**RUGBY CODES RESEARCH GROUP – CO-LEADER**



**Dr Aaron Uthoff PhD**

**Research specialization:** Sports performance and injury prevention with a specialization in developing sprint and change of direction ability

**Experience:** Aaron is a Research Fellow at Auckland University of Technology where he lectures on the principles and applications of strength and conditioning. He is also a strength and conditioning coach specializing in the development of speed and agility for team and individual sport athletes. He received a Master of Science in Performance Psychology from the University of Edinburgh and a Doctor of Philosophy in Sport and Exercise Science from Auckland University of Technology. He is a Certified Strength and Conditioning Specialist with 9 years of experience working with athletes from the youth amateur grades through to Olympic medalists, with stints at the University of Arizona, Scottish Athletics, New Zealand Athletics, and Tauranga Boys’ College.

**Research overview:** Cross-pollination of novel physiological and cognitive training techniques to enhance performance and reduce injury risk. My previous research focused on the unique effects of backward running and wearable resistance as tools to mitigate injury and improve physical performance, while my current suite of research is aimed at improving the diagnostic capabilities of change of direction tests, investigating training modalities to optimize striking force in combat athletes, determining the interactions between neck muscle latency and head trauma in rugby athletes, and exploring the role cognitive load has on physical performance.

**Postgraduate supervision:** Currently 5 PhD & 2 Masters students

**Research publications:** 26 peer-reviewed journal articles and 1 book chapter. Examples representative of Aaron’s ongoing work include:

1. Lenetsky, S, **Uthoff, A,** Coyne, J, & Cronin, J. (2021). A review of striking force in full-contact sport athletes: Methods of assessment. *Strength Cond J, Epub Ahead of Print*. DOI: 10.1519/SSC.0000000000000643.
2. Feser, EH, Neville, J, Bezodis, N, Macadam, P, **Uthoff, AM,** Nagahara, R, Tinwala, F, & Cronin, JB. (2021) Waveform analysis of shank loaded wearable resistance during sprint running acceleration. *J Sports Sci, 39*(17), 2015-2022. DOI: 10.1080/02640414.2021.1912966.
3. Forster, J, **Uthoff, A,** Rumpf, MC, Cronin, J. (2021). Advancing the pro-agility test to provide better change of direction speed diagnostics. *J Sport Exerc Sci, 5*(2), 101-106.
4. Feser, EH, Bezodis, NE, Nevile, J, Macadam, P, **Uthoff, AM**…Cronin, JB. (2021). Changes to horizontal force-velocity and impulse measures during sprint running acceleration with thigh and shank wearable resistance. *J Sports Sci, 39*(13), 1519-1527. DOI: 10.1080/02640414.2021.1882771.
5. Bustos, A, Metral, G, Cronin, J, **Uthoff, A,** & Dolcetti, J. (2020). Effects of warming up with lower-body wearable resistance on physical performance measures in soccer players over an 8-week training cycle. *J Strength Cond Res, 34*(5), 1220-1226. DOI: 10.1519/JSC.0000000000003498.
6. **Uthoff, A,** Nagahara, R, Macadam, P…& Cronin, J. (2020). Effects of forearm wearable resistance on acceleration mechanics in collegiate track sprinters. *Eur J Sports Sci, 20*(10), 1346-1354. DOI: 10.1080/17461391.2020.1722256.
7. Schofield, M, Tinwala, F, Cronin, J, Hébert-Losier, K, & **Uthoff, A.** (2019). Multijoint musculoarticular stiffness derived from a perturbation is highly variable. *J Strength Cond Res 35*(9), 2498-2503. DOI: 10.1519/JSC.0000000000003186.
8. Macadam, P, Cronin, J, **Uthoff, A,** & Feser, E. (2018). The effects of different wearable resistance placements on sprint-running performance: A review and practical applications. *Strength Cond Res, 41*(3), 79-96. DOI: 10.1519/SSC.0000000000000444.
9. **Uthoff, A,** Oliver, J, Cronin, J, Harrison, C, & Winwood, P. (2018). Sprint-specific training in youth: Backward running vs forward running training on speed and power measures in adolescent male athletes. *J Strength Cond Res, 34*(4), 1113-1122. DOI: 10.1519/JSC.0000000000002914.

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1. **Uthoff, A,** Oliver, J, Cronin, J, Winwood, P, & Harrison, C. (2018). A new direction to athletic performance: Understanding the acute and longitudinal responses to backward running. *Sports Med, 48*(5), 1083-1096. DOI: 10.1007/s40279-018-0877-5