How to make your computer workstation work for you

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How we have evolved

Something, somewhere went terribly wrong.
What we will cover:

• What is ergonomics
• Why should I care about ergonomics
• Where and how I hurt
• Why I hurt
• How can I reduce the risk of hurting myself - Setting up your work station
What is Ergonomics?

Ergonomics = Fitting the job to the person
Why should I care about ergonomics?

The proper work environment can:
- Make the job safer - it reduces discomfort and helps prevent injury
- Make the job easier - it can increase productivity
- Help you lead a more healthy and productive life
- Accommodate differences in job tasks and body sizes among employees
Ergonomic injuries

I use a keyboard. Isn't that dangerous?

Sometimes I type all hunched over.

Ow! Ow! It hurts to hear it!
Ergonomic injuries

• Known as MSDs (musculoskeletal disorders) or soft tissue injuries
• Disorders of the
  • Muscles
  • Nerves
  • Tendons
  • Ligaments
  • Joints
  • Cartilage
  • Blood vessels
  • Spinal discs
Ergonomic injuries

- **Common MSDs**
  - Tendonitis (hand, wrist, arm)
  - Epicondylitis (tennis elbow)
  - Carpal tunnel
  - Thoracic outlet syndrome (shoulder)
  - Herniated disc
  - Sciatica
  - Neck strain
  - Low back pain

- **Signs and symptoms:**
  - Swelling
  - Numbness
  - Tingling
  - Discomfort
  - Burning sensation
  - Irritation
  - Insomnia
  - Stiffness
Ergonomic risk factors

• Awkward posture
• High force
• Long frequency (repetition)
• Combinations of any of the above
• Physical stressors
  • Contact stress (pressure from objects on soft tissue)
  • Environmental issues (lighting, temperature, noise)
  • Psychosocial issues (high workload, few breaks, high stress, fast pace, little variety of workload)
We can fix that!
The Points of Contact

1. Eyes to Source
2. Hands to Input Device
3. Body to Chair and Ground
1. Eyes to the Source

- Monitor positioned directly in front of you
- Head/neck relaxed, upright and chin ‘in’

Like this.....
Not like this.....
1. Eyes to the Source

• Adjust height - top of the display is at or slightly below eye height.
  • Bifocals or transitions lenses - monitor slightly lower
• Monitor where you can easily read the information - about an arm’s length away
Monitor height and distance
Dual Monitors

- Equal use - directly in front (center of keyboard) and angled slightly
- One used more frequently - primary monitor front and center and other on either side at a 30° angle
- As close together as possible
- Same height
2. Hands to Input Device

- Keyboard and mouse positioned so:
  - At elbow level
  - Upper arms hang comfortably
  - Forearms are horizontal
  - Elbows at about 90°
  - Wrists are straight
Hands to Input Device

Too close

Too far
Hands to Input Device
Hands to Input Device
Hands to Input Device
Computer Mouse Use

- Position the mouse at the same level as your keyboard
- Work with your shoulder relaxed
- Keep your arm close by your side
- Hold your elbow at about a 90 degree angle
- Keep your wrist in a straight or neutral position
- Do not twist or move your wrist from side to side or up and down when working

- Keep your hand, fingers and thumb relaxed
- When not using the pointing device – let it go
- Consider alternating hands
- Consider reducing mouse use by using keyboard shortcuts, and by creating desktop shortcuts
- Wrist rests can help to maintain neutral postures and pad otherwise hard surfaces
Hands to Input Device
Hands to Input Device

WRONG!

RIGHT!

WRONG!

RIGHT!
Mice... or is it mouses?

• New mouse designs (e.g., trackball) require less index finger work
3. Body to Chair

- Seat height adjustable.
- Back adjustable up and down.
- Back tilt forward and back.
- Seat pan adjustable in and out.
- Arms adjustable up and down (arms optional).
- Proper fit for individual.
- 5 casters for stability.
“Oh, wait, Doreen. That chair’s just not safe.”
Sit in a Neutral Position

- Sit straight with back against the chair back
- Head balanced over shoulders (not forward)
- Shoulders relaxed, not hunched
- The curve of the chair back fits into the deepest part of the curve in your lower back.
- Forearms and thighs parallel to floor, at a $90^\circ$ angle
- Back of knees do not contact chair
- Feet flat on floor or on footrest
Work Postures (seated)

• Feet resting firmly and flat on the floor
• If not,
  • Raise/lower chair to allow feet to rest comfortably flat on floor.
  • Use footrest if keyboard/desk height requires an elevated chair.
Work Postures (seated)

or
Work Postures (seated)

Knees should be slightly lower than hips
Work Postures (seated)

- Sit with back pressed firmly up against backrest
Work Postures (seated)

• Sit in a slightly reclined posture while working. If not,
  Use a footrest if your heels come off the floor when reclining in your chair.
  Adjust seat pan angle and/or backrest angle to allow reclining and adjust position of keyboard and mouse as needed.
Work Postures (seated)

- Adjust the height of the backrest so that the curve of the back of the chair fits into the deepest part of the curve in your lower back.
Work Postures (seated)

• Visible space between front edge of seat pan and the back of your knee.

• If not,
  • Choose a chair with 2-3 fingers width between front edge of chair and back of knees.
  • Attach a removable back support cushion to existing backrest to shorten seat pan.
  • Choose a chair with a gently curved front edge on seat pan.
  • Adjust seat pan depth (if available).
Work Postures (seated)

• Arms hanging relaxed at the side of the body.

• If not,
  • Adjust armrests down to below elbow height to allow upper arms to hang comfortably.
Work Postures (seated)

or

Armrest
Work Postures (seated) - Armrests

- Relaxed
- Armrest too High
- Armrest too High & Wide
4. The Workstation
Work Surface / Equipment Layout

• Is there adequate space for non-computer work?

• If not,
  • If a set of drawers are present, can they be removed and their contents stored elsewhere?
  • Can a separate table located nearby be used?
Leg & Knee Room / Movement

• Is there adequate leg and foot space under the work surface?

• If not,
  • Remove materials underneath desk.
  • Install keyboard tray to increase distance between monitor and desktop and provide more leg room.
Workstation Configurations

L handed person

R handed person

Adapted corner
Workstation Configurations
Reach
Keyboard Accessories

- Wrist rest
  - Used only during pauses, not during typing
Work Organization/Task Issues

- Document holders
Work Organization/Task Issues

• Do not cradle the phone between your ear and shoulder
• Place phone on non-dominant hand side
• Use a telephone head set if on phone repeatedly
Work Environment Issues

• Is the level of lighting considered adequate?
• If not,
  • Use appropriate task lighting.
  • Rest your eyes periodically
Using a Laptop

- Are you using a laptop for more than 2 hours/day cumulatively?
Using a Laptop

- External keyboard and mouse properly positioned
- Docking station
Sit/Stand Workstations
As the day goes on....
Work Organization Tips

• Stand Up
  • 5 minutes each hour.
  • When you’re talking on the phone.
  • When retrieving print jobs.
  • Instead of reaching for reference materials.

• Move About
  • When possible stand up and walk around.
  • Take breaks / meals away from desk.
  • Stretch

• Vary your tasks
  • Eyes away from screen
  • Hands off keys
Questions?

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