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Authors' reply to Richardson & Chen: Comment on "Sport and Transgender People: A Systematic Review of the Literature Relating to Sport Participation and Competitive Sport Policies"

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Dear Editor,

We would like to thank you for the opportunity to respond to the letter by Richardson and Chen with regard to the systematic literature review we published in 2017 surrounding transgender sport participation and policies [1]. Within their letter, Richardson and Chen raise two points for discussion. First, they contest the conclusion they believe us to have made around transgender females having no athletic advantage at any stage of medical transition compared to cisgender female athletes. Second, they argue that transgender policies relating to sports that require the physical component of strength, power, size, combat skills and speed have been omitted from our review [2].

Transgender female advantage

Richardson and Chen claim that the conclusion from our evidence review is that transgender females do *not* have an athletic advantage. We do not come to such a conclusion in our 2017 article, instead we state that there is currently no direct physiological performance-related data with transgender females (transgender males, or gender diverse people) that would support the policy that is implemented by the International Olympic Committee (IOC) and other sporting organisations. We suggest in our review that until there is such evidence, sporting bodies should consider whether their transgender policy is 'fair' [1].

Richardson and Chen contest the conclusion about transgender female advantage, which they wrongly believe us to have come to using unreliable evidence. Throughout their letter, they are reliant on sensationalist media reports about athletes whose performance has come under scrutiny due to their gender identity. For example, they claim that Laurel Hubbard has an athletic advantage over cisgender competitors due to physiological adaptations and retained skill development, however, they aren't able to substantiate this claim with empirical and scientific literature. A question that remains unanswered for now is whether these athletes do have an unfair advantage as a direct result of their gender identity and having undergone gender-affirming medical treatment. This further supports the recommendation that we made in our article for the need for physiological performance-related research with transgender people throughout their medical transition [1]. This will enable fair sport policy for transgender people to be developed and the playing field levelled.

We also need to consider whether the *perceived* unfair athletic advantage of transgender females is any greater than the advantage held by cisgender athletes. For example, Michael Phelps possesses many physiological characteristics (large arm span, long torso, etc) that mean he excels in his sport, winning fourteen gold medals across two Olympic Games. However, his advantage isn't perceived as unfair, despite it being physiological, and therefore there appears to be disagreement about what constitutes an 'unfair' athletic advantage with regard to competitive sport [3].

Transgender sport policy

In their letter, Richardson and Chen question why some policies have been omitted from our systematic review. In the original article, we were transparent about the search criteria used to find such policies and therefore it is the case that these sports did not have a transgender sport policy at the time of the review (2017) [1]. Regardless, such sports would be required to follow the policy outlined by the IOC regarding transgender athletes [4]. We agree that transgender athletes will have differing experiences due to differences in regulations across sport policy. We highlighted this within our original article and while these policies are not underpinned by high quality evidence, if and when such evidence is produced it is likely that it will dictate different regulations depending on the sport in question.

Richardson and Chen also make reference to a discussion on powerlifting and transgender sport policy by United States Powerlifting. Here, biological differences between cisgender males and females are mentioned as a reason why transgender female athletes should be excluded from mainstream sport. Empirical evidence is used here to support the claim, however only two studies are cited both of which are outdated, only concern cisgender participants and do not include performance-related data. As the field advances and more contemporary physiological performance-related data is produced, it may be that some sports lend themselves well to have size, weight or ability categories rather than being segregated by binary gender. Such a change would be in accordance with the increased recognition that both biological sex and gender are not binary constructs [5-7]. Competitions of this nature are emerging, such as the all-gender

inclusive ‘Limitless Strength Competition’ based within the United Kingdom. In this competition, categories are devised by ability rather than binary gender.

In their recommendations, Richardson and Chen suggest a trans category within sport [2]. This would be inappropriate for several reasons. First, there is no evidence to suggest such a separate category, with subdivisions based on stage of medical transition, would be necessary. In fact, it is well established and supported by the IOC that genitalia do not confer an athletic advantage. In accordance with this, the IOC removed the requirement for genital-affirming surgery for transgender competitors in their most recent policy [4]. Second, as outlined in our article, transgender people face a disproportionate number of barriers to participating and competing in sport compared to cisgender people. When transgender people were asked about trans specific categories, some felt that these spaces were exclusionary and instead advocated that we should be focusing on developing inclusive environments in sport to ensure it is accessible to all [8].

Compliance with Ethical Standards

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Conflict of Interest:

Bethany Jones, Jon Arcelus, Walter Pierre Bouman and Emma Haycraft declare they have no conflict of interest with the content of this letter.

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