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## Load Carriage: Minimising Soldier Injuries Through Physical Conditioning – A Narrative Review

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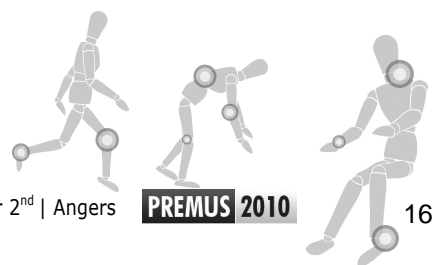
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## LOAD CARRIAGE: MINIMISING SOLDIER INJURIES THROUGH PHYSICAL CONDITIONING – A NARRATIVE REVIEW

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### **Aims:**

Load carriage tasks form part of the military soldier's vocation. With research showing an increased load to be borne by soldiers, effective physical conditioning may provide one means of reducing injuries induced by carrying these heavy loads. Through a reduction in injuries, the ability to train, maintain and retain soldiers is increased. The aim of this study was to review the current literature on physical conditioning for load carriage and present the findings in a manner that allowed physical conditioning practitioners a means of applying the findings into a conditioning program.

### **Methods:**

Using key search terms, a literature search of academic databases (both civilian and military) was conducted, with additional relevant literature sought from military and civilian colleagues. Gathered papers were assessed against several key criteria, in order to exclude papers which were not relevant to the load carriage context of interest, and then limited to those papers that specifically related to physical conditioning and military load carriage. These papers were reviewed to glean key findings in the light of information from, additional sources that were employed to contextualise the findings. The additional sources were research papers and published texts utilized by physical conditioning practitioners to develop conditioning programs.

### **Results:**

The search results yielded seven original research papers, one conference paper and four secondary source papers (military reports, journal articles).

### **Conclusion:**

Research suggests that an effective physical conditioning program for load carriage will include specific load carriage training conducted between two and four times per month. While loads must be sufficient to elicit a physiological response proportionate to that recommended for the development of cardiovascular and metabolic fitness, higher intensity training may be of particular benefit. Conversely, excessive training volume may increase the risk of both acute and overuse injury risks. While other forms of conditioning may supplement a load carriage conditioning program, load carriage specific training is still needed, with the duration and distance gradually progressed to levels that meet training and operational needs.

**Keywords:** Muscle activity, Work organization, Early prevention

### **References:**

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