



Do transgender athletes have an unfair advantage?

In the US, there are currently 27 states that ban transgender athletes from participating in school sports in the gender that they identify with. These bans are currently [being challenged in two Supreme Court cases](#).¹ At the international level, we are witnessing similar restrictions, with the recent implementation of a policy banning transgender women from participating in the Olympics.²

Critics of such policies argue that they are a form of discrimination against transgender persons, while those defending the bans claim that transgender athletes, more specifically transgender *women* athletes (individuals who were assigned male at birth but identify as women), have an unfair advantage against cisgender athletes (individuals who identify with the same gender they were assigned at birth).

Despite these claims, current research on transgender athletes does not support universal or blanket bans.³ While transgender athletes may sometimes have differences from cisgender athletes (for example, in some cases, having more absolute lean mass), the scientific evidence does not find that such differences are consistent or provide a universal advantage.⁴ Instead of blanket bans, more research should be conducted to support the development of sport-specific policies that balance fairness and inclusivity.

Furthermore, research does not find that allowing transgender athletes to participate in school sports reduces fairness.⁵ On the other hand, banning transgender students from school sports could harm transgender youth and prevent them from accessing the many benefits of sport participation, which may be especially needed for this vulnerable group⁶.

¹ Bomboy 2026; Howe 2026

² The Associated Press 2026

³ Hamilton et al. 2024; Harper 2015; Harper 2022; Harper et al. 2025; Ivy and Conrad 2018; Nokoff et al. 2023

⁴ Sieczkowska et al. 2026

⁵ Moyer et al. 2023

⁶ Austin et al. 2024; Chan et al. 2024; Cunningham et al. 2018; Muchicko et al. 2014

Do transgender women always have a built-in athletic advantage over cisgender women?

No. Transgender women do not always have a built-in athletic advantage over cisgender women.

When it comes to transgender participation in sports, the most common concern (and misconception) that people have is that transgender women automatically have an unfair advantage over cisgender women.⁷ This belief typically stems from assumptions about biological differences between men and women. It is also rooted in a long history of skepticism towards women who perform well in sports: for over 100 years, female athletes who display traits categorized as “masculine” or who perform exceptionally well have faced questioning, testing, and disqualification.⁸ Male athletes are not subjected to such challenges.⁹

Moving beyond these assumptions and examining research, we can gain a better understanding of how things actually work in practice.

Studies find that though there are differences between transgender women and cisgender women, these can be inconsistent, and do not always reflect an athletic advantage. In addition, many transgender women receive gender affirming hormone therapy (GAHT), which can further reduce potential advantages of transgender women athletes.¹⁰ GAHT has been found to reduce grip strength¹¹ and to slow transgender women's running times by 15% and swimming times by 5%.¹²

Recently, Sieczkowska and colleagues conducted a systematic review and meta-analysis (a study that combines and analyzes results from many previous studies) on this subject matter.¹³ In total, the researchers examined 52 studies involving 6485 participants! Their analysis revealed that:

- Transgender women undergoing GAHT had higher *absolute* lean mass (total weight of non-fat tissue, like muscles, organs, and bones) when compared to cisgender

⁷ Merrill and Anderson 2024; Shaw et al. 2024; Tanimoto et al. 2021;

⁸ Goldbach et al., 2022; Wiesemann, 2011

⁹ Goldbach et al., 2022; Wiesemann, 2011

¹⁰ Sieczkowska et al. 2026

¹¹ Scharff et al. 2019

¹² Harper et al. 2025

¹³ Sieczkowska et al. 2026

women, but no difference was found when looking at *relative* lean mass (lean mass adjusted for total body weight, a better indicator of how muscular someone is)

- Transgender women undergoing GAHT had no significant differences in relative VO2 max (a measure of aerobic fitness based on the rate of oxygen your body can consume during exercise, that is especially relevant to sports such as running)

The study concluded that exercise test performance of transgender women and cisgender women is comparable, and does not support that transgender women have an athletic advantage that would support universal bans.

This conclusion is similar to that of previous studies: though there might be some differences between transgender and cisgender women, these are not consistent enough to warrant universal or blanket bans.¹⁴

Furthermore, studies find that measures of physical fitness in transgender women are significantly lower than in cisgender men, meaning that, contrary to popular belief, transgender women do not perform athletically like men.¹⁵ Scholars call for the development of evidence-based sport-specific eligibility policies and explain that to support these, more research is needed, especially research with actual athletes rather than the general population, and with larger samples.

It is also important to remember that there is already a great deal of biological diversity among cisgender women. Women can naturally vary in things like height, muscle mass and testosterone levels due to various factors including but not limited to: genetics, age, menstrual cycle phase, and medical conditions.¹⁶ In some cases, these differences could impact athletic ability. For example, a very tall basketball player may have a significant advantage over shorter competitors.

Individual differences are an inherent part of sports. In certain contexts, an individual difference could provide an advantage, while in others it could be a disadvantage. Regardless of gender, complete physical equality is impossible.

¹⁴ Hamilton et al. 2024; Harper 2015; Harper 2022; Harper et al. 2025; Ivy and Conrad 2018; Nokoff et al. 2023

¹⁵ Saitong et al. 2025; Sieczkowska et al. 2026

¹⁶ Ivy and Conrad 2018; Luigi et al. 2022

Is the inclusion of transgender athletes in school sports harmful?

No. There is no scientific evidence that including transgender athletes in school sports harms other students.

Current transgender athlete bans in the United States are largely focused on school sports, yet research does not demonstrate that these bans impact fairness. To begin with, transgender athletes make up an incredibly small percentage of athletes in schools. For example, it is estimated that less than 0.002% of college athletes in the National Collegiate Athletic Association (NCAA) are transgender.¹⁷ Among younger athletes, it is suggested that only 0.197% of female youth athletes are transgender.¹⁸ This is in line with research that finds that in the United States, transgender individuals only make up about 1% of the population.¹⁹

At the same time, there is already variability among school-aged athletes due to differences in growth, puberty, financial privilege, access to training and resources, and community and family environments.²⁰ Given this preexisting variety, the number of transgender athletes who want to participate in school sports is so small that it is unlikely to have a meaningful impact on fairness.²¹

Though more than 20 states in 2021 introduced bills aimed at restricting transgender participation in sports, “sponsors in nearly every case were unable to cite a single instance in which such participation had caused fairness issues.”²² Furthermore, no evidence has been found of a student falsely claiming a transgender identity in order to gain a competitive advantage in sports.²³ This is not surprising, given that being transgender can involve numerous challenges, especially for youth. It would be unlikely that someone would choose a potentially more difficult path simply to have a supposed advantage in sports.

Although there is no evidence that including transgender athletes in school sports impacts fairness for other students, excluding them from sports could have negative consequences.

¹⁷ Creps 2025

¹⁸ Moyer et al. 2023

¹⁹ Herman & Flores 2025

²⁰ Moyer et al. 2023

²¹ Moyer et al. 2023

²² Moyer et al. 2023, p.8

²³ Moyer et al. 2023

Transgender youth want to participate in sports and physical activity²⁴, but research finds that they have lower participation levels²⁵ and lower social support²⁶ than their cisgender peers. Transgender youth feel less safe while playing sports and face more barriers to participation.²⁷ They also have a more negative perception of their physical self and demonstrate lower self-efficacy for physical activity.²⁸ As a result, transgender youth report heightened levels of mental distress relating to sport, exercise, and physical activity.²⁹

This is a serious issue; discrimination in sport participation can cause transgender youth to feel frustrated and their interest to decrease, making them more at risk for depression, suicide, drug abuse, and mental health disorders.³⁰ Consistently, research demonstrates that psychological distress in transgender youth is exacerbated by experiences of discrimination and prejudice.³¹ Therefore, sports bans could further contribute to harm against transgender people.

Given that transgender youth are particularly at risk for suicidal ideation, life-threatening behaviors, and depression,³² sport participation could be incredibly beneficial for this population, as there are many physical and mental benefits to participating in sports and physical activity. There is some evidence supporting this; for example, one study of LGBTQ+ youth found that participation in sports increased their well-being and sense of school belonging.³³

Recommendations

There is no scientific evidence that supports the universal bans on transgender athletes. In some situations, there may be differences between transgender athletes and cisgender athletes; these differences are heterogeneous and inconsistent, especially when considered alongside the inequalities that are already inherent to sport (regardless of gender).

At the same time, there is a clear need for more scientific research on this topic, especially studies that directly examine differences in sports performance between transgender

²⁴ Austin et al. 2024

²⁵ Austin et al. 2024

²⁶ Muchicko et al. 2014

²⁷ Austin et al. 2024

²⁸ Muchicko et al. 2014

²⁹ Austin et al. 2024

³⁰ Chan et al. 2024

³¹ Cunningham et al. 2018

³² Connolly et al. 2016; Grossman and D'Augelli 2007; Mathy 2003

³³ Clark et al., 2022

athletes and cisgender athletes. Rather than relying on theoretical arguments and assumed biological differences between men and women, policies should be based on empirical evidence, supported by research, and grounded in measurable indicators that balance inclusivity and fairness.

At the school level in particular, there is no evidence that justifies banning transgender students from participating in sports, especially since transgender people make up such a small percentage of school athletes. The potential benefits of including transgender youth in school sports drastically outweigh the supposed harms, which have not been demonstrated by the research. State-level school sport bans should be reconsidered and replaced with the development of programs that encourage transgender youth to safely participate in physical activity and sport.

References

- Austin, Felicity, Kemi E. Wright, Ben Jackson, Ashleigh Lin, Kai Schweizer, and Bonnie J. Furzer. 2024. "A Scoping Review of Trans and Gender Diverse Children and Adolescents' Experiences of Physical Activity, Sport, and Exercise Participation." *Mental Health and Physical Activity* 26 (March): 100576. <https://doi.org/10.1016/j.mhpa.2024.100576>.
- Bomboy, Scott. 2026. "Unpacking the Transgender Athletes' Case at the Supreme Court." National Constitution Center, January 21. <https://constitutioncenter.org/blog/unpacking-the-transgender-athletes-case-at-the-supreme-court>.
- Chan, Alex Siu Wing, Alston Choong, Kean Chang Phang, Lok Man Leung, Patrick Ming Kuen Tang, and Elsie Yan. 2024. "Societal Discrimination and Mental Health among Transgender Athletes: A Systematic Review and Meta-Analysis." *BMC Psychology* 12 (1): 24. <https://doi.org/10.1186/s40359-023-01493-9>.
- Clark, Caitlin M., and Joseph G. Kosciw. 2022. "Engaged or Excluded: LGBTQ Youth's Participation in School Sports and Their Relationship to Psychological Well-being." *Psychology in the Schools* 59 (1): 95–114. <https://doi.org/10.1002/pits.22500>.
- Connolly, Maureen D., Marcus J. Zervos, Charles J. Barone, Christine C. Johnson, and Christine L. M. Joseph. 2016. "The Mental Health of Transgender Youth: Advances in

- Understanding." *Journal of Adolescent Health* 59 (5): 489–95.
<https://doi.org/10.1016/j.jadohealth.2016.06.012>.
- Creps, Ryan. 2025. "Transgender Athletes and Title IX Compliance." *Higher Education Politics & Economics* 11 (1): 74–79. <https://doi.org/10.32674/hepe.11i1.7731>.
- Cunningham, George B., Erin Buzuvis, and Chris Mosier. 2018. "Inclusive Spaces and Locker Rooms for Transgender Athletes." *Kinesiology Review*. *Kinesiology Review* 7 (4): 365–74.
<https://doi.org/10.1123/kr.2017-0062>.
- Di Luigi, Luigi, Emanuela A. Greco, Chiara Fossati, Antonio Aversa, Paolo Sgrò, and Cristina Antinozzi. 2022. "Clinical Concerns on Sex Steroids Variability in Cisgender and Transgender Women Athletes." *International Journal of Sports Medicine* 44 (September): 81–94. <https://doi.org/10.1055/a-1909-1196>.
- Goldbach, Chloe, Stephanie Chambers-Baltz, Kristiana Feeser, David Cole Milton, Parker McDurmon, and Douglas Knutson. 2022. "Transgender Inclusion in Competitive Sport: Athletes' Attitudes toward Transgender Athlete Participation in Intercollegiate Sport." *International Journal of Sport and Exercise Psychology* 22 (4): 802–24.
<https://doi.org/10.1080/1612197X.2022.2161109>.
- Grossman, Arnold H., and Anthony R. D'Augelli. 2007. "Transgender Youth and Life-Threatening Behaviors." *Suicide & Life - Threatening Behavior* (Washington, United Kingdom) 37 (5): 527–37.
- Hamilton, Blair, Andrew Brown, Stephanie Montagner-Moraes, et al. 2024. "Strength, Power and Aerobic Capacity of Transgender Athletes: A Cross-Sectional Study." *British Journal of Sports Medicine* 58 (11): 586–97. <https://doi.org/10.1136/bjsports-2023-108029>.
- Harper, Joanna. 2015. "Race Times for Transgender Athletes." *Journal of Sporting Cultures and Identities* 6 (1): 1–9. <https://doi.org/10.18848/2381-6678/CGP/v06i01/54079>.
- Harper, Joanna. 2022. "Transgender Athletes and International Sports Policy." *Law and Contemporary Problems* 85 (1): 151–66.
- Harper, Joanna, Richard C. Blagrove, Eugenie Hunsicker, Gemma L. Witcomb, Richard A. Ferguson, and Emma O'Donnell. 2025. "Longitudinal Performance Changes in Transgender Women Athletes Pre and Post Gender Affirming Hormone Therapy." *European Journal of Sport Science* 25 (9): e70036. <https://doi.org/10.1002/ejsc.70036>.

- Herman, J. L., & Flores, R. (2025). *How Many Adults and Youth Identify as Transgender in the United States?* UCLA School of Law Williams Institute.
<https://williamsinstitute.law.ucla.edu/publications/trans-adults-united-states/>
- Howe, Amy. 2026. "The Transgender Athletes Cases: An Explainer." *SCOTUSblog*, January 8.
<https://www.scotusblog.com/2026/01/the-transgender-athlete-cases-an-explainer/>.
- Ivy, Veronica, and Aryn Conrad. 2018. "Including Trans Women Athletes in Competitive Sport: Analyzing the Science, Law, and Principles and Policies of Fairness in Competition." *Philosophical Topics* 46 (2): 103–41.
- Mathy, Robin M. 2003. "Transgender Identity and Suicidality in a Nonclinical Sample." *Journal of Psychology & Human Sexuality* 14 (4): 47–65.
https://doi.org/10.1300/J056v14n04_03.
- Merrill, J. A., and V. N. Anderson. 2024. "Sporting Gender: Cisgender Athletes' Attitudes Toward Trans Athletes." *Psychology of Sexual Orientation and Gender Diversity*, ahead of print. <https://doi.org/10.1037/sgd0000773>.
- Moyer, Valerie, Amanda Zink, and Brendan Parent. 2023. "Examining the Ethics and Impacts of Laws Restricting Transgender Youth-Athlete Participation." *Hastings Center Report* 53 (3): 6–14. <https://doi.org/10.1002/hast.1484>.
- Muchicko, Megan, Andrew Lepp, and Jacob Barkley. 2014. "Peer Victimization, Social Support and Leisure-Time Physical Activity in Transgender and Cisgender Individuals." *Leisure/Loisir* 38 (3–4): 295–308. <https://doi.org/10.1080/14927713.2015.1048088>.
- Nokoff, Natalie J., Jonathon Senefeld, Csilla Krausz, Sandra Hunter, and Michael Joyner. 2023. "Perspectives for Progress Sex Differences in Athletic Performance: Perspectives on Transgender Athletes." *Exercise and Sport Sciences Reviews* 51 (3): 85–95.
<https://doi.org/10.1249/JES.0000000000000317>.
- Saitong, A., Naeowong, W., Suksom, D., & Tanaka, H. (2025). Physical Fitness and Exercise Performance of Transgender Women. *Medicine & Science in Sports & Exercise*, 57(1), 134–143. <https://doi.org/10.1249/MSS.00000000000003536>
- Scharff, Miranda, Chantal Maria Wiepjes, Maartje Klaver, Thomas Schreiner, Guy T'Sjoen, and Martin den Heijer. 2019. "Change in Grip Strength in Trans People and Its

Association with Lean Body Mass and Bone Density." *Endocrine Connections* 8 (7): 1020–28. <https://doi.org/10.1530/ec-19-0196>.

Sieczkowska, Sofia Mendes, Bruna Caruso Mazzolani, Danilo Reis Coimbra, et al. 2026. "Body Composition and Physical Fitness in Transgender versus Cisgender Individuals: A Systematic Review with Meta-Analysis." Systematic Review. *British Journal of Sports Medicine* 60 (3): 198–210. <https://doi.org/10.1136/bjsports-2025-110239>.

Shaw, A. L., A. G. Williams, G. K. Stebbings, M. Chollier, A. Harvey, and S. M. Heffernan. 2024. "The Perspective of Current and Retired World Class, Elite and National Athletes on the Inclusion and Eligibility of Transgender Athletes in Elite Sport." *Journal of Sports Sciences* 42 (5): 381–91. <https://doi.org/10.1080/02640414.2024.2326354>.

Tanimoto, Chikako, and Koji Miwa. 2021. "Factors Influencing Acceptance of Transgender Athletes." *Sport Management Review* 24 (3): 452–74. <https://doi.org/10.1080/14413523.2021.1880771>.

The Associated Press. 2026. "Transgender Women Banned from Olympics by New IOC Policy." *NBC News*, March 26. <https://www.nbcnews.com/sports/olympics/transgender-women-banned-olympics-new-ioc-policy-rcna265086>.

Wiesemann, Claudia. 2011. "Is There a Right Not to Know One's Sex? The Ethics of 'gender Verification' in Women's Sports Competition." *Journal of Medical Ethics* (London, United Kingdom) 37 (4): 216. <https://doi.org/10.1136/jme.2010.039081>.