Ergonomics

- What is it?
- Why should I be interested?
- What do I need to know to help myself?
- Where can I get help?
Ergonomics is the science of adapting workplace conditions and tasks to match the capabilities of an individual.
Ergonomics Injury

Cumulative develops gradually

Trauma damage from stress

Disorder physical impairment, abnormal condition

RSI, MSD, strains, tendonitis, tennis elbow, epicondylitis...
Could affect any muscle, tendon, ligament, or nerve
Not just computer related

Back injuries from lifting and carrying
(80% will experience back pain in their life)

Knee injuries from squatting

Neck injuries from phone use
ERGONOMIC RISK FACTORS

Workplace Stressors

- Repetition
- Force
- Posture/Body Position/Contact
- Vibration
- Temperature
- Lighting
ERGONOMIC RISK FACTORS

Personal

- Degenerative Disorders
- Misaligned Fractures
- Hormonal Factors
- Substance Abuse
- Gender
- Obesity/lifestyle
- Age
- Hobbies
Contact stress
CONTROLLING RISK FACTORS

- Workstation Layout
- Job Design
- Employee Size
- Posture
- Right Height
- Right Angles
- Managing Stress
- Task Breaks
WORKSTATION

Neutral Posture For Computer Use

✓ Chair
  ✓ Monitor
  ✓ Keyboard & Mouse
  ✓ Accessories

Maximum adjustability
Neutral Posture
Spine erect with head and neck aligned, “S” curve in back maintained
Shoulder relaxed
Upper arms down and close to body
Elbow angle 90 – 110 degrees
Wrist straight
Knees & Hips 90-110 degrees
WORKSTATION

Chair

Seat  - comfortable size,
- padded, curved or waterfall front edge
- space between front edge and knee

Height - feet flat on floor or footrest
- thighs approximately parallel to floor
- when standing, front edge of chair ~2” below knee
WORKSTATION

Chair
Backrest - lumbar support in “small of back”
- height and tilt adjustable
- support your back, lean against backrest

Armrest - padded & adjustable (Horizontal and vertical)
- support shoulder in relaxed position
- arms close to body
• GOOD LOWER BACK SUPPORT
• ADJUSTABLE - KNEES AND HIPS ARE LEVEL.
• CHAIRS ON CASTORS MUST HAVE 5 LEGS
• IF YOUR DESK IS TOO HIGH, COMPENSATE BY RAISING THE SEAT HEIGHT OF YOUR CHAIR
• NEVER STAND ON THE CHAIR TO REACH ANYTHING, PARTICULAR IF THE CHAIR HAS WHEELS OR IS OF THE SWIVEL KIND.
• POTENTIAL ADJUSTABILITY FEATURES INCLUDE; CHAIR HEIGHT, TILT, ARMREST HEIGHT & POSITION, SEAT PAN DEPTH, BACKREST HEIGHT, LUMBAR SUPPORT, TENSION...
How To Move In Your Chair

When you're moving about at your desk, your back is vulnerable to injury. Sudden bends and turns pull stiff, tense muscles and cause nagging back pain. To help protect yourself, learn to watch your back when you make a move.

Avoid sudden, jerky movements.
How To Move In Your Chair

Avoid twisting your torso. Move your whole body when you turn, with feet and hips facing your destination.
WORKSTATION

Adjustable Tray

Tray – horizontal and vertical
+/- tilt
padded wrist rest
attached mouse tray

Adjust – keyboard close to body
elbow angle 90 – 110 degree
tilt so wrists are straight
mouse close to keyboard

“It’s an ergonomic keyboard. Once you learn how to use it, it will increase your speed by six percent!”
WORKSTATION

Mouse
Best location – above keyboard tray

Mouse grip

Mouse from elbow

Wrist rest ?
Wrist Deviation
WORKSTATION

Monitor
Height – top of screen ~eye level

Distance – arm’s length away

Angle – almost vertical to reduce glare
  90 degrees from window

Consider affects of bifocal (Computer Glasses)
Adjust screen contrast/font size for comfort
SIT/STAND WORKSTATION
Reduce the stress of sitting

It may surprise you to know that sitting puts more strain on your back than standing--or lifting. The stress of leaning over printouts and paperwork, slouching in an uncomfortable chair and spending long hours in one position leaves many office workers with aching, tired backs. But beating back stress is simple--and it's up to you.

Good posture helps reduce the stress of sitting in one position for prolonged periods. The secret to good posture is in maintaining the balance of the three natural curves of your spine. These curves work together to distribute body weight evenly. If you slouch forward or hunch your shoulders, you not only look bad, you also sabotage the body's balance and stress your spine.

How to Make it Work
In many cases your office set-up may not promote good posture. With a few modifications, you'll be sitting pretty.

• Use a lumbar roll to support your lower back. You can buy a premade lumbar roll or roll up a towel and place it in the small of your back to provide support in this area.
• Adjust your chair so that your arms are at desk level and your feet are on the floor. If your feet don't touch the floor, use a footrest.
• Position yourself so that your weight is shifted forward (off your spine). A seat wedge or folded towel two to three inches thick may help.
• Take short breaks at least once an hour to stretch your spine.
• Avoid crossing your legs. This interferes with the circulation to your legs and throws your spine out of balance.
OFFICE ERGONOMICS

Phone

- Use headset for extended use - don’t cradle receiver

- Avoid resting elbow on hard surface

- Keep close
OFFICE ERGONOMICS

Documents – keep close to monitor
don’t place flat on desk
utilize holder (either at monitor height or between monitor & keyboard)

Lighting – reduce room brightness (remove bulbs)
use blinds to control sunlight
task lighting
FILING CABINETS

In order to keep filing areas safe:

- Store the heaviest materials in the bottom drawer.
- Never leave the upper drawers of a file cabinet open.
- Open only one drawer at a time.
- Never open a drawer if someone is crouched below it.
- Shut a file drawer immediately after removing files.
- Use the handle when closing a drawer to help reduce pinch-point injuries.
OFFICE ERGONOMICS

Best Practices
Sit close to workstation
  - Keep commonly used items close
  - Change positions frequently
  - Take mini-breaks every 20 minutes
  - Distribute tasks throughout the day
Get help early for symptoms-
Stiff neck
Back soreness or pain
Tingling, numbness or pain in; wrists, fingers, elbows or shoulder
Headache, eyestrain

Our Website has a section on Ergonomics under the Workplace Health and Safety Heading
There are many self help topics That may help you resolve most of your issues yourself.
Workstation Components

• How to choose an ergonomic chair
• Tips for using a computer mouse
• Laptop guidelines
• Tips for using a laptop computer

Workstation Design

• Arranging a computer workstation: Recommendations
• Video display terminal (VDT) workstation-design guidelines
• Ergonomic tips for computer users
• Setting up your workstation
• Computer workstation evaluation checklist (PDF)

Reference Information And Links

• OSHA ergonomics page
• NIOSH: ergonomics and musculoskeletal disorders
• 3M Workspace Comfort Guide
If the problem persists, speak to your supervisor. If together you agree that further assistance is necessary you can contact EH&S.

Purchasing Services is available to provide assistance and guidance in the furniture/accessories selection process.

412-624-8642
www.ehs.pitt.edu