Ergonomics
The Agenda

• Definitions
• Standards
• Problems
• Solutions
• Resources

“No wonder your arm aches. Shackles should be placed at eye level. Man, it’s an ergonomic nightmare down here.”
But First, Let’s Stretch!

• Here are some stretches you can do in the morning and during the day.
But First, Let’s Stretch!

• You can do these while sitting:
Definition – what is Ergonomics?

- From the Greek words “ergon” (work) and “nomos” (law), or…
- Studying both the person and the job/task, and designing the work environment so that the two fit together to prevent or minimize the occurrence of injury
Requirements

• OSHA - General Duty Clause
Recommendations

• NIOSH – Lifting Equation, 1997 Guidelines
• ANSI – Z-365
• NIH – Laboratory Guidelines
• Industry-Specific Guidelines
What’s the big deal?

- In 2004, UB recorded approximately 47 injuries, with 480 lost workdays.
- In 2002, approximately 61 injuries were recorded, with a total of 2,331 lost workdays.
What’s the big deal?

• In 2003, BLS reported the median days away from work with a Carpal Tunnel diagnosis was 32 days (median for all causes was 8)
• 31.3% of people diagnosed with tendonitis were away from work 31 or more days
• 34% of all lost time incidents in 2002 resulted from musculoskeletal disorders
What’s the big deal?

- Carpal Tunnel Syndrome – 226,000 new cases diagnosed in 2002
- Lower back pain – experienced by 85% of the US population
- Computer Vision Syndrome – 90% of 70 million computer users
It’s not just computers...
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Workstation Evaluations

• Assessments provided upon request!
While the work environment can cause problems, it’s also important to look for other possible causes, including:

- Hobbies outside of work
- Medical conditions (diabetes, pregnancy)
- Medications
- Second/Third jobs
- Age-related disorders
Solutions

• Design ergonomic features into any job
• Pre-planning is the best course of action
• THERE IS NO “ONE SIZE FITS ALL”
Solutions – Five Basic Principles

• Environment affects behavior
• Movement is critical
• Minimize extreme postures
• Avoid contact stress
• Take breaks!
Your Ergonomic Workstation

- Head and neck tilted vs. upright
- Display at wrong height vs. correct height and distance
- Wrist bent and unsupported vs. straight and supported
- Keyboard at wrong height vs. correct height
- Lower back not supported vs. supported
- Chair at wrong height vs. correct height
- Feet not flat on floor vs. flat on floor or footrest
Optimal Organization

Diagram:
- Non-working area
- Occasional
- Usual

[Image of a person in a sitting position with labels indicating areas of comfort and activity.]
Lighting the Way

• Different tasks require different levels of light
• “Old eyes” need more light
• One source of overhead lights
• Task lighting avoids glare, provides additional light when/where needed
Remember that...

- The best solutions \neq the most expensive
- Gadgets, bells & whistles can’t substitute for training and good practices
- The best way to prevent problems is to design them out at the beginning
A Word or Two about Backs

• Remember what we said about 85% of the US population reporting back pain?
• There are many causes; some preventable, some not
• There are things you can do to prevent or limit back problems
Proper Lifting Techniques

The wrong way!  The right way!
Assistive Devices

- These can be helpful, but must be combined with proper body positioning, etc.
Assistive Devices
Resources

• Your local EH&S contact
• Recommendations
  – www.osha.gov
  – www.cdc.gov/niosh/topics/ergonomics/
• Other Universities
  – www.ergonomics.ucla.edu/
  – www.ergo.human.cornell.edu/
  – www.yale.edu/ergo/
Resources

• Vendors/Service Providers
  – www.humanscale.com
  – www.alimed.com
  – www.ergoboy.com
  – www.ergotron.com
  – www.officeorganix.com
  – www.askergoworks.com
Questions?

"It's the latest innovation in office safety. When your computer crashes, an air bag is activated so you won't bang your head in frustration."