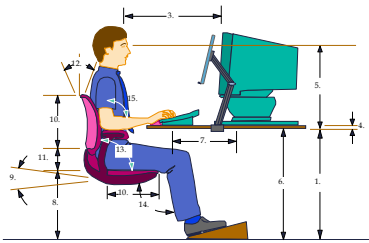


# Ergonomics



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## \*What is Ergonomics

Ergonomics is the science of adjusting environments, tasks, or procedures to fit the individual.



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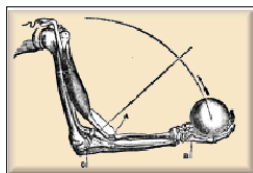
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## Musculoskeletal Disorders

Improper ergonomics can result in your developing a Musculoskeletal Disorder (MSD). MSDs can affect your:

- Muscles
- Tendons
- Nerves
- Joints
- Ligaments
- Cartilage
- Nervous system



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## Musculoskeletal Disorders

MSDs can impact almost any part of your body, including:

- \*Upper torso (back, neck, and shoulders)
- \*Upper extremities (arms, wrists, and hands)
- \*Lower extremities (legs and feet)

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## Musculoskeletal Disorders



Signs and symptoms of MSDs include:

- Pain, numbness, and tingling
- Cramping
- Swelling or stiffness of joints
- Reduced range of motion



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## \*Musculoskeletal Disorders

Common types of MSDs include:

- Cumulative trauma disorders
- Repetitive stress injuries
- Repetitive motion injuries



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## \*MSD Risk Factors

Factors that contribute to the development of MSDs include:

- Awkward postures
- Repetitive motions
- Forceful exertions
- Contact stress
- Vibration

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## \*Awkward Posture

Posture is important. Awkward postures are a risk factor for MSDs.

Awkward postures include bending, twisting, and working with your hands above your head or your elbows above your shoulders.



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## \*Repetitive Movements

Some jobs may require you to perform the same movements over and over again.

Repetitive movements can irritate your tendons and increase pressure on your nerves.



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## \* Force

Force is the amount of muscular effort used to perform work.

Exerting large amounts of force can result in fatigue and physical damage to your body.



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## \* Contact Stress



Contact stress occurs internally when a tendon, nerve or blood vessel is stretched or bent around a bone or tendon. External contact stress occurs when a part of your body rubs against a sharp or hard object such as the edge of a desk or table.

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## \* Vibration



Excessive vibration can:

- Decrease blood flow
- Damage nerves
- Contribute to muscle fatigue

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## \* Personal Risk Factors

There are also personal risk factors that can contribute to the development of MSDs. These personal risk factors include:

- Physical condition
- Psychological stressors
- Gender
- Age
- Body size
- Medical condition

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## \* Good Posture

A good working position is an upright sitting posture, in which the torso and neck are approximately vertical, the thighs are approximately horizontal, and the lower legs are vertical.



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## \* Good Posture



Another good working position is a declined sitting posture with the buttocks higher than the knees and the angle between the thighs and the torso is greater than 90 degrees.

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## \* Good Posture



An upright standing posture is a good working position. In this position the legs, torso and neck are approximately in-line and vertical.

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## \* Lifting

The most common work-related medical problem is lower back pain.

This is often a result of poor lifting techniques. If you have to do any lifting:

- Think before you lift!
- Test the load and ask yourself – “Can I lift it safely?” If not, get help!
- Make sure there is nothing in your path that could cause you to fall.



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## \* Lifting

Lifting safely means:



- Squat to bend at the knees
- Keep your head up
- Get a good grip with both hands and hold it close to the body
- Lift smoothly using your legs
  - Do not use your back
- Turn with your feet, don't twist your back

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## Ergonomics In Action

Understanding and practicing good ergonomics can:

- Make your job less stressful on your body
- Increase your safety and productivity
- Create a more comfortable environment
- Prevent injuries and illnesses



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