

**Mount Allison**  
UNIVERSITY  
**Animal Use Protocol Form Appendix**  
(version v2003)

**Peer Review**

**Honours/Student Research Projects**

For honours and student research projects where the project is not being conducted under a program that has been peer reviewed, review by a committee comprised of the members of the department will be accepted. A statement indicating that the project has been reviewed by the department and found to have scientific merit must be signed by two members of the reviewing committee and submitted with the protocol. For honours and student research projects that are being conducted as part of a research program that has already been peer reviewed by a funding agency such as NSERC, this statement is not required.

**Purpose of Animal Use (PAU)**

- PAU= 1. Studies of a fundamental nature in sciences relating to essential structure or function (e.g., biology, psychology, biochemistry, pharmacology, physiology, etc.).
- PAU = 2. Studies for medical purposes, including veterinary medicine, that relate to human or animal disease or disorders.
- PAU = 3. Studies for regulatory testing of products for the protection of humans, animals, or the environment.
- PAU = 4. Studies for the development of products or appliances for human or veterinary medicine.
- PAU = 5. Education and training of individuals in post-secondary institutions or facilities.

**Keywords**

1. research, teaching, testing;
2. regulation (are the experiments performed directly in relation to testing regulations in force in Canada and/or the US (FDA, EPA, etc.) and/or elsewhere, type of testing (e.g., cosmetic testing);
3. field work, behavior observation, environmental protection study, fauna conservation;
4. development of techniques, study of the effectiveness of a product (drugs, others) or a method (spectroscopy, others);
5. breeding, breeding colony, sentinel program;
6. antibody production (monoclonal, polyclonal);
7. pilot study;
8. palatability test, digestibility test, reinforcement/motivation, staged behavioral encounters;
9. primary cell culture, tissue/organ collection, graft, transplant;
10. species, transgenic animal;
11. validation of non-animal model (*in vitro* test, computational methods...).

## Categories of Invasiveness

The following list of categories provides *possible examples* of experimental procedures which are considered to be representative of each category.

### A. Experiments on most invertebrates or on live isolates

Possible examples: the use of tissue culture and tissues obtained at necropsy or from the slaughterhouse; the use of eggs, protozoa or other single-celled organisms; experiments involving containment, incision or other invasive procedures on metazoa.

### B. Experiments which cause little or no discomfort or stress

Possible examples: domestic flocks or herds being maintained in simulated or actual commercial production management systems; the short-term and skillful restraint of animals for purposes of observation or physical examination; blood sampling; injection of material in amounts that will not cause adverse reactions by the following routes: intravenous, subcutaneous, intramuscular, intraperitoneal, or oral, but not intrathoracic or intracardiac (Category C); acute non-survival studies in which the animals are completely anesthetized and do not regain consciousness; approved methods of euthanasia following rapid unconsciousness, such as anesthetic overdose, or decapitation preceded by sedation or light anesthesia; short periods of food and/or water deprivation equivalent to periods of abstinence in nature.

### C. Experiments which cause minor stress or pain of short duration

Possible examples: cannulation or catheterization of blood vessels or body cavities under anesthesia; minor surgical procedures under anesthesia, such as biopsies, laparoscopy; short periods of restraint beyond that for simple observation or examination, but consistent with minimal distress; short periods of food and/or water deprivation which exceed periods of abstinence in nature; behavioural experiments on conscious animals that involve short-term, stressful restraint; exposure to non-lethal levels of drugs or chemicals. Such procedures should not cause significant changes in the animal's appearance, in physiological parameters such as respiratory or cardiac rate, or fecal or urinary output, or in social responses.

**Note:** During or after Category C studies, animals must not show self-mutilation, anorexia, dehydration, hyperactivity, increased recumbency or dormancy, increased vocalization, aggressive-defensive behaviour or demonstrate social withdrawal and self-isolation.

### D. Experiments which cause moderate to severe distress or discomfort

Possible examples: major surgical procedures conducted under general anesthesia, with subsequent recovery; prolonged (several hours or more) periods of physical restraint; induction of behavioural stresses such as maternal deprivation, aggression, predator-prey interactions; procedures which cause severe, persistent or irreversible disruption of sensorimotor organization; the use of Freund's Complete Adjuvant (FCA) (see *CCAC Guidelines on Acceptable Immunological Procedures*).

Other examples include induction of anatomical and physiological abnormalities that will result in pain or distress; the exposure of an animal to noxious stimuli from which escape is impossible; the production of radiation sickness; exposure to drugs or chemicals at levels that impair physiological systems.

**Note:** Procedures used in Category D studies should not cause prolonged or severe clinical distress as may be exhibited by a wide range of clinical signs, such as marked abnormalities in behavioural patterns or attitudes,

the absence of grooming, dehydration, abnormal vocalization, prolonged anorexia, circulatory collapse, extreme lethargy or disinclination to move, and clinical signs of severe or advanced local or systemic infection, etc.

**E. Procedures which cause severe pain near, at, or above the pain tolerance threshold of unanesthetized conscious animals**

This Category of Invasiveness is not necessarily confined to surgical procedures, but may include exposure to noxious stimuli or agents whose effects are unknown; exposure to drugs or chemicals at levels that (may) markedly impair physiological systems and which cause death, severe pain, or extreme distress; completely new biomedical experiments which have a high degree of invasiveness; behavioural studies about which the effects of the degree of distress are not known; use of muscle relaxants or paralytic drugs without anesthetics; burn or trauma infliction on unanesthetized animals; a euthanasia method not approved by the CCAC; any procedures (e.g., the injection of noxious agents or the induction of severe stress or shock) that will result in pain which approaches the pain tolerance threshold and cannot be relieved by analgesia (e.g., when toxicity testing and experimentally-induced infectious disease studies have death as the endpoint).