Hand-Arm Vibration Safety — study guide

Hand-arm vibration damages nerves and blood vessels in the fingers, and the damage is permanent. This guide covers the health effects, the employer and employee duties, the exposure values and the controls.[1][2]

What it is and who is at risk

Hand-arm vibration is vibration transmitted from work processes into workers' hands and arms. Jobs that use vibrating equipment include ship maintenance, shipbuilding, heavy engineering and construction. Tools that present a hand-arm vibration risk include polishers, hand-held grinders and impact wrenches.

Hand-Arm Vibration Syndrome (HAVS)

Symptoms of HAVS include the tips of the fingers turning white and then red, tingling and numbness in the fingers, and an inability to feel things with the fingers. The effects can include reduced ability to work in cold or damp conditions, pain, distress and sleep disturbance, and reduced grip strength.

Employer responsibilities

Employers must assess the vibration risk to employees, keep health records for employees under health surveillance, and provide information and training on the health risks and the actions being taken to control them. Manufacturers must supply, in instruction books or manuals, information on the equipment's safe use and any training requirements, warnings about vibration-related risks, information on maintenance, and a statement of the equipment's vibration emission together with the method used for vibration testing. Under the Supply of Machinery (Safety) Regulations, manufacturers must design equipment that reduces vibration risks to as low a level as possible, using the latest technology.

Exposure values

- **Exposure Action Value (EAV)** — the daily amount of vibration exposure above which employers are required to take action to control exposure.
- **Exposure Limit Value (ELV)** — the maximum amount of vibration an employee may be exposed to on any single day.

Monitoring and control

Exposure is monitored to identify vibration-related disease at an early stage, to check the effectiveness of existing control measures, and to identify anyone exposed to hand-arm vibration who may be at particular risk. Control measures include rotating jobs and switching tasks frequently, using suspension systems to reduce the need to grip heavy tools, limiting the use of high-vibration tools wherever possible, and maintaining equipment at regular intervals.

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Protecting yourself

Employees can reduce their risk by always using the right tool for each job, and by encouraging good blood circulation — keeping warm and dry with gloves, a hat and waterproofs, massaging fingers, and changing working practices to reduce exposure. Employees should also be trained to recognise and report symptoms and to understand the health effects of hand-arm vibration.

Key facts to remember

- Hand-arm vibration passes from work processes into hands and arms; tools include polishers, grinders, impact wrenches.
- HAVS: white-then-red fingertips, tingling/numbness, inability to feel; pain, sleep disturbance, reduced grip.
- Employers: assess risk, keep health records, provide info/training. Manufacturers: safe-use info, risk warnings, vibration emission + test method.
- EAV = action level to control exposure; ELV = daily maximum exposure.
- Monitor to catch disease early, check controls and flag at-risk workers.
- Controls: rotate jobs, use suspension systems, limit high-vibration tools, maintain equipment.
- Employee: right tool for the job; keep warm and dry; recognise and report symptoms.

Sources

1. Control of Vibration at Work Regulations 2005 (UK) — exposure action value, exposure limit value, health surveillance and controls.
2. Supply of Machinery (Safety) Regulations — manufacturer duties on vibration emission information and design.