

It's a fact...

You should know about work-related musculoskeletal disorders.

Work-related musculoskeletal disorders (WMSDs)—

- ◆ Result from the cumulative effect of repeated stress to the body that is associated with workplace risk factors.
- ◆ Encompass a variety of injuries or illnesses of the muscles, tendons, ligaments, nerves (outside the brain and spine), joints, cartilage, bones, and supporting blood vessels in either the upper or lower extremities or the back.
- ◆ Occur over a period of time and can result in permanent damage to muscles, tendons, and tendon sheaths, and related bones, muscles, and nerves.
- ◆ Can result in permanent disability.



Dental work requires heavy hand forces and prolonged awkward postures.

Common WMSDs

- ◆ **Carpal tunnel syndrome** is a condition of pain and weakness in the hand caused by repetitive compression of a nerve that passes through the wrist into the hand.
- ◆ **Low back pain** is caused by repeated bending, lifting, and twisting of the lower back; sitting for long periods of time; standing on hard surfaces; and experiencing vibration over a long period of time. This “cumulative trauma” weakens the tissues in the back. When an aggravating event occurs—even a minor one such as a slip, trip, fall, or awkward lift—the low back pain intensifies because the weakened back tissue can’t handle the stress.
- ◆ **Tendonitis** is an inflammation of a tendon resulting from repeated tensing of that muscle/tendon group.
- ◆ **Lateral epicondylitis (tennis elbow)** is an inflammation of the tendons attached on the outside of the elbow caused by activities that have jerky throwing motions, repetitive twisting at the wrist, or impact (e.g., turning a screwdriver).

- ◆ **Medial epicondylitis (golfer's elbow)** is an inflammation of the tendon attachments on the inside of the elbow resulting from activities that require repeated or forceful rotation of the forearm and bending of the wrist at the same time.
- ◆ **Tenosynovitis** is an inflammation of the tendon and the lining of the smooth sheath surrounding the tendon resulting from repeated movement of the tendon in the sheath.
- ◆ **Synovitis** is an inflammation of the inner lining of the membrane surrounding a joint.
- ◆ **Stenosing tenosynovitis of the finger (trigger finger)** results from a tendon surface becoming irritated and rough. If the tendon sheath also becomes inflamed and presses on the tendon, a progressive constriction of the tendon can occur, resulting in a loss of free movement in that joint area. This disorder may be caused by repeated use of a tool such as a staple gun or pair of pliers.
- ◆ **de Quervain's disease** is a stenosing tenosynovitis affecting the tendons on the side of the wrist and base of the thumb. Constriction of these tendons pulls the thumb back away from the hand, causing severe pain and limited thumb movement or use.
- ◆ **Raynaud's phenomenon (white finger or vibration syndrome)** is caused by the reflexive constriction of the small arteries, which causes the fingers to become white (pale) and feel cold, numb, and tingly.

Finding Solutions to Prevent WMSDs



Fact Sheet 3: You should know about carpal tunnel syndrome.

Fact Sheet 4: Proper use of hand tools can make your work safer and easier.

Fact Sheet 5: Proper use of powered hand tools can make your work safer and easier.

Fact Sheet 7: You should know how to safely perform *lifting* and *lowering* tasks.

Fact Sheet 8: You should know how to safely perform *pushing* and *pulling* tasks.

Fact Sheet 9: You should know how to safely *carry* heavy loads.

This fact sheet is presented as guidance and should not be substituted for a professional medical examination and proper treatment of WMSDs.



This fact sheet is a product of the DoD Ergonomics Working Group, was adapted from their June 2000 publication, *Preventing Work-Related Musculoskeletal Disorders in the Workplace*, and supersedes USACHPPM Fact Sheet 88-003-0599.

Written for both supervisors and workers, the fact sheet provides basic information on ergonomics. For more information, visit the working group's Web site at <http://chppm-www.apgea.army.mil/ergowg/product.htm>.