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12 BARRY LAMAR BONDS

13
14 UNITED STATES DISTRICT COURT
15 NORTHERN DISTRICT OF CALIFORNIA
16 SAN FRANCISCO VENUE
17

18
19 UNITED STATES OF AMERICA,

NO. CR 07-0732 SI

20 Plaintiff,

DEFENDANT BONDS'
21 SUPPLEMENTAL MEMORANDUM
RE: ADMISSIBILITY OF
22 GOVERNMENT'S PROFFERED
EXPERT TESTIMONY

23 vs.

24 BARRY LAMAR BONDS,

25 Defendants.
26 _____/

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I. INTRODUCTION

Having reviewed the government’s most recent submission concerning the admissibility of its proffered expert testimony regarding the supposed side effects of anabolic steroids and human growth hormone (HGH), we are constrained to admit that we actually agree with the government on one thing. There is no necessity for the Court to take testimony on the *Daubert* issue. Of course, our reasons differ. We submit that the government’s proffer utterly fails to establish that Dr. Bower’s opinions constitute admissible expert testimony under Rule 702 and the Supreme Court’s decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). In some instances, that is because there is no reliable factual predicate which would render the opinion testimony relevant to this case. In other instances, it is because Bowers’ testimony concerning the effects of steroids has no reliable scientific basis. Finally, where there is a conceivable connection between the opinion testimony and the particular facts of the case, the probative value of the evidence is so minimal, while the consumption of time of time and potential prejudice it would involve is so great, that the evidence plainly should be excluded under Rule 403. For these reasons, we renew our request to exclude Dr. Bowers’ proffered testimony with respect to alleged side effects of anabolic steroids and HGH that are clearly inadmissible.

II. APPLICABLE LAW

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In our original moving papers, Mr. Bonds challenged the admissibility of expert opinion evidence on three grounds: relevancy, inappropriate expert testimony and undue prejudice. (Defendant’s Motion In Limine at 23.) As an initial matter, the first hurdle that the government must clear under *Daubert* is relevance – i.e. it must demonstrate that its proffered evidence tends “to make the existence of any fact that is of consequence to the determination of the action more probable or less probable... .” Rule 401, Fed. Rules Evid. As the Ninth Circuit recently explained:

1 Federal Rule of Evidence 702 provides that a court may admit
2 testimony from a qualified expert if it will help the trier of fact understand the
3 evidence or determine a fact in issue. Such evidence must still be relevant;
4 “[e]xpert testimony which does not relate to any issue in the case is not
relevant and, ergo, non-helpful.” *Daubert v. Merrell Dow Pharm., Inc.*, 509
U.S. 579, 591, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993) (internal quotation
marks and citation omitted).

5 *United States v. 97.98 Acres of Land*, 530 F.3d 899, 904 (9th Cir), cert. denied, ___ U.S. ___,
6 129 S.Ct. 606 (2008) (emphasis added). See also *United States v. Downing*, 753 F.2d
7 1224, 1242 (3d Cir. 1985) (“An additional consideration under Rule 702 - and another
8 aspect of relevancy - is whether expert testimony proffered in the case is sufficiently tied
9 to the facts of the case that it will aid the jury in resolving a factual dispute”). The Supreme
10 Court described this inquiry as a question of “fit” which “is not always obvious, and
11 scientific validity for one purpose is not necessarily scientific validity for other, unrelated
12 purposes.” *Daubert*, 509 U.S. at 591. To demonstrate this principle, the Court cited the
13 following:

14 The study of the phases of the moon, for example, may provide valid
15 scientific “knowledge” about whether a certain night was dark, and if
16 darkness is a fact in issue, the knowledge will assist the trier of fact.
17 However (absent credible grounds supporting such a link), evidence that
18 the moon was full on a certain night will not assist the trier of fact in
determining whether an individual was unusually likely to have behaved
irrationally on that night. Rule 702's “helpfulness” standard requires a valid
scientific connection to the pertinent inquiry as a precondition to admissibility.

19 *Id.* at 591 -592.

20 After the proponent establishes that the proffered expert testimony has “a valid
21 scientific connection to the pertinent inquiry”, the Court must turn to questions of validity
22 and reliability under Rule 702 – whether the (1) the testimony is based upon sufficient
23 facts or data, (2) the testimony is the product of reliable principles and methods, and (3)
24 the witness has applied the principles and methods reliably to the facts of the case.

25 Under Rule 702,

26 federal judges perform a “gatekeeping role” . . . ; to do so they must satisfy
27 themselves that scientific evidence meets a certain standard of reliability
before it is admitted. This means that the expert's bald assurance of validity

1 is not enough. Rather, the party presenting the expert must show that the
2 expert's findings are based on sound science, and this will require some
objective, independent validation of the expert's methodology.

3 *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1316 (9th Cir. 1995)
4 (following remand from the Supreme Court). This inquiry requires consideration of at
5 least five factors: (1) whether the expert's technique has been or can be tested, (2)
6 whether the technique or theory has been subject to peer review and publication, (3)
7 the known or potential error rate for the technique or theory, (4) the existence and
8 maintenance of controls and (5) whether the technique or theory is generally accepted
9 in the relevant scientific community. *Daubert*, 509 U.S. at 593-594.

10 Finally, assuming the proponent passes the first two hurdles, expert testimony
11 must nevertheless be excluded under Rule 403 if its probative value is outweighed by
12 the potential for undue delay, confusion or prejudice. See *Daubert*, 509 U.S. at 595;
13 *U.S. v. 87.98 Acres of Land*, 530 F.3d at 904-905. As the Supreme Court recognized:

14 Expert evidence can be both powerful and quite misleading because of
15 the difficulty in evaluating it. Because of this risk, the judge in weighing
16 possible prejudice against probative force under Rule 403 of the present
rules exercises more control over experts than over lay witnesses.

17 *Daubert*, 509 U.S. at 595, quoting *Weinstein, Rule 702 of the Federal Rules of*
18 *Evidence is Sound; It Should Not Be Amended*, 138 F.R.D. 631, 632 (1991). Given the
19 natural propensity of lay persons to rely on so-called experts, the Court must be
20 especially vigilant to ensure that misleading and prejudicial testimony is not presented
21 under Rule 702.

22 The government has argued that these objections go to the weight of the
23 evidence, not its admissibility. But that thoroughly misconstrues *Daubert* and the role of
24 this Court as "gatekeeper" under the Federal Rules. Absent persuasive preliminary
25 evidence out of the jury's presence showing that proffered expert opinions are relevant,
26 meet the *Daubert* standards and are not unduly time-consuming, prejudicial or

1 confusing under Rule 403, the Court should exclude the testimony.

2 III. THE PROFFERED TESTIMONY

3 The government's proffer fails to meet each of these hurdles. First, the
4 government asserts that "Dr. Bowers's testimony on the physical and mental effects of
5 steroid use is relevant because it would tend to prove the central allegation of the
6 indictment – that Bonds lied when he denied that he knowingly took anabolic steroids."
7 (Govt. Opp. To In Limine Motions at 48.) Yet, the government has never even
8 attempted to explain how it would establish the factual predicates that might render the
9 proffered expert opinions relevant. For example, the government would present
10 testimony that the use of anabolic steroids can cause male pattern baldness. (Bowers'
11 Declaration, ¶ 3.) Yet, Dr. Bowers' opinion concerning male pattern baldness – at least
12 it relates to an adult male with normal levels of testosterone – is completely
13 unsupported by any of the materials cited by Dr. Bowers and will be disputed by a
14 defense expert at trial. Millions of American men have become bald without ingesting
15 steroids. That being true, the fact that Mr. Bonds might be bald has no probative value
16 to show that he took steroids, even assuming there was a temporal link, which the
17 government has not demonstrated. For all of these reasons, Bowers' testimony
18 concerning baldness should be excluded under Rules 402, 403 and 702.

19 The government's proffered expert testimony suffers from yet another flaw. Dr.
20 Bowers is an accomplished chemist and laboratory technician. To quote the
21 government, he has spent "an entire professional career devoted to studying and
22 combating the use of anabolic steroids, human growth hormone, and other
23 performance enhancing drugs in sports." (Govt. Supp. Brief Re: *Daubert*, at 4.) But he
24 is not an endocrinologist. He is not even a medical doctor. He does not claim to have
25 treated, let alone examined a single individual who was known or suspected of using
26 steroids or HGH. He has no first hand experience, training or knowledge concerning
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1 the side effects of these substances. Instead, he relies on three or four medical
2 textbooks, several published articles (but only two controlled studies concerning
3 anabolic steroids) and anecdotal information received from others. Moreover, as we
4 will demonstrate, Dr. Bowers apparently misinterpreted or ignored much of the
5 information contained in those sources.¹ For these reasons, under Rule 702, Dr.
6 Bowers lacks the “specialized knowledge” required to testify as expert on the issue of
7 the side effects of steroids and HGH.

8 **A. ANABOLIC STEROIDS**

9 We begin by addressing several of the alleged side effects of anabolic steroids
10 identified by Dr. Bowers in his declaration. (Bowers Declaration, ¶ 3.) In support of our
11 position, we present the declaration of Ronald S. Swerdloff, M.D. Dr Swerdloff is a
12 renowned endocrinologist with extensive experience research, including clinical studies,
13 involving the administration of anabolic steroids and HGH. (Dr. Swerdloff’s declaration
14 and curriculum vitae are appended as Exhibits B and C, respectively.) Dr. Swerdloff
15 has reviewed the Declarations submitted by Dr. Bowers as well as the studies and
16 sources upon which Dr. Bowers relies. (Swerdloff Declaration, Exhibit B at ¶ 2.)

17 **1. Hair growth on the trunk and extremities.**

18 a. Factual Predicate. The government has proffered no evidence that
19 Mr. Bonds developed hair growth on his trunk or extremities.

20 b. Reliability of the Opinion. In none of the literature cited by Dr. Bowers

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22 ¹We have searched in vain through all of the materials cited by Dr. Bowers for a
23 single reference to the development of male pattern baldness in healthy adult males
24 who had normal levels of testosterone before using anabolic steroids. We append, for
25 example, the relevant chapter from one of the two medical texts upon which Dr. Bowers
26 relies. (Bowers Declaration at 2.) See Hardman, J.G, Limbird, L.E., and Gilman, A.G.
27 (Eds.). (2006) *Goodman & Gilman's the Pharmacological Basis of Therapeutics* (11th
28 ed.). New York: McGraw-Hill, appended as Exhibit A.) Its rather extensive discussion of
the side effects of testosterone and other anabolic steroids includes no mention of male
pattern baldness in adult males. *Goodman & Gillman*, Exhibit A, pp 6-9.

1 provided did we locate any support for this effect in healthy adult men who had normal
2 levels of testosterone. Dr. Swerdloff confirms that he is unaware of any study
3 demonstrating that the ingestion of an anabolic steroid had the effect of increasing hair
4 growth in an otherwise healthy adult male. (Swerdloff Declaration, Exhibit B at ¶ 4.a.)

5 **2. Testicular atrophy**

6 a. Factual Predicate. Apparently, a former girlfriend (who says she was
7 wronged by Mr. Bonds, pressed a legal claim against him and has shopped a book
8 about their relationship) claims to have noticed that Mr. Bonds' testicles became
9 smaller. We are aware of no similar observation by anyone else, certainly not by any of
10 Mr. Bonds' many trainers and attending physicians. There is, in fact, no medical
11 evidence to support this claim. The government's presentation of testimony from the
12 former girlfriend will invite the defense to present contradictory evidence.

13 b. Reliability of the Opinion. There are studies, some cited by Dr.
14 Bowers, that have found evidence of this effect on the testicles after several months of
15 the administration of therapeutic doses of testosterone.² However, the effect is
16 dependent on dosage and length of treatment, is usually minimal and is difficult to
17 detect because even when the testes atrophy, the size of the scrotum does not. Given
18 the relatively small effect, an untrained layperson would have difficulty discerning it
19 even by touch. (Swerdloff Declaration, Exhibit B at 4.c.) As a consequence, even
20 when the effect occurs, it cannot be visually discerned, most patients are not aware of
21 the effect and detection usually requires a medical examination by a trained examiner
22 using a special device called an orchidometer to document any reduction in size.
23 (Swerdloff Declaration, Exhibit B at 4.c.)

24 Given all of these circumstances, testicular atrophy is an especially apt issue for

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26 ²The *Goodman & Gilman* textbook states that if the "administration [of
27 pharmacological doses of androgens] continues for many years, testicular size may
diminish." (Exhibit A, at 8.)

1 exercise of the Court’s discretion under Rule 403, as suggested by Judge Weinstein,
2 *supra*.

3 **3. Psychological Effects – aggressiveness, feelings of invincibility, and**
4 **“roid rage”**

5 a. Predicate Fact. The government has proffered none. Assuming the
6 government is prepared to present lay witnesses that Mr. Bonds was on occasion
7 hostile, angry or aggressive, such evidence would be irrelevant absent some temporal
8 or other link to the alleged use of steroids. We are not aware of any witness who
9 claims that there was.

10 b. Reliability of the Opinion. These observations are controversial and
11 complicated by the inability to isolate causative factors. (Swerdloff Declaration, Exhibit
12 B at 4.d.)³ One of the papers cited by Dr. Bowers, is a good example. Thiblin I, Lindquit
13 O, Rajs R. 2000; *Causes and Manner of Death Among Users of Anabolic Androgenic*
14 *Steroids*; Journal of Forensic Science 45;16-23. This retrospective study examined the
15 manner of death of 34 males who were known to have used anabolic steroids. Its
16 findings were thoroughly confounded by the subjects consumption of numerous other
17 substances including alcohol, marijuana, cocaine, amphetamines and other stimulants
18 or illicit drugs. As for controlled prospective studies, the results are decidedly mixed.
19 One blinded study, for example, (not cited by Dr. Bowers) found no significant
20 psychological effects after a ten week treatment of testosterone at 600 mg./week.
21 Bhasin, S., et al., The Effects of Supraphysiologic Doses of Testosterone on Muscle
22 Size and Strength in Normal Men, New England Journal of Medicine (1996), Volume
23 335, No. 1. Dr. Bowers cited a different study – Pope Jr HG, et al., 2000. *Effects of*
24 *Supraphysiological Doses of Testosterone on Mood and Aggression in Normal Men: A*

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26 ³The textbook, *Goodman & Gilman*, states that other “side effects have been
27 suggested by many anecdotes but not confirmed, including psychological disorders and
28 sudden death due to cardiac arrest... .” (Exhibit A at 8.)

1 *Randomized Controlled Trial*. Arch Gen Psych 57:133 40 – which made limited findings
2 as expressed in the abstract:

3 Testosterone administration, 600 mg/wk significantly increased ratings of
4 manic symptoms in normal men. This effect, however, was not uniform
5 across individuals; most showed little psychological change, whereas a few
developed prominent effects. The mechanism of these variable reactions
remains unclear.

6 Thus, Dr. Swerdloff opines that the study results concerning psychological effects are
7 decidedly mixed and that there is no agreement in the scientific community. (Swerdloff
8 Declaration, Exhibit B at 4.d.)

9 Given the potential for a sideshow of criticism from biased witnesses concerning
10 Mr. Bonds' personality, together with the mixed scientific results and the axiom that
11 human behavior may have many indistinguishable causes, we submit this is another
12 area where the Court should exercise its discretion under Rule 403.

13 **4. Prostate cancer.**

14 a. Factual Predicate. The government has proffered none.

15 b. Reliability of the Opinion. The studies do not support the assertion that
16 anabolic steroids cause prostate cancer. (*Goodman & Gilman*, Exhibit A at 4.) Nor is
17 Dr. Swerdloff aware of any such evidence. (Swerdloff Declaration, Exhibit B at 4.e.)

18 **5. Male pattern baldness**

19 This was discussed previously. As Dr. Swerdloff explains, there is no evidence
20 that exogenous anabolic steroids cause baldness in an otherwise healthy male with
21 normal levels of testosterone, as opposed to women and children. (*Goodman &*
22 *Gilman*, Exhibit A at 8; Swerdloff Declaration, Exhibit B at 4.b.)

23 **B. HUMAN GROWTH HORMONE**

24 Next, we turn to the specific side effects of HGH identified by Dr. Bowers.
25 (Bowers Declaration, ¶ 5)

1 **1. Improved Eyesight**

2 a. Predicate Fact. The government has proffered no evidence.

3 b. Reliability of the Opinion. The studies and articles cited by Dr. Bowers
4 provide no support for the proposition that exogenous HGH improves eyesight. Nor is
5 Dr. Swerdloff aware of any such evidence. (Swerdloff Declaration, Exhibit B at 6.a.)

6 **2. Increased Size of the Head, Skull, Jaw, Hands, Fingers, Feet and Toes**

7 a. Predicate Fact. The government has proffered no evidence.

8 b. Reliability of the Opinion. Dr. Bowers did not refer to any study,
9 historical or prospective, controlled or otherwise, demonstrating that the introduction of
10 exogenous HGH to healthy, adult athletes actually results in bony growth such as would
11 cause an increase in the size of the skull, jaw, fingers, toes, etc. *See, e.g.* Holt RI, et al.
12 *Growth hormone, IGF-I and insulin and their abuse in sport*. Br. J Pharmacol. 2008;
13 154:542-56, p. 548 (the only potential physical adverse side effects of HGH arise from
14 sodium and fluid retention, possibly leading to ankle swelling, hypertension and
15 headache). Some of the literature Dr. Bower cites relies solely upon an analogy to
16 acromegaly to suggest that exogenous HGH in health adult athletes could have similar
17 symptoms. However, the analogy is strained, theoretical and untested. In fact, the
18 symptoms of acromegaly develop very gradually over many years of very elevated
19 levels of HGH. (Swerdloff Declaration, Exhibit B at 6.b.) These facts are recognized
20 even in the abstract of one of the very studies cited by Dr. Bowers, which notes that
21 acromegaly has an “insidious onset and slow progression” with the result that the
22 disease is “often diagnosed four to more than ten years after its onset.” Chanson P,
23 Salenave S. *Acromegaly*. Orphanet Journal Rare Diseases. 2008;25;3.17. Thus, the
24 analogy would suggest that an increase in bony growth due to exogenous HGH would
25 occur very gradually over many years of elevated HGH levels. Obviously, there is no
26 evidence to support that premise. Not surprisingly, there are no study documenting

1 such an effect from exogenous human growth hormone in healthy adult males.
2 (Swerdloff Declaration, Exhibit B at 6.b.)

3 **IV. CONCLUSION**

4 For all of the reasons stated above and in our previous submissions to the Court,
5 the government's proffered expert testimony concerning the alleged side effects of
6 exogenous steroids and HGH should be excluded.

7 Dated: February 18, 2009

Respectfully submitted,

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11
12 /s/ Allen Ruby_____

13 Allen Ruby