

Hand-Arm Vibration Syndrome (HAVS)

Vibration is the fast movement back and forth of an object. The speed and the force of the movement determines the level of vibration. Hand-arm vibration is the vibration of a tool or work piece moving into your hands or arms.

What is Hand-Arm Vibration Syndrome?

Hand-arm vibration syndrome (HAVS) is a group of health problems that can cause damage to the blood flow, nerves, muscles, tendons, and bones of the arm and hand. The problems usually get worse with time so it is important to know the signs and report them early. Prevention is the key to managing HAVS.

What causes HAVS?

Using vibrating power tools everyday that create hand and arm vibration can cause physical damage to the arms and hands. Some studies show that almost half the workers who use vibrating tools will have signs of HAVS. Some tools that can cause vibration are power hammers, jackhammers, chainsaws, riveters, grinders, and sanders. Among those who are at risk are workers in the construction, forestry, foundry, railroad, manufacturing, agriculture and mining sectors.



Miners are among the workers at risk of developing hand arms vibration syndrome.

What are the symptoms or signs of HAVS?

- your fingers become white and cold at times (more often in the winter). This happens more often and year round as the problem gets worse. It has also been called Raynaud's Phenomena and is caused by a decrease in blood flow to your hands and fingers
- the skin of your fingers and hands sometimes look blue
- numbness or tingling of the hands and especially fingers
- your hands and fingers feel weak and it is hard to hold onto things

What can happen?

- the white, cold fingers become painful and outdoor activities in the cold may have to be stopped
- weakness of the muscles may cause tools to slip from your hands which can interfere with your work or home activities
- you may not be able to feel heat, cold or pain with your fingers and hands which can cause injury
- you can suffer permanent damage to the nerves and muscles of your hands and fingers if the symptoms are ignored

What can your employer do?

- purchase only anti-vibration tools (The best way to control hand-arm vibration is better tool design.)
- maintain equipment in good working order
- provide personal-protective equipment and ensure its proper use (The second best way to control hand-arm vibration is the use of anti-vibration (A/V) gloves)
- educate workers on the signs of HAVS
- be aware of the possible health effects of overtime, shift work, and double shifts
- ensure the use of a work/rest schedule and job rotation. A 10 minute vibration-free rest break is recommended for every hour of continuous vibration work.
- provide education on good ergonomic principles of tool use and proper body postures that can reduce the effects of vibration

What can you do?

- use all personal-protective equipment correctly especially A/V gloves with fingertip material intact
- report all poorly functioning tools
- ask to have a maintenance check of all the tools you are using
- use the vibrating tool less often if possible and only when necessary
- use the tool at the lowest speed possible
- hold the tool as lightly as you can and still be

safe. Let the tool rest on the workpiece whenever possible.

- take regular breaks away from the tool
- wear warm clothes and do not allow your hands to become wet and chilled. If your hands become wet, put on a pair of warm, dry A/V gloves (you may have to carry an extra pair).
- recognize and report any symptoms to your supervisor and joint health and safety committee
- see your doctor as soon as you have any signs of HAVS
- put your hands in warm water or swing your arms to increase blood flow
- stop smoking because smoking decreases blood flow
- have your hearing checked regularly since most vibrating tools are noisy

What can your joint health and safety committee do?

Establish a preventative training program that includes

- research on and the promotion of purchasing anti-vibrating tools
- tool maintenance
- a reporting method for poorly functioning tools
- proper use of protective equipment
- education about and encouragement to report early signs of HAVS to the joint health and safety committee

The American Conference of Governmental Industrial Hygienists have developed threshold limit values to use as guidelines for allowable exposure to vibration. This guideline can be found in the OHC library.

References

1. OHCOW booklet *Hand-Arm Vibration Syndrome*
2. Rom, William N., *Environmental and Occupational Medicine* (Chapter 105)

For more information

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