




Pipetting, Ergonomics and You

Liquid Transfer



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An overview of pipetting technique, ergonomics, pipetting risk factors, methods for reducing risk of injury, and recommended solutions.

Ergonomics

- Ergonomics is the study of workplace equipment design or how to arrange and design devices, machines, or workspace so that people and things interact safely and most efficiently.
- Ergonomics is also called human factors analysis or human factors engineering.
- Ergonomics is “the science of fitting the job to the worker”
 - Occupational Safety and Health Administrations (OSHA), Federal and State Programs

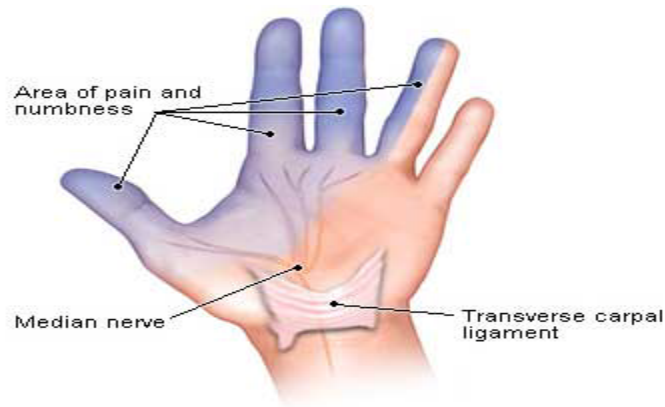
Pipetting Risk Factors

Pipetting is a forceful activity

- Tip Attachment
- Tip Ejection
- Multiple Arm/Hand Movements
- Reaching/Stretching with thumb
- Plunger Operation
- Gripping the pipette

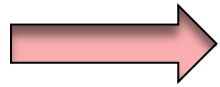
Pipetting is a repetitive activity

- More than 500 hours/pipetting are common

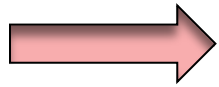


Repetitive Strain Injuries (RSIs) are Preventable...

RSIs are preventable through the use of ...



Ergonomic Practices



Ergonomic Tools

What does the Centers for Disease Control and Prevention recommend for Pipetting Ergonomics?



CDC Recommendation for Proper Posture

- Use shorter pipettes
- Use pipettes that fit comfortably in the user's hand
- Keep samples and instruments within easy reach
- Use low profile waste receptacles for used tips



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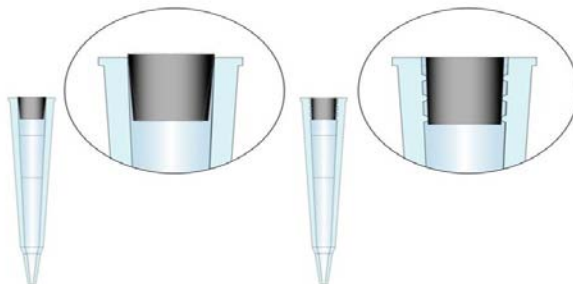
CDC Recommendations for Improved Efficiency

- Minimize repetitive tasks
- Use pipettes with index finger trigger mechanisms
- For tasks such as mixing or aliquotting, use an electronic pipette with mixing functions
- Use a multichannel pipette for large aliquotting tasks
- Take micro-brakes of 3-5 minutes, for every 20-30 minutes of pipetting



CDC Recommendations for Reducing Force

- Clean pipettes on a regularly scheduled basis
- Use pipette tips that fit correctly and are easy to eject
- Use minimal force when applying pipette tips



Questions



History of Innovation

- ✓ **First** variable volume pipette
- ✓ **First** multi-channel pipette
- ✓ **First** electronic trigger-action multi-channel pipette
- ✓ **First** 16 channel pipette
- ✓ **First** self sealing filter barrier tips
- ✓ **First** extended length pipette tips
- ✓ **First** interlocking technology system