Why talk about hand tools?

You may work with hand tools for six or more hours a day. Using a hand tool that does not fit your hand — that requires you to use a forceful grip, hold your hand or wrist in an awkward position, and/or results in excessive vibration can lead to work-related musculoskeletal disorders (MSDs). Such injuries tend to develop over time. Awkward wrist positions can also reduce your grip strength—one study found that working with the wrist bent reduced workers' grip strength by 27%.* Using a hand tool with a handle grip, length and weight that fits your hand can reduce fatigue, the risk for hand and wrist injuries, and have a positive impact on productivity and the quality of your work.

Reduce your risk for injury by selecting a hand tool that:

1. **Is made for the task—** avoid using a hand tool that was not designed for the task.
2. **Has a handle or handle area that fits your hand size and feels comfortable in your hand.** NIOSH** gives the following ranges depending on your hand size and how you hold a tool:

   ◊ **Single–handle tools — *Power Grip*** *(hammers, trowels, etc.) — a grip of just under 4 (3.9) to just over 6 (6.3) inches.*

   

   Precision Grip *(jointers, ornamental plaster tools, etc.) — a grip size of 1 to 2 inches*

   

   ◊ **Two-handle tools — *Power Grip*** *(nippers, etc..) a grip span of* no more than 3-1/2 inches open and at least 2 inches closed.

   

   Precision grip *(tweezers, etc.) — no more than 3 inches open and not less than 1 inch closed.*

3. **Keeps your wrist in a straight position** while you work. To find the most comfortable position for your hand and wrist, "let your hand relax on your lap, it will naturally fall into a 'position of rest', where all the tendons and muscles are most comfortable and lease stressed."**
4. Has a **handle or handle area long enough to extend beyond your palm.** Avoid ones that cut into your hand or presses into your palm.
5. Are **the lightest** option available.
6. Has features to reduce your risk for injury, such as:
   - ◊ Anti-vibration handle
   - ◊ Non-slip grip
   - ◊ Adjustable handle

Other preventive measures

⇒ If the **grip size is too small** for your hand, wearing gloves or adding a cushion or padding may help.

⇒ If the **grip size is too big**—see if you can change the handle to a smaller size or sand down a wooden handle.

⇒ Add a non-slip material, anti-vibration wraps, or wear gloves to improve grip strength and reduce vibration.

⇒ Use caps or guards on chisels and other striking tools to avoid overstrike injuries.

⇒ Rest your hands periodically.

⇒ **If you already have a hand/arm injury or condition** such as tendonitis, arthritis, or carpal tunnel syndrome, the smallest, lightest weight hand tool for the job would be best.

Discussion questions

⇒ What hand tools will you use today? Do they fit comfortably in your hand?
   - ◊ Is the grip the right size for your hand?
   - ◊ Can the tool be used while keeping your wrist straight — can you adjust the handle or height of your work to allow you to work with your wrist straight?
   - ◊ Is the handle length long enough—longer than the widest part of your hand?
   - ◊ Does the tool have other features—anti-vibration, non-slip grip surface, etc.

⇒ Do your hands get achy or tired after you use the tool for a typical task?

⇒ What are some steps that you can take to make the tool more comfortable?

Visit www.choosehandsafety.org to learn more about protecting your hands and wrists from MSDs and other hazards.

NIOSH—Easy Ergonomics: A Guide to Selecting Non-Powered Hand Tools.
****From www.ergonomics4schools.com, a free resource provided by the Institute of Ergonomics & Human Factors.***
Photos: *Tools supplied for photos courtesy of the Masonry r2p Partnership (BAC, ICE and IMI)*

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Date:

ATTENDEES

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