

University Animal Care Committee

Policy on Aseptic Surgery

Surgical asepsis encompasses all measures taken to reduce bacterial contamination at the surgical site, with the goal of reducing both clinical and subclinical infections. The Canadian Council on Animal Care (CCAC) stipulates in the Scientific procedures (Part B – Analgesia, anesthesia, and surgery) guidelines (2025) that **“Aseptic technique must be maintained during all aspects of a recovery surgical procedure and is strongly encouraged for non-recovery procedures.”** Subclinical surgical site infections can affect both research outcomes and animal welfare.

Personnel present during surgical procedures (including for observation) must wear appropriate personal protective equipment (PPE) to maintain aseptic conditions and to limit exposure to pathogens and allergens. Surgeons must perform proper hand antisepsis prior to donning sterile gloves. PPE must be replaced as necessary if sterility is broken.

A sterile field must be established and maintained throughout the procedure.

All surgical instruments, implantable devices, and other equipment or materials that will contact the surgical site must be sterilized. Unless the material or equipment arrives pre-sterilized in a single-use pack from the manufacturer, sterilization should occur via autoclaving, or another approved method for sensitive equipment (e.g., plasma or gas low temperature sterilization). At least one extra set of sterile instruments should be available as back-up. Instruments must be handled aseptically to preserve sterility during use. **Soaking instruments in alcohol, flaming them, exposure to UV, or use of a glass bead sterilizer without prior autoclaving are not acceptable methods of sterilization.**

For rodents or fish, when multiple surgeries are planned, the use of a new pack is encouraged for each animal. However, for uncomplicated procedures, once a sterile pack is used (previously sterilized by an approved method), a glass bead sterilizer can be used between surgeries, up to a maximum of 5 times before a new pack is needed.

Surgical procedures must include appropriate pre-operative and post-operative care of the animal(s), including supportive care and appropriate analgesic coverage. Successful surgical procedures will also focus on atraumatic tissue manipulation, meticulous hemostasis, reduction of deadspace, complete and tension free tissue apposition during closure, and appropriate use of suture material. Animals must be monitored closely post-operatively, and veterinary staff should be consulted if there are complications or welfare concerns.

Ideally, all recovery surgery should be performed in a suite especially designed for this purpose. **Unless otherwise specified, surgery should not be performed in an animal holding room.**

References

AAALAC., From AAALAC's Perspective...Using Alcohol As a Disinfectant. AAALAC Connection Newsletter. 2001 Winter/Spring. <https://www.aaalac.org/pub/?id=10D85285-0BC6-F7F1-FC83-B9444659A4E6>

Canadian Council on Animal Care. Scientific procedures, Part B (2025). https://ccac.ca/Documents/Standards/Guidelines/CCAC_Guidelines-Scientific_procedures-Part_B.pdf

Cox I. Guidelines for re-sterilising sutures. Community Eye Health. 2004;17(50):30. PMID: 17491807; PMCID: PMC1705723

Cunliffe-Beamer TL: Surgical Techniques. In Guttman HN (ed.): Guidelines for the Well-Being of Rodents in Research. Scientists Center for Animal Welfare, Bethesda, MD, 1989

Cox I. Guidelines for re-sterilising sutures. Community Eye Health. 2004;17(50):30. PMID: 17491807; PMCID: PMC1705723

Queen's University UACC SOP on Rodent Post-Operative Care https://www.queensu.ca/animals-in-science/sites/aiswww/files/uploaded_files/policies/UACC/2026/UACC-SOP-7-4-RodentPostoperative-Care%28Mice%29-06-03-2024.pdf

Revision History:

Date	New Version
03/01/2009	Policy Created
06/13/2012	Triennial Review; Revised to emphasize multiple surgical packs (rather than bead sterilizer) as gold standard for tools in serial surgeries; Clarified that although acceptable to disinfect gloves with 70% ethanol between animals, new gloves required after 5 rodents
11/14/2013	Triennial Review; Revised title and document to better encompass all species
01/25/2018	Triennial Review; Revised to differentiate between large animal and rodent surgical details
06/29/2019	Revised time required to soak and rinse suture material (formerly 10min now time of surgery)
06/27/2022	Triennial Review; Revised to clarify details to record on cage card and that recovery surgery must be performed in surgical suite or biosafety cabinet; New Format
03/25/2026	Triennial Review; Rewritten to remove SOP specific details and focus on defining asepsis and highlighting requirements for PPE, sterile field, instruments and considerations for serial surgeries