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## **Grip strength is associated with marksmanship and defensive tactics, but not injuries, in police recruits**

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### **ABSTRACT**

**Questions:** How important is grip strength in police recruits? **Design:** A longitudinal cohort study. **Participants:** New South Wales police recruits. **Outcome measures:** Dominant hand grip strength measured with a grip dynamometer, marksmanship performance with a 9mm Glock pistol measured by target scores, defensive tactics performance as determined by training instructors and injury results as recorded on the police injury database. **Results:** Data from two recruit cohorts (Session 1  $n=50$ : Session 2  $n=169$ ) were captured. Mean grip strengths were 43.6 kg ( $\pm 10$  kg) and 42.2 kg ( $\pm 8$  kg) for Session 1 and Session 2 respectively with no significance between groups ( $p=0.287$ ). Of the combined cohorts 26% ( $n=56$ ) sustained an injury/illness. During Session 2, 12% ( $n=27$ ) failed defensive tactics and 32% ( $n=70$ ) failed their initial marksmanship shoot. There was no significant correlation between grip strength measures and injuries/illness ( $r_s[219]=-0.126$ ,  $p=0.63$ ). A moderate, significant correlation was found between grip strength and marksmanship ( $r_s[169]=-0.419$ ,  $p<0.001$ ) with a weak but significant correlation found between grip strength and defensive tactics performance ( $r_s[169]=-0.227$ ,  $p=0.03$ ). **Conclusion:** Grip strength may not predict injury risk in police officers undergoing recruit training. Grip strength may play a role in the marksmanship and defensive tactics performance of police recruits, however its relationship with these tasks is not strong enough to provide a predictive value.

### **Key Practice Points:**

- Grip strength may influence a police recruit's marksmanship and defensive tactics performance.
- Optimising grip strength following injuries that affect a police recruit's grip strength is important.
- Grip strength may be a useful outcome measure in return-to-training planning for police officer recruits undergoing treatment for upper limb injuries.