ANIMAL EYE CONSULTANTS OF IOWA

Animal Eye Consultants of Iowa	
Institutional Animal Care and Use Committee	
Policy #10	**Policy on Multiple Survival Surgeries**
Approval Date: 8/2/2023 (Replacing version 5/27/2020)	

A. Purpose

This policy defines major and minor survival surgeries and describes criteria for which an animal may undergo multiple survival surgeries for research or teaching purposes.

B. Background

The Animal Welfare Act (AWA/R) ((9 CFR Ch. 1), Part 2 – Subpart C, 2.31 (d) (1)(x)) states: No animal will be used in more than one major operative procedure from which it is allowed to recover, unless:

(A) Justified for scientific reasons by the principal investigator, in writing;

(B) Required as routine veterinary procedure or to protect the health or well-being of the animal as determined by the attending veterinarian; or

(C) In other special circumstances as determined by the Administrator on an individual basis.

The eighth edition of The Guide for the Care and Use of Laboratory Animals states: "Regardless of classification, multiple surgical procedures on a single animal should be evaluated to determine their impact on the animal's wellbeing. Multiple major surgical procedures on a single animal are acceptable only if they are (1) included in and essential components of a single research project or protocol, (2) scientifically justified by the investigator, or (3) necessary for clinical reasons."

C. Policy Statement

Multiple survival surgeries on a single animal may be permitted only if clearly defined in the Animal Subjects Approval Form (ASAF), scientifically justified by the investigator, and approved by the IACUC. The number of survival surgeries performed must be

limited to the minimum number necessary to achieve the research objectives and must be determined with due consideration for minimizing the pain and distress experienced by any one animal.

Animals undergoing major survival surgery may not be transferred to another ASAF involving additional survival surgery. Exemption requests will only be considered with strong justification and reviewed on a case-by-case basis. Note: Multiple major survival surgeries on USDA-covered species, where the surgeries are not part of a single research protocol, require IACUC approval and that the Institutional Official submit a request to the USDA/APHIS for approval.

One exception is ovariectomy, ovariohysterectomy or castration performed either prior to the start of the research project (i.e., vendor-performed surgery) or prior to disposition for animals being adopted at the conclusion of the study. The sterilization surgeries will be conducted by university veterinary staff and in congruence with AEC IACUC Policy #18.

Surgical procedures must be conducted using anesthetics and analgesics as appropriate. Consultation with a veterinarian for appropriate anesthetics, analgesics, and other options to minimize pain and distress is required for any protocol involving procedures expected to cause more than momentary pain and distress.

D. Definitions

1. *Surgery:* The creation of a novel opening in the body or of a pre-existing orifice that involves cutting with a scalpel, scissors, biopsy forceps, punch biopsy, drill, laser, electrocautery, or direct tissue damage by cold (liquid nitrogen) or any comparable device or technique.

2. *Non-Survival Surgery*: A surgery in which the animal is euthanized before recovery from anesthesia. This excludes AVMA-approved euthanasia methods that involve general anesthesia followed by a secondary method (e.g., general anesthesia followed by exsanguination/perfusion).

3. *Survival surgery:* A surgery from which the animal recovers consciousness. Survival surgery requires aseptic technique in accordance with IACUC Policy #6.

4. *Multiple survival surgeries*: More than one surgical session is performed and the animal is recovered from anesthesia after each session.

5. *Minor Surgery*: A surgical procedure that does not expose a body cavity and causes little or no physical impairment.

6. *Major surgery*: Any surgical intervention that penetrates and exposes a body cavity or any procedure which produces permanent impairment of physical or physiological function. This will typically exclude castrations in immature mammals, which are generally considered a minor surgical procedure.
    - Body cavity is defined as the abdominal, thoracic, cranial, synovial, or bone marrow cavities.
    - Substantial impairment is defined as the circumstance where the animal is not expected to be normal after a reasonable postoperative recovery period. Examples include, but are not limited to, those procedures permanently and significantly affecting ambulation, physiology, the immune system, and mentation.

7. Biopsy: The removal of a piece of tissue from a live animal is known as a biopsy. If the collection of tissue involves entering a body cavity, then the biopsy shall be considered a major surgery (e.g., liver wedge biopsy), as defined below. The exception is the use of transcutaneous Tru-cut® biopsy needles, fine needle aspirates, or similar techniques of collection of samples of organs within a body cavity, which shall be considered a minor surgery. Principal Investigators are encouraged to perform these types of biopsies being guided by ultrasonography.

   The use of biopsies described in IACUC SOP #2 for tissue collection for genotyping purposes will not be considered surgery and will be reviewed in the tissue sampling section in the ASAF.

   The following examples are intended to serve as a guide only. The classification of a surgery as major or minor is determined on a case-by-case basis by the IACUC and the Attending Veterinarian with consideration to the species, animal age, and its impact on an animal's well-being.

Examples of Major vs. Minor Surgeries

Minor Surgical Procedure	Major Surgical Procedure
Tissue biopsy not involving surgical exposure of a body cavity (e.g., superficial lymph node, skin, or muscle)	Limb amputation, mammectomy
Subcutaneous osmotic mini-pump placement	Laparotomy and some more invasive laparoscopic procedures (e.g., hepatic lobectomy, portal vein cannula)
Skin suturing of a superficial dermal injury	Thoracotomy or craniotomy
Indwelling jugular catheter placement in a rodent	Arthrotomy and joint replacement, orthopedic implant
Oral surgery and tooth extraction not involving bone	Ovariectomy or ovariohysterectomy
Laparoscopic oocyte collection	Eye surgery with corneal incision

E. Responsibility

1. It is the responsibility of the Principal Investigator to maintain adequate, complete, and legible surgical, veterinary, and procedure records for all animals involved in the research or teaching protocol. See IACUC Policy #4 "Animal Care Medical Records for Research and Teaching Animals" for record keeping requirements and IACUC Policy #6 "Aseptic and Perioperative Surgical Techniques" for an example surgery log.

2. It is the responsibility of the IACUC to review the protocol and to perform a Harm-Benefit analysis. The 2011 *Guide* specifies that the IACUC is obliged to weigh study objectives against animal welfare concerns in accordance with the tenets of the Three R's. AAALAC International expects that IACUCs, as part of the protocol review process, will weigh the potential adverse effects of the study against the potential benefits that are likely to accrue as a result of the research. This analysis should be performed prior to the final approval of the protocol and should be a primary consideration in the review process.

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F. References

1) USDA Animal Welfare Act and Animal Welfare Regulations.

2) National Research Council, 2011. Guide for the Care and Use of Laboratory Animals. 8th Edition. The National Academies Press, Washington, DC.

3) U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research and Training.
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