

Guidelines for euthanasia of rodent fetuses and neonates

Fetuses

At approximately 60% of the gestation period, the neural tube has developed into a functional brain, and the likelihood that a fetus may perceive pain should be considered

Mouse, rat and hamster fetuses up to 15 days (i.e. E14 or less), and guinea pig fetuses up to 34 days (E33 or less):

- euthanasia of the mother or removal of the fetus are appropriate methods for fetal euthanasia (any loss of blood supply should ensure rapid death of fetuses).

Mouse, rat and hamster fetuses E15 days to birth, and guinea pig fetuses E34 days to birth:

- A physical method of euthanasia (decapitation or cervical dislocation) is required in addition to euthanasia of mother or removal of fetus.
- Careful injection of anesthetic agents may be used (e.g. IP injection of pentobarbital 800 mg/kg). As there may be a significant time delay (up to 20 minutes) between injection and cardiac asystole, a secondary physical means of euthanasia is needed.

Neonates

Mice, rat and hamster neonates up to and including 10 days of age:

- decapitation, cervical dislocation or injection with a chemical anesthetic (e.g. pentobarbital 800 mg/kg IP) are acceptable means of euthanasia. Neonates 10 days of age or less are resistant to hypoxia; if CO₂ is used, prolonged exposure time is needed to cause loss of consciousness or death. A secondary physical means of euthanasia (decapitation or cervical dislocation) is required when CO₂ is used.

Mice, rat and hamster neonates over 10 days of age, and Guinea Pig neonates of any age:

- follow euthanasia guidelines for adults.

References:

1. NIH Guidelines for Euthanasia of Rodent Feti and Neonates
<http://oacu.od.nih.gov/ARAC/euthmous.pdf>, revised 12/14/05.
2. Klaunberg B, O'Malley J, Clark T, Davis J, Euthanasia of Mouse Fetuses and Neonates, Contemporary Topics (AALAS), 43:5, 29-34, 2004.