Analgesic Use in Laboratory Animals, and Recognition of Painful Procedures in Lab Animal Guidelines

I. Overview:

Animal welfare regulations require that procedures involving animals avoid or minimize discomfort, distress, and pain to the animals. If procedures involve more than momentary or slight pain and discomfort to animals, regulations require the appropriate use of sedatives, anesthetics, or analgesics, unless withholding of such agents is scientifically justified in the animal care and use protocol and approved by the IACUC.

Use of analgesics is required when procedures are reasonably considered to produce pain or distress. Such procedures must be identified in the animal care and use protocol and include criteria used to assess pain and distress in the animals and steps to be taken to minimize such pain, such as the use of analgesic drugs. In addition, it is recommended to consult the Attending Veterinarian in the selection of appropriate analgesics (UC Merced Policy 116). Included below are general guidelines for determining painful and distressful procedures.

II. Guidelines:

The following procedures are considered to produce minimal, transient, or no pain and distress when performed by competent individuals using recognized methods:

1. Administration of anesthetics, analgesics and tranquilizers; fluid and electrolyte therapy; venipuncture; and SC and IP injections;
2. Gastric lavage;
3. Stimuli that produce only transient pain including those that are escapable or avoidable.

The following procedures are considered to produce minimal, transient, or no pain and distress when performed by competent individuals using recognized methods and appropriate substances:

1. Surgery (e.g., laparotomy, thoracotomy, craniotomy, orthopedic procedures, etc.);
2. Injection or application of compounds that induce excessive inflammation or necrosis (e.g., bradykinin, certain infectious agents, etc.);
3. Induction of certain disease states or radiation exposure (e.g., burns, organ transplant and rejection studies, etc.).

III. References:

a. *Guide for the Care and Use of Laboratory Animals* (8th ed.). National Research Council. Pages 120-121.
b. UC Merced 2023. *Survival Surgery in Rodents and Birds.*