

Tailoring a comfort-fit police jacket

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In collaborative work between police organizations and experts in ergonomics and biomechanics, a new equipment vest has been developed to address the issue of musculoskeletal disorders, particularly lower back pain, among police officers.

The work undertaken in Sweden is described in detail in the [*International Journal of Human Factors and Ergonomics*](#). The new vest design aims to redistribute the weight of essential equipment, such as communication equipment, weapons, and handcuffs, from the traditional duty belt to a more ergonomically designed vest.

The standard duty belt worn by officers has been identified as a contributor to [lower back pain](#) due to its unfavorable load on the lumbar spine, particularly during sitting or driving. This seems to be a universal issue and one that research might address. Additionally, the ballistic vest worn underneath the uniform presents challenges in regulating body temperature.

Kristina Eliasson and Teresia Nyman of the Department of Medical Sciences, Occupational, and Environmental Medicine at Uppsala University, Roy Tranberg of the Department of Orthopedics in the Institute of Clinical Sciences, part of the Sahlgrenska Academy at the University of Gothenburg, and Louise Bæk Larsen of the Department of Rehabilitation in School of Health and Welfare at Jönköping University undertook thorough analysis and testing during the development process.

They carried out interviews, held focus groups, and took pressure measurements with 95 active-duty police officers. Their findings allowed them to make iterative design changes with ongoing user feedback. This resulted in a vest better tailored to the needs of Swedish police officers.

The researchers suggest that the redistribution of equipment on the newly developed vest will reduce musculoskeletal discomfort and make important improvements to the physical component of being a police officer. Ultimately, the new [vest](#) design aims to enhance the well-being and comfort of [police officers](#) on active duty, potentially influencing occupational equipment standards globally.

This project highlights the importance of a dedicated project management team to coordinate efforts so that any changes are inclusive and take into account the views of those who are to use the new equipment as well as their physical measurements. Such a user-centric development process could also be used as a model for future occupational [equipment](#) projects, not only in [law enforcement](#) but across various types of workplace from health care to industry and other occupations in between.

More information: Kristina Eliasson et al, A user-centred development process for an equipment vest for the Swedish police force, *International Journal of Human Factors and Ergonomics* (2024). [DOI: 10.1504/IJHFE.2024.137126](#)

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