WELCOME!

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Laboratory Ergonomic Solutions

Dan Scungio, MLS (ASCP), SLS, CQA (ASQ)

Dan the Lab Safety Man, Inc.

"Safety is ALWAYS Value Added™"

part of Thermo Fisher Scientific

Objectives

- Identify the laboratory ergonomics regulations and regulatory agencies
- Gain in-depth understanding of laboratory ergonomics pitfalls
- Find cost-effective solutions to everyday ergonomics hazards
- Utilize an ergonomics assessment for your lab

What a Super Lab Employee Can Do…

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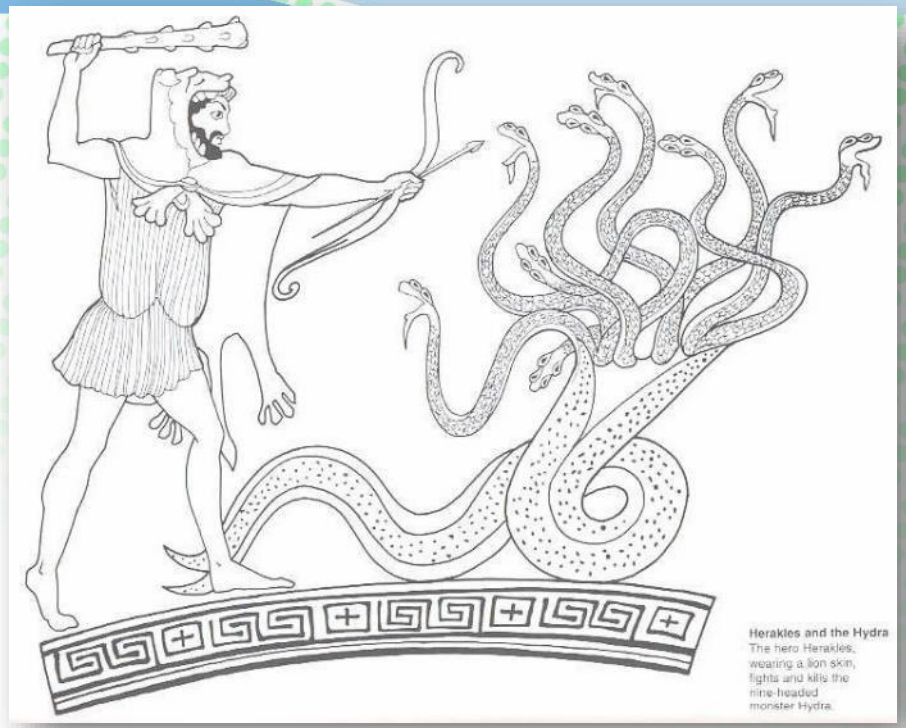
The Definition of Ergonomics

- From the Greek:
  - Ergon = Work
  - Nomos = Study of



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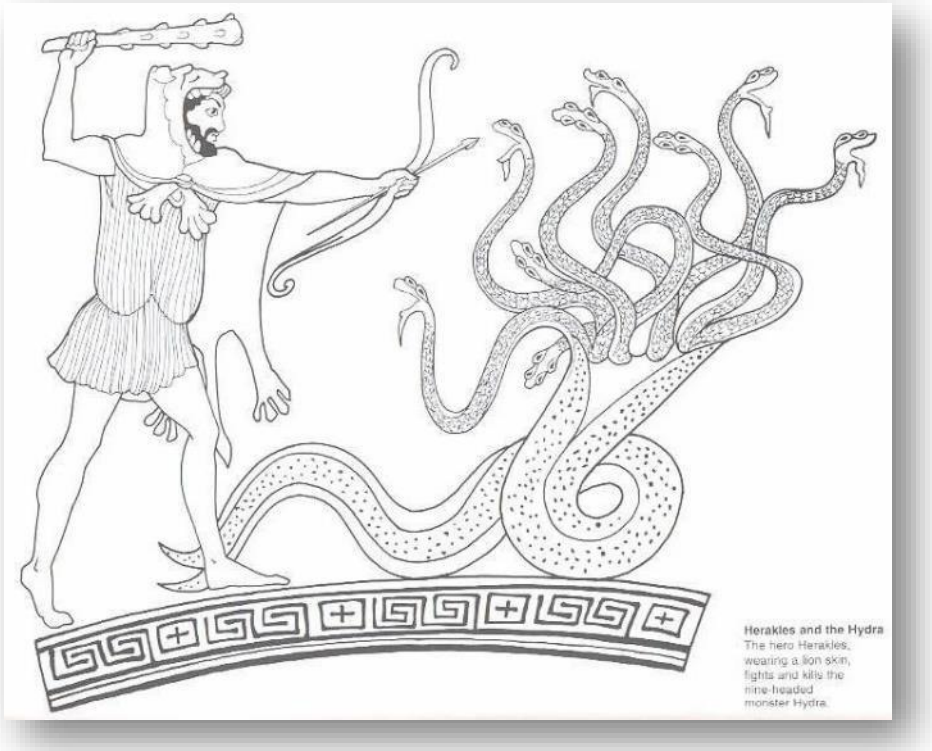

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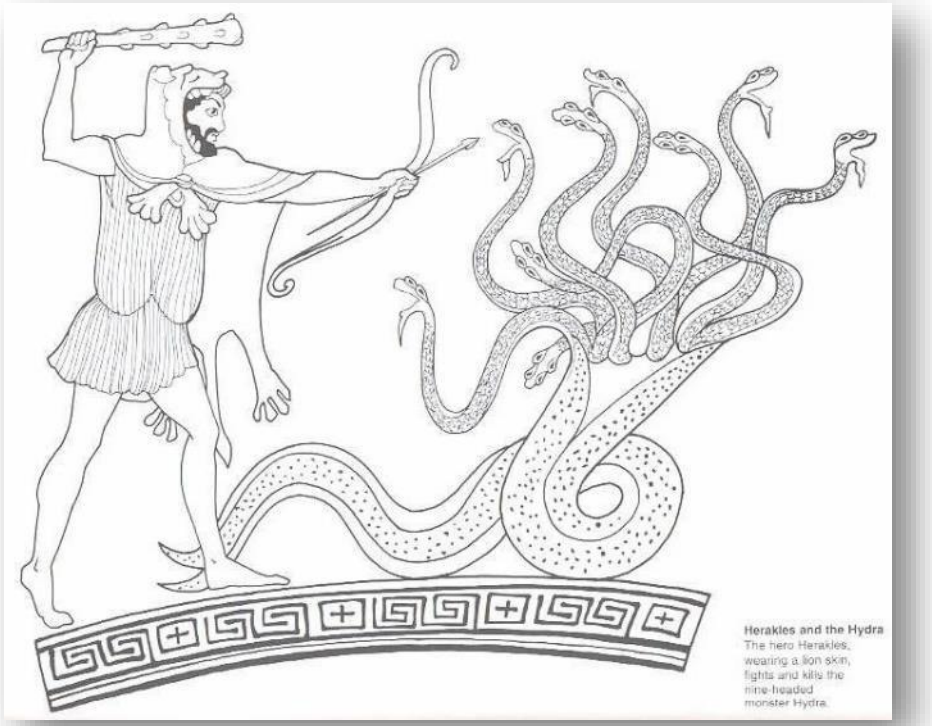

- Dan's Definition = Ergonomics is the science of adapting the job and the equipment and the human to each other for optimal safety and efficiency.

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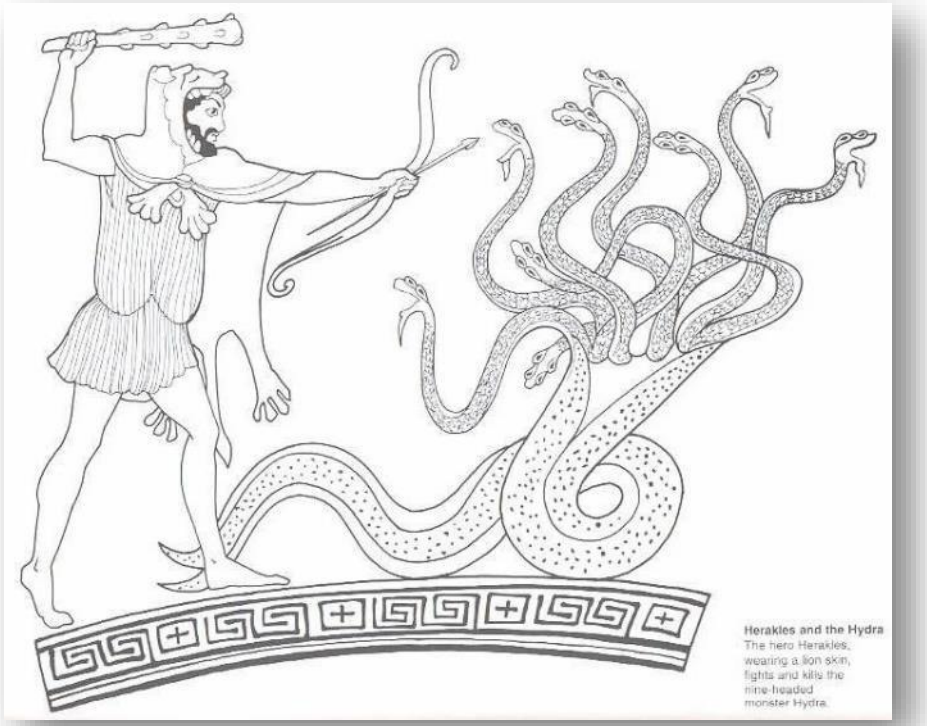

- From the Greek:
  - Ergon = Work
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- The Study of Work?
- Dan's Definition = Ergonomics is the science of adapting the job and the equipment and the human to each other for optimal safety and efficiency.
- Musculoskeletal Disorder (MSD)= A condition in which injury occurs to the musculoskeletal system over time due to trauma.

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Who Regulates Laboratory Ergonomics?

- OSHA
- CLSI
- CAP

OSHA®

CLINICAL AND LABORATORY STANDARDS INSTITUTE®

CAP ACCREDITED
COLLEGE of AMERICAN PATHOLOGISTS

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OSHA and Ergonomics

- January 2001
- OSHA puts into place its first ergonomics standard.
- Critics rail against language, cost.

- March 2001
- Congress repeals the law and prevents OSHA from issuing another that is "substantially the same."

- April 2002
- OSHA announces its Comprehensive Plan to reduce MSDs in the workplace.
- The Plan is a guideline, NOT a regulation.

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OSHA and Ergonomics

- 2010: Rumors of a new standard
- Placing MSDs on the 300 log- withdrawn 1/11

- 2011: Michigan bans ergonomics workplace standard in March
- California is the only state to have its own ergonomics standard

- Today: OSHA will cite violations/complaint issues under the General Duty Clause

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OSHA and Ergonomics

- Guidelines:
  - Management support
  - Involve employees
  - Identify problems
  - Early reporting
  - Implement solutions to control hazards
  - Evaluate progress

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CLSI

- GP-17 A3 Clinical Laboratory Safety.

- A comprehensive ergonomics program to prevent the occurrence of work-related musculoskeletal disorders (MSDs) should be implemented. This program may include training of employees about risk factors that cause MSDs, assessment activities to identify work activities or conditions of the job commonly associated with difficulties, and recommendations for eliminating the MSD hazard. Laboratory activity, workplace, and equipment (eg, chairs, laboratory workstations, computer keyboards, and displays) should be designed to reduce the risks of ergonomic distress disorders and accidents.

- Guideline or Regulation?

CAP

- GEN.77200

- There is a written ergonomics program to prevent musculoskeletal disorders (MSDs) in the workplace through prevention and engineering controls.

- NOTE: The program may include training of personnel about risk factors, identifying physical
- work activities or conditions of the job commonly associated with work-related MSDs, and
- recommendations for eliminating MSD hazards. Laboratory activity, workplace and equipment
- (eg, chairs, laboratory workstations, computer keyboards, and displays) should be designed to
- reduce the risks of ergonomic distress disorders and accidents.

- Evidence of Compliance:
- ✓ Records of ergonomic evaluation including recommendations for eliminating MSD hazards
- and appropriate corrective action based on assessment findings

Why Do They Care?

- Cost to the Country
  - 20 billion dollars annually
  - 1/3 of all worker's compensation costs are paid for MSDs
  - MSD cases typically cost twice the amount of other work injuries

- Cost to Workforce
  - How many Lab employees do we have?
  - What is the average age of Lab employees?

- What is the Cost to Your Organization?
  - Worker's Compensation
  - Medical Bills
  - Lost revenue
  - Recruitment fees

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Why Should You Care?

- Look at the BIG PICTURE!!
- How do you want to spend your final years at work?

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Why Should You Care?

- Look at the BIG PICTURE!!
- How do you want to spend your final years at work?
- How do you want to spend your retirement years?

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Improving Ergonomics in the Laboratory

Areas of Focus

- Standing
- Lifting
- Chairs
- Workbenches
- Hoods and Cabinets
- Microscopes
- Pipettes
- Microtomes and Cryostats
- Computer Work
- Phlebotomy
- Micro-Manipulation
- Noise

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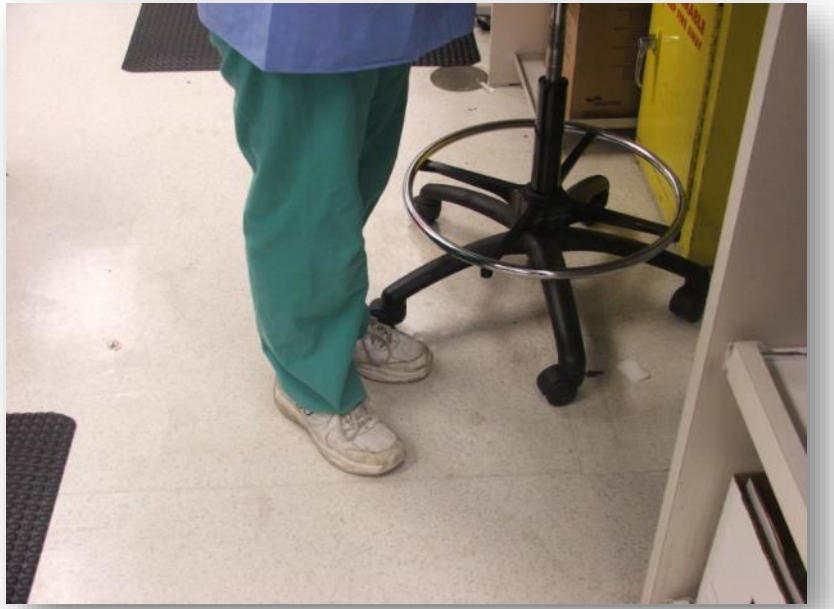
Standing While Working



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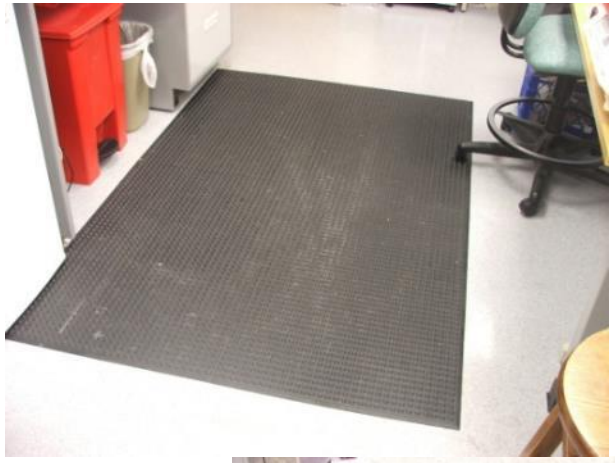
Floor Mats



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Lifting

- Never lift heavy objects without help
- Lift with your legs, not your back
- Place heavy objects on low shelves

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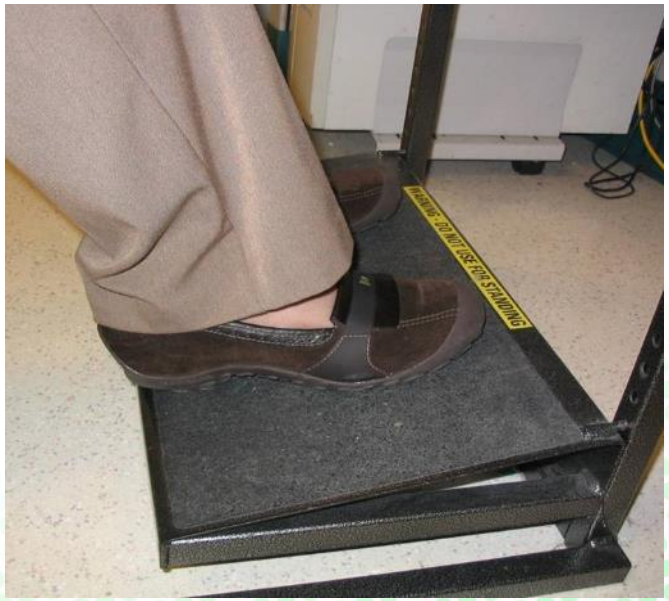
Chairs

- Fully adjustable
- Lumbar support
- Foot rests
- Foot rings?



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Workbenches

- STANDING:
  - The Right Height
  - Supplies with arm's reach (4-18" from edge)
  - Foot clearance and foot rest

Stressed

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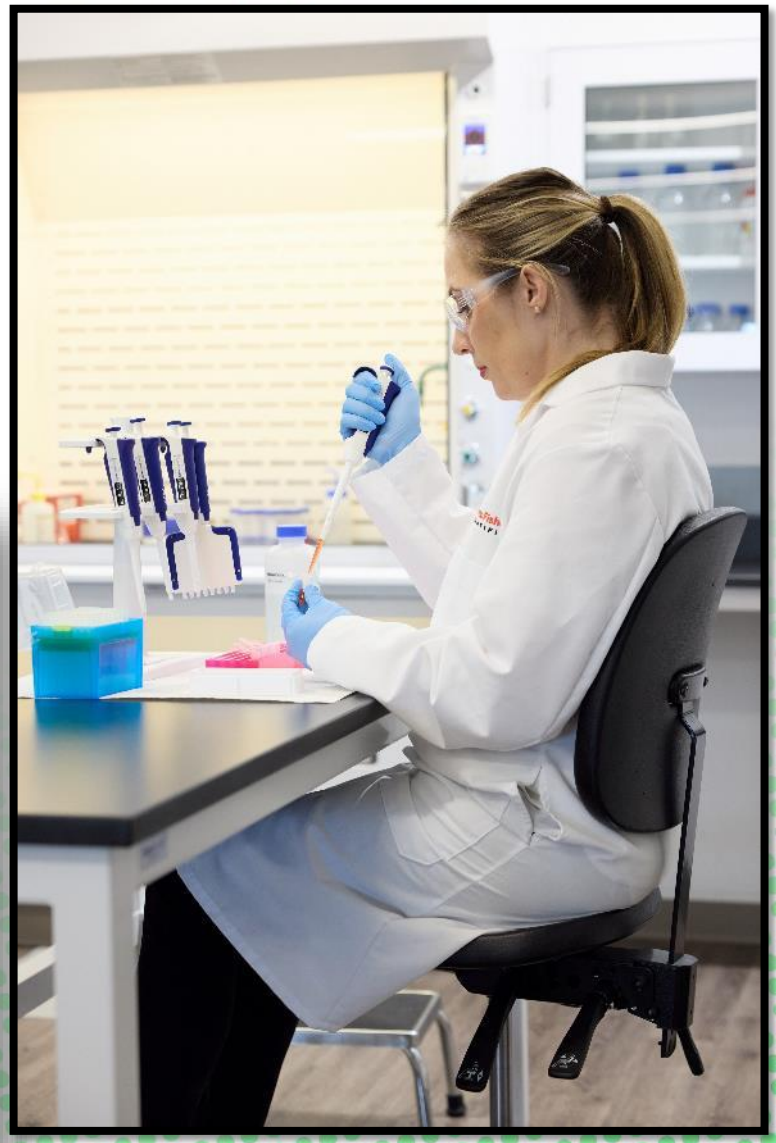
Workbenches

- SITTING:
  - Cut outs
  - Supplies within arms reach (24” from edge)
  - Knee and foot clearance
  - Rounded or padded edges

Neutral



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Workbenches

- SITTING:
- Adjustable devices
- Built in arm rests
- Adjustable stools

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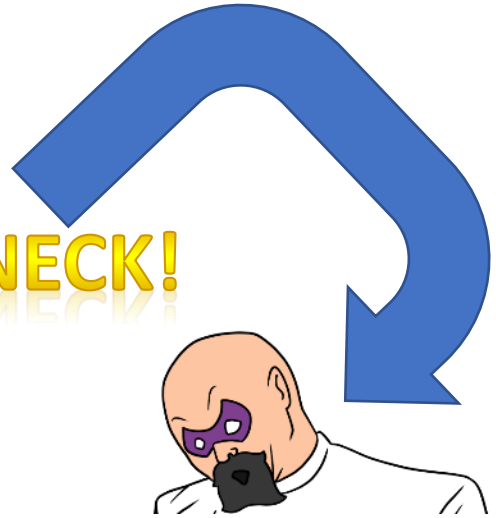
Virtual Ergo Break!

OH MY NECK!



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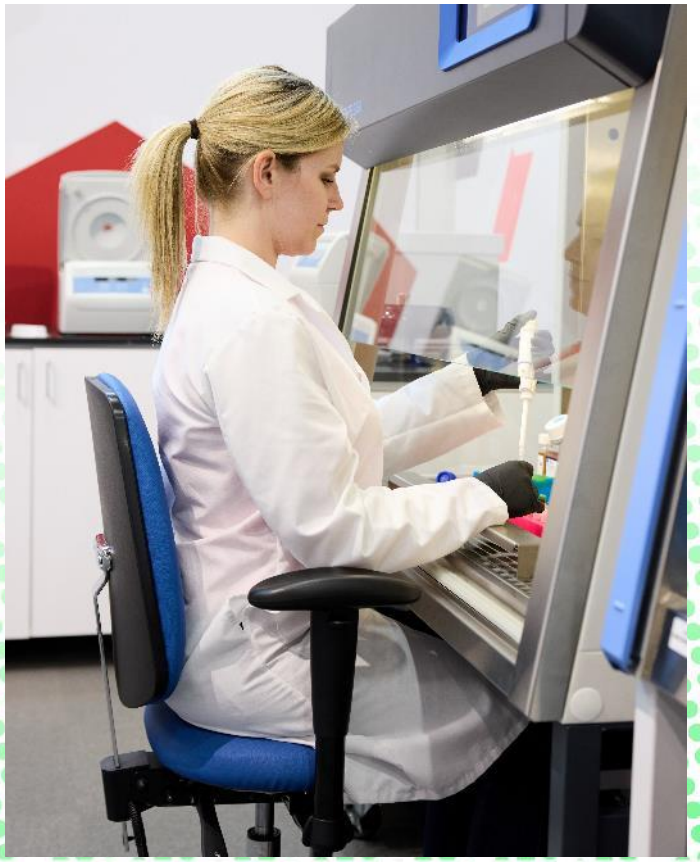
Hoods and Cabinets

- Height adjustment (chair or cabinet)
- Supplies with arm's reach (4-18" from edge)
- Leg and knee clearance
- Edge padding

Stressed

Neutral



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Microscopes

- Keep close to edge
- Cut out counter
- Adjust height(s)
- 20/20/20 rule

Stressed

Neutral

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Pipettes

- Comfortable in the hand
- Shorter is better
- Can be operated by thumb AND fingers

Pipettes

- Keep wrists in straight or neutral position
- Clean regularly

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Pipettes

- Pipette Tips
  - Low pressure connections
  - Easy ejection

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Microtomes and Cryostats

- Use the pistol grip
- Motorize for high volume
- Cut out counter

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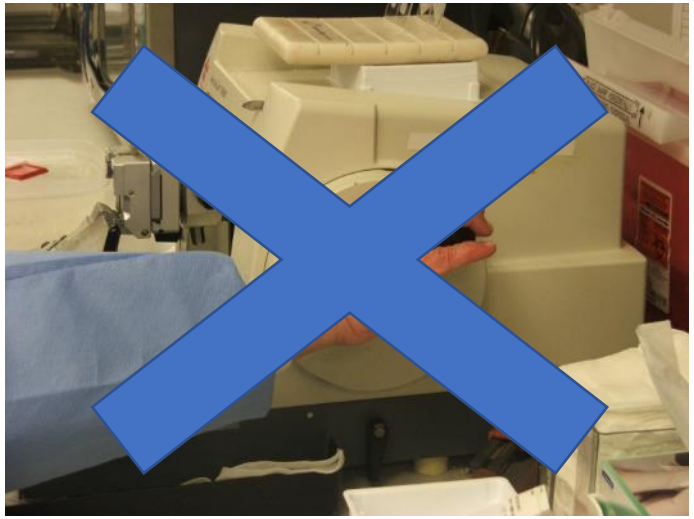

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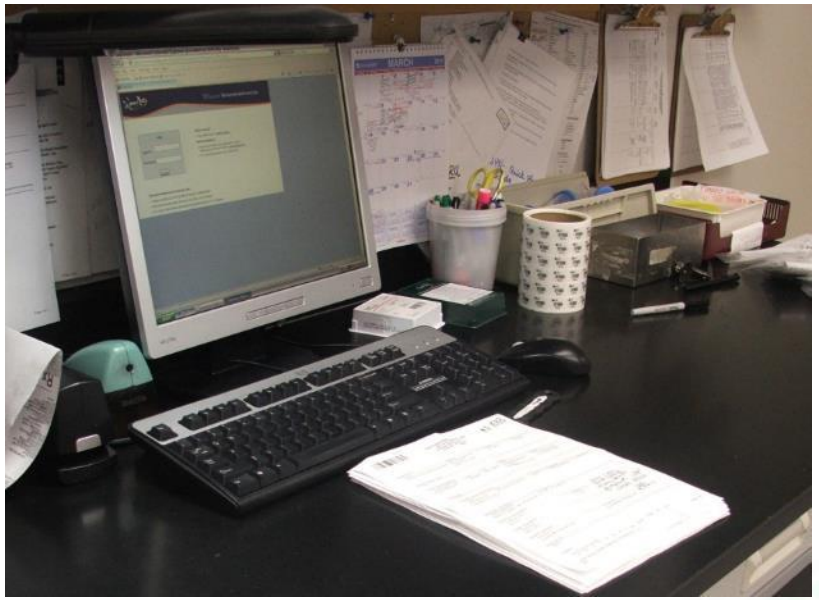
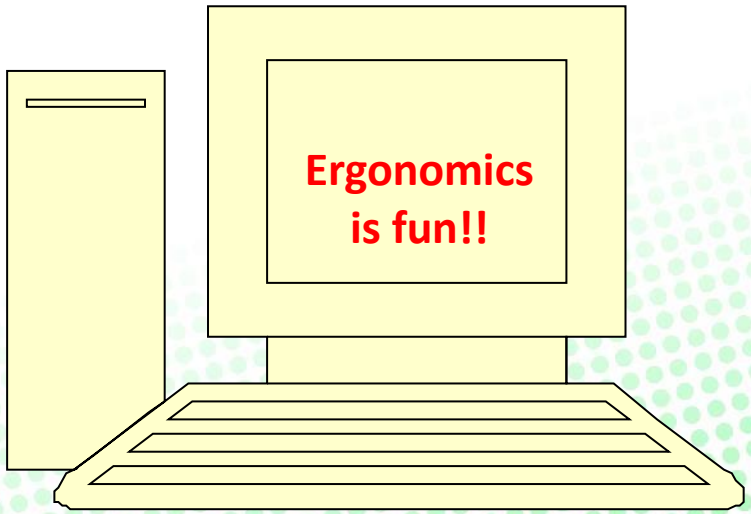
Computer Work



- Top of monitor at eye level
- Monitor is 18-30” away from face
- Keyboard is flat (or use wrist rest)
- Monitors face away from windows
- Keyboard and Mouse at same level



Use the 20-20-20 Rule.

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Phlebotomy

- Avoid awkward postures
- Sit down when possible
- Raise the arm of the draw chair, avoid bending

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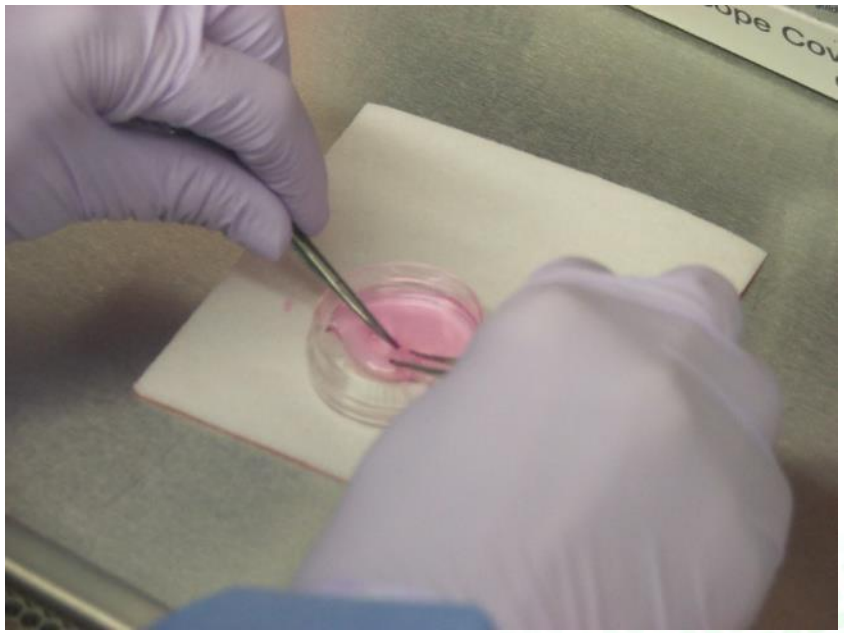
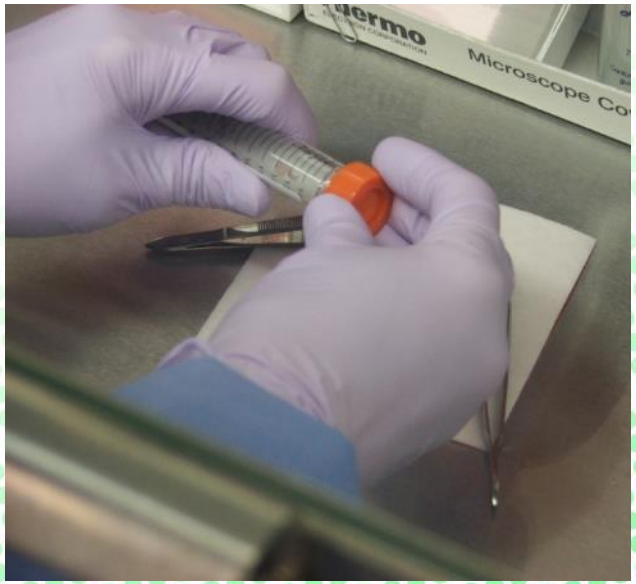
Micro-Manipulation

- Uncapping/capping
- Pneumatic tube system
- Forceps use





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Micro-Manipulation

- Ergonomic handles

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Ergonomics Basic Rules:

- Take a Break!
- Remain Comfortable!
- Limit overall time performing the duty
- Stretch
- Exercise

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Noise

- Under 75 decibels (or under 85 for 8 hours)
- Test whenever changes occur

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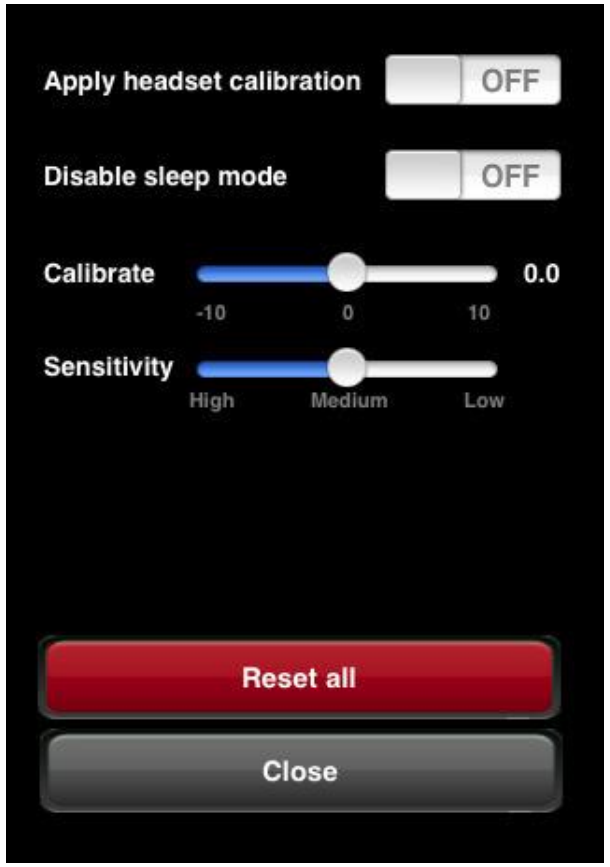

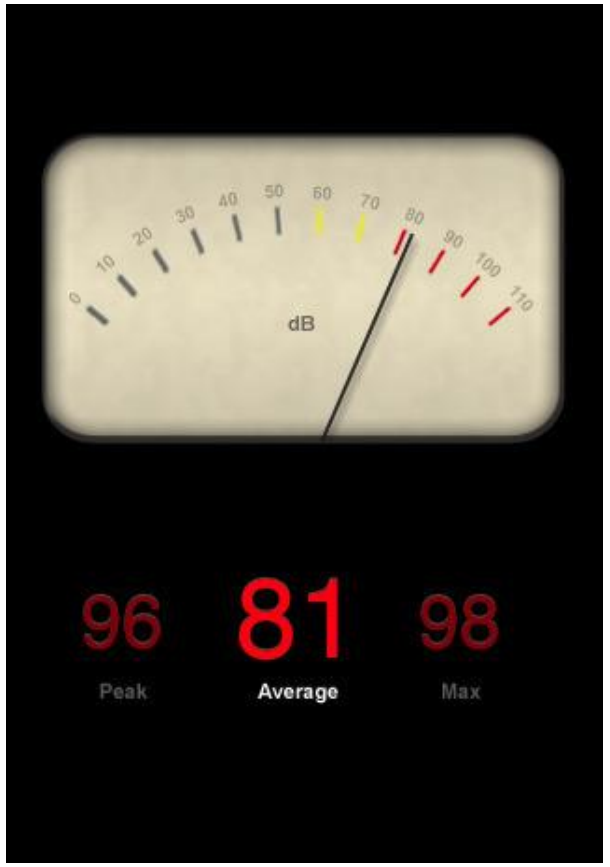

i Heard That!

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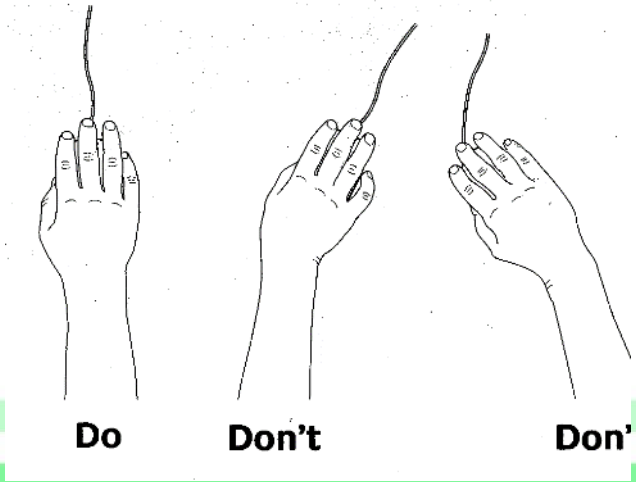
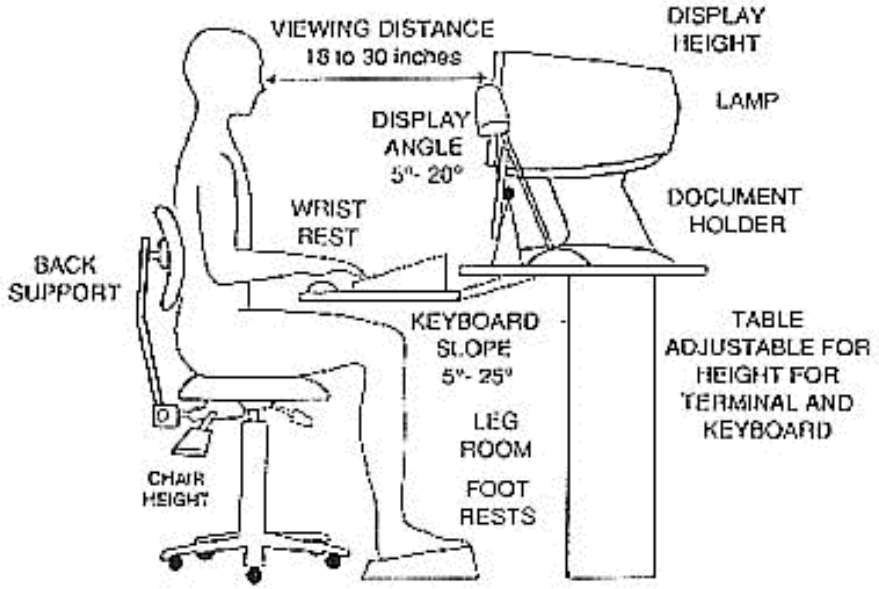
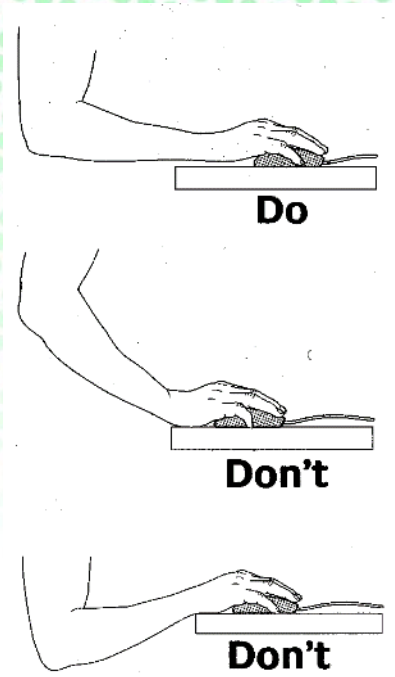
Assessing Ergonomics in the Laboratory

- Responsible Parties
  - Employee Health
  - Laboratory Safety







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Responding to Complaints

- Never ignore
- Consider the source
- Consider the job
  - Long shifts
- Consider the age group
  - The Young and The Experienced

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Create Your Own Assessment

- Decide on format
- Decide on coverage
- Decide on frequency
- Educate

- Why Should it be Important to the Employee?

Basic Audit

Topic: ERGONOMICS	YES	NO	N/A	Action Planned/Taken
Are chairs easily adjustable for height for different levels of work? (CAP Gen.70816)				
Is the seat pan size appropriate for the size user?				
Are seat back adjustments available for heightand forward/back or tilt adjustment?				
Are footrests available to employees if needed?				
Are work stretched encouraged?				
Are the tops of the monitors at eye level?				
Are monitors 18-29 inches from eye level?				
Does the keyboard lay flat?				
Is the mouse near and at the same level as the keyboard?				
Do computer monitors face away from windows to avoid glare?				

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Full Audit

- Includes All Laboratory Sections and Work Possibilities:
- Standing
- Lifting
- Chairs
- Workbenches
- Hoods and Cabinets
- Microscopes
- Pipettes
- Microtomes and Cryostats
- Computer Work
- Phlebotomy
- Micro-Manipulation
- Noise

Chemistry
Hematology
Urinalysis
Microbiology
Serology
Cytology
Histology
Flow Cytometry
Molecular Lab
Transfusion
Blood Collection
Transcription

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Let's Practice!

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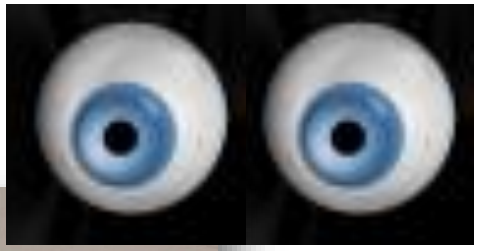

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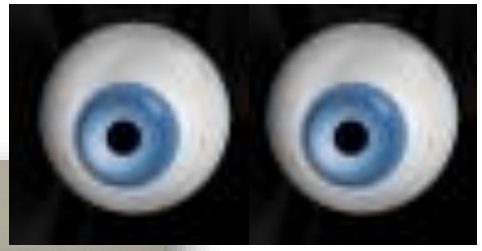

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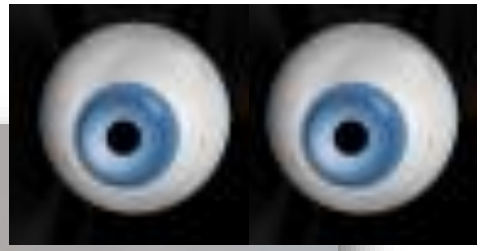

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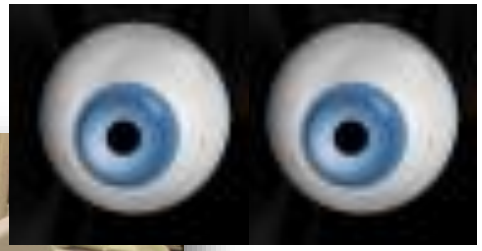

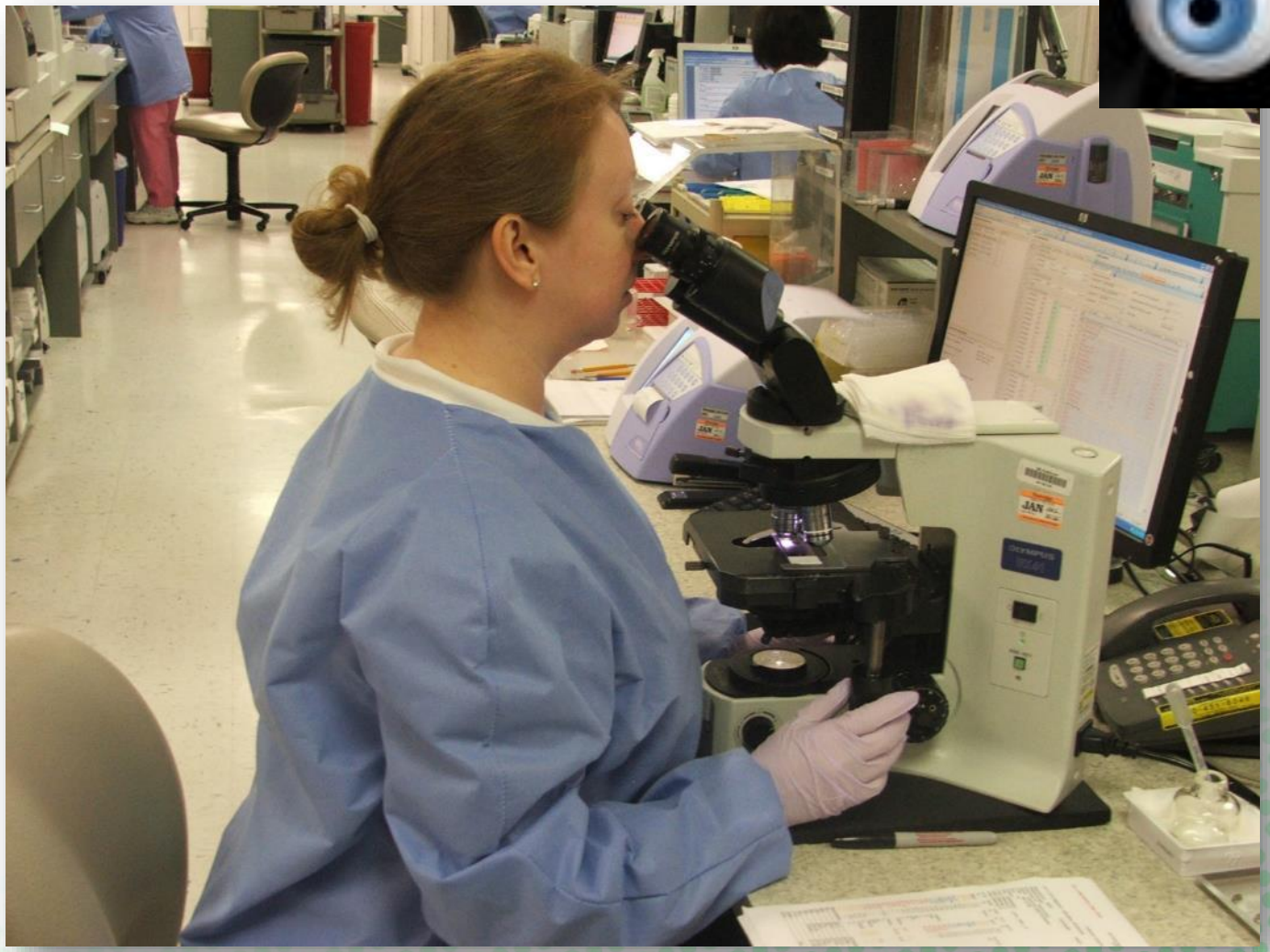

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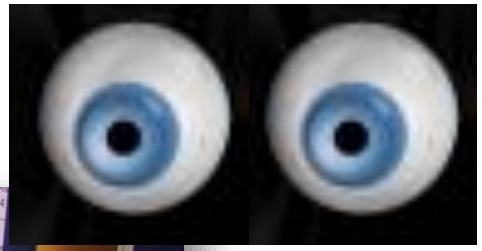

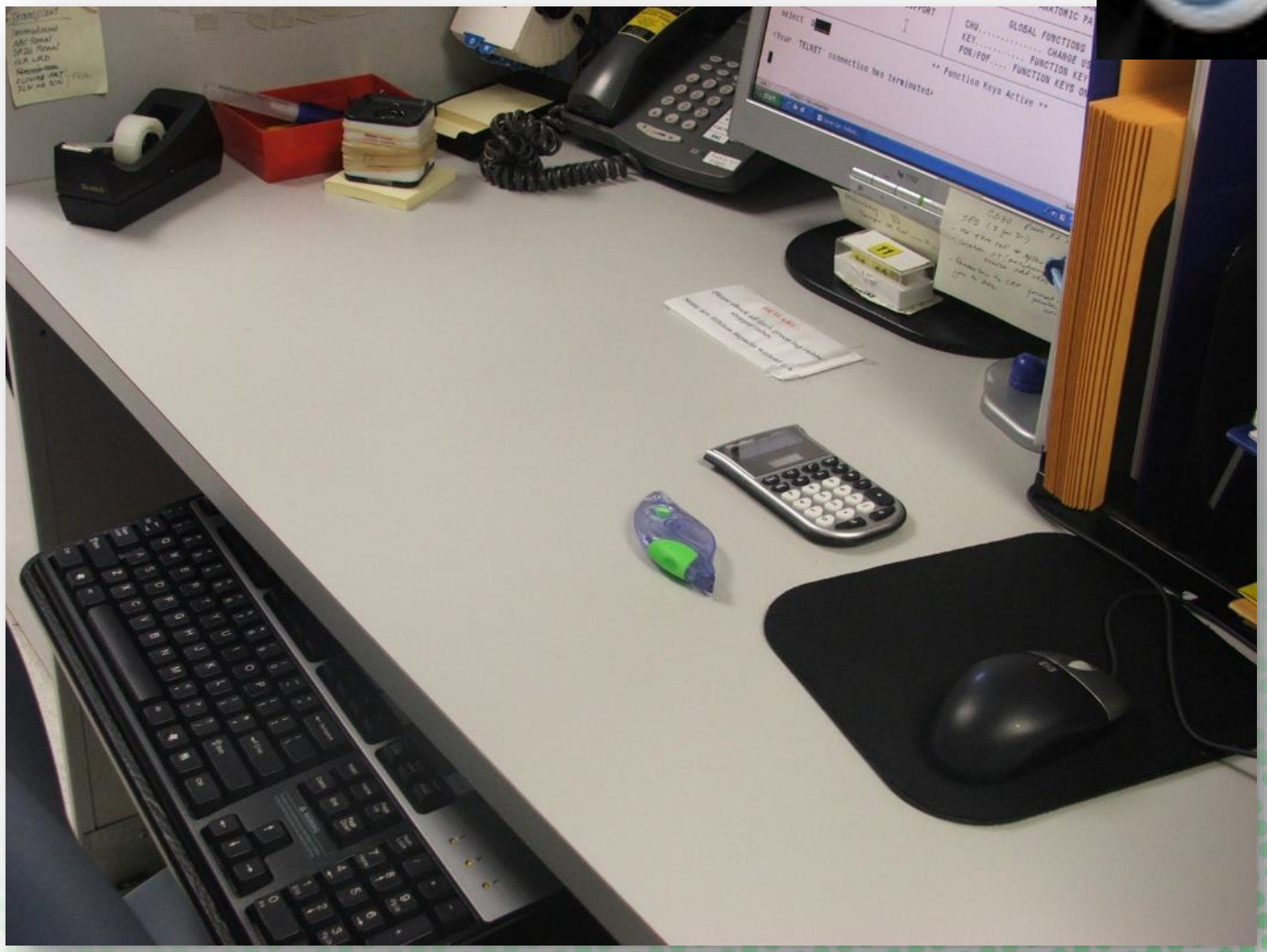

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Effects of Poor Ergonomics

- Decreased Productivity
- Unhappy Employees
- Increased Call-ins

- Carpal Tunnel syndrome, Trigger finger, Tendonitis, Back pain, Deafness, Computer Vision syndrome

By The Numbers

- According to the Bureau of Labor Statistics…
  - 272,780 total cases labeled as MSD-related in 2019 involving days away from work (30%)
  - 2.8 million total workplace injuries in 2017, sprains, strains = most common of all types
  - Back injury cases at work account for 39% of all MSD injuries (2016)

Let's Talk $$$

- Average costs of Some Surgeries:
  - Rotator cuff repair = $23,424
  - Carpal Tunnel surgery = $2000 - $8000
  - Meniscus repair = $2500 - $13,000
  - Spinal Fusion = $15,000 - $94,000
  - Tendonitis surgery = $2500 - $9300

Out of Work

- How much per day?
  - Worker's compensation
  - Medical insurance
  - Potential lost revenue
  - Replacement staff

- Isn't it more cost-effective to prevent these injuries?

Remember:

- Think of the BIG PICTURE!

Take Breaks.

- How does your staff want to spend their retirement years?
  - Ergonomics concerns begin at a young age…
  - And last for a lifetime…
- Remind them of the options often!
  - Educate!
  - Raise awareness always!

Use the 20-20-20 Rule.

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How to End an Ergonomics Presentation

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QUESTIONS?

THANK YOU!

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