

## MSI RISK FACTORS

### Hand-Arm Vibration

Hand-Arm Vibration (HAV) is a vibration that reaches the hands when working with power tools or hand-guided machines or when holding materials being processed by machines.

Regular exposure can cause permanent injuries to tendons, muscles, bones, joints and nerves in the hands and arms. Collectively, these effects are known as Hand-Arm Vibration Syndrome (HAVS).

#### Examples of HAV sources:

- Riveters and drills.
- Chisels and grinders.
- Sanders, sharpeners and shapers.
- Chain/power saws .
- Powered/jack hammers.
- Floor buffers (hand-guiding).
- Pedestal grinders (holding materials being processed).

#### Risk of injury increases with:

- Increased vibration magnitude.
- Increased exposure length and frequency.
- Increased awkwardness of posture.
- Increased force to grip or control equipment.
- Cold hands.



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#### Engineering Controls

- Look for alternative processes, equipment or work methods that eliminate or reduce exposure (e.g. automate).
- Purchase the lowest vibration tool that is suitable and can do the work efficiently.
- Limit the use of high-vibration tools when possible.
- Adjust worksite design to improve the posture of hands, wrists and arms.
- Use devices such as jigs and suspension systems to reduce the need to grip heavy tools tightly.
- Provide a heating source to keep workers warm.

#### Administrative Controls

- Develop and implement written safe work practices and procedures.
- Have a policy on the removal/reduction of vibration.
- Keep tools and machines well maintained.
- Limit worker's exposure (e.g. job rotation to reduce hours or number of days).
- Plan to avoid long periods of continuous exposure.
- Provide adequate rest breaks.
- Provide protective clothing for warmth and good blood circulation.
- Train workers in the correct use of tools and machines and the health risks of HAV.

#### What can you do?

- Use the right tool for the job.
- Wear anti-vibration gloves.
- Avoid using more force than necessary for safe operation.
- Take frequent breaks to minimize continuous exposure.
- Keep whole body warm (e.g., wear a vest), including warm, dry hands (e.g. wear gloves, exercise hands/fingers).
- Do not smoke (reduces blood circulation).
- Inform your supervisor if tools/processes produce high levels of vibration (e.g., poorly functioning tool).
- Report any symptoms (whitening of fingers, pain, numbness, tingling, loss of touch/grip strength).



A symptom of HAVS: whitening of fingers (also known as vibration white finger).