Vibrating tools

By Andrew M. Pawuk

Before you begin
Gather samples of vibrating tools and anti-vibration gloves that may be used at your job site. Be prepared to identify specific tool anti-vibration features.

Have you ever experienced a tingling, pain or numbness while operating vibrating tools? You may think these signs are just part of your job and continue with your task. However, your body is giving you warning signs that something is not right. Continuing the task can lead to serious health problems, which can jeopardize your ability to work.

Vibrating tools can cause hand and arm vibration. The operation of these tools causes a rapid back and forth motion that is transmitted from the tool to the hands and arms of the person holding the tool. This condition is called Vibration-induced White Finger (VWF), or Raynaud's Syndrome. It is caused when the circulatory system in your hands and fingers are damaged during use of vibrating tools. This, in turn, impairs circulation in your hands and fingers and results in VWF. Although acute symptoms may subside, the illness is chronic and will worsen progressively with repeated exposure.

Ask participants if they have ever experienced any symptoms during or after the use of vibrating tools. Their answers may include:

- Tingling fingers;
- Fingers turning white or blue;
- Difficulty picking up small objects;
- Reduced sense of heat, cold and pain in hands;
- Numbness;
- Trouble performing fine tasks, such as buttoning or zipping clothes.

Ask what type of tool may cause these symptoms. Typical answers may include:

- Drills;
- Grinders;
- Sanders;
- Lawn mowers;
- Jack hammers;
- Reciprocating tools;
- Snow blowers;
- Chain saws;
- Any tool which must be held during operation.

Ask the group what factors affect the possibility of VWF? Possible answers are:

- The amount of vibration produced by the tool (vibration intensity);
- How long the tool is used each day;
- Total hours, months and years of use of a vibrating tool;
- The way a person holds the tool;
- Exposure to the cold;
- Tobacco smoke.

Ask how soon after using the tool can the symptoms occur.

- Employees may have symptoms soon after beginning to use the vibrating tool.
- Other employees may not have any trouble for a long time, up to months or years.

Employees may experience these symptoms immediately following the use of a vibrating tool. Often these will disappear soon after the employee completes work with the vibrating tool. Employees should consider it a warning about future vibrating tool exposure and VWF. Continued vibrating tool exposure will increase the severity of the condition. Also, exposing your hands to cold temperatures while using vibrating tools has been found to contribute to the onset of symptoms. Tobacco smoke has been found to increase an individual's chances of having VWF.

Ask the group how employees can reduce their exposure to VWF. Possible answers include:

- Use methods to avoid vibrating tools whenever possible;
- Utilize tools that are in good condition because well-maintained equipment will reduce unnecessary vibration;
- Employ tools that have built-in anti-vibration features whenever possible;
- Let the tool do the work without placing a lot of force on the tool or with a tight grip;
- Limit the time the vibrating tool needs to be used whenever possible;
- Alternate the use of vibrating tools frequently with other tasks;
- Keep your hands warm.

Will personal protective equipment lessen a person's exposure to vibrating tools? Caution is needed when using anti-vibration gloves or mittens. They must allow vibration reductions, have minimal thickness to allow the dexterity required for safe and efficient tool operation and have adequate damping characteristics.

- The vibration damping material should extend from the palm of the glove to the fingers and thumb. These are the areas where primary VWF occurs and must be protected.
- The thumb must be protected with anti-vibration material on both sides. The material at the thumb normally rotates when gripping, thereby exposing the backside of the thumb to vibration.
- The glove should be loose fitting because over-sizing a glove increases manipulative dexterity.

Conclusion

VWF is a medical condition that can affect a person's ability to perform his or her job and daily activities. When knowledge of any symptoms occurs, steps must be taken to eliminate or reduce the employee's exposure to the cause. Failure to do so will worsen the condition, which may lead to the person's being unable to continue his or her work performance.

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References

Web sites

- Vibration publications (National Institute for Occupational Safety and Health): www.cdc.gov/niosh/topics/ergonomics/#vib
- Vibration (Canadian Centre for Occupational Health and Safety): www.ccohs.ca/oshanswers/phys_agents/vibration/
- Anti-vibration gloves (Job Accommodation Network): http://askjan.org/cgi-win/OrgQuery.exe?Sol281
- Raynaud's Phenomenon (National Institute of Arthritis and Musculoskeletal and Skin Diseases): http://www.niams.nih.gov/Health_Info/Raynauds_Phenomenon/default.asp