

Whole-Body & Hand/Arm Vibration

Whole-body vibration is experienced in any work condition that involves sitting, standing, or lying on a vibrating surface. Excessive levels and durations of exposure to whole-body vibrations may contribute to back pain and performance problems. If you spend a considerable amount of your work day on a vibrating seat or floor and experience any of the following signs or symptoms, contact the Office of Health and Safety and/or the Occupational Health Clinic:

- Blurred vision
- Decrease in manual coordination
- Drowsiness (even with proper rest)
- Low back pain
- Insomnia
- Headaches or upset stomach

Vibrating hand tools or work pieces can transmit vibrations to the holder, and depending on the vibration level and duration factors, may contribute to Raynaud's syndrome or vibration-induced white finger disorders. These disorders show a progression of symptoms beginning with occasional or intermittent numbness or blanching of the tips of a few fingers to more persistent attacks, affecting greater parts of most fingers and reducing tactile discrimination and manual dexterity. If you experience any of these symptoms, contact the Office of Health and Safety and/or the Occupational Health Clinic. The following recommendations can help reduce the likelihood of developing hand-arm vibration syndromes:

- Select power tools with anti-vibration properties.
- Use handle coatings that suppress vibrations.
- Increase coefficient of friction on handles to reduce force requirements.
- Keep power tools balanced and lubricated to minimize vibration.
- Job rotation — have more than one person perform tasks that involve exposure to hand-arm vibration.
- Use vibration attenuation gloves.

Hand Tool Use & Selection Principles

Implementing the following suggestions for proper selection and usage of hand tools will help reduce the likelihood of developing work-related musculoskeletal disorders in the hands, wrists, and arms:

- Maintain straight wrists. Avoid bending or rotating the wrists; a variety of bent-handle tools are commercially available.
- Avoid static muscle loading. Reduce both the weight and size of the tool. Do not raise or extend elbows when working with heavy tools. Provide counter-balance

support devices for larger, heavier tools.

- Avoid stress on soft tissues. Stress concentrations result from poorly designed tools that exert pressure on the palms or fingers. Examples include short-handled pliers and tools with finger grooves that do not fit the worker's hand.
- Reduce grip force requirements. The greater the effort to maintain control of a hand tool, the higher the potential for injury. A compressible gripping surface rather than hard plastic should be used.
- Whenever possible, select tools that use a full-hand power grip rather than a precision finger grip.
- Avoid sharp edges and pinch points. Select tools with large switches that can be operated even when gloves are not worn.
- Avoid repetitive trigger-finger actions. Select tools with large switches that can be operated with all four fingers.
- Wear gloves that fit. Tight-fitting gloves can put pressure on the hands, while loose-fitting gloves reduce grip strength and pose other safety hazards.

If your job involves the frequent use of hand-tools and you are experience numbing, blanching, pins-and-needles, or dull pain in the hands or forearms, contact the Office of Health and Safety and/or the Occupational Health Clinic.