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Silicone versus polyurethane catheters for use in mice

Vascular catheters are often implanted in laboratory mice in order to administer substances or to obtain blood samples while minimizing the pain and distress associated with repeated injections. Implanting catheters in mice is a technically demanding procedure, however, and the long-term patency of the catheters is limited. The catheter material can greatly affect its patency. Teilmann and colleagues carried out a study to evaluate whether a silicone catheter with a polyurethane tip or a 100% polyurethane catheter was more suitable for the catheterization of small vessels in mice. The maximum length of time that the catheters remained patent after implantation and the principal causes of catheter failure are reported.

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A xenon gas anesthesia administration technique

Xenon gas offers advantages as an anesthetic agent compared with other agents, such as its protection of the brain and heart from hypoxia-induced damage. The comparatively high price of xenon gas versus other anesthetic gases has so far limited its use in animal experiments, however. Ruder and colleagues designed a simple, closed, non-circuit system to provide adequate xenon and isoflurane anesthesia to laboratory mice for up to 20 minutes while minimizing the amount of xenon gas that is wasted.

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Ethical evaluation of animal research

The use of animals in biomedical research presents ethical concerns among scientists as well as the public. In the European Union, Directive 2010/63/EU addresses the protection of animals used for scientific purposes by providing guidance for the ethical evaluation of animal use proposals. It indicates that this evaluation should include harm-benefit analyses, but it does not provide a detailed scheme for these analyses. On the basis of their examination of the ethical review process of institutional animal use committees in the Netherlands, Bout *et al.* propose a matrix for harm-benefit analyses of animal use proposals, weighing the harm caused to the animals against the benefits presented by the research.

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