

Workstation Ergonomics



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KWORCC



Workstation Ergonomics

- Origin – Greek
 - Ergon = Work
 - Nomos = Laws Governing or Knowledge of

THE STUDY OF HUMAN PHYSIOLOGY
AND BEHAVIOR TO...

*FIT THE TASK TO THE PERSON, NOT THE PERSON
TO THE TASK!*



Ergonomics Statistics

- 31% of all workplace injuries in the US are MSD's resulting from ergonomics issues
- 80% Private Industry – 20% Government
- Average time away from work: 12 days



17% of all US employees work for government!

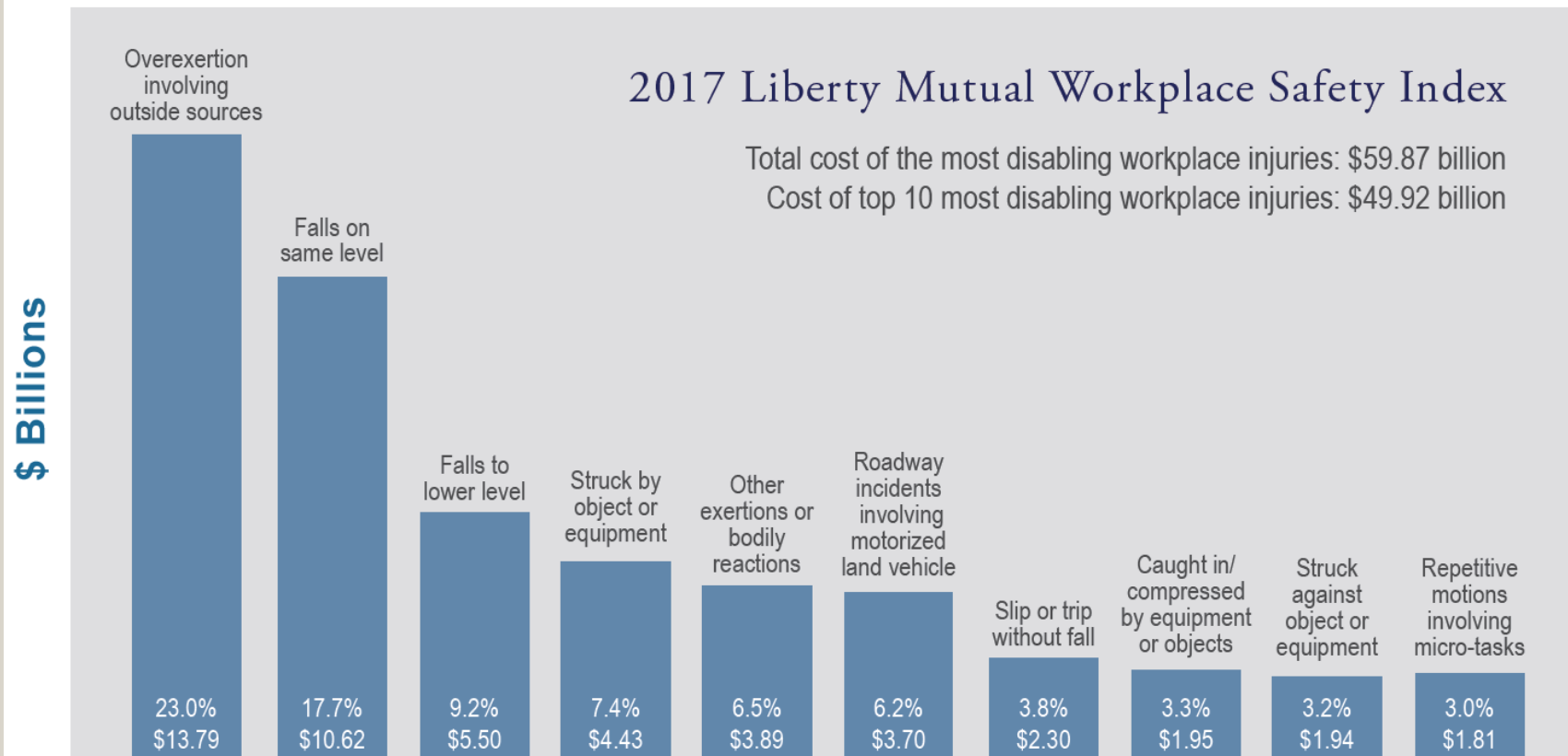
Source: Bureau of Labor Statistics

<https://www.bls.gov/news.release/osh2.nr0.htm>

<https://www.bls.gov/web/empst/ceshighlights.pdf>

Costs of Injuries

Top 10 Causes and Direct Costs of the Most Disabling U.S. Workplace Injuries^{1,2}





Common Ergonomic Injuries

- Carpal Tunnel Syndrome
- Trigger Finger
- Lower Back Pain
- Thoracic Outlet Syndrome
- Cubital Outlet Syndrome

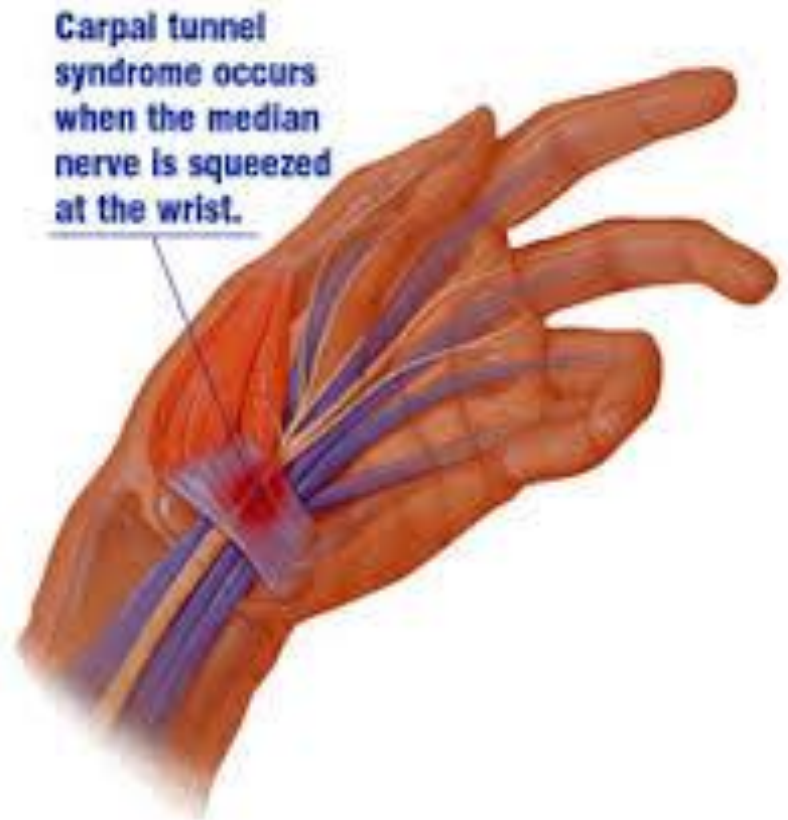
Carpal Tunnel Syndrome

Causes:

- Hand in an awkward position
- Repetitive Motion

Symptoms:

- Tingling, numbness & pain
- Affects the thumb, index finger, middle finger, half of the ring finger



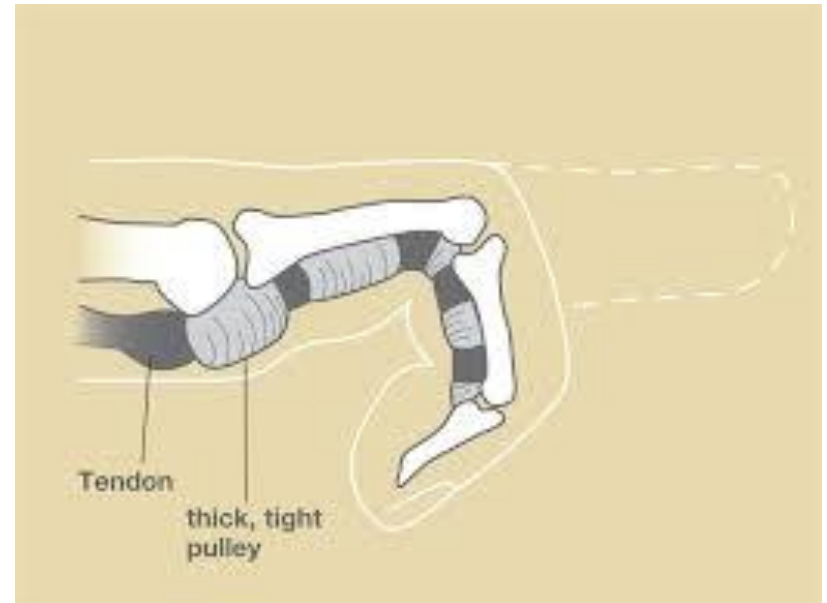
Trigger Finger

Causes:

- Inflammation of the tendon in the finger
- Repetitive Motion, i.e. spray painters

Symptoms:

- Pain & numbness in the affected finger
- Restricted motion of the finger





Low Back Pain

Causes:

- Irritation of the large nerves that go to the legs and arms
- Irritation of the smaller nerves in the spine
- Strain of the back muscles
- Injury to the bones, ligaments or joints
- Injury to the disk space between vertebrae
- **LIFTING/TWISTING!**

Symptoms:

- Pain
- Numbness/tingling
- Burning
- Restricted motion

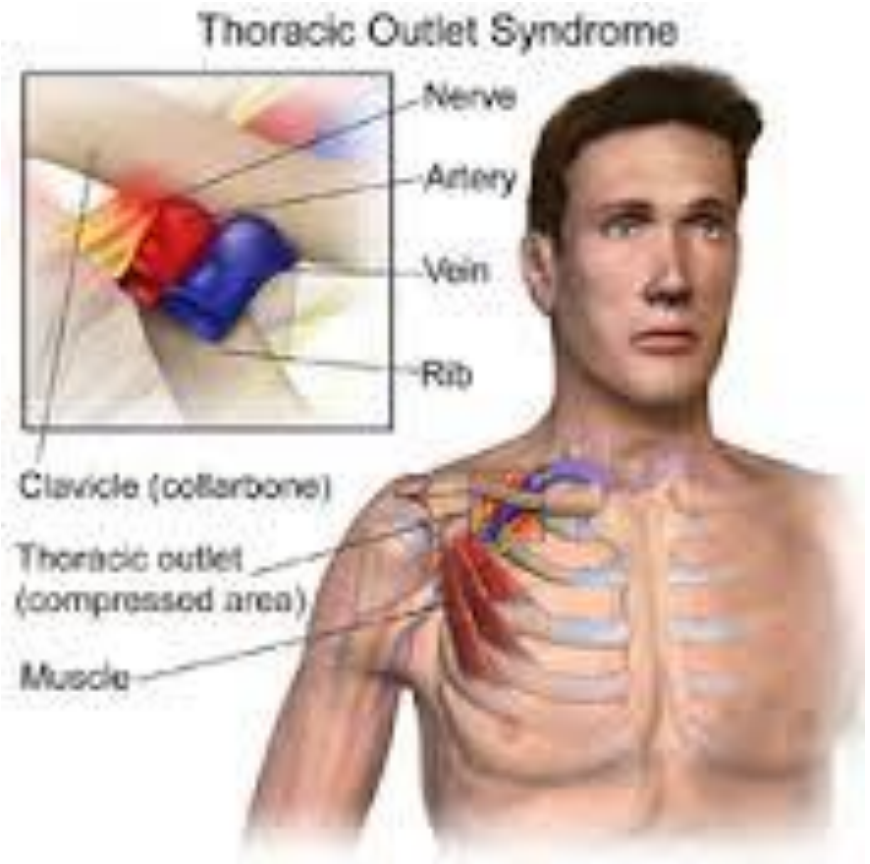
Thoracic Outlet Syndrome

Causes:

- Chronic pressure to the nerves and blood vessels that travel through the rib cage and collar bone.
- Repetitive tasks where the arms are used over the head level.

Symptoms:

- Pain, numbness, tingling, cold sensation, weakness, fatigue, and swelling in the arm and hand.



Cubital Outlet Syndrome

Causes:

- Stretching of the ulnar nerve.
- Repetitive motion of the elbow, bending and straightening.

Symptoms:

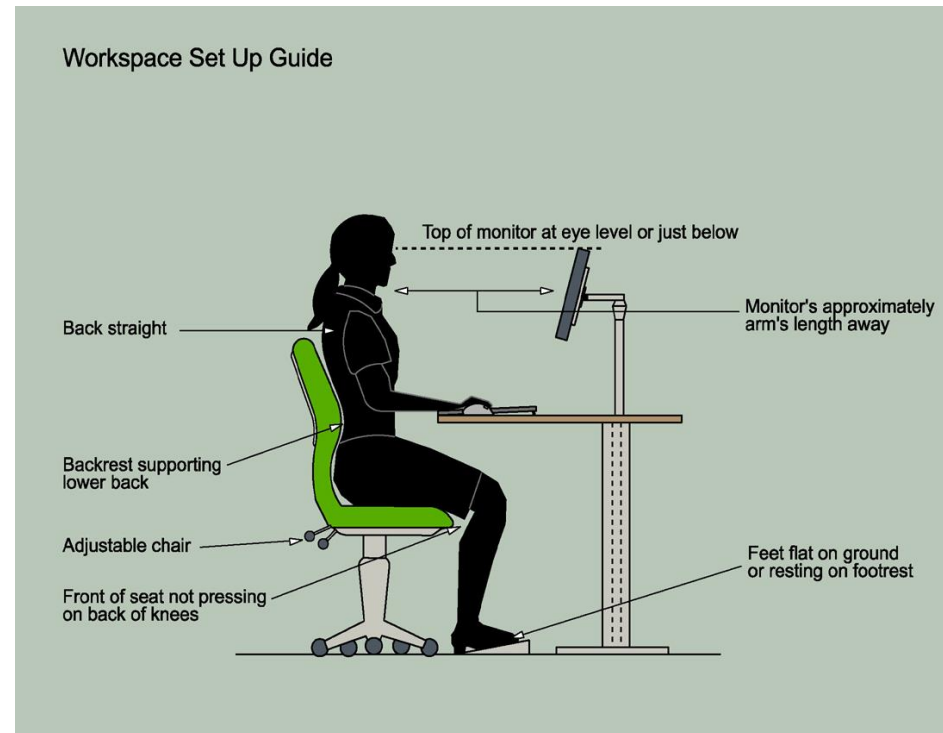
- Numbness to the inside of the hand, the little finger, and the outside of the ring finger. It later includes weakness, pain and electric shock at the elbow.



Workstation Ergonomics

■ Human ↔ Task Interaction

- Chair
- Display
- Lighting
- Document holder
- Work smart
- Posture

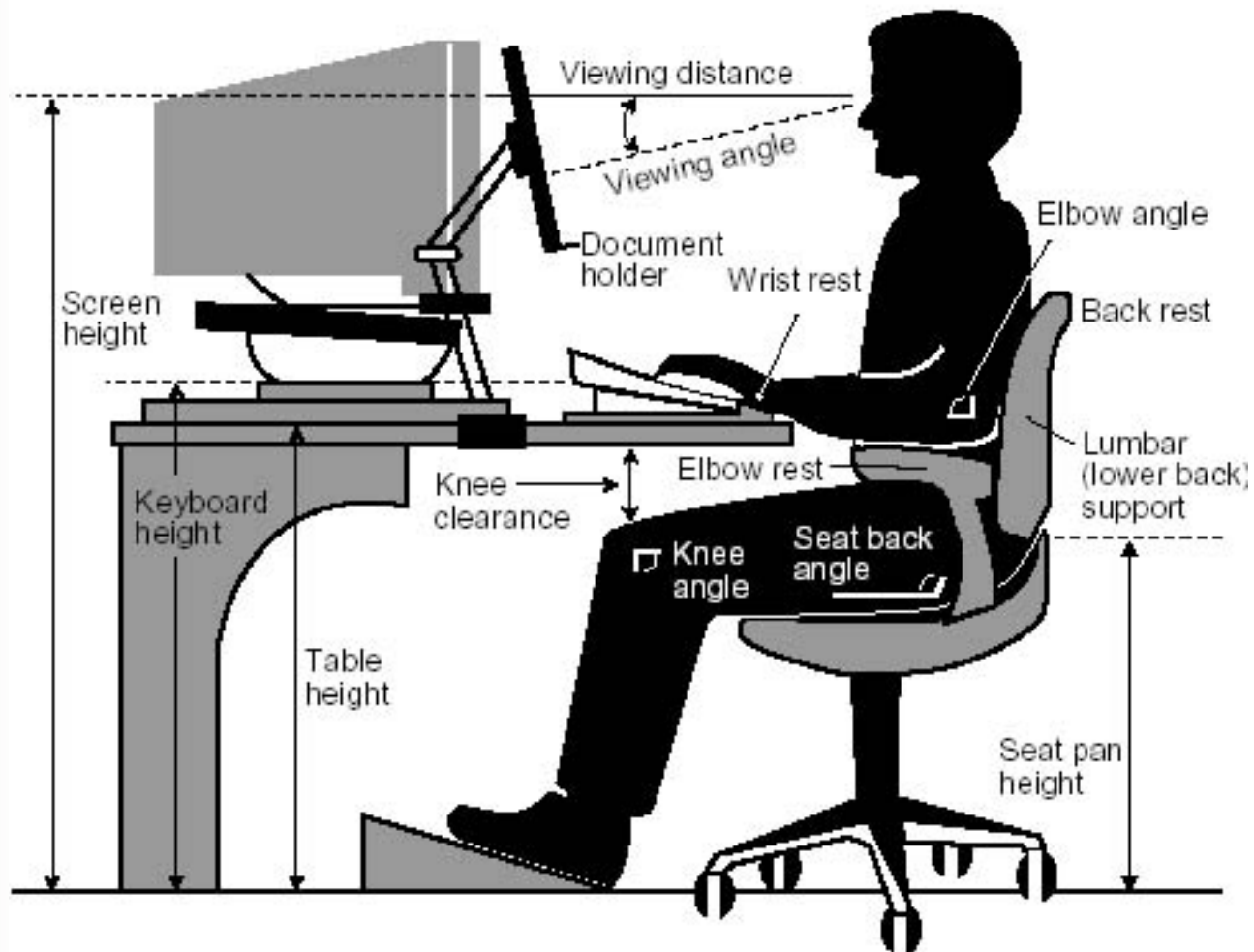


Workstation Ergonomics

- Adjusting the Chair
 - Adjust the height
 - Thighs horizontal
 - Feet flat on floor
 - Arms & hands comfortably positioned
 - Footrest
 - Armrests
 - Backrest
 - Seat pan
 - Firm seat cushion
 - Chair mat



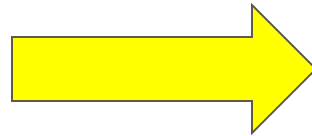
Workstation Ergonomics



Workstation Ergonomics

- Adjust the Display
 - Minimize glare
 - Top of screen eyebrow high
 - Contrast or brightness
 - Adjust lighting
 - Anti-glare filter

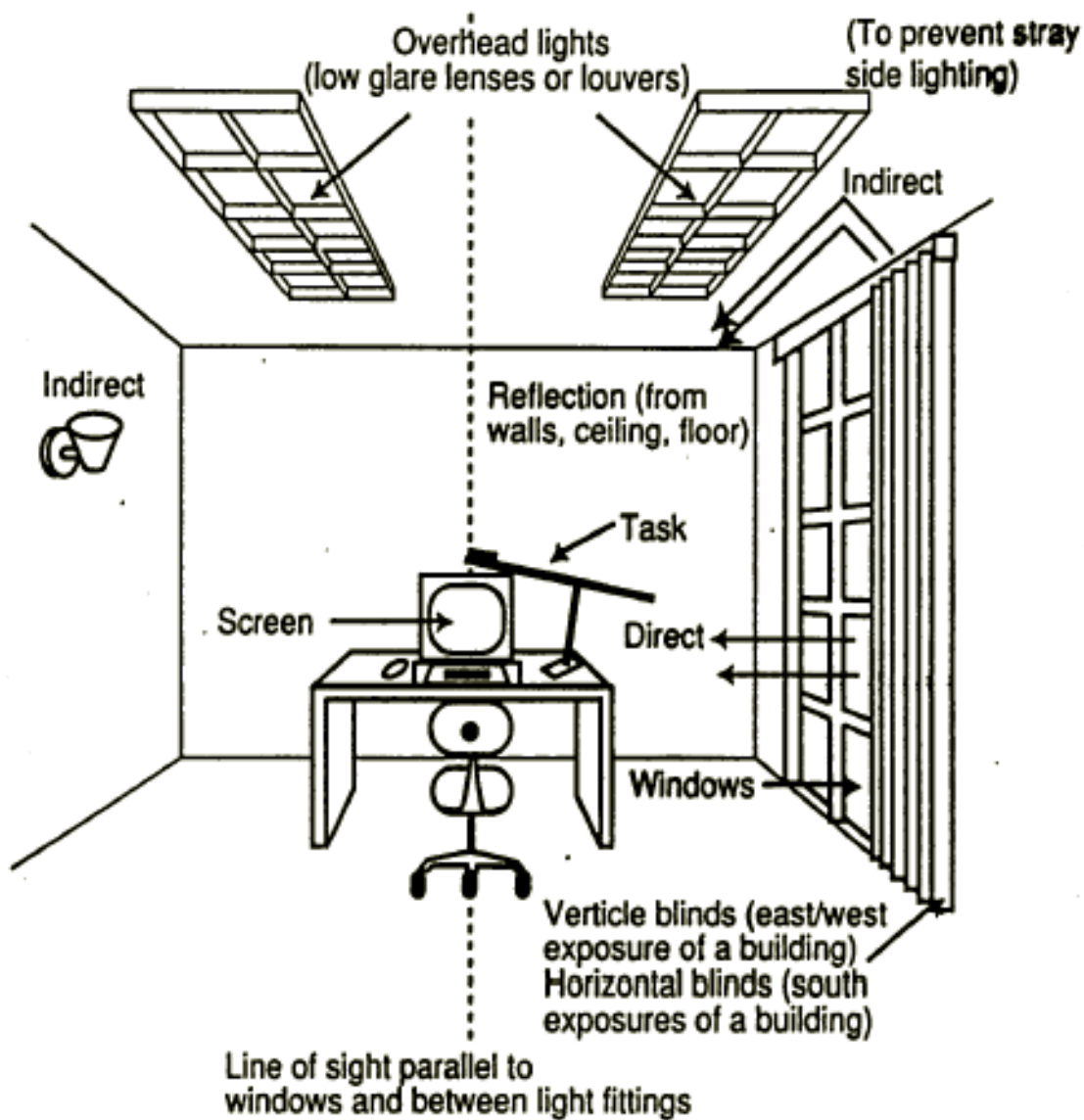
FULLY ADJUSTABLE!





Workstation Ergonomics

- Adjust Lighting
 - Draw drapes
 - Adjust blinds
 - Desk lamp or task light
 - Overhead lighting
 - Use indirect or shielded light
 - Walls medium or dark color





Workstation Ergonomics

- Adjust Document Holder
 - Close to screen
 - Same level as screen
 - Same distance
 - Rotate position to opposite side



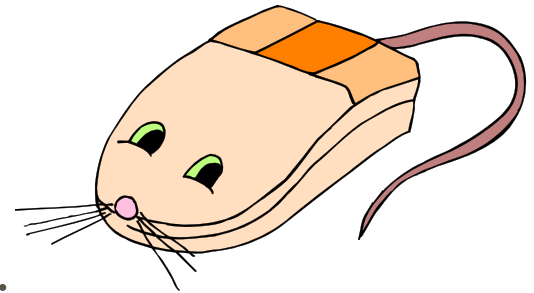
Workstation Ergonomics

- Work Smart
 - Change position
 - Stand up (every 20-30 minutes)
 - Stretch
 - Soft touch on keyboard
 - Keep hands and fingers relaxed

Workstation Ergonomics

■ Six Rules for Mouse Use

1. The mouse should be held loosely.
2. Don't rest your wrist or forearm
3. Use your whole arm and shoulder
4. Be careful not to lift your pinky.
5. Keep your wrist in neutral position.
6. Use a light touch when you click.





Workstation Ergonomics

EXERCISES FOR MOUSE USERS

1

Gently press your hands against a table,
stretch and hold for five seconds.



Workstation Ergonomics

EXERCISES FOR MOUSE USERS

2

Stretch and massage your fingers, hands, wrists and forearms throughout the day. Gently shake your hands and fingers to relieve tension and help blood flow.



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EXERCISES FOR MOUSE USERS

3

Rotate your shoulders in a full forward circle four times. Then roll them backward four times. Then rotate each shoulder separately four times. Do this at least twice daily.

Workstation Ergonomics



Questions ?



References

- <https://www.osha.gov/Publications/osha3125.pdf>
- <https://www.osha.gov/SLTC/etools/computerworkstations/>
- <https://www.bls.gov/news.release/osh2.nr0.htm>
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- <https://www.bls.gov/web/empsit/ceshighlights.pdf>