

# **Sugar, Spice and Everything Nice: “Sex Testing” in International Athletics**

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# A disclaimer and warning

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# The focus of this talk is “sex testing”



# A brief historical excursion

**Women have not always been welcomed in sport.**



**"The Olympic Games ... [are] the solemn and periodic exaltation of male athleticism with internationalism as a base, loyalty as a means, art for its setting and female applause as reward"**

**Pierre de Coubertin 1912  
Founder of the modern Olympic Games**

# Kathrine Switzer - Boston Marathon 1967



# Things have changed

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**In the London 2012 Olympic Games, women were 44% of participants in 46% of total events.**

**In 2007, the IOC modified its charter to include as a goal “to encourage and support the promotion of women in sport at all levels and in all structures, with a view to implementing the principle of equality of men and women.”**



# My focus is on a decision

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**Who gets to participate in women's events  
in elite athletic competition?**



# Why is this an issue anyway?

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# An outline for this talk

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- **Introduction**
- **“Sex testing” policies and recent controversies**
- **What is the problem?**
  - **Fraud? (no)**
  - **Fairness? (no)**
- **Science, sex and gender**
- **“Sex testing” is really about stereotypes**
- **A proposed new approach**



# A Brief Note on Terminology

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- **IAAF = International Association of Athletics Federations**
- **IOC = International Olympic Committee**
- ***Sex* refers to the biological and physiological characteristics that we associate with male and female (WHO 2015)**
- ***Gender* refers to “the socially constructed roles, behaviors, activities, and attributes that a given society considers appropriate for men and women” (WHO 2015)**
- **“Sex Testing” is my preferred term in this analysis**
  - **The stated basis for current policies is biology, hence the *sex***
  - **The policies are really about gender hence the *scare quotes***
- **Others use gender verification, androgen testing, testosterone testing, etc.**

# Dutee Chand (India)

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- In June 2014 won 2 Gold Medals at the 16<sup>th</sup> Asian Junior Asian Athletics Championships
- Soon thereafter she was told she could not represent India in the upcoming Commonwealth Games
- She had failed the IAAF “sex test”
- Has appealed her case to the “sport supreme court” in Switzerland -- the Court of Arbitration for Sport (decision due soon)

# Caster Semenya 2009 (South Africa)



- **Won the 800m in 2009 at the 2009 World Track and Field Championships**
- **Immediately had her eligibility questioned by other athletes and in the media**
- **Prompted IAAF and then IOC to adopt new policies focused on “sex testing”**
- **Was ultimately (one year later) classified as a women for purposes of IAAF and IOC competition**
- **Won a Silver at London 2012**

# Caster Semenya 2009 (South Africa)



- **"These kind of people should not run with us. For me, she's not a woman. She's a man"**  
Elisa Cusma (Italy) 6<sup>th</sup> in race
- **"Just look at her"**  
Mariya Savinova (Russia) 2<sup>nd</sup> place
- **"Semenya is breathtakingly butch. Her torso is like the chest plate on a suit of armor. She has a strong jawline, and a build that slides straight from her ribs to her hips"**  
*The New Yorker 2009.*
- **Was ultimately (one year later) classified as a women for purposes of IAAF and IOC competition**
- **Won a Silver at London 2012**

# “Look at her now” - 2012



**“I have been subjected to unwarranted and invasive scrutiny of the most intimate and private details of my being”**

**Caster Semenya 2012**

# The New IAAF Regulations - 2011

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## Eligibility of Females with Hyperandrogenism to Compete in Women's Competition

What is "hyperandrogenism" according to IAAF?

"a term used to describe the excessive production of androgenic hormones in females. The androgenic hormone of specific interest for the purposes of the new Regulations is the performance enhancing hormone, testosterone."

Why hyperandrogenism?

The condition has "proved to be controversial since the individuals concerned often display masculine traits and have an uncommon athletic capacity in relation to their fellow female competitors."



# The New IAAF Policy - 2011

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## Eligibility of Females with Hyperandrogenism to Compete in Women's Competition

**Bottom line?**

**"no female with HA shall be eligible to compete in a women's competition if she has functional androgen levels (testosterone) that are in the male range. . .**

**These conditions may necessitate the athlete undergoing treatment by her personal physician to normalise her androgen levels" "**



# Policies Needed to Prevent Fraud?

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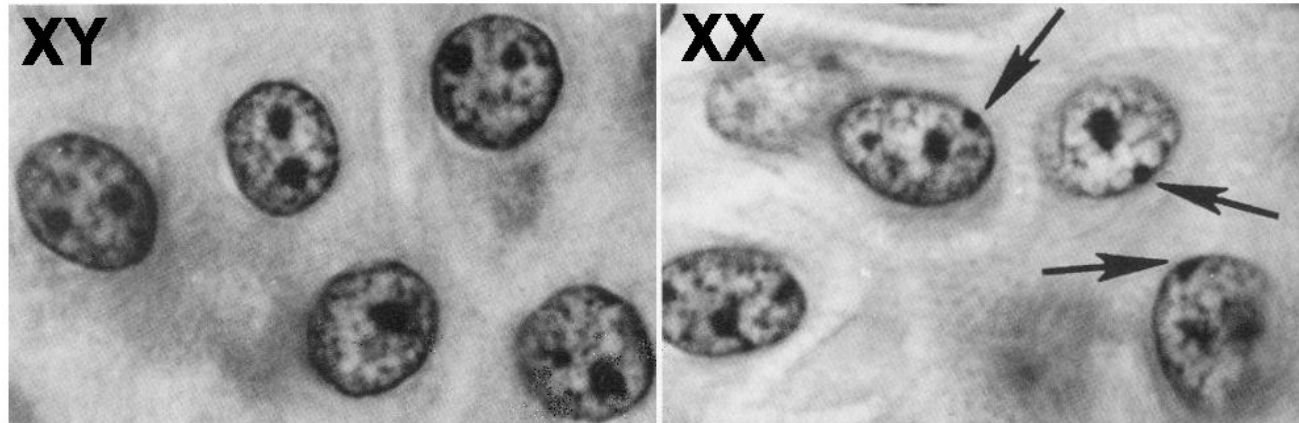


- Legacy of the Cold War
- Steroid era, e.g., East German doping program
- Led to introduction of “sex testing” in the 1960s
- “Naked parades” at some events
- There is no evidence of any man seeking to fraudulently enter an elite women’s sporting event in the past 50 years (and more)

**There is just no evidence to support claims that fraud is a problem at all.**

**A modern “urban legend” repeated online and in articles**

# The first scientific “sex tests” were introduced in 1967



- The Barr Body Test
- To detect multiple X chromosomes (indicating female)
- The problem is that genetics is much more complicated
- There are XXY males, and XY females, for instance
- Women who failed the test were expected to quietly withdraw from competition
- Those who passed received a “certificate of femininity”
- Was abandoned in the 1990s (volleyball was the last in 2004)

# What about fairness?

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**"Today the purpose of the femininity tests carried out on women athletes taking part in the Olympic Games is to make sure that all female athletes compete under identical anatomical conditions."**

**IOC 1974**

**The purpose of its hyperandrogenism policy is to "guarantee the fairness and integrity of female competitions for all female athletes"**

**IOC 2011**



# Is genetic fairness an issue in sport?

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**Flo Hyman –  
Marfan's Syndrome**

# Is genetic fairness an issue in sport?

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**Gheorghe Muresan –  
Acromegaly (or Gigantism)**

# Is genetic fairness an issue in sport?



**Eero Antero Mäntyranta –  
Hereditary Polycythemia**



# Diversity is celebrated in sport

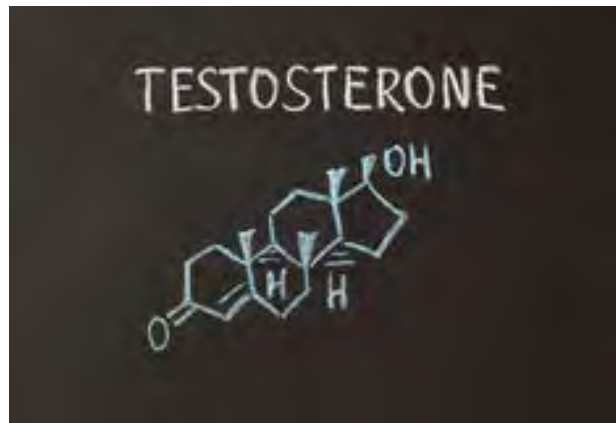
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# The new rules are actually unfair

**"the new rules treat men and women differently from one another without demonstrating an acceptable rationale supporting the regulation of androgens in women, but not men. This unequal treatment is the hallmark of discrimination based on sex"**

**Crincoli 2011**



**"There is no such thing as a correct biological amount of androgens for a female to be a woman; there is only data that show the statistical distribution of androgens that can be produced by the female body... [a female] athlete cannot produce 'excessive' androgens. She can only produce an amount that is a statistical outlier."**

**Crincoli 2011**

**"all people produce testosterone, and it is important for body functions and organs well beyond those we think of as masculine, like the heart and liver"**

**Karkazis and Jordan-Young 2013**

# The sex test as “Holy Grail”



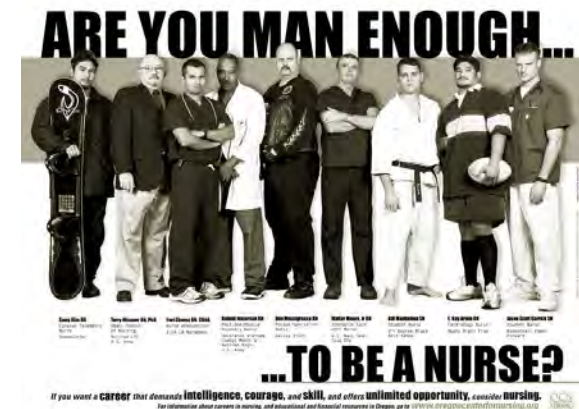
**“Humans are born with 46 chromosomes in 23 pairs. The X and Y chromosomes determine a person’s sex. Most women are 46XX and most men are 46XY. Research suggests, however, that in a few births per thousand some individuals will be born with a single sex chromosome (45X or 45Y) (sex monosomies) and some with three or more sex chromosomes (47XXX, 47XYY or 47XXY, etc.) (sex polysomies). In addition, some males are born 46XX due to the translocation of a tiny section of the sex determining region of the Y chromosome. Similarly some females are also born 46XY due to mutations in the Y chromosome. Clearly, there are not only females who are XX and males who are XY, but rather, there is a range of chromosome complements, hormone balances, and phenotypic variations that determine sex.”**

**WHO 2014**

# Biological sex and gender

“Gender” according to the World Health Organization is “typically described in terms of masculinity and femininity, is a social construction that varies across different cultures and over time”

World Health Organization 2015



# Gender stereotypes and the sexualization of sport



**1984 Olympics  
800m**



# Gender stereotypes and sexualization of sport

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**2012 Olympics  
800m**

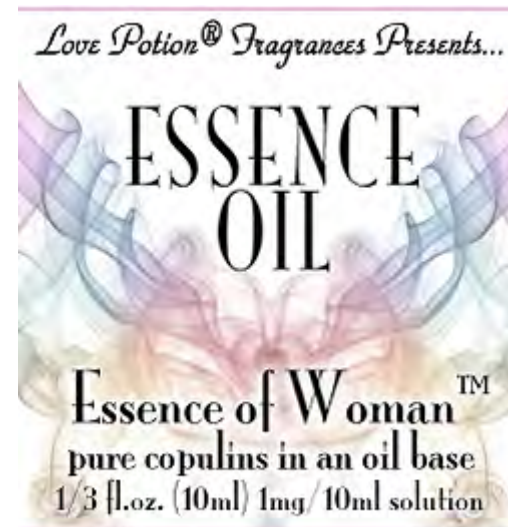
# The “essence” of male and female

**“A respect for the very essence of the male and female classifications in Athletics”**

**IAAF 2011**

**“These rules should respect the essence of the male/ female classification”**

**IOC 2011**



# Maybe its not about testosterone

- Consider the case of women with “complete androgen insensitivity syndrome”
  - XY
  - But their bodies do not respond to testosterone
- They are exempted from the IAAF Hyperandrogenism Regulations
  - “XY women with complete androgen insensitivity” are acceptable because “their tissues don’t respond to the **masculinizing call** of testosterone” (IAAF 2013)

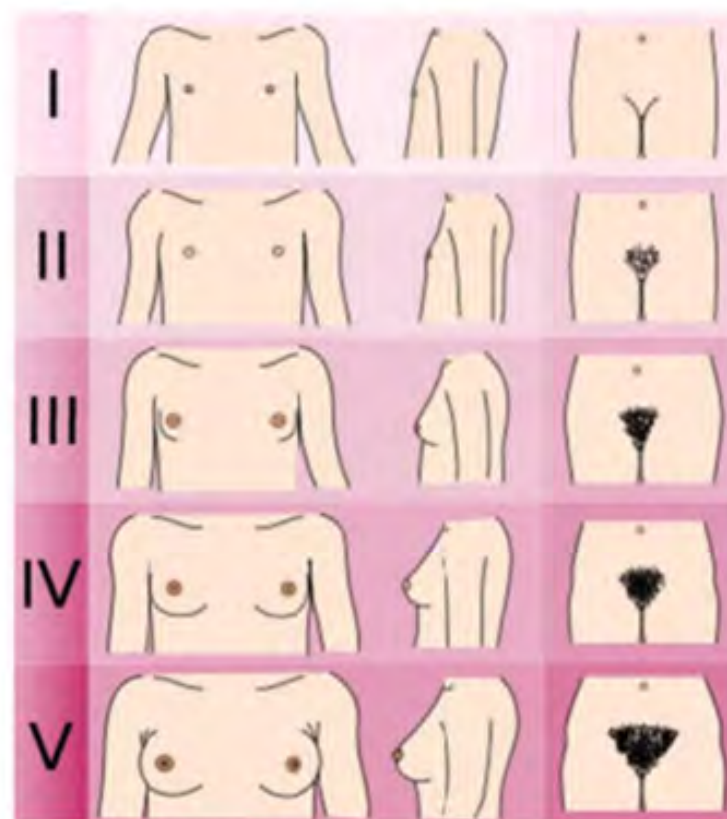


# Could it be about appearances?

## From the 2011 IAAF Regulations

**“Which clinical signs suggest pronounced and chronic hyperandrogenism?”**

- **Deep voice**
- **Breast atrophy**
- **Never menstruation (or loss of menses since several month)**
- **Increased muscle mass**
- **Body hair of male type (vertex alopecia, >17 years)**
- **Tanner score low (I / II) [Figure →]**
- **F&G score (>6 / ! minimized by the beauty) [i.e., body hair]**
- **No uterus**
- **Clitoromegaly**



# Stereotypes of masculinity and femininity?

"It is troubling that more than half of the indicators of hyperandrogenism identified by the IAAF policy to determine which female athletes should undergo sex testing are entangled with deeply subjective and stereotypical Western definitions of femininity."

Karkazis et al. 2012



"Some women develop **male-like body characteristics** due to an overproduction of male sex hormones, so-called "androgens"

IOC 2012

# Science does not offer a way out

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There are countless “objective” biological criteria which could be used as a litmus test of “women-ness,” such as:

- A height of less than 2 meters;
- an XY chromosome combination;
- testosterone less than a threshold amount;
- breasts scored at Level III or greater on the Tanner-Whitehouse Scale;
- having a uterus;
- having menstruated;
- having given birth.



“Can you decide what ultimately makes someone male, female, or other? Practically speaking, sure. That is to say, you can go ahead and make a decision. You won’t be the first.”

Dreger 2013

# How should sports organizations test for femaleness?

## Easy: They shouldn't

The screenshot shows the New York Times website with the 'Olympics' section highlighted. The article is titled 'You Say You're a Woman? That Should Be Enough' by Rebecca Jordan-Young and Katrina Karkazis, published on June 17, 2012. The article discusses the International Olympic Committee's new policy on sex verification, which aims to ban women with naturally high testosterone levels (hyperandrogenism) from competing. The article argues that while the rules may be imperfect, they are necessary for fairness. A graphic of interlocking male and female symbols is shown. Social media sharing options (Facebook, Twitter, Google+, Email, Share, Print, Reprints) are visible on the right. A small advertisement for the movie 'Birdman' is also present.

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The New York Times Olympics

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION

BASEBALL N.F.L. COLLEGE FOOTBALL N.B.A. COLLEGE BASKETBALL HOCKEY SOCCER G

GENDER GAMES

### You Say You're a Woman? That Should Be Enough

By REBECCA JORDAN-YOUNG and KATRINA KARKAZIS  
Published: June 17, 2012

The [International Olympic Committee](#)'s new policy governing sex verification is expected to ban women with naturally high testosterone levels, a condition known as hyperandrogenism, from women's competitions, claiming they have an unfair advantage. I.O.C. officials portray this as a reasonable compromise in a difficult situation, arguing that the rules may be imperfect, but that sports are rule-based — and that the rules should be clear.

We agree that sports need clear rules, [but we also believe](#) that the rules should be fair and as rational as possible. The new policy, [if it is based on testosterone levels, is neither.](#)

So what is a better solution?

FACEBOOK TWITTER GOOGLE+ EMAIL SHARE PRINT REPRINTS

BIRDMAN (THE UNEXPECTED VIRTUE OF IGNORANCE) NOW PLAYING TICKETS

### Some policy options

- How about anything goes?
- Use national legal definition?

# Let's compare sport policies for determining nationality

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# What does it mean to be “English”?



# A gender policy modeled on nationality policies

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- Legal status alone would be insufficient, and it may or may not be necessary.
- Participation in the men's or women's competitions would be determined initially by the athlete in the first instance of participating in organized national or international competition segregated into men's and women's categories. This will in almost all cases take place at the youth or junior level.
- Upon reaching senior competition and legal adulthood, the athlete would sign an affidavit testifying to his/her gender.
- Consistency in participation in men's or women's competitions would be required from the first instance through senior (i.e., adult, open) competitions.
- In those rare cases where an athlete wishes to change gender categories, existing policies and procedures would cover this contingency.
- No "sex tests" or medical examinations.
- No challenges.

# This approach offers three advantages

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- **First, consistency with the science of sex and gender;**
- **Second, it place responsibility for determining gender with the athlete and not the sports body;**
- **Third, it reflects societal norms and their inevitable changing nature.**



# This issue will evolve ...

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## M, F or Blank: 'Third Gender' Official in Germany from November

By Friederike Heine



A legislative change taking effect in Germany this November allows parents to opt out of determining their baby's gender. The law is the first of its kind in Europe.

**Germany is set to become the first country in Europe to introduce a third, "indeterminate" gender designation on birth certificates. The European Union, which is attempting to coordinate anti-discrimination efforts across member states, is lagging behind on the issue.**

1 August 16, 2013 - 03:18 PM

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The option of selecting "blank," in addition to the standard choices of "male" or "female" on birth certificates will become available in Germany from November 1. The legislative change allows parents to opt out of determining their baby's gender, thereby allowing those born with characteristics of both sexes to choose whether to become male or female in later life. Under the new law, individuals can also opt to remain outside the gender binary altogether.

Germany is the first country

ANZEIGE

# Meantime, what happens when a “butch” woman wins a sporting event?

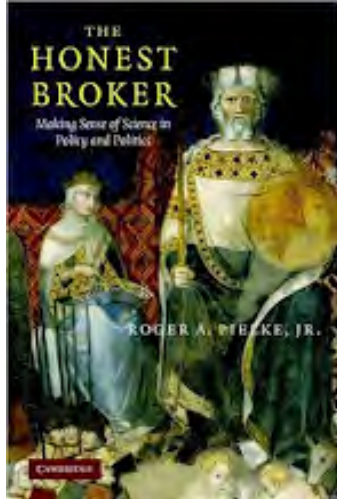
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**We congratulate her on her achievement,  
and give her a medal.**

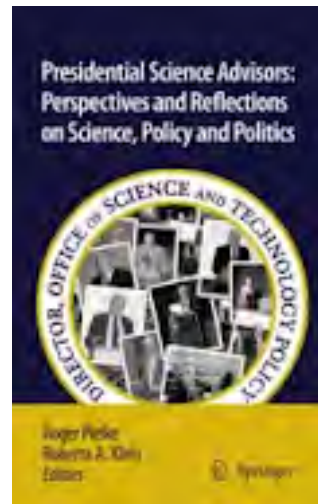


# Thank you!

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<http://sciencepolicy.colorado.edu/stepps>
- Weblog: <http://leastthing.blogspot.com/>



2007



2010



2010



2014