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Use of a load carriage assistance device for specialist police

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Poster Presentations Friday Lunchtime, Exhibition Hall, October 6, 2023, 12:20 PM - 1:02 PM

Aim: to examine the effectiveness of a load carriage assistance device (LCAD) on specialist police mobility and marksmanship.

Design: A randomized counter-balanced study.

Method: Six specialist police officers (age = 41.1±6.2 years, weight = 88.4±9.2 kg) completed 2x2 trials of a tactical course as quickly as possible with and without a Reaper™ LCAD (randomised), worn to support the load of their ballistic shield (±20 kg). Heart rate was measured via an Equival™ harnesses and marksmanship via distance from centre of target (DCOT). Perceived LCAD impacts were measured with a visual analogue scale (VAS). Bond University Human Research Ethics Committee provided ethics approval (RO1585).

Results: No significant differences were found for heart rate (non-Reaper™=152.20±7.29 bpm; Reaper™=152.01±12.97 bpm, p=0.910) or completion time (non-Reaper™=80.46±13.98 secs, Reaper™=76.82±11.23 secs, p=0.130); although a trend towards faster times wearing the Reaper™ was found. Marksmanship was not significantly different between trials however officers lowered the shield on the ground during the non-Reaper™ trials to engage the target. The VAS results were significantly poorer (p<0.001) in non-Reaper™ (-5.58±1.93 mm) versus Reaper™ (2.88±4.90 mm) trials.

Conclusion: Officers considered the riot shield to negatively impact their performance to a lesser degree when assisted by the LCAD. The ability to support the shield on the LCAD allowed officers to maintain protection behind a riot shield.

Key Practice Points:

- Prescription of a riot shield LCAD may be of benefit to specialist police especially if returning from an upper limb injury - which is a leading site of injury in this population.