



**Duke University  
Animal Care & Use Program  
Policy**



## **TAIL AND TOE CLIPPING IN MICE**

**PERFORMANCE STANDARD:** Tail or toe clipping, will not be performed unless adequately justified and approved by the IACUC. All activities surrounding tail or toe clipping will focus on assuring appropriate animal welfare and minimizing pain and distress.

**BACKGROUND:** Identification of individual animals, and obtaining small samples of tissue that allow researchers the necessary sample size to perform genotyping is a necessary and frequently employed practice in biomedical research.

1. Tail clipping is the practice of removing roughly the tip of the tail and is not considered a surgical procedure.
2. Toe clipping is the practice of removing the toe from the most distal joint to the tip of the toe. Toe clipping is not considered a surgical procedure.

**ROLES:** All participants shall treat the animals with respect and compassion. The removal of a tail tip or toe clip shall be performed with expertise and skill.

1. PI: Provide proper training, or obtain training for individuals who will be performing the activity.
2. Surgeon: Practice clean and careful technique, minimizing the amount of tail / toe taken, assuring hemostasis, and monitoring the recovery of the animals post procedure.
3. Veterinary Staff: Provide required training, ensure proper monitoring, assist with animal care practices to minimize pain or distress.

**PROTECTION POSTURES REQUIRED:** Proper gowning, gloving (as dictated by the facility management plan) is required. Adequate toweling is necessary to capture any blood loss and prevent undesirable environmental contamination.

**POLICY:**

1. Tail clipping:
  - A. Only the minimum amount of tissue should be taken. The definition for the Duke animal care & use program is 5 mm or less of tail tissue and no ossified vertebral tissue.
  - B. Tail clipping is not considered a surgical procedure. Because tail clipping is not a surgical procedure:
    - i. Skin preparation: Alcohol may be used to wipe down the tail prior to cutting the tail tissue.
    - ii. Instrument preparation: Sterile instruments are not required for this procedure, wiping with alcohol is acceptable. Instruments that have been exposed to autoclave, glass bead sterilizer, or chemical disinfectants are preferred for this procedure. Whether sterile or simply clean, all instruments must be clean and free of visible debris.
  - C. Neonatal mice should be gently hand held (not in a restrainer).
  - D. Mice should be placed on paper pad. Using gentle pressure, restrain the mouse and extend the tail.

- E. A clean scalpel should be used to cut the tail tip (do not use scissors).
- F. After removing the tail tissue, a piece of gauze should be applied to the distal portion of the tail with finger pressure to ensure hemostasis.
- G. When possible, tail clipping for genotype analysis should be performed at day 17, or earlier, to minimize the potential for pain and distress and because DNA yields are higher in more immature tissue (reference the Hankenson paper). If tail clipping is done before a mouse is weaned at 21 days, anesthesia is not necessary. After 21 days of age, anesthesia and analgesia are required. If anesthesia cannot be provided to a post-21 day animal, scientific justification is required as to why anesthesia and/or analgesia cannot be used and why the procedure cannot be done before 21 days.
- H. Investigators and research staff should be aware that tail ossification rates may be altered in genetically modified mice and they should be vigilant to the appearance of pain and distress following the tail snip. In such settings, the DLAR veterinary staff should be consulted regarding anesthetic and/or analgesic recommendations and the IACUC protocol amended accordingly.
- I. After removing the tail tissue, a piece of gauze should be applied to the distal portion of the tail with finger pressure to ensure hemostasis.

## 2. Toe clipping:

- A. Toe clipping for identification purposes alone requires scientific justification. Toe clipping is not allowed unless scientifically justified.
- B. Toe clipping MUST be performed prior to 12 days.
- C. Only the minimum amount of tissue necessary for the objective should be taken.
- D. Toe clipping is not considered a surgical procedure. Because it is not a surgical procedure:
  - i. Skin preparation: Alcohol may be used to wipe down the foot and digits prior to amputating the digit.
  - ii. Instrument preparation: Sterile instruments are not required for this procedure, wiping with alcohol is acceptable. Instruments that have been exposed to autoclave, glass bead sterilizer, or chemical disinfectants are preferred for this procedure. Whether sterile or simply clean, all instruments must be clean and free of visible debris.
- E. Neonatal mice should be gently hand held (not in a restrainer).
- F. Mice should be placed on paper pad. Using gentle pressure, restrain the mouse and extend the leg.
- G. After removing the digit, a piece of gauze should be applied to the distal portion of the digit with finger pressure to ensure hemostasis.
- H. Anesthesia: Topical anesthetics with epinephrine is recommended.
- I. Alternative identification methods (other than toe-clipping) that must be discounted prior to using digital amputation as an identification technique:
  - i. Micro-chip
  - ii. Indelible markers
  - iii. Ear tags
  - iv. Tattooing
- J. Contact veterinary staff of Division of Laboratory Animal Resources for assistance with performing this technique.

Ref: Hankenson FC, et al. JAALAS 2008 47:6 Pg 10-18. Evaluation of Tail Biopsy Collection in Laboratory Mice