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## Y--Does It Matter? Exploring the Significance of the Court of Arbitration for Sport's Landmark Decision in Semenya v. IAAF

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**Y—DOES IT MATTER? EXPLORING THE  
SIGNIFICANCE OF THE COURT OF ARBITRATION  
FOR SPORT’S LANDMARK DECISION IN  
SEMENYA V. IAAF**

I. INTRODUCTION

For centuries, sports have wrestled with the concepts of sex and gender, and this struggle has grown increasingly complex as modern notions of sex and gender have grown progressively more fluid. In the twenty-first century—an era of gender fluidity—international sports bodies, courts, and legislatures are at a loss for how to enact fair and rational policies while preserving human dignity. Like other social institutions, competitive sports have faced immense pressure to replace “sex” with “identity,” specifically in allowing biological males to compete as women if that is their legal or gender identity.<sup>1</sup> This conflict includes the more nuanced discussion surrounding athletes with differences or disorders of sex development (“DSD”), otherwise known as “intersex” athletes.<sup>2</sup>

Sports, particularly track and field, have had a long history with intersex women. Women were first allowed to participate in track and field at the Olympics in 1928.<sup>3</sup> The first intersex athlete to win gold was Stella Walsh, who won the 100-meter sprint in 1932.<sup>4</sup> However, it was not known that Walsh was intersex until after her death in 1980.<sup>5</sup> Concern over intersex athletes and the possibility of men masquerading as women led to gender testing in track and field.<sup>6</sup> From 1968 to

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1. Doriane Lambelet Coleman, *A Victory for Female Athletes Everywhere*, *QUILLETTE* (May 3, 2019), <https://quillette.com/author/doriane-lambelet-coleman/>.

2. *Id.*

3. Howard Fendrich, *1928 Amsterdam: Women’s track, gymnastics debut at Olympics*, *WASH. POST* (July 29, 2020, 10:05 AM), [https://www.washingtonpost.com/sports/olympics/1928-amsterdam-womens-track-gymnastics-debut-at-olympics/2020/07/29/f35dad32-d1ac-11ea-826b-cc394d824e35\\_story.html](https://www.washingtonpost.com/sports/olympics/1928-amsterdam-womens-track-gymnastics-debut-at-olympics/2020/07/29/f35dad32-d1ac-11ea-826b-cc394d824e35_story.html).

4. Sheila L. Cavanagh & Heather Sykes, *Transsexual Bodies at the Olympics: The International Olympic Committee’s Policy on Transsexual Athletes at the 2004 Athens Summer Games*, 12 *BODY & SOC’Y* 75, 82 (2006). Michael Heaton, *Cleveland track star Stella Walsh subject of new documentary: Q&A with Cleveland filmmaker*, *CLEVELAND.COM* (May 2, 2014), [https://www.cleveland.com/entertainment/2014/05/cleveland\\_track\\_star\\_stella\\_wa.html](https://www.cleveland.com/entertainment/2014/05/cleveland_track_star_stella_wa.html) (last updated Jan. 12, 2019).

5. *Id.*

6. Ruth Padawer, *The Humiliating Practice of Sex-Testing Female Athletes*, *N.Y. TIMES* (June 28, 2016), <https://www.nytimes.com/2016/07/03/magazine/the-humiliating-practice-of-sex-testing-female-athletes.html>.

the 1990s, all women in international competition were tested for two X-chromosomes.<sup>7</sup> Eventually, World Athletics (formerly known as the “IAAF”) and the International Olympic Committee (“IOC”) abandoned mandatory chromosome-based testing; however, some women were still tested sporadically on the basis of suspicion.<sup>8</sup>

Then, at the 2009 World Track and Field Championships, an unknown eighteen-year-old South African athlete, Caster Semenya, stunned the world by winning the 800-meter gold medal by a huge margin of 2.50 seconds.<sup>9</sup> Semenya’s win sparked outrage among some of her competitors, who cited her muscular build and deep voice as evidence for concern.<sup>10</sup> Before her victory at the 2009 World Championships, Semenya was subjected to sex testing.<sup>11</sup> Although Semenya is not the first athlete to have her identity as a woman questioned, she has endured challenges to her eligibility for over a decade—longer than any athlete in history.<sup>12</sup> Meanwhile, Semenya has won two Olympic gold medals and three Track and Field World Championships.<sup>13</sup> The inclusion of intersex athletes in women’s sports inevitably raises enormous issues regarding fair play for the majority and compassionate treatment for the minority.

In Part II, this Note will detail the history of women’s participation in Olympic sports and the various gender verification testing policies used to define the category of “woman” in sports. Additionally, Part III will introduce the landmark case *Semenya v. IAAF*<sup>14</sup> and discuss its significant contribution to modern sports’ nuanced understanding of gender identity and sex. Part IV will argue that the Court of Arbitration For Sport (“CAS”) correctly decided *Semenya* because, although testosterone regulation for a subset of affected athletes is discriminatory, the policy is a necessary means of achieving the legitimate objective of promoting fair competition in the female category. Finally, Part

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7. *Id.*

8. *Id.*

9. Ariel Levy, *Either/Or: Sports, sex, and the case of Caster Semenya.*, THE NEW YORKER (Nov. 19, 2009), <https://www.newyorker.com/magazine/2009/11/30/eitheror>.

10. *Id.*

11. *Id.*

12. Victoria Jackson, *The Decadelong Humiliation of Caster Semenya*, SLATE.COM (May 1, 2019, 6:53 PM), <https://slate.com/technology/2019/05/caster-semenya-testosterone-gender-appeal-ruling.html>.

13. Melissa Murphy, *Defending champion Caster Semenya sidelined at worlds*, ASSOCIATED PRESS (Sept. 28, 2019), <https://apnews.com/article/caster-semenya-africa-europe-middle-east-science-bd6559b788ee45bfb96db168cfe426b1>.

14. *Semenya v. Int’l Ass’n of Athletics Fed’ns*, CAS 2018/O/5794, Arbitral Award (Apr. 30, 2019).

V will discuss the global impact of *Semenya* and highlight the significant consequences of testosterone regulation at all levels of sport.

## II. BACKGROUND

Subsection A discusses the history of gender verification testing and chronicles the experiences of female athletes subjected to different types of sex testing implemented throughout history. Subsection B introduces the precedential case *Chand v. AFI & IAAF*.<sup>15</sup> Subsection C discusses the case *Semenya v. IAAF*<sup>16</sup> and the reasoning behind CAS's decision. Subsection D highlights emerging research that validates CAS's decision in *Semenya*. Lastly, Subsection E discusses hormone regulation, or lack thereof, at youth and collegiate levels of sport and how reverberations of the *Semenya* decision may impact future policymaking.

### A. *The History of Gender Verification Testing*

Gender verification is a procedure used in sports that either confirms or denies an athlete's genetic credentials to participate in gender-restricted sports competitions.<sup>17</sup> The first gender verification test dates back to the origins of the Olympics in the seventh or eighth century B.C.<sup>18</sup> Back then, only men were allowed to compete and spectate.<sup>19</sup> Therefore, men were required to compete naked to verify their gender.<sup>20</sup>

In the twentieth century, as women slowly began participating in sports, the new purpose of gender verification testing in women's sports was to confirm an athlete's gender due to fears of men masquerading as women and competing in women's sports.<sup>21</sup> Beginning in 1948, the IOC required all female athletes to submit a doctor's note verifying their sex in order to compete in international competitions.<sup>22</sup>

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15. *Chand v. Athletics Fed'n of India (ATF) & Int'l Ass'n of Athletics Fed'ns (IAAF)*, CAS 2014/A/3759, Interim Arbitral Award (July 24, 2015).

16. *Semenya*, CAS 2018/O/5794.

17. Padawer, *supra* note 6.

18. Laura A. Wackwitz, *Verifying the myth: Olympic sex testing and the category "woman"*, 26 *WOMEN'S STUD. INT'L F.* 553, 553 (2003).

19. *Id.*

20. *Id.*

21. Hayden Opie, *Australian Medico-Legal Issues in Sport: The View from the Grandstand*, 13 *MARQ. SPORTS L. REV.* 113, 138 (2002).

22. Lindsay Parks Pieper, *They qualified for the Olympics. Then they had to prove their sex*, *WASH. POST* (Feb. 22, 2018, 5:00 AM), <https://www.washingtonpost.com/news/made-by-history/wp/2018/02/22/first-they-qualified-for-the-olympics-then-they-had-to-prove-their-sex/>.

The Soviet Union's success in subsequent Olympics during the Cold War in 1956, 1960, and 1964 frustrated Americans who were defeated in the overall medal count.<sup>23</sup> Americans suggested that the muscular Eastern European female athletes were cheating.<sup>24</sup> This international pressure prompted the IAAF to institute mandatory physical exams.<sup>25</sup>

In 1966, the IAAF verified female athletes' sex by requiring athletes to submit to "nude parades."<sup>26</sup> These "nude parades" were a humiliating testing method, whereby female athletes had to display their nude body to a panel of doctors.<sup>27</sup> One year later, the "nude parades" were replaced with the Barr body test, which used a buccal smear to detect the presence of a chromatin mass called "the Barr body," which was thought to only occur in females.<sup>28</sup> The validity of the Barr test was later disproved.<sup>29</sup> In 1992, the IOC abandoned the chromatin analysis in favor of testing for a "polymerase chain reaction for the Y-linked gene SRY (sex-determining region Y)."<sup>30</sup>

Finally, in 1999 after facing international pressure, the IOC ended compulsory sex verification testing.<sup>31</sup> However, this introduced a new era of the "inspect if you suspect" policy.<sup>32</sup> This subjective test enabled IOC and IAAF officials to require an athlete to undergo sex verification testing if an athlete's physical appearance was "suspicious."<sup>33</sup> No athlete was subjected to testing during the first eight years of the IAAF policy.<sup>34</sup> In 2009, Caster Semenya's breakthrough on the professional scene raised enough suspicion to warrant testing by the IAAF.<sup>35</sup>

Gender verification tests have always faced criticism. Critics suggest that gender verification tests are unfair to females with genetic abnormalities. Moreover, only women face the stigma of having their gender and identity challenged. Additionally, affected women have no procedural recourse for their test results, and the outcome is often

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23. *Id.*

24. *Id.*

25. *Id.*

26. *Id.*

27. *Id.*

28. Jill Pilgrim et al., *Far from the Finish Line: Transsexualism and Athletic Competition*, 13 *FORDHAM INTELL. PROP., MEDIA & ENT. L.J.* 495, 509–10 (2003).

29. *Id.* at 510.

30. Joe Leigh Simpson et al., *Gender Verification in the Olympics*, 284 *JAMA* 1568, 1569 (2000).

31. *Id.* See also Jaime Schultz, *It's Time to Stop Gender-Testing Athletes*, *THE NEW REPUBLIC* (Aug. 16, 2016), <https://newrepublic.com/article/136083/its-time-stop-gender-testing-athletes>.

32. Padawer, *supra* note 6.

33. Simpson et al., *supra* note 30, at 1569.

34. *Id.*

35. *Id.* Padawer, *supra* note 6.

very public. The following athletes are early examples of the public nature of sex testing.

Helen Stephens and Stella Walsh competed in the 1936 Olympics.<sup>36</sup> Stephens won the 100-meter in 11.5 seconds, which astonished the world.<sup>37</sup> Her win was quickly followed by accusations from competitors and the rest of the world that Stephens must be a man because most people did not believe a woman could run that fast.<sup>38</sup> In response to the accusations, Stephens was then subjected to sex testing and was later cleared.<sup>39</sup> Walsh, who had previously won gold in the 1932 Olympics, placed second in 1936.<sup>40</sup> She was one of Stephens' staunchest accusers.<sup>41</sup> Later, when Walsh died in 1980, her autopsy revealed that she had male and female chromosomes and a penis.<sup>42</sup>

Ewa Kłobukowska was the first woman to fail a genetic sex verification test in 1967.<sup>43</sup> Results of the testing confirmed her chromosomal makeup was XXY.<sup>44</sup> The IOC stripped Kłobukowska of her medals and forbade her from competing as a woman in future races.<sup>45</sup> Interestingly, Kłobukowska was cited by the IAAF for having "chromosomal 'irregularities,'" but if she had been tested under the Barr body test, which was introduced one year later, she would have been eligible to compete because her cells possessed the Barr body.<sup>46</sup> In 1968, Kłobukowska gave birth to a son.<sup>47</sup>

In 1985, Spanish hurdler Maria José Martínez-Patiño failed a sex test because she had XY chromosomes.<sup>48</sup> Patiño was disqualified from competing, lost a scholarship, and lost her boyfriend.<sup>49</sup> Patiño was the first woman to successfully challenge her disqualification from Olympic competition.<sup>50</sup> Three years later, she was reinstated.<sup>51</sup> Patiño

36. Cavanagh & Sykes, *supra* note 4, at 82.

37. *Id.*

38. *Id.*

39. *Id.*

40. *Id.*

41. *Id.*

42. Cavanagh & Sykes, *supra* note 4, at 82.

43. Louis J. Elsas et al., *Gender verification of female athletes*, 2 *GENETICS IN MED.* 249, 250 (2000).

44. *A Gender Variance Who's Who*, ZAGRIA (Aug. 25, 2009), <http://zagria.blogspot.com/2009/08/ewa-kobukowska-1946-athlete.html>.

45. *Id.*

46. Cavanagh & Sykes, *supra* note 4, at 98.

47. *Id.*

48. *Id.*

49. Michael D. Lemonick, *Genetic Tests Under Fire*, *TIME.COM* (Feb. 24, 1992), <http://content.time.com/time/subscriber/article/0,33009,974937,00.html>.

50. Cavanagh & Sykes, *supra* note 4, at 98.

51. *Id.*

is credited with bringing scientific gaps in gender testing to the forefront, which helped to end mandatory gender testing a decade later.<sup>52</sup>

After public criticism following the treatment of athletes like Paño, the “inspect if you suspect” policy went unused for the next two decades.<sup>53</sup> The treatment of Indian sprinter, Dutee Chand, and the subsequent implementation of the hyperandrogenism regulations were the next significant events in gender verification testing.

### *B. Chand Challenges the IAAF’s Hyperandrogenism Regulation*

In June 2016, at age 20, Dutee Chand became the first Indian sprinter since 1980 to qualify for the women’s 100-meter dash at the Olympics.<sup>54</sup> However, just two years earlier, in June 2014, several female athletes attending a training camp with Chand expressed concern to the Athletics Federation of India (“AFI”) President about her “masculine” physique, which triggered a lengthy investigation into Chand’s sex.<sup>55</sup> Soon after, the AFI notified Chand that, based on medical testing, she was provisionally suspended from athletic competition until she complied with IAAF regulations.<sup>56</sup>

Rather than comply with testosterone reduction treatment, Chand boldly appealed the AFI’s decision to CAS.<sup>57</sup> Chand alleged that the IAAF’s hyperandrogenism regulation unlawfully discriminated against her on the basis of sex and her natural testosterone level.<sup>58</sup> On July 24, 2015, after a three-day hearing with testimony from sixteen witnesses, CAS announced its interim decision.<sup>59</sup> CAS held that the IAAF’s hyperandrogenism regulation was *prima facie* discriminatory.<sup>60</sup> Therefore, the CAS panel evaluated whether the IAAF’s discrimination was necessary to create a level playing field for all female athletes.<sup>61</sup>

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52. Jon Bardin, *Olympic Games and the tricky science of telling men from women*, L.A. TIMES (July 30, 2012, 12:00 AM), <https://www.latimes.com/science/la-xpm-2012-jul-30-la-sci-olympics-gender-20120730-story.html>.

53. *Id.*

54. Padawer, *supra* note 6.

55. Chand v. Athletics Fed’n of India (AFI) & Int’l Ass’n of Athletics Fed’ns (IAAF), CAS 2014/A/3759, Interim Arbitral Award, ¶ 392, (July 24, 2015).

56. *Id.* ¶ 27.

57. *Indian sprinter Dutee Chand appeals against ban for failing ‘gender test’*, THE GUARDIAN (Oct. 8, 2014, 4:50 AM), <https://www.theguardian.com/sport/2014/oct/08/sprinter-dutee-chand-appeals-ban-failing-gender-test>.

58. Chand, CAS 2014/A/3759, ¶ 4.

59. *Id.* ¶¶ 1–5.

60. *Id.* ¶ 117.

61. *Id.* ¶¶ 230, 500.

Ultimately, CAS held that there was no scientific evidence that conclusively proves that hyperandrogenic females enjoy a competitive advantage over other female athletes.<sup>62</sup> Consequently, CAS immediately suspended the IAAF's hyperandrogenism regulation.<sup>63</sup> However, CAS granted the IAAF two years to submit additional evidence to the arbitration panel to justify its hyperandrogenism regulation.<sup>64</sup> CAS also provided specific standards for additional evidence submitted by the IAAF: additional evidence must establish that the competitive advantage experienced by hyperandrogenic female athletes equates to the competitive advantage enjoyed by men over women.<sup>65</sup> Additionally, the competitive advantage must be so significant to demonstrate that hyperandrogenic women's participation in female athletics "would subvert the very basis [of female athletics] . . . and thereby prevent a level playing field."<sup>66</sup> Chand was reinstated and competed in the 2016 Olympic games, but she failed to advance beyond the preliminary round.<sup>67</sup> Chand's successful CAS appeal became a landmark gender case and set the framework for Semenya's legal battle.

In November 2015, following the *Chand* decision, the IOC held a meeting to address its transgender and hyperandrogenism policies.<sup>68</sup> In regard to transgender athletes, the IOC stated that transgender athletes cannot be excluded from participation in Olympic sports.<sup>69</sup> The IOC announced that transgender athletes who identified themselves as female (a male-to-female transitioning athlete) would be allowed to compete in that category as long as their testosterone levels were below ten nanomoles/liter for at least twelve months prior to the competition.<sup>70</sup> Transgender athletes who identify as male (a female-to-male transitioning athlete) do not face any restrictions on competitions.<sup>71</sup>

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62. *Id.* ¶ 532.

63. *Id.* ¶ 548.

64. *Chand*, CAS 2014/A/3759, ¶ 548.

65. *Id.* ¶ 535.

66. *Id.* ¶ 528.

67. Press Trust of India, *Rio Olympics: Dutee Chand Fails to Enter 100m Sprint Final, Mohammad Anas Flops*, NDTV SPORTS ENG. (Aug. 13, 2016, 10:46 AM), <https://sports.ndtv.com/olympics-2016/rio-olympics-dutee-chand-fails-to-enter-100m-sprint-final-mohammad-anas-flops-1480768>.

68. *IOC Consensus Meeting on Sex Reassignment and Hyperandrogenism November 2015*, INT'L OLYMPIC COMM., [https://stillmed.olympic.org/Documents/Commissions\\_PDFfiles/Medical\\_commission/2015-11\\_ioc\\_consensus\\_meeting\\_on\\_sex\\_reassignment\\_and\\_hyperandrogenism-en.pdf](https://stillmed.olympic.org/Documents/Commissions_PDFfiles/Medical_commission/2015-11_ioc_consensus_meeting_on_sex_reassignment_and_hyperandrogenism-en.pdf).

69. *Id.*

70. *Id.*

71. *Id.*

CAS gave the IAAF two years to present evidence to rebut the interim award in favor of Chand.<sup>72</sup> In those two years, the IAAF requested two extensions before abandoning its hyperandrogenism regulation in favor of a testosterone limit that quickly faced a challenge from 800-meter star Caster Semenya.<sup>73</sup>

### C. Semenya v. IAAF

Caster Semenya burst onto the international track and field scene in the summer of 2009, at age eighteen, when she won the IAAF World Track and Field Championship title in the 800-meter race by a margin of over two seconds.<sup>74</sup> Semenya's gender was immediately scrutinized by competitors and media outlets worldwide, and she was subjected to gender verification tests.<sup>75</sup>

In 2018, the IAAF issued new rules mandating that female athletes with DSDs could not compete in women's races from the 400-meters to the mile, unless they lowered their natural testosterone to what the IAAF calls the "female range" through hormone therapy.<sup>76</sup> The IAAF justified its regulations by suggesting that the high levels of testosterone produced by intersex athletes provide them with an unfair advantage over other female athletes.<sup>77</sup>

Semenya, who has faced scrutiny surrounding her gender for over a decade and would be ineligible to run her dominant event without testosterone lowering protocol under these new rules, challenged them in CAS.<sup>78</sup> In May, CAS announced it was upholding the IAAF regulations, so Semenya took her case to Switzerland's Supreme Court, which ordered a temporary suspension of the rules until it issued a decision.<sup>79</sup>

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72. *Chand*, CAS 2014/A/3759, ¶¶ 2–3.

73. *Semenya v. Int'l Ass'n of Athletics Fed'ns*, CAS 2018/O/5794, Arbitral Award, ¶¶ 1–2 (Apr. 30, 2019).

74. Melissa Block, *The Sensitive Question Of Intersex Athletes*, NPR (Aug. 16, 2016, 5:16 PM), <https://www.npr.org/sections/thetorch/2016/08/16/490236620/south-african-star-raises-sensitive-questions-about-intersex-athletes>.

75. *Id.*

76. Press Release, World Athletics, IAAF introduces new eligibility regulations for female classification (Apr. 26, 2018), <https://www.iaaf.org/news/press-release/eligibility-regulations-for-female-classifica>.

77. *Id.*

78. Amby Burfoot, *The Whole World Is Watching: Caster Semenya vs IAAF*, LETSRUN.COM (Apr. 22, 2019), <https://www.letsrun.com/news/2019/04/the-whole-world-is-watching-caster-semenya-vs-iaaf/>.

79. Sean Ingle, *Caster Semenya able to run medication-free for now as Swiss court floors IAAF*, THE GUARDIAN (June 3, 2019, 2:14 PM), <https://www.theguardian.com/sport/2019/jun/03/caster-semenya-800m-swiss-supreme-court-ruling-iaaf>.

On July 31, 2019, the Swiss Supreme Court revoked its previous order enabling Semenya and other DSD athletes to compete pending the IAAF appeal.<sup>80</sup> The IAAF issued a statement saying it “welcomes the Swiss Federal Tribunal’s decision today . . .”<sup>81</sup> The IAAF further stated it:

[M]aintain[s] its position that there are some contexts, sport being one of them, where biology has to trump gender identity, which is why the IAAF believes (and CAS agreed) that the DSD Regulations are a necessary, reasonable and proportionate means of protecting fair and meaningful competition in elite female athletics.<sup>82</sup>

The Court’s decision effectively ended Semenya’s 2019 season. After the decision was announced, Semenya responded saying, “I am very disappointed to be kept from defending my hard-earned title, but this will not deter me from continuing my fight for the human rights of all the female athletes concerned.”<sup>83</sup>

On June 18, 2019, seven weeks after issuing its ruling in *Semenya*, CAS published its 163-page decision.<sup>84</sup> CAS’s decision discussed the merits of all testimony presented in the five-day hearing.<sup>85</sup> First, the panel acknowledged the tremendous athletic accomplishments of Semenya and praised her strength and dignity.<sup>86</sup> The panel then discussed the mission of the IAAF and cited its decades long struggle with sex classifications.<sup>87</sup> Then, the panel acknowledged how modern social change has shifted our perspective on sex identity.<sup>88</sup> Importantly, the panel acknowledged this case involves “a collision of scientific, ethical and legal conundrums. It also involves incompatible, competing, rights.”<sup>89</sup> Additionally, the panel affirmed that it is necessary to have a “protected class” of female athletes.<sup>90</sup> However, the panel said regulation of the “protected class” was “complex.”<sup>91</sup>

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80. Siviwe Breakfast, *IAAF reacts triumphantly after putting the brakes on Caster Semenya*, THE S. AFRICAN (July 31, 2019, 2:38 PM), <https://www.thesouthafrican.com/sport/iaaf-reacts-triumphantly-after-putting-the-brakes-on-caster-semenya/>.

81. *Id.*

82. *Id.*

83. *Id.*

84. Amby Burfoot, *What You Need to Know From the 163-Page Caster Semenya vs. IAAF CAS Decision*, LETSRUN.COM (June 19, 2019), <https://www.letsrun.com/news/2019/06/what-you-need-to-know-from-the-163-page-caster-semenya-vs-iaaf-cas-decision/>.

85. *Id.*

86. *Semenya v. Int’l Ass’n of Athletics Fed’ns*, CAS 2018/O/5794, Arbitral Award, ¶ 467 (Apr. 30, 2019).

87. *Id.* ¶ 456.

88. *Id.* ¶¶ 458–59.

89. *Id.* ¶ 460.

90. *Id.* ¶ 461.

91. *Id.*

In order to answer whether the IAAF's regulation is necessary to promote fairness in the women's category, the panel looked to expert testimony.<sup>92</sup> CAS heard from dozens of expert scientists testifying for all three parties.<sup>93</sup> The panel's decision emphasized that it evaluated all scientific research presented and looked to overlapping commonalities.<sup>94</sup> CAS gave greater weight to scientific conclusions that emerged as "common ground" among scientists testifying for all parties.<sup>95</sup>

The panel also addressed whether the DSD regulations were discriminatory.<sup>96</sup> The CAS held that the DSD regulation is *prima facie* discrimination.<sup>97</sup> Therefore, the IAAF must establish that its hormone policy is "necessary, reasonable and proportionate."<sup>98</sup> Ultimately, the panel held that the DSD regulation is necessary because male-range testosterone is a qualitatively different athletic advantage.<sup>99</sup> Finally, the panel held that the five nanomole/liter upper limit on testosterone was reasonable and proportionate for now.<sup>100</sup> The panel acknowledged, but ultimately rejected, arguments made by Semenya about medical privacy and unknown health consequences.<sup>101</sup>

#### D. Emerging Research Supports More Regulation

On October 14, 2019, the IAAF announced its new testosterone regulation for transgender female athletes.<sup>102</sup> In order to be eligible to compete in the female category, transgender female athletes now must keep their natural testosterone below five nanomoles/liter of blood, which mirrors the limit imposed on DSD athletes.<sup>103</sup>

As a means of reinforcing this policy, the *British Journal of Sports Medicine* published the first study evaluating the effects of testosterone on young, physically active women.<sup>104</sup> The study found a causal effect between testosterone and increased aerobic running ability as

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92. *Semenya*, CAS 2018/O/5794, ¶¶ 474–75.

93. *See id.* ¶ 484, 486–87, 492.

94. *Id.* ¶ 475–76.

95. *Id.* ¶ 556–57.

96. *Id.* ¶ 542.

97. *Id.* ¶ 547.

98. *Semenya*, CAS 2018/O/5794, ¶ 547.

99. *Id.* ¶ 564.

100. *Id.* ¶ 620.

101. *Id.* ¶ 600, 605, 621.

102. Hannah Devlin, *Testosterone boosts women's athletic performance, study shows*, THE GUARDIAN (Oct. 15, 2019, 6:30 PM), <https://www.theguardian.com/science/2019/oct/15/testosterone-boosts-womens-athletic-performance-study-shows>.

103. *Id.*

104. Angelica Lindén Hirschberg et al., *Effects of moderately increased testosterone concentration on physical performance in young women: a double blind, randomised, placebo controlled study*, 54 BRITISH J. SPORTS MED. 599, 599–600 (2019).

well as lean muscle mass.<sup>105</sup> This study confirms the long-assumed performance-enhancing benefits of increased testosterone in female athletes.<sup>106</sup> The study appears to satisfy the evidentiary parameters outlined by CAS in the *Chand* decision. With the IAAF armed with this research, it is unclear how this will impact Semenya's appeal.

In September 2019, Semenya announced she had joined a semi-professional soccer club.<sup>107</sup> She insists she has not given up on track, but it is unclear whether Semenya, the defending Olympic champion, will toe the line.<sup>108</sup> Due to the recent international COVID-19 virus outbreak, the 2020 Olympics were postponed.<sup>109</sup> Prior to the COVID-19 outbreak, Semenya announced she has decided to compete in the 200-meter dash—an event outside the 400- to 1,500-meter races, which remain regulated by the testosterone regulation.<sup>110</sup> Semenya abandoned the 200 meter in 2021 and opted to compete in the 5,000 meter run.<sup>111</sup> She won the South African 5,000 meter track championship in 15:52, which is forty-two seconds off of the Olympic qualifying standard she must hit to compete in Tokyo.<sup>112</sup> As things stand, Semenya will not be able to defend her 800 meter Olympic title in Tokyo.<sup>113</sup>

### E. Hormone Regulation in Youth and Collegiate Sports

Participation in athletics decreases significantly as people advance through the levels of competition.<sup>114</sup> In the 2018–2019 high school cal-

105. *Id.* at 603.

106. *Id.* at 604.

107. Chris Bumbaca, *Intersex female runner Caster Semenya signs with professional South African soccer team*, USA TODAY (Sept. 6, 2019, 10:58 AM), <https://www.usatoday.com/story/sports/olympics/2019/09/06/caster-semenya-intersex-olympic-champ-signs-pro-soccer-club/2230483001/>.

108. David Wharton, *Caster Semenya will try soccer, but says she is not quitting track*, L.A. TIMES (Sept. 9, 2019, 10:19 AM), <https://www.latimes.com/sports/story/2019-09-09/caster-semenya-will-try-soccer-not-quitting-track>.

109. Andrew Keh, *The Coronavirus and the Postponement of the Olympics, Explained*, N.Y. TIMES (Mar. 25, 2020), <https://www.nytimes.com/2020/03/25/sports/olympics/coronavirus-summer-olympics-postponed.html>. The coronavirus disease of 2019 is a novel, contagious respiratory virus first identified December 2019 in Wuhan, China.

110. Paul Gittings, *'Supernatural' Semenya turns to 200m sprint to salvage track and field career*, CNN (Mar. 14, 2020, 12:32 PM), <https://www.cnn.com/2020/03/14/sport/caster-semenya-200m-sprint-tokyo-olympics/index.html>.

111. Steve Brenner, *Caster Semenya: 'They're killing sport. People want extraordinary performances'*, THE GUARDIAN (Apr. 23, 2021, 7:00 AM), <https://www.theguardian.com/sport/2021/apr/23/caster-semenya-theyre-killing-sport-people-want-extraordinary-performances>.

112. *Id.*

113. *Id.*

114. *Estimated Probability of Competing in College Athletics*, NAT'L COLLEGIATE ATHLETIC ASS'N RES. (Apr. 8, 2020), [https://ncaaorg.s3.amazonaws.com/research/pro\\_beyond/2020RES\\_ProbabilityBeyondHSFiguresMethod.pdf](https://ncaaorg.s3.amazonaws.com/research/pro_beyond/2020RES_ProbabilityBeyondHSFiguresMethod.pdf).

endar year, approximately eight million students participated in high school sports.<sup>115</sup> Of these high school athletes, only 500,000 athletes went on to compete in the National Collegiate Athletic Association (“NCAA”).<sup>116</sup> From there, only a fraction of collegiate athletes will become a professional or Olympic athlete.<sup>117</sup> Should athletes at all levels of sport be subject to the same testosterone regulations? Is there a “right” to participate at amateur levels that outweighs the concept of fair play?

States are currently re-evaluating their own policies regarding the right to participate in high school athletics.<sup>118</sup> However, “[r]egulations for transgender high schoolers are far less stringent.”<sup>119</sup> Unlike the NCAA, IOC, and the IAAF, “[n]o state requires students to undergo surgery or hormone therapy before they are allowed to compete.”<sup>120</sup> This less rigid policy demonstrates that the line has been drawn at the high school level on the side of ensuring the right of all athletes to compete.

Some parents and athletes are looking to erase that line in favor of equal opportunity policies instituted at the collegiate and professional level. In June 2019, three Connecticut high school athletes challenged their state’s transgender policy, which enables transgender athletes to compete on sports teams based on which gender they identify with.<sup>121</sup> The three complainants allege that allowing transgender girls to compete with cisgender girls violates Title IX’s mandate for equal athletic opportunities.<sup>122</sup>

High school athletics is perhaps the most difficult arena to address these topics because there are many factors at play. High school athletics have traditionally been viewed as a “right” to participate. Conversely, high school athletic performance is the gateway to collegiate athletics. Therefore, an unfair competitive advantage is a distinct concern. However, policies that require underage students to undergo

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115. *Id.*

116. *Id.*

117. *Id.*

118. See Ian Lovett, *Changing Sex, and Changing Teams*, N.Y. TIMES (May 6, 2013), [http://www.nytimes.com/2013/05/07/us/transgender-high-school-students-gain-admission-to-sports-teams.html?pagewanted=1&\\_r=1&ref=todayspaper](http://www.nytimes.com/2013/05/07/us/transgender-high-school-students-gain-admission-to-sports-teams.html?pagewanted=1&_r=1&ref=todayspaper) (discussing eligibility requirements for transgender students to participate in athletics).

119. *Id.*

120. *Id.*

121. Julia Jones et al., *Complaint says transgender athletes in Connecticut have an unfair competitive advantage*, CNN (June 20, 2019, 12:26 PM), <https://www.cnn.com/2019/06/19/us/transgender-athletes-connecticut-education/index.html>.

122. *Id.*

hormone regulation therapy or take unnecessary medications may not be ethical.

In regard to collegiate policies, the NCAA implemented its transgender student-athlete policy in 2011.<sup>123</sup> This policy does not regulate transgender athletes transitioning from female-to-male.<sup>124</sup> The policy requires male-to-female transgender athletes to undergo testosterone suppression treatment for one calendar year in order to be granted eligibility to compete in female sports.<sup>125</sup>

One athlete who has successfully completed the NCAA's testosterone suppression treatment is June Eastwood.<sup>126</sup> Eastwood is the first known Division I NCAA transgender track and field and cross-country athlete.<sup>127</sup> June Eastwood previously competed for three years for the University of Montana's men's track and cross country teams.<sup>128</sup> Prior to her transition, Eastwood had personal bests of 1:55.23 for the 800-meter, 3:50.19 for the 1,500-meter, and 14:38 for 5,000-meter.<sup>129</sup> The women's collegiate records for those distances are 1:59.10, 3:59.90, and 15:01, respectively.<sup>130</sup> Eastwood has had limited opportunities to race post-transition due to impact of COVID-19.<sup>131</sup> However, based on the 4:45 indoor mile she ran, she estimates that she could run a 4:24 for 1,500 meters.<sup>132</sup> This would be a thirteen-percent decline in speed.<sup>133</sup>

Although the NCAA policy largely mirrors the IOC transgender rules, the NCAA policy is more relaxed and less regulated.<sup>134</sup> The NCAA policy has no upper testosterone limit or a specific dosage of suppression medication that must be administered.<sup>135</sup>

123. NCAA INCLUSION OF TRANSGENDER STUDENT-ATHLETES, NAT'L COLLEGIATE ATHLETIC ASS'N OFF. OF INCLUSION 2 (Aug. 2011), [http://www.ncaa.org/sites/default/files/Transgender\\_Handbook\\_2011\\_Final.pdf](http://www.ncaa.org/sites/default/files/Transgender_Handbook_2011_Final.pdf).

124. *Id.* at 13.

125. *Id.*

126. *5 Facts About June Eastwood, Who Will Become the First Transgender Woman to Run an NCAA Division I Cross Country Race Saturday*, LETSRUN.COM (Aug. 27, 2019), <https://www.letsrun.com/news/2019/08/5-facts-about-june-eastwood-who-will-become-the-first-transgender-woman-to-run-an-ncaa-division-i-cross-country-race-saturday/>.

127. *Id.*

128. *Id.*

129. *Id.*

130. *Id.*

131. Jeff Welsch, *While fighting HB 112, transgender former UM runner Juniper Eastwood finds clarity on trails*, 406 MT SPORTS (Feb. 14, 2021), [https://406mtsports.com/college/big-sky-conference/university-of-montana/while-fighting-hb-112-transgender-former-um-runner-juniper-eastwood-finds-clarity-on-trails/article\\_205de5e9-e94e-513e-b954-fc0406ef1451.html](https://406mtsports.com/college/big-sky-conference/university-of-montana/while-fighting-hb-112-transgender-former-um-runner-juniper-eastwood-finds-clarity-on-trails/article_205de5e9-e94e-513e-b954-fc0406ef1451.html).

132. *Id.*

133. *Id.*

134. LETSRUN.COM, *supra* note 126.

135. *Id.*

Eastwood is the first Division I NCAA athlete to transition, but last year, CeCe Telfer was the first transgender NCAA athlete to transition as a Division II athlete.<sup>136</sup> In 2019, Telfer won the NCAA Division II title in the women's 400-meter hurdles.<sup>137</sup> Prior to her transition, Telfer did not experience a lot of success competing for Franklin Pierce University.<sup>138</sup> She had never scored in her conference meet when she competed in the male division.<sup>139</sup> Then, Telfer became a national champion in her first year competing as a woman.<sup>140</sup> Will the NCAA re-evaluate its transgender policy in response to the decision in *Semenya*?

A controversial bill recently passed by the Idaho Senate demonstrates that the debate surrounding regulation of transgender athletes is a priority for state legislatures.<sup>141</sup> The Idaho Senate voted 24-11 to ban transgender girls and women from playing on high school and college sports teams.<sup>142</sup> Obviously, this bill does not align with the NCAA's current transgender policy and it is very unlikely this bill could withstand a constitutional challenge. The NCAA released a statement saying that NCAA championships will only be held in places "free from discrimination."<sup>143</sup> More than twenty states are considering similar legislation.<sup>144</sup> Arkansas, Tennessee and Mississippi have already passed bills.<sup>145</sup> Moving forward, these bills have reignited a national policy debate regarding transgender participation in female sports.

### III. SUBJECT OPINION

In September 2014, Dutee Chand brought proceedings before CAS against the IAAF and the Athletics Federation of India ("AFI"), appealing the AFI's decision that she was ineligible to compete under

136. *Id.*

137. *Id.*

138. *Id.*

139. *Id.*

140. LETSRUN.COM, *supra* note 126.

141. Nathan Brown & Betsy Z. Russell, *Idaho Senate passes controversial transgender athletes bill, amid rush to adjourn*, IDAHO PRESS (Mar. 16, 2020), [https://www.idahopress.com/news/local/idaho-senate-passes-controversial-transgender-athletes-bill-amid-rush-to/article\\_bc4825fc-c588-524b-8128-68ba57d8c00d.html](https://www.idahopress.com/news/local/idaho-senate-passes-controversial-transgender-athletes-bill-amid-rush-to/article_bc4825fc-c588-524b-8128-68ba57d8c00d.html).

142. *Id.*

143. Holly K. Michels, *NCAA will pull games from states banning trans women as debate continues in Montana*, 406 MT SPORTS (Apr. 12, 2021), [https://406mtsports.com/college/ncaa-will-pull-games-from-states-banning-trans-women-as-debate-continues-in-montana/article\\_4bc7f029-3ed8-57bd-876d-3b055c3019fa.html](https://406mtsports.com/college/ncaa-will-pull-games-from-states-banning-trans-women-as-debate-continues-in-montana/article_4bc7f029-3ed8-57bd-876d-3b055c3019fa.html) (last updated May 7, 2021).

144. *Id.*

145. *Id.*

the IAAF's hyperandrogenism regulations.<sup>146</sup> On July 24, 2015, CAS delivered an interim award partially upholding Chand's appeal and suspending the hyperandrogenism regulations for up to two years.<sup>147</sup> The interim award stipulated that the IAAF had up to two years to submit further evidence and expert reports addressing weaknesses in its evidence.<sup>148</sup> In particular, CAS was skeptical regarding the lack of scientific evidence demonstrating the actual degree of athletic performance advantage sustained by hyperandrogenic female athletes due to their high testosterone.<sup>149</sup>

On September 29, 2017, the IAAF filed expert evidence and requested a six-month extension.<sup>150</sup> Then, on March 9, 2018, the IAAF informed CAS that it intended to withdraw the hyperandrogenism regulations and replace them with new testosterone regulations, which would take effect on November 1, 2018.<sup>151</sup> The new five nanomoles/liter testosterone regulation did not affect Chand, so the *Chand* proceedings were terminated.<sup>152</sup>

The new regulations affected Caster Semenya; therefore, on June 18, 2018, Semenya filed her request for arbitration with CAS against the IAAF.<sup>153</sup> On June 26, CAS announced that Athletics South Africa ("ASA") would be an additional party to the arbitration proceedings.<sup>154</sup> After months of discovery proceedings, parties argued before CAS panel from February 18–22, 2019.<sup>155</sup>

Months later, on April 30, 2019, CAS announced its ruling.<sup>156</sup> In a 2-1 majority decision, CAS upheld the IAAF's five nanomoles/liter upper limit on testosterone.<sup>157</sup> CAS noted that "the DSD Regulations are . . . a necessary, reasonable and proportionate means of achieving the [IAAF's] aim of . . . [preserving] the integrity of female athletics" in Restricted Events.<sup>158</sup>

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146. *Chand v. Athletics Fed'n of India (AFI) & Int'l Ass'n of Athletics Fed'ns (IAAF)*, CAS 2014/A/3759, Interim Arbitral Award, ¶¶ 75, 104 (July 24, 2015).

147. *Id.* ¶ 548.

148. *Id.*

149. *Id.* ¶ 547.

150. *Semenya v. Int'l Ass'n of Athletics Fed'ns*, CAS 2018/O/5794, Arbitral Award, ¶ 9 (Apr. 30, 2019).

151. *Id.* ¶ 10.

152. *Id.* ¶ 12.

153. *Id.* ¶ 14.

154. *Id.* ¶ 16.

155. *Id.* at ¶ 39.

156. *See generally Semenya*, CAS 2018/O/5794.

157. *Id.* ¶¶ 610–20.

158. *Id.*

No concurring or dissenting opinions were published by the panel and the holding of each arbiter was not disclosed. On May 28, 2019, Semenya and ASA filed an appeal with the Swiss Federal Tribunal—the Supreme Court of Switzerland.<sup>159</sup>

#### IV. ANALYSIS

*“There’s no real reason for there to be a man and a woman category in acting . . . It’s not track and field. You don’t have to separate ‘em. Robert de Niro has never said, ‘I’d better slow this acting down so Meryl Streep could catch up.’”*<sup>160</sup>

Like many other social institutions, competitive sports are being encouraged to replace “sex” with “gender identity” to allow athletes to compete according to their gender identity.<sup>161</sup> Sex-based classifications in competitive sport are critical to sport’s mission of fair competition. Replacing “sex” with “gender identity” is not cost-free in the case of competitive sport. Categorizing athletes by gender identity, without regulation, threatens to dismantle women’s status as a protected class.

CAS’s decision in *Semenya*<sup>162</sup> correctly defines the female category for purposes of professional track and field by biological sex characteristics instead of gender identity. Sex classifications cannot be abandoned in favor of gender identity in elite sport. If sex classifications are replaced with gender identity, female athletes will almost always lose to biologically male athletes and athletes with testosterone in the male range. Therefore, CAS correctly upheld the IAAF’s testosterone regulation of DSD athletes, despite its discriminatory effect, because the regulation is necessary to promote fairness in female sports.

##### A. Sex-Based Discrimination—Legal Framework

This Note explores competitive sports’ male-female binary classification of athletes and its treatment of the women’s category as a protected class reserved for biological females. This Section will briefly

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159. Motez Bishara, *Caster Semenya appeals to Federal Supreme Court of Switzerland against testosterone ruling*, CNN (May 30, 2019, 6:31 AM), <https://www.CNN.com/2019/05/29/sport/caster-semenya-appeals-to-federal-supreme-court-of-switzerland-spt-intl/index.html>.

160. Doriane Lambelet Coleman, *Sex in Sport*, 80 *LAW & CONTEMP. PROBS.* 63, 124 (2017) (quoting *Chris Rock’s Opening Oscar Monologue: A Transcript*, N.Y. TIMES (Feb. 28, 2016), <https://www.nytimes.com/2016/02/29/movies/chris-rock-monologue.html>).

161. See, e.g., *Chand v. Athletics Fed’n of India (AFI) & Int’l Ass’n of Athletics Fed’ns (IAAF)*, CAS 2014/A/3759, Interim Arbitral Award, ¶ 4 (July 24, 2015).

162. *Semenya*, CAS 2018/O/5794, ¶ 12.

highlight the United States' sex-discrimination legal framework as it continues to influence athletic policies today.

In *Craig v. Boren*, the U.S. Supreme Court held that sex classifications are subject to “intermediate” scrutiny under the Equal Protection Clause of the Fourteenth Amendment.<sup>163</sup> The Supreme Court elaborated on this standard in *United States v. Virginia*, holding that sex classifications are required to “show ‘at least that the [challenged] classification serves ‘important governmental objectives and that the discriminatory means employed’ are substantially related to the achievement of those objectives.’”<sup>164</sup> Justice Ruth Bader Ginsburg noted in her majority opinion that “[i]nherent differences’ between men and women . . . remain cause for celebration, but not for denigration of the members of either sex or for artificial constraints on an individual’s opportunity.”<sup>165</sup>

Most notably, Justice Ginsburg wrote, “[s]ex classifications may be used to compensate women ‘for particular economic disabilities [they have] suffered,’ to ‘promot[e] equal employment opportunity,’ [and] to advance full development of the talent and capacities of our Nation’s people.”<sup>166</sup> “But such classifications may not be used, as they once were, to create or perpetuate the legal, social, and economic inferiority of women.”<sup>167</sup>

As Justice Ginsburg recognized in *United States v. Virginia*, biological sex remains an important legal classification—therefore, the inherent biological differences between the sexes remain an essential feature of sex discrimination laws.<sup>168</sup> Therefore, where classification by sex is necessary to achieve a legitimate institutional interest, like the women’s category in sport, sex discrimination is lawful.

Traditionally, sport highlighted the male body and championed the best man.<sup>169</sup> Sport now does the same for the female body.<sup>170</sup> Because male athletes are significantly faster and stronger in almost all modern sports than female athletes, women can only be championed if athletes are segregated on the basis of biological sex.<sup>171</sup> In competitive sport, if biological males are introduced into the women’s category without testosterone limits, female athletes will no longer be able to

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163. 429 U.S. 190 (1976).

164. 518 U.S. 515, 533 (1996).

165. *Id.*

166. *Id.*

167. *Id.* at 534.

168. *Id.* at 533–34.

169. Coleman, *supra* note 1.

170. *Id.*

171. *Id.*

compete to win: replacing “sex” with “gender” would “be a disaster for women’s sports . . . a sad end to what feminists have wanted for so long.”<sup>172</sup> As sports scientist Ross Tucker has suggested, “[w]ithout a women’s category, elite sport would be exclusively male.”<sup>173</sup> Therefore, CAS correctly held in *Semenya* that the testosterone regulations affecting DSD athletes, although discriminatory, are necessary to achieve the IAAF’s legitimate interest in protecting fair competition in the female category.

### B. Women’s Sports—Protected Class

As most social institutions transition away from binary sex classification towards the more inclusive concept of gender identity, competitive sport still uses binary categories to classify athletes as either male or female.<sup>174</sup> Historically, the female category was used to exclude women from participation in sport entirely.<sup>175</sup> When women first began to participate in sport at the beginning of the twentieth century, they were segregated by sex, as they continue to be today.<sup>176</sup> Early rationale for sex segregation was related to antiquated gender norms and concerns over the fragility of the female body.<sup>177</sup> Now, modern sport rationalizes sex segregation on the basis of equal opportunity.<sup>178</sup> Equal opportunity is a relatively new concept and Title IX and other similar policies serve as a protective measure—barring sex discrimination not rooted in inherent biological differences and upholding sex discrimination when inherent disparities make it necessary.

Overall, since the enactment of Title IX and its related progeny, the percentage of girls and women participating in sport has increased, but is still much lower than male participation.<sup>179</sup> Additionally, perhaps the greatest challenge in achieving equal opportunity in women’s

172. Tim Layden, *Is it fair for Caster Semenya to compete against women at the Rio Olympics?*, SPORTS ILLUSTRATED (Aug. 11, 2016), <https://www.si.com/olympics/2016/08/11/caster-semenya-2016-rio-olympics-track-and-field>.

173. Malcolm Gladwell & Nicholas Thompson, *Caster Semenya and the Logic of Olympic Competition*, THE NEW YORKER (Aug. 12, 2016), <https://www.newyorker.com/sports/sporting-scene/caster-semenya-and-the-logic-of-olympic-competition>.

174. Coleman, *supra* note 160, at 63; Andrew Langford, *Sex Differences, Gender, and Competitive Sport*, QUILLETTE (Apr. 5, 2019), <https://quillette.com/2019/04/05/sex-differences-gender-and-competitive-sport/#:~:text=traditionally%2C%20sport%20has%20been%20split,could%20be%20interpreted%20as%20gender.&text=the%20same%20is%20true%20of,as%20within%20cycling%20and%20swimming>.

175. *Id.*

176. *Id.*

177. JENNIFER HARGREAVES, SPORTING FEMALES: CRITICAL ISSUES IN THE HISTORY AND SOCIOLOGY OF WOMEN’S SPORTS 209 (1994).

178. Coleman, *supra* note 1.

179. *Id.*

sports is funding.<sup>180</sup> Funding remains higher for boys and men's sports because boys and men's events are more popular and generate more revenue.<sup>181</sup>

This disparity in funding at all levels of women's sports was made more visible in 2019 by the gender discrimination lawsuit filed by the U.S. Women's National Soccer Team.<sup>182</sup> The U.S. Women's National Team alleged that female players are treated unfairly and paid less than the U.S. Men's National Soccer Team, which is markedly less successful.<sup>183</sup> In its defense, the United States Soccer Federation cited that the total prize money in the 2018 Men's World Cup was \$38 million, compared to the \$2 million prize money for the 2015 Women's World Cup.<sup>184</sup> Additionally, the United States Soccer Federation noted that the women's team generates less revenue from ticket sales than the men's team.<sup>185</sup> What makes these statistics more shocking is the fact that the Women's National Team is the most decorated American soccer team in history, but they are compensated less than their male colleagues, who did not even qualify for the 2018 World Cup.<sup>186</sup>

The commitment to treat girls and women equally in sport remains fragile at all levels of sport. With lower participation rates and less funding, women's sports deserve their status as a protected class. If biological sex is replaced with gender identity, this threatens to dismantle decades of work to provide equal opportunity for girls and women to win. Therefore, CAS correctly held in *Semenya* that the IAAF's testosterone regulation instituting a five nanomole/ liter limit on DSD athletes is necessary to protect equal opportunity in women's track races.

### C. Testosterone—A Qualitatively Different Competitive Advantage

What makes a physical trait a “genetic gift” versus an unfair competitive advantage? The competitive advantage experienced by Caster Semenya and other intersex athletes is fundamentally different from other biological advantages experienced by athletes like Michael

180. Anya Alvarez, *I thought the main issue in women's sports was equal pay. I was wrong*, THE GUARDIAN (May 9, 2019, 5:00 AM), <https://www.theguardian.com/sport/2019/may/09/i-thought-the-main-issue-in-womens-sports-was-equal-pay-i-was-wrong>.

181. *Id.*

182. Alexandra Svokos, *US Soccer fires back against lawsuit, says women's team has 'different obligations'*, ABC NEWS (May 7, 2019, 3:59 PM), <https://abcnews.go.com/Sports/us-soccer-fires-back-lawsuit-womens-team-obligations/story?id=62880911>.

183. *Id.*

184. *Id.*

185. *Id.*

186. *Id.*

Phelps and Missy Franklin because intersex athletes benefit from an advantage that makes them categorically different from their female competitors.

Michael Phelps is the most decorated Olympian of all time.<sup>187</sup> Undoubtedly, Phelps' intense training regime enabled him to succeed. However, Phelps' genetics are inextricably related to his storied career. Michael Phelps stands at six-foot four inches, but his torso is disproportionately longer than his legs,<sup>188</sup> wearing jeans with just a thirty-two-inch inseam.<sup>189</sup> Additionally, Phelps' wingspan reaches six feet seven inches, a full three inches beyond his height.<sup>190</sup> Finally, Phelps' size fourteen feet are so flexible they can extend fifteen degrees beyond average dexterity.<sup>191</sup> Together, these biological features enable Phelps to reduce his drag in the pool and pull himself through the water more quickly.<sup>192</sup> And, of course, Phelps' long wingspan helps him reach the wall of the pool faster than any of his competitors.<sup>193</sup>

Michael Phelps' anatomical abnormalities are so unique that Phelps' coach initially speculated that he had Marfan syndrome.<sup>194</sup> Marfan syndrome is a disorder of the connective tissue that results in long, thin limbs with flexible joints.<sup>195</sup> Phelps' wingspan-to-height ratio is 1.05—just within the baseline ratio of Marfan syndrome.<sup>196</sup> No governing body has ever evaluated the genetic advantages Phelps may

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187. Rory Jiwani, *The most decorated Summer Olympians of all time, through time*, THE OLYMPIC CHANNEL (Nov. 14, 2019, 5:00 PM), <https://www.olympicchannel.com/en/stories/features/detail/most-decorated-summer-olympians-all-time-phelps/>.

188. Michael Sokolove, *Built to Swim*, N.Y. TIMES (Aug. 8, 2004), <http://www.nytimes.com/2004/08/08/magazine/built-to-swim.html?pagewanted=4>.

189. *Id.*

190. *Id.*

191. *Id.*

192. Kevin Loria & Skye Gould, *Here's an exact breakdown of why 6'4" Michael Phelps has the perfect body for swimming*, BUS. INSIDER (Aug. 10, 2016, 5:00 PM), <https://www.businessinsider.com/michael-phelps-rio-olympics-body-swimming-2016-8>.

193. *Id.*

194. Jessica Ryen Doyle, *Michael Phelps Unintentionally Raises Marfan Syndrome Awareness*, FOX NEWS (Aug. 21, 2008), <https://www.foxnews.com/story/michael-phelps-unintentionally-raises-marfan-syndrome-awareness> (last updated May 18, 2015).

195. *Id.*

196. *Is it a genetic flaw that makes Phelps the greatest?*, THE SYDNEY MORNING HERALD (Aug. 16, 2008, 10:00 AM), [https://www.smh.com.au/sport/is-it-a-genetic-flaw-that-makes-phelps-the-greatest-20080816-gdsqwk.html#:~:text=%22If%20you%20reach%20out%20your,is%20considerably%20more%20at%2020208cm](https://www.smh.com.au/sport/is-it-a-genetic-flaw-that-makes-phelps-the-greatest-20080816-gdsqwk.html#:~:text=%22If%20you%20reach%20out%20your,is%20considerably%20more%20at%2020208cm;); John C.S. Dean, *Management of Marfan Syndrome*, 88 HEART 97, 97 (2002).

enjoy over his fellow competitors and none of his competitors ever complained of an unfair advantage.<sup>197</sup>

Olympic swimming champion Missy Franklin also has unusually long arms.<sup>198</sup> Franklin stands six feet two inches tall, but her wingspan reaches six feet four inches.<sup>199</sup> However, Franklin's advantageous wingspan does nothing to erode the performance gap between Olympic-level male and female swimmers.<sup>200</sup> Franklin set the former world record of 2:04:06 for the 200-meter backstroke at the 2012 Olympic Games.<sup>201</sup> Ryan Lochte set the men's former world record of 1:53:94 for this event in 2008 at the Beijing Olympics.<sup>202</sup> Franklin's world record was ten seconds slower than Lochte's, despite the fact that both swimmers are the same height with similar wingspans.<sup>203</sup> Franklin would still have a half-lap to swim as Lochte finished his record-breaking performance.<sup>204</sup> Advantageous genetic features like long arms certainly aid athletic performance, but they cannot overcome the performance gap between men and women.<sup>205</sup> If swimmers were categorized by height and wingspan, not gender, Franklin would not be an Olympian.<sup>206</sup> Therefore, sex matters in qualitatively different ways than other biological advantages possessed by athletes.

So exactly what is it about Caster Semenya's unusually high level of testosterone that makes it an unfair advantage? In short—human development.

Most females have a pair of XX chromosomes and most males have a mismatched pair of XY chromosomes.<sup>207</sup> There is limited data on the incidence of DSD, but it is estimated that the incidence of DSD is approximately one in 5,500 births.<sup>208</sup> If you limit the term intersex to

197. Monica Hesse, *We celebrated Michael Phelps's genetic differences. Why punish Caster Semenya for hers?*, WASH. POST (May 2, 2019, 9:23 AM), [https://www.washingtonpost.com/lifestyle/style/we-celebrated-michael-phelpss-genetic-differences-why-punish-caster-semenya-for-hers/2019/05/02/93d08c8c-6c2b-11e9-be3a-33217240a539\\_story.html](https://www.washingtonpost.com/lifestyle/style/we-celebrated-michael-phelpss-genetic-differences-why-punish-caster-semenya-for-hers/2019/05/02/93d08c8c-6c2b-11e9-be3a-33217240a539_story.html).

198. Coleman, *supra* note 160, at 90 (citing *Missy Franklin Biography*, PLAYERS WIKI, <https://playerswiki.com/missy-franklin>).

199. *Id.*

200. *Id.*

201. *Id.*

202. *Id.* (citing *Ryan Lochte Shatters World Record in 200m Backstroke*, OLYMPIC COMM., <https://www.olympic.org/videos/ryan-lochte-shatters-world-record-in-200m-backstroke>).

203. *Id.*

204. *Id.*

205. *Id.* at 87.

206. *Id.* at 90.

207. Jessie Szalay, *Chromosomes: Definition & Structure*, LIVE SCI. (Dec. 8, 2017), <https://www.livescience.com/27248-chromosomes.html#:~:text=typically%2C%20human%20females%20have%20two,a%20sperm%20fertilizes%20an%20egg>.

208. Kun Suk Kim & Jongwon Kim, *Disorders of Sex Development*, 53 KOREAN J. UROLOGY 1, 1 (2012).

individuals born with XY chromosomes but predominately female anatomy, XX individuals with predominately male anatomy, and individuals with ambiguous genitalia, the rate of intersex births is 0.018 percent, less than two in every 10,000 births.<sup>209</sup>

The IAAF's testosterone regulation is limited to athletes with forty-six XY DSD.<sup>210</sup> Therefore, only those like Semenya—athletes with XY chromosomes—have reason to challenge the policy.<sup>211</sup> Despite the rarity of intersex births, it is believed that all three medalists in the 2016 Olympic women's 800-meters are intersex.<sup>212</sup>

The first instance of sex differentiation in the fetus is the development of the testes, which is triggered by the SRY gene present in the Y-chromosome.<sup>213</sup> Testicular production of testosterone explains the difference in male and female testosterone levels.<sup>214</sup> Both men and women produce testosterone, but male testes produce significantly more testosterone than ovaries and other adrenal glands.<sup>215</sup> The female range for testosterone is 0.4 to 2.1 nanomoles/liter and the male range is 10.2 to 39.9 nanomoles/liter.<sup>216</sup> The gap between men's and women's testosterone ranges is approximately eight nanomoles/liter.<sup>217</sup>

According to the IAAF, no female athlete would have natural testosterone levels above five nanomoles/liter without a difference in sex development disorder or a tumor.<sup>218</sup> Testosterone is responsible for the development of both primary and secondary male sex characteristics.<sup>219</sup> These sex characteristics develop during puberty and have life-long effects.<sup>220</sup>

Compare the nine-year-old boys and nine-year-old girls world records for five kilometers. They are the same—17:53.<sup>221</sup> Fast forward to puberty, testosterone surges during puberty fuel dramatic growth in

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209. Robert Johnson, *What No One Is Telling You About Caster Semenya: She Has XY Chromosomes*, LETSRUN.COM (May 2, 2019), <https://www.letsrun.com/news/2019/05/what-no-one-is-telling-you-about-caster-semenya-she-has-xy-chromosomes/>.

210. *Semenya v. Int'l Ass'n of Athletics Fed'ns*, CAS 2018/O/5794, Arbitral Award (Apr. 30, 2019).

211. Johnson, *supra* note 209.

212. *Id.*

213. Coleman, *supra* note 160, at 71.

214. *Id.* at 72.

215. *Id.*

216. *Id.*

217. *Id.*

218. *Semenya*, CAS 2018/O/5794.

219. Coleman, *supra* note 160, at 73.

220. *Id.* at 118.

221. Burfoot, *supra* note 78.

boys' muscles, strength, and hemoglobin.<sup>222</sup> On the other hand, girls also increase testosterone production during puberty, but they produce ninety-five percent less than boys with the addition of estrogen production.<sup>223</sup> Therefore, the world record for 14-year-old boys' 5 kilometers is 15:07, whereas the fastest girl has run 16:28.<sup>224</sup> In subsequent years, the performance gap continues to widen until it reaches 10–12 percent.<sup>225</sup>

Additionally, puberty is not the only evidence of testosterone's critical role in human performance. Caster Semenya's season-best times from a decade of competition illustrate the effects of testosterone on athletic performance.

TABLE 1  
THE DROP, AND RISE, AND DROP OF CASTER SEMENYA'S  
800-METER SEASON BEST TIMES BY YEAR<sup>226</sup>

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Time	2:04.23	1:55.45	1:58.16	1:56.35	1:57.23	1:58.92	2:02.66	1:59.59	1:55.28	1:55.16	1:54.25

Following Semenya's breakthrough performance at the 2009 World Championships in Berlin, Semenya was required to take testosterone suppression medication.<sup>227</sup> Her times then slowed for the next five years. However, after the 2015 *Chand* decision, CAS removed the hyperandrogenism rule.<sup>228</sup> Without hormone suppressing medication, Semenya quickly returned to her previous form and lowered her personal best from 2009.<sup>229</sup>

As sports scientist Ross Tucker—who actually testified on behalf of Semenya before CAS—notes:

[T]he presence of the Y-chromosome is *the* single greatest genetic “advantage” a person can have. That doesn't mean that all men outperform all women, but it means that for elite sport discussion, that Y-chromosome, and specifically the SRY gene on it, which directs the formation of testes and the production of testosterone, is a key criterion on which to separate people into categories[.]<sup>230</sup>

Again, opponents of the testosterone rule point out that there is little fairness in sports. Everything from height, wingspan, and even

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222. *Id.*

223. *Id.*

224. *Id.*

225. *Id.*

226. *Id.*

227. Burfoot, *supra* note 78.

228. *Id.*

229. *Id.*

230. Gladwell & Thompson, *supra* note 173.

superior socioeconomic resources are advantages to athletes that remain unregulated. The competitive advantage experienced by intersex athletes competing in female sports is fundamentally different because the presence of the Y-chromosome enables intersex athletes to undergo hormonal changes that are categorically different from those experienced by their competitors. The advantage of high testosterone levels present in intersex athletes is a qualitatively different advantage because it is an insurmountable advantage that is only available to them.<sup>231</sup> In an Olympic race, Michael Phelps competes against other elite swimmers who probably also have relatively long wingspans and short legs. The qualitative difference with DSD athletes is that none of their female competitors have testosterone anywhere near male-range testosterone, which critically boosts muscular strength and endurance.<sup>232</sup>

#### D. *The Performance Gap*

Across dozens of sports, women's world records are consistently ten percent slower than men's records.<sup>233</sup> It was once thought that after the structural barriers to women's participation in sport eroded, there would be some level of progress demonstrating women's times catching up to men's times in the future.<sup>234</sup> Not so much.<sup>235</sup> The performance gap remains steadfast across varying sports and distances.<sup>236</sup>

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231. *Id.*

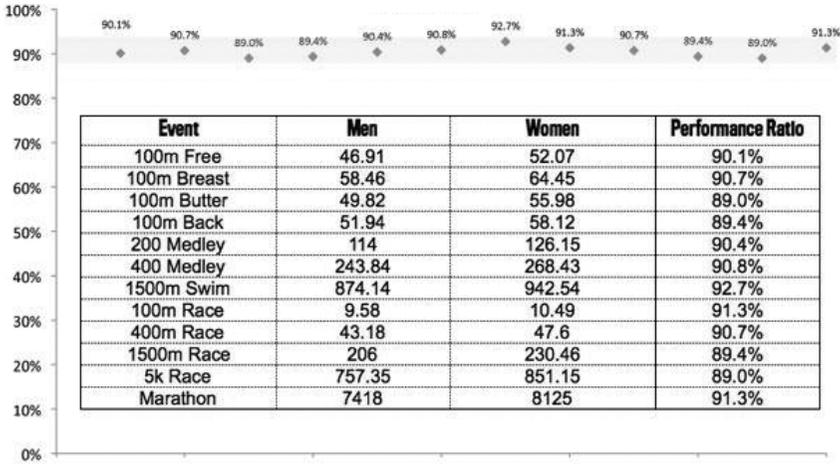
232. Coleman, *supra* note 160, at 123; Linda Carroll, *Boosting women's testosterone can increase muscle mass and endurance*, REUTERS (Oct. 17, 2019, 5:00 PM), <https://www.reuters.com/article/us-health-running-testosterone-women/boosting-womens-testosterone-can-increase-muscle-mass-and-endurance-idUSKBN1WW2ZK>.

233. Robinson Meyer, *We Thought Female Athletes Were Catching Up to Men, but They're Not*, THE ATLANTIC (Aug. 9, 2012), <https://www.theatlantic.com/technology/archive/2012/08/we-thought-female-athletes-were-catching-up-to-men-but-theyre-not/260927/>.

234. *Id.*

235. *Id.*

236. *Id.*



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Sport	Number Events	Average Men/Women Time Ratio
Running	30	0.89 ± 0.02
Kayaking	9	0.88 ± 0.02
Swimming	24	0.89 ± 0.02
Cycling	3	0.88 ± 0.04
Rowing	10	0.90 ± 0.01
Skating	6	0.91 ± 0.01
All Sports	82	0.89 ± 0.02

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This performance differential is not the result of a combination of superior training or discipline. It is because boys and men are the beneficiaries of male sex characteristics that drastically increase their strength, speed, and endurance.<sup>239</sup> The following statistics illustrate just how much better male athletes are compared to the most elite female athletes in the world. In 2017, Olympic gold medalist and World Champion Tori Bowie’s 100-meter personal best of 10.78 seconds was beaten 15,000 times by male athletes.<sup>240</sup> Also in 2017, Olympic gold medalist and World Champion Allyson Felix’s personal

237. *Id.* (reprinted from THE ATLANTIC as noted above).

238. *Id.*

239. Doriane Lambelet Coleman & Wickliffe Shreve, *Comparing Athletic Performances: The Best Elite Women to Boys and Men*, <https://web.law.duke.edu/sites/default/files/centers/sportslaw/comparingathleticperformances.pdf>.

240. *Id.*

best 400-meter time of 49.26 was beaten by over 15,000 males around the world.<sup>241</sup> These illustrations are not the exception, they are *the rule*.<sup>242</sup> These comparisons are used to justify why modern competitive sport separates biological males from biological females because the performance gap is pervasive and insurmountable.

### E. Emerging Research

A study recently published in the *British Journal of Sports Medicine* confirms the scientific basis upon which CAS correctly upheld the IAAF's testosterone regulation for DSD athletes competing in female track races from 400- to 1,500-meters.<sup>243</sup> In the novel study, researchers discovered high testosterone levels significantly boost female running performance.<sup>244</sup> The ten-week study recruited well-trained women ages eighteen to thirty-five.<sup>245</sup> Half of the 48 members of the study were administered a 10-milligram testosterone cream and the other half of the subjects received a placebo.<sup>246</sup> During the ten weeks, the women were tested on multiple occasions, requiring them to run to the point of exhaustion on a treadmill.<sup>247</sup> Researchers also took measurements of muscle mass and strength. The dose of testosterone administered to the women was not high enough to reach the male range.<sup>248</sup> Testosterone levels in the subjects administered the testosterone cream increased by more than four times.<sup>249</sup> This led to an eight and a half percent increase in endurance performance.<sup>250</sup> This is an enormous improvement, especially in light of the short time period of the study.<sup>251</sup>

As the lead researcher, Angelica Linden Hirschberg, from the Department of Women's and Children's Health at the Karolinska Institute in Stockholm, Sweden, noted "[t]his is a very complicated issue with many aspects to consider, not at least ethical ones. I support a regulation for fairness in women's sports but we have to be ready to

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241. *Id.*

242. Coleman, *supra* note 1.

243. Devlin, *supra* note 102.

244. Coleman, *supra* note 1.

245. *Id.*

246. *Id.*

247. *Id.*

248. *Id.*

249. *Id.*

250. *Id.*

251. *Id.*

modify it depending on new knowledge and practical experience.”<sup>252</sup> Many critics of the IAAF’s testosterone policy argue that there is no conclusive proof that testosterone is *the* source of a competitive advantage.<sup>253</sup> The IAAF will certainly rely on the findings of this study in the *Semenya* appeal.

In conclusion, for over fifty years, the international sporting community has struggled with notions of fairness when it comes to classifying athletic events into binary male and female categories. Today, the controversy remains unsettled in large part because of inadequate research and mounting pressure to respect the human rights of affected athletes. CAS’s decision in *Semenya* correctly defines the female category for purposes of professional track by biological sex characteristics instead of by gender identity.<sup>254</sup> While placing athletes into binary categories is an imperfect system because biological sex characteristics, are expressed along a spectrum, it protects cisgender female athletes from the overpowering advantage of athletes competing with unregulated male-range testosterone. CAS correctly held that the IAAF’s testosterone regulation for DSD athletes is necessary despite its discriminatory effect because it protects the IAAF’s mission of fair competition in the female category.

Furthermore, although only a handful of professional athletes are intersex, the number of people who identify as transgender continues to increase worldwide.<sup>255</sup> In particular, more young people identify as transgender.<sup>256</sup> Transgender athletes deserve the opportunity to compete in girl’s and women’s sports while following hormone therapy prescribed by their physician. Recent state laws banning transgender athletes are harmful and will most likely be held unconstitutional. The NCAA has recognized a proper protocol for transgender athletes to compete for over a decade.<sup>257</sup> As more transgender athletes compete their performances will likely demonstrate that hormone therapy does

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252. Hannah Osborne, *High Testosterone Levels ‘Significantly’ Boost Women’s Running Ability*, NEWSWEEK (Oct. 15, 2019, 6:30 PM), <https://www.newsweek.com/testosterone-significantly-improves-women-running-performance-1465266>.

253. Jeré Longman & Juliet Macur, *Caster Semenya Loses Case to Compete as a Woman in All Races*, N.Y. TIMES (May 1, 2019), <https://www.nytimes.com/2019/05/01/sports/caster-semenya-loses.html>.

254. *Semenya v. Int’l Ass’n of Athletics Fed’ns*, CAS 2018/O/5794, Arbitral Award (Apr. 30, 2019).

255. Esther L. Meerwijk & Jae M. Sevelius, *Transgender Population Size in the United States: a Meta-Regression of Population-Based Probability Samples*, 107 AM. J. PUB. HEALTH 1 (2017).

256. Lindsey Tanner, *More U.S. teens identify as transgender, survey finds*, USA TODAY (Feb. 5, 2018, 8:48 AM), <https://www.usatoday.com/story/news/nation/2018/02/05/more-u-s-teens-identify-transgender-survey-finds/306357002/>.

257. NATIONAL COLLEGIATE ATHLETIC ASSOCIATION OFFICE OF INCLUSION, *supra* note 123.

protect cisgender women while affording transgender women the right to participate in sport based on their gender identity. Therefore, significant resources should continue to be dedicated to the research of biological sex characteristics and their impact on athletic performance because it contributes to our understanding of sex and gender and will have an enormous impact on future policymaking at all levels of sport.

V. IMPACT: TESTOSTERONE REGULATION IN PROFESSIONAL WOMEN'S TRACK AND FIELD IS NECESSARY TO PROTECT FAIR COMPETITION

The decision in *Semenya v. IAAF* has wide-ranging consequences that extend far beyond who is eligible to compete in professional women's 400- to 1,500-meter track races. CAS's decision to uphold the IAAF's policy of requiring DSD athletes to reduce their testosterone levels to five nanomoles/liter fuels the ongoing debate on sex and gender. Additionally, the *Semenya* decision raises substantial human rights concerns. Ultimately, the landmark decision in *Semenya* establishes a precedent that will influence future athletic policies at all levels of sport around the world.

Subsection A discusses the impact of the IAAF's testosterone policy on DSD athletes. Subsection B outlines the impact of the new transgender testosterone policy implemented by World Athletics in response to CAS's decision in *Semenya*. Subsection C discusses how the reverberations of *Semenya* could impact collegiate and youth sports in the near future. Lastly, Subsection D proposes a number of questions about whether CAS's decision in *Semenya* will impact other sports.

A. Impacted Athletes

The consequences of the *Semenya* decision have the most significant impact on Semenya and other DSD athletes. Semenya can no longer compete in her preferred event without complying with a testosterone lowering regime because the ban only restricts DSD athletes from competing in the 400-meter to 1500-meter races. Therefore, she can move down to the 200-meter dash or she can move up to the 3000-meter steeplechase, 5-kilometers or 10-kilometers without lowering her testosterone. She was ineligible to compete in the 2019 IAAF World Track and Field Championships—a meet where she was the defending world champion.<sup>258</sup> Two other finalists from the last World Championships, Francine Niyonsaba and Margaret Wambui, are also

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258. Murphy, *supra* note 13.

believed to be impacted by the IAAF's testosterone policy and were noticeably absent from the 2019 World Championships.<sup>259</sup>

The IAAF's testosterone policy has devastating social and financial consequences for affected athletes. Semenya's physiology has been scrutinized for a decade.<sup>260</sup> The decision in *Semenya* stigmatizes her. Semenya identifies as female and she was raised as a female.<sup>261</sup> The IAAF's policy ostracizes her and fundamentally denies her an opportunity to compete in the female category in her specialty event without lowering her natural testosterone level.<sup>262</sup> Moreover, Semenya has been humiliated internationally with the controversial leak of her medical records in 2009.<sup>263</sup> The emotional cost of the legal fight left Semenya "defeated" and she recently joined a professional women's soccer team as she continues to weigh her options.<sup>264</sup>

Financially, CAS's decision ends, or significantly curtails, Semenya's professional track career. Professional athletes earn a salary from sponsors.<sup>265</sup> Athletes' salaries typically include performance bonuses that reward athletes for winning medals.<sup>266</sup> Additionally, athletes often earn prize money when they win.<sup>267</sup> Semenya is now ineligible to compete without reducing her testosterone levels or switching events. Sponsors do not want to pay ineligible athletes and if an athlete is ineligible to compete, they can no longer earn prize money. Therefore, CAS's decision may end the professional track career of Semenya and other DSD athletes.

Furthermore, the IAAF's testosterone policy presents unknown medical risks. DSD athletes have a range of treatment options for suppressing their testosterone level. DSD athletes may elect to have their testes removed, receive a monthly injection that blocks testosterone, or take birth control pills.<sup>268</sup> All of these treatment options have

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259. *Id.* Chris Chavez, *Margaret Wambui Opens Up About IAAF Testosterone Rule: "I Became a Victim"*, SPORTS ILLUSTRATED (Sept. 24, 2019), <https://www.si.com/olympics/2019/09/24/margaret-wambui-iaaf-testosterone-rule-caster-semenya-ban>.

260. Padawer, *supra* note 6.

261. *Id.*

262. *Id.*

263. *Id.*

264. Bumbaca, *supra* note 107.

265. *How Olympic Athletes Make a Living*, SPORTS MGMT. DEGREE HUB, <https://www.sportsmanagementdegreehub.com/olympic-athletes-salaries/#:~:text=income%20depends%20on%20event%3B%20sprints,prize%20money%2C%20etc.>

266. *Id.*

267. *Id.*

268. Melissa Block, *'I Am A Woman': Track Star Caster Semenya Continues Her Fight To Compete As Female*, NPR (May 31, 2019, 5:01 AM), <https://www.npr.org/2019/05/31/728400819/i-am-a-woman-track-star-caster-semenya-continues-her-fight-to-compete-as-a-femal>.

health risks.<sup>269</sup> Forcing an athlete to take medication or undergo elective surgery for the sake of athletic eligibility raises serious ethical concerns.<sup>270</sup> The World Medical Association (WMA) urges doctors to refuse to comply with the IAAF regulations.<sup>271</sup> The WMA considers the regulations a violation of human rights. “‘There is no medical need and no medical indication for this therapy, and therefore, doctors should not prescribe it,’ says Dr. Frank Montgomery, the WMA’s chair of council.”<sup>272</sup> The WMA goes as far as calling the practice “inverse doping” because it requires DSD athletes to take drugs that sabotage their performance.<sup>273</sup>

Regardless of the outcome of the appeals process, Caster Semenya deservedly continues to be praised for her tremendous athletic ability and her resilient character. *TIME* featured Semenya as one of its 100 Most Influential People of the Year in 2019, writing:

“Caster Semenya has taught us that sex isn’t always binary, and caused us to question the justness of distributing societal benefits according to ‘male’ and ‘female’ classifications . . . however [her case comes out], Semenya will have already made a singular historical contribution to our understanding of biological sex.”<sup>274</sup>

### B. Transgender Athletes

The decision in *Semenya v. IAAF* also impacts testosterone regulation of transgender athletes. Five months after *Semenya* was decided, the IAAF announced it was reducing the allowable limit of testosterone for male-to-female transgender athletes from the previous limit of ten nanomoles/liter to five nanomoles/ liter.<sup>275</sup> Although there are fundamental differences between DSD athletes and transgender athletes, they are now subject to the same testosterone regulations.<sup>276</sup> Is this fair? As previously noted, as the number of transgender athletes continues to increase, more athletes are subject to testosterone regulations upheld by CAS in *Semenya*. Will any transgender athletes challenge the new regulation? Reducing an athlete’s testosterone level

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269. *Id.*

270. *Id.*

271. *Id.*

272. *Id.*

273. *Id.*

274. Edwin Moses, *Caster Semenya*, *TIME MAG.*, <https://time.com/collection/100-most-influential-people-2019/5567679/caster-semenya/> (last reviewed Feb. 17, 2020).

275. Press Release, World Athletics, International federations discuss consensus on establishing rules for transgender athletes (Oct. 31, 2019), <https://www.worldathletics.org/news/press-release/international-federations-rules-transgender-a>.

276. *Id.*

from ten nanomoles/liter to five nanomoles/liter could have a drastic negative impact on a transgender athlete's performance.

### C. Collegiate and Youth Track and Field

The decision in *Semenya* may impact collegiate and youth track and field. The NCAA implemented a transgender testosterone policy that mirrors the IAAF and IOC, but it does not prescribe a strict nanomole/liter limitation. Instead, the NCAA requires one year of testosterone suppression treatment.<sup>277</sup> Will the NCAA reevaluate its policy in the wake of the *Semenya* decision? Additionally, the NCAA policy only applies to transgender student athletes. Will the NCAA implement a protocol for DSD athletes? Is there an ethical way for DSD student-athletes to be diagnosed? Given the devastating social consequences for Semenya, should the NCAA even be allowed to sex-test athletes?

These heavy questions are even more complicated at the youth level. In the U.S., youth sports continue to be largely regulated by the states.<sup>278</sup> States remain divided regarding transgender participation.<sup>279</sup> Some states require no medical intervention, other states require athletes to participate in sports according to the gender assigned to them on their birth certificate, and a handful of states do not have a policy for transgender athletes.<sup>280</sup> Will the decision in *Semenya* influence state athletic policies? Do the intangible benefits of youth sports participation and the unknown risks of hormone regulation (especially for minors) outweigh the principle of fair competition? And again, thus far, state athletic associations focus on transgender policies, but do not address DSD athletes. Will the *Semenya* decision bring more awareness to disorders of sex development?

Some of these questions are already starting to be discussed at the high school level. Connecticut's state high school athletic association recently decided that transgender male-to-female girls must be permitted to compete on school athletic teams according to their chosen gender identity.<sup>281</sup> Since this rule was put in place in June 2018, two transgender male-to-female girls finished first and second in the 100-

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277. NATIONAL COLLEGIATE ATHLETIC ASSOCIATION OFFICE OF INCLUSION, *supra* note 123.

278. Sydney Bauer, *These States Want to Stop Transgender High School Students Playing Sports*, THE DAILY BEAST (Jan. 16, 2020, 4:57 AM), <https://www.thedailybeast.com/these-states-want-to-stop-transgender-high-school-students-playing-sports>.

279. *Id.*

280. *Id.*

281. *3 Connecticut female athletes file federal discrimination complaint over transgender competition*, CBS NEWS (June 19, 2019, 9:29 AM), <https://www.cbsnews.com/news/connecticut-transgender-athletes-face-federal-discrimination-complaint-from-females-over-title-ix-violations>.

meter dash at the Connecticut state championship meet.<sup>282</sup> A year later, three female athletes filed a federal discrimination lawsuit alleging that the transgender policy diminishes female athletes' ability to achieve top finishes and possibly college scholarships.<sup>283</sup> Currently, Florida, Alabama, Arkansas, Mississippi, Montana, Tennessee and West Virginia have enacted laws banning transgender athletes from participating in female sports.<sup>284</sup> It is important to note that these policies will almost certainly be challenged and they are unlikely to survive constitutional scrutiny in federal court.<sup>285</sup>

#### D. Other Sports

The Court of Arbitration For Sports is in large part viewed as the "Supreme Court" for international sports. CAS decisions carry global significance. Therefore, sports bodies across the world may reevaluate their policies in response to the *Semenya* decision. As it stands, the IAAF testosterone policy only impacts track athletes that compete in women's races in distances from 400-meters to 1,500-meters.<sup>286</sup> As scientists continue to study testosterone's impact on performance, will regulation extend to all distances on the track? What about field events?

The IOC's current policy, implemented in 2015, requires transgender athletes in all Olympic sports to reduce testosterone levels to

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282. Alex Putterman & Lori Riley, *Connecticut high school athletes file complaint over transgender policy*, HARTFORD COURANT (June 18, 2019, 9:33 PM), <https://www.courant.com/sports/high-schools/hc-sp-transgender-high-school-track-lawsuit-20190618-20190618-4mjx7gllrjarlpidhnjееcfosq-story.html>

283. CBS NEWS, *supra* note 281.

284. Kiara Alfonseca, *Young transgender athletes grappling with anti-trans sports legislation*, ABC NEWS (June 4, 2021, 5:00 AM), <https://abcnews.go.com/Sports/young-transgender-athletes-grappling-anti-trans-sports-legislation/story?id=77880331>.

285. Transgender athletes have been allowed to participate in college athletics for over a decade. The IOC and World Athletics are also in full support of transgender athletes' participation in sports in accordance with their testosterone regulation policies. So why are all these policies being enacted now? There is absolutely no reason to enact outright bans on transgender athletes participating in sports. This current wave of anti-transgender legislation from conservatives is largely seen as a response to the Equality Act and promises from President Biden to protect the rights of transgender people in the United States. Governing sports bodies like World Athletics have already dedicated tremendous resources to understanding the biological science at issue and have carefully crafted rules that it feels promote fair play while encouraging the participation of transgender and DSD athletes. Outright bans are completely inappropriate and deny transgender athletes the intangible benefits of sport, which are critical to the mental-health of an already marginalized group.

286. World Athletics, *supra* note 76.

ten nanomoles/liter to be eligible.<sup>287</sup> Will the IAAF's new five nanomole/liter policy be adopted by the IOC? Will the IAAF and the IOC ever address how they intend to identify DSD athletes in the future? Will hormone levels of all female athletes be evaluated, or will only "suspect" athletes be subject to hormone testing?

## VI. CONCLUSION

Modern society increasingly opts to erase sex and embrace gender identity, which forces institutions rooted in binary categories, like elite sport, to evaluate the costs of transitioning from sex to gender identity-based classifications.<sup>288</sup> Women were denied the opportunity to participate in competitive sport for centuries.<sup>289</sup> Competitive sport is now committed to providing women an equal opportunity to participate.<sup>290</sup> Further, policies implemented to enable women's participation in sport, such as Title IX, combat stereotypes that have subordinated women throughout history.<sup>291</sup> As CAS held, the IAAF's testosterone policy, although discriminatory, is necessary because hyperandrogenic and transgender athletes receive a significant performance advantage because of elevated testosterone levels.<sup>292</sup> Although it is an imperfect system, categorizing female athletes on the basis of biological sex characteristics protects a class of female athletes striving to achieve elite levels in sport.

Athletes with DSD are exceptionally rare.<sup>293</sup> The rate of intersex births is just 0.018%—less than two out of every 10,000 people.<sup>294</sup> Yet all three Olympic medalists in the women's 800-meter races at the 2016 Olympics are believed to be intersex.<sup>295</sup> From an odds perspective, this illustrates why there needs to be an upper limit on testoster-

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287. Sean Ingle, *IOC delays new transgender guidelines after scientists fail to agree*, THE GUARDIAN (Sept. 24, 2019, 2:23 PM), <https://www.theguardian.com/sport/2019/sep/24/ioc-delays-new-transgender-guidelines-2020-olympics>.

288. See, e.g., Caitlin Emma, *Obama administration releases directive on transgender rights to school bathrooms*, POLITICO (May 12, 2016, 11:11 PM), <https://www.politico.com/story/2016/05/obama-administration-title-ix-transgender-student-rights-223149> (discussing how school bathrooms are an example of how modern society has begun to embrace gender identity).

289. Richard C. Bell, *A History of Women in Sport Prior to Title IX*, THE SPORT J., Mar. 14, 2008, at 1.

290. EQUAL ACCESS TO EDUCATION: FORTY YEARS OF TITLE IX, U.S. DEP'T OF JUST. 9 (June 23, 2012).

291. *Id.* at 4.

292. *Semenya v. Int'l Ass'n of Athletics Fed'ns*, CAS 2018/O/5794, Arbitral Award (Apr. 30, 2019).

293. Johnson, *supra* note 209.

294. *Id.*

295. *Id.*

one in women's sports.<sup>296</sup> Moreover, athletes like Michael Phelps are genetic outliers and thus are imperfect analogies to DSD athletes. Athletes have never been classified by arm or leg length, but athletes are almost always classified by sex. Women's world records are consistently 10–12% behind men across many sports.<sup>297</sup> Without gender classifications, women would never be able to excel at elite levels in most sports and the Olympics would have almost no women.

Furthermore, as CAS confirmed in *Semenya*, there is no human right to compete in a particular category of professional sports.<sup>298</sup> Sports bodies set artificial categories for sports all the time. Professional boxing relies on weight classes to create parity amongst boxers.<sup>299</sup> To say that DSD athletes must lower their testosterone to 5 nanomoles/liter, which is still 7.5 times the value of testosterone in XX women born with ovaries, is not a human rights violation.<sup>300</sup> The testosterone regulation is an acknowledgement that women's sports is a protected class.

Finally, because the number of DSD athletes impacted by the testosterone regulations is relatively small, the decision in *Semenya* has perhaps a more profound effect on transgender athletes. As society increasingly embraces gender identity, the number of transgender athletes continues to rise, especially at the youth level, where participation in girls' sports is mostly unregulated in the U.S. In the near future, the decision in *Semenya* will be used to challenge state laws that allow high school athletes to participate in sports based on their gender identity.

CAS correctly upheld the IAAF's testosterone regulation in *Semenya* because although the regulation discriminates against DSD athletes, the discrimination is necessary to protect fair sport in the women's category. However, the IAAF's testosterone regulations will undoubtedly continue to face intense scrutiny and it is not clear that testosterone regulation is appropriate at all levels of sport, especially youth sports. As CAS noted, it has "grave concerns as to the future practical application" of the new rules.<sup>301</sup>

"No matter what you do, you're going to end up hurting someone. And I think that's what makes this topic so difficult," says Steve Mag-

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296. *Id.*

297. Meyer, *supra* note 233.

298. *Semenya*, CAS 2018/O/5794.

299. Rachel Nall, *What Are the Different Weight Classes in Boxing?*, LIVESTRONG.COM, <https://www.livestrong.com/article/375318-what-are-the-different-weight-classes-in-boxing/> (last reviewed Feb. 16, 2020).

300. Johnson, *supra* note 209.

301. *Semenya*, CAS 2018/O/5794, ¶ 620.

ness, an exercise scientist and head cross-country coach at the University of Houston.<sup>302</sup> “You can at the same time feel incredible compassion toward Semenya and DSD athletes and say that ‘hey, what’s happening isn’t right’. But at the same time, you can say we protect the women’s division of sport for a reason and we have to decide somewhere where we want to divide that.”<sup>303</sup>

The issue of testosterone regulation of intersex and transgender athletes is one of the most complicated and emotional issues sport has ever faced. There is no easy solution, but the future of women’s sports hangs in the balance. As emerging science suggests, the Court of Arbitration For Sport made the right decision upholding the IAAF’s testosterone regulation to protect the women’s category of sport. Regardless of how the case is resolved, *Semenya v. IAAF* will remain a landmark case contributing to our understanding of sex and gender and influencing policy for years to come.

*Rebecca Dyson*

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302. Block, *supra* note 268. Steve Magness, U. OF HOUS., <https://uhcougars.com/staff-directory/steve-magness/130>.

303. Block, *supra* note 268.

