

	Guideline	Guidelines on Definitions of Non-Survival and Survival Surgery	
	Approved by:	CMRC Institutional Animal Care and Use Committee	
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TITLE	:	Guidelines on Definitions of Non-Survival and Survival Surgery
SCOPE	:	These guidelines are to assist all CMRC personnel by providing definitions for non-survival and survival surgeries.
SOP OWNER	:	IACUC
PURPOSE	:	To provide definitions of non-survival and survival surgeries, and for survival surgeries, differentiating between major, minor and multiple major surgeries.
EQUIPMENT	:	None
RELATED SOPS	:	None

I. General

Understanding what is a non-survival and survival surgery, and in particular for survival surgery, what is a major, minor and multiple major surgery, will help the IACUC and the researcher:

1. Maintain regulatory compliance
2. Provide guidance during the protocol review process
3. Provide guidance during protocol development

In order to conform to the AWA and PHS Policy, all investigators performing surgeries must have the appropriate training and IACUC approval prior to performing any surgical procedures. Principal investigators must provide locations, to the IACUC, of all areas in which surgeries are performed.

II. Definitions and Guidelines

Non-survival surgery is defined as any surgical intervention in which the animal will not recover from anesthesia (this can vary from minutes to hours of anesthesia). This does not include euthanasia followed by procedures conducted postmortem; however, any procedure where an incision is created following the administration of a lethal dose of anesthesia but prior to actual death of the animal is considered a non-survival surgery. An example of a less obvious non-survival surgery is one that includes euthanasia via transcatheter perfusion as incisions and dissections must occur prior to actual death. Although non-survival surgeries do not require aseptic technique, at a minimum, the animal should be clipped, the surgeon should wear clean gloves, and instruments and surrounding area should be clean.

Survival surgery means that the animal recovers from anesthesia following a surgical procedure. In accordance with the AWARs and the Guide all survival surgeries require aseptic technique.

Major survival surgery penetrates and exposes a body cavity or produces substantial impairment of physical or physiologic functions. Major surgical procedures on non-rodent species must be performed in a dedicated surgical facility.

Minor survival surgery does not expose a body cavity and causes little or no physical or physiologic impairment. Minor surgical procedures do not require a dedicated facility.

Examples of Major Surgical Procedures	Examples of Minor Surgical Procedures
Laparotomy (abdominal surgery)	Wound suturing, subcutaneous incision
Thoracotomy (open chest surgery)	Superficial vascular cut down
Craniotomy (removal of parts of the skull including burr holes to expose the dura)	Castration/orchidectomy
Joint replacement	Percutaneous biopsy
Limb amputation	Repair of a prolapse
Orthopedic surgeries	Arthroscopy

Multiple major survival surgeries occur when an animal undergoes two or more major survival surgeries as defined above. This refers to two or more surgeries in which the animal recovers from the anesthetic, and does not refer to procedures where two major surgeries are performed under one operative and anesthetic period.

The AWAR discourage second major survival surgeries on animals, but they may be approved if scientifically justified by the PI and approved by the IACUC. Cost savings must **not** be used as a scientific justification. Multiple major survival surgical procedures can be justified if:

- Surgeries are interrelated components of one project
- This action conserves scarce animal resources
- There are clinical reasons for multiple surgeries (animal health related as opposed to research).

Approved protocols for major multiple survival surgeries will be scrutinized carefully by the veterinary staff and the IACUC, with particular attention to post-operative care and recordkeeping throughout the duration of the study.

All animals that have undergone a major survival surgery must be identified and have appropriate record keeping to avoid an unapproved second major survival surgery. In particular, animals that are transferred between protocols must be identified to prevent their use in a second major survival operative procedure.

III. References

1. The Guide for the Care and Use of Laboratory Animals, National Research Council, 1996.
2. Brown et al., 1993; Guidelines for animal surgery in research and teaching. Am J Vet Res, 54 (9): 1544-1545.
3. Animal Welfare Act and Regulations (AWAR), 9 CFR, Part I Definition of terms and Part 2-Regulations, subpart C.
4. PHS (Public health Service). 1996 Public Health Service Policy on Humane Care and Use of laboratory Animals. Washington, D.C.: U.S. Department of Health and Human Services, 28 pp. [PL 99-158. Health Research Extension Act, 1985].