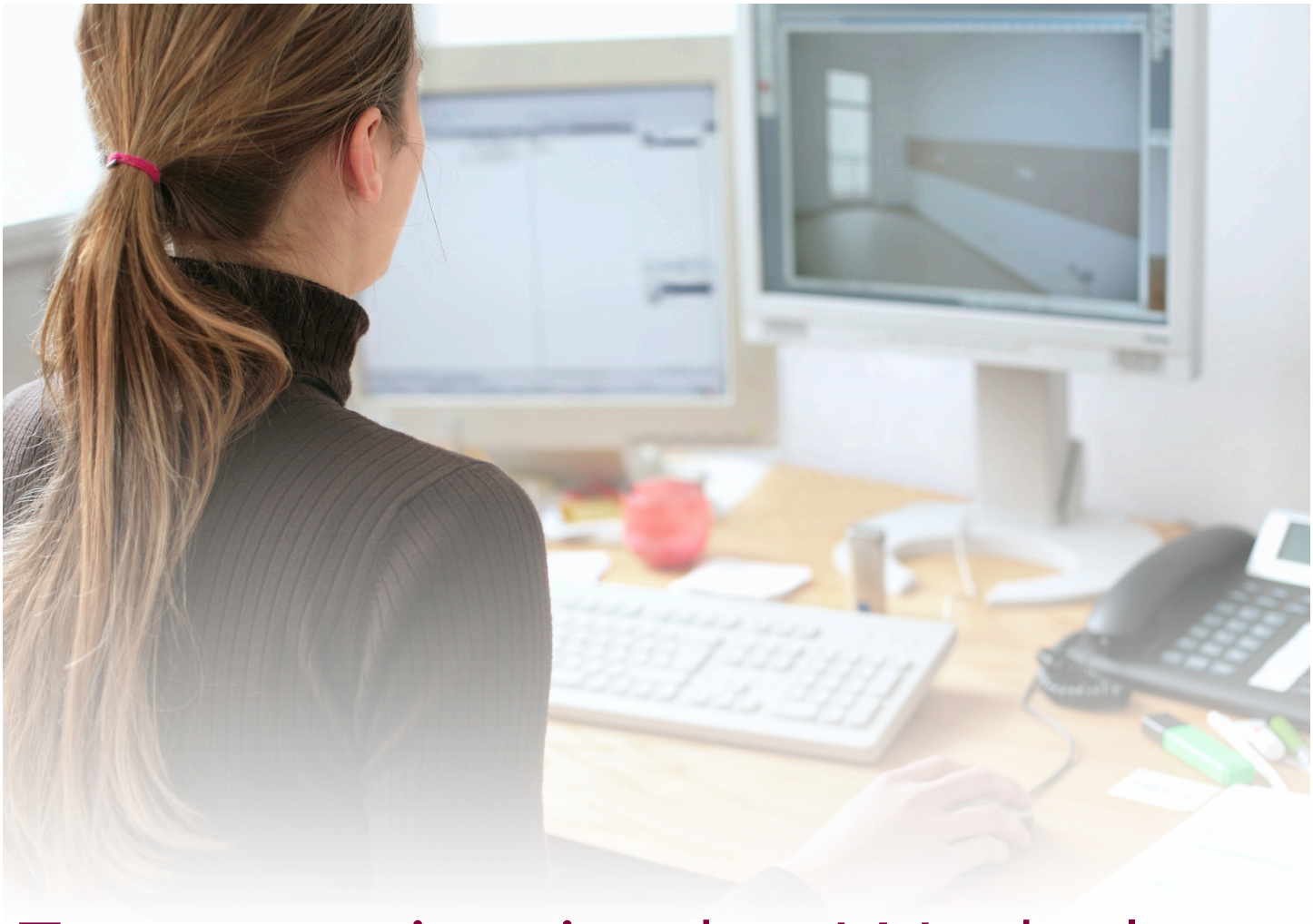

Ergonomics in the Workplace

The science of fitting workplace conditions and job demands to the capabilities of employees is critical to maintaining a safe workplace and reducing injuries.

Ergonomic principles are used to improve the "fit" between the worker and the workplace. A practical approach to ergonomics considers the match between the person, the equipment they use, their work processes and the work environment.

A person's capabilities, physical attributes and work habits must be recognized to improve ergonomic factors in the workplace.

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23940 - 8/2021

Learn More

Visit the Resource Library at UnitedHeartland.com for videos, tools and tips sheets for creating the optimal ergonomic work station.

Ergonomic-Related Injuries

These injuries can affect muscles, tendons, nerves, joints and spinal disks and include:

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

Some examples include:

- Tendinitis
- Tennis elbow
- Carpal tunnel syndrome
- Neck and back injuries
- Strains/sprains
- Bursitis
- Thoracic outlet syndrome
- Trigger finger

Body Stress — the precursor to musculoskeletal disorders, this can manifest itself by exhibiting stress in:

- Muscles
- Nerves
- Tendons
- Ligaments
- Cartilage
- Joints
- Spinal discs

Symptoms include:

- Aching, burning, numbness, stiffness or tingling — especially if symptoms worsen with continuation of task that causes them
- Muscle fatigue or pain that disappears with rest
- Decreased range of motion
- Decreased grip strength
- Loss of balance
- Deformity
- Swelling
- Cramping
- Redness
- Loss of color

Causes include:

- Repetitive motion, such as lifting
- Angle or alignment to activity
- Activity duration without rest
- Contact stress caused by sharp or hard object putting localized pressure on a part of body — irritating local tissues and interfering with circulation and nerve function
- Awkward posture — any deviation from the "neutral" body position
- Static posture — occurs when one position is held for a prolonged period of time
- Temperature extremes, whether heat (resulting in increased fatigue and heat stress) or cold (constricting blood vessels and reducing sensitivity and coordination of body parts)
- Psycho-social issues

The Benefits of a Workplace Ergonomic Program

- Decreased injuries, illnesses and workers' compensation costs
- Increased efficiency
- Increased physical well-being
- Increased morale

Ergonomic Review

One of the best things you can do to establish and maintain a sound ergonomic workplace is to ask yourself a few simple questions:

- How is your workspace organized?
- What kind of equipment and tools do you use?
- What body positions do you use?
- How often do you repeat a motion?
- Do you take breaks?
- Does your task change, and how often?

Once you know those answers, see how they fit in with established ergonomic "zones" (see illustration at right):

Comfort — 75 to 80% of work

- This zone has the least potential for repetitive motion injuries and is an ideal state for heavy and frequent lifts
- Elbows are close to the side of body
- Minimum distance reaches or bends
- Arms are bent at the elbow at 90 degrees
- Back and neck are in the normal S-curve position

Caution — 15 to 20% of work

- Arms extend slightly away from body
- Torso or neck is bent
- Arms may extend but elbows aren't locked
- Reach extends to head or knee level
- No reaches behind body
- Elbows stay below shoulder level
- Knees are slightly flexed, never locked

Danger — 5 to 10% of work

- Reaches extend overhead and to floor level
- Elbows locked and far away from body
- Elbows are above shoulders
- Torso or neck is bent more than 15 degrees
- Arms extend behind the body
- Torso is twisted

Ergonomic Adjustments in the Office

Make these key adjustments to ensure the most ergonomic benefits possible.

Chairs

- Adjust seat height so thighs are horizontal, feet rest flat on the floor, and arms and hands are comfortably positioned at the keyboard.
- If chair is too high, use a footrest to take pressure off back of the thighs.
- Armrests should be padded and adjustable in both the up/down and inward/outward positions and be padded.
- Adjust the backrest so it supports lower back and fits spine curvature.
- Situate seat pan for proper slope and comfort.
- Seat cushions should be firm, not soft.

Ergonomic Control Strategies

Engineering Controls

- Insist on appropriate initial design of the work station or work area
- Improve the design of the existing work area or equipment with appropriate adjustments
- Provide necessary equipment and accessories

Administrative Controls

- Limit extended work hours
- Provide mini-breaks
- Provide Personal Protective Equipment
- Adjust and maintain appropriate work pace and stress levels, including:
  - Work processes
  - Posture and habits
  - Wrist and hand motions
  - Neck and back postures
  - Equipment and materials placement
  - Proper tools for the task
  - Work habits

- Utilize chair mat to decrease carpet resistance and increase maneuverability.

Document Holders

- Position document holder close to computer monitor at same level and distance from eyes to avoid constant changes of focus.
- Rotate position of document holder to opposite side of screen periodically.

Computer Monitors

- Adjust the display so top of the screen is slightly below eye level.
- Position screen to minimize glare and reflection from overhead lights, windows and other light sources.
- Ensure windows are not directly in front of or behind monitor.
- Set contrast and brightness of screen at a comfortable level. Adjust as light in room changes throughout the day.
- Place keyboard at a height and distance to keep elbows comfortable.
- Keyboard should be flat, or tilted slightly downward away from the body in order to keep the lower arms, wrists and hands in a straight line.
- Hands should be essentially flat, with no twisting of wrists to the side, or upward or downward.
- Split keyboards — with each half rotated outward at “ZXCVB” — may work well for some but not all.
- Mouse should be large enough so hand fits comfortably over it.
- Release mouse from hand when not in use.
- Hand strain can be reduced by occasionally using function keys, instead of mouse.

Desk Lighting

- Close drapes or adjust blinds to reduce glare.
- Adjust desk lamp or task light to avoid reflections on the screen.
- Light sources should come at a 90-degree angle, with low watt lights rather than single high watt.
- The task lighting should not be less than light at screen.
- Reduce overhead lighting (where possible) by turning off lights or switching to lower wattage bulbs.

How to Learn More

United Heartland is committed to providing and directing our customers to helpful ergonomics resources. Contact our team of specialists for more information at 800-258-2667 or visit UnitedHeartland.com.

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