



Hand Tools

Choosing and using hand tools



Feeling pain in the wrist, palm or fingers? If you use hand tools regularly throughout the day, they might be the cause. The good news is that manufacturers now recognize that the tool is designed to work with, instead of against. The natural postures of your hand and wrist. However, it is also important to know how to pick the right tool for the job as well as use it properly to best protect the tissues in your hand.

Give your hands a break!



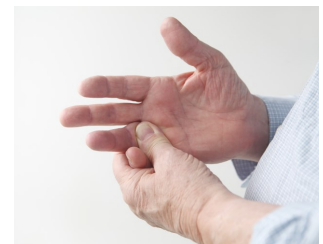
Hand stretch

- Make a tight fist with each hand.
- Stretch fingers out.
- Repeat 3 times.



Hand massage

- Apply gentle pressure with the opposite hand.
- Use circular movements to massage tissues in the palm.



Finger massage

- With gentle pressure, massage finger & joints in each hand.

What to watch for:

Keep your wrist straight

Avoid bending or rotating the wrists. There are a variety of bent handle tools available so you can do the job without bending your wrists.

Reduce the span of your grip

Don't overstretch your fingers and thumb! The best grip span for pliers, scissors or tongs is 6 to 9 centimeters from the fingers to the base of the thumb.

Wear gloves that fit

Gloves reduce both strength and dexterity. Tight fitting gloves can put pressure on the hands. Loose-fitting gloves reduce your grip strength as well as put you at risk for other safety hazards such as snagging.

Choose tools with large switches

Avoid trigger finger actions. Select tools with large switches that can be operated with all four fingers.



Additional Information



Avoid putting stress on your hands' soft tissues

- Do not use poorly designed tools that put pressure on your palms or fingers (ie: short handled pliers or tools with finger grooves that do not fit your hand).
- Your hand is not a hammer. Avoid repeated pounding of your palm on an object.

Working with heavier tools

Avoid static muscle loading. Reduce both the tool weight and size. If you must use a heavier tool, do not raise or extend your elbows. Try using counter-balanced support devices for larger, heavier tools.

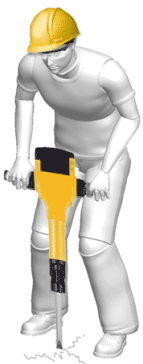
Choose a handle that is the right size and shape

- Avoid sharp edges and pinch points. Choose tools that do not cut or pinch the hands. For example, choose a tool with round handles instead of square ones with sharp edges that can dig into the fingers and palms.
- Depending on the job, follow these guidelines for selecting the right size circular tool handle:
 - Power grip: handle diameter = 3 - 5 cm
 - Precision finger grip: handle diameter = 0.75 - 1.5 cm



Reduce the amount of grip force needed

The greater the effort to maintain control of a hand tool, the higher potential for injury. Use a tool that has a grip surface that is more compressible than hard plastic.



Temperature and vibration

- Protect your hands from extreme temperatures. Heat and cold can decrease manual dexterity and may require an increase in your grip strength.
- Excessive vibration can cause reduced blood circulation in the hands, causing a painful condition known as white-finger syndrome.

Adapted from NIOSH Elements of Ergonomics Programs - Toolbox Tray 9-C