Use Tools Wisely For Proper Hand Safety

Healthy Hands Week is June 6-11, 2011. If your summer plans include home improvement projects, a vacation or a road trip, you may rely on hand tools to complete your projects. Even seemingly simple or frequently completed tasks may put you at risk of injury to your hands or upper extremity if you fail to follow guidelines for the proper selection and use of hand tools.

The American Society of Hand Therapists (ASHT) offers these prevention and safety tips to minimize the likelihood of hand injury and trauma when using hand tools.

Minimize the potential for musculoskeletal problems. Read the manufacturer's directions on the proper methods for using the hand tool, and adhere to precautions. Ensure your work area has good lighting.

Avoid multi-tasking while using hand tools; concentrate on your task. Also, be aware of the stress from force and repetition when using a hand tool. Give yourself frequent mini-breaks (10-15 minutes will usually provide your muscles adequate rest), and allow your body to recover from fatigue.

If you need to use gloves when handling a hand tool (due to cool temperatures, protection or tool vibration), select gloves that will allow you to operate the tool safely, with the least compromise to your hand grip.

Select your tools wisely. Select an optimal hand tool that's appropriate for the desired task.

Consider the weight of the hand tool. A lightweight tool will limit muscle fatigue, and reduce misdirected efforts during operation.

Make sure your hand tools are properly maintained. Does your tool require oiling on a regular basis? Is it susceptible to rust? Should it be kept sharpened?

In certain circumstances, a larger hand tool diameter may prove to be an important contribution to maintaining a good and comfortable grip. "Precision grip" refers to small diameter handles of 8-13 mm, while "power grip" corresponds to larger diameter handles ranging from 31-38 mm and 50-60 mm.

The tool's handle surface material is important, and must provide sufficient friction to aid in a secure grip to prevent hand slippage. For example, rubber grips or a tacky surface may be applied to your current tool handles, altering them to require less gripping force.

Handles should be shaped to fit the hand for proper grasp, avoid contact stress and allow the hand and wrist to maintain a neutral position to the forearm. Avoid short tool handles that apply contact stress. Instead, use handles that are longer than your palm to avoid contact stress.

Don't assume manual hand tools are safer than power tools—or vice versa. Manual tools require exertion of force by squeezing handles together, twisting, pulling and pushing. Power tools require support and proper positioning for force application, and may provide "kick-back," or reaction to the force generated.

Be mindful that if the increased forces required to operate a tool safely are more than an operator is capable of exerting, then strength and control may be compromised, leading to an accident or injury.

For a hand tool to be truly ergonomically designed, the National Institute of Occupational Safety and Health (NIOSH) states it is important for a tool to fit both the user and task being performed without creating awkward postures, harmful contact pressures or other safety and health risks.

Set up the proper workstation. Organize your work environment so manual operations may be performed with elbows close to the sides of your body (approximately a 90-degree angle). Tasks requiring precision work are more easily performed with a workstation that provides a sit-stand option and offers support under the elbows, forearms and hands.

Working postures with arms outstretched forward or to the side will result in rapid fatigue of the shoulders and neck muscles, and reduce the precision and general level of skill necessary to safely and efficiently operate hand tools.

For additional information about hand tool safety, or to find a hand therapist near you, visit the American Society of Hand Therapy's website, www.asht.org. ■

Resources

A Guide to Selecting Non-Powered Hand Tools. www.cdc.gov/niosh/docs/2004-164/pdfs/2004-164.pdf

Simple Solutions for Hand-Intensive Work. www.cdc.gov/niosh/docs/2007-122/hand.html

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