

FEATURE

The Humiliating Practice of Sex-Testing Female Athletes

By Ruth Padawer

June 28, 2016

One day in June 2014, Dutee Chand was cooling down after a set of 200-meter sprints when she received a call from the director of the Athletics Federation of India, asking her to meet him in Delhi. Chand, then 18 and one of India's fastest runners, was preparing for the coming Commonwealth Games in Glasgow, her first big international event as an adult. Earlier that month, Chand won gold in both the 200-meter sprint and the 4-by-400-meter relay at the Asian Junior Athletics Championships in Taipei, Taiwan, so her hopes for Scotland were high.

Chand was raised in Gopalpur, a rural village in eastern India with only intermittent electricity. The family home was a small mud hut, with no running water or toilet. Her parents, weavers who earned less than \$8 a week laboring on a government-issued loom, were illiterate. They had not imagined a different life for their seven children, but Chand had other ideas. Now, as she took the five-hour bus ride to Delhi from a training center in Punjab, she thought about her impending move to Bangalore for a new training program. She wondered if she would make friends, and how she'd manage there without her beloved coach, who had long been by her side, strategizing about how best to run each race and joking to help her relax whenever she was nervous. She thought little of the meeting in Delhi, because she assumed it was for a doping test.

But when Chand arrived in Delhi, she says, she was sent to a clinic to meet a doctor from the Athletics Federation of India — the Indian affiliate of the International Association of Athletics Federations (I.A.A.F.), which governs track and field. He told her he would forgo the usual urine and blood tests because no nurse was available, and would order an ultrasound instead. That confused Chand, but when she asked him about it, she recalls, he said it was routine.

Chand had no idea that her extraordinary showing in Taipei and at a national championship earlier that month had prompted competitors and coaches to tell the federation that her physique seemed suspiciously masculine: Her muscles were too pronounced, her stride was too impressive for someone who was only five feet tall. The doctor would later deny that the ultrasound was a response to those reports, saying he ordered the scan only because Chand had previously complained of chronic abdominal pain. She contends she never had any such pain.

Three days after the ultrasound, the federation sent a letter titled "Subject: Gender Verification Issue" to the Indian government's sports authority. "It has been brought to the notice of the undersigned that there are definite doubts regarding the gender of an Athlete Ms. Dutee Chand," the letter read. It also noted that in the past, such cases "have brought embarrassment to the fair name of sports in India." The letter requested the authorities perform a "gender verification test" on Chand.

Shortly after, Chand says, she was sent to a private hospital in Bangalore, where a curt woman drew her blood to measure her level of natural testosterone, though Chand had no idea that was what was being measured. Chand also underwent a chromosome analysis, an M.R.I. and a gynecological exam that she found mortifying. To evaluate the effects of high testosterone, the international athletic association's protocol involves measuring and palpating the clitoris, vagina and labia, as well as evaluating breast size and pubic hair scored on an illustrated five-grade scale.

The tests were meant to identify competitors whose chromosomes, hormones, genitalia, reproductive organs or secondary sex characteristics don't develop or align in the typical way. The word "hermaphrodite" is considered stigmatizing, so physicians and advocates instead use the term "intersex" or refer to the condition as D.S.D., which stands for either a disorder or a difference of sex development. Estimates of the number of intersex people vary widely, ranging from one in 5,000 to one in 60, because experts dispute which of the myriad conditions to include and how to tally them accurately. Some intersex women, for instance, have XX

chromosomes and ovaries, but because of a genetic quirk are born with ambiguous genitalia, neither male nor female. Others have XY chromosomes and undescended testes, but a mutation affecting a key enzyme makes them appear female at birth; they're raised as girls, though at puberty, rising testosterone levels spur a deeper voice, an elongated clitoris and increased muscle mass. Still other intersex women have XY chromosomes and internal testes but appear female their whole lives, developing rounded hips and breasts, because their cells are insensitive to testosterone. They, like others, may never know their sex development was unusual, unless they're tested for infertility — or to compete in world-class sports.

When Chand's results came in a few days later, the doctor said her "male hormone" levels were too high, meaning she produced more androgens, mostly testosterone, than most women did. The typical female range is roughly 1.0 to 3.3 nanomoles of testosterone per liter of blood, about one-tenth that of typical males. Chand's level is not publicly known, but it was above the 10-nanomoles-per-liter threshold that the I.A.A.F. set for female competitors because that level is within the "male range." As a result, officials said, she could no longer race.

In the two years since, Chand has been at the center of a legal case that contests not only her disqualification but also the international policy her lawyers say discriminates against athletes with atypical sex development. For Chand, who had never heard the words "testosterone" or "intersex," it has been a slow and painful education. When she was first told she was being barred because of her testosterone level, she didn't understand anything the officials were saying. "I said, 'What have I done that is wrong?'" she told me by phone in May through a Hindi translator. "Then the media got my phone number and started calling me and asking about an androgen test, and I had no idea what an androgen test was. The media asked, 'Did you have a gender test?' And I said, 'What is a gender test?'"

No governing body has so tenaciously tried to determine who counts as a woman for the purpose of sports as the I.A.A.F. and the International Olympic Committee (I.O.C.). Those two influential organizations have spent a half-century vigorously policing gender boundaries. Their rationale for decades was to catch male athletes masquerading as women, though they never once discovered an impostor. Instead, the athletes snagged in those efforts have been intersex women — scores of them.

The treatment of female athletes, and intersex women in particular, has a long and sordid history. For centuries, sport was the exclusive province of males, the competitive arena where masculinity was cultivated and proven. Sport endowed men with the physical and psychological strength that "manhood" required. As women in the late 19th century encroached on explicitly male domains — sport, education, paid labor — many in society became increasingly anxious; if a woman's place wasn't immutable, maybe a man's role, and the power it entailed, were not secure either.

Well into the 20th century, women were discouraged from participating in sports. Some medical experts claimed that vigorous exercise would damage women's reproductive capacity and their fragile emotional state and would make them muscular, "mannish" and unattractive to men. Critics fretted that athletics would unbind women from femininity's modesty and self-restraint.

As women athletes' strength and confidence grew, some observers began to wonder if fast, powerful athletes could even *be* women. In the 1936 Berlin Olympics, the runners Stella Walsh of Poland and Helen Stephens of the United States were rumored to be male impostors because of their remarkable athleticism, "male-like" muscles and angular faces. After Stephens narrowly beat Walsh in the 100-meter dash and posted a world record, Stephens was publicly accused of being a man, by Walsh or Polish journalists — accounts vary. German Olympics officials had examined Stephens's genitals before the event and declared her female. Four decades later, in an unexpected twist, an autopsy of Walsh revealed she had ambiguous genitalia.

In 1938, the gender of an athlete was again in dispute. The German high-jumper Dora Ratjen, a former fourth-place Olympian who won a gold medal at the European Athletics Championship, was suddenly identified as male, prompting Germany to quietly return the medal. When Ratjen's case became public years later — he claimed that the Nazis pressured him to pose as a woman for three years — it validated the growing anxiety about gender fraud in athletics. But in 2009, the magazine *Der Spiegel* investigated medical and police records and found Ratjen had been born with ambiguous genitals but, at the midwife's suggestion, was raised as a girl, dressed in girls' clothes and sent to girls' schools. Dora lived as a female until two years after the 1936 Olympics, when police were alerted to a train traveler in women's clothes who looked suspiciously masculine. With relief so apparent that the police noted it in their report, Ratjen told them that despite his parents' claims, he had long suspected he was

male. A police physician examined him and agreed, but reported that Ratjen's genitals were atypical. Ratjen changed his first name from Dora to Heinrich. But those details were unknown until recently, so for decades, Ratjen was considered a gender cheat.

By the mid-1940s, international sports administrators began requiring female competitors to bring medical "femininity certificates" to verify their sex. In the 1950s, many Olympics officials were so uneasy about women's participation that Prince Franz Josef of Liechtenstein, a member of the International Olympic Committee, spoke for many when he said he wanted to "be spared the unesthetic spectacle of women trying to look and act like men," writes Susan K. Cahn, a history professor at the University at Buffalo, in her book "Coming On Strong: Gender and Sexuality in 20th-Century Women's Sports." Others were particularly bothered by women in track and field because of the strained expressions on their faces during competition. Such female exertion violated the white middle-class ideal of femininity, as did the athletes' "masculinized" physiques, prompting Olympic leaders to consider eliminating those events for women.

In 1952, the Soviet Union joined the Olympics, stunning the world with the success and brawn of its female athletes. That year, women accounted for 23 of the Soviet Union's 71 medals, compared with eight of America's 76 medals. As the Olympics became another front in the Cold War, rumors spread in the 1960s that Eastern-bloc female athletes were men who bound their genitals to rake in more wins.

Though those claims were never substantiated, in 1966 international sports officials decided they couldn't trust individual nations to certify femininity, and instead implemented a mandatory genital check of every woman competing at international games. In some cases, this involved what came to be called the "nude parade," as each woman appeared, underpants down, before a panel of doctors; in others, it involved women's lying on their backs and pulling their knees to their chest for closer inspection. Several Soviet women who had dominated international athletics abruptly dropped out, cementing popular conviction that the Soviets had been tricking authorities. (More recently, some researchers have speculated that those athletes may have been intersex.)

Amid complaints about the genital checks, the I.A.A.F. and the I.O.C. introduced a new "gender verification" strategy in the late '60s: a chromosome test. Officials considered that a more dignified, objective way to root out not only impostors but also intersex athletes, who, Olympic officials said, needed to be barred to ensure fair play. Ewa Klobukowska, a Polish sprinter, was among the first to be ousted because of that test; she was reportedly found to have both XX and XXY chromosomes. An editorial in the I.O.C. magazine in 1968 insisted the chromosome test "indicates quite definitely the sex of a person," but many geneticists and endocrinologists disagreed, pointing out that sex was determined by a confluence of genetic, hormonal and physiological factors, not any one alone. Relying on science to arbitrate the male-female divide in sports is fruitless, they said, because science could not draw a line that nature itself refused to draw. They also argued that the tests discriminated against those whose anomalies provided little or no competitive edge and traumatized women who had spent their whole lives certain they were female, only to be told they were not female enough to participate.



Dora Ratjen in 1937. Ullstein Bild via Getty Images

One of those competitors was Maria José Martínez Patiño, a 24-year-old Spanish hurdler who was to run at the 1985 World University Games in Japan. The night before the race, a team official told her that her chromosome test results were abnormal. A more detailed investigation showed that although the outside of her body was fully female, Patiño had XY chromosomes and internal testes. But because of a genetic mutation, her cells completely resisted the testosterone she produced, so her body actually had access to less testosterone than a typical woman. Just before the Spanish national championships began, Spanish athletic officials told her she should feign an injury and withdraw from athletics permanently and without fuss. She refused. Instead, she ran the 60-meter hurdles and won, at which point someone leaked her test results to the press. Patiño was thrown off the national team, expelled from the athletes' residence and denied her scholarship. Her boyfriend and many friends and fellow athletes abandoned her. Her medals and records were revoked.

Patiño became the first athlete to formally protest the chromosome test and to argue that disqualification was unjustified. After nearly three years, the I.A.A.F. agreed that without being able to use testosterone, her body had no advantage, and it reinstated Patiño. But by then, her hopes for making the Olympics were dashed.

Dutee Chand was only 4 when she started running, tagging along with her sister, Saraswati, a competitive runner who liked to practice sprints along the local Brahmani River. Saraswati found training boring, so she recruited Dutee, 10 years her junior, to keep her company. For years, Dutee ran in bare feet — even on the village's mud-and-pebble streets — because she had to protect the only shoes she owned: flimsy rubber flip-flops that she knew her parents could not afford to replace.

When Dutee was about 7, her parents pressed her to stop running and learn to weave instead. But Saraswati argued that with Dutee's speed, she could earn more as a sprinter. Saraswati, who has since become a police officer, reminded her parents of the benefits her own running had brought to the family. Once the district government realized Saraswati's athletic potential, she, like other athletes, was given meat and chicken and eggs, food her family had not been able to afford. And she reminded them of the prize money she brought home whenever she did well in marathons. They agreed to let Dutee run.

Not long after, Saraswati used a string to measure Dutee's foot and took a bus to the nearest city, about 60 miles away, to find an affordable pair of sturdy sneakers for her sister. The ride took three hours, frequently picking up passengers carrying goats or chickens and large bundles. When Saraswati gave Dutee the sneakers the next morning, Saraswati told me over the phone

through a translator, Dutee yelled. “She asked me what can happen if she runs wholeheartedly. She asked if she would go abroad like me, and said she had never sat in a bus or a train, and asked where the money will come from for her to go abroad. I said that ‘if, with these shoes, you run well, you will be sent abroad from the money that will come to you, and not just that, but you’ll also get a tracksuit. So run!’ ”

In 2006, 10-year-old Dutee was accepted into a state-sponsored sports program more than two hours from the family’s home. Food, lodging and training were covered. She missed home but appreciated the dorm’s electricity, running water and indoor toilets. And she was happy she could send prize money to her parents.



1/5

1936 Stella Walsh and Helen Stephens Stephens, right, narrowly beat Walsh in the 100-meter dash at the Berlin Olympics. Both were rumored to be male impostors. Bettmann/Getty Images



That same year, though Dutee didn’t know it, a catastrophe was unfolding for another Indian sprinter. Santhi Soundarajan, a 25-year-old from southern India, finished second in the 800 meters at the 2006 Asian Games in Doha, Qatar, all the more impressive given her roots as a member of India’s impoverished “untouchable” caste. The previous decade, the I.O.C. and I.A.A.F. yielded to pressure by the medical and scientific community and stopped sex-testing every female athlete. But the groups retained the right to test an athlete’s chromosomes when questions about her sex arose and to follow that with a hormone test, a gynecological exam and a psychological evaluation.

In Soundarajan’s case, the media noted that she wasn’t just fast; she also had a deep voice and a flat chest. The day after Soundarajan’s race, the Athletics Federation of India drew her blood and examined her body. Some of her results were leaked to the media. Shortly after, Soundarajan was watching TV when she saw a news report that she had “failed” a sex test. Rejected by the local sports federations, stripped of her silver medal, tormented by ongoing scrutiny and unbearably embarrassed, she attempted suicide, reportedly by swallowing poison.

As Chand began competing in national athletics, another runner from a poor rural village, this time in South Africa, burst onto the international athletic stage. When Caster Semenya blew by her opponents in the 800-meter race at the 2009 African Junior Championships, her performance raised suspicions. Shortly after, sports officials tested her as she prepared for the World Athletics Championship. Unconcerned — she assumed the investigation was for doping — Semenya won gold again. Almost immediately, the fact that Semenya had been sex-tested was leaked to the press. Instead of attending what is normally the celebratory news conference, Semenya went into hiding. The I.A.A.F. spokesman Nick Davies announced that if Semenya was an impostor, she could be stripped of her medal. He added: “However, if it’s a natural thing, and the athlete has always thought she’s a woman or been a woman, it’s not exactly cheating.”

Fellow athletes, the press and commenters on social media scrutinized Semenya's body and made much of her supposed gender transgressions: her muscular physique, her deep voice, her flexed-biceps pose, her unshaved armpits, the long shorts she ran in instead of bikini shorts, in addition to her extraordinary speed. A story on Time magazine's website was headlined "Could This Women's World Champ Be a Man?" One of Semenya's competitors, Elisa Cusma of Italy, who came in sixth, said: "These kind of people should not run with us. For me, she is not a woman. She is a man." The Russian star runner Mariya Savinova reportedly sneered, "Just look at her." (The World Anti-Doping Agency would later accuse Savinova of using performance-enhancing drugs and recommend a lifetime ban.) The I.A.A.F. general secretary, Pierre Weiss, said of Semenya, "She is a woman, but maybe not 100 percent." Unlike India, South Africa filed a human rights complaint with the United Nations arguing that the I.A.A.F.'s testing of Semenya was "both sexist and racist." Semenya herself would later write in a statement, "I have been subjected to unwarranted and invasive scrutiny of the most intimate and private details of my being."

After nearly a year of negotiations (the details of which are not public) the I.A.A.F. cleared Semenya to run in 2010, and she went on to win the silver medal in the 2012 Olympics. She will be running in Rio. But the federation still faced condemnation over leaks, public smears and the very idea of a sex test. The I.A.A.F. maintained it was obliged to protect female athletes from having "to compete against athletes with hormone-related performance advantages commonly associated with men." In 2011, the association announced that it would abandon all references to "gender verification" or "gender policy." Instead, it would institute a test for "hyperandrogenism" (high testosterone) when there are "reasonable grounds for believing" that a woman may have the condition. Women whose testosterone level was "within the male range" would be barred. There were two exceptions: If a woman like Maria Patiño was resistant to testosterone's effects — or if a woman reduced her testosterone. This entails having her undescended testes surgically removed or taking hormone-suppressing drugs.

Not long after the policy went into effect, sports officials referred four female athletes from "rural or mountainous regions of developing countries" to a French hospital to reduce their high testosterone, according to a 2013 article in *The Journal of Clinical Endocrinology & Metabolism*. The authors, many of whom were physicians who treated the women, describe telling them that leaving in their internal testes "carries no health risk," but that removing them would allow the athletes to resume competition, though possibly hurt their performance. The women, who were between 18 and 21, agreed to the procedure. The physicians treating them also recommended surgically reducing their large clitorises to make them look more typical. The article doesn't mention whether they told their patients that altering their clitorises might impair sexual sensation, but it does say the women agreed to that surgery too.

Chand was unaware of any controversy surrounding Semenya or other intersex athletes. Her gender concerns were much more immediate: She saw other 15-year-old girls becoming curvier and heard them talk about getting their periods. She asked her mother why her body wasn't doing the same thing, and trusted her answer: Chand's body would change when it was good and ready.

In 2012, Chand advanced to a national-level athletic training program, which in addition to food and lodging provided a stipend. At 16, she also became a national champion in the under-18 category, winning the 100 meters in 11.8 seconds. The next year, she won gold in the 100 meters and the 200 meters. In June 2014, she won gold yet again at the Asian championships in Taipei.

Not long after that, she received the call to go to Delhi and was tested. After her results came in, officials told her she could return to the national team only if she reduced her testosterone level — and that she wouldn't be allowed to compete for a year. The particulars of her results were not made public, but the media learned, and announced, that Chand had “failed” a “gender test” and wasn't a “normal” woman. For days, Chand cried inconsolably and refused to eat or drink. “Some in the news were saying I was a boy, and some said that maybe I was a transsexual,” Chand told me. “I felt naked. I am a human being, but I felt I was an animal. I wondered how I would live with so much humiliation.”

As news spread that Chand had been dropped from the national team, advocates encouraged her to fight back. Payoshni Mitra, an Indian researcher with a doctorate in gender issues in sport who had advocated on behalf of other intersex athletes, suggested Chand send a letter to the Athletics Federation of India, requesting her disqualification be reversed. “I have not doped or cheated,” Chand said in Hindi, and Mitra, who would become Chand's government-appointed adviser, translated to English. “I am unable to understand why I am asked to fix my body in a certain way simply for participation as a woman. I was born a woman, reared up as a woman, I identify as a woman and I believe I should be allowed to compete with other women, many of whom are either taller than me or come from more privileged backgrounds, things that most certainly give them an edge over me.”

Mitra and others also urged Chand to take her case to the international Court of Arbitration for Sport — the Supreme Court for sports disputes — arguing that the I.A.A.F.'s testosterone policy was discriminatory and should be rescinded. She agreed. Over four days in March 2015, a three-judge panel heard Chand's appeal, as a total of 16 witnesses, including scientists, sports officials and athletes, testified.

Female athletes, intersex and not, wondered just how this case would affect their lives. At the hearing, Paula Radcliffe, the British runner who holds the women's world record for the marathon, testified for the I.A.A.F., saying elevated testosterone levels “make the competition unequal in a way greater than simple natural talent and dedication.” She added, “The concern remains that their bodies respond in different, stronger ways to training and racing than women with normal testosterone levels, and that this renders the competition fundamentally unfair.”

Madeleine Pape, a 2008 Olympian from Australia, testified for Chand. Pape lost to Caster Semenya in the 2009 World Championships, Semenya's last race before her sex-test results were made public. Pape had heard runners complain that Semenya was a man or had male-like advantages, and she was angry that Semenya seemed to win so easily. "At the time, I felt that people like Caster shouldn't be allowed to compete," Pape told me. But in 2012, Pape began work on a sociology Ph.D. focusing on women in sport. "With my running days behind me, I had the space to think more critically about all that," she says. "Until that point, I had no idea that the science of sex differences is extremely contested and has shifted over time, as have the regulations in sports, which change but don't improve as they try to get at the same questions."

Just what role testosterone plays in improving athletic performance is still being debated. At the hearing, both sides agreed that synthetic testosterone — doping with anabolic steroids — does ramp up performance, helping male and female athletes jump higher and run faster. But they disagreed vehemently about whether the body's own testosterone has the same effect.

I.A.A.F. witnesses testified that logic suggests that natural testosterone is likely to work the way its synthetic twin does. They pointed to decades of I.A.A.F. and I.O.C. testing showing that a disproportionate number of elite female athletes, particularly in track and field, have XY chromosomes; by their estimates, the presence of the Y chromosome in this group is more than 140 times higher than it is among the general female population. Surely, witnesses for the I.A.A.F. argued, that overrepresentation indicated that natural testosterone has an outsize influence on athletic prowess.

Chand's witnesses countered that even if natural testosterone turns out to play a role in improving performance, testosterone alone can't explain the overrepresentation of intersex elite athletes; after all, many of those XY female athletes had low testosterone or had cells that lacked androgen receptors. At the Atlanta Games in 1996, one of the few times the I.O.C. allowed detailed intersex-related data to be released, seven of the eight women who were found to have a Y chromosome turned out to be androgen insensitive: Their bodies couldn't use the testosterone they made. Some geneticists speculate that the overrepresentation might be because of a gene on the Y chromosome that increases stature; height is clearly beneficial in several sports, though that certainly isn't a factor for Chand.

In court, the I.A.A.F. acknowledged that men's natural testosterone levels, no matter how high, were not regulated; the rationale, it said, was that there was no evidence that men with exceptionally high testosterone have a competitive advantage. Pressed by Chand's lawyer, the I.A.A.F. also conceded that no research had actually proved that unusually high levels of natural testosterone lead to unusually impressive sports performance in women either. Nor has any study proved that natural testosterone in the "male range" provides women with a competitive advantage commensurate with the 10 to 12 percent advantage that elite male athletes typically have over elite female athletes in comparable events. In fact, the I.A.A.F.'s own witnesses estimated the performance advantage of women with high testosterone to be between 1 and 3 percent, and the court played down the 3 percent figure, because it was based on limited, unpublished data.

Chand's witnesses also pointed out that researchers had identified more than 200 biological abnormalities that offer specific competitive advantages, among them increased aerobic capacity, resistance to fatigue, exceptionally long limbs, flexible joints, large hands and feet and increased numbers of fast-twitch muscle fibers — all of which make the idea of a level playing field illusory, and not one of which is regulated if it is innate.



Chand, with her longtime coach, Nagapuri Ramesh, working to qualify for Rio. Sohrab Hura/Magnum, for The New York Times

Bruce Kidd, a former long-distance Olympic runner, told me in May that Olympians themselves sometimes joke that they're all freaks of nature, with one or another genetic abnormality that makes them great at what they do. Kidd, a Canadian who has long pushed for gender equity in sports, noted that there are also many *external* variables that influence performance: access to excellent coaching, training facilities, healthy nutrition and so on. "If athletic officials really want to address the significant factors affecting advantage, they should require all athletes to live in the same place, in the same level of wealth, with access to the same resources," he says. "Boy, oh, boy, there are so many unfair advantages many Olympians have, starting with who their parents are."

But the I.A.A.F. argued that testosterone is different from other factors, because it is responsible for the performance gap between the sexes. That gap is the very reason sports is divided by sex, the I.A.A.F. says, so regulating testosterone is therefore justified.

Chand's hearing, though, was about more than just testosterone. Implicitly, it questioned the decades of relentless scrutiny of female athletes — especially the most successful ones. Veronica Brenner, a Canadian who won a silver medal in freestyle skiing in 2002, told me she first learned that female Olympians had to pass a sex test when she arrived at the '98 Games in Nagano, Japan. "I said: 'Are you kidding?' I'd been competing my whole life, and my gender has never been questioned!" Brenner's test confirmed that she had XX chromosomes, and she was given what was commonly called a "femininity card" to prove she was the gender she claimed to be. But she was irked that despite the many advances of female athletes in the last half-century, powerful male athletes are celebrated and powerful female ones are suspect. "We'd hear comments all the time: 'She's really strong — she must be part guy.' "

Other critics see testosterone testing as simply the old "gender verification," the latest effort to keep out women who don't adhere to gender norms or have a standard female body. Katrina Karkazis, a bioethicist at Stanford University who is a leader of the international campaign against banning intersex athletes and who testified in Chand's case, says that if an athlete's androgen test shows she has high testosterone, she must undergo the same gynecological exam that has existed for decades. "The rationale behind the I.A.A.F.'s 'hyperandrogenism regulation' is to make it sound more scientifically justifiable and less discriminatory, but nothing in those exams has changed from the old policy except the name," she says. "It's still based on very rigid binary ideas about sex and gender."

Critics of the I.A.A.F. policy argue that if sports officials were truly concerned about fairness, they would quit policing a handful of women with naturally high testosterone and instead rigorously investigate athletes suspected of taking drugs that indisputably enhance performance. They note that in the last year, the I.A.A.F. has faced bribery and blackmail charges and widespread allegations that it intentionally ignored hundreds of suspicious blood tests.

Stéphane Bermon, an I.A.A.F. witness who took part in the efforts to identify females with high testosterone, acknowledged that doping was a significant threat to fairness but said that didn't negate the need to also regulate the participation of women with naturally high testosterone who may have an advantage. He offered an analogy: "Air pollution, like tobacco smoking, contributes to lung cancer, but one should never have to choose between these two before implementing prevention measures," he wrote in an email. "As a governing body, I.A.A.F. has to do its best to ensure a level playing field. ... These two topics are different but can lead to the same consequence, which is the impossibility for a dedicated athlete to compete and succeed against an opponent who benefits from an unfair advantage."



Dutee Chand Sohrab Hura/Magnum, for The New York Times

Last July, the Court of Arbitration for Sport issued its ruling in Dutee Chand's case. The three-judge panel concluded that although natural testosterone may play some role in athleticism, just what that role is, and how influential it is, remains unknown. As a result, the judges said that the I.A.A.F.'s policy was not justified by current scientific research: "While the evidence indicates that higher levels of naturally occurring testosterone may increase athletic performance, the Panel is not satisfied that the degree of that advantage is more significant than the advantage derived from the numerous other variables which the parties acknowledge also affect female athletic performance: for example, nutrition, access to specialist training facilities and coaching and other genetic and biological variations."

The judges concluded that requiring women like Chand to change their bodies in order to compete was unjustifiably discriminatory. The panel suspended the policy until July 2017 to give the I.A.A.F. time to prove that the degree of competitive advantage conferred by naturally high testosterone in women was comparable to men's advantage. If the I.A.A.F. doesn't supply that evidence, the court said, the regulation "shall be declared void." It was the first time the court had ever overruled a sport-governing body's entire policy.

Chand was thrilled. "This wasn't just about me," she said, "but about all women like me, who come from difficult backgrounds. It is mostly people from poor backgrounds who come into running — people who know they will get food, housing, a job, if they run well. Richer people can pay their way to become doctors, engineers; poor people don't even know about their own medical

challenges.”

Chand hoped that the ruling would prompt the I.O.C. to suspend its testosterone policy, too, so she would be eligible to try to qualify for the Rio Games. After all, the I.O.C. policy — which also called on national Olympic committees to “investigate any perceived deviation in sex characteristics” — was based on the same science that the court deemed inadequate.

In November 2015, the I.O.C. established new parameters for dealing with gender. But it never actually addressed whether it would suspend its testosterone policy, as the I.A.A.F. was forced to do. That ambiguity left intersex athletes in limbo. Finally, in late February, the I.O.C. said it would not regulate women’s natural testosterone levels “until the issues of the case are resolved.” It urged the I.A.A.F. to come up with the evidence by the court’s deadline so the suspended policy could be resurrected. It also said that to avoid discrimination, high-testosterone women who are ineligible to compete against women should be eligible to compete against men.

Advocates for intersex women were dismayed. “It’s ridiculous,” says Payoshni Mitra, the Indian researcher. “They say the policy is not for testing gender — but saying that a hyperandrogenic woman can compete as a man, not a woman, inherently means they think she really *is* a man, not a woman. It brings back the debate around an athlete’s gender, publicly humiliating her in the process.” Emmanuelle Moreau, head of media relations for the I.O.C., disagreed, writing in an email, “It is a question of eligibility, not gender or (biological) sex.”

A separate section of the I.O.C. gender guidelines addressed a different group of atypical women (and atypical men): transgender athletes. Unlike the intersex section, the transgender section stresses the importance of human rights, nondiscrimination and inclusion. It eschews most of the I.O.C.’s former requirements, including that trans competitors have their ovaries or testicles removed and undergo surgery so their external genitalia matches their gender identity. In the new guidelines, female-to-male athletes face no restrictions of any kind; male-to-female athletes have some restrictions, including suppressing their testosterone levels below the typical male range. And once they’ve declared their gender as female, they can’t change it again for four years if they want to compete in sports.

Reactions among trans advocates ran the gamut. Many trans advocates viewed the liberalized regulations as a victory. But some transwomen athletes who long ago had their testicles removed (and as a result, make virtually no testosterone) were unhappy with the policy; they argued that lifting the surgery requirement gave transwomen who still had testosterone-producing testicles an unfair advantage over transwomen who didn’t. And still other advocates said that requiring transwomen to suppress their testosterone below 10 nanomoles is premised on the very same claim about testosterone that the court rejected — that naturally made testosterone is the primary cause of men’s competitive advantage over women.

Without evidence that “male range” testosterone levels really do provide that advantage, some say it’s premature to base a policy on speculation — especially one that requires people to transform their bodies. In May, the Canadian Center for Ethics in Sports, which manages the country’s antidoping program and recommends ethics standards, issued trans-related guidelines for all Canadian sports organizations. The statement says policies that regulate eligibility, like those related to hormones, should be backed by defensible science. It adds, “There is simply not the evidence to suggest whether, or to what degree, hormone levels consistently confer competitive advantage.” And yet it’s hard to imagine that many female athletes would easily accept the idea of competing against transwomen athletes without those regulations in place.

Those debates are far from Chand’s thoughts. Her focus now is on making the most of the window the ruling provides: allowing her to try to qualify for next month’s Olympics without having to change her body. In the miserable months after her test results were revealed, Chand’s training time and concentration were interrupted, and her hope of ever competing seemed out of reach. Once the ruling was issued, though, she returned to the Indian national team, and intensified her training for the 100 meters, the 200 meters and the 400-meter relay. In addition to working out six hours a day, she tries to relax with naps and Facebook. She has made frequent trips to nations holding qualifying competitions. In May, she competed in India, China and Taiwan; in June, in Kazakhstan and Kyrgyzstan. She has until July 11 to meet the I.O.C. time requirement.

She is painfully aware that if she doesn't make this summer's Olympics, she may not have another chance. The I.A.A.F. may still come up with evidence that satisfies the court and would exclude women like her from competing without altering their bodies. Chand's best shot to qualify for Rio is in the 100 meters, which she must complete in 11.32 seconds or less. She remains one-hundredth of a second short.

Note: *On June 25, Dutee Chand qualified for the Rio Olympics, running the 100 meters in 11.30 seconds in Almaty, Kazakhstan, and breaking a national record for India. Later that day, she posted an even faster time of 11.24 seconds. She will be the first Indian woman to run the 100 meters in the Olympics since 1980.*