

Trans Athletes are Athletes: The Struggle for Inclusion

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My aims for this talk are, in the end, fairly simple: I want us to be cautious about claims that make the inclusion of trans athletes in collegiate sports “controversial,” as some “new” maneuver to threaten women’s sports. That simply is not the case. There have been inclusion policies for over twenty years in the National Collegiate Athletic Association (NCAA) and trans presence in sports there and in general is not new. What is new is the political weaponization of trans existence through these trans sport bans across the country by conservative action groups. In this talk, I seek to establish the inclusions of trans athletes as a false controversy by looking at the actual mission statement and policies of the NCAA and some of the misleading scientific studies that the NCAA and other organizations have relied upon to put in place trans bans.

OPENING ANTOCEDOTE: THOMAS

In early December of 2021, University of Pennsylvania swimmer Lia Thomas competed at the Zippy Invitational and swam the then-fastest times in the nation for the 200 and 500-yard freestyle. A firestorm erupted from within the swimming media and then across national media. Over the course of the next six weeks, Penn parents wrote letters to Penn and the NCAA protesting Thomas’ participation on the women’s team. Some Penn swim team members posted an anonymous open letter through Champion Women CEO and lawyer Nancy Hogshead Makar about how unfair it was for Thomas to compete as a woman. USA Swimming official Cynthia Millen resigned in protest over the “unfairness” of Thomas being allowed to swim (even though Thomas was not competing at professional USA swimming events and had therefore never been officiated by Millen); and the American Swim Coaches’ Association (ASCA) wrote an open letter to governing bodies seeking new “fair” transgender policies.

Less than six weeks after the swim Zippy Invitational, on January 19, 2022, the NCAA caved, announcing just such a new transgender participation policy. It effectively passed the responsibility of developing and enforcing trans participation requirements on to each sport’s national governing bodies. In swimming that is USA Swimming and World Aquatics. Most significantly, however, the press release

stated that these changes would be implemented immediately, taking effect in time for the 2022 Winter NCAA Championships. This mid-year policy shift occurred less than six weeks before the season's major Championship. The change would have mandated transgender athletes to provide additional documentation, surpassing the requirements of the previous 2010 policy, which included 12 months of hormone suppressant treatment and maintaining a testosterone level under 10 nanomoles per liter (nmol/L). The policy gave no reason, scientific or legal, for justifying the changes, which would practically prohibit the participation of transwomen in NCAA athletics and seemed to mark a sharp turn from the 2010 policy. The 2010 policy sought to “ensure transgender student-athletes fair, respectful, and legal access to collegiate sports teams based on current medical and legal knowledge.”¹

The recently implemented NCAA policy for swimming, mirroring that of World Aquatics, stood out as one of the most stringent in sports. It mandated that transgender women fulfill an Eligibility Reporting form, undergo a testosterone serum test, and provide documentation demonstrating a minimum of 36 months of testosterone suppression treatment, with a testosterone level below 5 nmol/L.² This form would require athletes to detail their testosterone levels from the past year, from the start of their season, and obtain a specific testosterone test four weeks before the Championship selections.³ It is nearly impossible to not see a directly causal relationship between Thomas’ swimming success, the backlash to that success, and the subsequent change to NCAA policy. If these policies had been implemented immediately, in time for those 2022 Championships, Thomas would have failed to qualify. Based on when she transitioned, her medical history around her transition would also have to be semi-publicly disclosed, a gross invasion of her material privacy.

In February, the protest letter and additional comments from the Penn Women’s Swimming team gained attention from national news outlets. This led to the Ivy League issuing a statement affirming Thomas’ right to compete and prompted the NCAA to reconsider its adoption of the USA Swimming testosterone standard until the 2023-2024 regular season and championships. On March 17, 2023, Thomas secured the NCAA Championship title in the 500-yard freestyle. However, in the 200-yard freestyle, Thomas tied for 5th place, and in the 100-yard freestyle, secured an 8th place finish, trailing behind fellow trans athlete Iszac Henig, who also tied for 5th. Thomas has never broken – and will never break – a collegiate national record. For reference, Thomas’ freestyle victory was over 9 seconds slower than Katie Ledecky’s NCAA meet record and American national record- that same Katie Ledecky who just surpassed Michael Phelps’s record of individual golds at world championships with 21.⁴ The fear that Thomas specifically or transwomen more generally would dominate women’s swimming decisively did not come to pass.

QUESTIONS RAISED

Thomas has become a polarizing figure, a lightning rod for the broader, roiling national and international debates about whether trans athletes should be allowed to compete in athletics based on their gender identity. These debates seem to pivot around preserving competitive “fairness” for cis-women athletes. This rhetoric of fairness, masks more insidious aims. Inciting fear about an impending “trans menace,” which, in this context, I take to mean the unfounded fear that if trans athletes, specifically transwomen, are allowed to participate fully in women’s sports. They will then take over and dominate those sports, sets up a smoke screen that protects these organizations from having to address continuing structural inequities around sex-segregated sports. Thus, it puts enormous burdens and pressures on trans student athletes which single them out for unwanted attention. These are the same students and kids who are already disproportionately singled out for bullying, and verbal, emotional, and physical abuse in school and institutional settings based on their gender identity.

If these organizations – local, national, and international, amateur and professional, cared about “fairness” towards women athletes, as they love to claim, they would put resources into protecting all women from sexual misconduct which is rampant in women’s sports, they would investigate corruption, they would address disparities in access, funding, development, media coverage and revenue contracts, and mentoring/coaching. These are the truly critical needs for women’s sports.

Most perniciously, this rhetoric around fairness reifies and replicates binary gender assumptions that do not serve women: that every female body is less competitive in all ways than every male body. It then fallaciously feeds the stereotype that women’s sports are “less interesting,” that testosterone is the best and only marker for sport performance (and that only men possess) it, and that every female is weaker, shorter, and less skilled than every male. This rhetoric leads to faulty assumptions that ignore biological diversity, basic physiological development and much too often, rely on a few, extremely limited, studies of trans people which may not be relevant to trans athletes.⁵

First, I would like to put these claims to fairness in the context of the NCAA. Next, I want to discuss where NCAA swimming came up with their regulations, which means moving from the International Olympic Committee guidelines to professional, international sports organizations, and then to collegiate and scholastic sports. Finally, I will briefly talk about some of the dubious biological assumptions being made and briefly consider a second case study – that of Caster Semanya – in the context of the single most cited study used to support testosterone regulations, Bermon and Garnier’s 2017 “Serum Androgen levels and their relation to performance in track and field.”

NCAA

The NCAA – National Collegiate Athletics Association - is a nonprofessional, non-profit sports organization. Fairness in collegiate sports is typically measured in terms of inclusion and access.

Whatever the ethics of not paying student athletes are, the NCAA as it exists presently, is still an ostensibly amateur organization and participating in an NCAA sport is not (yet) a profession unto itself. The debates about the presence or possible presence of trans athletes (usually trans women) in competitive collegiate sports raises questions about the very purpose of collegiate athletics in general and its commitments to creating “an environment that emphasizes academics, fairness and well-being across college sports,” per the National Collegiate Athletic Association (NCAA) mission statement.⁶ The NCAA’s stated goal is to provide “a fair, inclusive and fulfilling environment” and the emphasis is (or should be) on inclusivity, personal development, mental and physical safety and graduating, not on performance markers, as the use of those three adjectives stresses.⁷

“Inclusion” even receives its own page from the main NCAA dropdown menu, with its own dedicated page. This page guides readers to various NCAA initiatives focused on inclusion, such as the “Common Ground” summer series of online programs, a compilation of programs and resources, as well as information on committees and task forces. That is to say, the NCAA takes inclusion to be one of the bedrock foundations of its mission. Inclusion in sport generally brings a host of physiological and social benefits, which have been well-documented; these benefits are just as important for trans as cis kids. Accordingly, in this context of non-professional sports, which take inclusion and overall health as the primary mission goals of their organizations (at least rhetorically), I can see no substantive reason not to include trans athletes. However, when looking at the list of priorities, viewers, media, and sponsorship targets on the NCAA’s website, it seems like the NCAA is less interested in a safe and inclusive ecosystem than maintaining and furthering a revenue-generating machine.

SPORTS RULES: THE IOC PYRAMID

The International Olympic Committee has had a policy in place for trans participation for 20 years. The first iteration of trans regulations, the 2003 Stockholm Consensus on Sex Reassignment in Sports, required complete gender reassignment, including extremely costly genital surgery. After being sued for human rights violations, the IOC revised its policy in 2015 and the IOC Consensus Meeting on Sex Reassignment and Hyperandrogenism issued new regulations, which required only one year of hormone replacement therapy and a testosterone level below 10 nmol/L.⁸

After the 2021 Tokyo Olympics, which featured the participation of openly trans/nonbinary athletes in Women’s BMX Freestyle, Women’s Soccer, and Olympic Weightlifting, along with the unexpected disqualification of two teenage Namibian runners, Beatrice Masilingi and Christine Mboma, due to a diagnosis of high testosterone following their notable performances. This prompted World Athletics (formerly known as the International Amateur Athletic Federation or the IAAF until 2019) to conduct sex/gender verification testing. The regulations underwent another update in November 2022 and

were rebranded as the IOC Framework on Fairness, Inclusion, and Non-Discrimination Based on Gender Identity and Sex Variations.⁹

This new framework prioritizes inclusion over exclusion based on trans identity or natural sexual variations. It encourages sporting bodies to prioritize respect for human rights, gender equality, and inclusion as they develop new policies related to transgender individuals. Quite significantly, the IOC also relegates the power to determine these regulations onto each individual sporting body without establishing safeguards to ensure that athletes are able to participate in a safe and harassment free environment.¹⁰ Despite enshrining the practice of sport as a fundamental human right and declaring that “every individual must have the possibility of practicing sport, without discrimination of any kind” in the Fundamental Principles of Olympism, the IOC decided not to take a firm and clear position on trans participation rights and did not require all sporting bodies to abide by it.¹¹

Consequently, a host of international sports federations have introduced new, stringent, and unjust recommendations. For instance, returning to swimming, World Aquatics (then FINA) introduced regulations in June 2022 that would bar all trans women who went through male hormonal puberty, i.e. Lia Thomas. This Policy states that the only eligible athletes would be those who “had male puberty suppressed beginning at Tanner Stage 2 or before age 12, whichever is later, and they have since continuously maintained their testosterone levels in serum (or plasma) below 2.5nmol/L (emphasis World Aquatics)” (“Policy on Eligibility”). The Tanner stages track sexual maturity, and stage 2 generally occurs around age 11. This stipulation is confounding, given the widespread passage and attempted passage of U.S. laws that would prohibit gender-affirming care, including hormonal suppression and replacement therapies, for children under 18, revoke the medical licenses of doctors who attempt to provide such care, attempt to prosecute parents for child abuse and endangerment for seeking gender affirming care and/or hormonal suppression therapy for their children (notably in Texas, where Lia Thomas was born and raised), and the general widespread lack of medical and psychological resources available to pre-teen trans children in the United States. 21 U.S. states have passed laws and 7 additional states are considering legislation.

The UCI, or International Cycling Union, has since adopted the same policy. The International Rugby League has banned transfeminine participation entirely. FIFA is currently reviewing its policy. No international sporting federation has developed a policy that aims explicitly to include trans women; instead, each policy is exclusionary until certain standards (usually around testosterone regulation) are met.

On the U.S. level, in 2010 the LPGA eliminated their “only those identified as female at birth” requirement but do still require complete gender reassignment surgery in order to compete. The Premier Hockey Federation (formerly National Women’s Hockey League) was the first women’s pro sports

league to have a formal trans/nonbinary policy in place, based on time spent living in one's identity. The National Women's Soccer League, as of 2021, has a policy similar to the 2010 IOC Regulations, where transwomen can compete if they've kept their testosterone level under 10nm/L for at least a year. Nascent women's sports league Athletes Unlimited (founded 2020) explicitly supports non-binary gender expressions and their non-binary and trans policy is based on testosterone suppression only. Perhaps unsurprisingly, no men's professional sports leagues have formal policies regulating the hormones of trans men.

As a result, the NCAA's deferral of responsibility to national and international governing bodies results in inconsistently applied and needlessly confusing regulations. This deferral is further questionable because the NCAA is supposedly meant to coordinate rules and guidelines for members as part of its goal to provide "world-class services to student-athletes and members" while growing the "college sports ecosystem." Side-stepping that responsibility seems to indicate a failure to deliver upon its pledge.

BIOLOGY

It is significant that these regulations specifically involve the *reduction* of testosterone to a discretely quantifiable range, which means they target cis women (women who were identified as female at birth and live as women), trans women, and women with differences of sexual development (DSDs) and leave the hormonal levels of trans men and cis men unregulated. Trans women are required to produce a series of "proofs" attesting to their gender and that are meant to indicate that they have reduced their competitive advantage over cisgender women. To what extent or how they must prove this minimization of perceived advantage is up to each governing body, resulting in a variety of restrictive (and physically and psychologically invasive) requirements. The advantage is left undefined, because there is no scientific consensus on what, if any, are the continuing advantageous effects on the elite athletic performance of athletes who have gone through male hormonal puberty but now have the hormonal composition of a cis woman.¹² This allows common misperceptions around what sex and gender are to continue to exercise power.

For instance, in the anonymous letter from Penn swimmers that was reproduced in *Swimming World*, Thomas' teammates argue that Thomas took competitive opportunities away from them, and they "ask that Penn and the Ivy League support us as biological women, and not engage in legal action with the NCAA to challenge these new Athlete Inclusion Policies".¹³ While the swimmers affirmed Thomas' gender identity and right to pursue it through transition, they argued that allowing Thomas to compete is inherently unfair, as the "biology of sex is a separate issue from someone's gender identity."¹⁴ This is not entirely the case.

Biologists have long understood that sex is not a binary, especially when layered with sexuality and gender, and gradually certain other groups of people are coming to understand this. We are in the middle of a knee-jerk reaction to the blurring of the binary that has seen renewed attempts to binarize sex, gender and sexuality and erase transgender and other gender nonconforming individuals from existence. Sex can be many things, including sex assigned at birth—usually based on a visual inspection of an infant’s genitalia (and there are many reasons not to do this)—legal sex (what is on identity documents like a passport or birth certificate), and social or perceived sex (what a person is seen as and treated as). Given that there are multiple layers to sex, it seems there should be broader acceptance that sex itself is not fixed or immutable, and this is before we turn to the myriad physiological and anatomical variations of genitals, chromosomes, hormones, and fertility.

The sex binary assumes that there are only two categories of humans: males and females. They have strictly separate and different chromosomes, hormones, reproductive organs, and secondary sex characteristics. This is also referred to as biological determinism, but the biologists in the room are probably appalled by my reductionism. The very existence of intersex individuals and individuals with disorders of sexual development belies this supposed “fact,” and yet this idea continues to circulate widely.

In terms of athletics, how this has all shaken out is to an obsession with monitoring testosterone levels in women. Women have undergone various forms of gender verification testing since the 1930s, with systematic testing becoming prevalent at elite professional levels since the 1960s. These tests are designed specifically for gender verification, focusing exclusively on women. As mentioned previously, many of the regulations involve regulating testosterone levels. This can be expected to a degree - testosterone driven puberty is the driving factor in male development and estrogen/progesterone driven puberty is the driving factor in female development.

Be that as it may, the science around testosterone as an immutable indicator of sex, one whose effects could never be modified or erased is murky. Statements, like those posited by the anonymous Penn swimmers that Thomas was faster and more muscular because of some lingering post-pubertal testosterone effects are, as Rebecca Jordan-Young and Kristina Karkazis phrased it in their book *Testosterone: An Unauthorized Biography*, “partial, problematic and – in some circumstances – outright wrong”.¹⁵ While testosterone does contribute to higher rates of lean body mass (LBM), muscular area and strength, bone density, hemoglobin (Hgb) and hematocrit (HCT) levels, and lung capacity in cis men as compared to cis women, most studies have not considered either elite sports athletes specifically or trans athletes who have undergone hormone replacement therapy (HRT) or gender affirming surgery (GAS).¹⁶ That, is, once testosterone is blocked and replaced with estrogen, there is no current scientific evidence

that trans women retain pretransition testosterone advantages in competitive sports. Yet, there is a dire need for additional studies that are sport- and athlete-centric.

A comprehensive review of the literature—scientific, historical, and popular—uncovers weak or nonexistent connections between athleticism and natural testosterone levels. Even the associations between exogenous testosterone (introduced into an individual's body but not produced by that body) and enhancements in athletic performance are weak.¹⁷ This is because an increase in parameters, such as strength when testosterone is injected as a steroid, does not necessarily correlate with improved function.¹⁸ Veronica Ivy and Aryn Conrad bluntly state that the assumption that high endogenous testosterone is equivalent to high exogenous testosterone in its effects on the [female] body is simply false, as “all available scientific evidence suggests that there *is no overall relationship between endogenous testosterone and sport performance.*”¹⁹ There is no available evidence suggesting that post-transition trans women possess an unfair competitive advantage. Existing evidence often involves comparisons or conflation of trans women with cisgender men (and frequently combines trans women with women with Differences of Sex Development (DSDs)), while downplaying the physiological effects of long-term hormonal replacement therapy using estrogen/progesterone.²⁰

The differences among individual men or women are much greater than between men and women. This suggests that a truly level playing field should be adjudicated not on the basis of gender but on the basis of other graded characteristics, which could include a mix of physiological and social parameters.

THE BERMON/GARNIER STUDY

Let us consider a case study, one that has often been cited in the debates over determining “fair” standards of inclusion for trans, intersex, and DSD women: Stéphane Bermon and Pierre-Yves Garnier’s co-authored 2017 paper “Serum Androgen Levels and Their Relation to Performance in Track and Field.”

The Bermon/Garnier study was sponsored by World Athletics (then the IAAF) after the 2015 Dutee Chand case before the Court of Arbitration for Sport (CAS). It stated that the hyperandrogenism regulations then in place that mandated hormonal suppression treatment and/or surgery were discriminatory, pending further evidence. WA manufactured that evidence with this study. Based on it alone, WA implemented new hyperandrogenism regulations that would prevent women with DSDs or high endogenous testosterone levels and trans women from competing in specific events: the 400-meter, the 400-meter hurdles, the 800-meter and the 1500-meter. Notably and unsurprisingly, Caster Semenya, a multi-time World and Olympic gold medalist in the 800-meters who also competed in the 1500 and 400, was suddenly ineligible to compete in only her selected events.²¹ This study was instrumental in getting

Semenya banned from competitive athletics during her peak performance years. Semenya had first come under public media scrutiny in 2009 and was subsequently briefly banned based on an undisclosed-to-the-media DSD condition. She won her first appeal but lost the second when these regulations were put in place. Semenya has since taken her case to the European Court of Human Rights, which handed its decision down in July, ruling that the WA regulations are discriminatory and violate Semenya's human rights.²² They remain on the books.

The Bermon/Garnier study itself was closely examined and critiqued by several independent researchers, including three who published an open call for the study to be retracted when they could not reproduce the same values for even the simple descriptive statistics like means and standard deviations Bermon and Garnier presented in their study.²³ When Bermon finally emailed the researchers the data for eleven women's running events (but not the other 17 women's events or the 22 men's events), they discovered "significant anomalies and errors in the underlying data for four events," namely, the same events that women with DSDs or trans women could not compete in.²⁴ These errors were: duplicated athletes, duplicated times and phantom times which together constituted 32.8% of the data for the 400-meter race, 28.4% for the 400 hurdles, 17.2% for the 800-meter and 22.7% for the 1500-meter. Even while Bermon tacitly confirmed these errors in an email to Pielke, Tucker and Boye, he still did not publish the performance data, making it impossible to replicate the study and going against scientific best practice of making data available for verification.

When Veronica Ivy and Aryn Conrad (2017) examined the 2017 Bermon/Garnier study, they found an uneven distribution in testosterone advantage. Of the 11 events Bermon and Garnier surveyed, only 4 events had a statistically significant testosterone advantage. However, these "advantages" were from .31% to 1.07%, which do not at all indicate a clear-cut advantage, and in the absence of examining other confounding factors (like age, diet, training regime, and other chromosomal or genetic mutations) make for an unconvincing case that testosterone is the only explanation.²⁵ Further, this advantage is only seen in women's events, which is suspicious as there is a degree of natural variation in testosterone levels among men as well as women.

Finally, the Bermon and Garnier study relied upon a free-testosterone serum test instead of a total testosterone test. This is significant because the free serum test is difficult to measure accurately and can vary widely amongst individuals.²⁶ Given the deliberate obfuscation of the underlying data, Veronica Ivy and Aryn Conrad wonder if Bermon and Garnier used tertials instead of the standard quintiles when they grouped the data in order to "p-hack" the results, a practice in which data is selectively chosen *after* the experiment in order to create artificially significant results.²⁷ Much in the same way that World Aquatics' arbitrary proposal of the 36-months of treatment seemed designed to block Lia Thomas from competing, Ivy and Conrad contend that results of the study were designed to intentionally and deliberately block

Caster Semenya and other DSD women with high endogenous testosterone levels from competing on the global stage.

Beyond the significant problems with the fundamental design of the study, the employed methods, and the complete absence of transparency regarding data collection and sharing, there is a particular egregiousness in how Bermon and Garnier (along with the entity WA, funding this "independent" study) manipulated the data to ostensibly justify hyperandrogenic policies. These policies not only permit but also endorse the biopolitical regulation and surveillance of non-white, minority bodies from the Global South in the supposed pursuit of fairness and the perpetuation of the privileged status of white, western modes of femininity. In 2021, Bermon and Garnier finally published a correction, insisting that their study had been merely “exploratory” and observational, and that there was no evidence of causality between high endogenous testosterone in women and performance.²⁸ The damage has been done however, as Caster Semenya was forced out of track and field during her prime racing years, the discriminatory rules remain in place for WA, and anti-trans and anti-DSD regulations have proliferated across other sports.

CONCLUSION

In conclusion, relying solely on testosterone levels to assess the eligibility of trans women for competition is a reductionistic and somewhat irrelevant standard. This approach oversimplifies the complexity of the physical and biochemical changes resulting from medical transitioning and disregards a myriad of other physiological traits influencing athletic performance. These include factors such as height, weight, lean body mass, reflex reaction time, etc., as well as the aesthetic, cultural, and social constraints—especially those related to femininely gendered bodies—that influence the development of sporting technique and mastery in individual athletes.²⁹ Moreover to deny transwomen’s gender identity as women is blatantly transphobic and ignores the complex relationships among gender identity and sex, which are various and multiple. Considering basic trans rights to participation as a matter only of “fairness” to biological, women who still suffer unjustly as a minoritized class of humans, only serves to reify sex segregation and myths of female and feminine victimhood. They mask cissexist and racist assumptions about trans women and women of color and myths of athletic superiority based on sex and race.

Thomas’ journey in the late winter and early spring of this year makes evident that, despite all recent Title IX gladhanding on its 50th anniversary to the contrary, sex-segregated sports remain a bastion of sexism and misogyny. The bodies of trans athletes are subjected to institutionalized violence and harm by the same organizations that purport to embrace inclusion and diversity, as the NCAA does. This harm is compounded when the organizations that the NCAA looks to for policy guidance, namely the

International Olympic Committee (the IOC), issues empty performatives on sport as a human right and then lets individual sporting bodies come up with their own regulations for trans athletes.

The NCAA's adjudication of its policy on trans participation violates its own mission statement on equity and fairness. At best, these policies reflect the tendency of neoliberal corporatized universities towards nonperformative speech acts, pledging to foster diversity, ensure equity, and protect marginalized populations but often leading to continued marginalization. At worst, these policies may willfully violate Title IX—an irony lost on those invoking Title IX as the rationale for excluding trans athletes.³⁰ Trans athletes challenge these nonperformative gestures by daring to participate in their legal and/or chosen gender category. To put it simply, NCAA sports are non-professional sports, founded on principles of a Rawlsian contract of fair play; trans athletes have a human right to play sports and the evidence for excluding their participation is, simply, outdated science reliant on sexist and racist premises and methodologies.

If Lia Thomas' participation in sport is a matter of fairness, it is not a matter of whether or not it is fair for trans women to participate – trans women are women; to exclude trans women and girls is to be overtly discriminatory. If the question is whether or not it is fair for trans women and girls to participate in sports because of the lingering effects of any naturally occurring testosterone, it is still a moot question, as there is no scientific evidence yet determining lingering advantages. Finally, if this is a discussion about participatory fairness in sex-segregated sport, then why do these rulings concern only the bodies of women and not men? Why do they specifically target trans women? The truly fair question to ask may ultimately be whether or not sex-segregated sports themselves are fair.

Finally, some brief numbers: only .6% of Americans identify as transgender; so, with 220,000 women in the NCAA, that should mean about there about 1300 trans women athletes. That number is actually estimated to be less than 50, according to researcher Joanna Harper, who attempts to study trans involvement across all sports.³¹ Data does not exist because this population is so small. With regards to Lia Thomas, not a single trans woman has competed or is currently competing in women's swimming at the Olympic level. A final, further perspective – since the first transgender inclusion policy was introduced in 2004, there have been 63,000 Olympic athletes. Only two trans athletes have gone to the Olympics, and only 1 has competed – Laurel Hubbard of New Zealand, in Tokyo. She did not clear the minimum snatch lift and placed last in her group, not advancing to the final.³²

Prohibiting transgender youth from participating in sports is concerning because this demographic is exceptionally small and comprises an already vulnerable group. Transgender individuals are exponentially more likely than their cisgender peers to report poorer mental health, including issues like depression, suicidal ideation, and suicide attempts. Additionally, they are more prone to experiencing bullying, victimization, harassment, violence, and rejection from their peers. The Trevor Project,

conducting one of the largest surveys of LGBTQ youth (almost 34,000 respondents) aged 13 to 24, reported in their 2022 study that 45% of LGBTQ youth considered attempting suicide in the last year. Nearly 1 in 5 transgender and nonbinary youth attempted suicide, with higher rates among youth of color. Additionally, 73% of LGBTQ youth reported symptoms of anxiety, and 58% reported depression. For transgender/nonbinary youth, these percentages were 79% for trans boys/men and 71% for trans girls/women, with depression rates at 69% and 60%, respectively. Significantly, these rates decrease among LGBTQ youth who experience some level of support from their family or school.³³

Visibility through representation and inclusion in sports is crucial for the health and well-being of trans youth. The U.S. Department of Education has seemingly realized this, as in April of 2023, they released a memo that would seek to update Title IX to protect the participation rights of trans athletes.³⁴ Schools that banned participation in sports based on an individual's trans identity could then be held in violation of Title IX; the proposed rule would also help develop guidelines to govern eligibility criteria for trans participation and inclusion.

NOTES

1. "2010 NCAA Policy on Transgender Student-Athlete Participation," NCAA, 2010, https://ncaaorg.s3.amazonaws.com/inclusion/lgbtq/INC_TransgenderStudentAthleteParticipationPolicy.pdf.
2. Sport Science Institute, "Transgender Student-Athlete Participation Policy," NCAA, January 27, 2022, <https://www.ncaa.org/sports/2022/1/27/transgender-participation-policy.aspx>.
3. "Board of Governors Updates Transgender Participation Policy," NCAA Media Center, January 19, 2022.
4. "Board of Governors Updates Transgender Participation Policy."
5. This tells us that sex and gender are dynamic processes which vary from person to person and within each individual across time, dependent on environmental and other factors.
6. "Mission and Priorities," NCAA, 2021, <https://www.ncaa.org/sports/2021/6/28/mission-and-priorities.aspx#:~:text=The%20NCAA%20is%20committed%20to,in%20the%20decision%20making%20process>.
7. "Mission and Priorities."
8. For reference, the average man has a level of 10- 35 nmol/L and the average woman .5 – 2.5 nmol/L.
9. International Olympic Committee, "IOC Releases Framework on Fairness, Inclusion and Non-Discrimination on the Basis of Gender Identity and Sex Variations," International Olympic Committee, November 16, 2021, <https://olympics.com/ioc/news/ioc-releases-framework-on-fairness-%09inclusion-and-non-discrimination-on-the-basis-of-gender-identity-and-sex-variations>.
10. International Olympic Committee, "IOC Releases Framework."
11. International Olympic Committee, "Olympic Charter," International Olympic Committee, 2021, https://stillmed.olympics.com/media/Document%20Library/OlympicOrg/General/EN-%09Olympic-Charter.pdf?_ga=2.106222794.819378321.1673123668-%092061375324.1673123668.

12. See the 70-author study headed by Blair Hamilton and Giscard Lima, et al., “Integrating Transwomen and Female Athletes with Differences of Sex Development (DSD) into Elite Competition: The FIMS 2021 Consensus Statement,” *Sports Medicine* 51, no. 7 (2021): 1401–1415.
13. Swimming World Editorial Staff, “16 Penn Swim Team Members Ask School, Ivy League to Refrain from Litigation to Allow Lia Thomas to Race at NAAs,” *Swimming World*, February 3, 2022, <https://www.swimmingworldmagazine.com/news/penn-swim-team-%09members-ask-school-ivy-league-to-refrain-from-litigation-to-allow-lia-thomas-to-race-at-%09naas/>.
14. *Ibid.*
15. Rebecca Jordan-Young and Katrina Karkazis, *Testosterone: An Unauthorized Biography* (Cambridge: Harvard University Press, 2019), 166.
16. Silvia Camporesi, “When Does an Advantage Become Unfair? Empirical and Normative Concerns in Semenya’s Case,” *Journal of Medical Ethics* 45, no. 11 (2019): 702; Joanna Harper et al., “How Does Hormone Transition in Transgender Women Change Body Composition, Muscle Strength and Hemoglobin? Systematic Review with a Focus on the Implications for Sport Participation,” *British Journal of Sports Medicine* 55, no. 15 (August 2021): 1, <https://doi.org/10.1136/bjsports-2020-103106>; Taryn Knox, Lynley C. Anderson, and Alison Heather, “Transwomen in Elite Sport: Scientific and Ethical Considerations,” *Journal of Medical Ethics* 45, no. 6 (June 2019): 397, <https://doi.org/10.1136/medethics-2018-105208>.
17. See also the Anders Study, which maps the different feedback loops created by exogenous and endogenous hormones; an external hormonal feedback loop is created when exogenous hormones are introduced into an organism, creating different kinds of actions than that of an organism’s own hormone production.
18. Jordan-Young and Karkazis, *Testosterone: An Unauthorized Biography*, 162.
19. *Ibid.*, 119.
20. In a 2004 study about overlap in the mean muscle area between pre-transition women and men saw that after approximately 12 months of hormone replacement therapy (HRT) and suppression, there was complete overlap. This led researchers to the conclusion that muscle fibers themselves are not sexed, and cross-sectional muscle areas studied produced the same force. That is, distributions of a given secondary sex characteristic such as height, bone density, or cross-sectional muscle area reveal that the male distribution covers the entire female range. Louis Gooren and Mathijs Bunck, “Transsexuals and competitive sports,” *European Journal of Endocrinology* 151, no. 4 (2004): 425–429.
21. Stéphane Bermon and Pierre-Yves Garnier, “Serum Androgen Levels and Their Relation to Performance in Track and Field: Mass Spectrometry Results From 2127 Observations in Male and Female Elite Athletes..,” *British Journal of Sports Medicine* 51, no. 17 (July 3, 2017): 1309–14.
22. Camporesi, “When Does an Advantage Become Unfair? Empirical and Normative Concerns in Semenya’s Case.”
23. See also Jeré Longman, “Did Flawed Data Lead Track Astray on Testosterone in Women?” *The New York Times*, July 12, 2018, <https://www.nytimes.com/2018/07/12/sports/iaaf-caster-semenya.html>.
24. Roger Pielke, Jr., Ross Tucker, and Erik Boye, “Serious Problems Found in a Partial Replication of Bermon and Garnier,” July 9, 2018, 2, <https://www.sportsintegrityinitiative.com/wp-content/uploads/2018/07/FINAL-Serious-Problems-Found-in-a-Partial-Replication-of-Bermon-and-Garnier.pdf>.
25. Veronica Ivy and Aryn Conrad, “Including Trans Women Athletes in Competitive Sport: Analyzing the Science, Law, and Principles of and Policies of Fairness in Competition,” *Philosophical Topics* 46, no. 2 (2018): 128.
26. Bermon and Garnier, “Serum Androgen Levels and Their Relation to Performance in Track and Field: Mass Spectrometry Results From 2127 Observations in Male and Female Elite Athletes.”

27. Ivy and Conrad, “Including Trans Women Athletes in Competitive Sport: Analyzing the Science, Law, and Principles of and Policies of Fairness in Competition.”
28. Bermon and Garnier, “Serum Androgen Levels and Their Relation to Performance in Track and Field: Mass Spectrometry Results From 2127 Observations in Male and Female Elite Athletes.”
29. Harper et al., “How Does Hormone Transition in Transgender Women Change Body Composition, Muscle Strength and Hemoglobin?”; Camporesi, “When Does an Advantage Become Unfair? Empirical and Normative Concerns in Semenya’s Case”; Knox, Anderson, and Heather, “Transwomen in Elite Sport.”
30. For more on the “institutional mechanics” of nonperformative speech acts in the university setting, see Sarah Ahmed’s *Complaint!* (2021).
31. Joanna Harper, “Race Times for Transgender Athletes,” *Journaling of Sporting Cultures and Identities* 6, no. 1 (2015): 1–9.
32. “Transgender weightlifter Hubbard Makes History at Olympics,” <https://apnews.com/article/2020-tokyo-olympics-sports-weightlifting-laurel-hubbard-e721827cdaf7299f47a9115a09c2a162>
33. “2022 National Survey on LGBTQ Youth Mental Health,” The Trevor Project, <https://www.thetrevorproject.org/>.
34. “FACT SHEET: U.S. Department of Education’s Proposed Change to Its Title IX Regulations on Students’ Eligibility for Athletic Teams | U.S. Department of Education,” <https://www.ed.gov/news/press-releases/fact-sheet-us-department-educations-proposed-change-its-title-ix-regulations-students-eligibility-athletic-teams>.