

# How to choose the right pipette for less pain

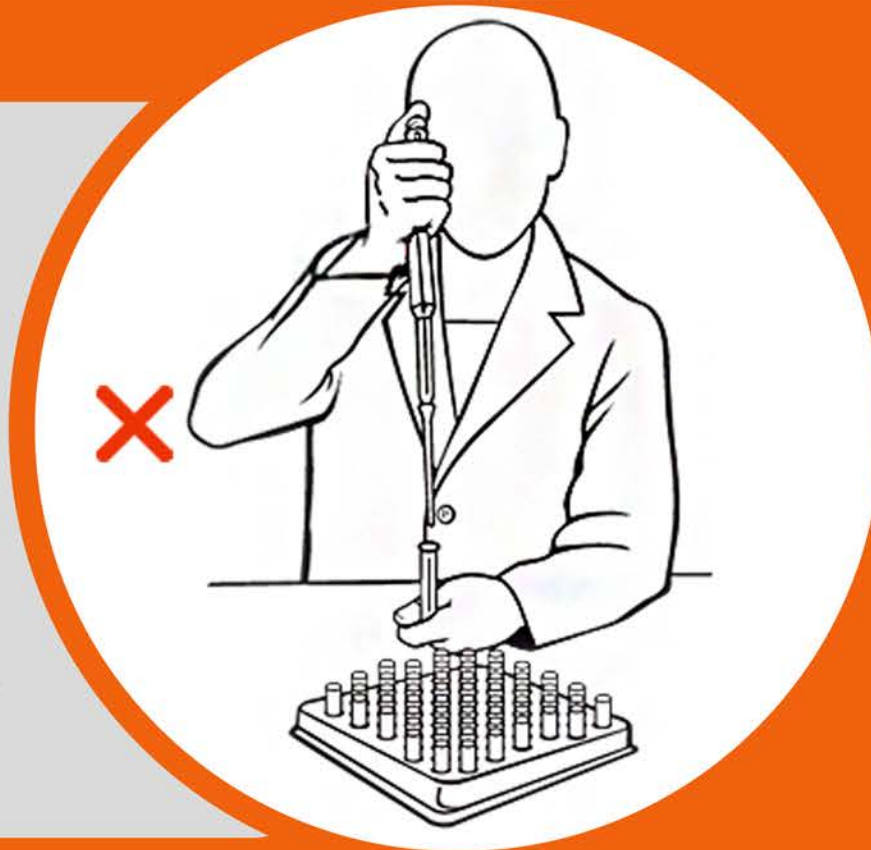
The root problem of pipetting pain is improper posture.



## What you don't want

### Elevated "winged" elbow

The average human arm weighs approx. 6% of total body weight. Holding a pipette with your elbow extended (winged elbow) in a static position places the weight of your arm onto your neck and shoulder muscles and reduces blood flow. This causes stress and fatigue. Muscle strength is also substantially reduced as arm flexion is increased.



## ARM



### Over-rotated forearm & wrist

When you over rotate your forearm and wrist in a supinated position (palm up), it increases the fluid pressure in your carpal tunnel. This increased pressure can result in compression of soft tissues like nerves, tendons, and blood vessels causing numbness in your thumb and fingers.

## WRIST

### Tight grip (clenched fist)

Hand fatigue results from continuous contact between a hard object and sensitive tissues. When you need to tightly grip a pipette, such as when jamming on a tip, it can result in not only fatigue, but diminished hand strength over time.



## HAND

Proper pipetting posture is key to avoiding pain.



## What you want

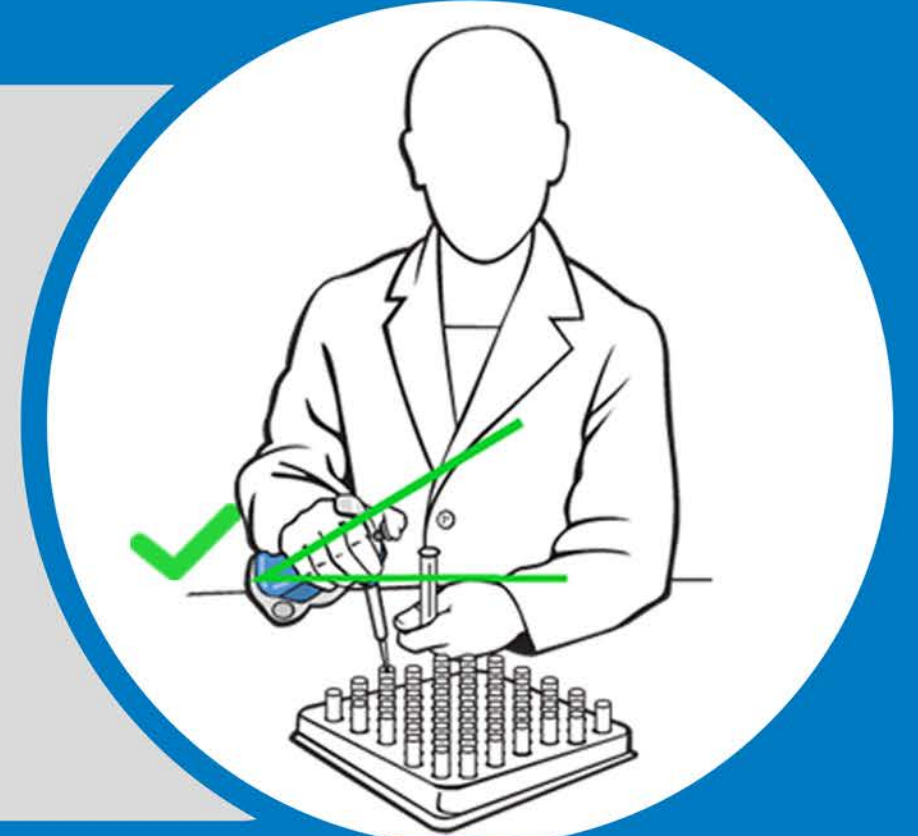
### Elbow close to body

Position your elbows as close to your body as possible, with arms and wrists in straight, neutral positions (handshake posture) to maximize available arm strength. Keep your arm elevation low to minimize stress to your elbow, shoulder, and neck. Your arm/hand elevation should not exceed 12" from the work surface.



### Wrist in neutral position

Keep your forearm rotation angle near 45° pronation (palm down) and maintain a neutral range of motion throughout your pipetting. Eliminate repetitive twisting of your forearm for minimal pressure on your carpal tunnel.



### A loose, relaxed hold

A loose, relaxed hold means less fatigue and more available hand strength. Use pipettes with hooks or other attributes that alleviate the need to tightly squeeze at any step in pipetting. This will reduce tension in your arm, wrist, and hand and increase endurance.



## Essential features for pipetting with less pain

In addition to decreasing forces and effort, a **truly ergonomic pipette** allows you to pipette with proper posture. Look for these pipette features to help you decrease the risk of repetitive strain injury (RSI) from pipetting.



### Adjustable hook and contoured body shape

Added support  
No "clenched fist"



### Low-force tip attachment

Easy "click on" tip acquisition mechanism



### Low-force spring loaded tip eject

Minimal thumb force & tips "flick" off



### Low force plunger plus large button

Use whole thumb instead of only finger tip



### Color-coded and self-standing

Easy volume identification and avoid risk of contamination

