

Biopsychosocial factors and low back pain in military personnel with lower limb loss: the ADVANCE study

Watson FCE, N Bennett A, McGregor A, Behan F, T Fear N, J Boos C, Cullinan P, Schofield S, M J Bull A. Biopsychosocial factors and low back pain in military personnel with lower limb loss: the ADVANCE study. *BMJ Mil Health*. 2025 Jun 20:military-2025-002962. doi: 10.1136/military-2025-002962.

What does this research look at?

Low back pain is common in the general population, but even more so in people with lower limb loss. We also know that lots of external factors (e.g., sleep, mental health, smoking, education level) can affect someone's experience of low back pain in the general population. This research wanted to look at low back pain-related disability in the ADVANCE cohort and investigate whether those external factors were important or different in people with limb loss.

Firstly, we split the ADVANCE cohort into 4 groups; (i) Uninjured, (ii) Injured without limb loss or spinal injury, (iii) Injured with limb loss but no spinal injury, and (iv) Injured with spinal injury with or without limb loss. We compared results from the Oswestry Disability Index (ODI) for low back pain related disability between these groups

Our findings:

As you might expect, we showed that the group with a spinal injury had worse ODI scores than the Uninjured group and the limb loss group. We showed that the limb loss group and no limb loss group had similar ODI scores.

This suggests that any combat injury might affect low back pain related disability, and that limb loss doesn't increase this. This also suggests the biggest contributor to low back pain related disability is a spinal injury. We think our results are different to others because many people with limb loss sustain a spinal injury at the same time. It's possible that previous research included participants with limb loss and a spinal injury, which confused the results. It's important to separate those injuries in future research to best understand the cause and outcomes.

The next thing we did is to compare 22 external factors affecting people with limb loss but not spinal injury with and without low back pain related disability. We found that those with low back pain related disability had more history of low back pain prior to their ADVANCE injury and:



More current use of opioid pain relief



Had a higher body mass index



More phantom limb and stump pain



Were more often of a non- White ethnicity



Had worse mental health

than those without low back pain related disability.

This is important because if we improve some of these external factors, we might be able to improve that person's experience of low back pain.

What is the ADVANCE Study?

The ADVANCE study examines the long-term physical and psycho-social impact of combat injuries on male British military personnel. A collaboration between the Ministry of Defence, Imperial College London, and King's College London, it follows 1,145 participants who served in the Afghanistan conflict (2002–2014) with half sustaining serious battlefield injuries, while the other half, a demographically similar comparison group, were deployed but not injured. Participants will be followed for the rest of their lives, with regular check-ins to track health and well-being.

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