# ERGONOMICS: VIBRATIONS

Occupational vibration exposure occurs when the body is exposed to pulsation, shaking or tremors usually produced by a vibrating object such as a power hand tool. Vibration is often called a vector quantity, which means that the vibratory motion has both a negative effect in of itself and a magnitude or intensity component. Vibration exposure is separated into hand-arm vibration and whole-body vibration. These two types of vibration have different sources, affect different areas of the body and produce different symptoms.

Hand-arm vibration is usually caused by a vibrating hand tool or work piece which transmits the movement. Vibration restricts the blood supply to the hands and fingers, which, depending on the vibration level and duration of exposure, can contribute to an ergonomic injury. Equipment that causes moderate vibration includes grinders, sanders and jig saws. Equipment that causes high vibration includes impact wrenches, carpet strippers, floor polishers, chain saws, percussive tools, jack hammers and chipping hammers.

## Preventive Measures and Controls

Vibration exposure is dose related, meaning that effective controls should:

- Reduce the intensity of the vibration.
- Reduce the duration of the exposure to vibration.
- Recognize the signs and symptoms of exposure early in the work process.
- Identify individuals who are sensitive to vibration.

Various engineering and work practice controls can be employed to reduce the intensity and duration of vibration exposure. They include:

- Selecting ergonomically designed anti-vibration tools.
- Using anti-vibration full-fingered gloves.
- Grasping the tool as lightly as possible.
- Resting the tool on a support as much as possible.
- Avoiding smoking because nicotine enhances the ability of blood vessels to go into spasm.