

## **Ergonomics – *Hand and Arm Vibration***

Hand-Arm Vibration (HAV) is defined as the transfer of vibration from a tool being used to a worker's hand and arm. The vibration is typically measured on the handle of tool, while in the grasp of the worker, and the amount of HAV is a function of the acceleration levels transferred to the worker.

Vibration restricts the blood supply to the hands and fingers. Signs and symptoms of vibration-induced injury, such as Reynaud's phenomenon, start with occasional numbness or loss of color in the fingertips. This progresses to more frequent and persistent symptoms affecting a larger area of the fingers and resulting in reduction in feeling and manual dexterity.

Here are some recommendations for minimizing the injury risk from HAV Injuries.

### **Management:**

- Train workers to recognize the warning signs of HAV Injuries.
- Medically monitor workers who routinely use products associated with HAV.
- Institute health care management practices ensuring early detection of hand/arm vibration disorders.
- Purchase new vibration-reduced pneumatic tools.
- Inspect and service tools at regular intervals in accordance with manufacturer instructions.
- Repair or replace tools producing high vibration levels due to wear and tear.

### **Workers:**

- Wear protective clothing to reduce the transmission of vibration energy to the hands and to protect the hands against exposure to cold.
- In cold weather, dress adequately to keep the whole body warm since a low body temperature can make you more susceptible to HAV.
- Wear multiple layers of warm gloves, or anti-vibration gloves, whenever possible, when using vibrating hand-held tools.
- Take more rest breaks when using tools with the highest vibration levels.
- Take a 10-minute break after each hour of continuously using a vibrating tool.
- Let the tool do the work by grasping it as lightly as possible, consistent with safe work practice.
- Keep chisels and chainsaws sharp to reduce vibration. Using new grinder wheels will also reduce vibration.
- Operate the tool at the minimum speed (and impact force) to reduce vibration exposure.
- Substitute a manual tool or other process where practical.