



ERGONOMICS

The hand and wrist is a highly complex system of levers and pulleys made up of ligaments, tendons, muscles, nerves, bones, and more. Because of the repetitive nature of many jobs, the stress and pressure created in the hand and wrist can cause it to become extremely vulnerable to various types of injuries called cumulative trauma disorders (CTD's). Every time you grasp an object or touch a keyboard you are contracting one or more of the flexor tendons that make your fingers move. Most of these tendons pass through a small passage in the wrist known as the carpal tunnel. Over time, and with repeated use, this area can become swollen or irritated. This in turn may cause pressure on the nearby nerves. Other irritants may be caused by holding the wrist at awkward angles or having contact with vibrating tools. Sometimes we can develop pain in the hands just by holding them for extended periods of time in a contracted position.



Ergonomics

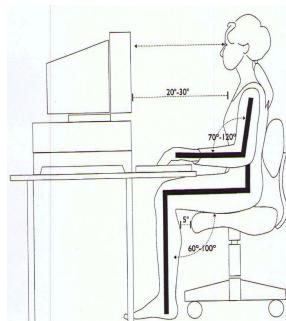
- Ergonomics means designing the workplace to fit the worker. In other words, making your facility "worker friendly".
- Are your hands shielded from the vibration caused by power tools?
- Are the workstations too high or too low?
- Have you eliminated any sharp edges at the workstation or on the tools you use that may place pressure against your hand, fingers or wrist?
- Is the temperature at a comfortable level?
- Do you have tools that properly fit your hands?

Causes of hand and wrist injury vary, but some of the common factors include:

- Mechanical stress
- Poor posture
- Excessive use of fingers or wrist
- Cold temperatures
- Vibration
- Smoking
- Medical factors (*age, diabetes, overweight*)
- Lack of exercise

Symptoms of hand and wrist injury vary depending on the type of injury

- Pain and tightness
- Numbness
- Tingling sensations
- Discoloration
- Decreased grip strength
- Spasms
- Decreased range of motion



Warm-Up Before Working

Finger Stretch

Spread your fingers as wide as you can. Hold for five seconds; relax. Repeat three times with both hands.



Thumb Stretch

With one hand palm up pull the thumb gently downward. Hold for five seconds. Repeat three times on each hand.



Head and Neck Rotation

Tuck your chin. Look over your right shoulder as far as possible, then your left shoulder. Repeat five times in each direction.



Tilt your head to the left bringing your ear toward your shoulder as far as you can. Repeat to the right side. Bend five time to each side.



Neck Flexion and Extension

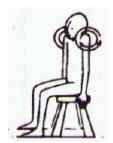
SLOWLY tip your head forward and touch your chin to your chest.

SLOWLY tip your head back as far as possible. Repeat five times.



Arm Circles

Raise both arms out to the sides, keeping your elbows straight. Make small circles with your arms, first forward, then backward. Repeat five times in each direction.



Shoulder Roll

With arms relaxed at your sides, slowly lift and roll your shoulders forward in a circular motion, then roll them backward. Repeat five times in each direction.



Pectoral Stretch

Lock your finger behind your neck. Press your elbows back as far as you can. Do not push your head forward. Relax. Repeat this five times.



Upper Arm Stretch

Lock your hands behind your back. Straighten your arms and lock elbows. Push your hands away from your back as far as possible. Return to starting position. Repeat five times.



Side Bend Stretch

With arms over your head, clasp fingers and straighten your elbows. Slowly lean to the left and then to the right until you feel the stretching on your side. Bend three times to each side.



Wrist Stretch

Place your hands, palms together, with fingertips toward ceiling. Lower hands and forearms toward lap until hands make a right angle to forearm. Hold for five seconds. You should feel a stretch at your wrist. Relax and repeat three times.