

## Natalie Hardaker

BSc (Hons), PhD candidate at AUT SPRINZ



**Research specialisation:** Sex differences; Concussion; Recovery.

**Thesis title:** The impact of the Female Athlete's sex hormones on Sports Related Concussion.

**Supervisors:** Professor Patria Hume (AUT), Dr Stacy Sims (Uni, of Waikato), Professor James Selfe (Manchester Metropolitan University).

**Experience:** Nat is originally from Yorkshire in the UK; and has 15 years of mixed clinical and research experience in the area of Sports injury prevention and rehabilitation including working as research assistant to Professor James Selfe at the University of Central Lancashire. Nat led several research projects focusing on patellofemoral pain, cryotherapy and thermoregulation. Other relevant experience includes working in the University Sports Injury Clinic alongside other healthcare professionals. On moving to New Zealand Nat secured a role in the research team at ACC and has since transitioned into ACC Injury Prevention focusing on work in the sports portfolio. Nat currently leads the Sports Collaboration Group (cross code group to address injury issues and management in sport) and has been actively involved in the development of the ACC National Guideline for Concussion in Sport. Nat is a current member of Sports Medicine New Zealand – Wellington Branch committee.

**Research overview:** Nat has always had an interest in 'special populations' (adolescents and females) in sport, and is increasingly driven to understand the impact of the female physiology on injury risk, recovery and performance in sport.

**Research publications:** 24 peer reviewed publications and conference contributions, including;

Hume PA, **Hardaker N.**, et al. Sport Concussion in New Zealand: ACC National Guidelines. In: Corporation AC, editor. First ed. Wellington: Accident Compensation Corporation; 2015. p. 18.

Theadom A, Starkey N, Dowell T, Hume P, Kahan M, McPherson K, Feigin V, Barker-Collo S, McPherson K, Kydd R, Barber P, Parag V, Brown P, Starkey N, Dowell A, Kahan M, Theadom A, Ameratunga S, Christey G, Jones K, Jones A, **Hardaker N**, Te Ao B, Sports Related Brain Injury in the General population; and epidemiological study. Journal of Science and Medicine in Sport (2014) 17(6)

Selfe J, Sutton C, **Hardaker N**, Greenhalgh S, Karki A, Dey P (2010) Cold Females a Distinct Group of Patellofemoral Pain Syndrome Patients? Journal of Orthopaedic and Sports Physical Therapy 40 (3) A42

Selfe J, **Hardaker N**, Whittaker J, Hayes C (2009) An investigation into the effect on skin surface temperature of three cryotherapy modalities. Thermology International 19 (4) 121-126

Kennet J, **Hardaker N**, Hobbs S, Selfe J (2007) Cooling efficiency of 4 common cryotherapeutic agents. Journal of Athletic Training 42 (3) 343-348

**Hardaker N**, Selfe J, Richards J, Sullivan I, Moss A, Jarvis S, (2007) The relationship between skin surface temperature measured via non-contact thermal imaging and intra-muscular temperature of the rectus femoris muscle. Thermology International 17 (1) 45-50

**Refereed conference contribution:**

Hardaker N, Hume P, Sims S, Sex Differences in Sports Related Concussion. 3<sup>rd</sup> Female Athlete Health Symposium: Youth in the Spotlight. Auckland, New Zealand April 2019.

Hardaker N, Selfe J, Richards J, Sullivan I, Moss A, Jarvis S, Relationship Between Intramuscular Temperature and Skin Surface Temperature as Measured by Thermal Imaging Camera. 10th European Congress of Thermology Zakapone Poland Sept 2006.

Hardaker N, Karki A, Karppi P, Ekberg J, Selfe J A thermographic investigation of skin temperature changes in response to a thermal washout of the knee in healthy young adults. The BSR Annual Meeting and the BHRP Spring Meeting, a joint meeting with the German Society for Rheumatology Annual Meeting, Birmingham, April 2005; first prize poster presentation.



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