



City Safe

A Guide To Assist In Training
Employees About:

VIBRATORY TOOLS

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City Safe is a publication of the League of Kansas Municipalities and the Kansas Municipal Insurance Trust for the purpose of educating and informing cities about loss control methods and risk management. Contents herein are not intended to provide specific legal or medical advice. Readers should seek advice on specific concerns from a qualified professional.

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Vibratory Tools and Their Affects

**By: Craig A. Halpern, CSP, CPE, ARM
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Although many improvements have been made in the design of tools and personal protective equipment, vibration continues to be a major risk factor in the development of musculoskeletal disorders. Regular and prolonged exposure to vibration from tools such as chain saws, lawn mowing equipment, and air impact tools used in automotive repair, are thought to be linked to syndromes such as Vibration White Finger (VWF). Symptoms can include a tingling sensation and numbness, or whitening of parts of the fingers. After a pain episode, which may last for up to half an hour, the affected finger may become painful, red and throbbing when the circulation returns. For employees who operate riding lawn mowing equipment, street repair equipment such as rollers, and other earth moving equipment, long term exposure to Whole-Body Vibration (WBV) could exacerbate back pain and discomfort.



Where possible, through engineering controls, tools should be purchased that have been designed with internal vibration dampening systems. Anti-vibration gloves with gel filled palms may be another way to reduce the transmission of vibration into the upper extremities. For vehicles, good air seats with shock absorbers and seats with proper lumbar support are a good way to reduce vibration. Administrative controls may be more



challenging but could be employed to rotate employees through jobs and limit the overall exposure time to the vibrating equipment.

Manufacturers are required to provide details on how much vibration a tool or piece of machinery produces. However, this laboratory data may be much less than vibration generated when the tool is being used for its intended purpose. Vibration is measured in m/s^2 ; the lower the figure the lower the vibration level.

When selecting tools, look at a range of tools and make a short list and select from those within 50% of the lowest vibration figure. Therefore, if the lowest level is $4 m/s^2$ select tools in the range $4 m/s^2$ to $6 m/s^2$, by doing this you are likely to select a tool with

low vibration characteristics. In general, however, for an eight hour work day, average vibration exposure should be limited to $2.8 m/s^2$.

Where risks cannot be otherwise eliminated, general controls to consider for reducing both HAV and WBV include:

- Take care to choose low vibration tools and equipment.
- Choose the right tool for the job.
- Provide training and information on proper methods of using the tool.
- Avoid gripping the tool too tightly.
- Check driving seats to ensure that they are well sprung and give adequate support.
- Make sure vehicles are well maintained, including suspension systems.
- Provide information and advice on safe posture, sitting position and use of vehicles and machinery.
- Use rubber mats and provide shoes with thick rubber soles for operators who have to stand operating vibrating machinery.
- Encourage the early reporting of back pain and discomfort.



Tragic incident shows common flash fire dangers

It's common in manufacturing and construction but also extremely flammable and explosive: We're talking about acetylene that's often used for welding and cutting.

And the U.S. Chemical Safety and Hazard Investigation Board (CSB) has a lot to say about it too, after finishing its report on an explosion that killed three employees.

On January 25, 2005, at ASCO in Perth Amboy, NJ, three employees were killed and a fourth seriously injured when a shed exploded because of a buildup of acetylene gas.



Steps to take

CSB says several situations combined to cause this tragedy, including a lack of procedures, an omission by employees and a faulty valve.

- More specific lessons learned, according to CSB, focus on buildings where acetylene is found
- Ensure buildings or enclosures where acetylene is used or stored have proper ventilation
- Install electrical components that compensate for acetylene's explosive nature
- Use heating methods in these buildings in accordance with National Fire Protection Association standards (a propane heater inside the shed provided the flash point for the ASCO explosion).



Info: www.csb.gov for the report; MSHA has detailed information for dealing with acetylene at www.msha.gov/alerts/hazardsofacetylene.htm for guidance.

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Safe-T-Tips

Supervisors and employees need to be on the lookout for trip hazards in the workplace. Make sure:

- Aisles and walkways are kept clear of boxes, tools and other trip hazards
- People know to flag you if they see a trip hazard they can't fix themselves
- To respond to complaints. If you can't get an uneven floor fixed right away block it off with some sort of marking.

The Benefits of Returning Injured Employees to Work

Although return to work is viewed as a way to control indemnity costs, it's also vital to controlling medical costs, because claims are usually closed more quickly and with fewer complications when employees are kept on the job. Cases that stay open not only require medical care for a longer period, which automatically increases cost, but also they can lead to more invasive treatment and to long-term use of expensive drugs

Returning to work can result in faster healing because the stress or anxiety of disability can make physical conditions more serious. While some injured workers will regard a disability as a sort of holiday, most experience a great deal of anxiety and stress when their jobs and their futures seem at risk due to their inability to work. Stress can magnify symptoms. In the worst cases, employees are caught in a trap where the more they worry, the more it hurts, and the more it hurts, the more they worry.

The Bottom Line: Keeping injured employees on the job helps to control both your indemnity and medical expenses.

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KMIT Loss Prevention ‘Training Tools’

KMIT and **IMA** have teamed up to offer valuable information geared towards supervisors. These **Training Tools** provide our cities with a wealth of information to be utilized when holding ‘toolbox’ safety meetings with employees.

A complete library of Training Tools can be found on the **KMIT** website, www.kmit.net, by clicking “document center.” Each issue is in PDF form, so you may print issues for your use. If you don’t see what you need, you may contact Renee Rhodes with IMA at (316) 266-6345 or renee.rhodes@imacorp.com, and KMIT will provide you with what you are looking for.

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