

Title: "A new prioritizing injury model for risk factors for musculoskeletal injuries in the military"

Congress Theme: "Prehab of musculoskeletal injuries"

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Summary

"Background: Musculoskeletal injuries (MSkIs) are leading causes of health care utilization, as well as limited performance and disability in all armed forces. MSkIs affect members of the military during initial training, operational training, and deployment and have a direct negative impact on overall troop readiness.

Methods: Based on the work of the NATO Science and Technology Organisation Human Factor and Medicine (HFM)-Panel Research Task Group (RTG)-283 on reducing MSkIs a systematic literature review of the scientific studies of the last two decades were analysed. The aim was to (i) get a list of all risk factors, (ii) score the level of evidence per risk factor, (iii) classify every risk factor in modifiable/non-modifiable and (iv) create a new injury model. PubMed, Ovid/Medline, and Web of Science were screened from January 1, 2000 to September 10, 2019 for useable studies. Additionally, a reference list scan was performed (using the "snowball method").

Results: In total, 176 original papers and 3 meta-analyses were included in the review. A list of 57 reported potential risk factors was formed. For 21 risk factors, the level of evidence was considered moderate or strong. Based on this literature review and an in-depth analysis, the expert panel developed a model to display the most relevant risk factors identified, introducing the idea of the "order of importance" and including concepts that are modifiable/nonmodifiable, as well as extrinsic/intrinsic risk factors.

Conclusions: This model may help us to understand risk factors that can be addressed, and in which order they should be prioritized when planning intervention strategies within military groups."