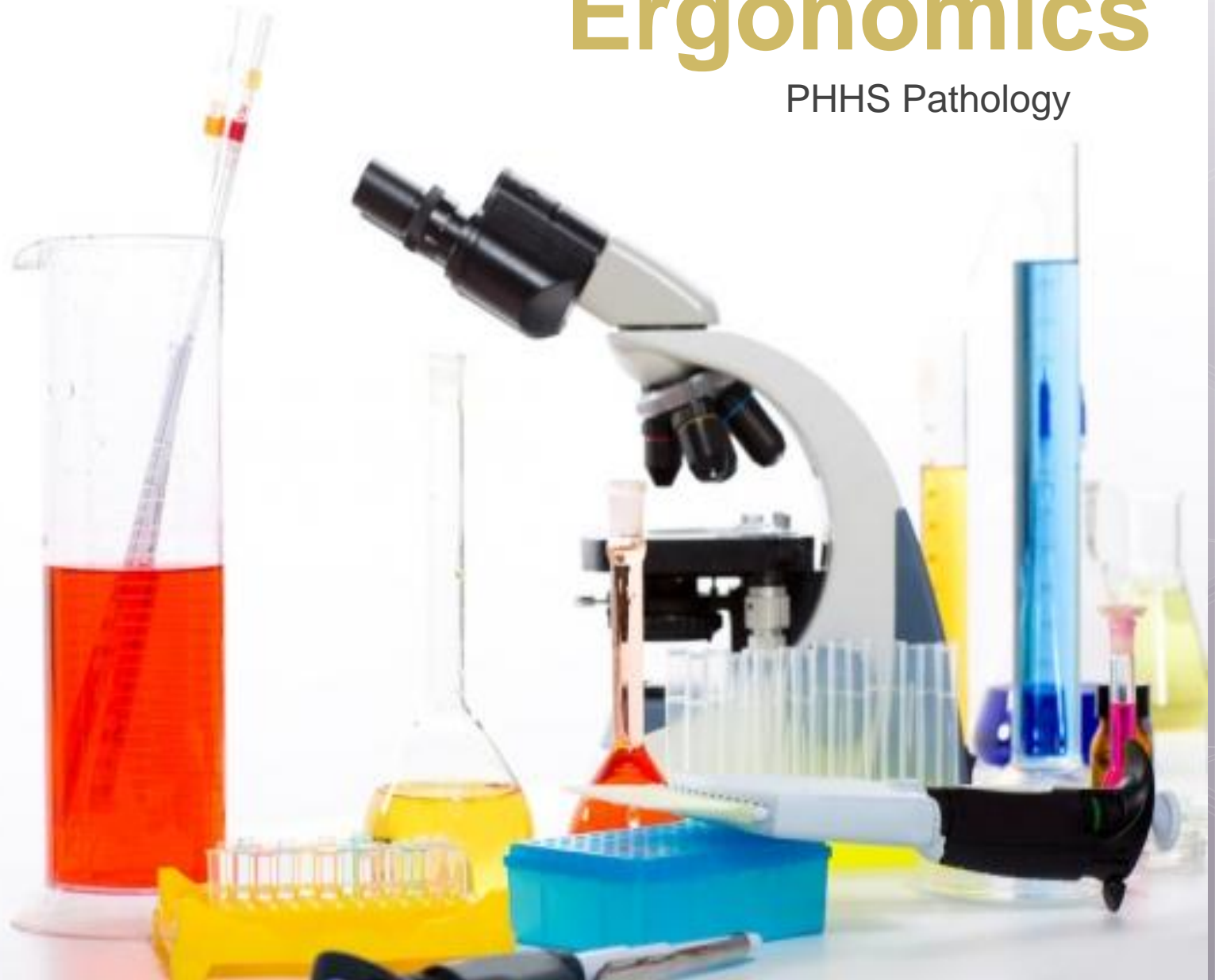


# Ergonomics

PHHS Pathology



# Objectives

Upon completion of this module, the participant should be able to correctly:

- Evaluate high-risk injury factors:
  - Awkward or prolonged postures
  - Repetitive motions
  - Using excessive force or pressure
- Determine the proper procedure of lifting heavy objects

# Seating

- Body position and posture:
  - Feet should rest on the floor or a footrest
  - Chair should provide adequate low back and thigh support
  - Front edge of chair should not press up against back of knees



# Tips for Good Seating Practices

- Sit all the way back into the seat to provide back support
  - If back support is not adequate or if the seat pan is too long, try a rolled up towel or a back support cushion to provide support
- Before starting work, make sure chair is adjusted properly
- Use a footrest if feet do not reach floor
- Get out of chair every 15-20 minutes to help relieve stress on the back

# Pipetting

While pipetting, maintain good seating posture and...

- Keep wrists straight – don't twist or rotate wrists
- Keep elbows close to body
- Try to sit with your work slightly below your elbows
- For every 15 minutes, take a 2 minutes break
- Rotate pipetting tasks with other activities

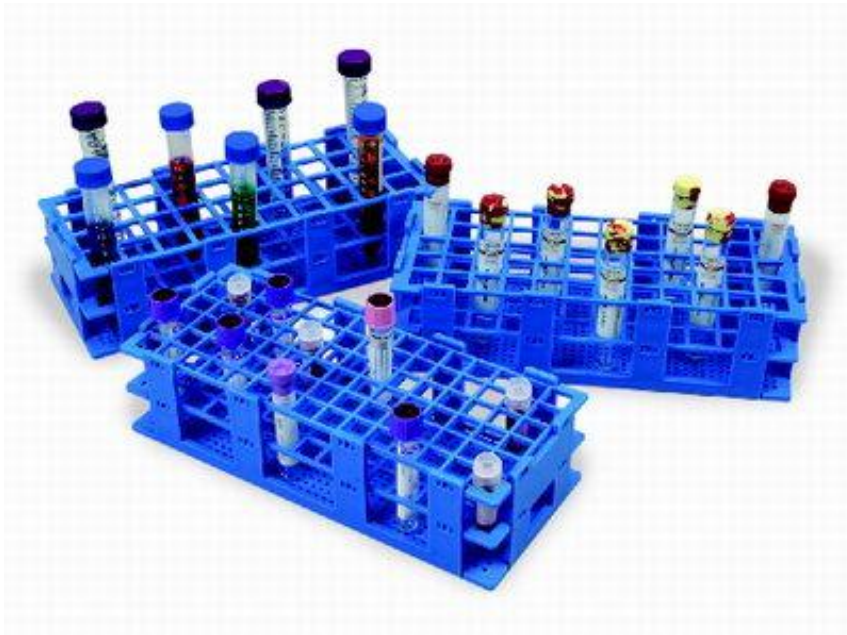


# Tips for Good Pipetting Practices

- Use proper seating techniques discussed earlier.
- Keep waste bins, beakers, etc., as close as possible
- Choose pipettes that require minimal hand and finger effort
- For highly repetitive jobs, utilize automated processes or multi-channel pipettes where feasible
- Take frequent “micro-breaks” away from pipetting (at least every 15-20 minutes)
- Share workload between right and left hands
- Avoid pipetting for long periods – alternate activities and/or rotate tasks with other employees



# Test Tube Handling



- Maintain straight wrists
- Work with elbows close to the body
- Avoid reaching upward or stooping low
- If seated, maintain good seating posture

# Tips for Good Test Tube Handling

- Arrange tubes to minimize reaching and/or twisting
- Share workload between right and left hands
- Take adequate breaks away from handling activity (even short several second “micro-breaks” help
- Use both hands to open tubes, or use a cap remover
- To avoid forearms resting on sharp edges, pad edges or use a cushion to pad forearm





# Microscope Use



- Make sure that you have enough legroom
- Set the chair or table height so that your shoulders can be relaxed close to your side, eyes aligned with the microscope eyepiece
- Adjust the eye piece to avoid a forward head position.
- Use a chair that provides good back and thigh support. Sit with your back against the back rest and your feet flat on floor or supported on footrest.

# Tips for Good Microscope Posture

- Move microscope close to edge of counter to avoid bending the neck
- Keep elbows close to sides
- To avoid forearm resting on sharp edges, pad edges or use a cushion to pad forearm
- Keep scopes clean and in good condition
- Take frequent “micro-breaks” to rest eyes
- Spread microscope work throughout the day or rotate microscope work among several employees as feasible
- Use proper seating techniques discussed earlier



# Excessive Force or Pressure

- Use a tool designed to open screw caps in order to loosen containers that are too tight to open by force alone
- Use a dolly or cart to push heavy objects across the floor



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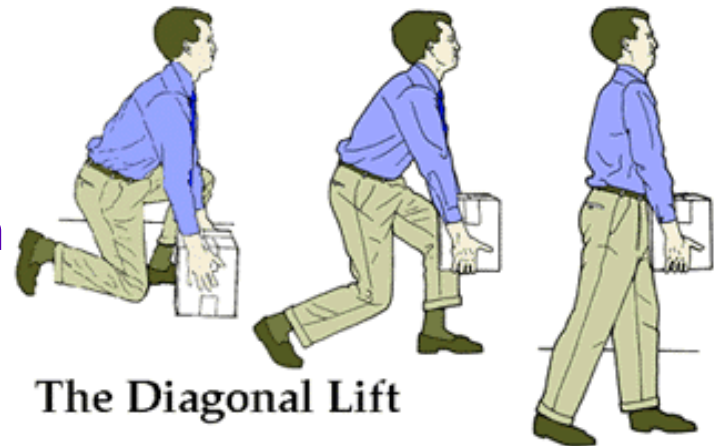
# Lifting Heavy Objects

1. Place feet about 10 -15 in. apart, one foot alongside the object being lifted and the other behind it.
2. Grasp the object using the palmer grip – fingers and hand should be extended around the object to be lifted using the full palm.
3. Use the bent knee or squatting position, keep the back straight, tuck in the chin so the neck and head continue the straight back line.



# Lifting Heavy Objects

4. Tuck arms and elbows into the side of the body and position the body so that your weight is centered.
5. Start lifting with a thrust of the rear foot, keeping the object close to the body as you lift with your legs, not with your back.
6. Carry the load close to your body, not on extended arms, shift your feet. Do not twist your back.
7. Use the same technique when you set the object down.



# General Work Tips



*Top  
Tips*

## Work Practices and Process:

- For any continuous or repetitive task, take frequent “micro-breaks” away from the primary activity
- Arrange work scheduling to allow occasional alternating of tasks
- Rotate intermittently between left and right hands to avoid over use of any one side
- For highly continuous or repetitive tasks, consider a rotation of employees to help safely distribute workload

# General Work Tips



*Top  
Tips*

## Proper equipment:

- When purchasing equipment, models that adjust in size are preferable
- Use the proper equipment for the task
- Know how to properly use the equipment
- Where feasible, use automated processes to reduce or eliminate high repetition or forces
- Use a step ladder when reaching overhead to remove objects from a high shelf so you aren't reaching over your head

By using proper technique and processes, we can make the laboratory a safer place.

