



Laboratory Ergonomics: Recommended Postures in the Lab

Examples of unsafe and safer postures

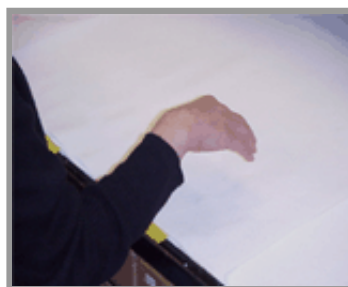
Research in a laboratory setting may require sitting, standing, using hand tools, pipettes, microscopes and working at laboratory hoods or biological safety cabinets. Some postures are more stressful than others and should be avoided. The photos in this section help illustrate some recommended as well as stressful postures, beginning with the wrists and elbows.



Recommended: Use the neutral "hand shake" position with wrist straight and elbow next to side.

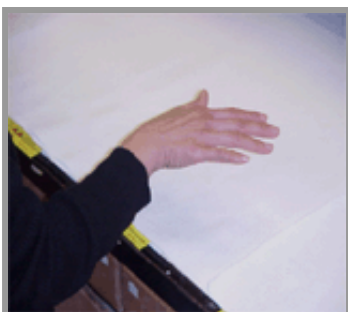


Unsafe: Avoid positions with bent wrists. Photo above shows wrist extension -- when the hand is bent back at the wrist.

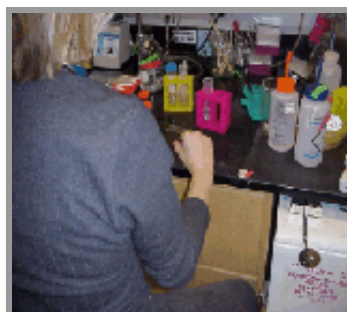


Unsafe: Again, the wrist is bent. This photo demonstrates wrist flexion-- when the hand is bent forward at the wrist.

Avoid holding or repetitive motion with bent wrist:



Unsafe: Ulnar Deviation (hand bent outward at wrist-- toward little finger)



Unsafe: Radial Deviation (hand bent inward at wrist-- toward thumb)

Avoid sustained holding or repetitive motion with rotated forearm:



Pronation: Forearm rotated so palm faces downward

Supination: Forearm rotated so palm faces upward

Wrists, elbows and getting close to your work

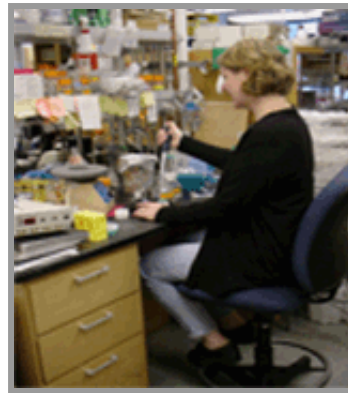
Position your elbows close to your body to reduce stress on your neck and shoulders. Remove cabinet doors and pencil drawers to get closer to the work.

Recommended: To the right, researcher is close to work; elbows positioned close to body.

Unsafe: Below, she is far away from work; her elbows are extended from body.

Recommended: Forearm supports
Below, forearm support encourages neutral wrist postures.

Unsafe:
Below, stressful wrist postures (wrist in ulnar deviation; elbows at 30°)



More ways to get close to your work

Shorter workers can reduce awkward arm postures by lowering the workstation. At a built-in counter, lower the surface by pulling out a drawer and placing a sturdy platform between the drawer edge and the cabinet.



Recommended:
Above, good workstation



Unsafe: Above, right elbow is positioned too high.

height.

The built-in cabinets underneath counters and the false fronts and supplies stored under laboratory hoods and biological safety cabinets prevent getting close to the work surface while sitting. This encourages pipetting with the arms too far away from the body.



Position closer to the counter by opening or removing the cabinet doors, as above.



Position closer to the laboratory hood by removing false fronts and supplies stored underneath.

Reducing Contact Stress



Unsafe: Above, contact stress from edge of desk (resting arm on hard, sharp surface)



Recommended: Use a forearm support to eliminate contact stress.



Recommended:

Desk-edge [padding](#) reduces contact stress.