

WVU IACUC POLICY: Euthanasia by Decapitation or Cervical Dislocation

A. PURPOSE

The purpose of this policy is to ensure that euthanasia by cervical dislocation or decapitation are performed in accordance with the AVMA Guidelines on Euthanasia (June 2013) as accepted by the USDA, PHS policy and AAALAC International for accredited institutions. While controversial, cervical dislocation may not bring unconsciousness and absence pain appreciation as quickly as decapitation in some instances. However, either technique may allow post-euthanasia movement after pain appreciation is gone. Cervical dislocation involves severing the spinal cord in the cervical region and is only conditionally acceptable as a primary means of euthanasia, such as when scientifically justified. Decapitation involved severing the head completely off the body in the cervical region. Both cervical dislocation and decapitation can be used as secondary confirmatory methods to insure death, or as a primary means of euthanasia when animals are under general anesthesia and unresponsive to deep pain stimuli. (Guide for the Care and Use of Animals, 8th ed. 2011, NAS).

Regulations

Unless scientifically justified and approved by the WVU IACUC, all decapitations and cervical dislocations must be conducted with the animal(s) fully anesthetized. Decapitation can only be conducted on laboratory rodents (mice and rats under 200 g), small rabbits, birds, small amphibians, reptiles, fish and invertebrates and bird embryos at least 50% through their incubation period when the spinal cord is formed. Cervical dislocation and decapitation should only be performed by trained personnel, and training should be provided on already dead animals when needed. Those performing the procedures should use species and age class appropriate equipment so as to render a quick result. All guillotines or scissors used for animal decapitation must be kept clean and in working order including the maintenance of blade sharpness. The use of appropriately sized plastic cones (e.g. Rodent Restraint Cone, Harvard Apparatus; or DecapiCone, Braintree Scientific Inc) to restrain animals appears to reduce animal handling stress, minimizes the risk of personnel injury, and simplifies positioning of the animal in the guillotine. The guillotine or scissors action should be smooth with no perceptible binding or resistance, and the blades must be rust-free.

For finfish and any species known to be tolerant of low oxygen environments, decapitation must be followed by brain pithing.

B. PI RESPONSIBILITIES

1. Anyone performing cervical dislocation or decapitation must be well trained beforehand for the species in question. Practice ahead on dead animals is recommended.
2. Cervical dislocation by trained staff can be performed with or without a restraining instrument in mice, birds < 1 Kg, small rabbits, wild rodents and rats under 200 g.
3. Anyone using a guillotine or scissors for decapitation as detailed in an approved WVU IACUC protocol should ensure that they are operating in good condition, properly lubricated where

warranted, and with an easy action prior to their use. **Use of a guillotine or scissor in suboptimal condition is a compliance issue.**

4. Personnel using a guillotine or scissors for decapitation are responsible for proper cleaning after use.
5. The responsibility for assuring adequate guillotine/scissors function and periodic re-sharpening or blade replacement rests with the PI of the approved WVU IACUC protocol. Failure to do so is a compliance violation.
 - a) To document regular blade sharpening the provider can place a sticky label designating the date of most recent blade sharpening or scissor or blade replacement, which is required to be in date within 1 year. The WVU IACUC defines active use as having decapitation approved on an active protocol.

OR,
 - b) If there is no sticker the WVU IACUC will check use logs during its semi-annual inspections, and will require a blade change or re-sharpening every 250 uses. Scissors used for decapitation must be kept sharp. It is recommended that carbide blade scissors are used because they are relatively inexpensive and can be replaced when dull. Standard scissors should not be used on any animal > 50 gm body weight. Poultry scissors or equivalent heavy shears should not be used in animals over 200 g.

C. PROCEDURE

1. Prior to use, the guillotine should be checked for rust, smoothness of operation, and cleanliness. Only qualified individuals should dismantle a guillotine for sanitation.
2. The use of disposable plastic cones is recommended.
3. After use, the entire guillotine should be rinsed under cold water to remove blood, tissues, and gross contamination. After removing gross contamination, the unit should be thoroughly disinfected and dried. Some people use a final 95% alcohol rinse to speed evaporation and reduce the need to hand-dry the equipment. During drying, the guillotine should be turned upside down with the blades open. Periodically the guillotine should be taken apart and the blades thoroughly sanitized. This is easily done at the time of re-sharpening.
4. Proper sharpening of guillotine blades is important to maintain efficiency of the instrument. Any reputable company may provide blade re-sharpening, although all will require that guillotine blades are clean before sharpening.
 - a. Frequency of sharpening depends on the frequency of use, the species euthanized, and the number of animals decapitated. **The IACUC requires sharpening at least once every 250 animals or once yearly whichever comes first.** The service technician will be able to determine if the blades should be sharpened or replaced. You should consider having a second guillotine or set of blades as a back-up.
 - b. If the guillotine can no longer be serviced, it should be disassembled. If it is to be discarded, the blades should be placed in a sharps container while the rest of the machine can be placed in the regular garbage.

5. Prior to use, the scissors should be checked for rust, smoothness of operation, and cleanliness. After use, scissors should be rinsed under cold water to remove blood, tissues, and gross contamination. After removing gross contamination, scissors must be disinfected and left open to dry; some people use a final 95% alcohol rinse to speed-up drying. Scissors that are dull or not operational should be disposed of in a sharps container and replaced with a new pair if they cannot be re-sharpened satisfactorily.

6. The guillotine or scissors maintenance log must have the following information:

PI name at top
 Scissors/Guillotine ID corresponding to the device in question
 Date of use
 Animal numbers at each use
 Cleaning verified y/n
 Date (i. e. last) of sharpening or blade replacement
 Initials of user

Use log example:

Guillotine/Scissors Maintenance Log

PI name:

Date of Use	Scissors/Guillotine ID	Animal number(s)	Cleaning (yes or no)	Date of blade sharpening or replacement	Initials