

What is Hand Arm Vibration Syndrome (HAVS)?

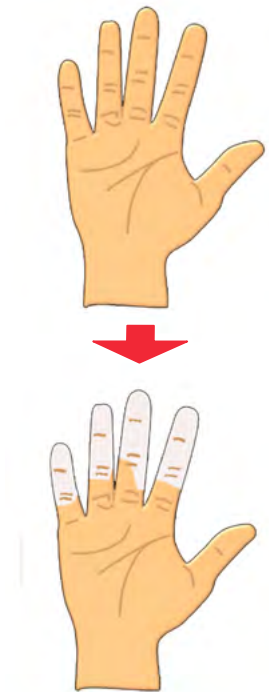
Hand-Arm Vibration Syndrome (HAVS) is a condition that can affect the vascular, neurological and muscular systems of the hands.

Regular exposure to high frequency vibrating hand tools/equipment (dependent upon the magnitude, frequency, and duration) such as jackhammers, chisels, chainsaws, sanders, grinders, drills etc., increases the risk of developing HAVS.

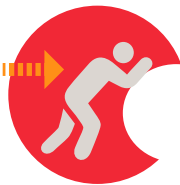
Some of the trades/industries in which workers are at risk include construction, forestry, foundry, assembly manufacturing, mining and agriculture.

HAVS is characterized by

- Bluish discoloration (cyanosis) of the skin of fingers and hands.
- Whitening (blanching) of fingertips (especially with colder temperatures).
- Numbness, with or without tingling.
- Decreased grip strength and sense of touch.



Ergonomic Risk Factors



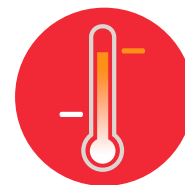
FORCE

- Forceful exertions
- Glove use
- Grip type



POSTURES

- Postures that deviate from neutral (e.g. reaching, twisting, bending, etc.)



TEMPERATURE

- Working in hot or cold conditions



VIBRATION

- Regular exposure to high frequency vibrating hand tools/equipment (125-400 Hz range)
- Impulse vibration
- Long term exposures to low intensity vibration



INADEQUATE RECOVERY TIME

- Sustained muscle contractions without rest, may lead to muscle fatigue which then requires an increased grip force to complete the task
- Tense muscles can increase the transmission of vibration



COMBINATION EFFECT

- Many or all of the risk factors act synergistically to increase the risk of HAVS

Specific Recommendations for Prevention

- Prior to purchasing vibrating tools, be aware of vibration levels to determine level of risk.
- Eliminate or minimize exposure to vibration.
 - Perform regular preventative maintenance.
 - Provide jigs designed to minimize the need to hold vibrating surfaces.
 - Provide anti-vibration handles/sleeves.
- Implement a work/rest schedule to minimize vibration exposure.
- Minimize forceful grasps.
- Use proper fitting personal protective equipment such as anti-vibration gloves (ISO approved).
- Educate workers (or yourself) on how to recognize:
 - Symptoms (like finger tingling, numbness, and finger blanching).
 - Associated risks of vibration exposure.
 - Possible sources of vibration in the workplace.
 - Health effects of working in cold temperatures.

Additional Resources and Tools

For industry/workplace specific recommendations contact an OHCOW Ergonomist to have an assessment performed.

- [ISO 10819:2013 - Mechanical vibration and shock](#)
- [OHCOW Glove Size Calculator](#)
- [Cold Stress Calculator](#)
- [Vibration Workshop \(2014\): Controls for Whole Body and Hand-Arm Vibration](#)
- [The hand-arm vibration exposure calculator](#)
- [Vibration - CCOHS](#)
- [Vibration - Measurement, Control and Standards](#)
- [Vibration Syndrome](#)
- [What is hand-arm vibration?](#)
- [Hand-arm vibration](#)

Video Resource

- [Hand Arm Vibration Syndrome Playlist](#)



Go to the OHCOW
Musculoskeletal Disorders
Landing Page