The Use of Drug Testing to Police Sex and Gender in the Olympic Games

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THE USE OF DRUG TESTING TO POLICE SEX AND GENDER IN THE OLYMPIC GAMES

Haley K. Olsen-Acre*

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INTRODUCTION

Drug testing at the Olympic Games has been a source of debate since its inception at the Summer Games in Mexico City in 1968.1 Various arguments over which types of drugs to ban and whether or not testing is a fair or effective deterrent to performance-enhancing drug use have been brought forth.2 Few seem, however, to question the necessity

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1. The procedures introduced at the 1968 Games tested only for stimulants because assay procedures necessary to test for anabolic steroids were unavailable. Steroid use was first tested for in the 1976 Montreal Games. R. Craig Kammerer, What is Doping and How is it Detected?, in DOPING IN ELITE SPORT 3, 4 (Wayne Wilson & Edward Derse eds., 2001).

2. See, e.g., David L. Black, Doping Control Testing Policies and Procedures: A Critique, in DOPING IN ELITE SPORT, supra note 1, at 29 (discussing the problems of accuracy and burden of proof inherent in current testing procedures); Angela J. Schneider & Robert B. Butcher, An Ethical Analysis of Drug Testing, in DOPING IN ELITE SPORT, supra note 1, at 129 (arguing that the invasion of privacy that results from current
of the drug regulations in the first place\(^3\) or the underlying ideologies that determine the content and procedures of the Anti-Doping Code.\(^4\) This Article takes a close look at the development and content of drug testing rules in the Olympics and argues that while the International Olympic Committee (IOC) defends its drug regulations under a rhetoric of fair play and equality, the current Anti-Doping Rules (Code) police not only drug use, but also sex and gender, through centering their prohibitions around hormones and misinformed conceptions of the “natural,” and therefore ostensibly fair, body.

The organizers of the Olympic Games have long used sex testing (historically called gender verification) to disqualify athletes deemed to have an unfair advantage over other competitors. In the early days of sex testing, sex verification “tests” involved visual and manual examination of all female competitors’ genitalia by doctors.\(^5\) Beginning at the Mexico City Games in 1968, laboratory testing for sex chromosomes became the official method.\(^6\) While the IOC has abandoned the practice of chromosomal sex testing in the face of harsh criticism regarding the discriminatory and exclusionary nature of the tests,\(^7\) drug testing regulations, which base disqualification decisions largely around athletes’ hormonal levels,\(^8\) have increased in scope and application and are more staunchly supported than ever.\(^9\) Viewed through the lens of prominent drug testing practices, in particular out-of-competition testing, is not justified by the harm supposedly caused to athletes and society by drug use.

3. Angela J. Schneider and Robert B. Butcher have written on the question of why drug use should be banned in athletic competition. See Angela J. Schneider, Doping in Sport and the Perversion Argument, in The Relevance of the Philosophy of Sport 117 (Gunter Gebauer ed., 1993); A.J. Schneider & R.B. Butcher, Why Olympic Athletes Should Avoid the Use and Seek the Elimination of Performance-Enhancing Substances and Practices from the Olympic Games, 20 J. Phil. Sport 64 (1994).


5. Id. at 331; Laura A. Wackwitz, Sex Testing in International Women’s Athletics: A History of Silence, 5 Women Sport & Physical Activity J. 51, 51 (1996).


8. See discussion infra Part II.A.

9. See, e.g., Eddie Pells, IOC: 2 Olympic Finals Set for Mornings, USATODAY.COM, Oct. 26, 2006, http://www.usatoday.com/sports/olympics/summer/2006-10-26-beijing-finals_x.htm (reporting that the number of drug tests performed in Beijing in 2008 will increase twenty-five percent over the number performed in Athens in 2004—a rise from 3500 to 4500 tests); World Anti-Doping Agency, Independent Ob-
feminist critiques of biological determinism, these hormonally based drug regulations merely extend the era of exclusionary sex testing under a new definition of legitimate “sex” that is hormonally, rather than chromosomally, based.

Part I of this Article discusses the history and development of sex testing and drug testing and argues that the two are both historically and ideologically linked. Part II examines the current Code in detail and argues that the Code’s focus on hormone-based controls acts to police sex and gender in Olympic athletes, thereby extending historical sex testing practices to a new era. This Article ultimately concludes that without recognizing and addressing the need for further research into the role of “sex” hormones in the body and the interplay of social context and biological circumstances, the IOC cannot maintain an anti-doping plan that serves its fairness and equality goals.

A. Why the Olympics?

Although the IOC is an international, nongovernmental, not-for-profit organization without the power to make law as such, it operates as part of an expansive and intricate network of regulatory bodies that make decisions that very much affect athletes’ lives, as well as public perceptions of sport. IOC regulations have the force of law within the Games themselves. Within the Olympic Games, IOC decisions are final and can be appealed only to the IOC Executive Board or in some cases to the Court of Arbitration for Sport (CAS). Additionally, IOC decisions are

servers (IO) Report: XX Olympic Winter Games, Turin, Italy, 10–26 February 2006, at 9 (2006), available at http://www.wada-ama.org/rtecontent/document/Olympic_IO_Report_2006_En.pdf (reporting a forty-eight percent increase in the number of doping tests performed at the 2006 Winter Games over the 2002 Games). In addition to increasing the number of tests performed, the IOC has also significantly increased athletes’ susceptibility to testing by providing that, as of the 2004 Games in Athens, Olympic athletes are susceptible to out-of-competition testing “wherever in the world they [are] located” as soon as the Olympic village opens a few weeks before the Games begin. Id.


11. Id. The CAS is an international arbitral tribunal, developed at the instigation of former IOC President Juan Antonio Samaranch, which is designed to provide a forum for the settlement of private disputes that arise in sport. All disputes arising in the Olympics are subject to resolution by the IOC Executive Board. However, IOC regulations in some instances provide that disputes may be settled before the CAS. The CAS is competent to hear disputes regarding almost any aspect of the world of sport outside the Olympic Movement, and as mentioned, in specific cases within the
widely influential in the world of sport: drug testing in elite-level sports competition reaches far beyond the Games themselves and is in many cases based on the World Anti-Doping Agency's (WADA) Anti-Doping Program, which the IOC helped to develop. WADA's Anti-Doping Code, which is used in the Olympic Games, has been adopted by all of the members of the Associations of Summer and Winter Olympic International Federations, the IOC-recognized International Federations in their individual capacities, and 203 National Olympic Committees. Among others, the Commonwealth Games Federation, the International Military Sports Council, the International Student Sports Federation, the International World Games Association, and sixty-seven national anti-doping organizations funded by various governments have also accepted WADA’s Anti-Doping Code.

Drug testing in modern sports demonstrates one way that regulatory bodies like the IOC use seemingly objective and neutral technologies of science in ways that actually enforce and reinforce societal gender norms. I focus on the IOC’s drug testing policies in particular because the Olympic Games are a widely visible and highly publicized arena where traditional Euro-American ideals of masculinity and femininity are at once powerfully challenged and strongly reinforced. In the Olympics, women are celebrated for exhibiting strength, power, and stamina—all characteristics traditionally viewed as masculine. At the same time, women are viewed with suspicion particularly because of these “masculine” traits.
In my discussion of sex, gender, and drug testing in the Olympics, I focus heavily on the regulations' implications for women and intersexed individuals because these are the populations that are most marginalized by the IOC's decisions. The very participation of women in elite-level athletics serves as a highly visible challenge to traditional notions of femininity. Since the early days of sexology (research into sex and its many facets), a woman's interest in competing in sports caused her femininity to become suspect and made her subject to surveillance and regulation. In his *Psychopathia Sexualis*, pioneering sexologist Richard von Krafft-Ebing notes that, "[t]he higher the anthropological development of the race, the stronger the contrasts between man and woman." He also mentions the possibility of cases of "retarded sexual development":

[T]he pure type of the man or woman is often enough missed by nature, that is to say that certain secondary male characteristics are found in woman and vice versa, to wit, men with an inclination for female occupations (embroidery, toilet, etc.), and women with a decided predilection for manly sports. . .

Krafft-Ebing believed that sexual differentiation, both biological and psychological, represented a state not only of normalcy, but also of higher evolution. For him and many other sex researchers, breaching the gender divide behaviorally or otherwise was a sign of illness, relegating the offending individual to the status of an object of study.

Sex testing, drug testing's adjunct and precursor, was originally introduced in the Olympics to keep men from competing as women. Sex testing was justified as a way of guarding against males masquerading as

16. *See* Janice M. Irvine, *Disorders of Desire* 1 (2005) ("'Sexology' is an umbrella term denoting the activity of a multidisciplinary group of researchers, clinicians, and educators concerned with sexuality.").
18. *Id*.
19. *Id*.
20. See generally Irvine, supra note 16 (describing the history of scientific sexology and its attempts to scientifically define and engineer "normality").
21. Wackwitz, supra note 5, at 51 (citing three newspaper articles reporting that the IOC has argued strongly for the necessity of preventing men from masquerading as women in the Olympics).
females in competition, although the only documentation of a male intentionally competing as a female in the Olympics occurred in 1936 when Hermann Ratjen of Germany bound up his genitals and took part in the women’s high jump competition. (Ratjen took fourth place, behind three women.) Because regulators were never concerned that a woman might attempt to enter a male competition, sex testing was never performed on apparently male athletes. Not coincidentally, the drug testing regulations that now serve sex- and gender-policing functions in place of chromosomal testing also specifically target women in an effort to weed out athletes breaching sex and gender divides.

In addition to, and in connection with, addressing the marginalization of women under the current Code, this Article critiques the current anti-doping policy’s patent exclusion of intersexual individuals from Olympic competition. Intersexed athletes powerfully challenge ideas about the normalcy of sexual differentiation and deserve special attention here because, while there are currently procedures in place for the admission of transsexual athletes to the Olympic Games, the IOC has utterly failed to recognize or address intersexed athletes to date.

22. Joe Leigh Simpson et al., Gender Verification in the Olympics, 284 JAMA 1568, 1569 (2000) ("The IOC and the International Amateur Athletic Federation (IAAF) convened workshops in the late 1980s and early 1990s at which it was consistently stated that 'the aim of gender verification tests is not to differentiate between sexes but to prevent male impostors from participating in female competitions.'") (quoting Arne Ljungqvist, Gender Verification, in 8 WOMEN IN SPORT: ENCYCLOPEDIA OF SPORTS MEDICINE 183 (Barbara L. Drinkwater ed., 2000)).


25. None of the sources cited herein mention male sex testing of any kind. See, e.g., id.; Ferguson-Smith, supra note 23.

26. See discussion infra Part II.A.

27. Cavanagh & Sykes, supra note 14, at 87–88. Cavanagh and Sykes provide an excellent critique of the IOC’s recently adopted rules regarding the admission of transsexual athletes in the Olympics. Of particular note are requirements that athletes must have either undergone sex reassignment surgery before puberty or (1) be post-operative (including gonadectomy where applicable), (2) have obtained legal recognition of their sex by their sponsoring country, (3) have diminished the effects of any “gender-related advantage” through the use of hormone treatment, and (4) have lived with their new sex for at least two years. Id. at 75–76.
To understand how the IOC's anti-doping policy developed to its current exclusionary state, it is important to examine the assumptions about sex and gender that underlie the Code's substance and structure. The Code's policing of traditional sex and gender boundaries arises primarily because its provisions are based on the false assumptions that (1) sex and gender are both naturally dichotomous, and (2) that sex is unitary, encompassing biological, psychological, and behavioral elements of identity. These assumptions lead to the belief that there are two distinct sexes underlying every outward appearance, and since gender is based on biological sex, naturally two, and only two, distinct genders also exist.28

This dichotomous view emerges out of a Euro-American society organized around a deeply entrenched binary conceptualization of sex and gender. The idea that there are only two “true” sexes is integral to all aspects of societal organization, and is reinforced by every institutional structure. From the moment a baby is born in a hospital, it is assigned a sex based on anatomical appearance. If anatomical appearance is ambiguous, surgery will shorten a too-long clitoris or construct a vaginal canal in order to fit the child's anatomy into the accepted “norm” for little boys and little girls.29 In the developmental preschool years, toddlers are socialized with other children of the same sex and are led down the “girl” or “boy” toy aisles at Toys 'R' Us. Later, children go to school and adults go to work, where locker rooms are separated by sex and bathrooms are marked “men” and “women.” The binary concept of sex supports common ideas of healthy family structure, infuses marriage and family law, structures medical practice and research, and most important for our purposes here, organizes sports competitions ranging from youth tee-ball leagues to the modern-day Olympic Games. In fact, it seems impossible to exist in this world organized around sex and gender without self-identifying and being identified as either male or female, an issue that becomes a lifelong struggle for many people.

The maintenance of this binary definition of sex and gender is dependent upon the development of ideally sexed and gendered forms; that is, the normal, healthy man versus the normal, healthy woman. What is normal or healthy for males and females is defined at every level

28. For a disciplined discussion of the medical pathologization of intersexuality and an accompanying critique of the “naturalness” of sex dimorphism, see SUZANNE KESSLER, LESSONS FROM THE INTERSEXED (1998).
of personhood: chromosomally, hormonally, physiologically, anatomically, psychologically, and behaviorally. For each of these categories, it is easy to think of a list of characteristics that are attached to concepts of the normal male and the normal female (for example, XY vs. XX chromosomes, testosterone vs. estrogen, large muscle mass vs. high body fat, penis vs. vagina, rational vs. emotional, aggressive vs. passive). Although it is now accepted that there are many more than two normal and healthy chromosomal configurations, hormonal structures, body make-ups, anatomical appearances, and psychological or behavioral patterns,\textsuperscript{30} the Anti-Doping Code continues to pursue the maintenance of ideally sexed and gendered forms through excluding athletes whose bodies fall outside traditional descriptions.

In her argument for a sexual continuum, feminist biologist Anne Fausto-Sterling offers one possible alternative to the binary conceptualization of sex and gender that is helpful in understanding the social choices that contribute to scientific definitions.\textsuperscript{31} In contrast to binary ideas of sex and gender that assume that the categories of male and female, masculine and feminine, are real and underlie all ambiguous bodies or behaviors, Fausto-Sterling argues that choosing which criteria to use in determining sex and gender, and choosing to make that determination in the first place, are social decisions reflecting beliefs about gender, not about science.\textsuperscript{32} She maintains that while the scientific and medical communities, the most privileged sites of knowledge production in our society, have chosen to identify only two sexes as legitimate, there is a vast continuum of variable biological characteristics that lie between the accepted norms for male and female.\textsuperscript{33} As is discussed in Parts I.A and II.A, these characteristics exhibit themselves in the form of alternate chromosomal configurations, hormonal functions in the body, and “ambiguous” or intersexed anatomy.

Fausto-Sterling’s argument for a sexual continuum is seen most clearly in her 1993 proposal for the recognition of five sexes—an extremely provocative suggestion that normalizes and categorizes the relatively common conditions of intersexuality that are pathologized in scientific and medical discourse.\textsuperscript{34} Suzanne Kessler, in \textit{Lessons from the...
Intersexed, argues that “what has primacy in everyday life is the gender that is performed, regardless of the flesh’s configuration under the clothes.” Kessler’s arguments advocate for taking the focus away from genitals and dispensing entirely with a separate “intersexual” identity.

For elite-level athletes, of course, the gender that is performed is not necessarily the gender that “has primacy.” Certainly engaging in elite-level athletic competition in many ways complicates the idea of gender performance, bringing powerful contradictions of traditional male and female roles into the public eye. A muscular female Olympic weightlifter, for example, challenges traditional concepts of femininity through her appearance, and performs feats that many men will never be strong enough to accomplish. Regardless of the weight-lifter’s self-identification as male or female, her sex and gender become suspect because of her appearance and performance level. In centering their antidoping provisions around biological markers of sex, IOC officials are interested in the gender that is performed or claimed only as far as it offers clues to the underlying “true” sex they seek. By using chromosomal and hormonal tests to identify athletes as male or female, the IOC makes the choice to prioritize minute biological elements over self-identification much like Fausto-Sterling’s five-sex system prioritizes genitalia.

In discussing the interplay between conceptualizations of sex and gender, it is important to distinguish the two terms. In this Article, I use “sex” to signify biological and physiological markers such as chromosomes, hormones, and anatomy, while I use “gender” to describe sexual expression at the social level. The term “gender” specifically applies to a person’s lived sense of identity as well as their socially perceived identity. I use the combined term sex/gender whenever I mean to imply that the concepts of sex and gender are being conflated. While sex and gender are not mutually exclusive categories and each is integral to understanding the other, it is important to make a distinction between the two levels of meaning because these categories influence the ways in which the elite-level sports world, as well as society at large, conceptualizes what is natural or real versus what is unnatural or artificial.

36. E.g., Jayde Pryzgoda & Joan C. Chrisler, Definitions of Gender and Sex: The Subtleties of Meaning, 43 Sex Roles 553, 554 (2000) (explaining that these meanings are commonly agreed upon, although more complicated than they seem).
Drug testing and sex testing have shared a lengthy history and emerged onto the Olympic scene together, demonstrating their inextricable linkage in the regulation of gender in sport. The IOC’s regulatory scheme aimed at preventing “unfair advantages” in athletes taking part in the Olympic Games has historically consisted of both drug testing and sex testing, or in IOC terms, “gender verification.” Both were initiated in the 1968 Games in Mexico City, after years of intense concern by international sports governing bodies about the IOC’s role in maintaining a fair competition environment and discussion of possible avenues for action.

Controversy over methods and results prompted the IOC to experimentally suspend mass sex testing in the Olympic Games, but this should not be viewed as a victory for those who question the validity of the idea of gender verification in sport. Sex testing on an individual basis can still take place and drug testing, often painted as a distinct entity, ensures sex/gender determinations will be made in other ways. These less conspicuous forms of sex testing prove to be even more detrimental to populations marginalized by Olympic regulatory procedures than mass sex testing was because they use gender markers as motivation to investigate sex, and base their conclusions on tenuous assumptions about sex and the body.

A. Sex Testing

The history of sex testing in the Olympics, viewed together with sex testing’s practical effects, demonstrates that while the IOC’s sex tests were and are performed under the rhetoric of maintaining fairness, they

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37. See Todd & Todd, supra note 6, at 68–69.
38. Id.
39. Id. at 66–69 (describing the doping incidents and IOC meetings leading to the introduction of a drug testing protocol at the 1968 Games).
41. Jill Pilgrim et al., Far from the Finish Line: Transsexualism and Athletic Competition, 13 FORDHAM INT’L. PROP. MEDIA & ENT. L.J. 495, 511–12 (citing a June 5, 2001 letter from the IOC to Jill Pilgrim, on file with the authors).
42. See discussion infra Parts I.A, II.A.
instead have accomplished the opposite effect: chromosomal sex testing
draws sex distinctions along genetic lines that may have no correspon-
dence with perceptions of gender in the real world. The IOC’s sex
testing provisions impose a particular definition of sex, one that privi-
leges genetics over other factors, on a biological continuum under which
many more than two chromosomal configurations are possible.

The IOC authorized the first laboratory sex controls at the 1968
Mexico City Games, concurrent with the first drug testing. The IOC
used a sex determination test based on a chromosomal definition of sex
that says that an XX chromosomal configuration constitutes a genetic
female and an XY configuration constitutes a genetic male. Until 1992,
chromosomal makeup was tested using sex-chromosome analysis of buc-
cal epithelial cells, obtained by scraping the buccal mucosa (the inside of
the cheek). In response to criticisms of the high incidence of false-
negatives and false-positives with use of the buccal smear, the IOC
medical commission replaced the test with another kind of chromoso-
mal detector, which uses a DNA polymerase chain reaction, at the
Winter Games in Albertville, France in 1992.

Although the polymerase chain reaction may be better than the
buccal smear at identifying chromosomal presence, both tests rely on a
strictly chromosomal definition of sex. These tests do not consider hor-
monal levels, physical appearance, self-identification, or any other of the
many factors that can be said to contribute to a person’s sex, and cer-
tainly do not consider the role of gender in identity. Because the buccal
smear and polymerase chain reaction tests identify only chromosomal
sex, they can declare athletes to be a sex that the athletes themselves have
never identified as. Women with certain genetic disorders, such as go-
nadal dysgenesis or Androgen Insensitivity Syndrome (AIS), may have
an XY chromosomal configuration, but due to their bodies’ inability to
produce or to respond to testosterone, develop the genitalia, breasts, and

43. Todd & Todd, supra note 6, at 68.
44. Wackwitz, supra note 5, at 51. This test is also known as the Barr Body test since it
looks for X chromatin masses, known as “Barr Bodies,” which determine excess X
chromatin (thus indicating an XX female). Id.; Arne Ljungqvist & Joe Leigh Simp-
son, Medical Examination for Health of All Athletes Replacing the Need for Gender
45. See Simpson et al., supra note 22, at 1569 (noting that the polymerase chain
reaction test is technically preferable to X chromatin analysis).
46. The polymerase chain reaction test amplifies DNA extracted from a specimen and
allows detection of SRY, the gene on the Y chromosome that initiates the develop-
ment of the testis. The test identifies a person as male if SRY is present in their DNA.
Stephenson, supra note 23, at 177.
47. Simpson et al., supra note 22, at 1569.
musculature of women.\textsuperscript{48} Some women with these disorders discover their "male" chromosomal identity for the first time during a sex testing procedure in elite-level competition.\textsuperscript{49} One striking example is found in the case of Spanish hurdler Maria Jose Martinez Patino, who discovered her XY chromosomal pattern for the first time at the 1985 World University Games. Patino was advised to fake an injury and withdraw from the competition.\textsuperscript{50} Patino later said of her experience: "What happened to me was like being raped. I'm sure it's the same sense of incredible shame and violation. The only difference is that, in my case, the whole world was watching."\textsuperscript{51}

In addition to the level of psychological discomfort this kind of discovery may cause, sex tests identifying athletes as male who have lived their entire lives as women have resulted in the disqualification of talented athletes who have committed no wrongdoing. Along with the fact that chromosomal disorders are congenital and sometimes hereditary, many do not offer any competitive advantage to people who have them.\textsuperscript{52} AIS, for example, disables the body's ability to utilize testosterone effectively, resulting in lower muscle mass and strength.\textsuperscript{53} Interestingly, sex tests that rely on chromosomal analysis fail to recognize some disorders that might actually provide some type of advantage, such as androgen-secreting tumors or 21-hydroxylase deficiency.\textsuperscript{54}

\begin{itemize}
  \item \textsuperscript{48} Stephenson, \textit{supra} note 23, at 177; see also Ferguson-Smith & Ferris, \textit{supra} note 23, at 18 (defining gonadal dysgenesis as a condition in which an XY female produces no male hormones and only vestiges of the gonads are present).
  \item \textsuperscript{49} Laura Wackwitz describes the shame and humiliation felt by women like Eva Klobukowska, the first woman to "fail" an Olympic sex test, and Kirsten Wengler, a swimmer who tested "male" poolside at a 1985 international competition, but was later cleared. Wackwitz, \textit{supra} note 5, at 51.
  \item \textsuperscript{50} \textit{Id}.
  \item \textsuperscript{51} \textit{Id.} (citations omitted).
  \item \textsuperscript{52} Stephenson, \textit{supra} note 23, at 178; see also Ferguson-Smith & Ferris, \textit{supra} note 23, at 18–19 (explaining that women with androgen insensitivity are not able to respond to the testosterone their body produces or to anabolic steroids).
  \item \textsuperscript{53} Ferguson-Smith & Ferris, \textit{supra} note 23, at 18; Wackwitz, \textit{supra} note 5, at 51 ("[P]eople with this condition are medically not men, 'in fact, there is no advantage because they don't have the receptors in their muscle to even benefit from male hormone.'") (quoting former U.S. Olympic Committee Medical Examiner Dr. Robert Voie) (citations omitted).
  \item \textsuperscript{54} Stephenson, \textit{supra} note 23, at 178. Cf Ferguson-Smith & Ferris, \textit{supra} note 23, at 19 (explaining that while androgen-secreting tumors may lead to increased muscle mass, it is unlikely that "such cases" would ever excel in sport).
  \item \textsuperscript{55} Ferguson-Smith & Ferris, \textit{supra} note 23, at 19. 21-hydroxylase deficiency is a condition that causes the adrenal gland to produce excess androgenic hormones, resulting in a muscular, "male" body build. As genetic females, people with this condition pass the chromosomal sex test. \textit{Id}.
\end{itemize}
Even where conditions that result from natural genetic variation have the potential to result in a competitive advantage, it is problematic to disqualify athletes on the basis of these while advantages resulting from other genetic variations (for example, tallness that runs in one's family) are not cause for exclusion. This seems especially unfair given that sex differentiation among athletes is also surprisingly common: one study found that one in 504 female athletes competing in selected events, including the Olympic Games, between 1972 and 1990, was disqualified for failing the sex chromatin test.

As mentioned earlier, although the IOC currently upholds the chromosomal definition of sex and has used techniques like the buccal smear and the polymerase chain reaction for over thirty years, widespread controversy over the validity of making sex distinctions in this way caused the IOC to suspend their policy of mass testing of all female competitors at the Sydney Games in 2000. This suspension came as a result of doctors and scientists declaring chromosomal testing too narrow and exclusive because it disqualifies athletes based on chromosomal configurations that may not represent their claimed or even visually apparent sexes. Further, even the newest chromosomal tests are still known to give a significant level of false-negative and false-positive results.

Although the IOC's suspension of mandatory sex testing implies that it recognizes the problems associated with prioritizing a genetic basis for sex over other biological aspects (as well as the psychological and sociological aspects of gender), the IOC has upheld its right to require that a team of medical experts individually test and examine "suspect"

56. See id. at 19; Stephenson, supra note 23, at 178.
57. Ferguson-Smith & Ferris, supra, note 23, at 19. Ferguson-Smith and Ferris note that because sex tests are in most cases conducted under conditions of strict confidentiality, it is difficult to determine the actual proportion of athletes who "fail" them and to obtain data about the diagnoses of those whose sexual status is investigated. Id.
58. Ljunqvist, supra note 40, at 183.
59. E.g., Albert de la Chapelle, Why Sex Chromatin Should be Abandoned as a Screening Method for "Gender Verification" of Female Athletes, 2 New Stud. Athletics 49 (1986) (arguing that the sex chromatin screening method is over inclusive because it excludes females with congenital chromosome abnormalities whose body build and muscle strength are female in the traditional sense); Ferguson-Smith & Ferris, supra note 23, at 17 (arguing that the sex chromatin test is more likely to exclude athletes unfairly than to detect those who cheat); Simpson et al., supra note 22, at 1568 ("In reality, gender verification tests are difficult, expensive, and potentially inaccurate. Furthermore, these tests fail to exclude all potential imposters . . . are discriminatory against women with disorders of sexual development, and may have shattering consequences for athletes who 'fail' a test.") (citations omitted).
60. Ljunqvist & Simpson, supra note 44, at 851.
individuals. Rather than constituting a victory for women, intersexed, or transsexual individuals, this move puts more power in the hands of decision makers to make assumptions about sex and gender based purely on physical characteristics or other “norms” of sex/gender ideals, such as “male” competitiveness or aggressiveness. Under this protocol, the distinctions between sex and gender become blurred as the IOC begins to looks for gender clues such as appearance and behavior, to justify an investigation into sex. While the IOC’s individual basis for examination does allow a majority of “traditional” or “feminine-looking” women to avoid the testing process, groups marginalized by earlier testing protocols cannot escape further scrutiny. The ideal of the world-class athlete who is also sufficiently “feminine” is never questioned in this process.

B. Drug Testing

In light of the controversy surrounding IOC sex testing practices and the 2000 suspension of mandatory sex testing, it becomes increasingly important to examine the other ways that Olympic medical officials and agencies police sex and gender in sports. Drug testing in the Olympics has always functioned in conjunction with sex testing not only in promoting the Olympic rhetoric of fair play, but also in drawing sex and gender distinctions, defining the “natural” and the “unnatural,” and deciding the fate of many an aspiring athlete. Now more than ever, when drug testing appears more and more distant from the sex testing woes of the past, it is important to look at the IOC’s anti-doping guidelines and practices in terms of both their drug and sex/gender policing roles.

The IOC adopted its first anti-doping policy at the 1964 Congress of the IOC in Tokyo. The policy at this point consisted of a formal condemnation of performance-enhancing drug use and sanctioning of persons or national sports organizations that used or supported the use of drugs. The IOC also required that individuals applying for an

61. Cole, supra note 4, at 331; Pilgrim et al., supra note 41, at 511-12 (citing a June 5, 2001 letter from the IOC to Jill Pilgrim, on file with the authors).
62. For example, during the 2004 Games in Athens, the IOC disqualified fifteen athletes for doping or for committing anti-doping rule violations, such as unjustified unavailability for testing. See Anti-Doping Rules Procedures & Violations at the Athens 2004 Olympic Games, http://multimedia.olympic.org/pdf/en_report_921.pdf (last visited Dec. 14, 2006). At least nine other athletes were suspended by their sport’s federation for unspecified doping violations. See id.
63. Todd & Todd, supra note 6, at 67.
64. Id.
Olympic berth sign a pledge of non-drug use and asked that national sports organization committees inform their athletes that they may be subject to testing, although no testing procedures were in place at the time. In May of 1967, the IOC voted to adopt a drug and sex testing policy to be implemented at the 1968 Games in Mexico City. At this meeting, the IOC recognized a formal definition of "doping": "the use of substances or techniques in any form or quantity alien or unnatural to the body with the exclusive aim of obtaining an artificial or unfair increase of performance in competition." Among the new banned substances on the IOC list in 1967 were alcohol, "pep" pills (amphetamine), cocaine, vasodilators, opiates, and hashish.

At the 1968 Games, the IOC's drug testing protocol consisted of selecting a sport at random each morning of competition and testing ten athletes from that sport, also chosen at random. When team sports were selected, at least two members from each team were tested. While this protocol seems comprehensive, many banned and not-yet-banned substances went undetected due to new medical technologies and drug developments. Interestingly, anabolic steroids, now the main focus of drug testing and the center of prominent doping scandals, were not even on the IOC's prohibited substances list in 1968, probably due to the organization's realization of its inability to test for these drugs effectively.

The IOC officially banned anabolic steroid use in 1971, although effective tests for the substances were not adopted until October of 1973. The tests, which used radioimmunoassay and mass spectrometry, were used experimentally in several international competitions over the next several years, but were not actually implemented in Olympic competition until the Montreal Summer Games of 1976. At the Montreal Games, 275 steroid tests were performed, resulting in eight disqualifications.

Over the past thirty years, the IOC has struggled to identify performance-enhancing substances and develop methods for detecting
them in the face of growing technologies that have often allowed drug-using competitors to evade discovery. One of the most striking examples of gender "confusion" and doping driving the IOC's concern about drug use and ways to detect it was the famous East German doping scandal of the 1970s and 1980s. During this period, the East German government financed research into developing anabolic steroids that could not be detected by the IOC's tests. The East German Olympic medical team then systematically administered the drugs to male and female swimmers and track and field athletes on the team.

As one might imagine, the public (and likely IOC officials as well) was most disturbed by the changes in appearance and performance level of the female competitors. The popular media became enraged by this deliberate defiance of the IOC's rules, not only out of contempt for the regime-style system taking place and the successful attempts to deceive the IOC, but also out of sheer discomfort over the female athletes' crossing of gender boundaries. In *Faust's Gold*, an account of the East German doping scandal, author Steven Ungerleider points out the dangers associated with female use of testosterone-elevating drugs: "[P]roblems include deepening of the voice (mostly an irreversible situation), an increase in body hair on the legs, pubic hair extending to the navel and beyond, and, more dangerously, the enlargement of the clitoris (clitoris-hypertrophy)." Although the health of the women taking the drugs was obviously a concern, the tremendous discomfort with seeing masculine-looking women beat traditionally feminine women in competition was likely a driving force behind the IOC's relentless pursuit of comprehensive drug regulations.

II. Sex/Gender Policing under Today’s Code

Today, the IOC's policies and procedures for drug regulation are set forth in the International Olympic Committee Anti-Doping Rules.

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75. *Id.* at 69–109 (documenting the IOC's struggle, from the advent of drug testing through the late 1990s, to keep ahead of doping science that has developed masking agents that help athletes evade detection and has discovered new methods of performance enhancement that the IOC has been unaware of or unable to test for).

76. Steven Dickman, *East Germany: Science in Disservice of the State*, 254 *Science* 26, 26 (1991) (reporting that dozens of documents have been uncovered revealing that East German scientists, working under state-sponsored "Plan 14.25," developed methods of doping that could not be detected in international competition).

77. *Id.*


79. The IOC Anti-Doping Rules are adopted for application in each Olympic Games. In this analysis, I will refer to the IOC Anti-Doping Rules applicable to the 2006 Win-
The IOC instituted drug testing procedures for the Olympics in order to promote its notion of fairness and equal opportunity for athletes. The IOC states in the Olympic Charter, the Olympics' governing document, that a goal of the Olympic Movement is to provide "every individual . . . the possibility of practising sport . . . in the Olympic spirit, which requires mutual understanding with a spirit of friendship, solidarity, and fair play." Presumably with an aim to preserve "fair play" in the Olympics, the IOC helped develop and has adopted WADA's Anti-Doping Code and International Standards regarding prohibited substances. WADA states that the World Anti-Doping Program's goals include "protect[ing] the Athletes' fundamental right to participate in doping-free sport and thus promote health, fairness, and equality for Athletes worldwide." While the IOC's and WADA's stated goals are laudable, a close look at the history and makeup of the current Code reveals that in their quest for equality and fair play, these agencies have cultivated drug regulations that serve the same sex-policing functions that sex testing historically has, and function to police gender by locating gender identity in the chemical and physical makeup of the body.

The most recent Code, in force for the 2006 Winter Games in Turin, Italy, consists of sixteen articles that set forth, inter alia, anti-doping rule violations, how proof of doping is shown, the list of prohibited substances, how samples are to be analyzed, disciplinary procedures, and sanctions. The Code prohibits several classes of substances from the "legitimate" athlete's body, focusing on hormonal substances, but including nonhormonal substances as well. In the Prohibited List effective January 1, 2007, substances prohibited both in and out of competition are broken down into the categories of Anabolic Agents, Hormones and Related Substances, Beta-2 Agonists, Agents with Anti-Estrogenic Activity, and Diuretics and other Masking Agents. Substances prohibited...
only in competition include stimulants, narcotics, cannabinoids, and glucocorticosteroids. In certain sports, alcohol and beta-blockers are also prohibited in competition.

A close look at the prohibited substances and what constitutes a violation of the Code reveals that the drug testing rules are structured in a way that excludes athletes whose bodies fall outside traditional sex and gender norms. The Code polices sex/gender through its regulation of athletes' hormone levels, specifically testosterone and other "sex" hormones. Focusing on testosterone as the main prohibited "drug" is problematic from a feminist perspective for several reasons. Additionally, the focus on sex hormones more generally as definitive of maleness or femaleness belies the historical and social construction of this category, treating biological facts that are socially constructed as scientific (and therefore venerated) truth. Finally, the Code's provisions for what constitutes a doping violation, including its strict liability stance and limited availability of therapeutic use exemptions, further demonstrate the Code's disservice to women and the intersexed in elite-level sport.

A. Hormone-Based Controls

The Code polices sex and gender through its focus on hormone-based controls, targeting most specifically testosterone and the other so-called "sex" hormones. The focus on testosterone in particular and on sex hormones generally is problematic for several reasons. First, the effects of testosterone in the body and its relationship to social context are not well understood. Specifically, testosterone in the female body has not been extensively studied, and there is evidence that physical activity itself may affect testosterone levels in athletes of any sex. Second, basing disqualification criteria on the relationship of testosterone to other hormones in the body both prioritizes the role of the "male" hormone in successful athletic performance and establishes a certain type of body that is allowed to serve as the athletic ideal for persons of each sex. On a practical level, a focus on the effects of testosterone keeps regulators on the lookout for "masculine" female bodies.

86. These include adrenaline, amphetamine, and ephedrine. Id. § 86.
87. These include heroin, methadone, and morphine. Id. § 87.
88. These include hashish and marijuana. Id.
89. Glucocorticosteroids, also called glucocorticoids, are steroid-like compounds that exert an anti-inflammatory effect. Stedman's Concise Medical Dictionary for the Health Professions 404 (John H. Dirckx ed., Illustrated 4th ed. 2001).
90. 2007 Prohibited List §§ P1, P2.
The most significant classifications of prohibited substances are based on hormone levels: Anabolic Agents, Hormones and Related Substances, and Anti-Estrogenic Agents. In the class of Anabolic Agents, several anabolic steroids and their relatives are listed, with testosterone and its derivatives screened on a system of ratio. ⁹¹ A competitor is subject to further investigation if he or she exhibits a ratio of testosterone to epitestosterone, both naturally found in male and female bodies, that is greater than 4:1. ⁹² Epitestosterone is a naturally occurring hormone with a predictable relationship to testosterone when it is manufactured by the body. ⁹³ The upper-limit ratio of 4:1 is applied to both men and women because although men may usually have more testosterone in their bodies, the relationship between testosterone and epitestosterone is supposed to be the same in both the male and female body. ⁹⁴ If further testing does not establish that an athlete’s “higher than normal” ratio is the result of a physiological or pathological condition, but is instead of exogenous (out of the body) origin, the athlete will be disqualified from Olympic competition and may be subject to further sanctions. ⁹⁵ Neither the Prohibited List nor the Code in general defines what constitutes an acceptable physiological or pathological condition, although the Code does allow some prohibited substances to be used for therapeutic purposes. ⁹⁶

Taken by itself, it seems that the ratio system of testing for testosterone is a fair and non-gender-biased approach to regulating the use of anabolic steroids and other testosterone-inducing agents in Olympic competition. In theory, this regulation does not discriminate based on sex, but treats all athletes equally. In reality, it is difficult to make hormonal regulations that apply equally to both men and women, simply because the effects of testosterone, traditionally viewed as a “male” hormone, have not been studied as extensively in women as they have in men. ⁹⁷ Ratios of testosterone to epitestosterone and appropriate measures

⁹¹. 2007 Prohibited List § S1(1)(b).
⁹². Id.
⁹⁴. See id.
⁹⁵. Id.
⁹⁶. See discussion infra Part II.C for further discussion of the physiological or pathological condition and therapeutic use exceptions.
⁹⁷. See Berry & Chastain, supra note 93, at 6 (“Many issues associated with urinary excretion of testosterone and epitestosterone are poorly understood, especially in the female. Research is limited and some authors have urged caution when assessing the female T/E profile.”)
for these hormones have not been established in the bodies of healthy
women.\textsuperscript{98}

The IOC’s prioritization of minute elements of biological sex over
other factors that contribute to an individual’s sense of gender dem-
strates a fundamental misunderstanding of the relationship between the
biological and the social. By looking to the body to determine an indi-
vidual’s gender, the IOC upholds a belief in a “natural” body that exists
prior to social context, and that tells more “truth” about gender than
lived experience can. This idea, while attractive in its simplicity, re-
resents a gross misreading of the relationship between the body and the
outside world. It is true that biology influences social interactions, but it
is also true that social contexts directly influence biology.

Several studies have investigated the relationship between testoster-
one levels and animal or human behavior. In \textit{Myths of Gender}, Anne
Fausto-Sterling presents a study of baboons that examines testosterone
levels and their relationship to social dominance.\textsuperscript{99} The study found that
while one might traditionally expect testosterone levels to govern the
male baboons’ fighting and mating activities, in reality, things worked
the other way around. Testosterone levels in male monkeys with access
to sexually receptive females sharply rose following intercourse, not be-
fore.\textsuperscript{100} Similarly, a male with high testosterone levels experienced a drop
in testosterone after being defeated in a fight.\textsuperscript{101} The same research group
discovered a similar effect in male humans during the Vietnam War.\textsuperscript{102}

\begin{thebibliography}{99}
\bibitem{98} See \textit{id.} (stating that variations in steroid profiling are associated with ethnicity, age,
sex, circadian rhythm, training and competition, diet and nutrition, menstruation,
pregnancy, common endocrine disorders like polycystic ovary syndrome, and a vari-
ety of other factors). Berry and Chastain also report on the studies of two expert
witnesses in a USA Track and Field (USATF) hearing giving rise to a later suit
brought by track and field legend Mary Decker Slaney against the International Ama-
teur Athletic Federation (IAAF). In that suit, Slaney sought review of an IAAF
arbitration panel’s finding that she had committed a doping violation at the 1996
U.S. Olympic Trials in Atlanta. Expert witness Christiane Ayotte, a member of
WADA’s Health and Research Committee, has reported in her research studies that
some women exhibit physiologic T/E ratios greater than 6:1. Another expert, Don H.
Cadin, Director of the Olympic Analytical Laboratory at UCLA, reported in one
study that the T/E ratio above which could not be attributed to normal physiologic
variations was 15:1. \textit{id.} (citing \textit{Slaney v. Int’l Amateur Athletic Fed’n}, 244 F.3d 580
(7th Cir. 2001) (affirming the district court’s application of the New York Conven-
tion on the Recognition and Enforcement of Foreign Arbitral Awards to dismiss
Slaney’s claim against the IAAF)).
\bibitem{99} \textbf{ANNE FAUSTO-STERLING,} \textit{MYTHS OF GENDER} 146–47 (Basic Books 2d ed. 1992)
(1985).
\bibitem{100} \textit{id.} at 146.
\bibitem{101} \textit{id.}
\bibitem{102} \textit{id.} at 147.
\end{thebibliography}
More recently, researchers have investigated the possibility of endogenous production of the anabolic steroid nandrolone in humans and have found that intense exercise may increase its concentration in urine to near or above allowed amounts. Additionally, researchers posit that genetics, trauma, hypoglycemic stress, and/or certain minerals or herbs may contribute to increased endogenous production of nandrolone metabolites.

These studies demonstrate the interaction and mutual influence of biology and social context, as does a study quoted in an article by researchers Rebecca Young and Evan Balaban, which found that "since circulating levels of testosterone are responsive to aggression, some authors conclude that 'current data supports a bidirectional model with androgens both influencing and being influenced by aggressive behavior.' The bidirectional model of influence between hormones and behavior and experience suggests that elite-level athletes such as those competing in the Olympic Games may have higher testosterone levels by virtue of their athletic participation.

Imposing a ratio of testosterone in the body that is acceptable for eligibility in athletic competition is also problematic because it designates a certain type of "normal" body that is allowed to be an athlete. The ratio system implies that athletes whose testosterone level is below 4:1 all experience the same bodily effects of their testosterone, while athletes whose levels are above 4:1 experience different effects and are either disordered or artificially enhanced. This idea is entirely misleading. While ratios of testosterone to epitestosterone above 4:1 may be uncommon, the average athlete's testosterone does not fall at a specific level, but may fall anywhere within a range below 4:1. The human body, regardless of sex, is naturally extremely variable in terms of hormone levels.

In addition to the IOC's somewhat arbitrary distinction between testosterone levels above and below 4:1, this particular regulation prioritizes the importance of what is traditionally viewed as a male hormone
in successful athletic performance. While an increase in testosterone levels does often lead to greater muscle mass and can lead to performance enhancement through greater muscular strength in both men and women, increased estrogen levels can lead to greater bone strength and mass in both men and women as well, offering the athlete greater stamina and skeletal support. Estrogen, however, is not regulated at any level of competition. Apparently, the effects of what is traditionally viewed as a female hormone do not provide athletic advantages in the eyes of the IOC. While it may be a triumph for women on some level to not have their estrogen levels directly regulated in the world of sport, the omission of estrogen from the banned substance list constitutes a de-emphasization of the active role of this hormone in creating and maintaining the athletic body, whether male or female.

The use of the testosterone ratio in the Anti-Doping Code is more than ideologically problematic. Setting a definitive level for the ratios of testosterone in the “natural” body keeps IOC officials on the lookout for individual athletes who appear as if they may have some form of unnatural testosterone in the body. In males, anabolic steroid use can be evidenced by large muscles, excess body hair, or a thick neck area, among other characteristics. Many of the bodily characteristics affected by steroid use are possible, and socially and culturally acceptable, in males who have not used the drugs, making drug users difficult to spot. In contrast, anabolic steroid use by women results in characteristics that are not socially and culturally accepted as feminine, including the same muscle growth, body and facial hair, and deeper voices that occur in men. Because there is a specific ideal for appearance in the female athlete, drug testing regulations focusing on testosterone levels leave women with high testosterone levels that result in “male” characteristics open as targets of suspicion. This system puts the tester in a position to discover more “truth” about the athletes than they themselves can know and gives the tester control over not only the athlete’s competitive destiny, but also over knowledge production about his or her sex/gender identity.

The Prohibited List’s class of Hormones and Related Substances also provides evidence of the sex- and gender-policing functions the cur-
rent drug regulations perform. In this class, Chorionic Gonadotrophin (hCG) is prohibited only in men, along with pituitary and synthetic gonadotrophins, such as Luteinizing Hormone (LH). Other prohibitions in this class include corticotrophins, human Growth Hormone (hGH), insulin-like growth factors, erythropoietin, and insulin in non-insulin-dependent diabetics. Again, athletes are subject to disqualification if these substances are found in their urine in excess of amounts deemed to be normal, unless they can prove that their existence is due to a physiological or pathological condition.

Although hCG serves important functions in both male and female bodies, the IOC only prohibits it in males. hCG is usually labeled a “female” hormone because it is directly tied to reproduction in females—it is secreted in female bodies only during pregnancy and is in fact the agent that home pregnancy tests detect. However, hCG is also important to male sexual development, stimulating differentiation of, and androgen production by, the interstitial cells of the testes in utero and influencing testicular descent. The justification for the IOC’s

111. LH stimulates estrogen and progesterone production from the ovary and levels vary during the menstrual cycle. In men, LH stimulates testosterone production and contributes to the maturation of spermatozoa. See David C. Aron et al., Hypothalamus & Pituitary Gland, in Basic & Clinical Endocrinology 106, 114 tbl.5-2 (Frances S. Greenspan & David G. Gardner eds., 7th ed. 2004).

112. Some corticotrophin-related peptides stimulate the secretion of androgenic steroids from the adrenal cortex. See Felix A. Conte & Melvin M. Grumbach, Abnormalities of Sexual Determination & Differentiation, in Basic & Clinical Endocrinology, supra note 111, at 564, 589–90. Growth hormone, together with insulin-like growth factor 1, increases protein synthesis by enhancing amino acid uptake. Aron et al., supra note 111, at 121.


114. 2007 Prohibited List § S2. Insulin is prohibited in non-insulin-dependent diabetics because athletes can use it to prevent new muscle growth from breaking down and to increase stamina for long-distance events by enabling their muscles to store glycogen when taken simultaneously with glucose before or between events. Andy Coghlan, Athletes May be Increasingly Abusing Insulin, New Scientist, Aug. 8, 2001, http://www.newscientist.com/article.ns?id=dn1129.

115. 2007 Prohibited List § S2.


prohibition of hCG only in men lies in the fact that hCG causes a rise in blood testosterone levels in the male body, and as discussed earlier, testosterone is ideologically prioritized over other bodily elements in creating the athletic body.

That hCG is not banned in nonpregnant women is further evidence of the prioritization of the role of “masculinization” in performance enhancement. If the IOC is interested in maintaining a natural body, it seems they would be interested in banning hCG in nonpregnant women since it does not occur naturally in those bodies. The IOC does not explain their reason for this omission, but in light of their emphasis on the performance-enhancing power of “masculine” characteristics, it is likely that hCG is not banned in women simply because its effects are seen as merely “feminizing” and thus not a factor in performance enhancement. hCG works in the female body together with LH and Follicle Stimulating Hormone (FSH) to prepare the body for pregnancy. These substances are banned only in men due to their androgenic effects in the male body.

The third class of banned substances concerned with hormone regulation is Agents with Anti-Estrogenic Activity. Agents with anti-estrogenic activity, such as aromatase inhibitors, selectively inhibit the synthesis of estrogen by limiting the conversion of androgen into estrogen. This class of substances was prohibited only in men until 2005, but is now prohibited in both men and women. Clearly, this regulation is distinctly aimed at maintaining a “normal” balance between hormonal elements in the body. By limiting the conversion of androgen to estrogen, aromatase inhibitors have the ability to alter testosterone levels in the body since more androgens will remain androgens instead

120. See 2007 Prohibited List § S2.
121. 2007 Prohibited List § S4.
122. AHFS DRUG INFORMATION 2006, supra note 117, at 929. Because aromatase inhibitors inhibit the conversion of androgen to estrogen, they have the effect of reducing estrogen’s effects in the body. Id. This result has been useful in the treatment of breast cancer, and in the athletic world, is used to combat the estrogenic effects of steroid use (e.g., gynecomastia and water retention), as well as to increase testosterone levels. See iSteroids.com, Aromasin-Exemestane, http://www.iSteroids.com/steroids/Aromasin-Exemestane.html (last visited Dec. 16, 2006) (explaining the usefulness of aromatase inhibitors for body building purposes to potential drug buyers).
123. See 2007 Prohibited List § S4.
of turning into estrogen through normal biological processes.\textsuperscript{124} Thus, like testosterone, these substances are prohibited in both men and women because they may result in an increase in testosterone, the hormone that is prioritized in the creation of the ideal athletic body. Again, while this regulation is directed at preventing artificial performance enhancement, it is doing so by labeling “artificial” certain levels of substances in the body that naturally occur in variable ranges, none of which are proven to be any more performance enhancing than any other.

\textbf{B. The Social Construction of “Sex” Hormones}

The Code regards estrogen and testosterone to be the essential elements of the makeup of female and male bodies, respectively. In prohibiting their presence in athletes of sexes they don’t “belong” to, the IOC ideologically excludes estrogen and other “female” hormones, such as LH and hCG, from the legitimately male body, and testosterone from the legitimately female body. This ideology comes out of a long medical and scientific tradition that falsely labels these hormones as specific to a certain sex.

The idea that testosterone and estrogen are chemical messengers of masculinity and femininity, respectively, emerged out of what Nelly Oudshoorn refers to as a prescientific ideological linkage of masculinity and femininity to the male and female gonads, from which sex hormones were first found to be secreted.\textsuperscript{125} Prescientific notions are those ideas that scientists have previous to their entrance into research, ideas that then inform the research they conduct. Prescientific notions that the essences of masculinity and femininity lie in the gonads date back to the times of Aristotle, when the ovaries of female cattle were removed to suppress sexual activity.\textsuperscript{126}

During the early 1930s, medical scientists interested in locating and classifying male and female sex hormones experienced what Anne Fausto-Sterling calls a crisis of definition.\textsuperscript{127} While earlier research (influenced by prescientific notions) suggested that there was one specific hormone that influenced female sexual development and a second, different hormone integral to male sexual development, in 1928, scientists

\begin{itemize}
    \item \textsuperscript{124} See AHFS Drug Information 2006, \textit{supra} note 117, at 929.
    \item \textsuperscript{125} NELLY OUDSHOORN, \textit{Beyond the Natural Body} 17, 19 (1994).
    \item \textsuperscript{126} \textit{Id.}
    \item \textsuperscript{127} FAUSTO-STERLING, \textit{supra} note 29, at 183.
\end{itemize}
discovered the first evidence of the as yet unnamed “female” hormone in the testes and urine of male animals. In 1931, the first reports of the “male” hormone appearing in female urine emerged. If the hormones now called estrogen and testosterone simultaneously appeared in both male and female bodies (with what further research showed to be undeniable consistency), how could scientists, who hoped to utilize these hormones for pharmaceutical research and various medical therapies, define them?

In 1932, an international group of gynecologists and physiologists met as the Health Organization of the League of Nations in London to decide on a definition for the female sex hormone. The female sex hormone was classified as that hormone which has “specific oestrus-producing activity.” Oestrus (estrus) is defined as “that portion or phase of the sexual cycle of female animals characterized by willingness to permit coitus.” Thus, the original definition of a hormone today so loaded with various scientific, medical, social, and personal implications, was derived from its reproductive function in animals, not humans.

In addition to the fact that the female sex hormone was originally defined for its function in animal species, the original (and persistent) definition of the hormone is flawed because of its sole focus on the hormone’s ability to induce reproductive function in females. Current common definitions of estrogen are similarly limited to its sexual functions. Estrogen is defined by Webster’s dictionary as “one of several steroid hormones produced chiefly by the ovary and responsible for the regulation of precursors certain female reproductive functions and the development and maintenance of female secondary sex characteristics.” Defining estrogen merely in terms of its sexual functions in females is simply inaccurate and ignores the various other functions estrogen serves, such as promoting bone growth and stability in both males and females.

The definition of the male “sex” hormone followed a similar process. In 1935, the Second International Conference on the Standardization of Sex Hormones was held in London. At this conference, the male sex hormone was defined as “andosterone,” its unit of activity being a suffi-

128. Id. at 182.
129. Id.
130. Id. at 184.
131. Id.
132. Stedman’s Concise Medical Dictionary for the Health Professions, supra note 89, at 336.
134. Khosla et al., supra note 107, at 1443, 1447.
135. Fausto-Sterling, supra note 29, at 185.
cient amount to produce a measurable size difference in the comb of a capon (a castrated male chicken or rooster) after five days of administration. So, as with the definition of the female hormone, the male hormone was defined according to its function in animal species rather than humans. Also like the earlier definition conference, this group's members chose to ignore the hormone's functions that are unrelated to sexual characteristics.

As Fausto-Sterling points out in her discussion of hormone definition, the categorization of estrogen and testosterone as sex-specific hormones, ignoring their cross-sexual existence and other physiological functions, leads to a subsequent sexualization of all bodily elements (glands, organs, cells, etc.) that interact with these hormones. While Oudshoorn points out that by the end of the 1930s, most sex researchers recognized that the male and female sex hormones were not mutually exclusive in their occurrence and function in male and female bodies, she also notes that male and female sex hormones were still conceptualized as agents of masculinity and femininity in terms of bodily, psychological, and behavioral characteristics.

Presence of the female hormone in men was seen as an explanation for "feminine" traits and presence of the male hormone in women was thought to explain the existence of what were seen as "masculine" women. This sexualization of biological body elements and human characteristics clearly informs the IOC's attitudes toward male and female bodies. Women with characteristics that are traditionally associated with masculinity through their assumed association with the male sex hormone, such as large muscle mass or aggressive behavior, are viewed as "masculine," and are suspect as such.

C. What Constitutes a Doping Violation

The prohibition of certain hormones and hormone levels from the legitimate athletic body under the Code works together with the Code's rules regarding what constitutes a doping violation to exclude athletes with biological makeups considered to be outside of the norm. Under the Code, drug testing is essentially a system of strict liability. The Code

136. Id.
137. Id. at 187.
139. Id. at 39.
140. See discussion supra, Part I.A, regarding the surveillance power of the medical commission.
states that “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 violation . . .”). Additionally, this section provides that except for substances the Prohibited List establishes a threshold for, “the detected presence of any quantity of a Prohibited Substance or its Metabolites or Markers in an Athlete’s Sample shall constitute an anti-doping rule violation.” This strict liability view has been upheld by the Court of Arbitration for Sport, the tribunal that hears Code violation appeals in the Olympic Games.

Holding athletes responsible for drug violations regardless of intent or knowledge puts athletes with variable hormone levels for whatever reason (e.g., conditions of intersexuality or increased testosterone as the result of physical activity) in a position of guilt without the opportunity to offer exculpatory evidence on their behalf. Thus, although the Prohibited List provides that “an acceptable physiological or pathological condition” may justify an adverse test result, athletes are, in reality, not given the opportunity to present evidence of these conditions. Even assuming athletes were allowed to present such evidence, the Code does not define what it considers an acceptable physiological or pathological condition, leaving it unclear whether athletes (and which athletes) could actually exonerate themselves under this exception.

The Code does provide for a therapeutic use exception (TUE), whereby athletes with a documented medical condition may apply to use a substance in or out of competition that would normally be prohibited. However, because the TUE requires that athletes notify the IOC Medical Commission before testing, this exception is of no help to athletes who did not know of their condition before the Games. Additionally, TUEs are only granted when (1) the athlete would experience a significant impairment to health if the prohibited substance or method

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141. 2006 Code § 2.1.1.
142. 2006 Code § 2.1.2 (emphasis added to “any,” other emphasis in original).
144. 2007 Prohibited List § 52.
145. Martens, supra note 143, at 239 (stating that under the Code, disqualification is an automatic and inevitable consequence of a doping violation because WADA has not adopted principles established in CAS cases allowing athletes to provide exculpatory evidence to rebut the presumption of guilt in suspension cases).
146. 2006 Code § 4.3.
147. See id. at § 4.3.2 (“It is expected that most Athletes entered to compete . . . who require a TUE would have already received [it] from their International Federation . . . no later than the date of the opening of the Olympic Village . . . the International Federation [must] notify the Athlete’s NOC, WADA, and the IOC Medical Commission.”).
were to be withheld, (2) the therapeutic use of the substance would not produce additional performance enhancement other than allowing the athlete to return to a normal state of health, and (3) there is no reasonable alternative to use of the prohibited substance or method. It is unclear whether the IOC would ever be willing to consider variant hormone levels that are the result of some form of intersexuality as falling within these criteria. Given the IOC’s views on what constitutes a normal state of health, help for athletes with variant hormone levels for whatever reason is unlikely to come in the form of a TUE.

**Conclusion**

Drug testing in the Olympic Games is a gender-policing tool that until now has never been challenged as such. A critical look at the anti-doping regulations and procedures of the International Olympic Committee reveals several problematic misconceptions about the human body and its relationship to social and historical context; it treats male and female bodies as dichotomous entities and views biology as the determining force in gender identity. Further, the IOC uses drug testing to make gender distinctions for the purposes of competition without ever explicitly stating that this is its goal.

Given the IOC’s vast misuse of science as well as the pervasive rhetoric of “fair play” to justify its actions, it is difficult to imagine that the current anti-doping system will soon be disrupted. However, because Olympic sport is such a powerfully visible arena for challenging traditionally ideals of masculinity and femininity while simultaneously working to maintain these ideals through drug testing, it is crucial that we look to the Olympics as an even more powerful arena for change. The IOC needs to be held responsible for the regulations that go into its Anti-Doping Rules and should be required to research more fully the roles of “sex” hormones in the body, specifically as they pertain to women. Before deciding to regulate chemical substances in the body, the IOC also needs to have a much deeper understanding of the role of social context in creating biological circumstances. In addition, the IOC must avoid specifically targeting women through gender clues that they see as representative of underlying masculinity. This might be accomplished through a more egalitarian testing system that truly chooses both

male and female athletes for testing at random, along with chemical regulations that reflect a more accurate understanding of male and female bodies.

While the focus on gender as an essential social organizer and the policing of sex and gender in sport is disappointing to those who hope for a more inclusive attitude toward athletic competition, hope is not lost. Although the IOC has yet to revise or even admit to the existence of the sex/gender policing functions of drug testing, progress has been made in terms of the inclusion of transsexual, if not intersexed, athletes in sport, a testament to the increasing awareness of the potential for variability in the human body. The high level of public visibility afforded to international athletic competitions ensures that even small victories on this front will have lasting and widespread influence on the world of sport.