

POLICY ON EUTHANASIA, CONFIRMATION OF DEATH, AND CARCASS DISPOSAL

Policy Summary: The Principal Investigator of an animal use protocol is responsible for insuring that:

1. All personnel performing euthanasia are trained in the technique(s) employed
2. Death is confirmed
3. Carcasses are disposed of properly

Definition of Euthanasia: Euthanasia is the act of killing animals using humane methods with no or only momentary pain and distress. Euthanasia causes rapid loss of consciousness followed by cardiac or respiratory arrest and, ultimately, the loss of brain function and death.

Regulations/Guidelines: To comply with the *Guide for the Care and Use of Laboratory Animals*¹, and the Animal Welfare Act (CFR 9 as amended), all animals must be euthanized using the methods set forth in the *2000 Report of the AVMA Panel on Euthanasia*² (<http://www.avma.org/resources/euthanasia.pdf>) with the following exceptions:

1. Carbon dioxide can only be used to euthanize small rodents (mice, rats, hamsters, gerbils, guinea pigs, chipmunks, squirrels), insectivores (musk shrews), and birds. The University of Virginia does not permit the use of carbon dioxide for euthanasia of dogs, cats, swine, rabbits, mink, or ferrets. Specific permission is required to use carbon dioxide to euthanize any other species that might not be listed above.
2. Carbon monoxide or potassium chloride cannot be used as the sole agent of euthanasia for any species.

The particular method chosen, or any deviation from the *2000 Report of the AVMA Panel on Euthanasia* based on scientific or medical justification, must be incorporated into the respective animal use protocol and be approved by the IACUC.

Justification for Euthanasia: Euthanasia might be necessary at the end of a protocol or to relieve pain or distress that cannot be alleviated by analgesics, sedatives, or other treatments. Protocols should include criteria for humane endpoints, such as degree of a physical or behavioral deficit or tumor size, which will enable members of the investigative team and/or veterinary staff to make prompt decisions on when to initiate euthanasia in cases related to the protocol.

Methods: The selection of specific drugs and/or methods for euthanasia depends on the animal species and the objectives of the protocol. Generally, inhalant or non-inhalant chemical agents (e.g. gas anesthetics, carbon dioxide, barbiturates) are preferable to physical methods (e.g. cervical dislocation, decapitation, penetrating captive bolt). However, physical methods might have to be used if chemical agents can potentially confound experimental results. Such exceptions must be detailed and scientifically justified in the Main Procedure section of the animal use protocol.

Euthanasia must be performed in a professional and compassionate manner by personnel skilled in methods appropriate for the species and should avoid creating distress in the subject and other animals in the area. If liquid inhalant anesthetics (e.g. halothane, isoflurane, metofane) are used in a bell jar or equivalent container, animals should not be placed in physical contact with the anesthetic agent. They can either be separated from the agent by a grid or grill, or the agent can be placed in a device (eg. open test tube) in the container. Vocalization and/or the release of pheromones from animals being euthanized may distress other animals that are present; therefore, euthanasia should not be performed in the immediate presence of other animals.

Confirmation of Death: Euthanasia and death must be verified (e.g. cardiac and respiratory arrest, circulatory collapse, brain death). After euthanasia by inhalant anesthesia or carbon dioxide, personnel should ensure that death has occurred by carefully monitoring animals for the absence of heart beat and/or respirations, or by performing cervical dislocation, decapitation, exsanguination, or cutting the chest open to induce pneumothorax.

Investigators who prefer that the Center for Comparative Medicine euthanize their laboratory animals must fill out a [Request for Euthanasia](http://ccmsserver.med.virginia.edu/ANIMAL%20EUTHANASIA%20REQUEST.pdf) form (see attached form or the following website) (<http://ccmsserver.med.virginia.edu/ANIMAL%20EUTHANASIA%20REQUEST.pdf>) available from the vivarium supervisor or through the above link, and submit the form 48 hours in advance of euthanasia. This service is not provided on weekends or holidays. For this reason, it is imperative that all lab personnel handling animals on weekends/holidays be trained how to perform euthanasia in case the need arises.

Carcass Disposal: Once an animal is euthanized and death is confirmed, it is the responsibility of the individual(s) performing the procedure(s) to transfer the dead animal(s) to the vivarium cold room, or in the case of radioactive animals, to contain the carcass(es) in a commissioned area and contact Radiation Safety personnel (see below) for pick up.

Regular (non-biohazardous and/or non-radioactive) carcasses intended for immediate disposal should be placed in green or black plastic bags and put into the biomedical waste containers located in the vivarium cold room or freezer.

Biohazardous carcasses are those that have been intentionally infected with organisms pathogenic to humans; inoculated with human derived tissues, fluids or cell lines; or euthanized animals previously held at animal biosafety level 2 (ABSL-2) containment or higher. These carcasses must be put in red plastic bags before transfer to biohazardous waste containers located in the vivaria cold room or freezer.

Radioactive carcasses must be disposed of in accordance with Radiation Safety policy. Radioactive small laboratory animal carcasses must be placed in green or black plastic bags and labeled on the outside with "Radioactive" warning tape. The laboratory should call the Radiation Safety Office (982-4917) for pickup. Radioactive large animal carcasses must be placed in special radioactive waste bags and boxes provided to the investigator by Radiation Safety, and picked up by Radiation Safety personnel. *Radioactive carcasses are never to be transferred to vivaria cold rooms or freezers unless they have been commissioned by Radiation Safety for this purpose.*

The respective plastic carcass bags are available at each cold room and vivaria supervisors should be consulted to determine the proper storage location for carcasses. Non-radioactive animals to be held for necropsy, tissue collection, etc. should be placed in the appropriate plastic bags on the shelf units inside each cold room and labeled with the investigators name, phone number, and date. An entry should be written on the disposal record that is suspended on the door of each cold room. For more information on carcass and waste disposal, see <http://keats.admin.virginia.edu/tree/home.html#rad>.

References:

¹ *Guide for the Care and Use of Laboratory Animals*, Institute of Laboratory Animal Resources, National Research Council, National Academy Press, Washington, DC, 1996.

² *2000 Report of the AVMA Panel on Euthanasia*, JAVMA 218:669-696, 2001 (<http://www.avma.org/resources/euthanasia.pdf>).

COMPARATIVE MEDICINE ANIMAL EUTHANASIA REQUEST

Investigator's name: _____ Protocol No.: _____

Code on which animals are being charged: _____

Species: _____ Animal I.D. Number: _____

Total number of animals to be euthanized:

_____ Date: _____

Signature of Investigator or Person Requesting Animal Euthanasia

_____ Date: _____

Signature of Comparative Medicine Employee Euthanizing Animals