

Euthanasia

Euthanasia: The act of inducing painless death. Selection of the method of euthanasia is dependent upon the animal species involved, objective of the procedure and skill of personnel. It is essential that proper physical control over the animal be maintained prior to euthanasia and that fear and apprehension be minimized. Noxious stimuli induce various responses including: vocalization, struggling, escape, aggression, salivation, urination, defecation, pupillary dilation, tachycardia, sweating, shivering, tremors and spasms. Not only are these responses undesirable from an aesthetic and humane point of view, they are usually undesirable complications of research where variation in baseline levels of cellular or extracellular biological values must be minimized.

Euthanizing agents terminate life by one of three basic methods: direct or indirect hypoxia, depression of vital neurons, or physical damage of brain tissue. Regardless of the method, it is essential to induce unconsciousness as rapidly as possible if euthanasia is to be aesthetically and scientifically successful. Criteria that have been considered in recommending the following list (Table 2) of methods of euthanasia include: time required to produce unconsciousness, time required to produce death, purposes, research results and compliance with the AVMA Guidelines on Euthanasia (June 2007), a copy of which is available in UCAR office.

Click here for the link to the [AVMA Guidelines on Euthanasia of Animals: 2013 Edition](#)

There are special considerations for euthanizing rodent embryos, fetuses and neonates. Please see the [UCAR Policy on Euthanasia for Rodent Embryos, Fetuses and Neonates](#) on the UCAR Website.

Table 2: Approved Euthanasia Dosage and Techniques

RODENTS

1. Sodium Pentobarbital 100 mg/kg IV or IP
2. Carbon Dioxide Inhalation Chamber followed by secondary physical method (i.e. pneumothorax, cervical dislocation for rodents under 200 grams, decapitation, perfusion of a histological fixative via the major blood vessels or complete severing of the spine just below the base of the skull using a dorsal approach)
3. Cervical dislocation for rats weighing less than 200 grams and all mice after sedation (unless otherwise scientifically justified to U.C.A.R.)
4. Decapitation with guillotine only after the animal has been sedated (unless otherwise justified to U.C.A.R.)
5. Cardiac perfusion or exsanguination under deep plane of surgical anesthesia.

RABBITS, NONHUMAN PRIMATES, DOGS, CATS, SWINE

1. Sodium Pentobarbital 100 mg/kg IV
2. Cardiac perfusion or exsanguination under deep plane of surgical anesthesia.