Alberto Salazar to Dr. Jeffrey Brown, Dathan Ritzenhein CC: Steve Magness Subject: FW: Call
Attachment: image2e4908.JPG; WADA_Medical_info_IV_infusions_3.0_EN.pdf (emphasis added).

volume. Indeed, insider testimony from Steve Magness and Dathan Ritzenhein confirms that USADA's email (which Salazar references in the email excerpt above) touched off a mad "scramble" to change the infusion protocol. Magness, Dr. Brown and Alberto Salazar were involved in this "scramble."[337] The only reason for the scramble was the understanding that Magness's infusion had broken the rules. Additionally, it is worth noting that Salazar's response regarding a need to try a "special medical drink designed to raised . . . Insulin levels" is indicative of his detailed understanding of the developing infusion protocol and confirms the testimony of Steve Magness and Dathan Ritzenhein that Salazar was deeply involved in specifics surrounding the infusion protocol and particularly in altering the protocol after the Magness infusion.

Finally, Dathan Ritzenhein was well aware that the infusion given to Steve Magness "was greater than 50 milliters."[338] This is why after the USADA email was received "there was a scramble to figure out a different way to do it."[339] One of the things Ritzenhein understood that they were doing to reduce the volume of the infusion was to give a glucose drink to raise insulin levels where the Magness infusion had included glucose in the infusate in order to stimulate insulin levels.[340] Again, there was no reason to adopt this change to the infusion protocol unless the Magness infusion had been in violation of the rules.

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[337] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 166, lines 17-18.
[338] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 170, lines 5-9.
[339] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 166, lines 8-10.
[340] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 170, lines 1-12. Steve Magness's medical records appear to reference dextrose as part of the infusion. *See* Magness medical records, p. USADA 001017.

e. The November 28, 2011 L-carnitine infusion to Steve Magness appears to have violated a number of sports anti-doping rules

Again, the reason why it is important to consider whether the Steve Magness L-carnitine infusion may have violated sport anti-doping rules is that Dr. Brown was a member of USA Track & Field and subject to sport anti-doping rules. Additionally, he was aware that sport anti-doping rules applied to the NOP athletes he was treating. Therefore, Dr. Brown had a duty not to put his patients in violation of sport anti-doping rules and those rules constituted an aspect of the standard of care applicable to Dr. Brown.

At the time that Magness received the L-carnitine infusion Magness was an assistant track and field coach with the Nike Oregon Project and he, Salazar, and Dr. Brown were all athlete support personnel subject to sport anti-doping rules. Salazar and Dr. Brown were members of USA Track and Field. Additionally, although not competing at a world class elite level Steve Magness was, at the time of the November 28, 2011 infusion, (and contrary to the subsequent claims of both Salazar and Magness) an active athlete competing in USATF sanctioned athletic competitions. For instance, on October 22, 2011, Magness competed in the USATF Oregon Cross-Country Championships in Portland, Oregon,[341] an officially sanctioned USATF competition.[342] Additionally, as of the time of the L-carnitine infusion, Magness was registered to compete in the upcoming Open Division of the USATF Club National

[341] https://www.athlinks.com/Athletes/57549298
[342] http://oregon.usatf.org/Events/Past-Events/Association-Champs.aspx

Cross Country Championships which were to take place on December 10, 2011 in Seattle, Washington.[343]

To Steve Magness's credit, it appears that he did not compete in the USATF Club National Cross Country Championships after receiving the November 28, 2011, L-carnitine infusion. Nevertheless, his eventual decision to not compete in a sanctioned event for which he had previously registered would not change Magness's responsibility to comply with the anti-doping rules. Magness's participation in a sanctioned event about a month before the infusion and his registration for an upcoming USATF national championship to take place less than two weeks after the infusion point to a conclusion that on November 28, 2011 Steve Magness was an active athlete bound to follow the anti-doping rules in the World Anti-Doping Code and the USADA Protocol.

The rules applicable to Brown, Salazar and Magness prohibited:

> Administration or Attempted Administration to any Athlete to any Athlete Out-of-Competition of any Prohibited Substance or any Prohibited Method that is prohibited Out-of-Competition.[344]

An infusion in excess of 50 mL of any substance (prohibited or not) within a 6 hour period is considered a "Prohibited Method."[345] Therefore, the November 28, 2011, infusion if in excess of 50 mL would have constituted the use of a Prohibited Method by Magness. Moreover, because Magness was, at the time of the infusion an active athlete still regularly competing and subject to sport anti-doping rules, Dr. Brown's act of providing an infusion to Magness of more than 50 mL if Magness was an active athlete

[343] http://www.usatf.org/events/2011/USATFClubXCChampionships/entry/status_Open.asp
[344] Code Art. 2.8.
[345] WADA Prohibited List.

would constitute the offense of "Administration" of a Prohibited Method in violation of the anti-doping rules.

"Administration" is defined as:

> Providing, supplying, **supervising**, **facilitating**, **or otherwise participating in the Use** or Attempted Use **by another Person of a** Prohibited Substance or **Prohibited Method**. However, this definition shall not include the actions of bona fide medical personnel involving a Prohibited Substance or Prohibited Method used for genuine and legal therapeutic purposes or other acceptable justification and shall not include actions involving Prohibited Substances which are not prohibited in Out-of-Competition Testing unless the circumstances as a whole demonstrate that such Prohibited Substances are not intended for genuine and legal therapeutic purposes or are intended to enhance sport performance.[346]

The foregoing definition makes clear that if the Magness infusion exceeded 50 mL and Magness was an active athlete then Alberto Salazar would also have engaged in the offense of "Administration" when he arranged for Magness, an active athlete employed by Salazar as his Assistant Coach at the Oregon Project, to receive an infusion in excess of 50 mL from Dr. Brown. It is clear that Salazar authorized Magness to travel to Houston in his capacity as an Oregon Project employee specifically in order to receive the infusion. Indeed, Magness understood that his participation in the L-carnitine infusion project was a job responsibility that was required by his boss, Salazar, and the emails between Salazar and Magness confirm this view. Moreover, Salazar communicated with Dr. Brown to procure Brown's services to administer the infusion and Salazar interacted with Dr. Brown and Magness concerning the specifics of the infusion. It is clear that the infusion would not have happened absent Salazar's insistence that an L-carnitine infusion program be developed in order to enhance the athletic performance of Oregon Project athletes. In relation to Magness's use of an L-

[346] Code definition of "Administration."

carnitine infusion Salazar also worked with Nike employees such as Brad Willis, Lisa Mielke and Meghan Williams to help arrange for the treadmill testing associated with the infusion and which was used to evaluate the success of the infusion. Each of these acts constituted supervision regarding, facilitation of, and participation in, the L-carnitine infusion received by Magness.

Additionally, the anti-doping rules proscribe "complicity" which is:

> Assisting, encouraging, aiding, abetting, conspiring, covering up or any other type of intentional complicity involving an anti-doping rule violation, Attempted anti-doping rule violation or violation of Article 10.12.1 by another Person.[347]

Clearly, if the Magness infusion exceeded 50 mL and if Magness was an active athlete when he received it Dr. Brown and Salazar both also engaged in complicity in violation of the rules for the assistance, encouragement, aiding, abetting, and conspiring which took place in relation to the infusion, as well as for the covering up and obfuscations related to the true nature of the infusion and the true volume of the infusion which would take place later.[348]

Athletes may not use a prohibited method, doing so violates Article 2.2 of the World Anti-Doping Code.[349] Additionally, athlete support personnel, including Alberto

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[347] Code Art. 2.9.
[348] At the time, "complicity" was an aspect of the offense of administration. Subsequently complicity became a stand-alone rule violation.
[349] Article 2.2.1 of the Code states:

> It is each Athlete's personal duty to ensure that no Prohibited Substance enters his or her body and that no Prohibited Method is Used. Accordingly, it is not necessary that intent, Fault, negligence or knowing Use on the Athlete's part be demonstrated in order to establish an anti-doping rule violation for Use of a Prohibited Substance or a Prohibited Method.

Article 2.2.2 of the Code states:

Salazar, Dr. Brown and Steve Magness, are also barred from possessing a Prohibited Method. The conduct barred by the possession rule is:

> Possession by an Athlete Support Person Out-of-Competition of any Prohibited Substance or any Prohibited Method which is prohibited Out-of-Competition in connection with an Athlete, Competition or training, unless the Athlete Support Person establishes that the Possession is consistent with a TUE granted to an Athlete in accordance with Article 4.4 or other acceptable justification.[350]

The November 28, 2011, infusion was given by Dr. Brown (and therefore possessed by him) to Steve Magness (and therefore used by Magness). This infusion was given in connection with a plan and strategy to assist athletes, prepare them for competition and advance their training. Therefore, in connection with the November 28, 2011 infusion, in the event it is established that the infusion exceeded 50 mL and Steve Magness is considered an active athlete then Dr. Brown is also liable for having possessed a prohibited method and Steve Magness would be responsible for having used a prohibited method.

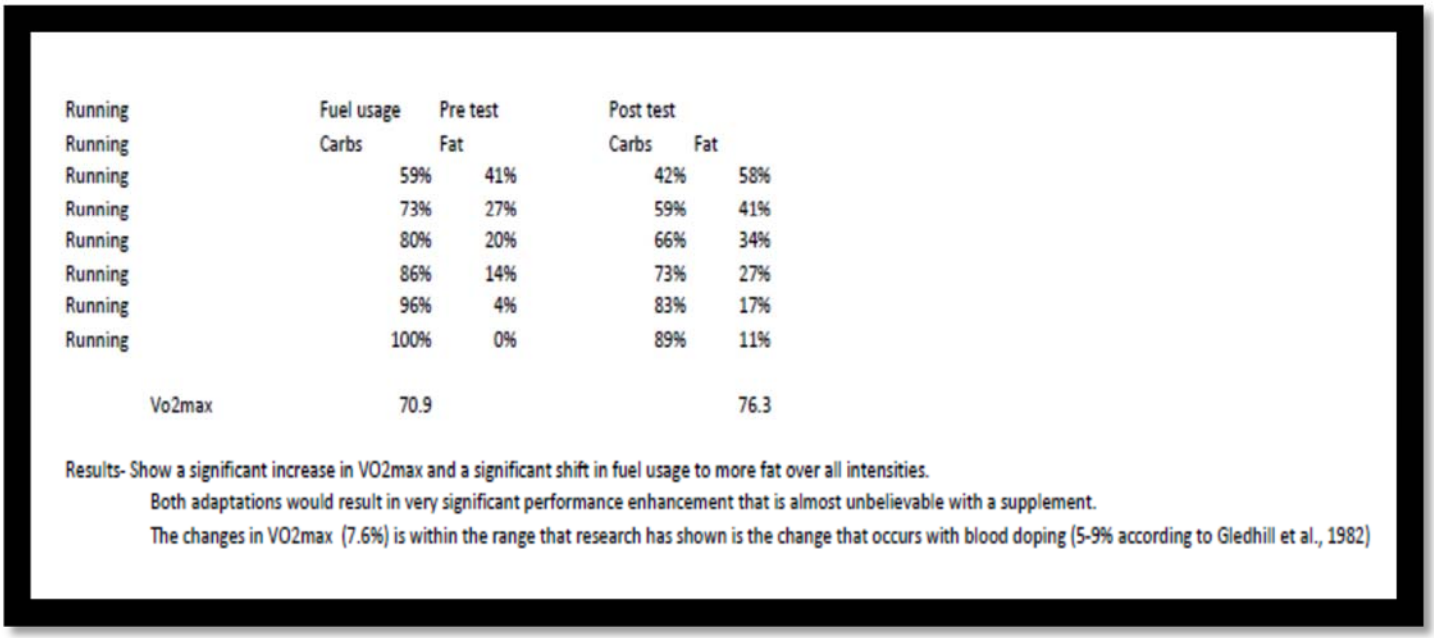
9. Thursday, December 1, 2011 - Report on Magness Treadmill Test Results

On December 1, 2011, three days after receiving his L-carnitine infusion, Steve Magness received the results of his post infusion treadmill test. Magness forwarded Salazar a spreadsheet. The results hit like a bombshell within the small community of elite athletes at the Oregon Project.

Here is what Alberto Salazar read –

> The success or failure of the Use or Attempted Use of a Prohibited Substance or Prohibited Method is not material. It is sufficient that the Prohibited Substance or Prohibited Method was Used or Attempted to be Used for an anti-doping rule violation to be committed.

[350] Code Art. 2.6.2.



		Fuel usage	Pre test		Post test	
Running		Carbs	Fat		Carbs	Fat
Running		59%	41%		42%	58%
Running		73%	27%		59%	41%
Running		80%	20%		66%	34%
Running		86%	14%		73%	27%
Running		96%	4%		83%	17%
Running		100%	0%		89%	11%
	Vo2max	70.9			76.3	

Results- Show a significant increase in VO2max and a significant shift in fuel usage to more fat over all intensities.
Both adaptations would result in very significant performance enhancement that is almost unbelievable with a supplement.
The changes in VO2max (7.6%) is within the range that research has shown is the change that occurs with blood doping (5-9% according to Gledhill et al., 1982)

Photo: Spreadsheet of Steve Magness Treadmill Test Results
(Attachment to December 1, 2011 Email from Steve Magness to Alberto Salazar).

The summary of the pre and post L-carnitine infusion data provided by Magness shows "a significant increase in VO2max[351] and a significant shift in fuel usage to more fat over all intensities." Magness reported:

> **Both adaptations would result in very significant performance enhancement that is almost unbelievable with a supplement**. **The changes in VO2max (7.6%) is within the range that research has shown is the change that occurs with blood doping** (5-9% according to Glehill et al., 1982).[352]

In other words, Magness was reporting to Salazar that the change in performance Magness experienced as a result of the L-carnitine infusion was in line with the performance enhancement brought about by the most powerful cheating method ever

[351] VO2 max is a measure of the maximum volume of oxygen that an athlete can use. It is measured in millilitres per kilogramme of body weight per minute (ml/kg/min). http://www.runningforfitness.org/faq/vo2-max .
[352] Excel spreadsheet entitled "L-carnitine drink" attached to 12/1/2011 Email from Steve Magness to Alberto Salazar Subject: Fwd: l carnitine (sent at 2:29 p.m.) (emphasis added).

devised for endurance athletes – *blood doping*. Salazar's excitement level literally went through the roof.

Soon after receiving Steve Magness's treadmill test results Salazar exuded his excitement over the test results to Lance Armstrong and a slew of top Nike Executives. He gushed:

> Lance, call me asap! **We have tested it and it's amazing**. You are the only athlete I'm going to tell the actual numbers to other than Galen Rupp. **It's too incredible**. All completely legal and natural! **You will finish the Iron Man in about 16 minutes less while taking this**.[353]

Salazar received his first copy of the spreadsheet with the Magness test results at 1:02 p.m. Pacific time.[354] By 1:11 p.m. Salazar had fired off his exuberant email to Lance Armstrong and the Nike Executive team. Within ninety minutes Dathan Ritzenhein had been told to call Dr. Brown to arrange to travel to Houston for an L-carnitine infusion.[355]

10. Thursday, December 1, 2011 -- Salazar and Brown Proceed with Arrangements for Further L-Carnitine Infusions

[353] 12/1/2011 Email from Alberto Salazar to Lance Armstrong, Steve Magness, Alberto Salazar CC: Fred Herlitz (Nike Senior Executive), Mark Parker (Nike CEO), Tom Clarke (then Nike President) Subject: RE: Recovery between 800's? (sent at 1:11 p.m.) (emphasis added). Interestingly, Tom Clarke was one of the Nike Executives who signed the contract between Nike and the Confederation of Brazilian Football referenced in the federal indictment involving the international soccer federation known as FIFA. See http://www.oregonlive.com/playbooks-profits/index.ssf/2015/06/phil_knight_and_former_nike_pr.html . Dathan Ritzenhein understood Clarke to be responsible for all sports marketing at Nike. Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 135, lines 16 – 19.

[354] The first spreadsheet that Salazar received from Magness did not have the reference to blood doping or any written description of the significance of the treadmill test results. This table of values without written comments was sent by Magness to Salazar and to Amy Hetherington of the Nike Lab at 1:02 p.m. on December 1. Magness added the written description of the significance of the blood test results and the reference to blood doping to a second version of the Excel spreadsheet that was sent only to Salazar at 2:29 p.m. on December 1.

[355] 12/1/2011 Email from Dathan Ritzenhein to Dr. Jeffrey Brown.

At 2:44 p.m. Pacific time on December 1, 2012, Dathan emailed Dr. Brown as follows:

> Hi Dr. Brown. Hope you are doing well. **I was told I should come down next week to get the L Carnitine infusion** and have you check me out anyway for a yearly check up. I am going on Monday to Albuquerque for the last six weeks before the trials marathon so it will be an easy flight from there. Is there any day that doesn't work next week for me to fly in? **About how long does it take? Just wondering if I can fly in earlier in the morning and head back that same night?** Thanks, look forward to seeing you.[356]

Dr. Brown's response indicates his understanding, as of December 1, that the infusion to be given Ritzenhein would track the 4 hour and ten minute IV infusion in the Titration Study as had Magness's November 28 infusion. Dr. Brown told Ritzenhein:

> **It takes about about 4-5 hours** and you could head back the same day. We will schedule it for Wednessday [sic] the 8th. Look and see how early that day you can get here.[357]

About five hours later Ritzenhein sent an email to Dr. Brown indicating that Ritzenhein has made arrangements to fly to Houston for the infusion on December 8. Ritzenhein wrote:

> Ok I'm all set for Thursday getting in at 9:30. I fly into Hobby so I'm not sure how far that is from the office but I should be able to get there pretty soon. I'll come straight to the office.[358]

Therefore, as of December 1, 2011, all indications are that it was "full speed ahead" on the plan for Oregon Project athletes to have L-carnitine infusions consistent with the Titration Study and the infusion protocol used on Steve Magness. In fact, by

[356] 12/1/2011 Email from Dathan Ritzenhein to Dr. Jeffrey Brown.
[357] 12/1/2011 Email from Dr. Jeffrey Brown to Dathan Ritzenhein (3:38 p.m.)
[358] 12/1/2011 Email from Dathan Ritzenhein to Dr. Jeffrey Brown.

the end of the day travel arrangements had been made for Dathan Ritzenhein to be the second individual to receive an L-carnitine infusion from Dr. Brown.

11. Friday, December 2, 2011 – Salazar Remains Enthusiastic About Magness Test Results

Furthermore, another day clearly did nothing to diminish Salazar's enthusiasm about Magness's treadmill test results. At 2:47 p.m. on Friday, December 2, 2011, Salazar sent the following enthusiastic message to Meghan Williams, (the Nike Wellness Center Manager, who had assisted Salazar and Magness with the treadmill testing before and after Magness's L-carnitine infusion):

> Hi Meghan, **thanks so much for all the help the last few weeks on the testing with Steve Mag[n]ess! The results are very promising ! I'm going to be meeting with Mark Parker probably next week to discuss them.** I would like to have one more athlete tested with the same protocol. Her name is Dawn Charlier [i.e., Dawn Grunnagle] and she has just joined our group so she is a very good candidate for this test as she isn't already taking the sports drink like all my other athletes have been for over two months. **Would it be possible to test her on the treadmill this coming up Monday, Dec. 5th?** Thanks for the consideration![359]

Mark Parker is the CEO of Nike, Inc. Salazar having sought to schedule a meeting with the Nike CEO within a day of receiving the Magness test results "to discuss them" is an indication that Salazar evidently considered the treadmill test results extremely significant.[360]

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[359] 12/2/2011 Email from Alberto Salazar to Meghan Simmons CC: Steve Magness Subject: RE: Just a thought.....

[360] While it is not known exactly why Salazar scheduled a meeting with the Nike CEO to discuss the Magness test results, we do know that at some point Salazar revealed to Dathan Ritzenhein that he wanted Nike to corner the market on the product and make it only available to Salazar's athletes. Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 132, lines 9 – 17.

Another indication of Salazar's state of mind on Friday, December 2, 2011, is the email he sent at 5:14 p.m. Pacific time to George Clouston seeking to order more of the proprietary Nutramet product. Salazar wrote:

> Hi George, Hope you're doing well. All my runners are doing great and have been on the drink for about two months. I've picked up a few extra runners, so I may run out before March so I thought I'd better go ahead and order another pallet now just to make sure there was no disruption in the protocol. I tried to look up Nutramet and BeSupreme online to see if I could order it direct[l]y without bothering you, but I couldn't find anything? **When do you plan to go to Market for anyone to be able to order it?** In the meanwhile can we get the wheels moving to get another pallet? If you'd like to send me an invoice for it, we'll be glad to arrange payment up front if you prefer to help with your cashflow. Thanks![361]

Salazar's question about when Clouston plans to take Nutramet to market (and when Oregon Project's rivals will be able to order it) is telling. Salazar plainly realizes that due to his exclusive access to the first shipment of Nutramet he has had more than a two month jump on his athletes' competitors.[362] Moreover, Salazar clearly believes by this date that the use of L-carnitine infusions will allow him to increase his runners' advantage to six months – the amount of oral L-carnitine loading that he believes can be avoided through an infusion. In his email to Clouston Salazar is obviously seeking both to ascertain the length of time his runners will have a competitive advantage and to ensure an uninterrupted supply of the Nutramet product for his runners.[363]

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[361] 12/2/2011 Email from Alberto Salazar to George Clouston CC: Alex Salazar, Steve Magness Subject: Nutramet Sports Drink (emphasis added).

[362] From the start Salazar had been telling his athletes to keep the Nutramet product secret as he viewed it as a competitive advantage. *See* Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 33, lines 18 – 24.

[363] Dathan Ritzenhein recalled that at some point in time Salazar talked about Nike potentially buying Nutramet out so that Oregon Project athletes would have exclusive access to the product. Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 132, lines 9 – 24.

Thus, by the close of business on Friday, December 2, 2011, all indications are that Salazar is very excited about the Magness treadmill testing results and is planning for Dathan to have his L-carnitine infusion in less than a week.

12. Dathan Ritzenhein Expresses Concerns Regarding L-Carnitine Infusion

However, apparently unbeknownst to Salazar, Ritzenhein had begun to have misgivings about having an infusion. Ritzenhein and his wife had spoken and he had told her that he had concerns with whether the proposed L-carnitine infusion was legal.[364] Dathan's wife had told him "you don't have to do it."[365] Dathan and his wife "had had this conversation for a couple of days at this point"[366] before Dathan went to Salazar.

Ultimately, his conversations with his wife led to Dathan expressing his misgivings to Salazar. Ritzenhein recalled that he "pushed back"[367] and he told Salazar, "Are you sure this is legal? This doesn't sound legal."[368] This was the first time that Ritzenhein ever recalls pushing back on anything like this with Salazar.[369] It was this conversation that Ritzenhein believes caused Salazar to contact USADA to gain the assurance Ritzenhein told Salazar he needed to get an L-carnitine infusion.[370]

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[364] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 38, line 11 – p. 39, line 14; p. 151, line 24 – p. 152, line 2.
[365] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 39, line 10.
[366] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 152, lines 16 – 17.
[367] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 155, lines 9 – 20.
[368] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 154, line 25 – p. 155, line 2; see also p. 152, lines 3 – 13.
[369] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 156, lines 7 – 24.
[370] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 155, lines 3 – 5; see also p. 153, lines 18-25.

Before contacting USADA Salazar told assured Dathan, they "would only move forward if it was clear through the rules[.]"[371]

13. Saturday, December 3, 2011 - Alberto Salazar Requests Permission from USADA for "a clinical test" involving "four to five athletes that would get an infusion of a sugar solution with LCarnitine, administered in a Doctor's clinic"

In response to Dathan Ritzenhein's concerns about the legality of the proposed infusion Salazar reached out to USADA. On Saturday December 3, 2011, Salazar left a phone message for USADA's Chief Operating Officer John Frothingham. Frothingham responded via email and Salazar emailed back asking for authority to give L-carnitine infusions to his athletes as part of a "clinical trial."

In a lengthy email sent at 5:40 p.m. Pacific time on Saturday, December 3, 2011, Salazar wrote to John Frothingham:

> Hi John, thx for calling, not urgent! The reason I called is that we're testing a new Sports drink out of the UK that is supposed to help you burn fatty acids longer by increasing LCarnitine stores in your mitochondria. This could be an aid for marathoners in particular. However one must take it for six months to take effect. I've got several of my athletes taking it for two months now but they and myself are balking at whether to continue not knowing if it will work. It's also very expensive, about $1000 per person for six months. **There is a way to immediately get the LCarnitine stores up in the mitochondria which involves doing an IV infusion of a sugar solution and LCarnitine.** The sugar causes an insulin spike that drives the LCarnitine into the muscles. **We tested the procedure with my assistant, Steve Magness** who has his Master's degree in exercise science. He went to a clinic to have it done by a doctor so that he could be monitored. His insulin levels did double from baseline from the solution. We had him do a specific treadmill test at Nike where he was monitored for fuel consumptions at different paces. He did this before the infusion, then a few days after the infusion. It appears to have helped him burn fat more efficiently during exercise. That is only a test of one person and he is not an elite athlete so **I'd like to try this test on a few of my elite athletes**. It would be **done as a clinical test** of the efficacy of this sports drink for endurance runners as a group, and also for individuals. Also, I

[371] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 38, line 24 – p. 39, line 1.

> have one athlete that is Native American. They have a high incidence of diabetes and her family specifically does, so she is leery of taking the drink long term unless she know it will help her and that an endocrinologist checks her out to see if she's at risk from taking this drink daily. Nike is also interested in these findings so **I wanted to ask permission for us to do a clinical test to evaluate this drink involving about four to five athletes that would get an infusion of a sugar solution with LCarnitine, administered in a Doctor's clinic.** They would do a specific treadmill test before and after infusions to see if the sports drink helps an endurance athlete. **Thanks for the consideration of this request**.[372]

Several things stand out about Salazar's statements in the foregoing email. First, it is apparent that Salazar is requesting permission from USADA to have infusions done *using the Titration Study protocol as administered to Steve Magness*. This is clear from the fact that Salazar requests permission to do "an IV infusion of a sugar solution and LCarnitine." Ultimately, the infusions that would be given to the athletes other than Magness would apparently not involve infusion of a sugar solution, rather in subsequent infusions the sugar used to drive up insulin levels would be taken orally. It is also clear that Salazar is seeking permission to use an infusion along the lines of the one given to Steve Magness a few days earlier because Salazar acknowledges he had already "tested the procedure with my assistant, Steve Magness." Therefore, as of December 3, 2011, Salazar was plainly seeking permission to do an infusion pursuant to the Titration Study/Magness protocol.

Second, Salazar asks for permission to give the infusions as part of "a clinical test" (he uses the term "clinical test" twice in his email) to be "administered in a Doctor's clinic." His repetitive use of the term "clinical" and "clinic" may reflect Salazar's appreciation of the wording of the WADA infusion rule at the time which stated

[372] 12/3/2011 Email from Alberto Salazar to John Frothingham Subject: Re: Call Time: 5:40 pm Pacific time.

""Intravenous infusions and/or injections of more than 50 mL per 6 hour period are prohibited except for those legitimately received in the course of hospital admissions or *clinical investigations*"[373] and possibly of his knowledge of the relevant WADA guidance document concerning the infusion rule which stated at that time that "if an intervention is part of a *clinical investigation* or hospital admission, there is no requirement for either an advance or retroactive TUE."[374]

Finally, Salazar requests permission to give the L-carnitine infusions to "four to five athletes." He would ultimately have L-carnitine infusions administered to at least five additional athletes in December 2011 and/or January 2012: Dathan Ritzenhein, Alvina Begay, Dawn Grunnagle, Galen Rupp and Lindsay Allen.[375] By the time of this email on Saturday, December 3, 2011, Salazar had already told Brown that he wanted infusions given to Ritzenhein and Begay[376] and had already organized a pre-infusion treadmill test for Grunnagle which she would complete on Monday, December 5, 2011.[377] Thus, it is clear that through his email to John Frothingham Salazar was merely seeking USADA's endorsement for the infusion plans Salazar had previously put in motion for most of his Oregon Project athletes.

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[373] WADA 2012 Prohibited List (circulated and implemented in the fourth quarter of 2011).
[374] WADA Medical Information to Support the Decisions of TUECs - Intravenous Infusion (Version 3.0) (September 2011), p. 1 (italics added).
[375] Oregon Project athlete Tara Erdman received an L-carnitine infusion from Dr. Brown in September, 2012. Oregon Project athlete Mo Farah received an L-carnitine infusion from British physician Robin Chakraverty in April, 2014. Salazar has conceded that he contemplated Farah receiving an infusion in 2012, however, he testified that Farah did not receive an infusion in 2012.
[376] 11/15/2011 Email from Alberto Salazar to Dr. Jeffrey Brown CC: Steve Magness Subject: Re: Dr. Harp- Oregon Project ("W[e] don't have time for that buildup for Dathan and Alvina who are running the Marathon. If we can do the infusion with you, it will get their levels up immediately much like an iron infusion gets ferritin levels up quickly.").
[377] 12/2/2011 Email from Alberto Salazar to Lisa Mielke, Dawn Grunnagle, Steve Magness, Bill Kellar CC: Meghan Simmons Subject: RE: Just a thought.....

Shortly after sending his request for permission to USADA, Salazar forwarded a copy of the request to Dathan Ritzenhein whose concerns had prompted Salazar to seek permission from USADA in the first place. Salazar wrote to Dathan:

> Hi Dathan, we are cutting edge but we take no chances on a screw up**. Everything is above board and cleared thru USADA**. They know me very well because **I always get an okay before doing anything!**[378]

Salazar's statement about always getting clearance with USADA "before doing anything" is both ironic and inaccurate. Salazar had, of course, not sought approval for Steve Magness's original L-carnitine infusion. Salazar did not seek approval of what he would characterize as a testosterone "sabotage test."[379] And, Salazar would later fail to seek approval for his revised L-carnitine testing protocol as to which he would, in fact, specifically advise his Oregon Project athletes not to inform USADA. Salazar's advice to his athletes one month later on January 5, 2012, would be:

> HI Dathan, Alvina ,and Galen, For your interest. **When asked about an Infusion, you are to say no.** LCarnitine and Iron in the way we have it done is classified as an injection. **So no TUE's and no declaration needed, not online and not when asked about infusions when getting drug tested in or out of competition**.. Thanks.[380]

Salazar's record on openness with USADA is therefore spotty at best.

14. Sunday, December 4, 2011 – Tempo Run with Magness, Ritzenhein, Rupp, Farah and Salazar

On December 4, 2011, six days after Steve Magness's L-carnitine infusion (and three days after the treadmill test results had been received), Dathan Ritzenhein went

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[378] 12/3/2011 Email from Alberto Salazar to Dathan Ritzenhein Subject: Fwd: Call (emphasis added).
[379] Discussed supra at pp. 87 – 95.
[380] 1/5/2012 Email from Alberto Salazar to Dathan Ritzenhein, Galen Rupp CC: Alvina Begay, Darren Treasure, Steve Magness, Alex Salazar Subject: F: ******* and permission to get an iron injection (emphasis added).

on a long, hard 15 mile tempo run with Galen Rupp, Mo Farah and Steve Magness.[381] Rupp was there to pace Ritzenhein who was in top shape with the Marathon Olympic Trials only a little over a month away.[382] The pace was a robust 4:50 per mile and given that pace, it was not anticipated that Magness would be able to stick with the group for long.[383]

Alberto Salazar accompanied the group on his bicycle.[384] During the run the conversation centered on the Magness treadmill test results and how "this [L-carnitine] stuff really works."[385] Everybody knew that Magness had just had an L-carnitine infusion,[386] and Magness was running so strongly that after a while the conversation switched to Magness, who should not have been able to keep up with Rupp and Ritzenhein, but was right there hanging in with them more than half way through the tempo run.[387] Ritzenhein recalled:

> Steve was not nearly as good as we were, basically. And he was . . . keeping up for a very long time to the point that I remember it distinctly, because it was very annoying, and Galen was quite upset about it afterwards that he was still, just kept hanging in there. . . it got annoying . . . **[Alberto] was kind of razzing Steve a little bit about how good he was looking and, maybe, that he should run the trials, make a debut marathon there, and stuff like that**, but it was just kind of like, **there was**

[381] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 140, line 1 – p. 141, line 14.
[382] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 141, lines 5 – 11.
[383] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 141, lines 4 – 22, p. 143, lines 5 – 8.
[384] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 140, lines 22 – 25.
[385] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 140, lines 13 – 15.
[386] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 143, lines 20 – 22.
[387] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 141, line 11 – p. 142, line 1.

> **excitement there**, but it was, **it was kind of fun**, you know, atmosphere, I guess, a little bit. He [i.e., **Alberto] was very giddy**.[388]

Everyone was shocked that Magness was able to run 10 miles at a 4:50 pace.[389] The group knew that Magness had had the infusion,[390] and everyone attributed Magness's performance to the L-carnitine.[391] Alberto got more and more excited.[392] Ritzenhein recalled that at that moment –

> I think it becomes more of a reality of it's not just something that Alberto talks about, and it never comes to fruition. **I mean, he was beefed up about it. He was very excited**.[393]

Also at that point, it was clear to Ritzenhein that Salazar desperately wanted each of his runners, including Ritzenhein, to get L-carnitine infusions.[394]

15. Tuesday, December 6, 2011 – USADA Rejects Salazar's Request to Approve "Clinical Test" and Recites 50 mL Infusion Limit

Salazar's request for USADA to approve his L-carnitine infusion proposal was responded to by USADA Science Director Dr. Matthew Fedoruk who called Alberto Salazar on Tuesday, December 6, 2011, and followed up with this email:

> Dear Alberto, Thanks for the call and it was a pleasure to speak with you. I've investigated your request and have concluded the following:

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[388] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 141, line 13 – p. 142, line 11 (emphasis added).
[389] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 142, lines 13 – 19, p. 143, lines 5 – 8.
[390] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 143, lines 20 – 22.
[391] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 141, lines 23 – 25, p. 142, line 1.
[392] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 142, lines 2 – 11.
[393] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 147, lines 11 – 15.
[394] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 145, line 7 – p. 146, line 4, p. 147, lines 6 - 11.

> Infusions or injections are permitted if the infused/injected substance is not on the Prohibited List, and the volume of intravenous fluid administered does not exceed 50 mL per 6-hour period.
>
> I've also attached the most up-to-date medical guidance issued by WADA on the topic of IV infusions so you can pass it onto the researchers you are working with in order to best design the research study to comply with the current WADA Prohibited List Standard.
>
> Finally, as mentioned on the phone, to clarify the definition of "clinical investigations" in the context of IV infusions, these are diagnostic procedures which require IV infusions of greater than 50mL per 6-hour period that would be necessary in a hospital or clinical setting in order to diagnose a legitimate medical condition.
>
> If you have any further questions, please do not hesitate to call or email me.[395]

Due to Dathan Ritzenhein's reluctance to proceed with an infusion without clear confirmation that the procedure was permissible under the anti-doping rules, and because of USADA's refusal to endorse Alberto Salazar's request for permission to circumvent the infusion rule by conducting a "clinical test," it had become clear that the Titration Study/Magness infusion protocol would have to be modified for Salazar's planned future L-carnitine infusions on Oregon Project athletes to fit within the anti-doping rules.

Alberto Salazar and his legal counsel have subsequently sought to characterize Alberto Salazar's December 3, 2011, email to USADA as notice to USADA about the nature of L-carnitine infusions that NOP athletes would subsequently receive and to cast Dr. Fedoruk's December 6, 2011, email as some sort of approval of those L-carnitine infusions which Salazar's athletes would later receive.[396] However, Dr.

[395] 12/6/2011 Email from Dr. Matthew Fedoruk to Alberto Salazar and John Frothingham Subject: RE: Call.
[396] *See*, *e.g.*, March 15, 2016, letter from John Collins to William Bock, p. 2.

Fedoruk's December 6, 2011, response was clearly not a grant of approval for future L-carnitine infusions. Nor could Salazar's December 3, 2011, email serve as notice about the nature of the L-carnitine infusions that would later occur, Alberto Salazar did not describe for Dr. Fedoruk the protocol for any future infusions. Rather, Salazar had only told Dr. Fedoruk about how the Magness infusion had been structured, and Dr. Fedoruk plainly did not endorse that prior infusion protocol. Rather, Dr. Fedoruk's response was to carefully and fully set forth the WADA 50 mL infusion rule and to make absolutely clear to Salazar that USADA was *not* endorsing any proposed L-carnitine infusions as a "clinical trial" as Salazar had requested.

16. December 6, 2011 – Dathan Ritzenhein Postpones Infusion with Dr. Brown

Furthermore, the responses of Alberto Salazar, Dr. Brown, Steve Magness and Dathan Ritzenhein to Dr. Fedoruk's December 6, 2011, email all demonstrate beyond any doubt that none of these individuals could legitimately view Dr. Fedoruk's email as approval of any future L-carnitine infusion protocol. Rather, each of these individuals understood Dr. Fedoruk's December 6, 2011, email to be clear and unequivocal confirmation that what had been done with Steve Magness's infusion was outside the WADA rules.

Dathan Ritzenhein's recognition that Dr. Fedoruk's email had put the "kibosh" on any plan to use an infusion like Magness had received is made clear by his immediate reaction to the Fedoruk email. About an hour after Dr. Fedoruk's email was sent Ritzenhein postponed his planned trip to Houston for an L-carnitine infusion. At 2:48 p.m. Pacific Time Dathan sent an email to Dr. Brown which stated in part:

> Hi Dr. Brown. Sounds like we should hold off on the trip to Houston for a little bit still while we figure everything out with USADA? I'll just cancel the flights and wait until we know what were doing.[397]

Dr. Brown's quick response to postponement of Dathan's trip to Houston was "Sounds good."[398] Clearly, Dr. Brown understood too, that Dr. Fedoruk had not endorsed the sort of infusion protocol used with Steve Magness.

17. Salazar's Prompt Direction to Proceed with "less than 50 mL L-carnitine infusion"

Less than four hours after Ritzenhein's postponement email, at 6:30 p.m. Pacific time on December 6, 2011, Alberto Salazar sent a blast email to Ritzenhein, Brown and Magness indicating there was now a *new* plan. Salazar forwarded Dr. Fedoruk's email and wrote:

> Hi Dr.Brown, I got this from USADA, so we can keep this for our records. **We will have to try the " less than 50 ml L-carnitine infusion " after** drinking **that special medical drink designed to raise his Insulin levels**. Perhaps we should try it on Steve:
> 1- get a baseline level
> 2- take the drink
> 3- 20 minutes later draw blood again, and take another drink
> 4- 40 minutes later draw blood again, and take another drink
> 5- 60 minutes later draw blood
>
> **Steve said that the drink may only raise insulin levels for 20 minutes**, so I was thinking in order to replicate the one hour long raised insulin levels from the other procedure, Steve would need to keep taking a drink every 20 minutes? Just a thought on my part, but I'll leave it up to you to figure out! Thanks![399]

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[397] 12/6/2011 Email from Dathan Ritzenhein to Dr. Jeffrey Brown (4:48 pm CST).
[398] 12/6/2011 Email from Dr. Jeffrey Brown to Dathan Ritzenhein CC: Alberto Salazar Subject: Re: Infusion.
[399] Email from Alberto Salazar to Dr. Jeffrey Brown, Dathan Ritzenhein CC: Steve Magness Subject: FW: Call Attachment: image2e4908.JPG; WADA_Medical_info_IV_infusions_3.0_EN.pdf (emphasis added).

Clearly, therefore, on December 6, 2011, Alberto Salazar also did not think Dr. Fedoruk had endorsed anything that Salazar had proposed about an L-carnitine infusion program. The lack of any endorsement from USADA was why Salazar was already working on a new plan to "try" a "less than 50 ml L-carnitine infusion" after drinking a "special medical drink." Thus, it is absolutely clear that Salazar's *post hoc* contention that he took Dr. Fedoruk's December 6, 2011 email as some sort of USADA approval of an L-carnitine infusion protocol is revisionist history and an invalid effort to imply an after-the-fact and non-existent USADA stamp of approval for his actions. Moreover, Salazar's effort to claim non-existent USADA approval for his conduct, referencing emails which do not reflect that such approval has been given, is part of a pattern of conduct with Salazar. As we will see, Salazar would again seek to contort emails exchanged with USADA as retroactive approval of a course of action Salazar never actually explained to USADA.

It is apparent from Salazar's December 6, 2011, email that in the few hours since Ritzenhein's postponement email Salazar had had conversations with both Steve Magness and Dr. Brown concerning how to proceed with the planned L-carnitine infusions. The fact that Salazar had conferred with Magness is apparent from the reference to what "Steve said." Salazar's prior communication with Dr. Brown is indicated by the fact that Salazar refers to the "less than 50 ml L-carnitine infusion" and by the reference to "that special medical drink designed to raise his Insulin levels" without a more detailed description. That Salazar assumes Brown's understanding of these otherwise relatively vague descriptions is a transparent indication that he and Dr. Brown have previously spoken about these terms.

As explained below, Dathan Ritzenhein would have his L-carnitine infusion on December 13, 2011, less than one week after the foregoing email from Salazar. Moreover, the medical records of Oregon Project athletes reflect that the procedure described by Salazar in his December 6, 2011, email, would be followed (more or less) in subsequent infusions given to Alvina Begay, Dawn Grunnagle, Galen Rupp, Lindsay Allen, and Tara Erdman, confirming Salazar's involvement in planning, supervising, facilitating, and otherwise participating in the administration of these L-carnitine infusions.[400]

Incredibly, despite the foregoing December 6, 2011, email from Salazar which reflects a clear intent to change the L-carnitine infusion protocol, and despite the fact that Salazar told Dathan Ritzenhein that the infusion protocol was being changed, and contrary to Ritzenhein's understanding from conversations with Salazar that the infusion protocol would be changed to conform to the requirements of the WADA 50 mL limit, Salazar testified in his USADA interview that he had *no knowledge* of any change to the infusion protocol used by Dr. Brown on NOP athletes who received infusions after Steve Magness. This testimony was a patent misrepresentation by Salazar. Here is the sequence of questions from Salazar's interview:

[400] Numerous emails between Salazar and Brown and between Salazar and each of the athletes also confirm Salazar's extensive involvement in the planning for each of the infusions. A chart identifying some of the measurements taken and testing performed during the infusions given to each of the NOP athletes is set forth *infra* at p.218. This chart reflects a change in the infusion protocol which tracks Alberto Salazar's Dec. 6, 2011, email for the infusions given to Begay, Grunnagle, Rupp, Allen and Erdman. The Ritzenhein infusion procedure more closely tracks the infusion given to Magness from the standpoint that there was no effort to measure blood sugar levels during the course of the Ritzenhein infusion as there was in the subsequent infusions. However, the Ritzenehein infusion protocol was apparently at least somewhat altered from the Magness infusion protocol, at least from the standpoint that Ritzenhein testified that he received an oral glucose preparation. Magness did not receive a glucose drink during his infusion, and the glucose used to spike Magness's insulin levels was administered solely intravenously.

Q In fact, sir, you knew that the procedure needed to be changed from Steve Magness's procedure, after you got this email from Matt Fedoruk, because Mr. Magness had received more than 50 milliliters, correct?

A I don't remember that, that he ever got, I don't remember him ever getting, I don't remember him ever telling me, or Dr. Brown telling me, that they were going to do anything that was not following the WADA and USADA rules.

Q Then why, sir, did you have to change the protocol for the IV?

MR. COLLINS: Objection. He never said he changed the protocol.

Q Didn't you understand that the IV protocol was changed after December 6th by Dr. Brown, by Steve Magness –

MR. COLLINS: Objection.

Q – and I believe possibly others.

MR. COLLINS: Asked and answered.

A I don't remember that.

Q You don't remember that?

A No. I don't remember that there was some change.[401]

The foregoing interview testimony from Salazar about allegedly not being aware that the infusion protocol was supposed to change is not credible. Emails from Salazar, Brown, Magness and Ritzenhein all clearly demonstrate that Salazar was aware of changes in the L-carnitine IV infusion protocol after December 6, 2011 and that Salazar participated in developing the changes. Furthermore, Salazar's participation in changing the protocol is confirmed by the testimony of Ritzenhein and Magness.

[401] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 138, lines 2 – 25 (emphasis added).

18. Treadmill Testing

Throughout much of December 2011 and January 2012, simultaneously with communications with Dr. Brown regarding logistics related to the L-carnitine infusions, both Alberto Salazar and his assistant coach Steve Magness carried on a steady conversation with individuals in the two Nike laboratories and at the University of New Mexico laboratory in Albuquerque, New Mexico concerning arrangements for treadmill testing to be performed before and after the infusions on some of the athletes who would get the L-carnitine infusions.

As noted above, Magness described the purpose of performing testing on Magness (before and after his infusion) to the Director of the Nike Sports Research Laboratory:

> We wanted to look into the possibility of testing whether an L-carnitine drink and/or infussion [sic] works to improve performance or not. There's been some good research, which I've attached, that shows that it can read to changes in fuel utilization that may delay glycogen depletion in marathoners and that it may alter fatigue mechanisms by altering muscle lactate accumulation. We wanted to test the drink ourselves by having me go through a baseline test, then get an infussion of L-carnitine and then do a follow up test to see if any of the underlying physiology changed.[402]

As Magness stated, the purpose of the treadmill testing on him was to give Salazar and Magness some information on the effectiveness of L-carnitine loading on improving athletic performance. While both Magness and Salazar described treadmill testing before and after the Magness infusion as useful for evaluating the effectiveness of the Nutramet drink, the testing could really do nothing more than provide some information about the efficacy of *the infusion protocol* in improving athletic performance.

[402] 11/16/2011 Email from Steve Magness to Brad Wilkins Subject: testing Attachment: L-carnitine supplement research.pdf

The point that treadmill testing on Steve Magness really would not confirm or deny the validity of the Nutramet drink was pointed out by the Nike Sports Research Lab Director on November 17, 2011. In an email to Steve Magness that Magness promptly forwarded to Alberto Salazar, Brad Wilkins said:

> Hey guys, I guess I am not really clear on what question you would be getting after with doing a VO2 test on one subject. I read through this article and **I see no reason to question this data. It is fairly clear data, published in an extremely reputable journal (actually the most reputable journal in our field). They have muscle biopsy data and performance data (which is rare) suggesting that 24 weeks of ingestion improves performance, delays glycogen depletion (at 50% Vo2) and reduces lactate during 30 min of exercise at 80% VO2 max. Which is impressive. With that said, I do not know what more we can add to this data by simply doing a VO2 test, or "anaerobic" Wingate test on one subject here in the lab.** If the supplement is truly shifting metabolic pathways toward fat oxidation (which is what it should do) the study variables measured are the best to show that, and it seems to show that in 7 subjects (one study). I guess **what I am saying is that this study shows more about why and how this works than we would show by simply collecting VO2 data here in the lab**.
>
> Secondly, timing wise, we do not have time to do this before thanksgiving anyway. If you really think VO2 data are necessary, the BO has a similar system to ours and they may be able to modify a protocol to fit your needs, but I am not sure. If you want to talk about the most appropriate protocol, I would be happy to sit down and help with that discussion. However, like I said, I am not sure what information we could add to the published data.
>
> Let me know if you want to discuss the most relevant protocol.[403]

Thus, weeks before Salazar came to USADA claiming that he was seeking permission to do a "clinical trial" for research purposes in order to test the Nutramet sports drink the Director of the Nike Sports Research Laboratory had shot down the

[403] 11/17/2011 Email from Brad Wilkins to Alberto Salazar and Steve Magness Subject: testing (emphasis added).

idea that the treadmill testing proposed by Salazar could add anything significant to the published data on L-carnitine loading and its impact on sport performance.

Salazar's true overriding motive for doing treadmill testing before Steve Magness's L-carnitine infusion was to try to figure out if such an *infusion* would improve his athletes' immediate sport performance, not merely to contribute to scientific research on the Nutramet *sports drink*. Salazar made his overriding motive clear in his response to Wilkins when Salazar said:

> I have had **Dathan** taking the LCarnitine for 6 weeks, he **has another 9 weeks until the Trials Marathon. That gives him 16 weeks total, not enough according to their study**. Alvina Begay is my other runner, she has a history of Diabetes in her family, so she doesn't want to take the drink twice per day for six months**. If we do an infusion on the athletes we can get the LCarnitine stores up immediately**. I don't know of I ca[n] find a doctor in town to do this for sports enhancement. If so its very expensive, Alvina had an iron infusion and it cost me $1800. Before doing these costly infusions I'd like to be assured that the LCarnitine storage via the drink will actually work.

Here, Salazar is saying that he is hopeful that L-carnitine infusions will get his runners' "L-carnitine stores up immediately," and he wants treadmill testing done on Magness to confirm this is the case. Salazar is also saying that if the infusion test works on Magness and improves Magness's exercise performance on a treadmill test that Salazar will want his runners to get infusions but is not sure that he "ca[n] find a doctor in town to do [infusions] for sports enhancement." Consequently, Salazar anticipates that the infusions will be very costly and "[b]efore doing these costly infusions" Salazar wants to be assured that the whole process will work.

Understanding Salazar's true motives concerning the pre and post infusion treadmill testing is important for several reasons. First, Salazar told USADA that his motive was scientific research. Demonstrating that Salazar was not being fully forthright

concerning his motives is relevant to consideration of Salazar's state of mind and whether he would have knowingly engaged in conduct in violation of sports anti-doping rules. In other words, if Salazar was willing to obfuscate about the reason for wanting to do the infusions, he is more likely to have been willing to hide the truth about the volume of the infusions. Second, the fact that Salazar acknowledged that he desired to do infusions "for sports enhancement" and was unlikely to be able to find a physician in Oregon to provide infusions for this purpose is relevant to whether Dr. Brown likely violated medical ethics by giving infusions for a non-medical purpose.

In fact, Alberto Salazar acknowledged to Dr. Brown that (contrary to what Salazar had previously written to USADA) the effectiveness of the Nutramet drink really could not be tested through the pre and post infusion treadmill tests. In a December 9, 2011, email Salazar cited Dathan Ritzenhein's prior use of the Nutramet drink as a reason why it would be pointless to do pre and post infusion treadmill testing on him. Salazar told Dr. Brown:

> . . . on dathan **we don't need to do a treadmill test first as he's already been on the drink for three months so the test wouldn't be valid**. He's already treated by you and USADA has just told us this procedure is okay, so **let's just go straight to the infusion on him**.[404]

The foregoing email by Salazar, written just days after Salazar represented to USADA that he wanted to do a "clinical test" to determine the efficacy of the Nutramet sports drink, demonstrates that Salazar knew that the testing he proposed doing would not truly be useful in evaluating the effectiveness of the *sports drink*. Rather, the pre and post infusion testing would really only gather evidence potentially useful to evaluate

[404] 12/9/2011 Email from Alberto Salazar to Dr. BrownJ (5:58 pm EST) CC: Dathan Ritzenhein Subject: Re: Infusion (emphasis added).

the effectiveness of L-carnitine *infusions*. The foregoing email also demonstrates that Dr. Brown knew that Ritzenhein's infusion was for sports enhancement and not for any medical, health or research purpose.[405]

Moreover, Salazar's statement that treadmill testing for Dathan Ritzenhein "wouldn't be valid" confirms that the real motive behind Salazar's request to USADA just days earlier was not, as he claimed to USADA, to simply gather research data concerning the Nutramet sports drink. Rather, Salazar's December 9 email concerning Dathan Ritzenhein demonstrates that Salazar sought to hoodwink USADA into providing permission for Salazar's athletes to receive prohibited infusions based on an intentionally false premise that USADA would merely be approving a *research study* for the "four or five athletes" whom Salazar sought to include in the study.

When he made his request of USADA Salazar knew full well that as to Ritzenhein's participation Salazar had no research purpose whatsoever – he knew

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[405] In contrast, in his interview with USADA Salazar blamed Dathan for deciding not to do the treadmill tests. When asked why Ritzenhein did not have the treadmill testing Salazar said:

> **He may not have wanted to do it. I don't remember.** Some of the athletes just decided to just take the drink, and they felt that the treadmill tests that we had done seemed that, perhaps, this drink was going to be effective in helping them. . . .
>
> **I don't know where Dathan was when we did the treadmill tests. Maybe he was on a break. Maybe he was away on a training camp. I don't know.** Not everyone did the treadmill tests. Some people just took the drink often. Athletes take supplements without doing some sort of tests on them. They do it on the basis of research or whatever, that's how it works.

Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 121, line 22 – p. 122, line 14 (emphasis added). In light of the clear record in Salazar's emails that Salazar, in fact, personally made the decision that Ritzenhein would not participate in the treadmill testing, it is clear that the foregoing response by Salazar was not honest.

Ritzenhein would not take a treadmill test.[406] Rather, with respect to Dathan Ritzenhein Salazar's only motivation was to deceive USADA into authorizing a research study when, in fact, Salazar's only intent was that Dathan obtain the infusion to enhance his sport performance at the upcoming U.S. Olympic Marathon Trials. This point concerning Salazar's knowingly false statement to USADA and his true motive for the L-carnitine infusions is further supported by numerous emails in which Salazar stated that Ritzenhein needed an L-carnitine infusion because there remained insufficient time before the U.S. Olympic Marathon Trials for him to obtain maximal L-carnitine loading through oral supplementation.[407]

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[406] Because he knew that taking the test would be pointless due to Ritzenhein's prior use of the Nutramet drink.

[407] *See*, *e.g.*, 9/28/2011 Email from Alberto Salazar to Steve Magness Subject: Nutramet Invoice ("In their article it talks about getting the same results in a few days with infusions. . . **For everyone else we have time for the supplement to work, for dathan we may not**."); 11/14/2011 Email from Alberto Salazar to George Clouston ("For my marathon runners we may try an infusion as they'll only have bee[n] taking it for four months **by the date of our Marathon Olympic trials** -Jan.14."); 11/14/2011 Email from Alberto Salazar to Steve Magness CC: Dr. Jeffrey Brown Subject: Dr. Harp- Oregon Project (" . . . without doing the infusion it takes up to six months to build up the Lcarnitine levels in the muscle cells **we don't have enough time for DThan to get it up there because the marathon trials are in two months**."); 11/14/2011 Email from Alberto Salazar to Dr. Jeffrey Brown, Dathan Ritzenhein CC: Steve Magness Subject: Re: Dr. Harp- Oregon Project ("Hi Dr.Brown, **what if we just try it [the infusion] with Dathan**? We have nothing to lose, **if it works it will get his Lcarnitine levels up quicker**. If it doesn't, there's no harm."); 11/15/2011 Email from Alberto Salazar to Dr. Jeffrey Brown CC: Steve Magness Subject: Re: Dr. Harp- Oregon Project ("**W[e] don't have time for that buildup for Dathan** and Alvina who are running the Marathon. If we can do the infusion with you, it will get their levels up immediately[.]");11/17/2011 Email from Alberto Salazar to Brad Wilkins CC: Steve Magness Subject: testing ("**Finding a doctor in Portland to do the infusion on the basis of testing a sport supplement is going to be very hard**. I believe that this supplement is the real thing and **want to have it ready to use in my runners that are doing the Olympic Trials Marathon on Jan.14th**."); 11/17/2011 Email from Alberto Salazar to Brad Wilkins CC: Steve Magness Subject: testing ("I have had Dathan taking the LCarnitine for 6 weeks, he has another 9 weeks until the Trials Marathon. That gives him 16 weeks total, not enough according to their study. Alvina Begay is my other runner. . . **If we do an infusion on the athletes we can get the LCarnitine stores up immediately**.") (bolding added in foregoing quotes).

19. December 9, 2011 – Dathan Ritzenhein Agrees to Proceed with Infusion by Dr. Brown

Although Dathan Ritzenhein was not enthusiastic about getting an L-carnitine infusion he felt that because Salazar wanted him to get it and had explained convincingly that the infusion would not violate anti-doping rules that Ritzenhein had no choice but to get the infusion. In essence, Ritzenhein felt that he was on a "short leash" and had used up a lot of good will with Nike and with Salazar by having been injured for the past year. Ritzenhein recalled:

> I used up a lot of budget, and a lot of patience over the previous couple of years. I had really been good really good in 2009, and there was a lot of promise and basically had been injured ever since, and so I felt the pressure to have him [Salazar] on my side, when that came to pass.[408]

Ritzenhein said that, although he had raised the concern about whether the procedure was legal, once Salazar gave him "rationale from him and evidence, according to him, that it was"[409] legal, by forwarding the "correspondence that [Salazar] had with Matt Fedoruk about what the WADA guidelines were for IV infusions and injections"[410] that Ritzenhein felt he had no choice but to go through with the infusion.

Ritzenhein's wife at this point still had "reservations" about the proposed L-carnitine infusion and told him, "you don't have to do it,"[411] but Ritzenhein said he responded to her, "if you want to be in the Oregon Project, and you want Alberto to

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[408] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 41, lines 10-16.
[409] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 41, lines 23-24.
[410] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 42, lines 4-6.
[411] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 159, lines 19-20.

coach you, you have to do it."[412] Ritzenhein felt he had no choice other than to get the infusion or leave the Oregon Project, "[t]here's no way for me to get around it at that point, in my eyes."[413]

Consequently, on December 9, 2011, Ritzenhein sent the following email to Dr. Brown:

> Hi Dr. Brown. **Talked to Alberto and it Sounds like we are going to do the 45ml infusion with the drink**. Does it work for me to come on tuesday to have it done? If so do I understand it right that it will take less time than the original way? I was thinking if that is the case I would come in on the 12:30 arrival flight so that I can run before I leave here. Let me know if that is ok.[414]

Dr. Brown's response reflects the degree of control that Alberto Salazar is exercising over the infusion process; Dr. Brown says – "Let me talk to Alberto and I will get back to you. It is certainly a thing that we can do."[415]

Salazar gets back to Ritzenhein and Dr. Brown, authorizing Brown to proceed directly to the infusion without any treadmill testing. Salazar instructs:

> Hi Dr.Brown, on dathan we don't need to do a treadmill test first as he's already been on the drink for three months so the test wouldn't be valid. He's already treated by you and USADA has just told us this procedure is okay, so let's just go straight to the infusion on him. Thx![416]

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[412] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 159, lines 21-22.
[413] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 160, lines 1-2.
[414] 12/9/2011 Email from Dathan Ritzenhein to Dr. Jeffrey Brown Subject: Infusion (emphasis added).
[415] 12/9/2011 Email from Dr. Jeffrey Brown to Dathan Ritzenhein Subject: Infusion.
[416] 12/9/2011 Email from Alberto Salazar to Dr. Jeffrey BrownJ CC: Dathan Ritzenhein Subject: Re: Infusion.

The next day, Dr. Brown's response to Dathan and Salazar is, "Let's do it then."[417] This sequence of emails, first Dr. Brown telling Dathan that he needs to check with Salazar and then Salazar directing Dr. Brown to give the infusion without waiting for treadmill testing, reflects that, contrary to what Alberto Salazar claimed in his USADA interview, the L-carnitine infusion program was truly run by Alberto Salazar with assistance from Dr. Brown and Steve Magness and was not orchestrated primarily by Magness and Brown as claimed by Salazar.

20. December 12, 2011—L-Carnitine Infusion Protocol Still Not Set

As noted in the December 9, 2011 email from Dathan Ritzenhein above, by that date, Alberto Salazar had told Dathan Ritzenhein that Dathan would be receiving a "45 mL infusion with the drink." Therefore, based on what he had been told by Salazar, Ritzenhein made arrangements to fly to Houston, Texas, and have his infusion on December 13, 2011.

Yet, email correspondence from Steve Magness from three days later, on December 12, 2011 – the day before Ritzenhein's scheduled infusion procedure, reflects that by about noon Pacific time on December 12 Steve Magness still apparently does not know what the infusion procedure will be and believes that the details of the procedure still remain to be worked out. Magness emails Dawn Grunnagle at 11:45 a.m. Pacific time (1:45 p.m. Central time) on December 12 as follows about Grunnagle's upcoming infusion:

> Hey Dawn, **We're finalizing the procedure**. I'm going through everything to make sure you're all good.

[417] 12/10/2011 Email from Dr. Jeffrey Brown to Dathan Ritzenhein and Alberto Salazar Subject: Infusion.

> But **what we'll be doing will take about 80minutes**. ANd **it simply consists of you taking a drink every 20minutes before you get an infusion**. So **that's 4 drinks and 4 little drips of infusion essentially**. Completely safe with the only side effect being the sugary drink you have to drink four times :)
>
> **I'll get you a step by step protocol once I talk to our doctor on wednesday**. Again, it's completely safe and has been done in numerous research studies, just never with athletes as fast as you! **It's a great research study we're doing and thanks for doing this. It helps us a lot and it will help you a lot to if you respond anything at all like my test did**, which there should be no reason why you don't.
>
> If you or Harry have any questions, just let me know.
>
> Nice work today! Good to see you three girls working out together. It'll be a great training group.[418]

In context, the foregoing email from Steve Magness is astonishing. Although Grunnagle does not know it, Magness's email is sent to her less than 24 hours before Dathan Ritzenhein's infusion is scheduled to begin, and Magness is admitting that at that point the infusion protocol has still not been finalized. Magness tells Grunnagle, "[w]e're finalizing the procedure" and that he will not be able to "get [her] a step by step protocol [until] . . . Wednesday," i.e., the day after Ritzenhein's scheduled infusion procedure.

In his under oath interview Alberto Salazar described Steve Magness as integrally involved in the development of the L-carnitine infusion protocol. Even though Salazar has plainly minimized the degree of his own involvement in planning the L-carnitine infusions, we can accept Salazar's contention that Magness was intimately

[418] 12/12/2011 Email from Steve Magness to Dawn Grunnagle (emphasis added).

involved with the planning of these infusions as the email record confirms the substantial involvement of both of Salazar and Magness in planning the infusions.[419]

Magness's email to Grunnagle is clearly written to try to ensure that she is comfortable with, and has no misgivings about, the infusion procedures. Thus, Magness had every motive to remove uncertainty and there would appear to have been no reason for Magness to tell Grunnagle that the infusion protocol had not yet been finalized unless, in fact, it had not yet been. Magness's December 12 email to Grunnagle makes clear, however, that the protocol is not yet finalized. This means that Salazar's representation to Ritzenhein on or before December 9 that the L-carnitine infusion would be 45 mL was certainly puffing. On December 9 Salazar did not know what the volume of the L-carnitine infusions would actually be or likely what sort of modifications, if any, would permit the L-carnitine loading effect he was seeking.[420] Rather, on December 9 Salazar simply knew it was necessary to tell Dathan the infusion would be less than the 50 mL WADA limit in order to induce Ritzenhein to have the procedure done.

21. References in Emails to the Use of Multiple Infusions

Magness's December 12 email also suggests that what had at that point had very possibly been discussed between him, Salazar and Dr. Brown is that the athletes

[419] Ritzenhein understood that there was a "scramble" to revise the infusion procedure and that those involved in the scramble were Salazar, Brown and Magness. Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 166, lines 7-18.

[420] Salazar has conceded that "[t]here was an effort to try and get the same absorption of the L-carnitine" as in Dr. Greenhaff's study. Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 168, lines 16 -17. He has also claimed that the intent was to do it "in a manner that was safe, legal, and ethical." The point, however, is that Salazar was giving Ritzenhein assurances about the new infusion protocol at a time when that protocol had not yet even been set.

were to receive multiple infusions. Magness explains in his email to Grunnagle that he anticipates that she will be "taking a drink every 20 minutes before [she] get[s] an infusion." He also tells her that she will get 4 drinks, one every 20 minutes during what is anticipated to be an 80 minute procedure. Thus, the drinks, which we understand from other information each consisted of 75 grams of glucose dissolved in water, were intended to raise insulin levels and were apparently to be timed to coincide with 4 infusions of L-carnitine, which would make sense because the spike in insulin was necessary to drive carnitine into the muscle.

Plainly seeking to minimize the scope of the procedure, and by this time highly focused upon the WADA 50 mL infusion volume limit, Magness tells Grunnagle to anticipate "4 drinks and *4 little drips of infusion essentially*." Yet, we know that Grunnagle could not have actually received merely "4 little drips" of an infusion liquid and have experienced any appreciable impact on her serum L-carnitine levels.

The Titration Study, which had been followed so religiously in planning Steve Magness's infusion on November 28, established the necessity of keeping serum L-carnitine levels continually elevated during the period that insulin levels were raised. It was the combination of raised insulin levels along with continuously high levels of serum L-carnitine levels which drove carnitine into the muscle – the whole reason the infusion procedure was, after all, being done in the first place.

Had only four little drips of infusion been given to Dawn Grunnagle there would have been no significant impact on Grunnagle's serum L-carnitine levels. And, we know that, in fact, Grunnagle's L-carnitine infusion administered on December 29, 2011, did have a powerful impact on her plasma carnitine concentration. Before her infusion on

December 29 Grunnagle's total plasma carnitine level was measured at 49 umol/L. However, at the end of the procedure her carnitine level was measured at greater than 2,000 umol/L, meaning that she experienced at least a 3,982% increase in her plasma total carnitine level as a result of the infusion she received. Such a massive increase in her plasma carnitine level could not have been achieved through 4 drips of infusion and Steve Magness would have understood the insufficiency of 4 drips of infusion to create a carnitine loading effect.

Therefore, what Magness described to Grunnagle about the L-carnitine procedure in his email on December 12 is clearly not a literal reference to 4 drips and may possibly best be understood as referring to a discussion Magness has had with Brown or Salazar about 4 separate infusions, each spaced to coincide with the 4 glucose drinks which would be taken consecutively 20 minutes apart. In fact, Grunnagle's medical records confirm that she received 4 separate 75 gram glucose drinks each spaced 20 minutes apart. Thus, Grunnagle's medical records are potentially consistent with the idea drawn from Magness's December 12, 2011, email that one plan discussed may have been for Grunnagle to receive 4 separate infusions, each timed to coincide with the 4 separate glucose drinks she was given.

Furthermore, such an understanding is supported by what Magness has said on other occasions about the L-carnitine infusions given to NOP athletes. Several times Magness has described multiple infusions which were purportedly spaced to "circumvent the infusion limit."

For instance, about the same time last year that L-carnitine use by NOP athletes was reported in the *London Sunday Times*, reporter David Epstein asked Magness –

> Hey Steve, one other quick question for you emanating from the Sunday Times piece. I remember **you said that the point of the carnitine injections was to basically circumvent the infusion limit**. **Don't suppose you remember how the injections were spaced by any chance, do you?** I know that's a pretty fine-grained question, but it could bear on whether they managed to stay just on the right side of the rules or not.[421]

Magness's response to Epstein's inquiry was:

> Ya I don't have exact specifics. **I remember them taking the infussion protocol and switching it to injections to keep under the 50ml limit. I looked back through emails and saw the drink spacing for keeping the insulin levels up was every 20-30min. But that's about the most I got.** I don't have the exact protocol listed in any emails or notes I had.[422]

Magness's claim of multiple injections spaced to circumvent the WADA 50 mL infusion limit was also made in his initial communication to USADA in 2012 – his December 12, 2012, email to the USADA Play Clean email address. Magness reported then:

> They're also pretty good at doing legal injections under 50ml instead of infusions. I know it's permitted, but they've done this with L-carnitine, Magnesium, and iron, plus a few others probably. **L-carnitine they took an infusion protocol and instead went with 3-4 small injections while drinking a high glucose drink** instead of the glucose+carnitine infusion that was done in the medical journals.[423]

Thus, Magness has repeatedly described the L-carnitine infusion protocol for Oregon Project athletes as involving multiple (i.e., "3-4") "injections to keep under the 50 ml limit." As explained above, these descriptions of the L-carnitine infusion protocol are also consistent with Magness's December 12, 2011 email to Grunnagle which, read

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[421] 3/24/2015 Email from David Epstein to Steve Magness.
[422] 3/24/2015 Email from Steve Magness to Epstein.
[423] 12/10/2012 Email from Steve Magness to playclean@usada.org Subject: oregon project (emphasis added).

most logically, references 4 infusions and not literally to "4 drips of infusion" – which Magness would have known was a scientific impossibility.

Yet, there is a significant hole in Magness's description of multiple injections which collectively exceeded the 50 mL WADA infusion limit but were spaced to circumvent the 50 mL limit. The hole in Magness's logic concerning how the WADA rule was circumvented is the fact that the medical records for each of the NOP athletes make clear that the entire L-carnitine procedure for each athlete was completed within a two hour period. The WADA rule prohibited "[i]ntravenous infusions and/or injections of more than 50 mL *per 6 hour period*."[424] Thus, there was not sufficient time in the L-carnitine procedure to *time* or *space* the infusions or injections, and separate infusions or injections which totaled more than 50 mL as Steve Magness concedes took place and which took place within a period of 6 hours or less each constituted a violation of the infusion rule.

Further evidence that the Oregon Project athletes may have received L-carnitine infused from multiple infusion bags was received by USADA on March 15, 2016. On that date USADA received a document labeled "Logged Formula Worksheet" form the "COMPOUNDING CORNER PHARMACY, INC." from John Collins who is the lawyer for Galen Rupp and for Alberto Salazar and a number of other NOP athletes. USADA's counsel followed up with a phone call to Mr. Collins asking where he obtained the "Logged Formula Worksheet" which he provided to USADA on Galen Rupp's behalf. Mr. Collins confirmed that as stated in his March 15, 2016, letter, the worksheet had not

[424] 2012 WADA Prohibited List.

been in Galen Rupp's possession. Mr. Collins, however, would not disclose where the worksheet was obtained or how it came into his possession.

The Logged Formula Worksheet indicates that on January 4, 2012, one day before Galen Rupp received his L-carnitine infusion(s), four (4) 100 mL IV infusion bags containing a concentration of 9.67 grams of L-carnitine per 45 milliliters were prepared by the compounding pharmacy. Galen Rupp's lawyer has apparently misread the "Logged Formula Worksheet" as allegedly referring to a "45 ML injectable." However, on closer examination what the worksheet actually reflects is the preparation of 4 x 100 mL bags of injectable L-carnitine at a *concentration* of 9.67 grams per 45 mL. That each of the four (4) infusion bags prepared actually contained 100 milliliters at a concentration of 9.67gm per 45 mL is made clear by the fact that the bottom of the log records that each infusion bag contained approximately 21.4889 grams of L-carnitine.

Thus, the "Logged Formula Worksheet" is a clear indication that Galen Rupp received at least a 100 mL L-carnitine infusion and that he most likely received considerably more than this because 4 x 100 mL infusion bags were prepared *the day prior* to his infusion which occurred on January 5, 2012. By this date, the infusions for Dathan Ritzenhein, Alvina Begay and Dawn Grunnagle had already occurred and only Rupp and Lindsay Allen were awaiting their L-carnitine infusions. Accordingly, had the intent been to deliver only a single IV infusion bag of L-carnitine to Rupp, four (4) infusion bags would not have been prepared the day prior to his infusion. Therefore, this recently received evidence fits with the other evidence USADA has discovered which suggests that multiple infusion bags were likely used for the L-carnitine infusions received by NOP athletes in December, 2011 and January, 2012 from Dr. Brown.

22. "Special Medical Drink" Testing

In his December 6, 2011, email to Dathan Ritzenhein, Dr. Brown and Steve Magness, Alberto Salazar referenced a "*special medical drink* designed to raise . . . insulin levels" to be used in the L-carnitine infusions going forward and suggested testing the drink on Steve Magness, even describing a testing procedure to evaluate the efficacy of the drink. Salazar said:

> Hi Dr.Brown, I got this from USADA, so we can keep this for our records. We will have to try the " less than 50 ml L-carnitine infusion **" after drinking that special medical drink designed to raise his Insulin levels**. **Perhaps we should try it on Steve:**
> **1- get a baseline level**
> **2- take the drink**
> **3- 20 minutes later draw blood again, and take another drink**
> **4- 40 minutes later draw blood again, and take another drink**
> **5- 60 minutes later draw blood**
>
> Steve said that the drink may only raise insulin levels for 20 minutes, so I was thinking in order to replicate the one hour long raised insulin levels from the other procedure, Steve would need to keep taking a drink every 20 minutes? Just a thought on my part, but I'll leave it up to you to figure out! Thanks![425]

Dathan Ritzenhein testified that he understood that Magness was going to perform testing on this medical drink first before the L-carnitine infusion would be given to Ritzenhein.[426] The records USADA has reviewed indicate that testing of the drink designed to raise insulin levels *was eventually* conducted on Steve Magness. However, this testing of what Salazar termed a "special medical drink" was not undertaken until

[425] Email from Alberto Salazar to Dr. Jeffrey Brown, Dathan Ritzenhein CC: Steve Magness Subject: FW: Call Attachment: image2e4908.JPG; WADA_Medical_info_IV_infusions_3.0_EN.pdf (emphasis added).
[426] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 172, lines 3 – 5 ("That was my understanding . . . that Steve was going to try it out first."); p. 173, lines 17 – 19 ("He was just testing the insulin response of the glucose drink, the one that was to be taken every 20 minutes.").

December 15, 2011, *two days after* the drink was purportedly used on Dathan Ritzenhein when he received an L-carnitine infusion in Dr. Brown's office.[427]

The dilatory testing of the "special medical drink designed to raise . . . insulin levels" after it was used on Dathan Ritzenhein demonstrates a number of things, including:

(1) the slipshod and last minute nature of the L-carnitine infusion procedure overseen by Salazar and participated in by Dr. Brown and Steve Magness,

(2) the lack of priority given to athlete health concerns in this process – his physician and coaches were willing to move ahead with the infusion on Dathan without completing anticipated testing and evaluation of the procedure, and

(3) the willingness to push ahead with the L-carnitine procedure without full disclosure and obtaining complete athlete/patient consent – there is no indication that Dathan Ritzenhein was ever informed that the "special medical drink" he was given in Dr. Brown's office as part of the L-carnitine infusion procedure had not been tested in advance of giving it to him.

23. December 13, 2011 – Dathan Ritzenhein Receives L-Carnitine Infusion from Dr. Brown

On Tuesday, December 13, 2011, Dathan Ritzenhein flew from a Nike Oregon Project high altitude training camp in Albuquerque, New Mexico to Houston, Texas in order to receive an L-carnitine infusion from Dr. Brown. It was a month and a day before the U.S. Olympic Marathon Trials and one week to the day after Dr. Fedoruk's

[427] *See* 12/15/2011 Email from Steve Magness to Diane Gonzales (assistant to Dr. Brown) ("Hi Diane just wanted to let you know I had the glucola insulin test done today and everything went well."); Steve Magness medical records, p. USADA 001502 (test results from blood collections on 12/15/2011 reflecting 5 separate insulin levels taken 20 minutes apart).

denial of Alberto Salazar's request for USADA to approve a high volume infusion on Ritzenhein.

The medical records from Ritzenhein's infusion procedure include only post infusion blood testing records which identify Ritzenhein's levels for both insulin and carnitine (both free and total) after the infusion.[428] Ritzenhein is the only NOP athlete who received an infusion from Dr. Brown as to whom pre-infusion blood data was not collected. In addition to the blood testing records, Ritzenhein's medical file with Dr. Brown contains two (2) pages of Dr. Brown's chart notes regarding the infusion procedure. These chart notes for the infusion procedure are set forth below so that they may be referred to in relation to the commentary that follows.

[428] A table which summarizes blood testing values for the infusions received from Dr. Brown by Oregon Project athletes as well as other information found in the patient records for each infusion is provided *infra* at p. 218. This chart also permits a comparison of the various infusions, particularly with regard to what records are available from each infusion.

L-Carnitine Infusion Chart Notes for Dathan Ritzenhein (2 pages)

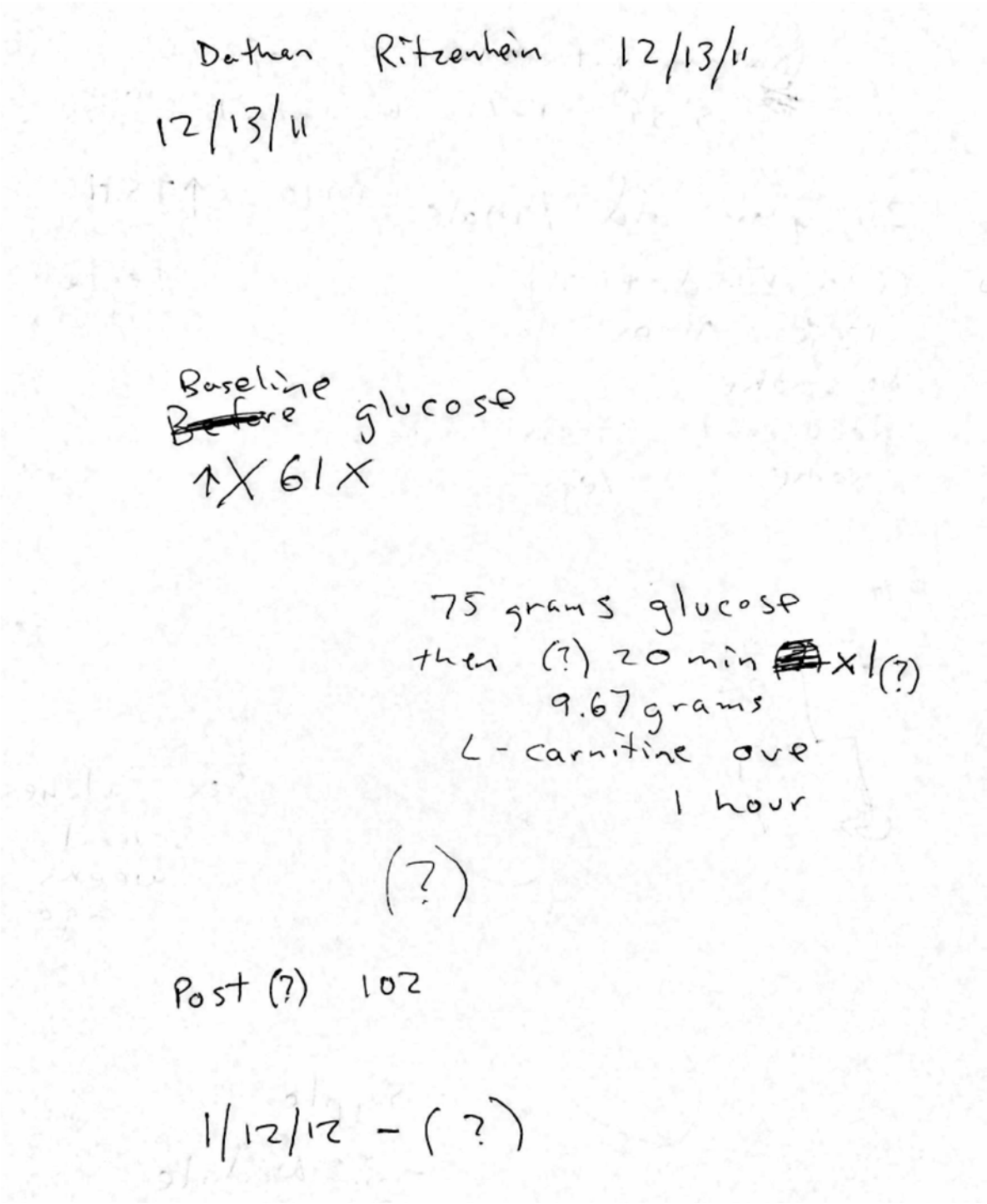
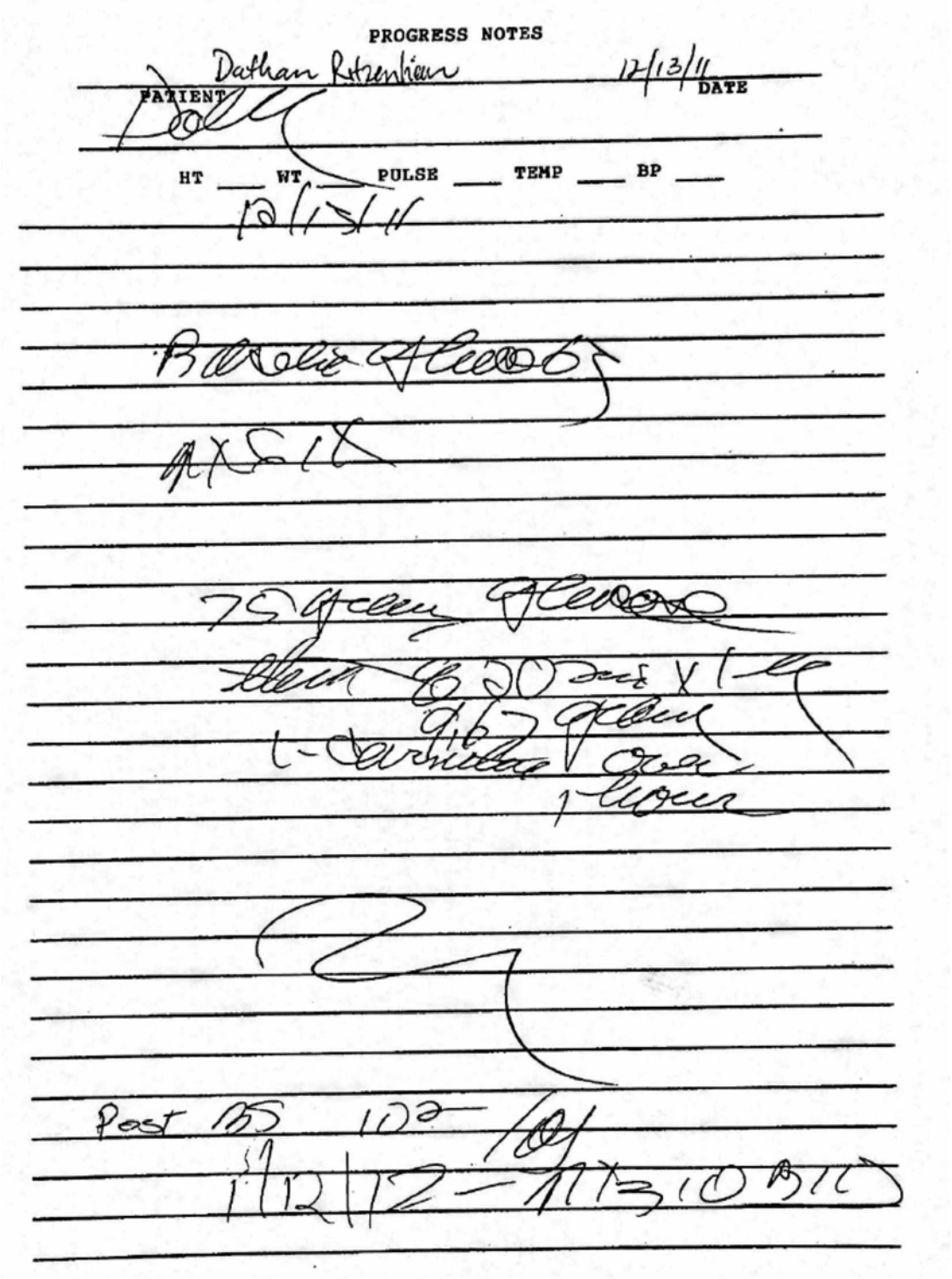


Photo: Dr. Brown's 12/13/11 Note for Dathan Ritzenhein (p. USADA 000809). (p. USADA 000809) (Note: As discussed below, this entire page was deleted from records provided by Dr. Brown's Office to USADA.)


PROGRESS NOTES

PATIENT Dathan Ritzenhein DATE 12/13/11

HT ___ WT ___ PULSE ___ TEMP ___ BP ___

12/13/11

Photo: Dr. Brown's 12/13/11 "Progess Notes" for Dathan Ritzenhein (p. USADA 000810). (Note: As discussed below, this page was altered in records provided by Dr. Brown's Office to USADA. A reference to "40 ml" was inserted.)

a. Ritzenhein's recollections about the infusion in Dr. Brown's Office

Ritzenhein was in Brown's office for an infusion because Salazar was insisting that he get the L-carnitine infusion to improve Ritzenhein's chances in the upcoming Olympic Trials. Ritzenhein said that he was still nervous that the infusion would be under the allowable limit.[429]

Ritzenhein said he "checked in like any other patient."[430] He was brought back to Dr. Brown's office.[431] He "asked Dr. Brown specifically about the volume"[432] and Dr. Brown said, "I had it **compounded to 45 milliliters**, so that it wouldn't be too close to the limit."[433]

During his interview with USADA Ritzenhein repeated three times what Dr. Brown allegedly said about the infusion volume and when asked – "do you recall that specifically, he said, 'I had it compounded to 45 milliliters'?"[434] Ritzenhein responded – "**I recall that very specifically**."[435] Likewise, Salazar testified about a 45 milliliter infusion. Salazar said:

> Dr. Brown either told me before he was going to do the IV injections, or after he did it, that in order to be extra careful he was only going to give it, 45 milliliters, not even go to the 50.[436]

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[429] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 181, lines 13- 24.
[430] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 180 line 19.
[431] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 181, lines 1- 12.
[432] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 181, lines 18- 19.
[433] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 181, lines 19- 21 (emphasis added).
[434] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 182, lines 18- 19.
[435] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 182, line 20 (emphasis added).
[436] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 126, lines 20 – 24.

There is, however, absolutely no reference to an infusion volume of 45 mL in Ritzenhein's medical records.[437]

Ritzenhein said that Dr. Brown's assistant Diane Gonzales "was getting things set up"[438] and that she "did all the actual draws of blood and the, inserting the IV needle in, and hanging the bag, all of that."[439]

Ritzenhein was seated "on [Dr. Brown's] couch facing Dr. Brown's desk with the door on [Dathan's] left."[440] The IV bag was hung on a "pole right next to the couch on [Dathan's] left."[441] "Diane hung the bag."[442] There was a line running down from the bag to where the needle had been inserted in Dathan's arm.[443] Significantly, the IV liquid was continuously flowing out of the IV bag. Ritzenhein observed fluid dripping "out of the bottom of the bag into the tube that connected the bag to the needle."[444]

Ritzenhein also recalls his blood being drawn periodically throughout the procedure and Dr. Brown talking with him during the procedure. He said:

> I'm sitting there for an hour. They go out, they get me these glucose bottles to drink periodically throughout, and it's just Dr. Brown there talking to me . . . for a lot of the time when he's not seeing patients, he would go

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[437] As explained below, however, a reference to "40 ml" was surreptitiously added to Ritzenhein's medical records in 2015 by someone at Dr. Brown's office before the records were provided by Brown's office to USADA.
[438] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 183, line 2.
[439] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 183, lines 3- 5.
[440] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 184, lines 13-14.
[441] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 184, lines 19-20.
[442] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 184, line 22.
[443] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 184, lines 23 - p. 185, line 1.
[444] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 185, lines 3- 5.

> out for a couple of minutes, sit there talking for awhile, and so I just sat there on his couch with this thing for an hour.[445]

Another vivid and potentially significant recollection was that the IV bag was being "squeezed" repeatedly by Dr. Brown and his assistant during the procedure. Ritzenhein said:

> She's going in and out a lot, and he's going in and out, talking to patients. **They're checking the bag, squeezing it a little bit**, taking blood periodically throughout this, and the whole time I'm trying to drink this stuff steadily.[446]

When asked about the IV bag being squeezed Ritzenhein said:

> Throughout, yes. It was, I don't know how many times or, I mean **Dr. Brown squeezed it occasionally. They would look at it, flick it**, you know, it was just, it was a small amount that was going down. It was already hard to tell the amount, I guess.[447]

He said they were squeezing the IV bag "like they're trying to get the last bit out of a bag"[448] and that it "could have been" they were squeezing the infusion bag in order to change it out.[449] However, Ritzenhein said that he could not "recall them coming out, disconnecting it and putting a new bag in . . . but . . . there was a lot going on."[450]

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[445] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 183, line 20- p. 184, line 3.
[446] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 184, lines 6 - 11.
[447] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 185, lines 10 - 14.
[448] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 186, lines 2- 8.
[449] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 185, lines 16 - 21.
[450] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 185, line 23 – p. 186, line 1.

Ritzenhein said that "going off . . . strictly what they [were] telling"[451] him, he believed the bag was being squeezed to accelerate the flow rate from the bag.[452] Dr. Brown told him they were trying to "accelerate the flow"[453] from the bag because there was a "feeling that the fluid wasn't coming out fast enough."[454] Ritzenhein, "didn't have a reason to not believe Dr. Brown" about this.[455]

Ritzenhein recalled no pain and no unusual sensation or burning in his arm or at the infusion site.[456] Therefore, it is unlikely that the L-carnitine solution administered to him was highly concentrated.

b. Efforts to accelerate the flow rate from the infusion bag

Ritzenhein's description of the repeated efforts to accelerate the flow rate from the infusion bag is flatly inconsistent with the volume of the infusion having been 50 mL or less. 50 mL is less than 3.5 tablespoons of liquid. Unless the flow from an IV is restricted or extraordinarily narrow tubing is used 50 mL of liquid would flow out of an IV bag in much less than an hour. Moreover, squeezing an IV bag can result in flow rates of some 150 - 200 ml per minute.[457] Clearly, the infusion bag could not have been squeezed repeatedly without less than 3.5 tablespoons of liquid having been pushed out well before the end of the 80 minute infusion procedure. Thus, Ritzenhein's

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[451] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 187, lines 13- 14.
[452] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 188, lines 19 - 23.
[453] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 188, lines 19 - 23.
[454] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 188, lines 11- 18.
[455] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 187, lines 16- 17.
[456] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 193, line 16 - p. 194, line 24.
[457] http://www.ncbi.nlm.nih.gov/pubmed/10149684

recollection that the infusion bag was flowing and that it was squeezed several times during his procedure is inconsistent with an infusion of 50 mL or less over 80 minutes.

However, Ritzenhein's recollection of the infusion bag having been repeatedly squeezed would be consistent with the use of four (4) 100 mL L-carnitine infusion bags such as we now know were prepared by the Compounding Corner Pharmacy just one day prior to Galen Rupp's L-carnitine infusion(s). Thus, Dathan Ritzenhein's recollection and the "Logged Formula Worksheet" provided by Galen Rupp yields further corroboration for the likely prospect that multiple infusion bags for the L-carnitine infusions given to NOP athletes in 2011-2012.

c. Ritzenhein's recollection of Dr. Brown stating that he had the infusion bag "compounded to 45 mL"

Ritzenhein's firm recollection that Dr. Brown told him that he had had the infusion bag "compounded to 45 mL" is significant in part because, if the infusion bag was specifically compounded for Dr. Brown, there should have been a reference in Ritzenhein's medical records to the compounding pharmacy which prepared the infusion solution. These records from the compounding pharmacy should have had the concentration of the L-carnitine solution set forth in them and from this concentration, as well as from the volume and number of the bags prepared, the total volume of Ritzenhein's infusion should be determinable. However, these records were missing from the medical records provided to USADA, indicating apparently either that Dr. Brown kept incomplete medical records or that someone intentionally removed these records from the copy of the medical file his office provided to USADA.

As previously noted, such a document containing a record from the compounding pharmacy for Galen Rupp's infusion(s) was separately provided to USADA by counsel

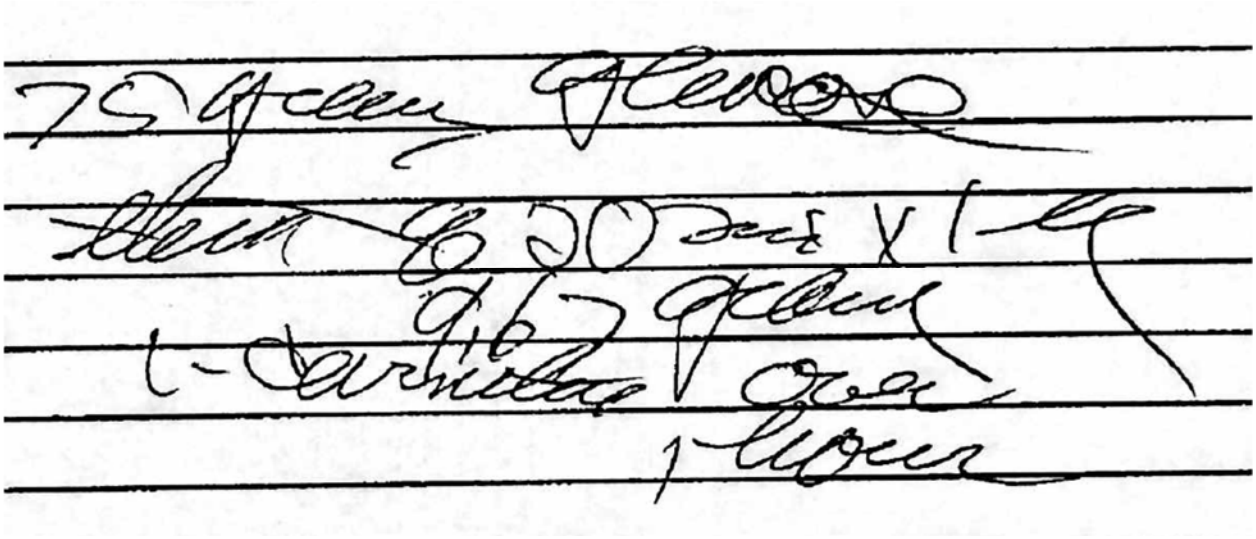
for Galen Rupp on March 15, 2016. The existence of this document in relation to the Galen Rupp infusion(s) indicates that there should be available records setting forth this information in relation to the infusion given to Dathan Ritzenhein.

d. Alteration and Withholding of Ritzenhein's medical records by Dr. Brown's Office

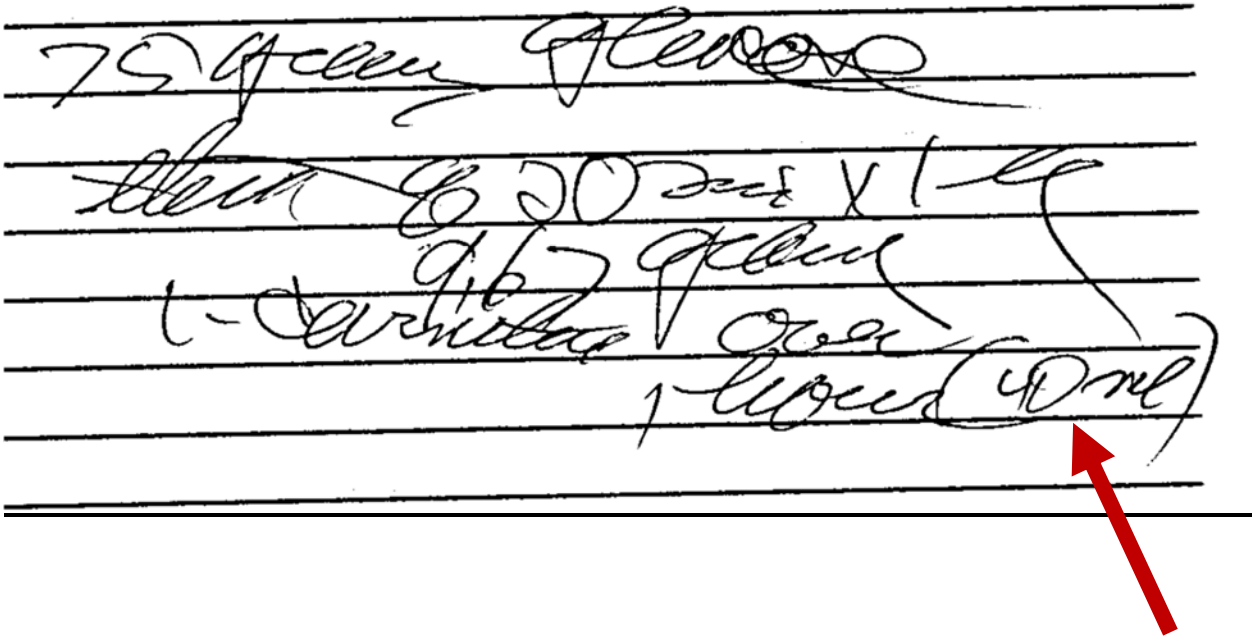
USADA originally obtained a copy of Dathan Ritzenhein's medical records concerning the December 13, 2011, L-carnitine infusion directly from Dathan Ritzenhein without seeking them from Dr. Brown. Ritzenhein told USADA that he had obtained his set of records directly from Brown's office. These records obtained directly from Dathan Ritzenhein's legal counsel have been Bates labeled USADA 000800 – USADA 000810.

Subsequently, USADA requested and received from Ritzenhein a medical records release to obtain records directly from Dr. Brown's office. The Dathan Ritzenhein medical records obtained directly from Dr. Brown's office (through his medical records service) have been Bates labeled USADA 000811 – USADA 000948. When the records obtained from Dr. Brown by USADA were compared to the records previously provided by Ritzenhein it became apparent that the records provided to USADA by Dr. Brown's office had been intentionally altered. For instance, as reflected in the screen shots below, a note provided by Dr. Brown's office to USADA related to the L-carnitine infusion had a notation of "(40 ml)" surreptitiously added.

Excerpt from Record Obtained <u>by Ritzenhein</u> from Dr. Brown:



Excerpt from Record Obtained <u>by USADA</u> from Dr. Brown:



Dr. Brown or someone in his office obviously altered the above medical record provided to USADA in order to make it appear that an infusion volume of 40 mL had been contemporaneously included in Dathan Ritzenhein's medical records.[458]

[458] The original record received from Dathan Ritzenhein's legal counsel is Bates labeled USADA 000810. The altered record with the "40 ml" insertion is Bates labeled USADA 000814.

Additionally, an entire page of handwritten notes from the L-carnitine infusion was completely removed from the set of medical records that Dr. Brown's office sent USADA. The page of handwritten notes that was removed is set forth at p. 192, *supra*, and contained the key notation pictured immediately below. As explained below, this notation is useful for establishing that Ritzenhein's infusion exceeded the 50 mL limit and constituted an anti-doping rule violation. It is curious that the page Dr. Brown left out of Ritzenhein's records sent to USADA was perhaps the most important one to help confirm that the volume of the Ritzenhein infusion exceeded the the WADA 50mL limit.

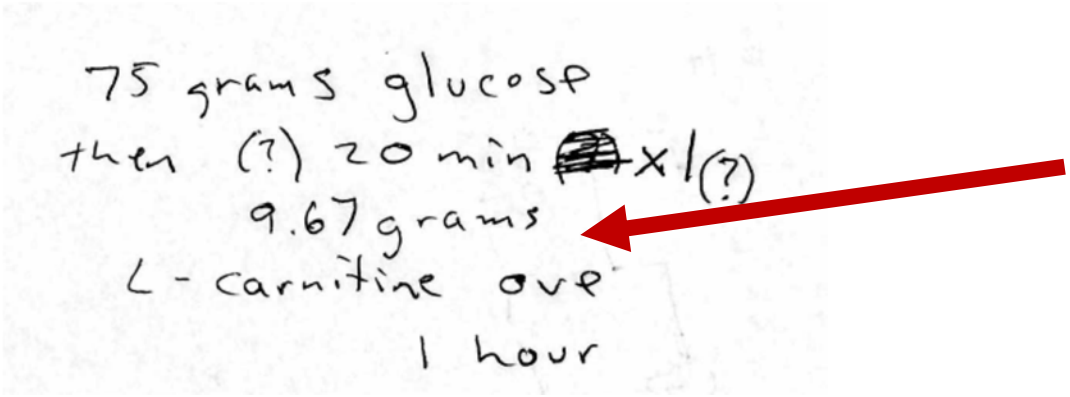


Photo: Excerpt from Dr. Brown's 12/13/11 Note for Dathan Ritzenhein (showing reference to "9.67 grams L-carnitine ove 1 hour") (p. USADA 000809) (Note: The entire page on which this note is found was deleted from records provided by Dr. Brown's Office to USADA.)

The improper, non-contemporaneous insertion of a notation of "40 ml" in Dathan Ritzenhein's medical records, as well as the apparent removal of a key page of the infusion chart notes, by Dr. Brown or someone in his medical office is significant for a number of reasons. These reasons include:

- Dr. Brown's alteration of medical records supports the inference that additional records from the compounding pharmacy (which should have set forth information regarding the infusion volume of Ritzenhein's L-

carnitine infusion) may likewise have been removed from the medical file provided to USADA.

- Dr. Brown's alteration of medical records supports an inference that he was well aware that the infusion which he gave to Dathan Ritzenhein exceeded the WADA 50 mL limit.
- Dr. Brown's alteration of medical records supports an inference that he failed in his ethical duty to his patient by giving him an infusion in excess of 50 mL after specifically representing to Ritzenhein that the infusion would not exceed 45 mL.
- Dr. Brown's alteration of medical records constituted a breach of Dr. Brown's ethical duties to Dathan Ritzenhein because Ritzenhein (through his medical records release)[459] specifically requested that Dr. Brown provide Ritzenhein's complete medical file to USADA.

Of course, in light of the recently revealed document from the Compounding Corner Pharmacy demonstrating a concentration of 9.67 grams per 45 mL was used in making the Rupp infusion bags a reference to "40 ml" is even more curious.

[459] Dathan Ritzenhein's medical records release to Dr. Brown is Bates labeled USADA 000813.

e. Further discussion of ethical and professional breaches arising from alteration of Ritzenhein's medical records and other potential misconduct by Dr. Brown and his office in relation to NOP athletes, L-carnitine infusions and other treatment given to NOP athletes

A physician may breach his duties towards his patients by failing to provide medical care that is consistent with the standard of care. As discussed throughout this Interim Report, USADA has identified numerous areas where the care, medical treatment or advice provided by Dr. Brown breached the standard of care.

In addition, a physician may breach his duties toward his patients by failing to adhere to ethical requirements related to their care such as breaching a duty of loyalty to the patient, failing to adequately inform the patient, and failing to conduct adequate investigation and failing to look out for the patient's best interests. At this point, having just discussed the alteration of Dathan Ritzenhein's medical records by Dr. Brown or someone in his office, which clearly constituted a breach of ethical duties, a further and somewhat broader consideration of Dr. Brown's duties to each of the Oregon Project athletes who became his patients may be appropriate and useful.

1. Physician's duty to put patient interests first

As a physician Dr. Brown had an ethical duty (sometimes called a fiduciary duty) to act at all times in the best interest of his patients and to submerge his own interests (and those of any other individual, including Alberto Salazar) to those of his patients. The American Medical Association Code of Ethics describes this duty as follows:

> The relationship between patient and physician is based on trust and gives rise to physicians' ethical obligations to place patients' welfare above their own self-interest and above obligations to other groups, and to advocate for their patients' welfare.

> Within the patient-physician relationship, a physician is ethically required to use sound medical judgment, holding the best interests of the patient as paramount.[460]

USADA has found strong evidence, discussed throughout this Interim Report, that Dr. Brown allowed self-interest, as well as loyalty to Alberto Salazar, to interfere with his duties to his patients and to their welfare. The self-interested alteration of medical records is just one example where Brown apparently placed his own interest above that of his patients. Examples of Dr. Brown placing the interests of himself and others above patient loyalties include:

- Allowing Salazar access to patient information that permitted Salazar to engage in the provision of medical care and medical advice and the dispensing of medication to athletes;
- Allowing Salazar exercise control and influence over Brown's medical judgment;
- Allowing medical treatment and long-term patient health and wellbeing to become subservient to the goal of promoting athletic performance enhancement (examples of this include the diagnosis of hypogonadism and the dispensing of thyroid medication, the dispensing and use of testosterone, the dispensing and use of prescription strength vitamin D, the dispensing and use of calcitonin and the dispensing and use of L-carnitine infusions);

[460] AMA Code of Medical Ethics (Opinion 10.015 - The Patient-Physician Relationship) http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/opinion10015.page?

- Failing to timely advise athlete patients of the extent of his relationship with Nike and Salazar and of the conflicting loyalties these relationships created;
- Failing to advise patients of potential alternative therapies and of their right to seek a second opinion (which is particularly important where a physician has a potential or actual conflict of interest); and
- Alteration of patient medical records.

2. Physician's duty to inform patients

Another area where USADA has found that Dr. Brown failed to put patient interests first was his failure to keep his Athlete-Patients fully informed regarding all aspects of their care and regarding the risks of treatments in which he engaged. Regarding informed consent, the American Medical Association Code of Ethics states:

> The patient has the right to receive information from physicians and to discuss the benefits, risks, and costs of appropriate treatment alternatives. Patients should receive guidance from their physicians as to the optimal course of action. Patients are also entitled to obtain copies or summaries of their medical records, to have their questions answered, to be advised of potential conflicts of interest that their physicians might have, and to receive independent professional opinions.[461]

It is accepted that "[t]he patient's right of self-decision can be effectively exercised only if the patient possesses enough information to enable an informed choice."[462] Moreover, "[p]hysicians should sensitively and respectfully disclose all relevant medical information to patients."[463]

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[461] AMA Code of Medical Ethics (Opinion 10.01 - Fundamental Elements of the Patient-Physician Relationship) http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/opinion1001.page?

[462] AMA Code of Medical Ethics, Opinion 8.08 (Informed Consent) http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/opinion808.page

[463] *Id.*

With respect to the duty to inform, USADA has found:

- That Athlete-Patients were frequently not thoroughly advised by Dr. Brown of the reason he was recommending various therapies and of alternatives to those therapies
- That Dr. Brown often left it to Alberto Salazar to interact with Oregon Project athletes regarding care that was being endorsed or recommended by Salazar;
- That Dr. Brown did not take it upon himself to insure that the Athlete-Patients had been fully informed about the proposed procedure and potential alternatives (examples included (1) the L-carnitine infusions where the Athlete-Patients spoken to by USADA have uniformly told USADA that Dr. Brown did not advise them regarding the procedure and the risks and benefits of the procedure, (2) the testosterone administered to Alberto Salazar's sons with no discussion of potential risks, and (3) thyroid therapy, as to which several athletes have told USADA that there was very limited disclosure made by Dr. Brown of the long term implications of going on thyroid medication;
- That Dr. Brown failed to advise Oregon Project athletes of the conflicts of interest he had in providing them care which arose due to his relationships with Nike and Salazar;
- That Dr. Brown frequently failed to advise Oregon Project athletes of their right to receive an independent professional opinion regarding their care; and

- That Dr. Brown failed to provide complete and accurate copies of Dathan Ritzenhein's medical records to USADA when asked to do so by Dathan Ritzenhein.
- That Dr. Brown appears to have failed to advise Dathan Ritzenhein and possibly other athletes of the fact that their L-carnitine infusions violated the WADA 50 mL limit.

In the case of the Oregon Project athletes Dr. Brown was specifically and thoroughly aware of the athletes' obligations to follow sport anti-doping rules and of the harm that they could suffer by not complying with anti-doping rules. Accordingly, as to the Athlete-Patients and others Dr. Brown's duty to disclose encompassed a duty to disclose and discuss with his patients any conduct (such as the L-carnitine infusions and/or the so-called testosterone sabotage testing) which violated sport anti-doping rules.

Furthermore, by becoming a member of USA Track & Field Dr. Brown committed to personally comply with sport anti-doping rules. Accordingly, Dr. Brown had an ethical duty to not participate in the violation of any anti-doping rules and to not assist any athlete or coach in their violation of anti-doping rules. Those instances described herein in which Dr. Brown potentially violated anti-doping rules and/or potentially failed to disclose to athletes or others that he was causing them to engage in rule violations also potentially constituted a breach of Dr. Brown's professional duty to inform his patients.

For instance, the evidence related to Dathan Ritzenhein's L-carnitine infusion strongly suggests that Dr. Brown breached his duties of loyalty and to fully disclose the risks of the procedure (including the risk that the procedure was in violation of the anti-

doping rules) to Ritzenhein. The alteration of Ritzenhein's medical records and Dr. Brown's concomitant failure to be forthcoming with USADA support an inference that Dr. Brown was well aware that the infusion which he gave to Dathan Ritzenhein exceeded the WADA 50 mL limit. If it is established that the Ritzenhein infusion exceeded 50 mL this will constitute a serious breach of Dr. Brown's duty of loyalty to Dathan Ritzenhein.

As discussed above, Dathan Ritzenhein has testified to USADA that he specifically asked for assurance from Dr. Brown that the infusion Ritzenhein was receiving would be below the WADA 50 mL limit, and Ritzenhein has testified that Dr. Brown specifically responded that the infusion he was giving Ritzenhein would comply with the anti-doping rules. Therefore, if Dr. Brown provided these assurances and still gave Ritzenhein an infusion that violated the rules, as may well be the case, the failure by Dr. Brown to abide by the applicable sport anti-doping rules will have constituted a serious breach of Dr. Brown's duties of loyalty and disclosure to his patient Dathan Ritzenhein.

At the time of the Ritzenhein L-carnitine infusion Dr. Brown as a member of USA Track & Field and subject to a personal duty to abide by sport anti-doping rules. Moreover, Dr. Brown had a clear ethical and professional duty to his patient Dathan Ritzenhein not to provide him an infusion which would cause Ritzenhein to be in violation of his sport's anti-doping rules. The evidence, however, is strong that Dr. Brown potentially breached these duties and then altered medical records and removed relevant records from Dathan Ritzenhein's medical file in order to attempt to cover-up his ethical breaches.

3. Physician's duty to adequately investigate, test and advise patients regarding novel and experimental treatments and attendant risks

Another aspect of the physician's duty to adequate inform his patients and to obtain consent before engaging in treatment is the requirement that where a therapy, procedure or treatment is novel, experimental, unusual or not previously performed by the physician that the physician must engage in adequate investigation (and, if necessary, testing) to ensure that the physician can adequately inform the patient regarding the likelihood of success of the procedure and whether there are any material risks of the procedure. Without such investigation it is impossible for the physician to adequately advise the patient regarding the likelihood of success of the procedure and/or to advise the patient concerning material risks of the procedure.

As described in this Interim Report, with respect to the L-carnitine infusion procedure used on Dathan Ritzenhein and other athletes it appears that Dr. Brown did not engage in sufficient investigation in order to adequately advise his patients and obtain informed consent. Particularly, with respect to Ritzenhein, given that Dr. Brown and Alberto Salazar claim that they had dramatically changed the infusion procedure, there were a number of unknowns regarding the allegedly *new* infusion procedure (such as the efficacy of the so-called "special medical drink," the efficacy of a changed infusion length, and the efficacy of any change in the amount to be infused) that, although in some cases not disclosed or admitted to Ritzenhein, were apparently not even investigated by Dr. Brown prior to the infusion.

Furthermore, as explained in this Interim Report, Alberto Salazar and Dr. Brown have to date taken the position that the L-carnitine infusions provided to the Oregon

Project athletes were 45 mL or less and therefore below the 50 mL WADA threshold. Yet, the post infusion plasma carnitine levels measured in post infusion blood samples taken from each athlete who received an infusion from Dr. Brown reflects in each instance a supraphysiological L-carnitine level approaching or exceeding 2,000% higher than the athlete's pre-infusion plasma carnitine level. This would necessarily mean that if the athlete got sufficient L-carnitine through an infusion of 45 mL to raise their post infusion carnitine level to such an extraordinary level that the concentration of L-carnitine infused by Dr. Brown would have had to have by far exceeded the concentration of L-carnitine that is recommended as safe for L-carnitine injections or infusions. It is clear from USADA's interviews with each athlete who received an L-carnitine infusion that no athlete recalls any warning or disclosure by Dr. Brown of any risks of the infusion whatsoever, let alone any disclosure by Dr. Brown that he intended to administer L-carnitine at a concentration far greater than levels recommended as safe by manufacturers of injectable L-carnitine. However, the "Logged Formula Worksheet" provided to USADA on March 15, 2016, indicates that just such risky infusions of an extraordinarily high concentration of L-carnitine (i.e., about 21.5 grams of L-carnitine in 100 mL as opposed to the 9.67 grams in 1,000 mL used in the Magness infusion) was apparently tried on one or more NOP athletes.[464]

Thus, it would appear that the NOP athletes became sort of "guinea pigs" on which Dr. Brown tried, at Alberto Salazar's apparent request, an untested and novel experiment in which Dr. Brown infused incredibly high levels of L-carnitine into the

[464] Based on the concentration numbers found in the "Logged Formula Worksheet" the concentration of L-carnitine in the Rupp infusion appears to have been greater than twenty-one (>21 times) more concentrated than in the Magness infusion and than in the infusions used in the Titration Study.

athletes over a short period of time. If the L-carnitine infusions actually took place in the manner described by Salazar and Dr. Brown then it appears clear that Brown breached his ethical duties to his patients regarding informed patient consent, and regarding the safety and efficacy of the concentration of L-carnitine in the fluid he infused into the athletes.

4. Physician's duty not to recommend invalid medical treatment

Physicians also have a duty to not recommend invalid medical treatment. The American Medical Association has issued an opinion on invalid medical treatment which provides:

> The following general guidelines are offered to serve physicians when they are called upon to decide among treatments:
>
> (1) Treatments which have no medical indication and offer no possible benefit to the patient should not be used (Opinion 2.035, "Futile Care").
>
> (2) Treatments which have been determined scientifically to be invalid should not be used (Opinion 3.01, "Nonscientific Practitioners").
>
> (3) Among the treatments that are scientifically valid, medically indicated, and offer a reasonable chance of benefit for patients, some are regulated or prohibited by law; physicians should comply with these laws. If physicians disagree with such laws, they should seek to change them.
>
> (4) Among the various treatments that are scientifically valid, medically indicated, legal, and offer a reasonable chance of benefit for patients, the decision of which treatment to use should be made between the physician and patient.[465]

A number of treatments recommended by Dr. Brown or which he claims to have administered meets the definition of an invalid medical treatment, such as:

[465] AMA Code of Medical Ethics (Opinion 8.20 - Invalid Medical Treatment) http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/opinion820.page

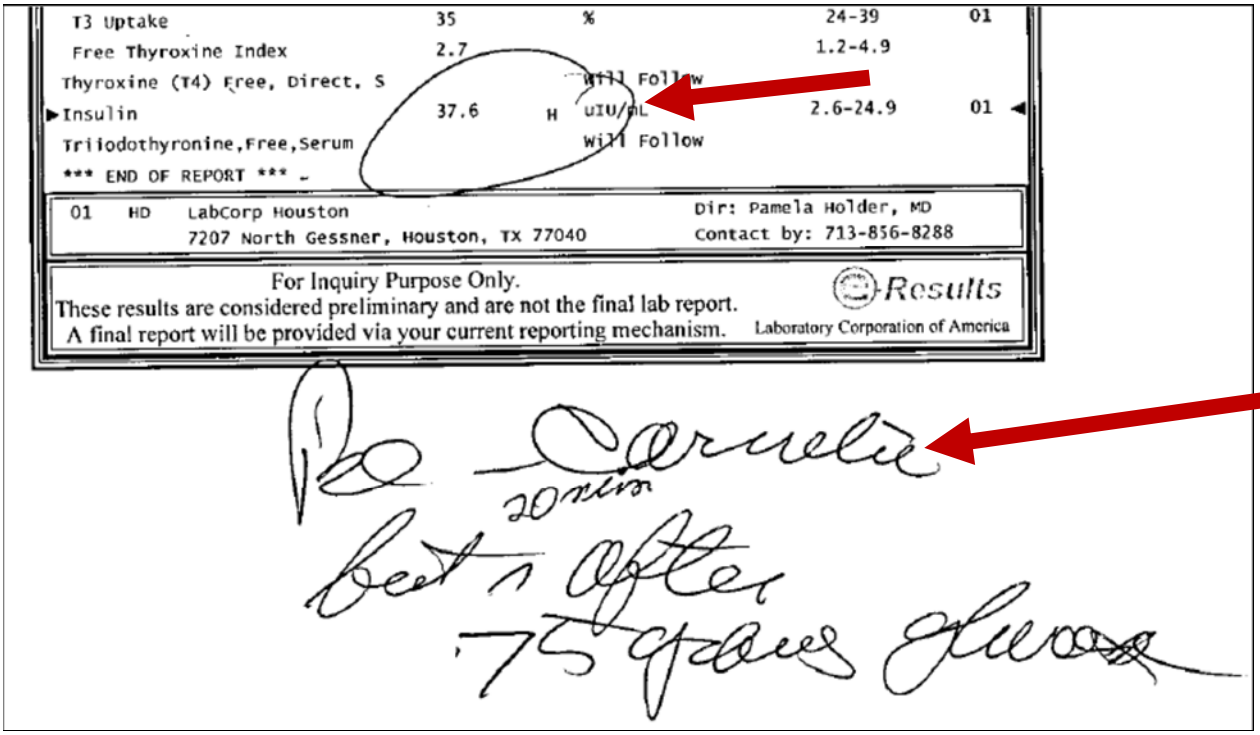
- To the extent that Dr. Brown administered L-carnitine infusions of 40 mL as claimed by him, and the infusions used a recommended, safe L-carnitine concentration then those treatments would have been invalid as they would have offered no benefit to the patient and certainly not the endurance benefit sought (on the other hand, to the extent that Dr. Brown administered 40 mL with an excessive, not recommended and potentially unsafe L-carnitine concentration then Dr. Brown would have also violated his duty to his patients);
- To the extent that Dr. Brown recommended the use of thyroid medication to increase testosterone levels, this was an invalid treatment;
- To the extent that Dr. Brown recommended the use of prescription strength Vitamin D to increase testosterone levels, this was an invalid treatement;
- To the extent that Dr. Brown recommended the use of calcitonin as a preventive therapy to prevent stress fractures, this was an invalid treatment.

f. Dr. Brown's use of an untested glucose drink in the Ritzenhein infusion

Ritzenhein recalls "sitting there for an hour" in Dr. Brown's office while the infusion was going on and "they get me these glucose bottles to drink periodically throughout." Ritzenhein said he believed, "the IV was hooked up for an hour, but . . . I started drinking the drink 20 minutes before that." Ritzenhein's recollection is confirmed by a handwritten notation made by Dr. Brown on a blood test report from one of the December 13, 2011, blood draws on Ritzenhein. Brown circled Ritzenhein's recorded

insulin level of 37.6 and immediately below wrote: “pre-carnitine but 20 mins after 75 grams glucose.” Dr. Brown’s notes are reproduced below.

Dr. Brown's handwritten notes on Labcorp blood analysis from Ritzenhein 12/13/11:



T3 Uptake	35		%	24-39	01
Free Thyroxine Index	2.7			1.2-4.9	
Thyroxine (T4) Free, Direct, S			Will Follow		
▶Insulin	37.6	H	uIU/mL	2.6-24.9	01 ◀
Triiodothyronine,Free,Serum			Will Follow		

*** END OF REPORT ***

01 HD LabCorp Houston
7207 North Gessner, Houston, TX 77040
Dir: Pamela Holder, MD
Contact by: 713-856-8288

For Inquiry Purpose Only.
These results are considered preliminary and are not the final lab report.
A final report will be provided via your current reporting mechanism.
Results
Laboratory Corporation of America

Photo: Dr. Brown's handwritten notes on Dathan Ritzenhein blood test record from Dec. 13, 2011 blood draw (p. USADA 000806).

Regarding the glucose drink, Ritzenhein said that during the infusion, "[t]hey're checking the bag, squeezing it a little bit, taking blood periodically throughout this, and *the whole time I'm trying to drink this stuff steadily*."[466] He said, "I just remember *it was a lot of, a lot of drinks*, and I had finished them. And by the end, yeah, just a lot of straight sugar."[467]

[466] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 184, lines 8 – 11.
[467] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 189, lines 18 – 21.

As noted above, Dathan Ritzenhein testified that he understood that Magness was going to perform testing on this medical drink first before the L-carnitine infusion would be given to Ritzenhein.[468] By giving Ritzenhein an untested glucose drink without informing Ritzenhein that the efficacy of the drink had not yet been tested Dr. Brown failed to provide Ritzenhein material information which Dr. Brown had a fiduciary duty to provide to his patient. Furthermore, by proceeding to the infusion procedure without disclosing to Ritzenhein material information regarding the procedure, Dr. Brown breached his duty to Ritzenhein to obtain Ritzenhein's fully informed consent prior to beginning the procedure.

g. Differences between medical records for Ritzenhein infusion and those for all subsequent L-carnitine infusions

There are a number of significant differences between the medical records for the L-carnitine infusion received by Dathan Ritzenhein and the records for every NOP athlete who subsequently received an L-carnitine infusion from Dr. Brown. A comparison of these records reflects that in terms of the records kept the infusion received by Ritzenhein looks much more like the infusion received by Steve Magness than it does the infusion received by other athletes.[469]

For every other athlete the chart notes reference a pre-infusion blood sugar reading and fingersticks approximately every 20 minutes after the start of the infusion at which blood sugar levels are recorded. Ritzenhein's records, however, lack these blood

[468] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 172, lines 3 – 5 ("That was my understanding . . . that Steve was going to try it out first."); p. 173, lines 17 – 19 ("He was just testing the insulin response of the glucose drink, the one that was to be taken every 20 minutes.").
[469] See Recorded Athlete Infusion Values Chart at p. 218, *infra*.

sugar readings. Only the infusion procedure performed on Steve Magness also lacked these blood sugar measurements.

Ritzenhein's records also lack a pre-infusion measurement of free and total carnitine. Every other athlete had their carnitine level measure before the infusion began.

The lack of these key measurements in the Ritzenhein records likely reflect, in part, the haste with which the Ritzenhein infusion was organized. The Ritzenhein infusion took place only seven (7) days after the receipt of Dr. Fedoruk's email, affording less than a week for Salazar, Magness and Brown to research and agree on a new infusion protocol (assuming a new protocol that was safe, effective to load L-carnitine "and get the same absorption of the L-carnitine"[470] as in the Titration Study, and in compliance with the rules, could even be developed) and to sort out the logistics for the infusion. Brown, Salazar and Magness were telling Ritzenhein that the infusion protocol *had* been changed from the Magness protocol, yet, Magness's December 12 email indicates that at least Magness thought that as of the day before Ritzenhein's infusion the *new* infusion protocol had *not yet* been set.

Further, the glucose drink testing which was to have preceded the change in procedures had not yet taken place. Without the glucose drink testing Dr. Brown had no solid pre-infusion evidence that Ritzenhein's insulin levels would be sufficiently raised to facilitate L-carnitine loading without use of a dextrose solution.

The lack of planning and preparation for the Ritzenhein infusion is palpable. The records that were kept by Brown are not very orderly. The principals have clearly not

[470] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 168, line 17-18.

communicated effectively with each other concerning what the procedure will look like. Nor have they communicated details to Ritzenhein. Thus, Ritzenhein senses that the process is "a scramble."[471] No one has communicated to him in advance, "any idea about the procedure . . . or anything . . . about a less than 50 [mL] procedure or anything like that."[472]

The lack of pre-infusion records also underscores that there was clearly no research purpose intended for the Ritzenhein infusion. The purpose of this infusion was solely to attempt to increase Ritzenhein's L-carnitine storage to enhance his performance in the upcoming U.S. Olympic Trials. Had there been a research purpose better records would have been kept.

The difference between the records maintained for Ritzenhein's infusion and those kept for the infusions received by all the other NOP athletes may be seen in the following chart which sets forth a side by side comparison of recorded values in the infusion records for Oregon Project athletes.

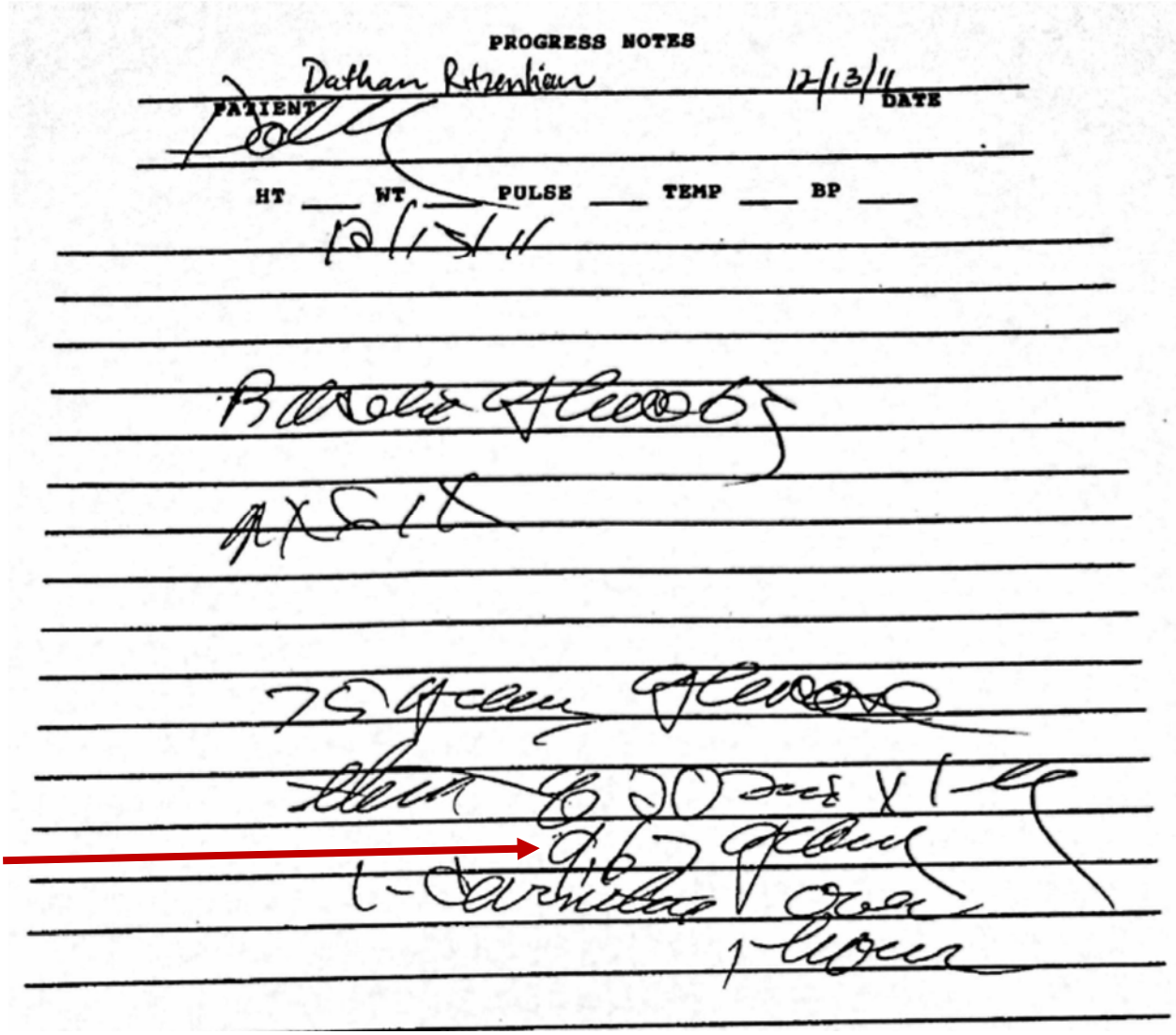
[471] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 166, line 14.
[472] Transcript of Interview (Under Oath) of Dathan Ritzenhein (October 28, 2015), p. 166, lines 21 – 23.

Recorded Athlete Infusion Values

Athlete	Steve Magness Nov. 28, 2011	Dathan Ritzen-hein Dec. 13, 2011	Alvina Begay Dec. 22, 2011	Dawn Grunnagle Dec. 29, 2011	Galen Rupp Jan. 5, 2012	Lindsay Allen Jan. 11, 2012	Tara Erdman Sept. 19, 2012	Mystery Athlete *Approx.* Dec. 29, 2011
Pre-infusion Blood Sugar	Not recorded	Not recorded	82	133 10:10	82	82 8:40am	77 8:46am	81
Glucola start time	Not given	Not recorded	9:30am	10:20am	9:00am	Not recorded	8:50am	9:00am
Infusion start	Not recorded	Not recorded	9:40 am	10:30am	9:10am	8:50am	9:00am (10cc)	9:00am
L-C concentra-tion or weight	60 mMole	9.67 grams	Not recorded	Not recorded	Not recorded	Not recorded	Not recorded	Not recorded
1st fingerstick	Not recorded	Not recorded	10:00am 108	10:50am 107	9:30am 139	9:10am 124	9:20am 67 (10cc)	9:30am 137
2nd fingerstick	Not recorded	Not recorded	10:20 95	11:10am 94	9:50am 130	9:30am 103	9:40am 85 (10cc)	9:50am 132
3rd fingerstick	Not recorded	Not recorded	10:40 104	11:30am 76	10:10am 116	9:50am 130	10:00am 91 (10cc)	10:10am 114
4th fingerstick	Not recorded	Not recorded	11:00 103	11:57am 88	10:34am 110	Not recorded	10:10am Not rec.	10:34am 112
Pre-infusion/ pre-glucose levels	12:59pm **Carnitine total** 81 **Limits** 25-69 **Carnitine free** 46 **Limits** 16-60 **Insulin** 11.1 **Limits** 2.6-24.9	1:52pm **Carnitine total** Not rec. **Limits** Not rec. **Carnitine free** Not rec. **Limits** Not rec. **Insulin** Not rec. **Limits** Not rec.	10:13am **Carnitine total** 61 **Limits** 25-69 **Carnitine free** 54 **Limits** 16-60 **Insulin** 3.3 **Limits** 2.6-24.9	9:35am **Carnitine total** 49 **Limits** 25-69 **Carnitine free** 46 **Limits** 16-60 **Insulin** 30.9 **Limits** 2.6-24.9	9:27am **Carnitine total** 127 **Limits** 25-69 **Carnitine free** 106 **Limits** 16-60 **Insulin** 5.3 **Limits** 2.6-24.9	10:02am **Carnitine total** 55 **Limits** 25-69 **Carnitine free** 43 **Limits** 16-60 **Insulin** 4.3 **Limits** 2.6-24.9	9:30am **Carnitine total** 67 **Limits** 25-69 **Carnitine free** 57 **Limits** 16-60 **Insulin** 1.3 **Limits** 2.6-24.9	9:25am **Carnitine total** 129 **Limits** 25-59 **Carnitine free** 104 **Limits** 16-60 **Insulin** 5.5 **Limits** 2.6-24.9
Post-infusion levels	12:59pm **Carnitine total** 2822 **Limits** 25-69 **Carnitine Free** 2452 **Limits** 16-60 **Insulin** 19.4 **Limits** 2.6-24.9	2:45pm **Carnitine total** >2000 **Limits** 25-69 **Carnitine Free** >2000 **Limits** 16-60 **Insulin** 48.7 **Limits** 2.6-24.9	11:15am **Carnitine total** >2000 **Limits** 25-69 **Carnitine Free** >2000 **Limits** 16-60 **Insulin** 27.9 **Limits** 2.6-24.9	10:11pm **Carnitine total** >2000 **Limits** 25-69 **Carnitine Free** >2000 **Limits** 16-60 **Insulin** 54.5 **Limits** 2.6-24.9	9:57pm **Carnitine total** >2000 **Limits** 25-69 **Carnitine Free** >2000 **Limits** 16-60 **Insulin** 38.7 **Limits** 2.6-24.9	10:09am **Carnitine total** >2000 **Limits** 25-69 **Carnitine Free** >2000 **Limits** 16-60 **Insulin** 29.1 **Limits** 2.6-24.9	10:18am **Carnitine total** 7447 **Limits** 25-69 **Carnitine Free** 7269 **Limits** 16-60 **Insulin** 58.6 **Limits** 2.6-24.9	9:57am **Carnitine total** >2000 **Limits** 25-59 **Carnitine Free** >2000 **Limits** 16-60 **Insulin** 39.2 **Limits** 2.6-24.9

h. Significance of Ritzenhein receiving 9.67 grams of L-carnitine

In two (2) places Dr. Brown's notes state that Ritzenhein was administered "9.67 grams of L-carnitine over 1 hour."[473]


PROGRESS NOTES

Dathan Ritzenhein 12/13/11

PATIENT DATE

HT ___ WT ___ PULSE ___ TEMP ___ BP ___

Photo: Excerpt from Dr. Brown's 12/13/11 "Progress Notes" Note for Dathan Ritzenhein (showing reference to "9.67 grams L-carnitine over 1 hour") (p. USADA 000810)(Note: This record was altered to insert "40 ml") in records provided by Dr. Brown's Office to USADA.)

[473] *See* Dathan Ritzenhein medical records, p. USADA 000804.

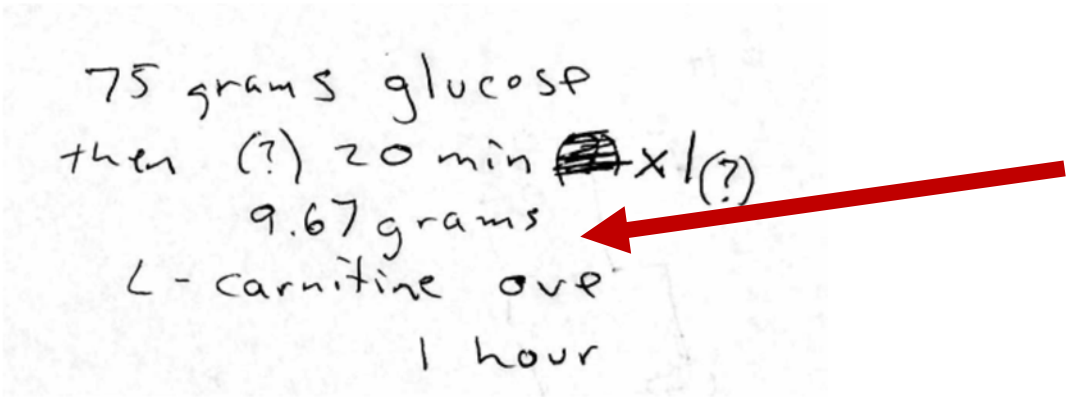


Photo: Excerpt from Dr. Brown's 12/13/11 Note for Dathan Ritzenhein (showing reference to "9.67 grams L-carnitine ove 1 hour") (p. USADA 000809) (Note: The entire page on which this note is found was deleted from records provided by Dr. Brown's Office to USADA.)

As noted above, there may have been an effort to deprive USADA of the page in the medical records containing the very clear reference above to Dathan Ritzenhein having received "9.67 grams L-carnitine ove[r] 1 hour." In any case, the page was missing from the records that Dr. Brown's office provide to USADA. For the reasons set forth below, the fact that Ritzenhein's medical records state that he received 9.67 grams of L-carnitine over 1 hour demonstrates that Ritzenhein likely received an infusion far in excess of 50 mL.

As explained above, in 2015, in response to USADA's request for Ritzenhein's medical records, Dr. Brown or someone in his office inserted a reference to an infusion volume of "40 mL" in the above record. 40 mL is about 2.7 tablespoons.

Preparing an infusion concentration of 9.67 grams of L-carnitine in 40 mL of liquid certainly would have required the assistance of a compounding pharmacy. The "Logged Formula Worksheet" demonstrates that a similar concentration was prepared

for the Galen Rupp infusion(s), although, considerably more than 40 or 45 mL was evidently understood by Dr. Brown to be required to spread the infusion over the one hour long infusion period as the fact that 100 mL infusion bags were prepared for the Rupp infusion clearly indicates.

Infusing 40 mL (2.7 tablespoons) continuously and uniformly over a one hour period is a practical impossibility and Dr. Brown knew this. As explained above, the point of the L-carnitine infusion is to "maintain a supraphysiological steady-state plasma carnitine concentration."[474] The intent is not to simply bring plasma carnitine concentration to a peak and allow it to dissipate, rather the point is to keep the plasma concentration at a "supraphysiological" the entire time that insulin levels are being driven up.

Therefore, Dr. Brown knew that he had to infuse more than 40 mL for the uptake of L-carnitine to occur. Dathan Ritzenhein's blood records from the infusion reflect that his post infusion carnitine level was > (i.e., greater than)[475] 2,000 H umol/L. Therefore, we know that at the very end of the infusion Ritzenhein's plasma carnitine level was extremely high. This could not have occurred if 40 mL was used for the infusion (and particularly with the squeezing of the bag described by Ritzenhein) as the infusion volume would have been used up well before the end of the procedure and Ritzenhein's plasma carnitine level would have dissipated.

---

[474] Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006, p. E638.

[475] We do not know how much higher because the blood test used in his case only measured whether the value was greater than 2000 H umol/L. However, we do know that for Tara Erdman's subsequent infusion in September of 2012, her absolute total L-carnitine level increased from 67 H umol/L to 7269 H umol/L an extraordinary, almost 11,000% increase.

Thus, just as appears from the "Logged Formula Worksheet" we understand that even if Ritzenhein's infusion was prepared at a concentration of 9.67 grams per 40 mL (a concentration even higher than that evidently given to Galen Rupp), that well over 50mL must have been used in the infusion in order to continue the infusion over the full one hour period of time that Dr. Brown evidently believed was required to attempt to get sufficient uptake of L-carnitine. As noted above, Ritzenhein's recollection that his infusion bag was squeezed in an effort to accelerate the flow rate makes clear that well over 50 mL must have been used during the infusion procedure, precisely as the Rupp infusion "Logged Formula Worksheet" indicates happened for Galen Rupp's infusion.

In any case, it is important to note just how extraordinary and potentially unsafe are the concentrations of L-carnitine which Brown has apparently acknowledged giving the NOP athletes and which are reflected in the "Logged Formula Worksheet." 9.67 grams of L-carnitine diffused in 40 mL amounts to an L-carnitine concentration in the infusion solution of 241.75 mg/mL. This is more concentrated than the highest concentration of injectable L-carnitine commercially available in the U.S. and elsewhere. Injectable carnitine is available in the U.S. at a concentration of only 1 g per 5 mL (200 mg/ml).[476] Moreover, as explained below, *the manufacturers of injectable L-carnitine recommend it be diluted to 25 times less than 200 mg/ml before injecting it into a human being*.

Injectable L-carnitine (i.e., levocarnitine) is commercially available as an FDA-Approved prescription product known by the brand name CARNITOR® (NDC 54482-

[476] *See* http://www.sigmatau.com/canada/Product_Monograph_CARNITOR.pdf . The concentration of 1g/5mL is also the highest concentration apparently available in Europe.

147-01) manufactured by Sigma-Tau S.p.A, 00040 Pomezia (Rome), Italy.[477,478] Currently, other manufacturers with approval to market a generic equivalent are Eurohealth International Sarl and Luitpold Pharmaceuticals Inc—American Regent,[479] but only American Regent had product available in the US until May 2015 and other repackaging companies or manufacturers also stopped distribution.[480] Oral solutions, tablets and capsules are also available on the market as prescription-only products.

Carnitor and the generic equivalents are manufactured as 200 mg levocarnitine per milliliter with an adjusted pH 6.0 to 6.5 (hydrochloric acid/sodium hydroxide) solution. This is the only concentration available on the US market. With an empiric formula of $C_7H_{15}NO_3$ and molecular weight 161.2 g/mol, the chemical is a white, hydroscopic powder, but not commercially available for standard pharmacy purchase. Compounding concentrations higher than 200 mg/mL requires the pharmacy carry compounding certification, which only a few specialty pharmacies maintain.

Carnitor markets a single-dose 5 mL vial. The product contains no preservatives. Teva Parenteral Medicines marketed a single-dose 5 mL vial and a 12.5 mL multi-dose vial until late 2014 when the products were discontinued. American Regent previously

[477] CARNITOR [package insert]. Gaithersburg, MD: sigma-tau Pharmaceuticals Inc: June 2015.
[478] Levocarnitine. Drug Facts and Comparisons [database online]. St. Louis, MO: Wolters Kluwer Health Inc; February 16, 2016. Accessed February 29, 2016.
[479] Levocarnitine. Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations. U.S. Food and Drug Administration. http://www.accessdata.fda.gov/scripts/cder/ob/docs/tempai.cfm [26 Feb 2016]. Accessed February 29, 2016.
[480] Resolved Drug Shortage Bullentin: Levocarnitine Injection. American Society of Health-System Pharmacists. Drug Shortages. http://www.ashp.org/menu/DrugShortages/ResolvedShortages/bulletin.aspx?id=968 [20 May 2015]. Accessed February 29, 2016.

marketed 5 mL vials that have been on back order since May 2015 with no release date.

The recommended dilution of this product is a concentration between 0.5 and 8 mg per mL prepared in Sodium Chloride 0.9% or Lactated Ringers. This concentration range was tested for stability and compatible with polyvinyl chloride (PVC) containers (i.e. standard IV bags) at room temperature (25 degrees Celsius) for up to 24 hours. Higher concentrations have not been tested for stability or remain unpublished.[481,482,483] When data cannot support a more highly concentrated dilution, it is risky for a physician such as Dr. Brown to deviate from the recommended maximum due to risk to the peripheral IV site or vein and due to the increased potential for adverse events related to the safety of the infusion.

The manufacturer's recommendation, (as stated in the following excerpt from the product monograph for the Carnitor® brand of injectable L-carnitine available in the U.S.), is that injectable L-carnitine be mixed in an IV solution in concentrations only up to 8 ng/mL. The concentration of the L-carnitine solution reflected in the altered records for Ritzenhein's infusion (i.e., 9.67g/40 ml or, in other words, 241.75 mg/mL) is therefore more than thirty times higher than the concentration recommended by the manufacturer.

[481] Trissels LA. Handbook on Injectable Drugs. 18th Ed. Bethesda, MD: American Society of Health-System Pharmacists; 2014.
[482] Gahart, BL, Nazareno, AR. 2014 Intravenous Medications A Handbook for Nurses and Pharmacists. 30th Ed. Elsevier; 2014.
[483] Phelps, SJ, et.al., Pediatric Injectable Drugs (The Teddy Bear Book). 10th Ed. Bethesda, MD: American Society of Health-System Pharmacists; 2013.

CARNITOR® (levocarnitine) Injection:
For intravenous use only. CARNITOR® Injection is compatible and stable when mixed in parenteral solutions of Sodium Chloride 0.9% or Lactated Ringer's in concentrations ranging from 250 mg/500 mL (0.5 mg/mL) to 4200 mg/500 mL (8.0 mg/mL) and stored at room temperature (25°C) for up to 24 hours in polyvinyl chloride (PVC) plastic bags.

Photo: Excerpt from Carnitor® Product Monograph (indicating maximum recommended infusion concentration of 8.0 mg/mL).

Potential side effects noted in the product literature for Carnitor® injectable L-carnitine include injection site reactions, adverse gastrointestinal reactions and seizures.[484] Each of these potential side effects becomes progressively more likely as the concentration of the infused L-carnitine solution increases, meaning that it was potentially medically risky and certainly not an appropriate exercise of professional judgment to infuse L-carnitine at such a high concentration.

Even in 50 mL of infusion solution (which the records provided to USADA by Dr. Brown deny was given), 9.67 grams of L-carnitine would be at the highest concentration level commercially available and far above (about 25 times higher than) the concentration recommended for infusion in humans. Therefore, it would appear from the reference to an infusion of 9.67 grams of L-carnitine that Dathan Ritzenhein received that if Dr. Brown actually infused this concentration that his actions indicated a conscious disregard for potential side effects constituted a clear deviation from the standard of care.

[484] *Id.*

24. L-Carnitine Infusions Received by Begay, Grunnagle, Rupp and Allen

After Ritzenhein had his L-carnitine infusion on December 13, 2011, Alvina Begay received her infusion on December 22 and three more NOP athletes, Dawn Grunnagle (Dec. 29), Galen Rupp (Jan. 4) and Lindsay Allen (Jan. 11) received their infusions in successive weeks. Following is a discussion of what USADA has discovered concerning these transfusions.

a. Common denominator in the medical records of subsequent infusions: lack of record of the amount of L-carnitine infused

Perhaps the most telling aspect of what is known about subsequent L-carnitine infusions given to Oregon Project athletes is what is *not* recorded in their medical records. For *each* of the subsequent L-carnitine infusions[485] *the amount of the L-carnitine used in the infusion is not recorded* in the medical records provided to USADA by Dr. Brown's office. Nor was the amount of the L-carnitine used in any of these infusions set forth in any of the other documents provided to USADA by Salazar, the athletes or their legal counsel until the "Logged Formula Worksheet" was provided on March 15, 2016.

USADA has still not received any medical records from Dr. Brown which state the amount of L-carnitine used in the infusions. The omission in the medical records of the amount of L-carnitine used in the infusions should impress as truly shocking. After all, what piece of information could possibly be more valuable to record in order to evaluate the success (or not) of the infusion and to ensure the future reproducibility of the

[485] For the first two infusions the amount of L-carnitine allegedly used was provided by weight (Ritzenhein, 9.67 grams) or concentration of the L-carnitine solution (Magness, 60mMol).

infusion protocol than the amount of the L-carnitine used? The answer, of course, is that no piece of information could be more valuable and useful for evaluating and comparing the infusions and in order to permit data about the infusions to be used in the future. This is why the omission of the amount of L-carnitine used (either by concentration of the infusion solution or via the absolute amount of L-carnitine) in the records *of all five (5) subsequent infusions performed by Dr. Brown* must either be regarded as either: (1) the most stunning and improbable of all possible recordkeeping failures, or (2) evidence of an intentional effort to conceal the amount of L-carnitine used (and more to the likely point, the volume of infusion solution used) in the infusions.

Keep in mind that, as explained above, Alberto Salazar told everyone who would listen that he wanted to use the infusions to evaluate the effectiveness of L-carnitine storage in the muscle. He told this to USADA, to Dr. Brown himself, to the Nike Research Laboratory Director Brad Wilkins, to other laboratory employees at Nike and at the University of New Mexico and to George Clouston, the CEO of Nutramet. Moreover, Salazar claims even now that the infusions were conducted for a primarily research purpose. He repeated this theme over and over, *ad nauseum*, in his interview.[486] Furthermore, it is clear that, while performance enhancement was

[486] *See*, *e.g.*, Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 60, lines 10 – 12 ("Steve came up with the idea on who we should test in order to **ascertain whether L-carnitine supplement worked**"); p. 60, lines 23-24 ("Steve came up with this idea on we could **test it** in this manner"); p. 63, lines 15-18 "I contacted USADA, and alerted them to the idea that we wanted to do this **experiment on L-carnitine**"); p. 64, lines 5-7 (I can't remember when the idea of **testing** this, and this experiment came up. It may have come up with Dr. Brown."); p. 64, lines 9-13 ("once we got to the point of . . . let's go figure out **how to do this experiment** . . . that's where Steve Magness was primarily in charge"); p. 74, lines 15-19 ("The L-carnitine infusion was **designed to test** on the athletes if continuing on the drink or starting the drink anew would help their training and ultimately their performance."); p. 75, lines 10-11 ("the main reason [for the infusions] was to **test the drink** to see if it worked"); p. 99, lines 17-19 (the infusions were used "In order to **test whether taking the L-carnitine drink was going to be worth it** or not; to see if the stuff worked"); p. 100, lines 7-10 ("The infusions had to

undoubtedly the overriding motive for the infusions, at least as to Ritzenhein, Rupp and Begay in 2011-2012, and certainly as to Mo Farah in 2014, what Salazar says about wanting to "test" or "research" L-carnitine was also true to a point.

Although Salazar plainly wanted to make a point during his interview that the L-carnitine infusions were simply a part of "testing the sports drink"[487] and not really to enhance the performance of his athletes, when it came to Salazar having any level of personal knowledge regarding how the testing was to work, or of what amounts of L-carnitine were to be tried in the testing, or of the outcome of the testing, Salazar professed both ignorance and apathy. He tried to suggest that he really did not care about this L-carnitine testing stuff, that it was all something he left to the scientists and about which he was rather unconcerned. For instance, some of his responses to questions on this topic were as follows:

> **Q** Let me ask you this. You did a test. You were doing a test to see how the L-carnitine worked?
>
> **A** Mm-hm.
>
> **Q** Let's start with this basic. It was relevant how much L-carnitine was taken, correct?
>
> **A** I assume, yeah.

---

do with preparing, **testing the drink** to see if it would help their training and ultimately their performance"); p. 119, lines 10-13 ("The L-carnitine injection was given to Mo, as with our previous athletes, to **check the efficacy of L-carnitine** in training and performance"); p. 120, lines 11-15 ("All I can tell you is that those IV injections were done for the purpose of **testing the sports drink** that, what the efficacy of taking the sports drink would be"); p. 163, lines 2-6 ("Steve Magness was in charge of **researching** this project, and **seeing if it was going to work**. And at some point he decided this [L-carnitine infusion] was something that he was willing to do, and go and do it."); p. 168, lines 4-5 ("at some point, we decided to **get this tested**").

[487] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 120, lines 11-15.

Q What data would be more relevant in determining how well L-carnitine worked than the amount of L-carnitine that was used?

A I am not a scientist, and I am not a doctor. . . .

****

Q I'm asking you what data would be more relevant about the efficacy of L-carnitine and your L-carnitine testing than the amount that was actually given to the athletes?

A I don't know. **I was not in charge of that**. **I don't remember**. I absolutely do not remember talking to Dr. Brown or anybody else about how many grams or ounces of carnitine are there. They had the studies from Greenhaff, and he and Magness had worked out whatever these grams are going to be and that kind of stuff. **I had no idea**.

Q But you do agree that in terms of determining the efficacy of L-carnitine, that it would be relevant or important to know how much L-carnitine each athlete was given?

A You are saying that – which would be now, and I would say that sounds reasonable to me, but **that wasn't my concern**. It wasn't – **I wasn't in charge of that**. I knew that we were following the WADA rules, and we talked USADA, and we were doing it, and **it was a safe procedure**. The doctor told me that it was a safe procedure. **At that point – go at it, guys**.[488]

Salazar's professed ignorance of, and the apathy about, the infusion protocol is not credible and conflicts with the strong weight of the evidence USADA has discovered. It is clear from his emails and from the testimony of NOP athletes that Alberto Salazar desperately wanted to know how effective the muscle loading of L-carnitine could be. This is why six of the seven U.S. NOP runners who eventually received L-carnitine infusions had treadmill testing before and after their infusions. Salazar testified in his interview, "treadmill tests were done before and after . . . the IV

[488] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 219, line 2 – p. 222, line 2 (emphasis added).

injection"[489] "[t]hose [pre and post IV] treadmill tests were done to see if taking the sports drink, which was purported to increase the amount of L-carnitine in your cells, would actually help an athlete's training [and] subsequent performance."[490] This interest in knowing whether Nutramet worked was also why Salazar inquired about obtaining such evidence through painful muscle biopsies of his athletes. Given that this tremendous, practically insatiable curiosity about the effectiveness of L-carnitine loading was present, and Dr. Brown was well aware of it, makes the utter lack of information in the medical records regarding the amount of L-carnitine used in the infusions both striking and utterly incomprehensible, unless the repeated omission of this information has been intentional. In context, neither Salazar's professed apathy about the amount of L-carnitine used in the infusions, nor the absence of this information in the medical records are plausible. Both lead to an inference that information about the precise amount of L-carnitine used in the infusions may not have been included in the medical records because it could be damaging if disclosed.

Such a glaring omission of clearly important and relevant information from infusions that --

- were obviously considered very important at the time (most if not all of the trips to see Dr. Brown in Houston to obtain an infusion were arranged just days before the trip; Alvina's Begay's ticket was, for instance, purchased by Salazar the night before her travel),
- were quite costly, and

[489] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 120, lines 20 – 21.
[490] Transcript of Interview (Under Oath) of Alberto Salazar (February 4, 2016), p. 120, lines 23 – p.121, line 2.

- were very time consuming and undertaken at a busy time on the competition calendar for some of the athletes (such as Ritzenhein and Begay),

suggests that data about the amount of L-carnitine used may have been intentionally left out of the medical records.

b. Salazar claimed in March 2014 that the amount of L-carnitine used in the infusions of NOP athletes was not available but the "Logged Formula Worksheet" demonstrates this claim by Salazar was not accurate when made

On March 24, 2014 Alberto Salazar sent an email to Barry Fudge, a physiologist with UK Athletics with whom Salazar regularly worked in developing the training plan for British Oregon Project athlete Mo Farah. Salazar's email was sent in order to assist Fudge with preparing an L-carnitine infusion for Mo Farah to use prior to Farah's marathon debut, set to occur in the London Marathon on April 11, 2014. Accordingly, Salazar provided what he referred to in his email as "the protocol that was used on one of our runners."[491] Salazar, however, did not identify this "Mystery Athlete" in his email to Fudge.

The emailed information provided to Fudge by Salazar included the Mystery Athlete's pre-infusion blood sugar level, when glucose fingersticks occurred during the Mystery Athlete's infusion, and pre and post infusion insulin and carnitine levels. Essentially, the email to Fudge contains a description of the data found in the medical records for a single NOP athlete. The measurements concerning the infusion of the

[491] 3/24/2014 Email from Alberto Salazar to Barry Fudge Subject: LCarnitine protocol.

Mystery Athlete, which are described by Salazar in his email to Fudge, are the same measurements which recorded in the medical records of most of the NOP athletes.[492]

Salazar does not identify the Mystery Athlete in his email to Fudge. However, it is clear that at the time Salazar sent the email he was aware of the identity of this athlete because Salazar knew that the athlete had been given a treadmill test. Salazar wrote to Fudge: "I will look for the treadmill results later." Salazar was also aware that this particular athlete had a "baseline total Carnitine level of 129 [which was] a little high, . . . because the athlete had already been taking the drink daily for about three weeks."[493]

A comparison of the recorded values for the Mystery Athlete who was the subject of Salazar's email reflect that the Mystery Athlete was almost certainly Galen Rupp, as the values set forth in Salazar's email are by far the closest the values reported for Rupp in his medical records. Yet, Salazar wrote Fudge, "Unfortunately, the records we have don't show the amount of LCarnitine that was used."

However, the "Logged Formula Worksheet" reflects that Salazar's emailed statement to Barry Fudge about not having "records" that "show the amount of LCarnitine that was used" was not accurate. The "Logged Formula Worksheet" contains a fax marking indicating that it was faxed on "Oct 08 2013 [at] 8:23 AM[.]"

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[492] *Compare* 3/24/2014 Email from Alberto Salazar to Barry Fudge Subject: LCarnitine protocol *to* information in the chart of NOP athlete infusion values found *supra* on p. 231. The infusion data from the athlete whose data is included in Salazar's 2014 email is labeled "Mystery Athlete" in the chart on p. 218.

[493] It appears likely that Salazar's reference to the Mystery Athlete having taken Nutramet for three weeks is a misprint and that Salazar was probably referring to *three months*, as the records kept for the Mystery Athlete most closely track records kept for infusions on NOP athletes after December 22, 2011, and the Nutramet product was first distributed to NOP runners on September 29, 2011.

While we do not know at this point to whom the "Logged Formula Worksheet" was faxed, it does appear that the information regarding the amount of L-carnitine used in Galen Rupp's L-carnitine infusion was likely easily available to Alberto Salazar in October of 2013 and in March of 2014 when he sent the email to Barry Fudge claiming that this information was unavailable. Thus, it may be suspected that Alberto Salazar had a reason for not sharing the amount of L-carnitine used in Galen Rupp's infusion. Of course, a possible reason for not wanting to share the amount of L-carnitine used would be Salazar's knowledge that the infusion exceeded the WADA 50 mL threshold.

c. Pre and post infusion carnitine levels are available in the medical records of each of the Oregon Project athlete infusions

In Galen Rupp's case we now have the "Logged Formula Worksheet" which reflects the preparation of 4 x 100 mL L-carnitine infusion bags at a very high L-carnitine concentration. As discussed above, this document indicates that Rupp's L-carnitine infusion almost certainly exceeded 50 mL. While "Logged Formula Worksheets" have not at this point been provided for Begay, Grunnagle, Allen and Erdman it appears likely that they would have received similar infusion volumes.

Infusing 40 mL (2.7 tablespoons) or 45 mL continuously and uniformly over a one hour period is a practical impossibility and Dr. Brown knew this. As explained in the Titration Study, the point of the L-carnitine infusion is to "maintain a supraphysiological steady-state plasma carnitine concentration."[494] The intent is not to simply bring plasma carnitine concentration to a peak and allow it to dissipate, rather the point is to keep the

[494] Francis B. Stephens, Dumitru Constantin-Teodosiu, David Laithwaite, Elizabeth J. Simpson and Paul L. Greenhaff. **A threshold exists for the stimulatory effect of insulin on plasma L-carnitine clearance in humans.** *Am J Physiol Endocrinol Metab* 292:637-641, 2007. First published Oct 17, 2006, p. E638.

plasma concentration at a “supraphysiological” the entire time that insulin levels are being driven up.

Therefore, Dr. Brown would have known in the case of each NOP athlete that he had to infuse more than 40 mL for the uptake of L-carnitine to occur. Blood records from the infusions of Begay, Grunnagle, Rupp, and Allen all reflect that, just like Dathan Ritzenhein, their post infusion carnitine levels were each > (i.e., greater than) 2,000 H umol/L. Therefore, we know that at the very end of each infusion the plasma carnitine level for each NOP athlete was extremely high. This could not have occurred if 40 or 45 mL was used for the infusion as the infusion volume would have been used up well before the end of the procedure and the plasma carnitine level would have dissipated.

Thus, just as appears from Rupp’s “Logged Formula Worksheet” we understand that even if the other NOP athletes had infusion bags prepared at the extremely high concentration of 9.67 grams per 45 mL that well over 50mL must have been used in each infusion in order to continue the infusion over the full minimum one hour period of time that Dr. Brown evidently believed was required to attempt to get sufficient uptake of L-carnitine. As noted above, Ritzenhein’s recollection that his infusion bag was squeezed in an effort to accelerate the flow rate is additional evidence that well over 50 mL must have been used during each of the infusions, precisely as the Rupp infusion “Logged Formula Worksheet” indicates happened for Galen Rupp’s infusion.

An additional noteworthy piece of information is available from Tara Erdman’s subsequent infusion from Dr. Brown in September of 2012. In Erdman’s infusion the total amount of her post infusion carnitine level was measured rather than simply measuring whether her value exceeded 2000 H umol/L. Erdman’s absolute total L-

carnitine level increased from 67 H umol/L to 7269 H umol/L an extraordinary, almost 11,000%, increase. This information as well indicates that the plasma L-carnitine values observed in the NOP athletes post infusion were highly extraordinary, providing further evidence that the NOP athletes received steady state L-carnitine infusions over the entire one (1) hour or more of the infusion period, and thereby establishing that they each almost certainly had infusions in excess of 50 mL.

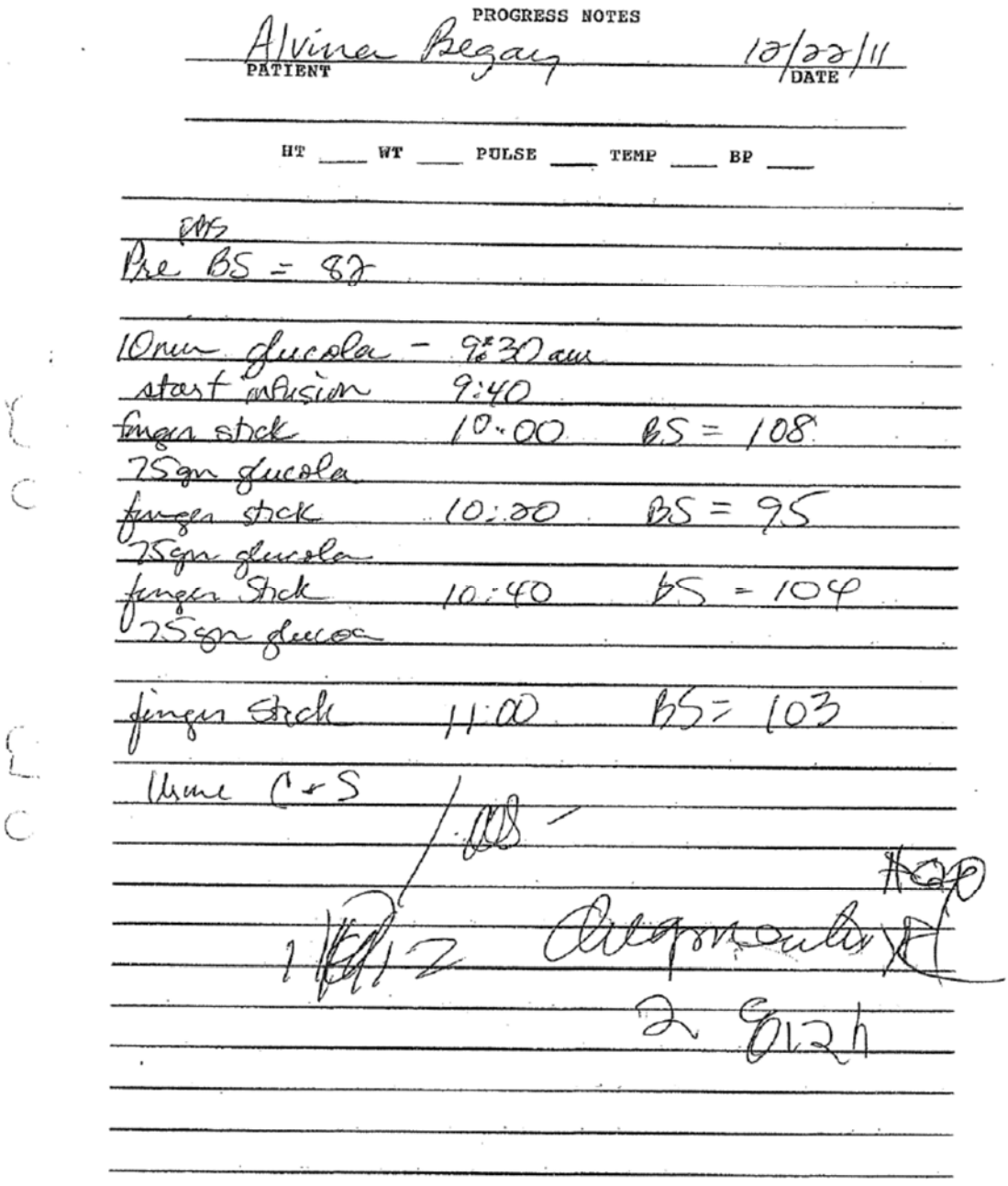
d. December 22, 2011 – Alvina Begay's Infusion

Alvina Begay was interviewed telephonically by USADA Investigator Vic Burgos in early 2015. In her telephonic interview Begay promised to sign a medical records release authorizing USADA to obtain her medical records from Dr. Brown and to sign a statement confirming what she told USADA in her interview.

However, after her telephonic Begay retained Alberto Salazar's legal counsel John Collins as her personal attorney and stopped communicating with USADA. Throughout 2015 and through the first two months of 2016, Begay through her legal counsel Collins refused to sign a medical records lease and/or to obtain her medical records from Dr. Brown in order to provide them to USADA. However, after Salazar's interview in which Salazar identified Begay as having received an infusion from Dr. Brown, USADA sent a follow up request to Collins asking that Begay provide her medical records from her L-carnitine infusion to USADA. On Friday, March 11, 2016, through her lawyer Begay provided copies of her medical records from Dr. Brown to USADA.

Chart notes from Begay's L-carnitine infusion procedure with Dr. Brown are reproduced below.

L-Carnitine Infusion Chart Notes for Alvina Begay (3 pages)



PROGRESS NOTES

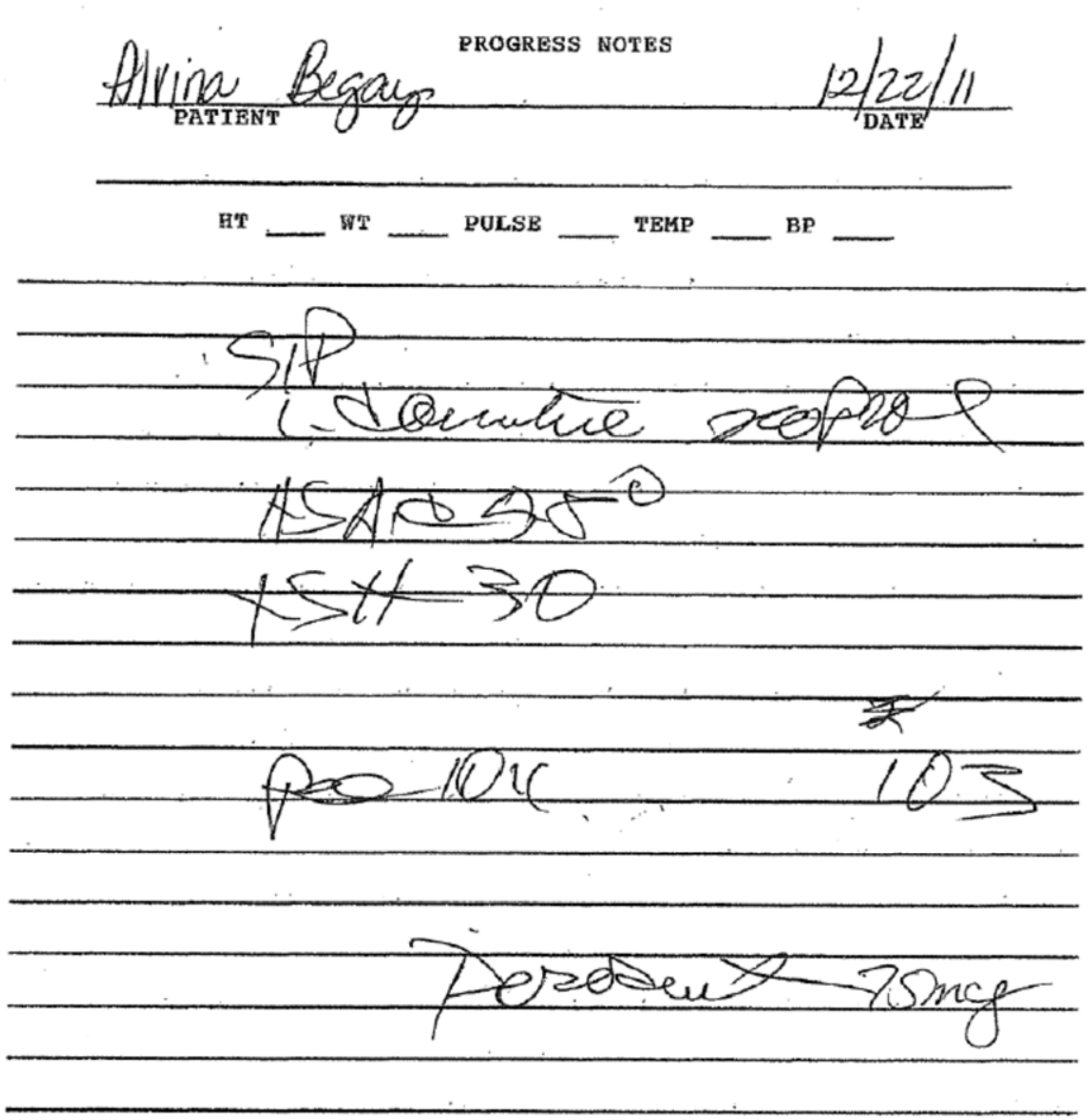
Alvina Begay — PATIENT — 12/22/11 — DATE

HT ___ WT ___ PULSE ___ TEMP ___ BP ___

Pre BS = 87

10min glucola - 9:30 am
start infusion 9:40
finger stick 10:00 BS = 108
75gm glucola
finger stick 10:20 BS = 95
75gm glucola
finger stick 10:40 BS = 104
75gm glucola
finger stick 11:00 BS = 103
Urine C+S

Photo: Diane Gonazales and Dr. Brown's 12/22/11 "Progress Notes" for Alvina Begay (p. USADA 008528).



PROGRESS NOTES

Alvina Begay — PATIENT — 12/22/11 — DATE

HT ____ WT ____ PULSE ____ TEMP ____ BP ____

Photo: Dr. Brown's 12/22/11 "Progress Notes" for Alvina Begay (p. USADA 008529).

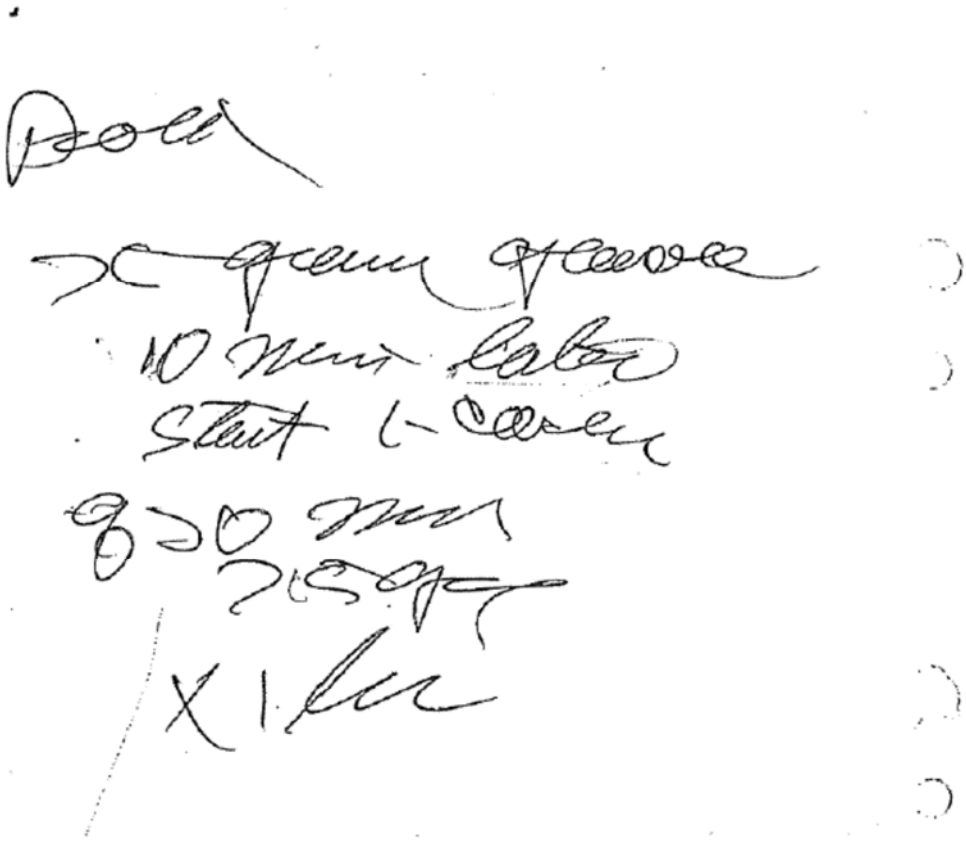


Photo: Dr. Brown's 12/22/11 Notes for Alvina Begay (p. USADA 008532).

In her telephonic interview Begay told USADA that sometime in the Fall of 2011 Alberto Salazar gave her a "tub" of a sports drink that she recalls being "some sort" of liver supplement that had "a lot of sugar". She was concerned with the sugar content because diabetes runs in her family. Begay recalls mixing the drink by adding water to the powder, producing an orange "tang-like" liquid. Begay recalls the drink dosage being twice a day pre and post workouts, and her understanding was that NOP athletes Galen Rupp, Dathan Ritzenhein, Lindsay Allen, Jackie Areson and Mo Farah were also using the drink. She said that she used the drink for about two months before Salazar allowed her to "back off" of it due to her concerns about diabetes. Salazar told her the drink was from the United Kingdom and its benefit was improved endurance.

Begay stated that in late December 2011, she traveled to Houston Texas to see Dr. Jeffery Brown, whom she understood to be an endocrinologist. Salazar made the appointment for her, telling her it was part of the "L-carnitine protocol." Begay recalled that Steve Magness picked her up at the airport and drove her to a hotel near Dr. Brown's office.

Begay said that she took a cab to Brown's office the following day. Begay told USADA that she has hypothyroidism and that the purpose for her visit was that Dr. Brown was giving her a check-up.

Begay claimed she did not recall receiving any infusion or injection at Dr. Brown's office on this visit. When told that Steve Magness had informed USADA that Begay received an L-carnitine infusion at Brown's office during the visit, Begay stated, "Honestly I don't recall".

Begay recalled that prior to the December 2011 visit to Dr. Brown's office she was given a treadmill test in Albuquerque. When asked why she would have a treadmill test before a check-up, Begay stated she did not know why it was ordered. Begay was clearly not forthcoming in her statements to USADA regarding whether she had an L-carnitine infusion from Dr. Brown.

Although Begay claimed to USADA that she did not recall receiving an infusion from Dr. Brown, her medical records confirm that she, in fact, did receive an infusion from him. Additionally, in their interviews with USADA Alberto Salazar, Dathan Ritzenhein and Steve Magness each said that they were aware that Begay had received an L-carnitine infusion from Dr. Brown.

An email from Alberto Salazar to Begay on December 22, 2011, also confirms that Begay received an L-carnitine infusion from Dr. Brown. This email reads:

> **Hi Alvina, I spoke with Dr.Brown and he said he did the LCarnitine infusion on you.** I have fedexed the Sports Drink to you and it will be to you by 4:00 pm tomorrow, but I'd rather you didn't wait until then to start on the drink. Can you go by Dathan's condo and pick up some drink from him before you go to sleep tonight? You should take a serving tonight. (2 scoops per serving) , and then two servings per day to maintain your levels. Also perhaps you can borrow Dathan's Crowcon just for a night to check your tent out. Thanks! – Alberto[495]

Based on the foregoing, it is not credible that Alvina Begay did not recall whether she had received an L-carnitine infusion when she was interviewed by USADA in 2015. Her two day visit to Dr. Brown in December of 2011, just three days before Christmas, required her to travel from the NOP high altitude training camp in Albuquerque, New Mexico and spend two days in Houston about three (3) weeks prior to the U.S. Olympic Marathon Trials for which Begay had qualified.

As noted above, Begay had received at least one emails from Salazar indicating that they had discussed her having an L-carnitine infusion and Salazar's belief that the infusion would improve her marathon time. Moreover, Begay was a part of the Oregon Project at a time when Salazar was expressing great excitement about the Magness L-carnitine infusion and Salazar sent numerous emails in which he expressed his strong motivation for Begay to receive an infusion. Thus, it is clear that Begay knew well in advance of her trip to Houston that she was traveling to see Dr. Brown in order to get an L-carnitine infusion, that she did receive an L-carnitine infusion and that receiving the infusion was a sufficiently noteworthy experience that she would not have forgotten it.

[495] 12/22/2011 Email from Alberto Salazar to Alvina Begay, Dathan Ritzenhein Subject: Sports Drink (emphasis added).

Therefore, Begay's false statement to USADA that she could not recall receiving an infusion from Dr. Brown may lead to an inference of guilty knowledge.

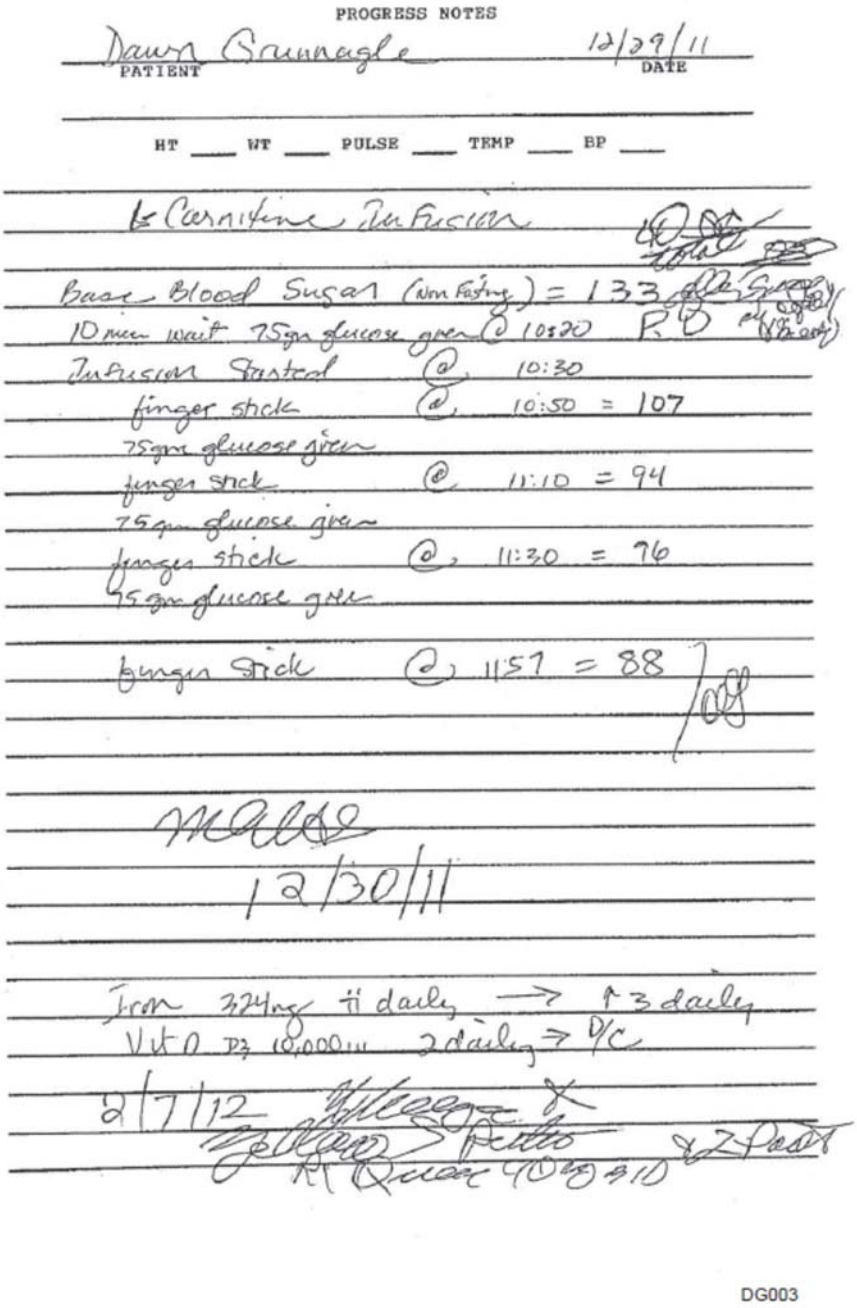
For the reasons set forth above, it appears highly likely that Alvina Begay received an L-carnitine infusion from Dr. Brown in excess of 50 mL in violation of the applicable anti-doping rules and in violation of Dr. Brown's duty to Alvina Begay not to cause her to violate the rules. USADA's investigation of Ms. Begay's potential violation of sport anti-doping rules is continuing.

e. December 29, 2011 – Dawn Grunnagle's Infusion

Dawn Grunnagle was interviewed telephonically by USADA Investigator Victor Burgos in early 2015.

Grunnagle subsequently retained Alberto Salazar's attorney John Collins and discontinued communicating with USADA. She did however sign a written statement she had worked on with USADA prior to retaining John Collins. She also followed through on her promise to provide USADA her medical records from Dr. Brown. The medical records that USADA has received from Grunnagle were obtained by Grunnagle or her attorney and provided to USADA through her lawyer.

L-Carnitine Infusion Chart Notes for Dawn Grunnagle



PROGRESS NOTES

Dawn Grunnagle — PATIENT — 12/29/11 — DATE

HT ___ WT ___ PULSE ___ TEMP ___ BP ___

L-Carnitine Infusion

Base Blood Sugar (non Fasting) = 133

10 min wait 75gm glucose given @ 10:20

Infusion Started @ 10:30

finger stick @ 10:50 = 107

75gm glucose given

finger stick @ 11:10 = 94

75gm glucose given

finger stick @ 11:30 = 96

75gm glucose given

finger stick @ 11:57 = 88

12/30/11

Iron 324mg ii daily → ↑ 3 daily

Vit D 3 10,000iu 2 daily → D/C

2/7/12

DG003

Photo: Diane Gonazales and Dr. Brown's 12/29/11 "Progress Notes" for Dawn Grunnagle (p. USADA 000689).

Grunnagle told USADA that Alberto Salazar advised her that L-carnitine loading would generate additional energy stores and improve her performance. In late 2011 Grunnagle took a treadmill test which she said was used to gauge how fast she burned glucose. She said the test results demonstrated she burned glucose faster than others in the group who took the same test. Grunnagle said she was told the treadmill test was intended to help measure whether L-carnitine improved her energy levels during training and competition.

Grunnagle said that in late 2011 she was directed by Steve Magness and Alberto Salazar to visit Dr. Jeffrey Brown in Houston, Texas in order to have an intravenous administration of L-carnitine. Grunnagle said that she asked Salazar about the legality of the infusion, and he assured her it was not prohibited. Salazar told Grunnagle that he had spoken with Amy Eichner at USADA who told him the L-carnitine infusion procedure was not prohibited because the volume to be administered was less than 50 mL.

Grunnagle said that in late 2011 she and her husband Harry visited Dr. Brown's office in Houston. She said that in Dr. Brown's office Dr. Brown's assistant administered an IV drip from an IV bag containing fluid in which L-carnitine had been dissolved. A needle was inserted in Grunnagle's arm and connected to the IV drip. Grunnagle sat on the couch in Dr. Brown's office for about an hour while the L-carnitine solution was administered intravenously. After administration of the contents in the IV bag was complete a nurse removed the needle from Grunnagle's arm. Grunnagle estimated that the entire procedure took a little more than an hour.

Grunnagle's infusion chart note contains handwriting of Dr. Brown's office assistant Diane Gonzales who prepared most of the infusion description. However, also included on the side of the note appears to be handwriting of Dr. Brown which appears to read "40 cc total."

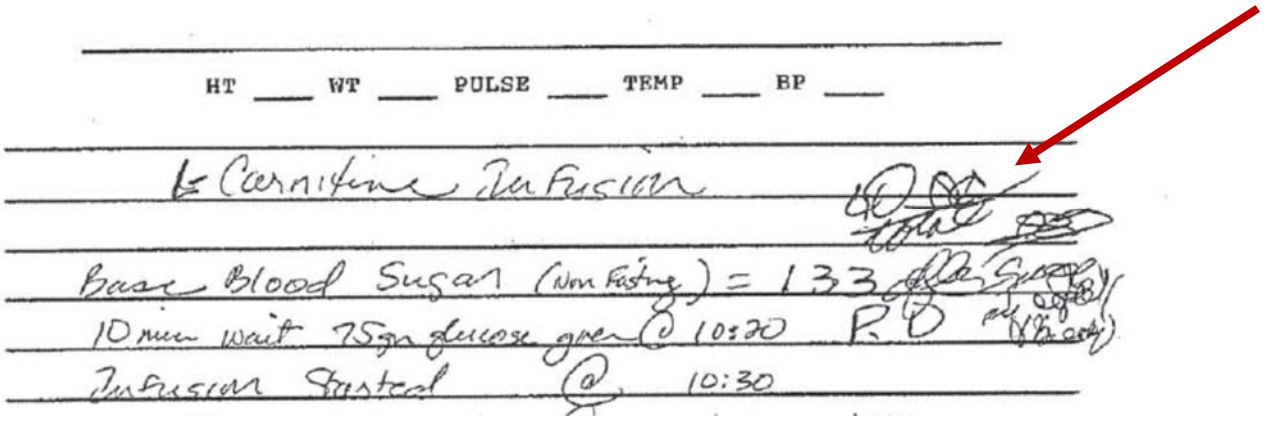


Photo: Detail of a portion of Diane Gonazales and Dr. Brown's 12/29/11 "Progress Notes" for Dawn Grunnagle (p. USADA 000689).

It is not entirely clear whether Dr. Brown's 40 cc (i.e., 40 mL) notation was added to the chart note contemporaneously, or, like the "40 ml" notation in the Ritzenhein records, added well after the fact. Nevertheless, as explained above in the sections discussing the infusion volumes it is apparent that the reference to "40 cc" if, in fact, intended as a reference to the volume of Grunnagle's infusion is a fabrication.

It also seems unusual that the reference to "40 cc" was added to the side of Ms. Gonzales's note rather than at the bottom of the page of Progress Notes where there would have apparently been ample room to add the note as of the December 29 date of the infusion.

The bottom of the Progress Notes page does currently include a note bearing a date of 2/7/12. However, this note would note have been at the bottom of the page when the infusion record was created. Thus, if the "40 cc" notation was added later and

not contemporaneously it may have been added to the side of the page because the note entered on February 7, 2012, took up the space at the bottom of the page.

For the reasons set forth above, it appears highly likely that Dawn Grunnagle received an L-carnitine infusion from Dr. Brown in excess of 50 mL in violation of the applicable anti-doping rules and in violation of Dr. Brown's duty to Dawn Grunnagle not to cause her to violate the rules. USADA's investigation of Ms. Grunnagle's potential violation of sport anti-doping rules is continuing.

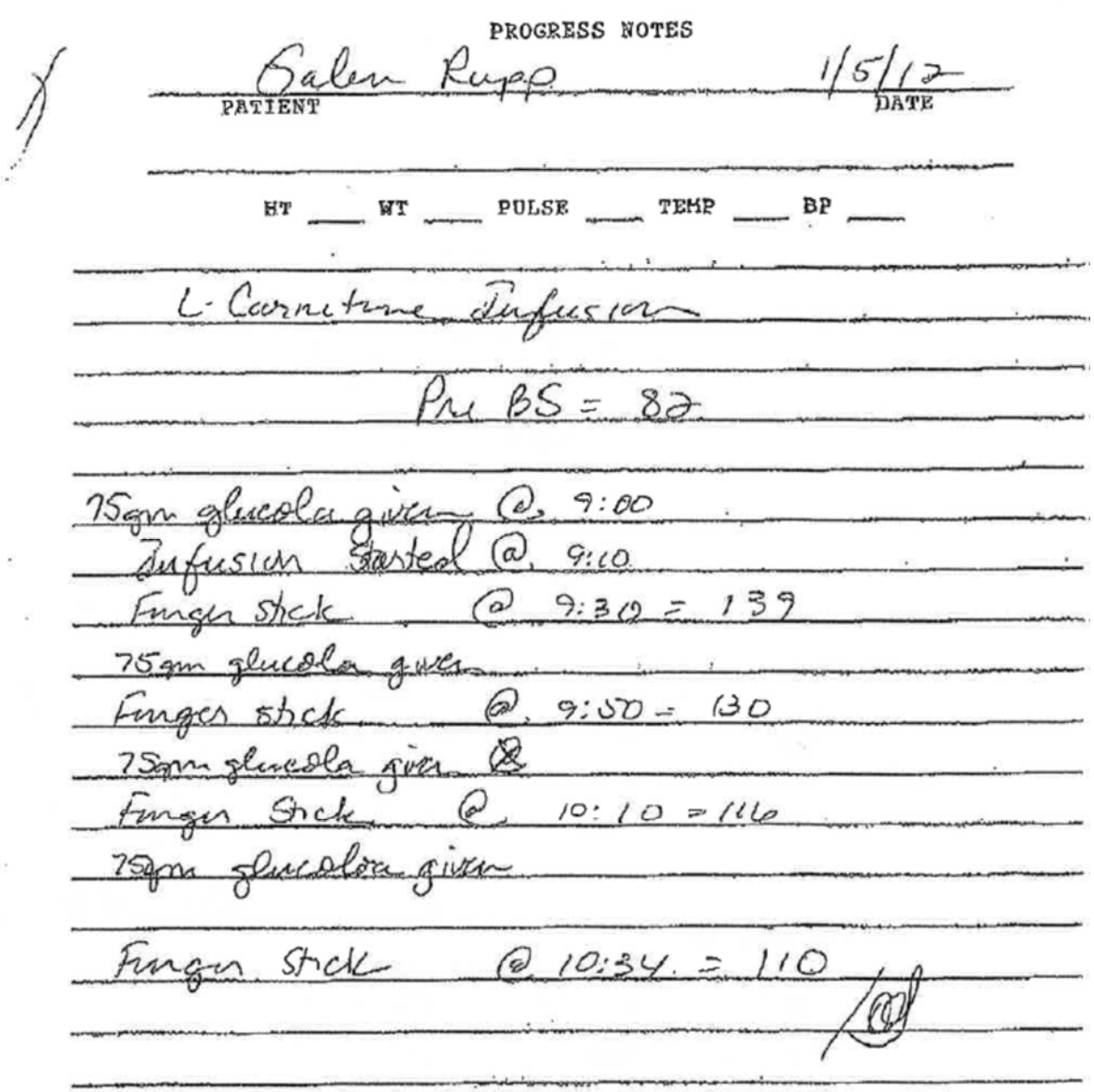
f. January 5, 2012 – Galen Rupp's Infusion

Galen Rupp was interviewed by USADA under oath on January 19, 2016.

Given the allegations made against Rupp by Steve Magness, the "testosterone medication" reference in the photo provided by Magness and concerns expressed by various individuals whom USADA interviewed from early June, 2015, USADA repeatedly sought to interview Rupp under oath. Eventually, Rupp agreed to an interview with USADA pursuant to a written proffer agreement.[496]

[496] The proffer agreement with Galen Rupp is Bates labeled USADA 009343 – USADA 009344.

L-Carnitine Infusion Chart Notes for Galen Rupp



PROGRESS NOTES

Galen Rupp — PATIENT — 1/5/12 — DATE

HT ___ WT ___ PULSE ___ TEMP ___ BP ___

L-Carnitine Infusion

Pre BS = 87

75gm glucola given @ 9:00
Infusion started @ 9:10
Finger stick @ 9:30 = 139
75gm glucola given
Fingers stick @ 9:50 = 130
75gm glucola given
Finger Stick @ 10:10 = 116
75gm glucolora given
Finger Stick @ 10:34 = 110

Photo: Diane Gonzales 1/5/12 "Progress Notes" for Galen Rupp (p. USADA 000952).

Rupp acknowledged that he was sent to Dr. Brown's office in Houston, Texas for an L-carnitine infusion in January of 2012. Galen was aware that, "doing an infusion, maybe might have been a better way to take L-carnitine."[497] Rupp, however, claimed not to have much knowledge about how L-carnitine might help him as a runner. When asked how he thought the L-carnitine infusion was going to work in his body, Rupp responded: "[w]ell, it was going to, you know, put L-carnitine in it."[498]

Rupp said that his infusion was given in Dr. Brown's personal office.[499] Rupp was seated on a couch or chair in Brown's office.[500] Dr. Brown was there throughout most of the infusion, although he "might have gotten up a couple of times to leave."[501] Before having the infusion, Rupp recalls making small talk with Dr. Brown and then Dr. Brown "just went over the protocol of what he was going to be doing."[502] Rupp said that he could not recall what Brown told him. However, Rupp did recall that Rupp "asked [Dr. Brown] to make sure this was fine with the WADA code, this was all compliant."[503]

Rupp said, "I just wanted to make sure, I know that Alberto had said that he had checked and everything was good, and again, I just wanted to double-check."[504] Rupp also said that he had had a telephone conversation with Salazar in which Salazar had

[497] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 231, lines 14 – 15.
[498] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 231, lines 24 – 25.
[499] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 214, line 20 – p. 215, lines 16.
[500] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 215, lines 5 – 11.
[501] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 215, lines 14 – 15.
[502] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 215, lines 23 – 25.
[503] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 216, lines 3 – 5.
[504] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 275, lines 4 – 7.

told him the infusion procedure was compliant with the anti-doping rules.[505] As a result of these prior communications with Salazar, in Dr. Brown's office Rupp just "wanted to make sure that Dr. Brown is doing exactly what Alberto had like, talked to USADA about and made sure that there was no, like, confusion or miscommunication with any of that stuff."[506] So, Rupp said "I just made sure that . . . him and Alberto had spoke, and that they were on the same page[.]"[507]

Rupp's relied on Salazar to insure that the infusion procedure followed the rules. Rupp said, "I trusted that Alberto . . . had looked into it, and when he said it was fine, I wanted to make sure that everybody was just on the same page."[508] Regarding the WADA infusion rule, Rupp recalled, that he "remember[ed] hearing that there was like a 50 milliliters, like that rings a bell[.]"[509] But in the end, according to Rupp, he "asked Alberto, and [Alberto] was the one that told me that he looked into it, and that was fine."[510]

During the infusion procedure Rupp was given "really sugary drinks. Really sweet."[511] Rupp said he did not know what the purpose of the drinks were, just that they had something to do with the infusion.[512]

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[505] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 217, line 23 – p. 219, line 6.
[506] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 219, line 23 – p. 220, line 2.
[507] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 220, lines 10 – 12.
[508] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 220, lines 15 – 19.
[509] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 220, line 24 – p. 221, line 1.
[510] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 221, lines 13 – 15.
[511] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 225, lines 21 – 22.
[512] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 225, line 25 – p. 226, line 4.

Rupp believes, though he did not specifically recall, that it may have been an assistant of Dr. Brown who put the needle in his arm.[513] Rupp did not recall what kind of needle it was.[514] He also claimed to be unable to remember what the needle was attached to.[515] He did not remember whether there was an infusion bag,[516] or, if there was an infusion bag, whether anyone squeezed the infusion bag.[517] When asked if he was paying any attention to whether any infusion bags were being changed, Rupp said: "I don't know. I don't remember what, exactly."[518]

Rupp said he did not recall if there was a tube attached to the needle or whether anything was flowing into his arm.[519] Consequently, Rupp was unable to provide any testimony regarding the amount of the infusion he received.[520] Rupp also could not recall how long he was in Dr. Brown's office.[521]

When pressed about his lack of recollection regarding the circumstances of the infusion Rupp responded, "I don't remember. I was on my phone. I was on my phone. I really wasn't."[522]

Rupp had treadmill tests before and after his L-carnitine infusion. Rupp's recollection of the test result was "the numbers were, like they were better that a test that I had done in the past, but I don't remember anything."[523]

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[513] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 225, lines 6 – 18.
[514] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 227, lines 19 – 21.
[515] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 227, line 22 – p. 228, line 7.
[516] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 233, lines 16 – 18.
[517] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 232, lines 22 – 24.
[518] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 233, lines 11 – 15.
[519] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 228, lines 3 – 17.
[520] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 228, lines 14 – 25.
[521] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 229, lines 9 – 11.
[522] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 233, lines 9 – 10.
[523] Transcript of Interview (Under Oath) of Galen Rupp (January 19, 2016), p. 237, lines 17 – 20.

For the reasons set forth above, it appears highly likely that Galen Rupp received an L-carnitine infusion from Dr. Brown in excess of 50 mL in violation of the applicable anti-doping rules and in violation of Dr. Brown's duty to Galen Rupp not to cause him to violate the rules. USADA's investigation of Mr. Rupp's potential violation of sport anti-doping rules is continuing.

g. January 5, 2012 – Salazar's "Hide the Ball" Email

On January 5, 2012, at 12:08 p.m. Pacific time, USADA TUE coordinator Shelly Rodemer sent Dathan Ritzenhein the following email on which Alberto Salazar was copied:

> Dathan,
>
> I just wanted to follow up with you by email in regards to our telephone conversation. I know that you are working with your physician to obtain your medical records regarding your hospital admission in June 2011. When you obtain these medical documents and notes, can you please provide me with this so that we may keep them on file. Thank you very much.
>
> **I have also attached for your review the WADA guidelines addressing Intravenous Infusions**. Also, please note, as stated on the Doping Control Official Record, blood transfusions during the last 6 months should be declared. Thank you very much and **please contact me if you have any questions**. Thank you very much for responding so quickly.
>
> Thanks again,
>
> Shelly Rodemer[524]

The foregoing email was sent by Shelly Rodemer to Dathan Ritzenhein due to the fact that Ritzenhein had had a plasma infusion during a medical procedure in 2011 and was

[524] 1/5/2012 Email from Shelly Rodemer to Dathan Ritzenhein CC: Alberto Salazar Subject: Medical Documentation Requested.

being required by USADA to provide documentation regarding the infusion. USADA had learned of the infusion because whenever an athlete has their blood drawn as part of the athlete biological passport program they are required to identify any infusions received during the preceding six (6) months.

However, the email from Rodemer to Salazar happened to come on the very day that Galen Rupp was having his L-carnitine infusion in Dr. Brown's office and within the several weeks prior Dathan Ritzenhein, Alvina Begay, and Dawn Grunnagle had all had their L-carnitine infusions. The following week Lindsay Allen would receive her L-carnitine infusion.

The USADA call log indicates that 24 minutes after Shelly Rodemer sent the above email with guidance regarding IV infusions which was copied to Alberto Salazar that Salazar called Rodemer. Rodemer's contemporaneous notes in the USADA call log concerning this call from Salazar are as follows:

> **coach was calling about difference between infusion and injection**- i have provided coach and athlete with WADA guidelines regarding IV- **i informed coach that injections with a simple syringe and are not a prohibited as a method if the injected substance is not prohibited and the volume does not exceed 50 ml**; an **intravenous infusion is defined as a the delivery of fluids through a vein using a needle or similar device**- as stated in the WADA guidelines and also on Global DRO terms and conditions (at bottom of terms and conditions)- **i emailed alberto the global dro link and also the first page from Global DRO which states the terms and conditions stating this information regarding injections and infusions**. shelly[525]

Obviously, Rodemer's email to Ritzenhein about his plasma infusion had triggered Salazar to ask Rodemer about the difference between infusions and injections.

[525] Entry in USADA call log, January 5, 2012, by Shelly Rodemer.

About 10 minutes after their phone call Rodemer sent Salazar a follow up email regarding the difference between infusions and injections. This email read:

> Alberto-
>
> This link will take you to the Terms and Conditions from our Global DRO website. At the bottom of the terms and condititions, injections and infusions are discussed. Thank you.
>
> http://www.globaldro.org/us-en/search[526]

About an hour and fifteen minutes later Salazar sent Rodemer the following:

> Hi Shelly, thanks so much for sending this Globaldro link and the WADA link regarding injections and infusions. From reading both of these we will proceed with the following understanding: **As long as an injection into a vein using a standard needle or butterly needle is under 50 ml and contains no banned substances, the athlete does not have to apply for a TUE and should not consider ti an infusion, and should answer "NO", if asked by drug testers if they've had an infusion in the previous six months**.
>
> **Is this correct?** Thank you! -- Alberto Salazar[527]

However, Salazar's recitation of the definition of an "injection" is spectacularly wrong.

The WADA link which Salazar claims, in the foregoing email to have read, provides the following guidance regarding the difference between intravenous (IV) infusions and injections:

> By definition, **an IV infusion is the supply of fluids** or other liquid substrates via the insertion of a specialized needle **into a vein** and infusing fluids at a predetermined rate **from a reservoir usually situated above the level of the body**. **An intravenous injection is the supply of fluid** or medication **by means of a syringe** with a standard or butterfly needle, **directly into a vein**. Infusions or injections are permitted if the infused/injected substance is not on the Prohibited List, the volume of

[526] 1/5/2012 Email from Shelly Rodemer to Alberto Salazar Subject: Quick Reference as to Infusion vs. Injection.
[527] 1/5/2012 Email from Alberto Salazar to Shelly Rodemer Subject RE: Quick Reference as to Infusion vs. Injection.

> intravenous fluid administered does not exceed 50 mL per 6-hour period.[528]

Thus, the distinction between intravenous infusions and intravenous injections based on WADA's standards has nothing to do with the volume of the infusion or injection. Rather, an IV "injection" is administered *via a syringe* directly into a vein. In contrast, an IV "infusion" is the supply of fluids via a specialized needle into a vein *from a reservoir* usually situated above the level of the body. An examination of Salazar's email to Shelly Rodemer above demonstrates that Salazar has sought to thoroughly butcher the distinction between an injection and an infusion in such a way that he will be able to argue that he has received confirmation that an "injection" is any insertion of fluid into a vein at or under 50 mL using a butterfly needle – this is not at all the guidance Salazar has received or what the documents he was sent state, but it is his cobbled definition, and it suits his purposes.

With the benefit of hindsight and an understanding of the L-carnitine infusion protocol with which Salazar was intimately involved on January 5, 2012, it is easy to see that Salazar was attempting to create an email record that would permit him to instruct his athletes that they did not need to report their L-carnitine infusions to USADA during the next six months when they would be asked (when blood samples were taken from them) if they had used an infusion during the preceding six (6) months. Salazar had just experienced USADA inquiries regarding the Ritzenhein plasma infusion which had required Salazar and Ritzenhein to compile Ritzenhein's medical records related to the infusion and send them to USADA. Salazar clearly did not want to send USADA the

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[528] https://wada-main-prod.s3.amazonaws.com/resources/files/WADA_Medical_info_IV_infusions_3.0_EN.pdf (emphasis added).

medical records for the L-carnitine infusions and we can see now that he was working for an angle to tell his athletes that they did not need to inform USADA about the infusions.

There is no reason that Salazar's butchery of the distinction between injections and infusions should have been immediately apparent to Shelly Rodemer. Nothing about what he has said to her is technically incorrect. His construction is confusing and he has left out significant portions of the definition of an injection but boiled down to its essence he appears to really just be asking Rodemer -- if his athletes get an injection of less than 50 mL of a non-prohibited substance using a butterfly needle they don't need to declare it as they would an infusion do they? Technically, this is accurate, an injection does not need to be declared to be an infusion.

There is no way for Shelly Rodemer to be able to know that Salazar has deviously created a new definition of "injection." She does not know that he has just had five (5) athletes within the past forty (40) days get L-carnitine infusions that meet the definition of "infusions" within the WADA guidance document she has just referred Salazar too. She cannot be expected to know he is intentionally manipulating the language in his email to call these infusions "injections" and thereby achieve a particular ends, and she is entitled to assume that Salazar can read English and is operating in good faith. In any case, there was no occasion for Rodemer to respond because less than an hour later Salazar withdrew his request to her for a response.

Subsequently, at 2:53 p.m. on the same day, Salazar sent Rodemer the following quite lengthy email chain:

> From: Salazar, Alberto
> To: Shelly Rodemer

Subject: FW: Kara Goucher and permission to get an iron injection
Sent: 1/5/2012 3:52:49 PM

HI Shelly, I just found this old email where Amy Eichner answered my earlier question to you regarding whether an injection of under 50 ml should be declared when an athlete is asked when drug tested. She says below that it's not necessary so unless USADAs stance on this has changed, you don't need to answer me back. Thanks for all your help and have a great week! - Alberto

---

From: Amy Eichner, Ph.D. [mailto:AEichner@usada.org]
Sent: Wednesday, December 22, 2010 8:26 AM
To: Linda Barnes; Salazar, Alberto
Subject: RE: Kara Goucher and permission to get an iron injection

Hi Alberto- Intravenous injections, provided they are under 50mL in volume, are permitted. Kara can have an injection of iron without a TUE or a declaration of use.

Best regards,
Amy

From: Linda Barnes
Sent: Wednesday, December 22, 2010 8:20 AM
To: Amy Eichner, Ph.D.; 'Alberto.Salazar@nike.com'
Cc: Becky Renck
Subject: FW: Kara Goucher and permission to get an iron injection

Mr. Salazar

I have forwarded your e-mail to Amy Eichner, our Drug Reference Resource Manager she should be able to answer your questions. I am unclear about her travel plans during the holidays, but I am sure she will respond before the 27th.

Best regards,
Linda Barnes

From: Salazar, Alberto [mailto:Alberto.Salazar@nike.com]
Sent: Tuesday, December 21, 2010 6:23 PM

To: Tue
Subject: Kara Goucher and permission to get an iron injection

To Whom it may concern,
I sent the email below to Becky Renck and got an answer back that said that she was out of the office until Dec.27th. If there is someone else that can answer this question before the 27th, it would be greatly appreciated! Happy Holidays! Alberto Salazar, cell 503-866-5016

From: Salazar, Alberto
Sent: Tuesday, December 21, 2010 5:09 PM
To: 'Becky Renck'
Subject: RE: Kara Goucher

HI Becky, I hope this email finds you doing well! I am contacting you regarding Kara Goucher. She gave birth about ten weeks ago and recently she had a blood test done and we found that her ferritin and HGB levels were much lower than her normal levels.
Ferritin : 17 versus 200
HGB : 13 versus 15.5
She usually takes several iron pills per day but got off of them during her pregnancy. She has increased her iron pills to the normal amount starting a few days ago. She races in three and half weeks and is really struggling right now because of these low levels. There is no way that she can build up her ferritin levels and get a sizeable improvement in HGB levels in this time period**. I know that Intravenous transfusions are not allowed, but wondered if Intravenous iron injections of Ferumoxytol were okay to do?** From reading on the internet it says that the **normal treatment is about 18 mls** of a 30 mg/ml injection done twice over an eight day period, intravenously. I called Dr.Bob Adams with USATF today and he wasn't sure so he recommended I call you. Thanks for any advice you can give us on this. Happy Holidays! Alberto Salazar[529]

This email and how he will ultimately use it as a shield to prevent USADA from learning about the L-carnitine infusions through declarations by his athletes is very deceptive as well. Salazar has found an old email from Amy Eichner in which she instructs that "injections" under 50 mL do not need to be declared – this, of course, is true. Injections

[529] 1/5/2012 Email from Alberto Salazar to Shelly Rodemer (emphasis added).

do not need to be declared but infusions do need to be declared. Indeed, in the bolded language in the email above Salazar demonstrates that he had an appreciation of the difference between "Intravenous transfusions" which at the time were "not allowed" and "Intravenous injections." The bolded language in this email, in fact, makes clear that Salazar well understood that the distinction between IV infusions and IV injections had nothing to do with volume. Infusions have to be declared to drug testers and injections do not – nothing in this email undercuts this premise. Salazar's only question in this email is whether USADA's position on *declaring* "injections" had changed – he was clearly not advancing any novel new definition of injections. Therefore, there was no reason for Shelly Rodemer to respond to this email, which said not to respond unless USADA position had changed, and she did not.

About a half hour later, at 3:27 p.m. Pacific time on January 5, 2012, Salazar sends his "hide the ball email" to Dathan Ritzenhein, Alvina Begay, Galen Rupp and a group of NOP employees. In full, the deceptive and misleading email Salazar sent reads as follows:

> Sent: Thursday, January 05, 2012 3:27 PM
> To: Dathan Ritzenhein; 'Galen Rupp'
> Cc: 'alvina begay'; Darren Treasure, Steve Magness, Alex Salazar
> Subject: FW: ******** and permission to get an iron injection
>
> HI Dathan, Alvina ,and Galen, For your interest. **When asked about an Infusion, you are to say no. LCarnitine and Iron in the way we have it done is classified as an injection. So no TUE's and no declaration needed, not online and not when asked about infusions when getting drug tested in or out of competition**.. Thanks.- Alberto
>
> _____
>
> From: Salazar, Alberto
> Sent: Thursday, January 05, 2012 2:53 PM
> To: Salazar, Alberto

Subject: FW: ******** and permission to get an iron injection

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From: Salazar, Alberto
To: 'Shelly Rodemer'
Sent: Thursday, January 05, 2012 2:53 PM
Subject: FW: ******** and permission to get an iron injection

HI Shelly, I just found this old email where EichnerA answered my earlier question to you regarding whether an injection of under 50 ml should be declared when an athlete is asked when drug tested. She says below that it's not necessary so unless USADAs stance on this has changed, you don't need to answer me back. Thanks for all your help and have a great week! - Alberto

---

From: Amy Eichner, Ph.D.
Sent: Wednesday, December 22, 2010 8:26 AM
To: Linda Barnes; Salazar, Alberto
Cc: Becky Renck
Subject: RE: ******* and permission to get an iron injection

Hi Alberto- Intravenous injections, provided they are under 50mL in volume, are permitted. ******* can have an injection of iron without a TUE or a declaration of use.

Best regards,
Amy[530]

Salazar has cleverly and deceptively packaged his email to Shelly Rodemer and the advice received more than a year prior from Amy Eichner about "injections" as apparent confirmation that the *infusions* he is telling his athletes they received (i.e., allegedly infusions under 50 mL) do not need to be declared to USADA or the IAAF over the next six months when the athletes are asked about prior infusions when being blood

[530] 1/5/2012 Email from Alberto Salazar to Dathan Ritzenhein, Galen Rupp CC: Alvina Begay, Darren Treasure, Steve Magness, Alex Salazar Subject: F: ******* and permission to get an iron injection

tested. Yet, Rodemer has confirmed nothing of the sort. Salazar had asked her whether USADA's position on *injections* had changed, not whether iron and L-carnitine in the way the Oregon Project "ha[s] it done is classified as an injection." Furthermore, to complete the deception Salazar has cut from the forwarded email chain the reference to a difference between IV transfusions and IV injections.

Salazar's conduct here is patently calculating, misleading and dishonest. The bottom line is that Salazar specifically instructed Ritzenhein, Begay and Rupp (and subsequently Allen and Grunnagle to whom this email was later forwarded) not to declare their L-carnitine infusions to USADA when he plainly knew that they were required to do so and he created a deceptive email chain to back up his bogus advice. This conduct begs the question of *why*, if Salazar was confident that the infusions received by his Oregon Project athletes were not in violation of the rules, *did he feel the need to create a deceptive and misleading email record and to specifically instruct these athletes not to report their infusions to anti-doping authorities?*

h. January 11, 2012 – Lindsay Allen's Infusion

Lindsay Allen was interviewed in person by USADA on January 20, 2016. She is no longer a member of the Oregon Project and was not represented by legal counsel at the meeting. Allen stated that members of her family have close friendships with Alberto Salazar. However, Allen was willing to help USADA because she had misgivings about what was going on at the Nike Oregon Project and wanted to be honest and open with USADA for the good of her sport.

L-Carnitine Infusion Chart Notes for Lindsay Allen

PROGRESS NOTES

Lindsay Allen — PATIENT

1-11-12 — DATE

HT ___ WT ___ PULSE ___ TEMP ___ BP ___

L-Carnitine Infusion
Blood Sugar = 82 @ 8:40
75 gm glucola given
Infusion Started → @ 8:50
fingerstick BS = 124 @ 9:10
75 gm glucola given
fingerstick BS = 103 @ 9:30
75 gm glucola given — Dr. Brown Rep. → BS 113
fingerstick BS = 130 @ 9:50
75 gm glucola given

Photo: Diane Gonzales 1-11-12 "Progress Notes" for Lindsay Allen (p. USADA 001706).

1. L-carnitine

Allen recalled that all of the Oregon Project athletes were given an L-carnitine drink. She knew that the drink came from England. Allen understood that the drink was useful in improving endurance. However, the drink tasted, "super gross." She understood that the drink needed to be used for 6 months. She said that Salazar was "really enthusiastic" about L-carnitine. Salazar "showed results" to her about how it improved performance and told her it was "not widely used" and would give her the "potential for big improvements."

2. Visit to Dr. Brown

Allen said that she went to Dr. Brown because Salazar told Allen that he had received "approval from USADA to test the effect of L-carnitine and that USADA wanted the Oregon Project to do testing on L-carnitine." She said that Salazar left the impression that USADA "wanted to get more information on what L-carnitine did."

She understood that she was to get an infusion from Dr. Brown, which would be a "test of L-carnitine in a controlled setting." She understood that the purpose was research, "to see the effects of L-carnitine."

Allen recalls expressing some mild misgivings to Salazar about getting an infusion and whether doing so would be in compliance with the rules. Allen stated that the reason she expressed some concern to Salazar was, "it felt weird." Allen said that in response to her expression of concern Alberto said, "we are testing it for USADA" and gave her the assurance that she was not getting a drug infusion. When asked again in

her interview about whether she had a strong recollection of what Salazar told her, Allen affirmed that Salazar "specifically said 'USADA is on board and wants us to test it.'"

Allen did treadmill testing before and after seeing Dr. Brown. This was the only time that Allen saw Dr. Brown, however, she understood that all of the NOP athletes were seeing Dr. Brown. Allen recalled Dr. Brown giving her a general physical. Allen said that Dr. Brown did not explain any possible risks or side effects from the infusion to her. She did not recall any discussion with Salazar or Brown about the amount of the infusion or that the volume of the infusion was an issue. Allen said that she did not have any specific recollections about the infusion she received from Dr. Brown.

Alberto Salazar's misleading statements to Lindsay Allen about USADA allegedly wanting the Oregon Project to test L-carnitine is additional evidence of a pattern of deception by Salazar in relation to the L-carnitine infusion project. This extensive pattern of misleading and deceptive conduct supports an inference that the infusions were in violation of the rules.

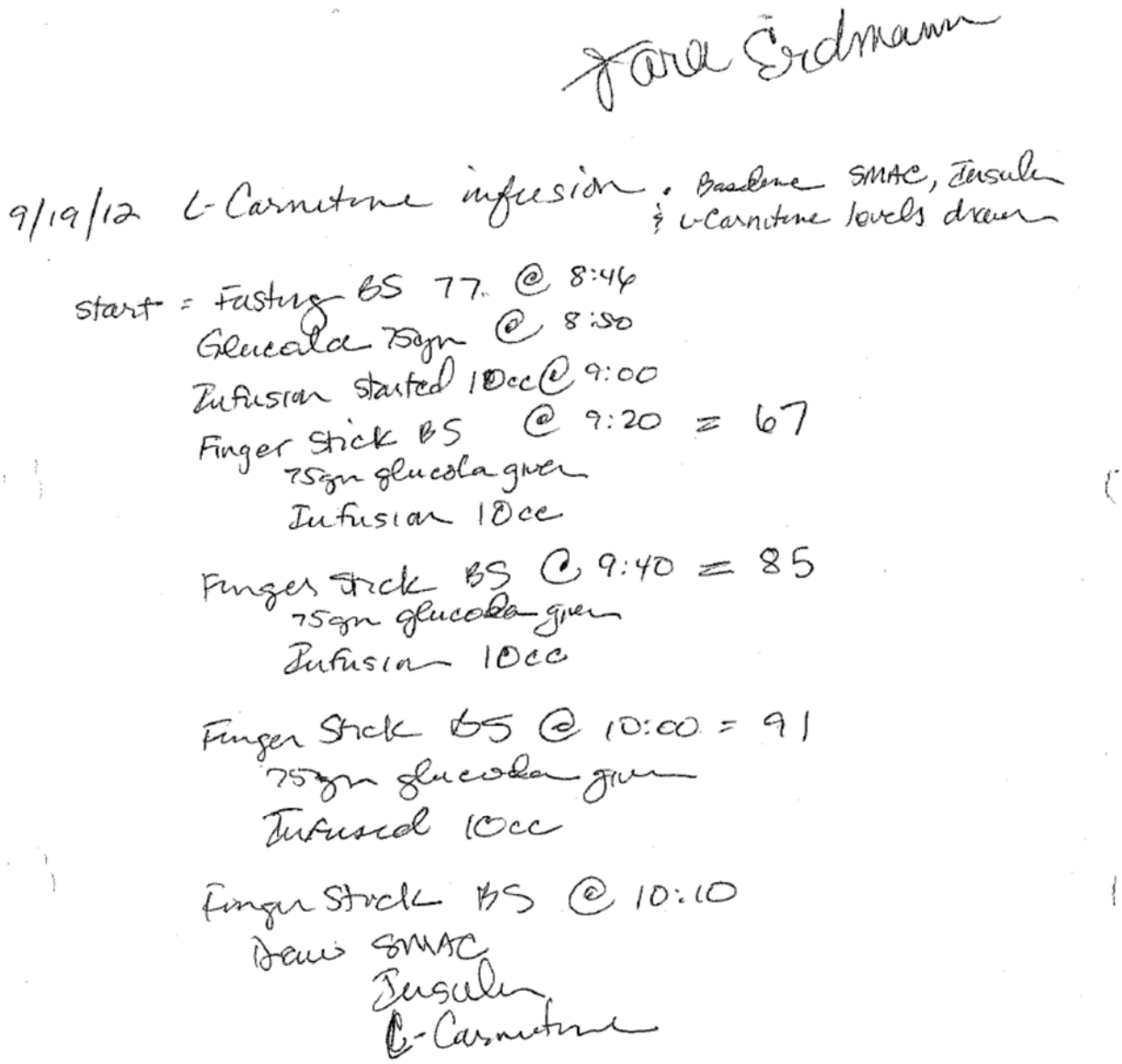
For the reasons set forth above, it appears highly likely that Lindsay Allen received an L-carnitine infusion from Dr. Brown in excess of 50 mL in violation of the applicable anti-doping rules and in violation of Dr. Brown's duty to Lindsay Allen not to cause her to violate the rules. USADA's investigation of Ms. Allen's potential violation of sport anti-doping rules is continuing.

25. Infusion for Tara Erdman – September 19, 2012

Tara Erdman was first interviewed telephonically by USADA Investigator Victor Burgos during the summer of 2015. Erdman was subsequently interviewed in person

by USADA on February 5, 2016. Erdman is not currently represented by legal counsel and has agreed to cooperate with USADA's investigation.

L-Carnitine Infusion Chart Notes for Tara Erdman


Tara Erdmann

9/19/12 L-Carnitine infusion. Baseline SMAC, Insulin & L-carnitine levels drawn

start = Fasting BS 77 @ 8:46
Glucola 75gm @ 8:50
Infusion started 10cc @ 9:00
Finger Stick BS @ 9:20 = 67
75gm glucola given
Infusion 10cc

Finger Stick BS @ 9:40 = 85
75gm glucola given
Infusion 10cc

Finger Stick BS @ 10:00 = 91
75gm glucola given
Infusion 10cc

Finger Stick BS @ 10:10
Draw SMAC
Insulin
L-Carnitine

Photo: 9/19/12 Notes for Tara Erdman (p. USADA 001736).

a. Dr. Jeffrey Brown

In her first interview with USADA, a telephonic interview with USADA Investigator Victor Burgos in the summer of 2015, Tara Erdman denied that she had ever seen Dr. Brown. After receiving documents which indicated that Erdman had not been truthful in her initial interview with USADA a second interview with Edrman was scheduled.

The documents which USADA obtained which undercut Erdman's initial claim that she had not seen Brown included this September 20, 2012, email from Alberto Salazar to Galen Rupp:

> Hi Galen, Can you let me know if you have some Nutramet Sports Drink that Tara can get at your house? I forgot to bring some today from my house, she got the LCarnitine injection yesterday from BrownD so I don't want her to miss any days. Thanks! - Alberto[531]

The foregoing email was obtained several days prior to Galen Rupp's January 19, 2016, interview with USADA in response to a document production request to Rupp that had been made months earlier.

In addition, Erdman identified Dr. Brown as her physician on a USADA doping control form in connection with a urine sample collected from Erdman on December 2, 2012. On that doping control form Erdman listed "NutraMet Sport" as a supplement she had last consumed on November 30, 2012.

As a result of the foregoing information indicating Erdman was not truthful in her initial interview, USADA scheduled a second interview with Erdman.

[531] 9/20/2012 Email from Alberto Salazar to Galen Rupp.

b. September 18-19, 2012 – Erdman and Oregon Project Assistant Coach Pete Julian visit Dr. Brown in Houston, Texas

In her second interview Tara Erdman acknowledged that in September 2012 she was sent by Salazar to Dr. Brown for "testing." Erdman said that Alberto Salazar had told her before she went to Houston that she "would have to take a surgery drink" and the Dr. Brown would test her. She said that Salazar "hyped Dr. Brown up" to her and that Salazar told her that Galen Rupp had gone to Dr. Brown before.

Before Erdman went to Houston to visit Dr. Brown she did treadmill testing with Lisa Mielke at the Nike laboratory. She also did treadmill testing with Mielke immediately after she returned from Brown's office.

Erdman said that Salazar paid for the plane tickets for her trip to visit Dr. Brown in Houston. Erdman said that she was accompanied on the trip by then Oregon Project Assistant Coach Pete Julian. Erdman denies that she was told any reason for the trip other than that she had performed very well on some testing of her oxygen capacity and was sent to Dr. Brown for more testing.

Erdman said that she called her parents before and after the trip to Houston. She said that before she traveled she told them she was getting blood testing done and that afterwards she told them she had gotten sick and the trip was "awful."

Erdman said that she and Pete Julian got into Houston relatively late in the day and just had time to go for a run and try to find some food. She said they had difficulty finding food because nothing was open. She said that she went to Brown's office the following day in the morning and was only there for about an hour and then left to fly back to Portland.

Erdman's statements in her second interview, however, remain inconsistent with the medical records from Dr. Brown which she consented to USADA obtaining and which USADA obtained following Erdman's second interview. These records indicate that Erdman visited Dr. Brown's office on two days (September 18 and 19). On the first day she had blood drawn in Brown's office at 8:47 a.m. According to the medical records, on the second day, September 19, Erdman received an L-carnitine infusion which Dr. Brown's notes indicate began at 8:46 a.m. and the last recorded note related to the infusion was at 10:10 a.m. Blood records from the second day of Erdman's visit to Dr. Brown indicate the last blood draw related to the infusion was at 10:18 a.m. Thus, records from September 19 indicate a minimum infusion length of one hour and 32 minutes.

c. Erdman's Recollection of Procedure in Dr. Brown's Office at Her Second Interview with USADA

In her second interview with USADA Tara Erdman claimed not to be aware that she had received an infusion of any kind in Dr. Brown's office. She said that she went for a run in the morning before her office visit. When she got to Dr. Brown's office she was asked for her insurance card. However, she believes that Nike paid for the visit because she would have had to get authorization from her primary care physician in order for her insurer to have paid for the visit.

She recalled that Pete Julian was with her at Dr. Brown's office the entire time. She said that Dr. Brown "talked a lot" and told her about pro athletes he had worked with, including professional football players and that Pete and Tara "looked at each other like, who is this guy?"

Erdman told USADA she recalled the following diagnostic procedures supervised by Dr. Brown:

- She did a physical first;
- Then she had her blood drawn;
- He also had her jump on one foot;
- He checked her bones;
- He poked her with a "roller thing" that "felt spiky but wasn't;" and
- She "blew into an asthma thing."

From the above list, only multiple blood draws and the recordation of Erdman's height and weight are listed in her medical records from the September 18 and 19 visits to Dr. Brown's office.

Erdman also told USADA that she took "Kool Aid at Dr. Brown's office" and later got sick and threw up. She then said it was not really "Kool Aid" but was a "really sweet drink" with sugar in it. She said that the flavor of it was orange or strawberry and that Dr. Brown permitted her to pick the flavor she wanted to try. She said Dr. Brown told her she had to drink it and that it contained carbohydrates. She said she was required to "drink a lot" and only had "a certain amount of time to drink this." She understood that Dr. Brown was "testing sugar levels or something."

She said that she was seated in a chair and had 6 minutes to drink the sweet drink and then they would wait 5 minutes and prick her finger. All she recalls was being pricked in her finger. She did not remember an IV bag and could not recall if she was hooked up to anything. She said, "I remember trying to blank out the whole thing." While Erdman professed not to know what happened in Dr. Brown's office in Houston or

whether she had received an infusion, during her second interview she began crying and stated, “I don’t know if Alberto did something to me.”

Although Pete Julian was with her at the time she was taking the drink Erdman said that Julian did not explain why she was taking it or what they were doing. She said that when she was leaving Dr. Brown’s office she “felt miserable.” She said this drink caused her to throw up two times in the car on the way to the airport. Erdman said that visit to Dr. Brown was “swept under the rug after [she] got back.” She claimed not to have ever been told about the results of any testing that Dr. Brown had done on her.

She said Dr. Brown did not follow up with her after the visit. She said the reason she listed Dr. Brown on her doping control form in December, 2012, is that Salazar told her to do so. Erdman said that she called Salazar while the USADA doping control officer was at her residence and Salazar instructed her to list Dr. Brown on the form.

For the reasons set forth above, it appears highly likely that Tara Erdman received an L-carnitine infusion from Dr. Brown in excess of 50 mL in violation of the applicable anti-doping rules and in violation of Dr. Brown’s duty to Tara Erdman not to cause her to violate the rules. USADA’s investigation of Ms. Erdman’s potential violation of sport anti-doping rules is continuing.

26. Mo Farah

USADA continues to investigate circumstances related to L-carnitine use by Mo Farah and an L-carnitine infusion received by Mo Farah. At this point USADA has not identified any conclusive evidence that Dr. Brown administered an L-carnitine infusion to Mo Farah. Accordingly, Mo Farah’s involvement in the NOP L-carnitine program has not been addressed in detail in this Interim Report.

XII. Conclusion

As described above, the U.S. Anti-Doping Agency has found substantial and compelling evidence that Nike Oregon Project Coach Alberto Salazar and Houston endocrinologist Dr. Jeffrey Brown conspired to collude together in order to employ risky and untested alternative and unconventional (and sometimes potentially unlawful) uses of medical procedures and prescription medications (including both substances and methods prohibited and/or potentially prohibited under the rules of sport and those that were not) to attempt to increase the testosterone and energy levels and the recovery capacity of Nike Oregon Project athletes in order to boost athletic performance. Further, USADA has concluded that in so doing Dr. Brown engaged in serial violations of professional, medical and ethical obligations to his patients, putting them at increased risk of injury to their health and wellbeing and in jeopardy of losing their athletic eligibility.