DEFINITIONS OF TYPES OF ANIMAL PROCEDURES

EUTHANASIA:  A method of killing animals by methods that induce rapid unconsciousness and death without pain or distress. An IACUC approved animal protocol is required to conduct euthanasia. The pain/distress category for animals undergoing only euthanasia in the protocol should be indicated as USDA category “C”.

TISSUE HARVESTING:  The collection of tissue after the animal's death. Note that for non-USDA covered species (rats, mice, frog, fish, birds) an animal protocol is required for euthanasia, but not just for tissue harvesting. Thus, if you take possession of a dead animal (e.g. from another investigator who has euthanized the animal as part of their IACUC approved protocol) in order to collect tissue, you do not need a separate animal protocol. Similarly, an animal protocol is not needed when non-USDA covered animal tissues are ordered from commercial vendors. For USDA covered species (hamsters, rabbits, higher mammals) an IACUC approved protocol is required to work with live or dead animals or animal parts.

BIOPSY:  The removal of a piece of tissue from a live animal. Note that if tissue sampling 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 biopsy needles, fine needle aspirates, or similar techniques of collecting small samples of organs within a body cavity. For biopsies where superficial tissue samples (e.g. skin) are collected, the procedure is considered a minor surgery (as defined below). The collection of a superficial biopsy sample may not always require general anesthesia. For example, some procedures could be done after subcutaneous instillation of a local anesthetic (e.g. bupivacaine). Principal Investigators should consult with a veterinarian regarding the best possible anesthesia/analgesia and wound care for their specific biopsy technique. An IACUC approved protocol is always required to conduct biopsies; the pain/distress categorization of the procedure will vary (typically USDA category “C” or “D”).

SURGERY:  The intentional creation of a novel opening in the body that is done under anesthesia. This may involve cutting with a scalpel, scissors, biopsy forceps, punch biopsy, laser, electrocautery, cold (liquid nitrogen) or other technique. An IACUC approved protocol is required for all surgical procedures. Principal Investigators should consult with a veterinarian regarding the best possible anesthesia/analgesia and wound care for any surgical protocol (this is a requirement for any survival surgery).

1) Non-survival Surgery:  When an animal is anesthetized for surgical procedures and then euthanized without ever regaining consciousness. These procedures can be performed under less stringent conditions than survival surgery (e.g. don’t require aseptic technique) and are classified as pain/distress category “D”.

Note:  The IACUC has classified transcardial perfusion of rodents with chemical
fixatives while under anesthesia as a non-survival surgery. While this procedure leads to the inevitable death of the animal, it is not listed as a euthanasia method in the new AVMA Guidelines on Euthanasia (thus IACUC considers it a category “D” non-survival surgical procedure).

2) Survival Surgery: When an animal is anesthetized for surgical procedures and then allowed to recover consciousness afterwards. These procedures require aseptic (sterile) techniques and appropriate pain control (both anesthesia and postoperative analgesia). These would typically be classified as USDA pain/distress category “D” (animals treated with appropriate post-operative analgesia afterwards) but could in some cases be categorized as “E” (e.g. peripheral nerve injuries that generate subsequent neuropathic pain that is not treated). In the latter example, appropriate scientific justification will be required.

a) Major Survival Surgery
The Guide states that “As a general guideline, major survival surgery... penetrates and exposes a body cavity, produces substantial impairment of physical or physiologic functions or involves extensive tissue dissection or transection”. Major surgeries require appropriate anesthesia, aseptic technique, appropriate wound closure (sutures, staples, tissue glue, and/or bandaging), analgesia, wound care, and monitoring. A minimum of 48 hrs of post-surgical analgesia is required for most major survival surgical procedures. Examples include:
- Laparotomy, including laparoscopy
- Thoractomy
- Craniotomy
- Arthrotomy and joint replacement, excluding arthroscopy
- Orthopedic procedures (e.g. limb amputation)
- Nerve/muscle transection
- Eye surgery with corneal incision

b) Minor Survival Surgery
The Guide states that a “minor survival surgery does not expose a body cavity and causes little or no physical impairment”. This includes procedures routinely done on an “outpatient” basis in veterinary clinical practice. Minor surgeries require appropriate anesthesia, aseptic techniques, and appropriate postoperative care including analgesia and monitoring. A minimum of 24 hrs of post-surgical analgesia is recommended for most minor survival surgical procedures. Examples include:
- Vascular cut-downs/catheter placement in a peripheral vessel
- Tissue biopsy not involving surgical exposure of a body cavity (e.g. skin, tail)
- Subcutaneous implants
- Suturing or other repair of a superficial injury
- Oral surgery and tooth extractions not involving bone incisions