



HUMAN
RIGHTS
WATCH

“They’re Chasing Us Away from Sport”

Human Rights Violations in Sex Testing of Elite Women Athletes



1930^s

Unsubstantiated stories of men masquerading as women in international sporting events first appear.ⁱ

1940^s-1950^s

Systematic sex testing, of a sort, exists as early as the 1940s via identity cards and “certificates of femininity,” with the IAAF and IOC requiring all female athletes who wish to register for an event to provide a physician letter attesting to their sex for eligibility purposes.ⁱⁱ

Meeting of the Executive Committee of the International Olympic Committee in 1951 in Vienna, chaired by IOC President Edström.
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BACKGROUND

You have to sacrifice so much, especially us ladies.

—C.M., athlete, November 12, 2019

The regulation of women’s participation in sport via “sex testing” dates back decades. A key architect of such regulations—a former official with the International Olympic Committee (IOC) and World Athletics—later went on to characterize previous testing regimes as a “systematic violation for which the world of sport must take responsibility,” and “a decades-long example of sexual harassment of sexual abuse within sport [and] a flagrant abuse.”¹³

The earliest attempts at “sex testing” that sports authorities instituted in the 1940s for the purposes of eligibility were informal and ad hoc, but by the 1960s, sports governing bodies such as the IAAF and the IOC began systematic mandatory testing of all women athletes based on rumors that some women “were more male than female,” resulting in “unfair competition for ‘real’ women.”¹⁴ There have never been analogous regulations for men.

In an effort to “thwart the rumours” and ensure “only women competed in women’s events,” the IOC and other sports federations, including the then-IAAF, introduced procedures to sex test women athletes.¹⁵

Over the years of mandatory, systematic, and standardized sex testing from 1966 on, sports governing bodies have relied on various clinical exams and tests to assess women athlete’s specific sex characteristics and, by proxy, their sex.

¹³ Arne Ljungqvist, *Doping’s Nemesis* (Cheltenham: Sportsbooks Limited, April 2011), pp. 182-183.

¹⁴ Vanessa Heggie, “Testing Sex and Gender in Sports: Reinventing, Reimagining and Reconstructing Histories,” *Endeavour* 2010, 34(4): 157–163, accessed October 29, 2020, doi:10.1016/j.endeavour.2010.09.005; Ljungqvist, *Doping’s Nemesis*, p. 183.

¹⁵ Ljungqvist, *Doping’s Nemesis*, p. 183.

1966-1967

Women athletes who wish to register for the 1966 European Athletics Championships are subject to “nude parades,” requiring them to walk before a medical panel to determine eligibility.ⁱⁱⁱ On-site gynecological and physical examinations are required for eligibility in the 1966 British Empire and Commonwealth Games Federation in Kingston, Jamaica.

1967-1980s

The IAAF (in 1967 at the European Cup Athletics) and the IOC at the 1968 Grenoble Winter Olympics implement a technique to determine the presence of more than one X chromosome (Barr body test or buccal smear).^{iv} This method classifies some women as men (those with only one X chromosome).

The Olympic Flag is carried by French Alpine troops during a procession at the opening ceremony of the 1968 Winter Olympics in Grenoble, February 7, 1968. © 1968 AP Photo

The earliest tests included compulsory genital/gynecological exams, so-called nude parades, and assessment of secondary sex characteristics such as hair patterns.¹⁶ One policymaker noted:

Sport had no other means of asserting the gender of participants other than having them parade naked in front of a panel of doctors. After this ‘examination,’ the panel decided whether the case presented to them was a woman or a man.¹⁷

Sports governing body officials later described these as “traumatic and degrading visual genital inspections” where female athletes “were forced to parade in the nude.”¹⁸ Given their invasive nature, policymakers decided to abandon such degrading exams after a brief period of using them, ushering in a shift to ostensibly less abusive exams.

The IOC and World Athletics adopted a version of chromosomal testing in 1968 that relied on swabbing cells from inside the cheek to assess Barr bodies.¹⁹ Under this method, chromosomes alone were incorrectly deemed sufficient as a proxy for sex, and because this technique only assesses whether someone has more than one X chromosome it ruled some women ineligible to compete in the female category while, theoretically at least as there were no analogous regulations for men, rendering some men eligible.²⁰

¹⁶ Arne Ljungqvist et al., “The History and Current Policies on Gender Testing in Elite Athletes,” *International SportMed Journal* 2006, 7(3): 225–230, https://www.researchgate.net/publication/289604595_The_history_and_current_policies_on_gender_testing_in_elite_athletes (accessed October 29, 2020); Eduardo Hay, “Sex Determination in Putative Female Athletes,” *Journal of the American Medical Association (JAMA)* 1972, 221(9): 221, accessed October 29, 2020, doi:10.1001/jama.1972.03200220032008; Robert Ritchie, John Reynard, and Tom Lewis, “Intersex and the Olympic Games,” *Journal of the Royal Society of Medicine* 2008, 101(8): 395–399, accessed October 29, 2020, doi:10.1258/jrsm.2008.080086; J.L. Simpson et al., “Gender Verification in Competitive Sports,” *Sports Medicine* 1993, 16(5): 305–315, accessed October 29, 2020, doi:10.2165/00007256-199316050-00002.

¹⁷ Ljungqvist, *Doping’s Nemesis*, p. 183.

¹⁸ Ljungqvist et al., “The History and Current Policies on Gender Testing in Elite Athletes,” *International SportMed Journal*, p. 225.

¹⁹ A “Barr body” is the inactive X chromosome in a typically female cell. Albert de la Chapelle, “The Use and Misuse of Sex Chromatin Screening for ‘Gender Identification’ of Female Athletes,” *JAMA* 1986, 256(14): 1920–1923; Heggie, “Testing Sex and Gender in Sports,” *Endeavor*, pp. 157–163.

²⁰ This would include men with Klinefelter syndrome (or XXY syndrome), which is a genetic condition in which a person has an extra copy of the X chromosome. See: Louis J. Elsas et al., “Gender Verification of Female Athletes,” *Genetics in Medicine* 2000, 2(4): 249–254, accessed October 29, 2020, <https://doi.org/10.1097/00125817-200007000-00008>. “It took some time before specific cases and issues became public and illustrated the unreliability and damage caused by chromosome-based screening. Barr body tests had been abandoned during the 1970s, because they were found unreliable. These chromatin tests were screening out women with genetic difference affording no unusual physical advantage for sports (e.g., XY females with complete androgen insensitivity) while they missed XX men and women with medical conditions such as testosterone-producing ovarian tumors or congenital adrenal hyperplasia. That the de facto results of genetic screening devastated the lives of screen-positive women was illustrated by the story of Maria Patino, an unsuspecting Spanish national



Spanish hurdler Maria José Martínez-Patiño is ruled ineligible to compete the World University Games. She challenges her exclusion and eventually wins.^v

A “certificate of femininity” Spanish hurdler María José Martínez-Patiño received in in 1983. In 1985, she was ruled ineligible to compete as a woman.

The IAAF stops mandatory testing of all women, and shifts to suspicion-based testing via a health check for all athletes (women and men) before competition in 1991.^{vi} A clause gives “the medical delegate at competition... authority to arrange for the determination of the gender of an athlete at his/her discretion.”^{vii} In 1992, the IAAF stopped systematic

testing altogether and requested national federations to conduct health checks before international competitions. In 1996, the IAAF added a clause to its constitution reading: “The Medical Delegate shall have ultimate authority on all medical matters ... He shall also have the authority to arrange for the determination of the gender of the competitor should he judge that to be desirable.”^{viii} This remains in place until the 2011 Hyperandrogenism regulations were instituted.

A Note on Terminology

This report discusses human rights violations that occur due to bias and discrimination against people on the basis of their real or perceived innate sex characteristics. Variations in sex characteristics—including genitals, chromosomes, gonads, hormone production, or hormone sensitivity—are sometimes referred to in policy and medical literature as “Disorders of Sex Development” or “Differences of Sex Development (DSD).” Variations in sex characteristics are also sometimes referred to as “intersex,” which, as explained in a 2019 UN background note: “Intersex is an umbrella term used to describe a wide range of innate bodily variations of sex characteristics.”²¹ In this report, we refer to variations in sex characteristics, most prominently hormone levels, as such. When referencing policies that use “DSD” or jurisprudence that uses “intersex” or “intersex variations,” we adhere to that language. The intent is to explain that these terms all overlap and are linked. Our use of “variations in sex characteristics” is intended to be both accurate and respectful.

While the assessed sex characteristic has varied throughout the history of sex testing, the idea that a single biological marker is sufficient for assessing sex has not.²² Regulators have long understood that reliance on one sex characteristic—among the many available—could unfairly exclude women with variations in sex characteristics, but some have understood this barring as the price to pay “in order to ensure fair play.”²³

champion hurdle competitor who was screened out at the World University Games and banned from sports in 1985.”

²¹ OHCHR, “Background Note on Human Rights Violations against Intersex People,” October 26, 2019, <https://www.ohchr.org/EN/Issues/Discrimination/Pages/BackgroundViolationsIntersexPeople.aspx> (accessed October 29, 2020).

²² Katrina Karkazis et al., “Out of Bounds? A Critique of the New Policies on Hyperandrogenism in Elite Female Athletes,” *American Journal of Bioethics* 2012, 12(7): 3–16, accessed October 29, 2020, doi:10.1080/15265161.2012.680533.

²³ Hay, “Sex Determination in Putative Female Athletes,” *JAMA*, p. 221.

1992-1999

The IOC shifts from buccal smear to a novel technique polymerase chain reaction test (PCR-test) to detect the presence of the SRY gene, discovered a few years prior to lead to testis development. Evidence the test is useful for sex determination is sparse, and there is no evidence the gene is linked to athletic advantage. This technique classifies some women as men.^{ix}

2000-2001

The IOC agrees to suspend mandatory sex verification practices for the 2000 Sydney Olympic Games, after years of pressure from medical professional associations, policymakers, women’s sports advocates, and the IOC Athlete’s Commission. The IOC turns to a reserve clause that permits medical professionals to evaluate on an ad hoc basis

The Sydney Harbour Bridge with the Olympic rings and the Opera House with the Earth lighting projection are lit up in Sydney, Thursday, September 14, 2000.
© 2000 AP Photo/Rob Griffith



2006

individual athletes whose sex has been questioned via various clinical exams and laboratory tests.^x In 2001, the IAAF starts conducting blood tests at all major competitions to determine doping until implementation of the Athlete Biological Passport (ABP) by the World Anti-Doping Association (WADA) in January 2009.^{xi} However, the ABP allows “systemic screening for abnormal virilization in female athletes.”^{xii}

The IAAF introduces its Policy on Gender Verification “to establish a policy and mechanism for managing the issue of gender amongst participants in women’s events.” An interim solution, it intends to provide guidance to “event organizers, national associations, athletes and officials as to how to approach this problem and to come up with a satisfactory solution when faced with a case.”^{xiii} The method is a “comprehensive but ad hoc medical examination by a panel of experts.”^{xiv} According to the policy, gender is “an issue that surfaces from time to time in women’s events.”

The problems with the exclusive reliance on a single sex characteristic, and indeed the harms of sex testing, came to widespread attention in 1985, when the IOC disqualified Spanish hurdler Maria José Martínez-Patiño.²⁴ Officials subjected Martínez-Patiño to sex testing using chromosomal tests. After officials deemed her “chromosomally male” and barred her from competition in the World University Games, her results were leaked to the press.²⁵ She was then dropped by the Spanish Athletics Federation, her medals and records were withdrawn along with her university scholarship, and her boyfriend left her.²⁶ Three years later, she was reinstated after having challenged the disqualification, but by then she had suffered significant harm.

In response, some IAAF officials sought to “stop this idiocy,”²⁷ or, as they phrased it more diplomatically, “obviate the need for any laboratory-based genetic ‘sex test.’”²⁸ But disagreement about which sex characteristics to assess complicated any simple answer, so in 1992 the IAAF stopped systematic sex testing per se, instead requiring athletes to provide a certificate of health from a doctor and kept in place a reserve clause that allowed “the medical delegate at a competition ... the authority to arrange for the determination of the gender of an athlete at his/her discretion.”²⁹ Thus, while systematic sex testing was no longer in force, the IAAF’s strong advice to national federations to conduct health checks before international competitions allowed the IAAF the full right to investigate any athlete as they deemed necessary.³⁰

Rather than follow the IAAF, the IOC began testing for what is called the testis development, or SRY gene, with the idea that this was the key to screen the “sexually ambiguous” from the women’s category.³¹

Using this test, officials classified some women as men, including eight women in the 1996 Atlanta Olympics.³² Then, following pressure from medical organizations and the Athletes’ Commission, the IOC decided to stop mandatory sex testing of all women.³³ As with the IAAF, the IOC instituted a regulation that allowed for medical examination of athletes they deemed suspicious using myriad laboratory tests and clinical exams.³⁴ Medical organizations and the IOC Athletes’ Commission also called for a similar ad hoc, suspicion-based regulation to be abandoned.³⁵ As IOC and World Athletics officials later wrote:

The abolishment of sex verification tests as a condition for women’s participation in competitive sport has closed a dark chapter in elite female sport which has had a permanent impact on the evolution and performance of female athletes. Gender verification has forced professional sports organizations to address the scientific and ethical implications of gender in competitive sport.³⁶

Part of the motivation for discontinuing routine sex testing was financial, and part was because policymakers believed “contemporary athletic clothing and the need to provide a urine sample for doping control under direct supervision made male imposters easy to identify.”³⁷

Nevertheless in 2006, the IAAF issued its Policy on Gender Verification, which was framed as an interim solution “to establish a policy and mechanism for managing the issue of gender amongst participants in women’s events.”³⁸ The IAAF stated that, “[i]n resolving cases that may arise, determination should not be done solely on

²⁴ Maria Jose Martínez-Patiño, “Personal Account: A Woman Tried and Tested,” *The Lancet* 2005, 366(s38), accessed October 29, 2020, doi:10.1016/S0140-6736(05)67841-5; Ljungqvist, *Doping’s Nemesis*; María Jose Martinez-Patiño, Eric Vilain, et al., “The Unfinished Race: 30 Years of Gender Verification in Sport,” *The Lancet* 2016, 388(10014): 541-543, accessed October 29, 2020, doi:10.1016/S0140-6736(16)30963-1.
²⁵ Ljungqvist, *Doping’s Nemesis*, p. 184.
²⁶ Heggie, “Testing Sex and Gender in Sports,” *Endeavor*; Martínez-Patiño, “Personal Account: A Woman Tried and Tested,” *The Lancet*.
²⁷ Ljungqvist, *Doping’s Nemesis*, p. 185.
²⁸ Arne Ljungqvist and J.L. Simpson, “Medical Examination for the Health of All Athletes Replaces the Need for Gender Verification in International Sports: The International Amateur Athletic Federation Plan,” *JAMA* 1992, 267(6): 850-852, accessed October 29, 2020, doi:10.1001/jama.1992.03480060096038.
²⁹ Ljungqvist et al., “The History and Current Policies on Gender Testing in Elite Athletes,” *International SportMed Journal*, p. 229.
³⁰ Elsas et al., “Gender Verification of Female Athletes,” *Genetics in Medicine*; Heggie, “Testing Sex and Gender in Sports,” *Endeavor*, p. 160.
³¹ Bernard Digeon, “Gender Verification and the Next Olympic Games,” *JAMA* 1993, 269(3): 357–358, accessed October 29, 2020, doi:10.1001/jama.1993.03500030055026.

³² Myron Genel, “Gender Verification No More?” *Medscape Women’s Health* 2000, 5(3): E2, <https://www.medscape.com/viewarticle/408918> (accessed October 29, 2020).
³³ Ljungqvist and Simpson, “Medical Examination for the Health of All Athletes Replaces the Need for Gender Verification in International Sports,” *JAMA*; Heggie, “Testing Sex and Gender in Sports,” *Endeavor*; Elsas et al., “Gender Verification of Female Athletes,” *Genetics in Medicine*; Ljungqvist, *Doping’s Nemesis*.
³⁴ Genel, “Gender Verification No More?” *Medscape Women’s Health*; Tian Qinjie et al., “Gender Verification in Athletes with Disorders of Sex Development,” *Gynecological Endocrinology* 2009, 25(2): 117–121, accessed October 29, 2020, doi:10.1080/09513590802530957; Ljungqvist and Simpson, “Medical Examination for the Health of All Athletes Replaces the Need for Gender Verification in International Sports,” *JAMA*.
³⁵ Louis J. Elsas et al., “Gender Verification of Female Athletes,” *Genetics in Medicine*.
³⁶ Ljungqvist et al., “The History and Current Policies on Gender Testing in Elite Athletes,” *International SportMed Journal*, p. 230.
³⁷ Myron Genel and Arne Ljungqvist, “Gender Verification of Female Athletes,” *The Lancet* 2005, 366(S41), accessed October 29, 2020, doi:10.1016/S0140-6736(05)67843-9.
³⁸ IAAF, “IAAF Policy on Gender Verification,” 2006, <http://bolandathletics.com/sitefiles/wp-content/uploads/2015/11/IAAF-Gender-Verification-Policy.pdf> (accessed November 4, 2020).



2006

The Olympic Council of Asia tests Santhi Soundarajan after she wins silver in the 800 meters at the Asian Games in Doha. News leaks that she failed a “sex test” and that her medal was withdrawn.^{xv} She attempts suicide a year later.^{xvi}

India’s Santhi Soundarajan holds her silver medal on the winner’s podium after the women’s 800-meter final on the second day of the athletics competition for the 15th Asian Games at Khalifa Stadium in Doha.
© 2006 Toshifumi Kitamura/AFP via Getty Images



2009

Caster Semenya wins the World Championships in Berlin amid speculation about her sex.^{xvii} News of Semenya being investigated leaks, as does^{xviii} her confidential medical report,^{xix} which cites a source close to an investigation being conducted by the International Association of Athletics Federations, the sport’s governing body, as saying the “18-year-old returned three times the amount of testosterone which might be expected from a ‘normal’ female.”

South Africa’s gold medal winner Caster Semenya is flanked by Kenya’s silver medal winner Janeth Jepkosgei Busienei, left, and Britain’s bronze medal winner Jennifer Meadows, right, during the awards ceremony for the women’s 800-meter final at the World Athletics Championships in Berlin on Thursday, Aug. 20, 2009.
© 2009 AP Photo/Markus Schreiber



2010

Caster Semenya returns to competition. She and her coach report that she underwent extensive physical examinations, including nude photography.^{xx}

Caster Semenya celebrates with the South African flag after winning the athletics women’s 800-meter final during the 2018 Gold Coast Commonwealth Games at the Carrara Stadium on the Gold Coast on April 13, 2018.
© 2018 Saeed Khan/AFP via Getty Images

laboratory based sex determination.” However, the policy also stated that:

[I]f there is any ‘suspicion’ or if there is a ‘challenge’ then the athlete concerned can be asked to attend a medical evaluation before a panel comprising gynecologist, endocrinologist, psychologist, internal medicine specialist, expert on gender/transgender issues.³⁹

In other words, tests that sports governing body officials had called degrading and humiliating were once again put in force. Moreover, the exact medical specialists called to weigh in on an athlete’s sex for the purpose of sports eligibility, and hence her right to compete, are precisely those called in to make diagnoses regarding variations in sex characteristics, revealing once again the decades-long focus on rooting women with these variations out of competition.

Once again, women athletes fell under an ad hoc policy that had no clear criteria for inclusion or exclusion. Another widely publicized investigation under these regulations was the disqualification of Indian runner Santhi Soundarajan in 2006. The Olympic Council of Asia stripped Soundarajan of a silver medal won in the 2006 Asian Games in the 800 meter race and, following that, the Athletics Federation of India barred her from competing.⁴⁰ She attempted suicide in the aftermath of the media coverage of her disqualification.⁴¹

Three years later, in 2009, sex testing came to widespread public attention again with the IAAF’s disqualification of South African Caster Semenya. Semenya’s treatment reinvigorated global attention, and indeed outrage, over the practice. She said: “I have been subjected to unwarranted and invasive scrutiny of the most intimate and private details of my being ... [which has] infringed on not only my rights as an athlete but also my fundamental and human rights, including my rights to dignity and privacy.⁴² It was later revealed she was required to take testosterone-lowering medications to continue competing, medication that she said made her “feel constantly sick.”⁴³

³⁹ Ibid.

⁴⁰ “Santhi Stripped of Asiad Medal,” *Rediff*, December 18, 2006, <https://www.rediff.com/sports/2006/dec/18dohaleado2.htm> (accessed October 29, 2020).

⁴¹ Ruth Padawer, “The Humiliating Practice of Sex-Testing Female Athletes” *New York Times*, June 28, 2016, <https://www.nytimes.com/2016/07/03/magazine/the-humiliating-practice-of-sex-testing-female-athletes.html> (accessed October 29, 2020).

⁴² Associated Press, “Caster Semenya’s Comeback Statement in Full,” *Guardian*, March 30, 2010, <https://www.theguardian.com/sport/2010/mar/30/caster-semenya-comeback-statement> (accessed October 29, 2020).

⁴³ Nick Said, “Semenya Accuses IAAF of Using Her as a ‘Human Guinea Pig,’” *Reuters*, June 18, 2019, <https://www.reuters.com/article/us-athletics-semenya/semenya-accuses-World-Athletics-of-using-her-as-a-human-guinea-pig-idUSKCN1TJ22P> (accessed October 29, 2020).

She later said:

The IAAF used me in the past as a human guinea pig to experiment with how the medication they required me to take would affect my testosterone levels.⁴⁴

Sport governing bodies faced a public relations and media backlash. Starting in 2010, IAAF and IOC policymakers began to develop new regulations, which they issued in 2011 and 2012, respectively.⁴⁵

Although the IAAF claimed that its new regulations “replaced” the 2006 Gender Verification Policy and that it had “abandoned all reference to the terminology ‘gender verification’ and ‘gender policy’ in its Rules,” critics pointed out that the regulations continued the decades-long practice of sex testing in multiple ways.⁴⁶

Critics of sex testing had successfully challenged the use of single markers of sex (such as chromosomes) for how it ignored sex’s biological and social complexity. Yet policymakers framed the new regulations’ exclusive focus on testosterone as objective and scientific, and ostensibly as a “clean break” from the previous problems of sex testing policies such as the reliance on a single marker.⁴⁷

Athletics officials identified testosterone as the primary driver of athleticism, identified 10 nanomoles per litre of blood (10nmol/L) as a scientifically specious threshold for functional endogenous testosterone that they deemed confers a performance advantage, and ascribed an unfair advantage to women with natural testosterone above this level.⁴⁸ They deemed this level within the “normal male range,” ignoring the variability of both women’s and men’s testosterone levels, and the overlap between ranges for women and men.⁴⁹ Any woman with naturally occurring testosterone in the “normal male range” and an unspecified degree of androgen sensitivity—meaning her body has functional androgen receptors—would be ineligible to compete unless she lowered her levels. In April

⁴⁴ Ibid.

⁴⁵ IAAF, “IAAF Regulation Governing Eligibility of Females with Hyperandrogenism to Compete in Women’s Competition,” April 2011, <https://www.sportsintegrityinitiative.com/wp-content/uploads/2016/02/IAAF-Regulations-Governing-Eligibility-of-Females-with-Hyperandrogenism-to-Compete-in-Women%E2%80%99s-Competition-In-force-as-from-1st-May-2011-6.pdf> (accessed October 29, 2020).

⁴⁶ Ibid.

⁴⁷ Ibid., Karkazis et al., “Out of Bounds?” *American Journal of Bioethics*.

⁴⁸ Ibid.

⁴⁹ Katrina Karkazis and Rebecca Jordan-Young, “Debating a Testosterone ‘Sex Gap,’” *Science* 2015, 348(6237): 858-860, accessed October 29, 2020, doi:10.1126/science.aab1057.



2011

The IAAF introduces regulations governing the eligibility of women with hyperandrogenism (when women produce higher than typical androgens), in elite women’s competition. An athlete assigned female at birth and with a female legal sex may compete if her endogenous testosterone levels are below 10nmol/L (which they deem the “normal” male range) and with

Mariya Savinova (front L) of Russia competes with Caster Semenya (front R) of South Africa in the women’s 800-meter final at the world athletics championships in Daegu, South Korea, on Sept. 4, 2011. Savinova won the gold medal in 1:55.87, while Semenya finished second in 1:56.35. Mariya Savinova is later stripped of the gold medal for doping; Semenya receives the gold.
© 2011 Kyodo via AP Images



androgen sensitivity. A woman athlete known or suspected to have hyperandrogenism must be examined by an expert panel to determine her levels and degree of androgen insensitivity. Athletes with levels above this limit (and absent androgen insensitivity) who refuse to lower levels below the threshold via pharmaceuticals or surgery will not be eligible to compete.^{xxi}

Uganda’s Annet Negesa, right, Slovakia’s Lucia Klocova, left, and New Zealand’s Nikki Hamblin compete on the final stretch of a Women’s 800m qualification heat at the World Athletics Championships in Daegu, South Korea, Thursday, Sept. 1, 2011.
© 2011 AP Photo/Martin Meissner

2019, World Medical Association President Dr. Leonid Eidelman said: “We have strong reservations about the ethical validity of these regulations. They are based on weak evidence from a single study, which is currently being widely debated by the scientific community.”⁵⁰

The determination of whether testosterone is “functional” requires the same physical tests and exams used in the past, including genital inspections to assess clitoral size (used as a proxy for androgen sensitivity) as well as physical inspections, for example, to assess breast size and bodily and facial hair quantity and patterns.⁵¹

The investigations under these regulations also drove stigma. According to article 2.2 of the 2011 World Athletics regulations, anyone was allowed to request World Athletics to investigate and women suspected of having higher natural testosterone (sometimes called “hyperandrogenism”) could be targeted for testing on “reasonable grounds.”⁵² The 2012 IOC policy also noted that each National Olympic Committee should “actively investigate any perceived deviation in sex characteristics” prior to registering women athletes for competition.⁵³

⁵⁰ “WMA Urges Physicians Not To Implement IAAF Rules on Classifying Women Athletes,” World Medical Association press release, April 25, 2019, <https://www.wma.net/news-post/wma-urges-physicians-not-to-implement-iaaf-rules-on-classifying-women-athletes/#:~:text=WMA%20President%20Dr.,debated%20by%20the%20scientific%20community> (accessed October 29, 2020).
⁵¹ IAAF, “IAAF Regulation Governing Eligibility of Females with Hyperandrogenism to Compete in Women’s Competition,” <https://www.sportsintegrityinitiative.com/wp-content/uploads/2016/02/IAAF-Regulations-Governing-Eligibility-of-Females-with-Hyperandrogenism-to-Compete-in-Women%E2%80%99s-Competition-In-force-as-from-1st-May-2011-6.pdf>; Katrina Karkazis and Rebecca Jordan-Young, “The Powers of Testosterone: Obscuring Race and Regional Bias in the Regulation of Women Athletes,” *Feminist Formations* 2018, 30(2): 1-39, accessed October 29, 2020, doi:10.1353/ff.2018.0017.
⁵² “IAAF to Introduce Eligibility Rules for Females with Hyperandrogenism,” World Athletics news release, April 12, 2011, <https://www.worldathletics.org/news/World-Athletics-news/World-Athletics-to-introduce-eligibility-rules-for-femal-1> (accessed October 29, 2020).
⁵³ International Olympic Committee, IOC Regulations on Female Hyperandrogenism, 2014, https://stillmed.olympic.org/Documents/Commissions_PDFfiles/Medical_commission/IOC-Regulations-on-Female-Hyperandrogenism.pdf (accessed October 29, 2020).

The IOC publishes “Hyperandrogenism Regulations,” developed in conjunction with IAAF policymakers. They do not specify a testosterone threshold.^{xxiii}

2012

World Championships take place in Daegu, South Korea. Blood samples are collected from all athletes in an ‘unprecedented anti-doping programme to measure relevant biomarkers for individual profiling purposes within the framework of the Athlete Biological Passport.’^{xxii}

Caster Semenya wins her second gold medal in the World Championships.

Ugandan runner Annet Negesa competes at the Daegu World Championships and is also sex tested under the anti-doping regulation.

Annet Negesa runs her personal best of 1:59:08 in the 800 meter race on May 27 at Fanny Blankers-Koen Games in Netherlands. In July, she is informed that she cannot compete in the London Olympics, and travels to France for further investigation initiated by the IAAF. In November, she undergoes orchiectomy (removal of testes) surgery in Uganda.

Caster Semenya wins silver at the London Olympics (Mariya Savinova is later stripped of the gold medal for doping; Semenya receives the gold).

Analysis of the putatively neutral new regulations revealed:

- Continued use of a single biological marker of sex, testosterone in this case;
- Ongoing scrutiny of women’s bodies for signs of masculinity and even maleness, now linked explicitly to higher natural testosterone;
- Sports officials’ opportunistic and selective use of science to support binary models of sex/gender and inattention to contradictory evidence about the relationship between testosterone and athleticism; and
- The spurious nature of officials’ claims that medical interventions to lower testosterone benefit athletes, when in fact they are medically unnecessary and harmful.⁵⁴

In 2013, a retrospective clinical study that included key sports officials as authors revealed that four women athletes (aged 18-21) from “rural or mountainous regions of developing countries” underwent gonadectomy (surgery to remove gonads) and “partial clitoridectomy” after being identified as having testosterone above the regulations’ threshold.⁵⁵ The physician-authors also state that their diagnoses carried no health risks and that the procedures were not required for health reasons. It also revealed the women were likely women of color from the Global South, matching the pattern of women whose names had been leaked to the press over the years.⁵⁶

This study contradicted earlier claims that the interventions were for the health of the athletes.⁵⁷ As one article said: “the reported medical decisions rendered violate ethical standards of clinical practice and constitute a bio-medical violence against their persons.”⁵⁸

⁵⁴ Karkazis et al., “Out of Bounds?” *American Journal of Bioethics*; Rebecca M. Jordan-Young et al., “Sex, Health, and Athletes,” *British Medical Journal* 2014, 348: g2926, accessed October 29, 2020, doi:10.1136/bmj.g2926; Sönksen et al., “Medical and Ethical Concerns Regarding Women with Hyperandrogenism and Elite Sport,” *Journal of Clinical Endocrinology and Metabolism* 2015, 3(1): 825-827, accessed October 29, 2020, doi:10.1210/jc.2014-3206.
⁵⁵ Patrick Fenichel et. al., “Molecular Diagnosis of 5 α -Reductase Deficiency in 4 Elite Young Female Athletes Through Hormonal Screening for Hyperandrogenism,” *Journal of Clinical Endocrinological Metabolism* 2013, 98(6):E1055-9, accessed October 29, 2020, doi:10.1210/jc.2012-3893.
⁵⁶ In the past, sex testing regulations targeted women from the global north, including María José Martínez-Patiño (Spain) and Ewa Klobukowska (Poland). However, the most publicized investigations since 2009 feature women from the Global South, including publicized cases of women from India, South Africa, Uganda, Kenya, and Burundi.
⁵⁷ Katrina Karkazis and Rebecca Jordan-Young, “The Harrison Bergeron Olympics,” *American Journal of Bioethics* 2013, 13(5): 66–69, accessed October 29, 2020, doi:10.1080/15265161.2013.776375.

2013

Annet Negesa tries to return to competition, but is unable to get her strength back.

A group of physicians, including some who are IAAF-affiliated, publish an article documenting investigation of, and interventions on, four women athletes (see “The Fenichel Paper” section).

2014

Dutee Chand wins the 200 meter and 4x400 meter gold medals in Asian Junior Championships in Taipei, Taiwan. The chairperson of the Medical Committee of the Athletic Federation of India (AFI) conducts tests on Chand without her informed

India’s Dutee Chand celebrates after winning the bronze medal in the women’s 200-meter race at the Asian Athletics Championships in Doha, Qatar, Wednesday, April 24, 2019.
© 2019 AP Photo/Vincent Thian

2015

On July 24, the Court of Arbitration for Sport suspends IAAF regulations as a result of Chand’s case.^{xxiv}

Dutee Chand competes in a semi-final heat of the women’s 100m athletics event during the 2018 Asian Games in Jakarta on August 26, 2018.
© 2018 Jewel Samad/AFP via Getty Image

Another article analyzing the interventions noted the especially debilitating short and long-term complications from such interventions, including the possibility of sterilization.⁵⁹

In 2014 after fellow athletes—among others—raised questions about the supposed “masculine” “stride and musculature” of 18-year-old Indian sprinter, Dutee Chand, officials in India ordered Chand to undergo invasive exams without her informed consent. She was eventually barred from competing in the female category at the 2014 Commonwealth Games in Glasgow and her name was leaked to the press.⁶⁰ Chand could continue competing only if she submitted to medical interventions to lower her testosterone below the threshold, but she refused and decided to challenge the regulations at the Court of Arbitration for Sport (CAS).

CAS suspended the IAAF’s regulations in July 2015, noting that IAAF had failed to establish that the regulations “are necessary and proportionate to pursue the legitimate objective of organizing competitive female athletics to ensure fairness” in elite women’s competition.⁶¹ CAS noted that IAAF had failed to provide sufficient evidence about the “quantitative relationship between enhanced testosterone levels and improved athletic performance in hyperandrogenic athletes.” The court said:

In the absence of such evidence, the Panel is unable to conclude that hyperandrogenic female athletes may enjoy such a significant performance advantage that is it necessary to exclude them from competing in the female category.⁶²

CAS gave IAAF two years to provide further evidence “concerning the magnitude of the performance advantage that hyperandrogenic females enjoy over other females.” If they did not, the IAAF regulations would be declared

consent, and does not share the results with her. AFI asks the Sports Authority of India (SAI) to conduct further tests. Chand is dropped from the team for IAAF World Junior Championship in Oregon and the Commonwealth Games in Glasgow. Chand appeals to the Court of Arbitration for Sport asking it to allow her to compete and declare IAAF Hyperandrogenism Regulations “invalid and void.”

void. The IOC met in November 2015; IAAF representatives were invited. The IOC decided not to issue regulations for the 2016 summer Olympics in Rio, Brazil. Nonetheless, the IOC’s November 2015 consensus statement on the matter supported the IAAF’s testosterone-based regulations.⁶³

In April 2018, the IAAF released its new “Eligibility Regulations for the Female Classification (Athletes with Differences of Sexual Development).” Under the new regulations, women would be ineligible to compete in the women’s category in international races ranging in length between 400m and one mile if they received any of seven DSD diagnoses, had testosterone levels above 5 nmol/L, had sufficient sensitivity to testosterone such that their testosterone levels were thought to have an “androgenising effect, and refused to take medical steps to reduce and maintain their testosterone below 5 nmol/L.”⁶⁴

Caster Semenya filed an appeal in June 2018 at CAS. “It is not fair,” Semenya said. “I just want to run naturally, the way I was born. I am Mokgadi Caster Semenya. I am a woman and I am fast.”⁶⁵ Her legal team argued that the case was meant to:

[E]nsure, safeguard and protect the rights of all women on the basis that the Regulations are irrational, unjustifiable, and in violation of the World Athletics Constitution (based in Monaco), the Olympic Charter, the laws of Monaco, the laws of jurisdictions in which international competitions are held, and of universally recognized human rights.⁶⁶

⁵⁸ Sönksen et al., “Medical and Ethical Concerns Regarding Women with Hyperandrogenism and Elite Sport,” *Journal of Clinical Endocrinology and Metabolism*.

⁵⁹ Jordan-Young et al., “Sex, Health, and Athletes,” *British Medical Journal*.

⁶⁰ *Dutee Chand v. The Athletics Federation of India and the International Association of Athletics Federations*, CAS 2014/A/3759, Interim Arbitral Award, 2014, https://www.doping.nl/media/kb/3317/CAS%202014_A_3759%20Dutee%20Chand%20vs.%20AFI%20%26%20IAAF%20%28S%29.pdf (accessed October 29, 2020).

⁶¹ Ibid.

⁶² The CAS Panel found that “the evidence does not go so far as to equate, or correlate, the level of testosterone in females with a percentage increase in competitive advantage. The evidence does not, for example, establish an advantage of the order of 12% rather than, say 1% or 3%. Once the degree of competitive advantage is established, the World Athletics would then need to consider, if the degree of advantage were well below 12%, whether that justified excluding women with that advantage from the female category.” Ibid.

⁶³ In response to the interim award dated July 24, 2015 in *Chand v AFI and World Athletics*, CAS 2014/A/3759, the IOC Consensus Meeting recommended: Rules should be in place for the protection of women in sport and the promotion of the principles of fair competition.

The IAAF, with support from other International Federations, National Olympic Committees and other sports organisations, is encouraged to revert to CAS with arguments and evidence to support the reinstatement of its hyperandrogenism rules.

To avoid discrimination, if not eligible for female competition the athlete should be eligible to compete in male competition.

International Olympic Committee, “IOC Consensus Meeting on Sex Reassignment and Hyperandrogenism,” November 2015, https://stillmed.olympic.org/Documents/Commissions_PDFfiles/Medical_commission/2015-11_ioc_consensus_meeting_on_sex_reassignment_and_hyperandrogenism-en.pdf (accessed October 29, 2020).

⁶⁴ The 2018 regulations are substantively similar to the 2011 regulations. Analysis of the 2011 regulations thus remains relevant.

⁶⁵ “Caster Semenya: Olympic Champion Will Challenge ‘Unfair’ IAAF Testosterone Ruling,” *BBC*, June 19, 2019, <https://www.bbc.com/sport/athletics/44522370> (accessed October 29, 2020).

⁶⁶ Norton Rose Fulbright, “Norton Rose Fulbright Advises Olympic Champion Caster Semenya to Challenge World Athletics Rules as Discriminatory,” June 18, 2018, <https://www.nortonrosefulbright.com/en/news/115e61b6/norton-rose-fulbright-advises-olympic-champion-caster-semenya-to-challenge-World-Athletics-rules->

2015

In November, the IOC Consensus Meeting on Sex Reassignment and Hyperandrogenism primarily addresses regulations for transgender athletes but notes that in light of the Chand decision, “The IAAF, with support from other International Federations, National Olympic Committees and other sports organisations, is encouraged to revert to CAS with arguments and evidence to support the reinstatement of its hyperandrogenism rules. To avoid discrimination, if not eligible for female competition the athlete should be eligible to compete in male competition.”^{xxv}

2015-2019

No official IAAF or IOC sex testing regulations in place.

2018

The IAAF issues “Eligibility Regulations for the Female Classification (Athletes with Difference of Sex Development).” They differ from the 2011 regulations in several ways, including:

- Applying only to a subset of races (400m, 400m hurdles, 800m, 1500m, and the mile, relays and combined events including any of these distances).
- Setting a lower arbitrary testosterone threshold of 5 nmol/L.
- Focusing only on women with a subset of intersex variations (also called “differences of sex

development”) characterized by higher natural testosterone levels and “sufficient androgen sensitivity” (receptors for testosterone) to have an effect.

- Explicitly excluding conditions unrelated to intersex variations but that can cause higher testosterone in women, even if they “cause the individual to have testosterone levels in her blood above the normal female range.”^{xxvi} In June, Caster Semenya appeals the 2018 IAAF Regulations at the Court of Arbitration of Sport.

In the meantime, concerns were growing about both the human rights violations associated with the regulations and the science used by IAAF to support the regulations. In 2018, three UN special procedures mandate holders (on health, torture, and discrimination against women) wrote to World Athletics to express “serious concerns” that:

The eligibility criteria and the procedures for their implementation set forth in these regulations appear to contravene international human rights norms and standards including the right to equality and non-discrimination, the right to the highest attainable standard of physical and mental health, the right to physical and bodily integrity and the right to freedom from torture, and other cruel, inhuman or degrading treatment and harmful practices.⁶⁹

Others criticized the short- and long-term harms of medical interventions to lower testosterone noting that there was no medical reason to lower testosterone in the absence of patient complaints,⁷⁰ and that the science produced by World Athletics to support the claim that women with higher natural testosterone have a competitive advantage over peers with lower levels was (and remains) deeply contested.⁷¹

used, in which mild hyperandrogenism is a key clinical feature and has higher than expected prevalence among elite female athletes. Non-classical adrenal hyperplasia is a milder and later (adult) onset variant of classical congenital adrenal hyperplasia with a much higher but still rare population prevalence (1:1000 vs 1:16,000 for the classical variant).... Hence a conservative threshold for circulating testosterone of 5 nmol/L measured by LC-MS would identify fewer than 1:10,000 women with PCOS as false positives, based on circulating testosterone measurement alone. Circulating testosterone higher than this threshold is likely to be due to testosterone-secreting adrenal or ovarian tumors, intersex/DSD, badly controlled or non-compliant M2F transgender athletes or testosterone doping.”

⁶⁹ Mandates of the Special Rapporteur on the Right of Everyone to the Enjoyment of the Highest Attainable Standard of Physical and Mental Health; the Special Rapporteur on Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment; and the Working Group on the Issue of Discrimination Against Women in Law and in Practice, “Special Procedures Communication to the IAAF,” OL OTH 62/2018, https://www.ohchr.org/Documents/Issues/Health/Letter_IAAF_Sept2018.pdf.

⁷⁰ Karkazis et al., “Out of Bounds?” *American Journal of Bioethics*; Jordan-Young et al., “Sex, Health, and Athletes,” *British Medical Journal*.

⁷¹ While a full discussion of the science is beyond the scope of this report, key articles include: Simon Franklin, Jonathan Ospina Betancurt, and Silvia Camporesi, “What Statistical Data of Observational Performance Can Tell Us and What They Cannot: The Case of Dutee Chand v. AFI & World Athletics,” *British Journal of Sports Medicine* 2018, 52(7): 420–421, accessed October 29, 2020, doi:10.1136/bjsports-2017-098513; Handelsman, Hirschberg, and Berman, “Circulating Testosterone as the Hormonal Basis of Sex Differences in Athletic Performance,” *Endocrine Reviews*; Court of Arbitration for Sport (CAS), Dutee Chand v. Athletics Federation of India (AFI) & The International Association of Athletics Federations (World Athletics), CAS2014/A/3759, September 2014, https://www.doping.nl/media/kb/3317/CAS%202014_A_3759%20Dutee%20Chand%20vs.%20AFI%20%26%20IAAF%20%28S%29.pdf (accessed November 3, 2020); Katrina Karkazis and Gideon Meyerowitz-Katz, “Why the IAAF’s Latest Testosterone Atudy Won’t Help Them at CAS,” *World Sport Advocate* 2017, 15(8), August 2017; Karkazis and Jordan-Young, “The Harrison Bergeron Olympics,” *American Journal of Bioethics*; Karkazis et al., “Out of Bounds?” *American Journal of*

Whereas policymakers framed the 2011 regulations as a departure from prior sex testing regulations, the 2018 regulations revealed their aim to be sex testing. The foregrounding of testosterone as a criterion for judging women’s eligibility was intended to signal a new focus on scientific validity. However, in reality, the new regulations reveal an intensified focus on other aspects of sex biology beyond testosterone.

During the case, IAAF amended the policy, narrowing the women to whom the regulations applied. According to a public letter they wrote in response to World Medical Association criticism:

The DSD regulations only apply to individuals who are:

- legally female (or intersex), and
- who have one of a certain number of specified DSDs, which mean that they have:
 - male chromosomes (XY) not female chromosomes (XX)
 - testes not ovaries
 - circulating testosterone in the male range not the (much lower) female range
 - the ability to make use of that testosterone circulating within their bodies by having functional androgen receptors.⁶⁷

The amended version allowed some women with endogenous testosterone above the threshold to compete provided they had female typical chromosomes and gonads (that is 46, XX karyotype and ovaries). The women allowed to compete include women with polycystic ovarian syndrome (PCOS)—the most common reason that women have naturally high testosterone—and women with Congenital Adrenal Hyperplasia (CAH), a condition that can cause atypical sex characteristics even though IAAF has argued that women with these diagnoses derive an “advantage” from their higher testosterone.⁶⁸

as-discriminatory (accessed October 29, 2020).

⁶⁷ IAAF, “IAAF Letter to the World Medical Association,” May 7, 2019, <https://www.worldathletics.org/news/press-release/iaaf-letter-wma> (accessed October 29, 2020).

⁶⁸ David J. Handelsman, Angelica L. Hirschberg, and Stéphane Bermon, “Circulating Testosterone as the Hormonal Basis of Sex Differences in Athletic Performance,” *Endocrine Reviews* 2018, 39(5): 803-829, accessed October 29, 2020, <https://doi.org/10.1210/er.2018-00020>. “In creating a threshold for eligibility for female events it is also necessary to make allowance for hyperandrogenic women including women with polycystic ovary syndrome (PCOS) and non-classical adrenal hyperplasia. PCOS is a relatively common disorder among women of reproductive ages with a prevalence of 6-10%, depending on the diagnostic criteria



File photo dated August 20, 2016 of IAAF president Sebastian Coe
© 2016 Martin Rickett/PA Wire via AP Images



Francine Niyonsaba (BDI) celebrates after winning gold in the Women's 800-meter final in a time of 1:58.31 during the final session of the IAAF World Indoor Championships at Arena Birmingham in Birmingham, United Kingdom on Saturday, Mar 2, 2018.
© 2018 Steve Flynn/Image of Sport

2019

In February, the CAS hearing takes place in Lausanne with both Semenya’s team and Athletics South Africa’s team challenging the IAAF’s DSD Regulations. In a split decision issued in April, the CAS rules against Semenya. In May, Semenya announces she is appealing the case to the Swiss Federal Tribunal.^{xxvii}

In a Monday, Feb. 18, 2019 file photo, South Africa's runner Caster Semenya, left, current 800-meter Olympic gold medalist and world champion, and her lawyer Gregory Nott, right, arrive for the first day of a hearing at the international Court of Arbitration for Sport, CAS, in Lausanne, Switzerland.
© 2019 Laurent Gillieron/Keystone via AP, File

On May 1, the IAAF issues revised eligibility regulations for the female classification (athletes with difference of sex development). Similar to the 2018 regulations, they focus on an even narrower subset of women with variations in sex characteristics.^{xxviii}
In October, Ugandan runner Annet Negesa speaks publicly about what she has endured since 2012. A

Matthieu Reeb, General Secretary of the Court of Arbitration for Sport, CAS, speaks to journalists during the release of the decision in the case of South Africa’s runner Caster Semenya, left, the current 800-meter Olympic gold and world champion in front of the Court of Arbitration for Sport (CAS) in Lausanne, Switzerland, Wednesday, May 1, 2019. Semenya lost her appeal Wednesday against rules designed to decrease naturally high testosterone levels in some female runners
© 2019 Laurent Gillieron/Keystone via AP, File

On May 1, 2019, a panel of CAS arbitrators ruled 2-1 in favor of World Athletics and its regulations limiting endogenous testosterone in women. The judgment thus required any woman who did not meet the conditions in the eligibility regulations to lower her testosterone, only compete nationally (if permitted by the national federation), change events to an unrestricted event, compete in the male category, or leave the sport.⁷² CAS procedure dictates that the minority opinion does not write a dissent.

In dismissing Semenya’s case, the CAS arbitrators recognized that the regulations are discriminatory but deemed them a “prima facie proportionate” response to World Athletics’ concerns about eligibility for the female category.

The CAS arbitrators nevertheless expressed “serious concerns as to the future practical application” of the regulations. These concerns included how World Athletics would assess individual athletes’ compliance with the regulations, and flagging the issue of possible side effects of hormonal interventions for athletes, and recognizing the questionable evidence of significant athletic advantage for women athletes with higher than typical natural testosterone in certain events, such as the 1500 meter race.⁷³ The CAS conclusion was based on the assumption that testosterone levels can be effectively reduced below the stated threshold and maintained using only contra-

German television documentary about her and another unnamed athlete sparks an investigation by the French government.^{xxix}

In December, the IOC’s Executive Board notes that its “consultation process regarding “athletes’ inclusion on the basis of sex characteristics and gender identity” confirmed “considerable tension between the notions of fairness and inclusion, and the desire and need to protect the women’s

category.” The IOC concludes that changing the 2015 Consensus Statement guidelines before the Tokyo 2020 games would be “neither ethically nor legally admissible.” It pledges further deliberation.^{xxx}

Several other athletes including Francine Niyonsaba,^{xxxi} Maximilla Imali,^{xxxii} and Margaret Wambui^{xxxiii} begin to speak to media about their unfair exclusion.

ceptive pills, such that surgery or other methods would not be required. It is noteworthy that World Athletics still included surgery as an option, however, in its press release about the case.⁷⁴ The arbitrators noted that further assessment of these concerns may result in the regulations being deemed invalid in the future.

In the run-up to and aftermath of the decision, a slew of sports organizations and LGBT and intersex advocacy groups spoke out against the World Athletics’ regulations.⁷⁵

In September 2020, the Federal Supreme Court of Switzerland ruled in Caster Semenya’s case that sport regulations that violate women’s rights cannot be struck down as inconsistent with Swiss public policy. The court came to this conclusion despite finding that the regulations in question—which create a regime of discriminatory surveillance and medical interventions on women—violate the fundamental human rights of Caster Semenya.⁷⁶ “I will continue to fight for the human rights of female athletes, both on the track and off the track, until we can all run free the way we were born,” Semenya said in a statement about the Swiss ruling.⁷⁷ In November 2020, Semenya announced she would be taking her case to the European Court of Human Rights.⁷⁸

World Athletics’ application of sex testing based on stereotypical gender norms sparked intense criticism from the World Medical Association and the United Nations Human Rights Council, among others, who criticized the body for mandating that healthy athletes undergo medically unnecessary interventions in order to compete.⁷⁹

Bioethics; Mary-Louise Healy et al., “Endocrine Profiles in 693 Elite Athletes in the Postcompetition Setting,” *Clinical Endocrinology* 2014, 81(2): 294–305, accessed October 29, 2020, doi:10.1111/cen.12445; Stéphane Bermon et al., “Serum Androgen Levels in Elite Female Athletes,” *Journal of Clinical Endocrinology & Metabolism* 2014, 99(11): 4328–4335, accessed October 29, 2020, doi:10.1210/jc.2014-1391; Stéphane Bermon and Pierre-Yves Garnier, “Serum Androgen Levels and their Relation to Performance in Track and Field: Mass Spectrometry Results from 2127 Observations in Male and Female Elite Athletes,” *British Journal of Sports Medicine* 2017, 51(17): 1309–1314, accessed October 29, 2020, doi:10.1136/bjsports-2017-097792; Stéphane Bermon et al., “Serum Androgen Levels are Positively Correlated with Athletic Performance and Competition Results in Elite Female Athletes,” *British Journal of Sports Medicine* 2018, 52: 1531-1532, accessed October 29, 2020, https://doi.org/10.1136/bjsports-2018-099700; Martin Ritzén et al., “The Regulations About Eligibility for Women with Hyperandrogenism to Compete in Women’s Category are Well Founded. A Rebuttal to the Conclusions by Healy et al.,” *Clinical Endocrinology* 2014, 82(2): 307–308, accessed October 29, 2020, doi:10.1111/cen.12531; Amanda Menier, “Use of Event-Specific Tertiles to Analyse the Relationship Between Serum Androgens and Athletic Performance in Women,” *British Journal of Sports Medicine* 2018, 52:1540, accessed October 29, 2020, https://doi.org/10.1136/bjsports-2017-098464; Roger Pielke, “A Call for Bermon and Garnier (2017) to be Retracted,” post to “The Least Thing” (blog), July 12, 2018, http://leastthing.blogspot.com/2018/07/a-call-for-bermon-and-garnier-2017-to.html (accessed October 29, 2020); Peter Sönksen et al., “Hyperandrogenism Controversy in Elite Women’s Sport: An Examination and Critique of Recent Evidence,” *British Journal of Sports Medicine* 2018, 52(23): 1481-1482, accessed October 29, 2020, doi:10.1136/bjsports-2017-098446.

⁷⁴ “CAS Arbitration: Caster Semenya, Athletics South Africa (ASA) and International Association of Athletics Federations (IAAF): Decision,” Court of Arbitration for Sport press release, May 1, 2019, https://www.tas-cas.org/fileadmin/user_upload/Media_Release_Semenya_ASA_IAAF_decision.pdf (accessed November 3, 2020).

⁷⁵ Sean Ingle, “Caster Semenya to Run in Doha as Sebastian Coe Welcomes Cas Ruling,” *Guardian*, May 2, 2019, https://www.theguardian.com/sport/2019/may/02/caster-semenya-doha-sebastian-coe-iaaf-cas-ruling-athletics (accessed October 29, 2020).

⁷⁴ “IAAF Publishes Briefing Notes and Q&A on Female Eligibility Regulations,” IAAF press release, May 7, 2019, https://www.worldathletics.org/news/press-release/questions-answers-iaaf-female-eligibility-reg (accessed October 29, 2020).

⁷⁵ Canadian Centre for Ethics in Sport (CCES), the Canadian Association for the Advancement of Women in Sport and Physical Activity (CAAWS) and AthletesCAN, “CCES, CAAWS and AthletesCAN Very Concerned with the CAS Ruling on IAAF’s Eligibility Regulations for Female Classification,” May 2, 2019, https://cces.ca/news/cces-caaws-and-athletescan-very-concerned-cas-ruling-iaafs-eligibility-regulations-female (accessed November 4); See statement signed by Athlete Ally, Women’s Sports Foundation, Champion Women, Canadian Association for the Advancement of Women and Sport and Physical Activity, GLSEN, Global Justice Institute, Metropolitan Community Churches, the HRC, interAct, International Working Group on Women and Sports, LGBT SportSafe Inclusion Program, National Women’s Law Center, OutRight International, Out and Equal, Out in Athletics, Tucker Center for Research on Women & Girls, and WomenWin here: https://www.athleteally.org/organizations-support-caster.

⁷⁶ Tribunal Fédérale Suisse, “Arrêt du 25 août 2020, Ire Cour de droit civile, 4A_248/2019, 4A_398/2019, on file with Human Rights Watch.

⁷⁷ Norton Rose Fulbright, “Caster Semenya Remains Determined to Fight for Human Rights,” September 8, 2020, https://www.nortonrosefulbright.com/en-za/news/8ee6fb77/caster-semenya-remains-determined-to-fight-for-human-rights (accessed October 29, 2020).

⁷⁸ “Athletics: Semenya to take fight to European Court of Human Rights,” *Reuters*, November 17, 2020, https://www.reuters.com/article/us-athletics-semenya/athletics-semenya-to-take-fight-to-european-court-of-human-rights-idUSKBN27X1G8.

⁷⁹ On March 22, 2019, the United Nations Human Rights Council passed a resolution noting that the World Athletics regulations “are not compatible with international human rights norms and standards, including the rights of women with differences of sex development” and expressing concern at “the absence of legiti-

Caster Semenya announces she is switching to 200 meter race [an unregulated event] in a bid to compete in the Tokyo Olympics, reflecting an apparent trend of women athletes refusing to undergo involuntary medical interventions to comply with the regulations.^{xxxiv} The Swiss Federal Tribunal rules in Semenya’s case that sport regulations that violate

women’s rights cannot be struck down as inconsistent with Swiss public policy. The court came to this conclusion despite finding that the regulations in question – which create a regime of discriminatory surveillance and medical interventions on women – violate fundamental human rights of the South African runner Caster Semenya.

Rather than viewing the serious and long-term consequences of lowering testosterone as “side effects,” World Athletics proposes that the “medications are gender-affirming.”⁸⁰

Disregarding women athletes who have resisted these interventions, World Athletics insists that the “side effects” such as reduced muscle and increased fat “change [women’s bodies] to better reflect their chosen gender.”⁸¹ The latter statement insinuates that women athletes who do not willingly modify their bodies chose not to do so for reasons of gender rather than because they are unwanted manipulations of their bodies and violate their bodily integrity.

Dr. Stéphane Bermon, a consultant physician who has served as Director of Health and Science for World Athletics since 2018, and was one of the principal architects of the regulations, defended this justification, saying, “for me the approach is quite simple: you want to compete in the PROTECTED feminine category, then you must not oppose a treatment that affirms your feminine gender,” and “If a person claims to be a woman and wants to compete IN THIS PROTECTED FEMALE CATEGORY, then she should be happy to lower her testosterone level” (emphasis in his original quote).⁸² This framing of the policy imposes a narrow construction of femininity in order to determine who is a “real” woman, a process which imposes discriminatory gender stereotypes on all athletes in violation of rights to autonomy, privacy and dignity, and freedom from discrimination. It also projects for broader society a stereotype-driven image of “femininity,” which negatively affects all women.

The result is that, approaching the 2021 Olympics in Tokyo, sex testing of women athletes has not yet been brought to an end. In a March 2020 press release, the IOC Executive Board clarified that they had undertaken a consultation with athletes with variations in their sex characteristics. The 2015 Consensus Statement guidelines, therefore, will not be updated before the 2020 Games. The IOC wrote:

mate and justifiable evidence for the regulations.” The Human Rights Council also found “no clear relationship of proportionality between the aim of the regulations and the proposed measures and their impact.” UN Doc. A/HRC/40/L.10/Rev.1, Elimination of Discrimination Against Women and Girls in Sport.
⁸⁰ IAAF, “IAAF Letter to the World Medical Association,” <https://www.worldathletics.org/news/press-release/iaaf-letter-wma>.
⁸¹ “IAAF Publishes Briefing Notes and Q&A on Female Eligibility Regulations,” IAAF press release, <https://www.worldathletics.org/news/press-release/questions-answers-iaaf-female-eligibility-reg>; Rebecca Jordan-Young and Katrina Karkazis, “4 Myths about Testosterone,” *Scientific American*, June 18, 2019.
⁸² Rachel Mulot, “Athletism: ‘If You Want to Compete in the Feminine Category, then You Must not Oppose a Treatment,’” *Sciences Et Avenirs*, June 25, 2019, https://www.sciencesetavenir.fr/sante/athetism-if-you-want-to-compete-in-the-feminine-category-then-you-must-not-oppose-a-treatment_134846 (accessed October 29, 2020).

A change of the existing guidelines – the 2015 Consensus Statement – at this stage would mean a change of rules during an ongoing competition with the qualification for the Olympic Games Tokyo 2020 already underway. Such a change, therefore, would be neither ethically nor legally admissible.⁸³

The press release said the IOC “will reflect further on new guidelines for athletes’ inclusion on the basis of sex characteristics and gender identity.”⁸⁴

Absent updated guidance from the IOC, the World Athletics regulations will determine eligibility for women athletes in the now-postponed Tokyo games. They are arbitrary, invasive, and degrading. They are not based on accepted science, and they violate women’s fundamental rights. They are implemented in coercive environments where women are forced to choose between their careers and their basic human rights. In addition, the policies put physicians, sporting bodies, and governments in precarious positions of complicity in violations of privacy, dignity, health, and non-discrimination protections.

In June 2019, following the negative outcome at CAS, Caster Semenya told reporters:

Even though the hormonal drugs made me feel constantly sick, World Athletics now wants to enforce even stricter thresholds with unknown health consequences. I will not allow the World Athletics to use me and my body again. But I am concerned that other female athletes will feel compelled to let World Athletics drug them and test the effectiveness and negative health effects of different hormonal drugs. This cannot be allowed to happen.⁸⁵

⁸³ International Olympic Committee, “IOC Executive Board Opens Second Meeting of the Year,” <https://www.olympic.org/news/ioc-executive-board-opens-second-meeting-of-the-year>.
⁸⁴ Ibid.
⁸⁵ Said, “Semenya Accuses IAAF of Using Her as a ‘Human Guinea Pig,’” *Reuters*, <https://www.reuters.com/article/us-athletics-semenya/semenya-accuses-World-Athletics-of-using-her-as-a-human-guinea-pig-idUSKCN1TJ22P>.

ⁱ Louis Elsas, et al., “Gender verification of female athletes,” *Nature*, vol. 2, no. 4, July/August 2000, <https://www.nature.com/articles/gim2000258.pdf?origin=ppub>; J.L. Simpson, et al., “Gender verification in competitive sports,” *Sports Medicine*, 16 (5), 1993, <https://www.ncbi.nlm.nih.gov/pubmed/8272686>.
ⁱⁱ Vanessa Heggie, “Testing sex and gender in sports; Reinventing, reimagining and reconstructing histories.” *Endeavour* December 2010, 34(4): 157–163
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“They’re Chasing Us Away from Sport”

Human Rights Violations in Sex Testing of Elite Women Athletes

Applying “sex testing” policies based on racialized gender stereotypes, sport governing bodies have created environments that coerce some women into invasive and unnecessary medical interventions as a condition to compete. While some athletes have fought back publicly, openly challenging the policies in court, countless other women have suffered under them as well. Sports officials have engaged in vitriolic public criticism that has ruined careers and lives.

“*They’re Chasing Us Away From Sport*” documents how sex testing policies in international athletics violate rights and damage the lives of many women athletes. The regulations target women in running events between 400 meters and one mile and compel women to undergo medical interventions, or be forced out of competition.

To identify which athletes to target, sports authorities subject all women athletes’ bodies to scrutiny and require those who seem “suspect” to undergo degrading and often invasive medical examinations.

There is no scientific consensus that women with naturally higher testosterone have a performance advantage in athletics. And despite a wide range of testosterone levels among men, they have never been subjected to analogous regulations. World Athletics, which produced the regulations, and the International Olympic Committee—the supreme authority in global sport—should immediately rescind and renounce all such regulations.

(front cover) Annet Negesa, a Ugandan runner, holds a photo of herself racing in the 2011 World Championships in Daegu, South Korea. Negesa was targeted under sex testing regulations and instructed to undergo a medically unnecessary surgery in 2012.

(above) Annet Negesa at a training center in Berlin, Germany, October 2020.

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