

VistaLab's Pipetting Ergonomics Presentation at a glance



First Educate

The problem

Pipetting is an ergonomic disaster.

45 % of lab workers report pain or discomfort while pipetting.

The solution

Education and training in proper pipetting posture, techniques, and pipette selection.

Pipetting is the #1 cause of pain and discomfort in the laboratory

- High Repetition
- Excessive Force
- High Contact stress
- Awkward Posture

Repetitive Strain Injuries (RSIs)

Cautionary tales

When the pain is left unaddressed

"By my second year of postdoc, it was bad enough that I would procrastinate experiments that involved pipetting, and I feared that I might have to give up experimental science and find a different career"

-Dan Dickinson, UT Austin

"The strain of triturating cells using normal pipettes caused a RSI in my right hand. The pain got worse and worse over time, to the point that I could no longer perform simple tasks like writing with a pen or pencil. My doctor told me to stop pipetting!"

-Margarete Diaz Cuadros, Brigham and Women's Hospital

Then Train

Proper Pipetting Guide

Hand and thumb pain

Avoid a clenched fist
Keep your fingers relaxed and spread. Avoid gripping the pipette tip with your thumb.

Use a loose relaxed grip
Avoid a tight grip on the pipette. Use a relaxed grip to reduce strain on the hand and thumb.

Elbow pain

Avoid the "winged elbow" position
Fully extending your elbow while pipetting can lead to shoulder and elbow strain. Keep your elbow close to your body.

Keep your elbow close to your body
Position your elbow close to your body at all times. Avoid any awkward angles or excessive reaching.

Wrist pain

Avoid a supinated wrist position (palm up)
Avoid a supinated wrist position while pipetting. This can lead to wrist strain and discomfort.

Keep wrist in a neutral or pronated position (palm down)
Maintain a neutral or pronated wrist position while pipetting to reduce strain.

Proper Pipette Selection

Must haves for truly ergonomic pipettes

To avoid RSI, choose a pipette with the following features:

- Adjustable front and rear hand grip
- Low force tip attachment
- Low force spring loaded tip eject
- Low force plunger plus large button
- Self-venting

Grip force and tip attachment

Axial pipette

High force required for tip attachment

Tip for hand to grip over the pipette body

Ovation® pipette

Low force "click" tip attachment

Tip for hand to grip over the pipette body

Plunger force and tip ejection

Axial pipette

High force required for plunger force

Ovation® pipette

Low force required for plunger force