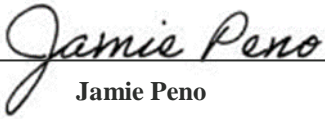
 <div> <div>DIVISION OF RESEARCH &amp; INNOVATION</div> <div>Research Integrity &amp; Compliance</div> </div>		<b>Institutional Animal Care and Use Committee</b>  <b>Standard Operating Procedures</b>	
<b>Title:</b> Assessment and Treatment of Pain, Distress and Illness in Research Animals			
<b>Effective Date:</b>	December 22, 2020	<b>Document Number:</b>	IACUC-SOP-02-12.00
<b>Approval/Date:</b>  <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">   <hr style="width: 100%;"/> <b>Jamie Peno</b>  Director, Research Integrity and Compliance </div> <div style="text-align: center;"> 12/22/2020  <hr style="width: 100%;"/> <b>Date</b> </div> </div>			
<b>REVISION HISTORY</b>			
<b>Date</b>	<b>Section</b>	<b>Author</b>	

## PURPOSE

It is the goal of the UNT IACUC to limit the pain and distress of experimental animals to the absolute minimum necessary that will still meet the objectives of the proposed research.

## SCOPE

It is the responsibility of the Principal Investigator and research personnel to follow the procedures outlined regarding the evaluation and minimization of pain and distress and to provide the proper justification for all procedures that may cause even momentary pain and distress in experimental animals to the IACUC for evaluation of appropriateness and merit.

## DEFINITIONS AND ABBREVIATIONS

UNT- University of North Texas, Denton

IACUC- Institutional Animal Care and Use Committee

SOP/SOP's- Standard Operating Procedure(s)

PI- Principal Investigator

LAF- Laboratory Animal Facility

AV- Attending Veterinarian

PAIN- Pain is an awareness of acute or chronic discomfort, occurring in varying degrees of severity, and resulting from injury, disease, or emotional distress as evidenced by biological and/or behavioral changes.

ACUTE PAIN- Acute pain results from a traumatic, surgical, or infectious event that is

abrupt in an onset and relatively short in duration. It is generally alleviated by analgesics.

**CHRONIC PAIN-** Chronic pain results from a longstanding physical disorder or emotional distress that is usually slow in onset and has a long duration. It is seldom alleviated by analgesics but frequently responds to tranquilizers combined with environmental manipulation and behavioral conditioning.

**DISTRESS-** Distress is a state in which an animal cannot escape from or adapt to internal stresses which results in effects to the animal's wellbeing. Its acute form may be relieved by tranquilizers. Sustained distress, however, requires environmental change and behavioral conditioning and does not often respond acceptably to drug therapy.

**ANALGESIA-** Analgesia refers to relief from pain. ii. Tranquilization is a state of behavioral change in which the patient is relaxed and unconcerned by its surroundings. In this state, the animal is often indifferent to minor pain.

**SEDATION-** Sedation is a mild degree of central depression in which the patient is awake but calm.

**NARCOSIS-** Narcosis, in man, is defined as a drug-produced state of deep sleep accompanied by analgesia. In veterinary medicine, the narcotized patient is seldom asleep but is sedated and oblivious to moderate pain.

**HYPNOSIS-** Hypnosis is a condition of artificially induced sleep, or a trance resembling sleep, resulting from moderate depression of the central nervous system.

**LOCAL ANESTHESIA-** Local anesthesia is the loss of sensation in a limited area of the body.

**REGIONAL ANESTHESIA-** Regional anesthesia is insensibility in a larger but limited area of the body.

**BASAL ANESTHESIA-** Basal anesthesia is a light level of general anesthesia usually produced by pre-anesthetic agents. It serves as a basis for deeper anesthesia on administration of other agents.

**GENERAL ANESTHESIA-** General anesthesia is complete unconsciousness.

**SURGICAL ANESTHESIA-** Surgical anesthesia is unconsciousness accompanied by muscular relaxation to such a degree that surgery can be performed painlessly and without struggling on the part of the patient.

## **PROCEDURES**

- I.** The following information is used by the IACUC in considering painful and stressful procedures, and these guidelines should also be used by those submitting protocols for review.

### **A. SIGNS OF PAIN**

1. An animal in pain, regardless of species, usually displays one or more of the following signs:
  - a) Attraction to the area of pain
  - b) Increased skeletal muscle tone
  - c) Altered electroencephalogram response
  - d) Increased blood pressure and heart rate
  - e) Pupillary dilation
  - f) Change in the respiratory pattern
2. Signs of acute pain may include:
  - a) Protection of the painful part
  - b) Vocalization (especially on movement or palpation of the painful area)

- c) Licking
  - d) Biting
  - e) Scratching or shaking of affected area
  - f) Restlessness
  - g) Pacing
  - h) Increased rate or respiration
3. Signs of chronic pain may include:
- a) Limping
  - b) Licking of area affected
  - c) Licking of other areas if the painful part cannot be reached
  - d) Reluctance to move
  - e) Loss of appetite
  - f) Change in behavior

## **B. SPECIES SPECIFIC SIGNS OF PAIN**

1. Rabbits
  - a) Rabbits in pain may be apprehensive, dull, inactive and assume a “hunched” appearance.
  - b) They sometimes, however, show aggressive behavior, and activity may be increased with excessive scratching and licking.
  - c) Reactions to handling are exaggerated, and acute pain may result in vocalization.
  - d) Respiratory rate may be increased, and there may be inappetence.
2. Rodents
  - a) Pain in rodents usually results in decreased activity, piloerection and an un-groomed appearance, or there may be excessive licking and scratching.
  - b) They may adopt an abnormal stance with ataxia, but rats and mice may become unusually aggressive when handled. Acute pain may cause vocalization.
  - c) Inappetence or a change in feeding activity may be noted and, if housed with others, a change in the normal group behavior may be apparent.
3. Birds
  - a) Birds in pain may show escape reactions with vocalization and excessive movement.
  - b) There may be an increase in heart and respiratory rates.
  - c) Prolonged pain will result in inappetence and inactivity with a drooping, miserable appearance.
  - d) When handled, the escape reaction may be replaced by a state of tonic immobility.
4. Fish
  - a) It is difficult to determine the nature of the response to pain in fish.
  - b) Responses to harmful stress include an increased ventilatory pattern with excessive movement of the fins.

## **REFERENCES**

1. The Guide for the Care and Use of Laboratory Animals.
2. Animal Welfare Act

## **APPENDICES**

### **IACUC Standard Operating Procedures**