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|  | Animal Health Unit University of Calgary | R8: Rat Manual Restraint |
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R8: Rat Manual Restraint

Note: This SOP includes multiple Methods. When referencing this SOP in your IRISS Animal Use Protocol (AUP), please ensure you specify precisely which Method you are using. If you are varying this SOP in any fashion you must detail those variations within your IRISS AUP.

PURPOSE: To outline the acceptable methods of manual restraint for rats.

RESPONSIBILITY: All students, staff and researchers trained by qualified staff under veterinary supervision. Any escaped rats **must** be reported to the ARC **immediately** as part of the University's legal obligation.

KEYWORDS: *rat, restraint, handling*

Note: There are several important factors when handling rats:

- Always begin by observing the rat and allowing it to settle or become calm; allow it to become comfortable by placing your hand in the cage
- Never 'scruff' a rat or pick it up by the tail as you would a mouse
- **One hand must always be on the rat**
- To minimize exposure to allergens, gloves are required to be worn during all handling of animals. It is also recommended that a mask be worn during handling of animals and that handling of conscious animals takes place in a ventilated cage change station or a ventilated biosafety cabinet and/or a fitted N95 mask is used.

PROCEDURE:

1. Manual restraint ("Harness hold"):

- *can be used to restrain while a partner conducts a procedure*

1.1. With your dominant hand, gently grasp the rat at the base of the tail to keep it from moving about the cage.

- 1.2. Using your non-dominant hand, create a 'V' shape with your first two fingers, and grasp the rat overtop of the shoulder area right behind the ears, pinning it down to the flat surface. With the remaining fingers and thumb, gently clasp the rat around the torso underneath the arms (see Figure 1).



Figure 1: 'V' finger shape grasping over the shoulders, remaining fingers tucking around the torso.

- 1.3. When lifting the rat, ensure you support the rump and hind legs by moving the dominant hand from the base of the tail underneath the rat to grasp the back legs (see Figure 2).

- 1.3.1. Place the pointer finger (index finger) of the supporting hand between the rat's legs, using the thumb and second finger to wrap and restrain the legs (see Figure 3).



Figure 2: Second hand supporting the rump of the rat when lifting.

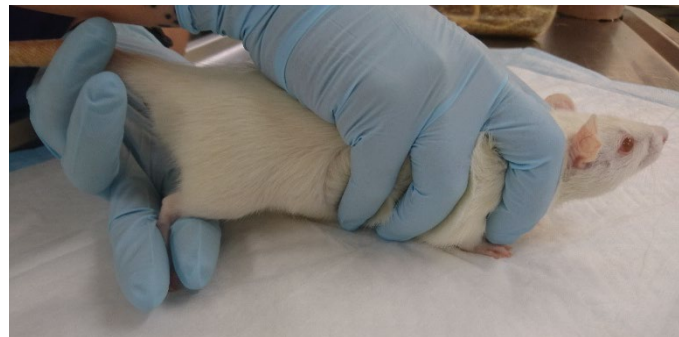


Figure 3: Rat is restrained using the 'harness hold' with the supporting hand in position around the legs to lift.

- 1.4. If using this restraint for a partner to conduct a procedure, lift the rat into an outstretched position (see Figure 4).



Figure 4: Rat is securely held and outstretched, exposing the ventral side for a partner to access.

2. 'Bench-top Hold'

- *For use during examinations or subcutaneous injections*

- 2.1. Lightly place a towel over top of the rat (cranial/anterior end), leaving the hind quarters exposed
- 2.2. Tuck the rat in close towards your body holding the rat (see Figure 5) with your non-dominant hand
 - 2.2.1. The nose of the rat should be towards the elbow of your non-dominant hand

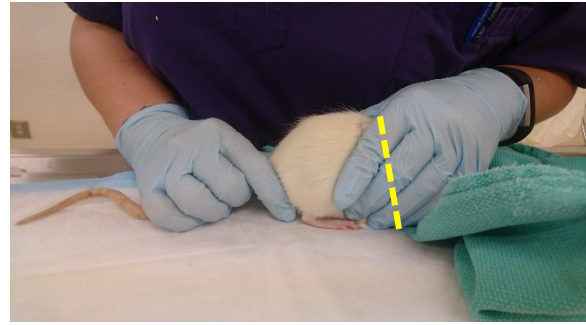


Figure 5: Rat tucked close to body with towel overtop in 'bench-top hold'. Dotted line shows where the towel is located under the hand.

3. Towel restraint ("Burrito"):

- *For use during intraperitoneal injections*

- 3.1. Transport the rat to a towel or blanket laying on a flat surface.
- 3.2. Hold the rat in the centre of the towel with the harness hold, keeping the nose of the rat towards your non-dominant elbow.
- 3.3. Place the top section of the towel over top of the rat (See Figure 6).
 - 3.3.1. If you need access to the rear of the rat, keep the rat hind end closer to the end of the towel.
- 3.4. While maintaining hold of the rat, bring one side of the towel over top of the body, and then the remaining side of the towel overtop (see Figures 7, 8, and 9).
 - 3.4.1. Depending on the length of your towel, you may need to tuck the first side of the towel underneath the rat's abdomen before proceeding with the second side.



Figure 6: Bringing the top of the towel down over the rat.



Figure 7: Keeping hold of the rat, bring the top section of the towel over top of the rat torso.



Figure 8: Bringing the first side of the towel over top of the torso. Arrow shows direction of towel wrapping.

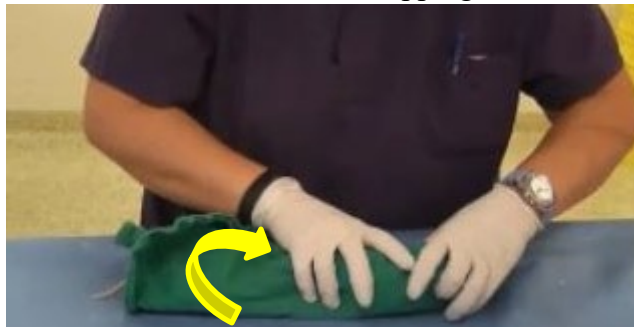


Figure 9: Rat fully wrapped in the towel with the rear end accessible. Arrow shows direction of towel wrapping the second side of the towel.

- 3.5. Once both of the side flaps are overtop of the rat, grasp the top portion of the towel fabric tightly to lift the rat (see Figure 10), and hold it close to your body.
- 3.6. Ensure that the rat is properly restrained such that it is not able to rotate inside the towel
 - 3.6.1. If the rat is not properly restrained, place it back on the work surface and repeat these steps.



Figure 10: Rat fully wrapped in the towel, top portion of the towel is grasped to lift the rat.

- 3.7. Roll back any excess towel to access the rat.