

Other advice

- If you begin to experience any aching or symptoms, please review your posture and work organisation as described.
- Try to take a break from pipetting, or reduce the amount of pipetting for a few days.
- If your symptoms persist contact the Occupational Health Service for further advice and support.

If you have any further questions please contact:

University of Cambridge
Occupational Health Service
16 Mill Lane
Cambridge
CB2 1SB

Tel: 01223 336594
Email: OccHealth@admin.cam.ac.uk
[http://www.oh.admin.cam.ac.uk/advice-and-guidance/
laboratory-health](http://www.oh.admin.cam.ac.uk/advice-and-guidance/laboratory-health)

Useful Web Sites

www.hse.gov.uk
www.hse.gov.uk/pharmaceuticals
www.abilitynet.org.uk



Occupational Health

Laboratory Advice

Ergonomic advice for pipetting

OHL07

Introduction

Working with pipettes requires concentration for long periods and can cause aches and pains in the back, shoulders, neck, arms, wrists, hands or fingers; other symptoms could include pins and needles or numbness. These upper limb disorders (ULDs) are often referred to by the terms repetitive strain injury (RSI), or musculo-skeletal disorders (MSD).

The risk of developing these problems can be prevented or reduced by your posture, the way your work is organised, how the pipette is used and by choosing the correct pipette for the task.

Posture whilst using the pipette

- Use an adjustable chair with good back support.
- Sit or stand close to your bench to avoid overstretching, this requires leg space under the work area.
- Sit supported against the back rest of your chair and adjust the height and footrest for support. If the foot ring does not offer support an alternative footrest may be required.
- Adjust your chair to work height rather than bending your neck down, or reaching up to your pipette.
- Always try to work with your hands below shoulder height.
- Where possible use short pipettes, low profile solution containers and waste receptacles to reduce reaching. The opening of any container should be at the same height as the end of the pipette.
- Organise your bench keeping all your regularly used equipment as close as possible to avoid twisting and reaching; move rarely used items further away.
- Avoid resting your forearms on sharp edges, use padding.

Organising your work

- Short frequent breaks are more effective than longer infrequent breaks.
- Take a 1-2 minute micro-break after every 15-20 minutes of pipetting, or as often as the procedure allows. Undertake a few simple stretches to relax your back and upper limbs. Let go of the pipette to give your fingers and hand a rest.

- Alternate between different types of work during the day to avoid long periods of pipette work.
- Rotate pipetting work with colleagues where possible.

Using the pipette

- Keep your wrists in a straight neutral position, do not twist or rotate your wrist while pipetting. Inclining sample holders or solution flasks can help.
- Keep elbows as close to sides as possible.
- Hold the pipette with a relaxed grip.
- Avoid excessive force using the pipette; use minimal pressure.
- Use light force or two hands to change tips.
- Use the tips designed for the pipette.
- Do not over stretch your thumb when using the plunger.
- Alternate or use both hands to pipette.
- Vary the type of pipette used if possible to prevent repetitive movements.

Choosing the correct pipette for the task

- There are a wide range of pipettes available with varying features and prices. When choosing consider the following:
- Select a light weight pipette sized for your hand that is comfortable to hold/grip with no sharp edges or ridges.
- The pipette should be suitable for left or right handed use.
- Use pipettes with finger aspirators and thumb dispensers to reduce thumb strain.
- The plunger or main button position should not cause over stretching of the thumb.
- Use electronic pipettes for repetitive pipetting.
- Use multi-channel pipettes whenever possible.
- Choose pipettes that require the least force to activate.
- The tip fitting and ejection should be easy and if possible the whole hand used to eject tips rather than just the thumb.
- It should be easy to set and read the dosage on the pipette.