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Strength, power and aerobic capacity of transgender athletes: a cross-sectional study

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 Strength, power and aerobic capacity of transgender athletes: a cross-sectional study

Co-authored by Blair Hamilton, Andrew Brown, Stephanie Montagner-Moraes, Cristina Comeras-Chueca, Peter G Bush, Fergus M Guppy, Yannis P Pitsiladis

Abstract

Objective: The primary objective of this cross-sectional study was to compare standard laboratory performance metrics of transgender athletes to cisgender athletes.

Methods: 19 cisgender men (CM) (mean±SD, age: 37±9 years), 12 transgender men (TM) (age: 34±7 years), 23 transgender women (TW) (age: 34±10 years) and 21 cisgender women (CW) (age: 30±9 years) underwent a series of standard laboratory performance tests, including body composition, lung function, cardiopulmonary exercise testing, strength and lower body power. Haemoglobin concentration in capillary blood and testosterone and oestradiol in serum were also measured.

Results: In this cohort of athletes, TW had similar testosterone concentration (TW 0.7±0.5 nmol/L, CW 0.9±0.4 nmol/), higher oestrogen (TW 742.4±801.9 pmol/L, CW 336.0±266.3 pmol/L, p=0.045), higher absolute handgrip strength (TW 40.7±6.8 kg, CW 34.2±3.7 kg, p=0.01), lower forced expiratory volume in 1 s:forced vital capacity ratio (TW 0.83±0.07, CW 0.88±0.04, p=0.04), lower relative jump height (TW 0.7±0.2 cm/kg; CW 1.0±0.2 cm/kg, p<0.001) and lower relative $\dot{V}O_2$ max (TW 45.1±13.3 mL/kg/min/, CW 54.1±6.0 mL/kg/min, p<0.001) compared with CW athletes. TM had similar testosterone concentration (TM 20.5±5.8 nmol/L, CM 24.8±12.3 nmol/L), lower absolute hand grip strength (TM 38.8±7.5 kg, CM 45.7±6.9 kg, p=0.03) and lower absolute $\dot{V}O_2$ max (TM 3635±644 mL/min, CM 4467±641 mL/min p=0.002) than CM.

Conclusion: While longitudinal transitioning studies of transgender athletes are urgently needed, these results should caution against precautionary bans and sport eligibility exclusions that are not based on sport-specific (or sport-relevant) research.

[Access the full study here](#)

[For a summary of the research, click here](#)



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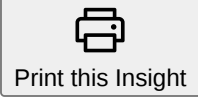
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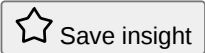
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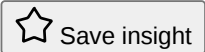


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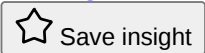


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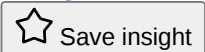


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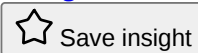
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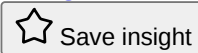
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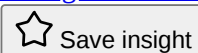
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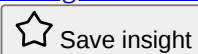
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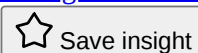
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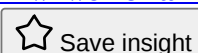
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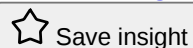
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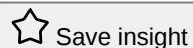


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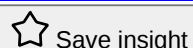


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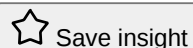


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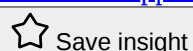


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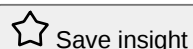


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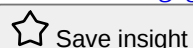


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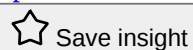
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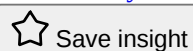
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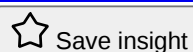


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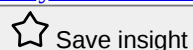
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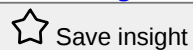
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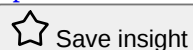


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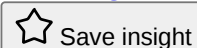
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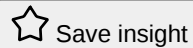
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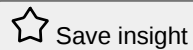
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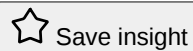
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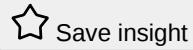
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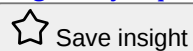
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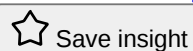
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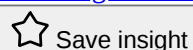
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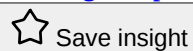
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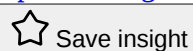
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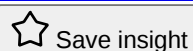
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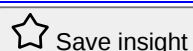
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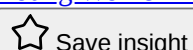
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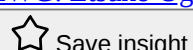
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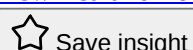
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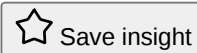
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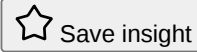
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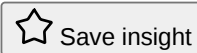


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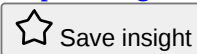


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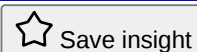


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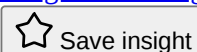
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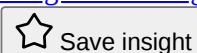


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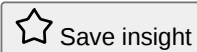


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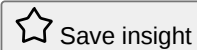
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IWG: Helen Parker - Transgender competitors in women's sport - Change for the better?

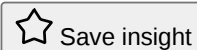
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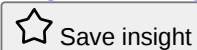


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Insights to Young Women's Participation - Webinar #3 "Focus on Wellbeing and creating a safe environment"

By Rachel Howells - Sport New Zealand

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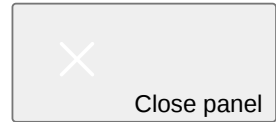
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