

BY EMAIL

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Dear Andy

Thank you for agreeing to publish this reply on behalf of the IAAF to the two articles you have recently published on the IAAF's *Eligibility Regulations for the Female Classification (Athletes with Differences in Sex Development)* (the '**DSD Regulations**').

Original article:

Your original article, published on 30 April 2018 and titled '*Subterfuge continues with IAAF Differences of Sex Development Regulations*', was characterised as an important contribution to the debate by Roger Pielke Jr., who tweeted on 1 May 2018: '[I cannot recommend this too strongly, excellent work @Journo Andy](#)'.

Unfortunately, however, as I pointed out to you at the Sport Resolutions conference on 3 May, the article contained a number of very serious errors. For example:

- You claimed that the IAAF's previous Hyperandrogenism Regulations '[were struck out as unscientific](#)', because they were '[not backed by any science](#)'. In fact, the July 2015 decision of the CAS Panel in the *Chand* case was clear that Ms Chand was '[unsuccessful in her challenge to the underlying scientific basis of the Hyperandrogenism Regulations](#)' (award, para 552), because (among other things) the Panel was '[satisfied, to the requisite standard of proof, that there is a scientific basis in the use of testosterone as a marker for the purposes of the Hyperandrogenism Regulations](#)' (ibid, para 499).
- You quoted the assertion in a 2014 paper by Healy et al that there is a '[complete overlap between the sexes](#)' in testosterone levels. You failed to mention that Ms Chand's team cited the same paper to the CAS Panel for the same proposition, and the CAS Panel rejected that proposition, finding instead that, when the evidence is properly analysed, '[there is a significant difference in the testosterone levels of normal populations of males and females](#)' (para 494).
- You claimed that the CAS Panel found that '[females with elevated natural testosterone above 10 nmol/L do not enjoy such a significant advantage that it is necessary to exclude them from female competition](#)'. That is also wrong: the CAS Panel noted that there is '[a lack of clear data concerning the degree of the performance advantage that hyperandrogenic females enjoy over their non-hyperandrogenic peers](#)' (para 524), meaning that it could not decide whether or not it was significant enough to justify excluding them from female competition. Since the

IAAF bore the burden of proof on the point, the CAS decided the Hyperandrogenism Regulations should be suspended while the IAAF gathered evidence as to the degree of performance advantage such athletes had by virtue of their elevated testosterone levels (para 532).

- You asserted that ‘the IAAF carried out surgical, anatomical changes on four young female athletes ahead of the London 2012 Olympics under the previous Hyperandrogenism Regulations, who were told that such surgery was necessary to allow them to compete’. That was also wrong. The IAAF did not carry out any surgery on anybody. In addition, no one was told that they had to have surgery if they wanted to compete.
- You claimed that ‘Athletes are not allowed to appeal whether the Regulations ... are scientifically valid’. You called that ‘the clever bit, for which IAAF lawyers should take a bow’. In fact, clause 5.2 of the DSD Regulations specifically and expressly provides that an athlete and/or her member federation may challenge ‘the validity, legality and/or proper interpretation or application of the Regulations’ before the Court of Arbitration for Sport. The IAAF’s lawyers were not seeking in any way to immunise the Regulations from such challenge, including their scientific validity. You were just wrong.

The IAAF appreciates your withdrawing the original article and replacing it with a revised article that removes these and other errors. It would have been good if in the revised article you had acknowledged the errors you made in the original article, so that the record was corrected, but at least you have not repeated them.

The revised article

Unfortunately, your revised article (*‘Questions remain over IAAF Differences in Sex Development Regulations’*, published on 19 May 2018), fails to address the following points, even though they were put to you in writing before you published it:

- You stress that the elevated testosterone levels in DSD athletes are produced by their ‘natural physiology’. That is correct, but why do you fail to make clear to your readers that the ‘natural physiology’ of most DSD athletes includes male gonads (testes) that produce levels of circulating testosterone not in the normal female range (0.12 to 1.79 nmol/L in serum) but in the normal male range (7.7 to 29.4 nmol/L), producing (if the athlete is not androgen-insensitive) lean body mass and levels of circulating haemoglobin well above the normal female range and rather in the normal male range? If the intent is to be fair and balanced, and to inform your readers about the relevant objective facts, isn’t that a point that should be included?
- You note that the 2018 paper by Handelsman et al estimates that there is a greater than 9% advantage for DSD athletes in having testosterone levels in the normal male range rather than the normal female range. You compare this to a 2017 Bermon paper showing that higher testosterone levels correlated to superior sports performance of between 1.78% and 4.53% in five disciplines. You ask: ‘why is the advantage asserted in the 2018 study greater than the advantage asserted in the 2017 research?’ As I told you, it is because you are comparing apples with oranges. The 2017 paper compares performance among athletes with low levels of testosterone (at the lowest end of the sigmoid curve, where the response to dose is minimal), whereas the 2018 paper compares the impact of testosterone levels within the normal female range (0.12 to

1.79 nmol/L) to the impact of testosterone levels at the lower end of the normal male range (7.7 to 29.4 nmol/L), i.e., further up the sigmoid curve, where the response to dose is marked.

- Observational data reported by Bermon of performances of DSD athletes (i) before the Hyperandrogenism Regulations were in place, i.e., when their testosterone levels were in the normal male range; and (ii) while the Hyperandrogenism Regulations were in place (2011 to 2015), when their testosterone levels were suppressed to below 10 nmol/L, show an average drop in performance of 5.7%, which (as any elite athlete will tell you) is enormous. You assert that this evidence ‘appears to be based on athletes whose ability to endogenously produce testosterone has been removed’ (by surgical removal of their gonads). As I explained to you, however, that is not true in all of the cases reported, and in any event the issue is the degree of performance advantage conferred by the higher levels of endogenous testosterone, not the mechanism behind the drop in testosterone levels.
- You then change tack, asserting that requiring a DSD athlete to reduce her testosterone levels to below what is ‘appropriate for that individual’s unique physiology’ ‘could have serious implications for the health of XY females they [the DSD Regulations] apply to. This is because the DSD Regulations require them to reduce their natural testosterone levels, which is their primary source for protein cell synthesis’, thereby affecting ‘the body’s ability to regenerate itself’. This is a very serious claim, and yet you do not cite any support for it, despite my specific request that you do so. The doctors consulted by the IAAF, who are highly experienced in dealing with DSD cases, are not aware of any evidence that lowering the serum testosterone levels of DSD athletes to below 10 or 5 nmol/L could have adverse health effects for those athletes. To the contrary, in the 30+ DSD cases that the IAAF has handled to date, the athletes experienced a drop in their sports performance when they lowered their testosterone levels, but did not suffer any adverse medical side effects from doing so. Furthermore, to the (limited) extent that Ms Chand’s (non-medical) expert argued there were adverse side effects, her claim was refuted by the medical experts called by the IAAF, and the CAS did not accept her evidence in its award, instead specifically ruling that ‘the Regulations are administered in confidence and with care and compassion’, and can benefit athletes by identifying underlying medical conditions that require urgent treatment (award, para 507).
- Against this, the only ‘evidence’ you cite for your assertion that requiring DSD athletes to reduce their testosterone levels below 5 nmol/L if they want to compete in certain events could harm their health is as follows:
 - You speculate that the elbow injury suffered by trans female weight-lifter Laurel Hubbard at the 2018 Commonwealth Games may have been due to her previous suppression of her testosterone levels. You were at the Sports Resolutions conference earlier this month and asked Mike Irani (Chairman of the IWF Medical Committee) a question on another topic when he was on the podium, but you did not ask him if there was any basis for this particular speculation. I did, and he told me that her injury had nothing to do with her testosterone suppression.
 - You note that Joanna Harper says that of the eight trans females she studied, ‘after transition, runner four began to experience a significant number of injuries which prevented her from training as rigorously as she previously

had'. You again speculate that this may have been due to the reduction in her testosterone levels as part of her transition. There is no basis for such speculation in the paper, and I have checked with Joanna Harper, who confirms that it is baseless. She points out: "Training for distance races at the sub-elite level involves a substantial injury risk, and the fact that one out of eight subjects in my study had her results significantly impacted as a result of injury is consistent with injury rates among the entire sub-elite population. There are other subjects in this cohort who managed to train and race at a consistently high level for much longer than five years after a transition to low testosterone levels'.

- You say the experience of Harper's runner four 'echoes the experiences of Sloan Teeple'. But as best I can tell from your article, Sloan Teeple is neither trans female nor a DSD female, but rather a cisgender XY male who specialises in treating males with low testosterone. If so, how does his experience support your assertion that lowering testosterone in DSD females to below 5 nmol/L could adversely affect their health?
- Finally, you mention Kristen Worley, whom you describe as a trans XY female who had a gonadectomy and then required doses of exogenous testosterone that took her circulating testosterone above the normal female range, in order to preserve her health and to allow her to train and compete. I am not familiar with Ms Worley's case, but I pointed out to you that respected bodies such as the Endocrine Society and the World Professional Association for Transgender Health recommend that trans females be given hormonal treatment to reduce their testosterone levels down to the normal female range. Why would they recommend that, if doing so presented serious health risks for trans females? Again, I am not sure why you did not think it worth mentioning this in your article, for sake of fairness and balance.
- You say: 'If the IAAF is so confident that the DSD Regulations are fair and proportionate, then why limit challenges to the CAS?' The answer is that, as with all sports rules that apply globally, it is critical to obtain a definitive ruling from one authoritative body, rather than a range of different decisions from different courts and tribunals across the globe, which would lead to uneven application of the rule and so deny athletes a level playing field. And the Court of Arbitration for Sport has been set up to be that authoritative body. Its list of arbitrators includes plenty of high quality jurists who are obviously capable not only of understanding the science (for example, the chair of the CAS Panel in the *Chand* case was not only a serving federal judge in Australia but also has a PhD in Biochemistry and remains active in that field), but also of conducting the balancing exercise that is necessary between the desire to allow DSD athletes to participate in sport and the right of non-DSD athletes to fair and meaningful competition against competitors who do not have the same hormonal advantages as male athletes.
- With respect, your suggestion that the outcome in the *Chand* case is a 'scandal' that shows CAS is not fit to hear such cases is hopelessly confused:
 - You say that Ms Chand 'suffered an 11 month suspension from international competition because of the Hyperandrogenism Regulations, which should not have been applicable to her in the first place due to her AIS [Androgen Insensitivity Syndrome]'. As I explained to you, the IAAF is not aware that Ms Chand has AIS. In particular, Ms Chand never argued at CAS that the

Hyperandrogenism Regulations did not apply to her because she has AIS. If you are right that she has AIS to such a degree that the Hyperandrogenism Regulations did not apply to her, then any period of exclusion from the sport was entirely self-inflicted on her part. We can only speculate as to why she would do that. But surely someone wishing to cover this issue in a fair and balanced way would note this anomaly, rather than ignore it or, worse, try misguidedly to use it against the IAAF, as you have done.

- It is also disappointing that you failed to note in your article that (as I explained to you) when Ms Chand asked to be allowed to compete first at national level and then at international level while her challenge was pending, the IAAF did not oppose her application but instead consented in each case. Nor (according to the evidence in that case) was Ms Chand ever on the list of athletes selected to compete for India in the 2014 Commonwealth Games.
- Finally, you assert that 'the CAS has allowed the IAAF to terminate Chand's case by promulgating new Regulations that are not applicable to her', as if this was some clever ruse on the IAAF's part, without noting that (as again I explained to you) the IAAF asked the CAS to retain jurisdiction over the matter and to consider and rule on the merits of the DSD Regulations, but Ms Chand did not want to participate any further, and the CAS took the view that in those circumstances it could not continue with the case.

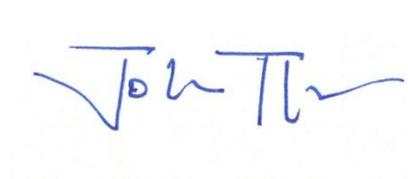
There are many other points in your revised article that the IAAF takes issue with, but for now I will simply address your complaint that the IAAF treats a DSD athlete's elevated levels of endogenous testosterone as an unfair advantage, when there are many other 'natural' advantages that it does not seek to prohibit (you mention height advantages in high-jumping, and potential advantages of certain ethnicities in other events):

- As bio-ethicist Tom Murray explains in his new book *'Good Sport'*, competition categories exist 'to select from among the myriad differences between players the ones that should affect outcomes'. In other words, sports governing bodies divide competition into categories based on age, weight, sex, etc. in an effort to ensure that the outcome is determined by factors that their stakeholders find meaningful (natural talent, determination and courage), and not by factors that they do not consider meaningful (such as the enormous physical advantages that a heavyweight boxer has over a flyweight). That is also why Paralympic sports have so many different classifications in each event (so that outcomes are determined by ability and dedication, not by degree of disability).
- Sex differences in physical attributes such as muscle size and strength and circulating haemoglobin levels give male athletes an insurmountable competitive advantage over female athletes in sports where size, strength and power matter. These advantages (which translate, in athletics, to an average 10-12% performance difference across all disciplines) make competition between men and women as meaningless and unfair as an adult competing against a child or a heavyweight boxer competing against a flyweight. Only men would qualify for elite-level competition; the best female athlete would not come close to qualifying. Therefore, as the CAS Panel found in *Chand*, 'it is legitimate and necessary to divide athletes into male and female categories', in order to safeguard the right of female athletes 'to engage in meaningful competition by competing on a level playing field' (award, paras 230, 510). Failing to do so risks discouraging female athletes from entering, or from making the extreme sacrifices required to excel in, the sport.

- As the CAS Panel in *Chand* found, the evidence shows that the difference in testosterone levels is 'a key reason for and measure of male athletic advantage' (para 515). More specifically, the physical advantages enjoyed by male athletes are due to the fact that they have testes that produce testosterone in amounts that circulate in serum in the range 7.7 to 29.4 nmol/L, whereas female athletes have ovaries that produce much lower levels of testosterone, in the range 0.12 to 1.79 nmol/L.
- Due to conditions referred to as 'differences in sex development' (most often, 5- α reductase deficiency, or partial androgen insensitivity), an XY baby's testes may not descend from the abdomen, so that it presents on birth with female or ambiguous genitalia, and so may be assigned the female sex. At puberty, however, the testes start producing the much larger levels of testosterone mentioned above, which (unless the XY female is completely androgen-insensitive) will have an androgenising effect on her body and will increase her circulating haemoglobin, in the same way as happens to an XY male at puberty.
- The evidence gathered by the experts consulted by the IAAF (both peer-reviewed research and observational data from the field) suggests that having levels of circulating testosterone in the normal male range rather than in the normal female range gives a female DSD athlete a performance advantage of 9%+ over a female athlete with testosterone levels in the normal female range (which is an enormous difference in events where milliseconds count). The effects are most clearly seen in races over distances between 400m and one mile, where the combination of increased lean body mass and elevated circulating haemoglobin appears to have the greatest combined impact. To maintain confidentiality of the athletes involved, the IAAF cannot cite the evidence from the field in detail, but it is clear-cut.
- The IAAF fully respects the dignity and privacy of female DSD athletes, and their right not to have their sex questioned in any way. It will not tolerate witch-hunts or stigmatisation of athletes or other forms of improper discrimination. But as Tucker and Collins explain: 'authorities must defend equality of competition in the female category when the equality is questioned as a result of a physiological factor that challenges the basis for the gender categories in the first place'. That is why the IAAF polices the hormonal advantage enjoyed by female DSD athletes when it does not police certain other 'natural' advantages, such as height or ethnicity. If it is not fair and meaningful for a female athlete to have to compete with a male athlete whose gonads produce 10-30 times more testosterone than she does, so too it is not fair and meaningful for that female athlete to have to compete with a DSD athlete whose gonads also produce 10-30 times more testosterone than she does. Treating like cases alike and different cases differently means requiring such DSD athletes, if they wish to compete in the female category in the events covered by the DSD Regulations, to reduce their natural testosterone levels down from the normal male range to below 5 nmol/L. Quoting Tucker and Collins again: 'Attempting to maintain the separate gender classifications, but failing to appropriately manage where individuals with DSDs and potential performance advantages should compete would be analogous to having a system where weight classifications exist, but then waiving the weight limit for certain individuals who cannot reduce their weight enough to fit into the required category. It is for this reason that sports-governing bodies are compelled to grapple with the issue of DSDs and classification, and simply dismissing them as naturally occurring advantages in performance would compromise the integrity of the sport'.

The IAAF has no issue with people challenging its position and/or its reasoning, but it would hope that media commentary would be objective and balanced. I therefore thank you again for agreeing to print this reply to your two articles, and hope that it helps your readers to understand the issues underlying the DSD Regulations.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Jonathan Taylor', written over a light blue grid background.

Jonathan Taylor QC
Partner
For and on behalf of Bird & Bird LLP