

Hand and Arm Vibration from Tools

GENERAL DISCUSSION

This meeting is about preventing injuries from hand and arm vibration. You may think that the tingling, pain, or numbness you feel when you use vibrating tools is just part of your job. But vibrating tools (like drills, jackhammers, grinders, and chainsaws) can cause serious health problems so serious that you could be forced to leave your trade. Millions of U.S. workers use vibrating tools. More than half of them will get some kind of injury.

Whether or not you get injured partly depends on:

- 0. The amount of vibration the tool produces (acceleration level).
- 0. How long you use the tool each day.
- 0. How many total hours, months, and years you use vibrating tools.
- 0. The way you hold and use these tools.

Some workers may have symptoms just a few months after they start using vibrating tools, but others may not have any trouble for a long time. It's important to know that once you fully develop hand-arm vibration syndrome (HAVS), it may be too late to reverse it. You may never recover full use of your fingers. The only cure is prevention. So we' all talk today about how to work safely with vibrating tools.

You or a crew member may want to add a personal story about vibration.

Next, discuss with the crew which tools used at this particular job site produce vibration that may be hazardous:

Ask the Crew these Questions

Show the tool you brought and point out any safety features after each question, give the crew time to suggest possible answers. Use the information following each question to add points that no one mentions.

1. Vibration from tools can damage the blood vessels in your hands and fingers. The reduced blood supply can then harm the skin, nerves, and muscles. You lose feeling in your hands and fingers, and can't control them. This is called hand-arm vibration syndrome (HAVS), and is also known as white finger, dead finger, or Raynaud's Syndrome.

It's very important to watch for early symptoms and report them. What are the signs to watch for?

- Tingling fingers.
- Fingertips turn white or blue.
- Trouble picking up small objects.
- Numbness.
- Clumsiness with hands.
- Reduced sense of heat, cold, and pain in hands.
- Trouble buttoning and zipping clothes.

2. Vibration isn't the only thing that can reduce the blood supply to your hands and fingers. Your chance of getting HAVS goes up if you're exposed to vibration combined with other risk factors that also cut down the blood supply. Do you know what some of those risk factors are?

3. Is there any protective gear you can wear to prevent exposure to vibration?

- Not really. There are gloves with vibration-damping material built into the palms and fingers. But they haven't been proven effective. If they fit well and don't cause you to grip tighter, it doesn't hurt to try them.
- Regular work gloves and warm clothing are important in cold weather to avoid getting your hands cold or wet. Remember that cold increases your risk.
- Hearing protection is important in noisy environments, and many vibrating tools are very loud. Remember that noise increases your risk.
- Always wear safety glasses or other eye/face protection when you work with any tool.

4. Are there tools that reduce your exposure to vibration?

- Yes. The best solution is to do the work with a non-vibrating tool instead of a vibrating one if you can. For example, sometimes you can mill or machine a part instead of using a grinder.
- If you do use a vibrating tool, use one that has anti-vibration features built in whenever possible. Some new designs can reduce tool vibration over 50%. But tool suppliers should be asked for real evidence that their equipment reduces vibration.

- Vibration is reduced when tools are well maintained. Tools that are worn, blunt, or misaligned vibrate more. Immediately report any tool that is functioning poorly.

5. Are there any other ways to reduce exposure to vibration?

- Limit the amount of time you use vibrating tools (both hours per day and days per week) wherever possible.
- Take a 10-minute break for every hour that you spend working with a vibrating tool. Or alternate work with vibrating and non-vibrating tools.
- Let the tool do the work. Keep your grip as loose as possible while still keeping control of the tool. A tight grip restricts blood flow, and also allows more vibration to pass from the tool to the body.
- Don't use full throttle unless you need to.

6. Do you need any special medical exams if you work with vibrating tools?

- No exams are presently required by law, but it's a good idea for anyone exposed to hand-arm vibration on a regular basis to have an annual exam for signs of HAVS. You should be examined by a doctor with special training in occupational health, who will know exactly what to look for.
- Also, you should inform your employer and request a medical evaluation if you experience symptoms of HAVS (such as tingling or numbness).

OSHA Regulations

Explain: OSHA does not have specific rules on vibration at this time. However, OSHA did recently adopt a new ergonomics standard which relates to these issues. On any construction job, if there has been more than one ergonomic injury within a year to workers doing the same task, the company must take steps to identify and correct these hazards. We must also provide relevant training. Also, the National Institute for Occupational Safety and Health has issued recommendations on vibrating tools. Most of the safety measures we've talked about are included in these recommendations. They are also part of this company's Injury and Illness Prevention Program, which is required by OSHA. I have a Checklist of the precautions to take when using vibrating tools. If you'd like to know more, see me after the meeting.

Company Rules

(Only if applicable.) We have some additional company rules about vibration.

Discuss company rules

Comments from the Crew

Ask: Do you have any other concerns about vibration? Do you see any problems on our job? (Let the steward answer first, if there is one.) What about other jobs you've worked on? Have you had any experience with vibration that might help us work safer on this job?

GENERAL SAFETY REIVEW

This is a time to review all safety concerns, not just today's topic. Keep your notes on this page before, during and after the safety meeting.

Are you aware of any safety hazards from any other crews? Point out any hazards other crews are creating that this crew should know about. Tell the crew what you intend to do about those hazards

Do we have any other safety business? Discuss any past issues or problems. Report any progress of investigations and action taken.

Have there been any accidents, near misses or complaints? Discuss any accidents, near misses, and complaints that have happened since the last safety meeting. Also recognize the safety contributions made by members of the crew.

Please remember, we want to hear from you about any health and safety issues that come up. If we don't know about problems, we can't take action to fix them.

ENDING THE MEETING

Circulate Sign-Off Form.

Assign one or more crew member(s) to help with next safety meeting.

Refer action items for follow-up.

Do you have any Safety Recommendations?

Do you have any Job Specific Topics you would like us to discuss?

Comments

SAFETY TALK REVIEW

Hazard Identification

- 0. The company has a written Safety and Health Program that meets all OSHA requirements. It includes identification of vibration hazards on the site, regular inspections, accident investigation, and correction of hazardous conditions.
- 0. All tools that may pose a vibration hazard have been identified.

Vibrating tools used on this site

- 0. drills
- 0. jackhammers
- 0. asphalt breakers
- 0. grinders
- 0. chain saws
- 0. chipping tools
- 0. concrete vibrators and levelers
- 0. needle guns
- 0. polishers
- 0. sanders
- 0. riveters
- 0. compactors
- 0. other pneumatic tools: _____
- 0. Workers are encouraged to report tools that are causing particular problems.

Medical Monitoring

1. Health monitoring is provided for workers exposed to vibration. It includes pre-employment and annual exams.
2. Health monitoring is conducted by a qualified health provider who is fully aware of the signs and symptoms of hand-arm vibration syndrome (HAVS). The health provider receives detailed information regarding the worker's exposure to vibration.
3. Any worker who develops prolonged signs and symptoms of hand-arm vibration syndrome is removed from further exposure to vibration. Anyone removed retains all earnings and seniority.

Worker Training

1. Workers who use vibrating tools are trained in the effects of vibration and methods for reducing exposure.
2. Training includes information on factors that increase vibration-induced health risks (including cold, noise, and smoking).

Tool Design, Inspection and Maintenance

1. Non-vibrating tools are used instead of vibrating tools whenever possible.
2. Tools with vibration-reducing features are purchased and used whenever possible. Tool suppliers are asked to provide evidence that their equipment reduces vibration.
3. Vibrating tools are equipped with grips made of heavy rubber or similar vibration-damping material.
4. Tools are inspected daily before use and are kept clean.
5. Tools are well maintained. They are kept sharp, lubricated, and tuned. (Tools that are worn, out of alignment, or otherwise in poor condition can produce greater vibration.)
6. Damaged, defective, or worn tools are tagged and removed from service until repaired.

Breaks

1. The number of hours in a day, and the number of days in a week, that a worker uses vibrating tools is kept to a minimum.
2. Operators of vibrating tools take a 10-minute break each hour and/or alternate work with vibrating and non-vibrating tools.

Work Practices

1. Workers use only tools with which they have experience, or on which they have been trained.
0. Operators let the tool do the work by using the smallest amount of grip force possible (while still maintaining control of the tool).

Personal Protective Equipment

0. If necessary, personal protective equipment (PPE) is provided by the company and worn by workers. The types used are appropriate for the work and give adequate protection.
0. Workers using tools always wear safety glasses with side shields or other eye/face protection. Eye and face protection meets the requirements of American National Standards Institute (ANSI) Z 87.1 1989, American National Standard Practice for Occupational and Educational Eye and Face Protection.
0. Gloves and adequate cold weather clothing are worn when necessary. (Cold contributes to hand-arm vibration syndrome.)
0. Gloves have vibration-damping material in palms and fingers. They fit properly and don't increase the grip force required to control the tool.
0. Workers exposed to foot injuries from crushing or penetrating actions, hot surfaces, falling objects, or hazardous substances, or who are required to work in abnormally wet locations, use appropriate foot protection such as steel-toed safety shoes and/or boots. (For jackhammers, workers wear a steel covering over the whole foot, not just the toes.)
0. Workers exposed to noise in excess of 90 dB use hearing protection. (Noise contributes to hand-arm vibration syndrome.)

Ergonomics

0. If there has been more than one ergonomic injury within a year to workers doing the same task, the company has set up a program to identify and correct these hazards and provide relevant training.