

University of Louisville  
Institutional Animal Care and Use Committee  
***Policies and Procedures***

## **Multiple Survival Surgeries**

**Policy:** This policy describes criteria for which an animal may undergo multiple survival surgeries as part of a research *Proposal*. In brief, multiple survival surgeries performed on a single animal must be appropriately justified by the Principal Investigator in a single *Proposal* and approved by the IACUC prior to implementation. *Proposals* should consider both scientific necessity and animal welfare.

**Rationale:** Both the *Animal Welfare Regulations*<sup>2</sup> and the *Guide for the Care and Use of Laboratory Animals*<sup>3</sup> require that no animal be used for more than one major survival surgery unless the procedures are included in a single protocol and scientifically justified or are necessary for clinical reasons. Additionally, multiple survival surgeries performed on a single animal should be evaluated to determine the impact on the animal's overall health and wellbeing. This policy has been developed to ensure compliance with these regulations and to provide definitions and consistent standards for *Proposals* requiring multiple survival surgeries.

**Definitions:**

**Minor Surgery:** any surgical intervention that does not expose a body cavity and causes little or no physical impairment to the animal (e.g. wound suturing, peripheral vessel cannulation, percutaneous biopsy).

**Major Surgery:** any surgical intervention that penetrates or exposes a body cavity, has the potential for inducing permanent or physiological impairment, or involves extensive tissue dissection or transection (e.g. laparotomy, thoracotomy, joint replacement, limb amputation). Some surgeries such as laparoscopic procedures and craniotomies may be classified as either major or minor depending on the impact on the animal.

**Multiple Survival Surgeries:** Surgical procedures are considered separate survival surgeries when performed under *separate anesthetic periods* from which the animal will recover from each anesthetic event.

**Procedures, Guidelines, and Exceptions:**

1. All surgeries must be detailed in the IACUC *Proposal*, and reviewed and approved by the IACUC prior to implementation. The Principal Investigator must also detail surgeries performed prior to acquisition of animals, including those performed by vendors or at other institutions prior to importing animals.
2. The number of survival surgeries should be limited to the minimum number necessary to achieve the research objectives while minimizing pain and distress.
3. Multiple survival surgeries of either kind (minor or major) on a single animal require specific justification in the IACUC *Proposal*. This should include the total number of surgical procedures an animal will undergo, justification addressing why the procedures cannot be performed during the same anesthetic event, and the minimum amount of time allowed between procedures. The

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justification should demonstrate the scientific or clinical necessity of the multiple survival surgeries. Cost savings alone is never an acceptable justification for performing multiple major survival surgeries.

4. Animals that undergo a survival surgery cannot be transferred to another IACUC *Proposal* and undergo additional surgical procedures without specific IACUC approval and appropriate justification. This includes animals imported from a vendor or another institution having previously undergone a surgery. USDA-regulated species cannot undergo a second *major survival surgery* under a different IACUC *Proposal* without UofL's Institutional Official receiving special approval from the USDA<sup>1</sup>. Similar exceptions for non-USDA-regulated animals may be critically reviewed and approved by the IACUC but are highly discouraged.
5. Animals that undergo surgery as part of routine or emergency veterinary care (unrelated to research) may be used on a *Proposal* requiring survival surgery in consultation with and at the direction of an RRF veterinarian.
6. IACUC requirements for anesthesia, surgery, and recordkeeping must be followed according to relevant policies. This may include the Rodent Anesthesia, Performing Rodent Survival Surgery, Individual Animal Records, and Use of Postoperative Analgesia policies.

### **References:**

1. Animal and Plant Health Inspection Service, USDA (2011). *Animal Care Policy #14: Major Survival Surgery*. <https://www.nal.usda.gov/sites/default/files/Policy14.pdf>
2. Animal and Plant Health Inspection Service, USDA (2017). *Animal Welfare Act and Animal Welfare Regulations*.
3. Institute of Laboratory Animal Resources, National Research Council (2011). *The Guide for the Care and Use of Laboratory Animals*. National Academies Press, Washington, DC.

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