

VIEWPOINT



Scientific and Ethical Challenges in Gender Equality in Sports: A Critical Perspective

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ABSTRACT: This paper addresses two basic principles related to Olympic ethics: the possibility that male transgender or transsexual individuals try to compete as if they were real females. Essentially, it clearly rejects the possibility that men, having “administratively” changed their sex registration, can compete as if they were “true females.” It also considers it mandatory that, in all sports modalities where strength is relevant, women must have previously undergone a testosterone evaluation.

KEY WORDS: Olympic Ethics; Gender Identity; Sports Competition



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Scientific and ethical issues in sport, as in life, are inseparable. We believe that before addressing any problem, it is essential to clarify the concepts and principles one follows. It is undoubtedly discriminatory to treat what is obviously different as equal. This leads us to reflect on the politically imposed concept of equality between sexes, which are anatomically and physiologically distinct. Equal rights are essential, but it is crucial to avoid simulation and fraud, considering the excessive desire to be the best.

The Olympic Code of Ethics clearly defines fundamental principles that must be fully respected. Article 1.2 emphasizes the universality and neutrality of the Olympic Movement, and Article 1.4 rejects all forms of discrimination, irrespective of the reason (race, language, political opinion, nationality, social origin, or any other situations).

Unfortunately, we believe the concept of amateur sports is at risk, as we cannot forget that the original Olympic Games, which began in 776 BC, ended approximately 1,000 years later in 393 AD (during the reign of Roman Emperor Theodosius).

We maintain that sports should remain independent of political ideologies, and no athlete should ever be precluded from participating in the Olympic Games due to their country's political choices or errors. Furthermore, we believe

the Olympic Truce should be effective from the moment athletes leave their country until they return, not just within the Olympic Village. We all remember the Olympic Truce and its rule of free circulation and the cessation of hostilities, starting one week before and ending one week after the Games.

It is scientifically evident that hormonal levels differ according to biological sex, which is established at the union of the spermatozoon and ovum. Since the dawn of humanity (and we hope it continues to exist...), we need males and females, who are anatomically (and even psychologically) distinct but obviously complementary and essential for the continuation of humanity. Some individuals who have decided to change their sex have neglected the need to clearly distinguish between the different types of sports.

- a) **Physical Exercise:** Aimed at health and well-being, promoting both physical and mental harmony, and often considered amateur.
- b) **Sports Competition:** Focused on participation, not just winning, also considered amateur.
- c) **High-Performance Sports:** Such as the Olympic Games and World Championships, where the main goal is to win, often blurring the lines between amateurism and professionalism.

There are two major issues that need addressing: one is the participation of “transgender” or “transsexual” individuals in women’s competitions, and the other is hyperandrogenism.

No one denies the significant muscular differences that clearly distinguish women from men. Blood haemoglobin levels, which provide the essential oxygen supply to muscles and promote their development, range from 13.2 to 16.6 g/dL in men and from 11.6 to 15 g/dL in women. We also know that autotransfusions and the use of drugs to increase blood oxygen levels are already considered doping.

However, it is essential that women also have the opportunity to practice sports in safe conditions, ensuring their rights and dignity. As far as we know, no woman has ever wished to compete in men’s competitions. It is, however, crucial to ascertain the true sex of all competitors to avoid fraud by men who have, even administratively, registered as the opposite sex. If a man were to do this, it would clearly violate Article 1 of the 1994 Brighton Declaration.

In men, androgens (especially testosterone) predominate, whereas in women, oestrogens prevail. The

most striking physical differences are particularly evident during adolescence and young adulthood, due to the significant hormonal action of androgens during this period. Men have historically been stronger, with a larger heart, more red blood cells, and higher haemoglobin levels, which help transport oxygen to muscle mass and facilitate growth.

These biological differences are evident and can be clearly demonstrated through the results in sports competitions.

Competition	Unit	Olympic Records		World Records	
		Men	Women	Men	Women
100 m	s	9.63	10.61	9.58	10.49
400 m	s	43.03	48.25	43.03	47.60
1500 m	min:s	3:28.32	3:53.11	3:26.00	3:49.11
Marathon	h:min:s	2:06:32	2:23:07	2:02:35	2:11:53
4×100 m	s	36.84	41.60	36.84	40.82
High Jump	m	2.39	2.06	2.45	2.09
Long Jump	m	8.90	7.40	8.95	7.52
Shot Put	m	23.30	22.41	23.56	22.63
Discus Throw	m	69.89	72.30	74.35	76.80
Javelin Throw	m	90.57	71.53	98.48	72.28

In 1968 (Mexico City), the international Olympic Committee (IOC), reacting to rumours that men might attempt to compete in women’s events, sought a scientifically safe and non-degrading solution—thus, the karyotype test was introduced (though this method has since been largely forgotten!).

Many sports are gender-segregated due to these evident physical differences. However, the Los Angeles Declaration of 1981, which unanimously approved a series of recommendations for gender equality in sports, aims to improve women’s lives globally. It is important to note, however, that excessive exercise may delay puberty and induce menstrual irregularities, requiring careful medical evaluation.

According to the International Olympic Committee, (IOC) for a new sport to be included in the Olympic Games, there must be both a male and a female competition. We believe that this is not justified, as sexual parity should not be the primary concern; instead, the athletes’ characteristics should determine the appropriate competition structure.

What scientifically distinguishes men and women are their chromosomes: two X chromosomes (XX) for females and one X and one Y chromosome (XY)

for males. However, there are congenital conditions such as Klinefelter Syndrome (XXY) and Turner Syndrome (X), where individuals may be biologically male or female but possess atypical chromosomal patterns. Additionally, a lack of sensitivity to androgens (testosterone and dihydrotestosterone) can occur.

A case in point was a Spanish athlete who was wrongly disqualified from a World University Sports competition due to an XY karyotype, despite having female physical characteristics. It is well-known (though fortunately rare) that sexual ambiguities at birth can lead to questions about the newborn's sex, a decision that the physician must make. This is one reason we strongly oppose Law 38/2018, which should be urgently revoked. It is nonsensical to delay sex assignment until the child has grown and is allowed to choose their gender identity, as if biology were irrelevant.

The Universal Declaration of Human Rights (10/12/1948) and the Universal Declaration of Children's Rights (20/11/1959) clearly state that all children have an inalienable right to receive treatment for medical conditions, and congenital malformations are considered "diseases" requiring timely medical intervention. Medical practitioners, in accordance with the Hippocratic Oath, must correct any existing congenital malformations as soon as possible, not wait for the child to make a decision later in life.

According to the law, after birth, the child must be registered by the parents in the Civil Registry as either male or female. Curiously, in Portugal, a child has already been officially registered with a gender-neutral name: "Gentil".

In females (XX), virilization can occur, leading to an enlarged clitoris resembling a penis, as seen in conditions like congenital adrenal hyperplasia and polycystic ovary syndrome, which can cause pathological hyperandrogenism and thus require careful medical assessment. In males (XY), the penis may be malformed, hypoplastic, or retracted. Rarely, true hermaphroditism occurs, where the newborn possesses both testes and ovaries, with a karyotype of 46 XY / 45 XO.

Physiologically, after the initial embryonic phase, hormones are what most clearly define sex, with testosterone predominating in males and oestrogens in females (though both sexes have both hormones, albeit at very different levels). These issues arise during early infancy and do not affect high-performance athletes, such as Olympians.

It is clear that no athlete should be disadvantaged because of natural attributes that confer a sporting advantage, as opposed to doping. Strangely, during the 2016 Rio Olympics, a simple declaration of sex sufficed for participation, though WADA (World Anti-Doping Agency) did not endorse this.

In 1968, the International Olympic Committee (IOC), responding to rumours that men might attempt to compete as women, introduced the karyotype test as a scientifically safe method to determine sex, even using saliva to conduct it. However, the method was not entirely reliable and was eventually abandoned.

Following a vote by American psychiatrists, the concept of "Gender Dysphoria" was introduced, defining individuals who feel their anatomy does not match their gender identity. These individuals are now termed transgender (or transsexual if they have undergone surgery). However, it has been shown that individuals who undergo sex change surgery have higher rates of severe depression and suicide.

Additionally, hormones used by transgender individuals may pose health risks, such as blood clots, cardiovascular disease, and certain cancers, requiring close medical supervision. Furthermore, individuals who regret transitioning have formed organizations advocating for the reversal of these irreversible surgeries.

In November 2015, at an IOC "Consensus Meeting on Sex Identification and Hyperandrogenism," Dr. Richard Burgett, then IOC Medical and Scientific Director, disclosed that female athletes' testosterone levels should be below 10 nmol/L for at least one year prior to the Olympic Games (though how this would be monitored remains unclear). Hormonal levels can also be altered by anti-androgens, such as spironolactone or cyproterone acetate.

The IOC suggested that testosterone levels up to 10 nmol/L would be acceptable for women, a threshold that seems arbitrarily high, given that healthy women typically have testosterone levels below 3.9 nmol/L. We believe that a maximum level of 5 nmol/L would be more appropriate.

For women with hyperandrogenism, the simplest solution would be to introduce a separate category for competitions, as is done in other sports like weightlifting, judo, and boxing. A simple testosterone test would clarify this issue, enabling fair decisions. We suggest creating two categories: one for values below 2.5 nmol/L and another for values above 2.5 nmol/L.



The case of Caster Semenya is noteworthy, as she was reinstated as the rightful winner of her Olympic gold medal in the 800m after her initial disqualification. This demonstrates the importance of respecting an athlete's dignity when their situation is the result of natural development rather than doping. Other Olympic athletes, such as Allyson Felix and Margaret Wambui, have also spoken out about living with hyperandrogenism.

A biologically female athlete can, of course, compete in men's competitions, though this has yet to occur. We believe that sex changes prior to puberty have little effect on athletic performance, but administrative changes after puberty pose significant challenges, as the individual may not lose the advantages given by testosterone prior to the transition.

While the IOC asserts that transgender individuals should not be excluded from sports competitions, it seems they have overlooked the biological truths that have shaped humanity for millennia. Regrettably, instead of taking a clear stance, the IOC continues to delegate responsibility for determining policies to individual sports federations.

In many so-called "developed countries", including the USA, transgender women have already competed in women's events, sometimes winning. This troubling trend is gaining momentum, as reported by publications such as *The Washington Stand*.

CONCLUSIONS

We believe that transgender and transsexual individuals should not be allowed to compete in women's sports competitions. The issue became starkly evident at the Paris Olympics, where a biologically male boxer (Imane Khelif) was awarded a "female" gold medal. The IOC's silence on this issue was disgraceful and unacceptable.

Sadly, the Olympic Games have increasingly become commercial enterprises rather than preserving their original ethos. While the Games continue to provide excitement and spectacle, we long for a return to Pierre de Coubertin's original vision of the Olympics as a philosophy of life, promoting the unity of body, will, and spirit, and aiming for a society rooted in peace and human dignity. The classical motto, "*Mens sana in corpore sano*," should remain at the core of the Olympic spirit, reminding us that the true value of the Games lies in the pursuit of excellence through effort, fair play, respect, and solidarity.

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