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1: Comp Med. 2002 Jun;52(3):249-57.

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Erratum in:

- Comp Med. 2002 Dec;52(6):498, 572..

Aversion to gaseous euthanasia agents in rats and mice.

Leach MC, Bowell VA, Allan TF, Morton DB.

Biomedical Services Unit, University of Birmingham, Edgbaston, United Kingdom.

Despite euthanasia being the most common of all procedures carried out on laboratory animals, the potential distress associated with gaseous agents has received little interest until recently, with growing concern over use of carbon dioxide as a humane method of euthanasia. The distress associated with exposure to carbon dioxide, argon, and carbon dioxide-argon mixtures was investigated in rats and mice by measuring the degree of aversion on exposure to low, medium, and high concentrations of these agents. Animals were exposed to the various concentrations in a test chamber containing air or gas mixtures that they were able to enter and leave at will. Aversion was assessed using measurements of initial withdrawal time and total dwelling time in the test chamber, as they were the most sensitive measurements of aversion. Comparisons between euthanasia agent and control (air) treatments indicated that concentrations of agents recommended for rapid and efficient induction are associated with some degree of aversion. Carbon dioxide and the carbon dioxide-argon mixtures were more aversive than was argon for rats and mice. These findings suggest that induction with carbon dioxide either alone or in combination with argon is likely to cause considerable distress before the loss of consciousness in rodents, which is unacceptable considering that effective and more humane alternatives are available.

PMID: 12102571 [PubMed - indexed for MEDLINE]

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