

# Health risks from occupational exposures to mechanical vibration

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## KEY WORDS

Human vibration; health effect; risk assessment

## SUMMARY

*Health effects of occupational exposure to hand-transmitted vibration (HTV) and whole-body vibration (WBV) are reviewed. Excessive exposure to HTV from powered processes or tools is associated with an increased occurrence of symptoms and signs of disorders in the vascular, neurological and musculoskeletal systems of the upper limbs. This complex set of disorders is called hand-arm vibration syndrome. Long-term occupational exposure to intense WBV is associated with an increased risk for disorders of the lumbar spine and the connected nervous system. With a lower probability, the neck-shoulder, the gastrointestinal system, the female reproductive organs, the peripheral veins, and the cochleo-vestibular system are also assumed to be affected by WBV. However, there is weak epidemiological support for WBV-induced disorders of organ systems other than the lower back. In addition to the health effects of human vibration, this review provides information on methods for the protection and health surveillance of vibration-exposed workers according to the European Directive 2002/44/EC on mechanical vibration.*