

New methods to handle mice – time for a change

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The way that you pick up laboratory mice influences their stress, longer-term anxiety and reliability in scientific testing. Picking up mice by the tail induces negative responses¹⁻³. In contrast, picking them up in a tunnel, or cupping them on the hand, considerably reduces stress and anxiety, and results in animals that are much more willing to interact with you voluntarily¹⁻³. Below are simple tips for implementing these methods. Your choice should be compatible with your local biosecurity rules.

For further details and advice, see our free video tutorial at www.nc3rs.org.uk/mouse-handling-tutorial

Tunnel handling

- Guide mouse into tunnel with free hand
- Lift mouse inside tunnel
- Remove mouse by tipping out backwards, with end of tunnel just above surface
- Mice habituate very quickly to tunnels
- Ideal for less experienced handlers
- Minimal risk of being bitten
- Abnormal behaviour easily spotted



Cup handling

- Scoop mouse onto one or both palms
- Lift hand(s) clear of cage
- Mouse sits on the hand without restraint
- A single hand is sufficient once mice are familiar with this method
- Mice slower to habituate to cup handling
- Needs more skill to prevent mice jumping, but can improve animal-handler bond



Combined tunnel to cup handling

- Pick up mouse in a tunnel
- Tip backwards onto open hand
- Mouse should stay willingly on the hand



Tips for good handling

- **Do not** be hesitant
- Use cage side and free hand to guide mouse quickly into the tunnel – **do not** chase the mouse with the tunnel
- **Do not** wait for the mouse to enter voluntarily, actively guide it in
- With good technique, mouse will go straight in – practice makes perfect!
- Mice familiar with tunnels enter more readily
- Provide mice with a tunnel in their home cage if possible²
- Mice stay in the tunnel when lifted up, but cover tunnel ends to move animals safely over a distance
- Tip mice out backwards, **do not** shake them out
- Smooth clear plastic tunnels are ideal, 50 mm in diameter



- Inexperienced mice may try to jump off open hand
- To familiarise, scoop between hands held loosely around mouse for a few seconds
- See video tutorial for more detailed advice

Restraint for procedures

- Capturing and picking up mice by the tail should be avoided where possible
- Once picked up, mice can be restrained by the tail, e.g. for sexing
- They can also be restrained by scruffing as needed for scientific procedures
- **Restraint by the tail or scruff does not reverse the positive effects of tunnel and cup handling¹**



Benefits

- Mice are much less anxious than those picked up by the traditional tail method¹⁻³
- You can still restrain mice manually by the tail base or scruff when needed¹
- Mice show more reliable behavioural³ and physiological responses⁴
- They only need brief experience of tunnel handling to habituate^{2,3}
- Once skilled, you can pick up mice by tunnel or cup just as quickly as by tail. You will need to practice to become efficient – but it's worth it!



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References

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