



ATHLETICS

# WHY DUTEE CHAND CAN CHANGE SPORTS

Why should a natural, inherent condition prevent one of India's most promising young sprinters from competing? It's a question at the heart of a global debate on gender and sports

BY RUDRANEIL SENGUPTA & DHAMINI RATNAM

The sprinter Dutee Chand leads a quiet, disciplined life. It involves attending classes for 9 hours at the Zonal Railway Training Institute in Bhusaval, a small town in Maharashtra almost 600km from Mumbai. At the institute's large, leafy campus, Chand is one of only three women training to be ticket-checkers. After classes, she heads back to her hostel room and pores over study material. She has pencilled notes—abbreviations and chapter headings—on the room walls and on white charts; a desk with a laptop is within arm's reach of her bed. It is a life some distance removed from what she has known so far, a life revolving around intense sprint training, workouts and competitions. It is even further removed from the storm now brewing—with her at its centre—that has the potential to change the world of sports. Though she has never com-

peted at the senior level, the 18-year-old Chand is well known. In June, in a breakthrough in her fledgling career, she won two gold medals at the Asian Junior Athletics Championships in Taipei, Taiwan. Bigger stages awaited her—she was set to compete at the International Association of Athletics Federations (IAAF) World Junior Championship in the US and her name was under consideration for the 2014 Commonwealth Games (CWG) in Glasgow. But on 12 July, just ahead of the world championships and the CWG, Chand was summoned by the doctor at the Sports Authority of India (SAI) training centre in Bengaluru, where she was training. A series of tests were run, and three days later, she was told she would not be able to compete. No reasons were offered. "My first thought was that I had been banned because I failed a dope test," Chand says. "But I have never doped." Confused and upset, Chand left for her home in Odisha. It was only there that she learnt, through

news channels, that she had failed a "gender test". Chand was completely bewildered by the news. It made no sense. "What she did have, and did not know about, is a condition called hyperandrogenism. Her body produces a larger amount of the androgen hormone testosterone than the average woman. She was barred from competing because IAAF, the governing body for world athletics, introduced a rule in 2011 which states that women who naturally produce testosterone at levels usually seen in men will be ineligible to compete as women. The extra hormone gives them an unfair athletic advantage. IAAF's reasoning went. Just before the 2012 Olympics in London, the International Olympic Committee (IOC) also adopted the rule. Athletes who had hyperandrogenism had two options: quit sports, or undergo a medical intervention involving surgery and long-term hormone-replacement therapy to lower androgen levels. Chand took the third option.

She decided to challenge the ruling at the the Court of Arbitration of Sports (CAS) in Lausanne, Switzerland. "What I have is natural," she says. "I have not doped. I don't deserve the ban. This should never happen to another girl again." Multiple cases of hyperandrogenism have come to light since the ruling came into effect in 2011, but no athlete has ever taken this step. These tests and their results are meant to be confidential, and athletes, fearing social shame and an end to their careers, quietly accept secretive medical intervention. Chand's act of defiance brought together an international group of scientists, former athletes and bioethicists, including Canadian Olympian and author Bruce Kidd, one of the world's leading activists for equality in sports, and medical anthropologist and author Katrina Karkazis from the Center for Biomedical Ethics at Stanford University, US. Kidd and Karkazis are part of an expert panel

who will testify for Chand. Jim Bunting, a lawyer who represents the Sport Dispute Resolution Centre of Canada, is working as SAI's legal counsel, pro bono. "I marvel at Dutee's courage and strength," Karkazis wrote in an email. By any reckoning, the odds were stacked against Chand's decision to fight back. She is the third of seven children born to a poor weaver family in Odisha's Chaka Gopalpur village. She spent her early childhood in a hovel; her parents, both weavers, earned less than ₹3,000 a month. When she was 4, she was inspired by her elder sister Saraswati's running prowess, and would run along with her on the banks of the Brahmani river that flowed past their village. She watched as Saraswati's sporting career—her elder sister became a state-level athlete—transformed the economic fortunes of her family. Saraswati even got a job with the police through the sports quota. By the time she was 10, Dutee was already impressive enough on a

track to win a scholarship to a government-run sports hostel in Bhubaneswar. Then she began winning everything. In 2013, she became the first Indian to reach the final of an international 100m event (at the IAAF World Youth Championships). She became the senior national champion in 100m and 200m the same year. This May, two months before her ban, she had broken the 14-year-old national junior record in 100m by a large margin. Sports was her key to a different life. "The pressure on athletes to remain eligible is extraordinary," Karkazis says. "Their sports career is the livelihood for their family. It is very hard to challenge this policy because it requires an interruption to one's career, and the toll that can take is huge." The challenge It was a breach of confidentiality that set everything in motion. On 16 July, the details of Chand's test and her name were made public by a newspaper. The leak could have had disastrous results, but it also brought the case to the attention of Payoshni Mitra, a Kolkata-based researcher and activist in gender issues in sports. Mitra got Chand's number and called her. "She was suspicious and confused," Mitra says. "She was remarkably stable when she spoke but she had no idea what was happening to her, and she said, 'I don't know why they are saying I'm not a girl. Why are they doing gender tests on me?'" Mitra told her not to use the term "gender test", but by then SAI had released a statement confirming that it had done a "gender test" on an athlete—it did not name Chand. Mitra contacted SAI. She met the director

general, Jiji Thomson, with whom she had worked earlier to rehabilitate another athlete whose career had been destroyed because of gender questions—the middle-distance runner Santhi Soundarajan. Soundarajan's story is like an inventory of everything that can go wrong when an athlete's most basic identity is questioned. She was born into a desperately poor Dalit family in Kathakurichi village in Tamil Nadu, and grew up in a house without electricity, running water, or a toilet. Her parents made a living working in brick kilns, a profession recently in the news for being widely regarded as being akin to slavery. Soundarajan's athletic talent, though, was spotted early, when she was in school, and it changed her life. By the time she was 15, she was living in Chennai on scholarship and being groomed as an elite athlete. Ten years and a handful of international medals and national records later, she finished second at the 2006 Asian Games in the 800m. It was by far the biggest win of her career—a glowing tribute to the overwhelming odds she had sprinted through to become an elite athlete. At the end of the race, Soundarajan, overcome with emotion and disbelief, lay flat on her back on the track. The triumph lasted less than 24 hours. The morning after the race, Soundarajan was called by the Athletics Federation of India (AFI) doctor, and made to undergo a test conducted by the Olympic Council of Asia (OCA) medical committee. The doctors



Miles to go: (clockwise from above) Dutee Chand leading the field in the 100m at the Junior Asian Athletics Championship this year; SAI chief Jiji Thomson; Santhi Soundarajan, whose running career was derailed by a gender test; and Chand goes for an evening run at the railway training institute in Bhusaval.

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did not tell her what it was for, but they took blood, and made her strip. The next day, again without any explanation, she was told to leave the Games. A few days later, back in India, Soundarajan saw footage of her race splashed across news channels, with a report that said she had failed a "gender test". Many of the reports suggested that Soundarajan was a man disguised as a woman who cheated her way to a medal. The AFI called to tell her that she was barred from sports, and that her Asian Games medal had been taken away. A few months later, Soundarajan drank a bottle of veterinary poison in her village. She was saved by a friend who rushed her to hospital. Then Soundarajan was forgotten. In 2011, Mitra, who was working in London, decided to interview her. In the course of the interview Mitra learnt that Soundarajan was never given her medical report (a serious breach of protocol—such reports are supposed to be handed over to the athlete first). Together, they filed a right to information (RTI) request for the report. Mitra made a documentary on Soundarajan to explain her condition. Soundarajan had female genitalia, but the chromosomal set-up of a man (XY instead of XX). She produced more testosterone than the average woman, but she was also insensitive to the hormone, which ran inertly through her. None of these conditions is uncommon—in fact they are far more common in elite sports than in average populations—and none of them proves that Soundarajan is not a woman. Mitra showed the documentary to sports officials in India, but got little response. In 2012, Soundarajan's story got another jolt when it was reported in a newspaper that she was working in a brick kiln. Suddenly, there was a wave of sympathy and support. The Union ministry of youth affairs and sports offered her a job as a coach. But questions about her gender continued to haunt her—when she was given admission to the coaching course at SAI's National Institute of Sports in Patiala, administrators denied her a place, saying they could accommodate her neither in the women's hostel nor in the men's hostel. Mitra found herself up against a wall—the then director general of SAI even suggested another gender test to resolve the issue. In early 2013, SAI got a new chief, Jiji Thomson, who took an unusually sympathetic view of the case, and ordered that NIS immediately take her in and put her in its guest house instead of the hostel. Mitra was relieved, when she took up Chand's case, to find that Thomson was still at the helm. She raised the issue with him, and Thomson took the unprecedented step of sending out a carefully drafted statement saying that Chand's gender was not in question, and she was being tested only for hyperandrogenism. "That statement had a bigger effect on the way the media reported the story than anything we had done for Soundarajan," Mitra says. Thomson took the bold step of making Mitra the official mediator for Chand, even though she had no affiliation with SAI or the sports ministry—"I knew my people were very unprofessional in things like this, and I knew Payoshni was the right person, so I asked her to take over," he says. She was sent to Chand's village to meet her, Mitra and Chand spoke on an overcast day sitting on the banks of the Brahmani, the very place where Chand had discovered her passion for running. "She was still very cheerful," Mitra says, "because that's the

way she is, but her family and her older sister (Saraswati) were very depressed. Dutee started opening up to me. She had many questions about the test, about her own body, about androgens." Neither Chand nor her family really understood what was happening, and why anyone would say their girl is not a girl. Other villagers too stood behind her. They told her she had that "thing"—essence, not genitalia—that made her a girl. Mitra and Chand travelled to New Delhi, where they hunkered down for a series of meetings with sports officials. The options were laid out for her: Quit sports or put yourself through medical intervention. "Dutee, Payoshni and I were locked up in a room talking about what to do for a long time," Thomson says. "At some point, Dutee broke down. Then we ate lunch together, and when we resumed talking, Dutee said, straight away, 'I don't want surgery or hormone therapy.'" "When I read that my condition is treatable, I thought they meant that I could take a medicine, like you take a painkiller," Chand says. "But when I was told that it would involve changing my body in some way, I didn't want to." Chand's decision produced the trigger for SAI to act. Thomson immediately began negotiations with the sports ministry to allow the challenge to be filed, listing carefully the potentially high expenditure of taking the case to CAS. "I told my minister, no one has ever challenged this before, this is absolutely unprecedented," Thomson says. The word spread. Karkazis, Kidd, Bunting, all got involved. Mitra spent all her time on the phone or writing mails. On 27 September, a Saturday, Thomson and Mitra waited anxiously for a go-ahead from Bunting to file the appeal with CAS. Chand had been officially barred on 29 August, and CAS rules mandate that an appeal must be filed within a month of the ban. Time was running out. "Then the call from Bunting came through in the evening," Thomson says. "I had stopped my officers from going home just for this. We immediately started the process for filing the appeal. The almost 5-hour time difference saved us. Those were tense last moments." The stage was set. What makes you a woman? Why women athletes need to be tested for eligibility is perhaps the last explosive question left in sports, and at its centre right now is the hyperandrogenism policy. Men and women both produce testosterone, but men typically have more than 10 times the amount in their body. The use of synthetic testosterone has been clinically proven to boost muscle growth and explosive power, and aid recovery from physical activity. Using synthetic testosterone is simply seen as doping, and there is agreement in the scientific or sporting community that this should not be permitted. Naturally produced testosterone, on the other hand, is a completely different ball game. It is neither an external, nor an artificial, aid. And even though it plays a central role in muscle growth, there is no consensus on the degree to which testosterone produced by the body aids athletes. "Testosterone is only one ingredient among many that affect athletic performance," Karkazis says, "and there is no scientific basis for claiming that it is either the singular or the most important dividing line between men and women athletes." Studies have shown that women athletes with Androgen Insensitivity Syndrome (AIS)—like Soundarajan, their bodies produce extra testosterone but

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cannot use it—are highly over-represented in elite sports. In 1996, a systematic chromosome screening of female athletes at the Atlanta Olympics found that one out of every 423 athletes had AIS—more than 200 times the estimated incidence in the general population. Some even had CAIS—the “C” stands for “Complete”—which means their bodies could not use any testosterone at all. More recently, during the 2011 IAAF World Championships in Daegu, South Korea, another systematic blood testing programme found similar rates of AIS in female athletes.

Martin Ritzen, emeritus professor at the Karolinska Institute, Sweden, and a former member of the IOC Medical Commission, who helped shape the hyperandrogenism rule, was one of the co-authors of a paper based on the Daegu tests, and published in *The Journal Of Clinical Endocrinology And Metabolism* in August. The paper states that “there is no clear scientific evidence proving that a high level of T (testosterone) is a significant determinant of performance in female sports...”

Ritzen did not respond to emails requesting an interview for this article. Arne Ljungqvist, IOC member and vice-president of the World Anti-Doping Agency, who was also part of the committee that worked on the hyperandrogenism rule, declined an interview, saying he will “not comment on an ongoing case”.

The principal logic behind the hyperandrogenism policy is that men and women produce distinctly different levels of testosterone, and these levels are responsible for the vast difference in their performance. But a large-scale, 2009 study on elite athletes conducted by GH-2000, a project co-funded by the IOC and the European Union through the Growth Hormone Research Society, found a significant overlap in testosterone values in men and women. Around 5% of the women tested in the “male range”, and 8% had levels above the “female range”. Even more tellingly, 25% of the men, including some Olympic medalists, were below the “male range”, with a large number testing in the “female range”.

The difference in male and female athletic performance, especially in explosive events like sprints, is truly large. The winner of the 2012 Olympic Women’s 100m sprint would not



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even qualify for the men’s event. But these differences are not explained by testosterone alone. “There is no stigma for men who are strong and fast,” says Karkazis. “There are no tests for men to weed out those who produce more testosterone than other men. Why not?”

The hyperandrogenism rule is unique in the sporting world for being the only policy that prohibits a natural phenomenon. In every other way, sports is an incredibly sophisticated and well-funded machinery aimed at recognizing and developing the innate gifts of athletes.

Michael Phelps, the swimmer who holds the record for the most number of Olympic gold medals won by a single athlete, has a rare genetic disorder called Marfan’s Syndrome, which is characterized by hyperflexibility, long limbs and long, thin fingers. The Finnish skier Eero Mäntyranta, who won seven Olympic medals in skiing in the 1960s, has a mutation in something called the EPOR gene, which improves the oxygen-carrying capacity of a person’s blood by 25-50%.

“Usain Bolt was born with very long legs. He completes the 100m race in 41 strides. His nearest competitor takes 45. Should we ban Bolt?” asks

Thomson. Just about every athlete at the elite level is a physical outlier.

Karkazis suggests that what is at stake here is not a scientific problem but a social anxiety. In a televised debate on Al-Jazeera on hyperandrogenism, Ritzen said women with hyperandrogenism have an “in-bom” error. Hida Voloria, the US-based chairperson of the Organization Intersex International, responded: “Fifty years ago, Norman Cox, an Olympic official, said that about black women who have a different physicality, that the IOC should create a special category of competition for them: the unfairly advantaged hermaphrodites.”

There is no reason to go back 50 years. Last month, the head of the Russian Tennis Federation and IOC member Shamil Tarpishev referred to Serena Williams, the women’s World No.1 in tennis, and her sister Venus as the “Williams brothers”, adding that “it’s scary when you really look at them”.

“Policing women’s testosterone exacerbates one of the ugliest tendencies in women’s sports today: the name-calling and insinuations that an athlete is ‘too masculine’, or worse, that she is a man,” says Kidd.

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**Outliers:** (extreme left) Serena Williams has often faced ridicule for being muscular; and South Africa’s Caster Semenya, whose case highlighted the problems with gender testing in sports.

**Bad science**

It is this very fear, that men masquerading as women will compete in women’s athletics events, that led to gender testing in the first place. It has a muddled and embarrassing history. While gender screening goes back to the 1936 Olympics, it became mandatory in 1966, partly in response to a Cold War paranoia that East European countries were sending men disguised as women to win medals. All female athletes were required to drop their pants and have their genitals tested. Two years later, amid outrage over the humiliation of these “nude parades”, the IOC switched to a DNA test. It was simple—men have XY chromosomes and women have XX. Except when they don’t.

The scientific community stood unified in opposition to the IOC, telling the sports body that there was just no way to divide men and women neatly by looking at their chromosomes since all kinds of things can and do happen when parents’ DNAs are lining up to form the genetic combination for a baby. By 1990, chromosome testing had been dropped.

Yet the fear of “masculine” women never went away. Caster Semenya went through the same ordeal in 2009, when she won the 800m at the IAAF World Championships in breathtaking fashion. A few weeks earlier, she

had been secretly, and without her knowledge, subjected to a gender test. As she was running the race, the test was leaked to the press. When she won, Time.com ran a headline which read, “Could this women’s world champ be a man?”

As she was subjected to intense and humiliating scrutiny, Semenya received overwhelming support from her country. The South African government pursued the case aggressively with IAAF and the IOC, and it came to light that IAAF’s gender policy did not have a single litmus test for determining sex. Instead, it relied on consensus, without defining the criteria that must be used. Yet it could investigate any athlete if anyone raised a question. Semenya was tested after a blog post called her a man (Chand too was tested after an anonymous complaint).

As in the case of Chand, people were appalled at these revelations. In July 2010, IAAF cleared Semenya to run again, and began to look yet again for a gender test. It came up with hyperandrogenism.

The fact remains that there is no single scientific marker that separates men from women, and this is the stumbling block for sports’ governing bodies. Alice Dreger, professor of clinical medical humanities and bioethics at the Feinberg School of Medicine, Northwestern University in Chicago, said in a 2009 *New Yorker* article on Semenya: “People always press me: ‘Isn’t there one marker we can use?’ No. We couldn’t then and we can’t now, and science is making it more difficult and not less, because it ends up showing us how much blending there is and how many nuances, and it becomes impossible to point to one thing, or even a set of things, and say that’s what it means to be male.”

Kidd advocates an elegant solution to the problem: If you say you are a woman, it is enough. In the world of sports, where scrutiny is anyway intense, this suggestion is not as fanciful as it may seem at first. There has never been a confirmed case of a man pretending to be a woman at an international athletic event.

“It is a far-fetched idea, a ghost concern that men will start competing as women,” Karkazis says. “People who suggest this are not thinking what it would mean for a man who does not feel himself to be a woman to live his life in and out of sports as a woman.”

**Under the knife**

What might have happened if Chand had succumbed to medical intervention to lower her androgen levels?

A study based on the treatment of four athletes who were found to have hyperandrogenism at the 2012 Olympics provides distressing testimony. The athletes were not named in the study, which

was published in *The Journal Of Clinical Endocrinology And Metabolism* in 2013, but were described as 18-21 years of age, tall, slim, muscular, flat-chested, and “from rural mountainous regions of developing countries”. They had “excessive pubic hair and clitoromegaly (enlarged clitoris)” and hidden testes but “none of them reported male sex behaviour”. To make them fit for competing as women, they were taken to a hospital in France where their gonads were removed, even though the study says, “...leaving male gonads in patients carries no health risk, each athlete was informed that gonadectomy would most likely decrease their performance level but allow them to continue elite sport...”

Gonadectomy (the removal of an ovary or testis) in women causes loss of bone and muscle strength, and may lead to diabetes, chronic fatigue, depression, and poor libido. It necessitates lifelong hormone replacement therapy. More chillingly, in the case of the four athletes, the gonadectomy was followed by a series of cosmetic surgeries that had nothing to do with lowering androgen levels: Their clitoris were partially removed, a practice that the medical community renounces, and they underwent “feminizing vaginoplasty”.

“When I read the paper, I was absolutely shocked,” Mitra says. “Why on earth would anyone need cliterodectomy? It seemed like appearance was more important than anything else. Does this woman look like a woman? Does she have breasts?”

**Can Dutee run?**

Chand is wearing a buttoned-down cream shirt and black jeans, as she walks back to her institute from the Bhusaval railway station. She has returned from a day-trip to a temple in a nearby town. She has an easy and wide smile that she breaks into quickly and often. She is small—5ft-nothing—and ties her hair in a severe ponytail. Waiting for her case to move forward, Chand has allowed her nails to grow, and painted them a dark pink. When she speaks, it is with a surety and softness that belies her age—she speaks fast, like she runs.

“I’ll leave sports but I will never change my body,” she says.

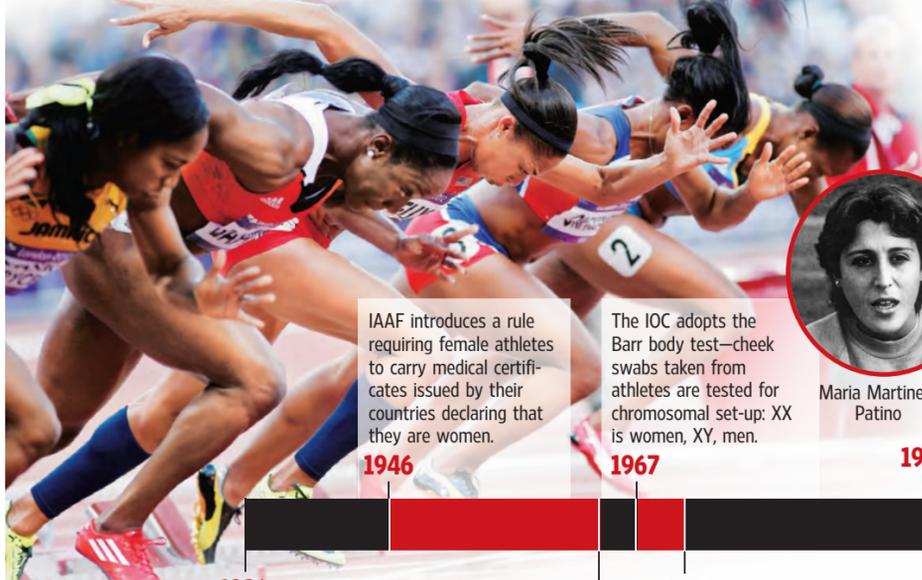
But then she adds: “My sister wanted me to earn a medal for India in the Olympics and I have to do that. I feel like there is a speed breaker in my life now. I just have to overcome this and I can go back to running.”

By the middle of next year, perhaps earlier, Chand will know if she can do what she loves best. If she is allowed to run again, it will be a victory worth more than an Olympic medal.

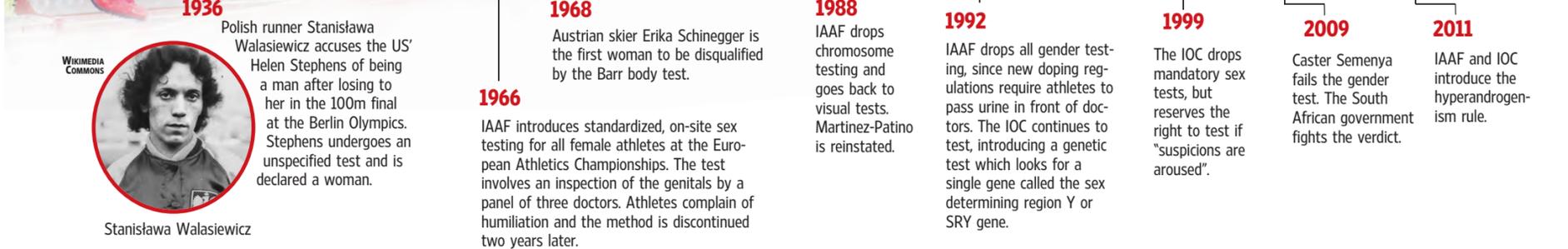
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**Not woman enough**

Gender testing in sports through the years



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Santhi Soundarajan fails the gender test after the 2006 Asian Games. She loses her medals.

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