

Bond University
Research Repository



The impact of fitness levels on marksmanship: A critical narrative review

Muirhead, Hannah; Birge, Sasha; Orr, Rob Marc; Schram, Ben; Dawes, Jay

Licence:
CC BY-NC-ND

[Link to output in Bond University research repository.](#)

Recommended citation(APA):
Muirhead, H., Birge, S., Orr, R. M., Schram, B., & Dawes, J. (2019). *The impact of fitness levels on marksmanship: A critical narrative review*. Poster session presented at Rocky Mountain American College of Sports Medicine Annual Meeting 2019, Denver, Colorado, United States.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

For more information, or if you believe that this document breaches copyright, please contact the Bond University research repository coordinator.

Title: The Impact of Fitness Levels on Marksmanship: A critical narrative review

Authors: Hannah Muirhead¹, Sasha Birge¹, Robin Orr^{1,2}, Ben Schram^{1,2} & Jay Dawes³

Affiliations: ¹Physiotherapy Department, Bond University, Gold Coast, Australia:

²Tactical Research Unit, Bond University, Gold Coast, Australia:

³University of Colorado, Colorado Springs, USA

PURPOSE: The occupational demands of a police officer can vary between two divergent roles; one being more sedentary and the other including physically challenging field based manual tasks. With the high risk nature of this occupation, police officers are also expected to accurately aim and fire a weapon if needed. The aim of this critical review was to identify, critically appraise and synthesize the key findings of studies that investigated relationships between levels of fitness against marksmanship ability. **METHOD:** Using key words, academic databases were searched with identified studies subjected to dedicated inclusion and exclusion criteria. Included studies were critically appraised using a modified Downs and Black checklist, and a level of evidence was determined. Relevant data were extracted, tabulated and synthesized. **RESULTS:** From an initial 1450, eight studies were included for review. With a mean appraisal score of $68.5 \pm 9.3\%$ (range: 53.6% - 80.4%), there was a substantial interrater agreement ($k = 0.642$) between raters. A variety of fitness measures were used prior to marksmanship tasks, with the most common measure ($n = 7$) being grip strength. In four studies, grip strength was found to be significantly correlated with marksmanship. **CONCLUSION:** Although there currently exists a variety of fitness measures and fitness levels among police agencies and police officers, it is important to monitor and maintain grip strength ability in officers for the safety of the officer, their colleagues and the general public.