

TITLE: Guidelines for Assessing Pain

PURPOSE: To provide investigators with guidance on assessing the potential for pain and the signs of pain and distress.

REVIEW/REVISIONS: The IACUC will review and revise this guidance as needed.

Chart 1: Examples of Pain Potential and Categorization to Determine Recommended Time to Provide Analgesia

Minimal to Mild Pain <i>Provide analgesia for 8-12 hours</i>	Mild to Moderate Pain <i>Provide analgesia for 48 hours</i>	Moderate to Severe Pain <i>Provide analgesia for >48 hours</i>
Catheter Implantation	Minor Laparotomy incisions	Major Laparotomy/Organ Incision
Tail Clipping	Thyroidectomy	Thoracotomy
Ear Notching	Orchidectomy	Heterotopic Organ Transplantation
Superficial Tumor Implantation	Cesarean Section (C-Section)	Vertebral Procedures
Orbital Sinus Venotomy	Embryo Transfer	Burn Procedures
Superficial Lymphadenectomy	Hypophysectomy	Trauma Models
Ocular Procedures	Thymectomy	Orthopedic Procedures
Multiple ID Antigen Injections		
Intracerebral Electrode Implantation		
Vasectomy		
Vascular Access Port Implantation		

Taken from: Public Statement (2007). *Guidelines for the Assessment and Management of Pain in Rodents and Rabbits. Public Statement, American College of Laboratory Animal Medicine. 46:97-108.*

Chart 2: Signs of Pain and Distress in Laboratory Animals

Species	Signs of mild to moderate pain or distress	Signs of severe or chronic pain or distress
Cat	Increased aggression when approached; decreased food intake; licking.	Generally silent; may growl or hiss if approached; attempt to hide; crouching, hunched or stretched posture; wild escape behavior, vocalizing, un-groomed appearance; pupillary dilation; anorexia.
Cattle	Depressed; little interest in surroundings; weight loss and sudden drop in milk yield; lack of grooming	Rapid, shallow respiration; increased aggression; rigid posture; grunting and grinding of teeth; weight loss
Dog	Decreased alertness; stiff posture; panting; biting; licking or scratching; increased vocalization; increased aggression.	Unwillingness to move; crouching posture; increased restlessness; increased aggression; crying when handled or moved.
Gerbil	Ocular discharge; eyelids partially closed and matted with dry material; may “faint” when handled; changes in activity and burrowing behavior; arched back; hunched posture.	Loss of weight and condition; sores on face; hair loss on tail.

Guinea Pig	Eyes sunken and dull; changes in respiration; increased timidity; increased sleepiness; arched back; increased vocalization.	Weight loss; hair loss; scaly skin; dehydration; decreased timidity; unresponsive; excessive salivation (oral problems); increased barbering; loss of righting reflex; decreased vocalization; hypothermia.
Syrian Hamster	Ocular discharge; increased aggression; hunched posture; reluctance to move.	Loss of coat and body condition; increasing depression; extended daytime sleep periods; lateral recumbency; hypothermia; sores on lips, paws.
Horse	Interrupted feeding; pupillary dilation; glassy eyes; increased respiration; increased heart rate; profuse sweating; rigid stance; restlessness.	Depression; biting; kicking; circling; self-mutilation; reluctance to be handled.
Mouse	Eyelids partially closed; changes in respiration; rough hair coat; increased vibrissae movement; unusually apprehensive or aggressive; possible writhing, scratching, biting, self-mutilation; hunched posture; sudden running; aggressive vocalization; guarding.	Weight loss; dehydration; incontinence; soiled hair coat; eyes sunken, lids closed; wasting of muscles on back; sunken or distended abdomen; decreased vibrissae movement; unresponsive; separates from group; hunched posture; ataxia; circling; hypothermia; decreased vocalization.
Pigs	Changes in gait or posture; increased efforts to avoid handling; increased squealing when approached or handled.	Depression; unwillingness to move; attempts to hide; withdrawal from pen mates; anorexia.
Non-human primate	Generally few signs, especially in the presence of humans; decreased activity; decreased food and water intake; increased vocalization.	Huddled or crouching posture, with hand folded over abdomen; clenching or grinding of teeth; depression or increased restlessness; withdrawal from cage mates; increased (generally aggressive) attention from cage mates; anorexia; weight loss; decreased grooming.
Rabbit	Ocular discharge; constipation or diarrhea; depression; facing back of cage; excessive self-grooming; stretched posture; early failure to eat and drink; dull attitude or increased aggression when handled; possible vocalization when handled; tooth grinding; respiratory rate may increase.	Tooth grinding; apparent sleepiness; dehydration; weight loss; fecal staining; wasting of lower back muscles; decreased production of night feces; unresponsive.
Rodents	Aggressive vocalization; licking, biting, scratching; guarding; rough hair coat + hair loss; reduced exploratory behavior.	Eyes closed, piloerection and ungroomed appearance; dehydration; weight loss; incontinence; soiled hair coat; self-mutilation; recumbent position with head tucked into abdomen; decreased vocalization; hypothermia; staggering/falling; squirming; poor gait; writhing; poor posture.
Sheep, Goat	Lying with legs extended; stamping feet; swaying stance; mild ataxia; restlessness or depression; increased aggression on handling; guarding; tooth grinding.	Rolling; frequently looking or kicking at abdomen; falling over; walking backward; rapid, shallow respiration; weight loss; tooth grinding; grunting; vocalization on handling (goats especially); rigidity; unwillingness to move.

Chart 3: Signs of Pain & Distress in All Species Table

Signs of Pain/ Distress	Species												
	Cat	Cattle	Dog	Gerbil	Guinea Pig	Syrian Hamster	Horse	Mouse	Pigs	NHP	Rabbit	Rodents	Sheep Goat
Anorexia	S								S	S			
Ataxia								S					M
Attempt to Hide	S								S				
Biting/Kicking			M				S	M				M	
Change in Activity & Burrowing Behavior				M									
Change in Respiration		S			M		M	M			M		S
Circling							S	S					
Constipation or Diarrhea											M		
Crouching	S		S										
Decreased Activity										M			
Decreased Alertness			M										
Decreased Food Intake	M									M			
Decreased Vocalization					S			S				S	
Dehydration					S			S			S	S	
Depression		M				S	S		S				M
Excessive Salivation					S								
Eyelids Partially Closed				M				M/S				S	
Eyes Sunken/Dull					M			S					
Growling/ Hissing	S												
Grunting/Grinding of Teeth		S								S	M/S		M/S
Guarding								M				M	M
Hair Loss				S	S							M	
Hunched or Stretched Posture	S			M		M		M/S		S	M	S	
Hypothermia					S	S		S				S	
Increased Aggression	M/S	S	M/S			M				S	M		M
Increased Efforts to Avoid Handling									M				
Increased Heart Rate							M						
Increased Restlessness			S				M			S			M
Increased Sleepiness					M	S					S		
Increased Squealing when Approached or Handled									M				
Increased/ Decreased Vibrissae Movement								M/S					
Increased Vocalization	S		M		M			M	M	M	M	M	S
Increased/ Decreased Timidity					M/S								
Lack of Grooming		M				S				S		S	
Licking	M		M									M	
Little Interest in Surroundings		M						S		S		M	
Loss of Righting Reflex					S								
Ocular Discharge				M		M					M		
Poor Gait									M			S	
Possible Writhing								M					
Profuse Sweating							M						
Pupillary Dilation	S						M						
Reluctance to Move						M							
Rigid Posture		S			M								
Rigid Stance							M						M/S
Scaly Skin					S								

Self-Mutilation						S	M				S	
Separation from Group							S	S	S			
Soiled Hair Coat							S				S	
Sores on Face/ Paws			S		S						S	
Staggering/ Falling											S	
Sunken or Distended Abdomen							S					
Unresponsiveness				S			S			S		
Unwillingness to Move			S					S				S
Weight Loss		M/S		S	S		S		S	S	S	S

M = Mild to Moderate **S** = Severe or Chronic **M/S** = Mild to Moderate/Severe or Chronic

Chart 4: Potential Signs Associated with Pain or Distress in Gerbils, Hamsters, Guinea Pigs, Rodents, and Rabbits

Signs	Gerbils	Hamsters	Guinea Pigs	Mice	Rats	Rabbits
Abdominal Breathing				X	X	X
Abnormal Posture/Positioning (e.g., head-pressing, Hunched back)	X	X	X	X	X	X
Biting/Growling/Aggression		X			X	X
Change in Respiration			X			
Decreased Food and Water Consumption				X	X	X
Dehydration/Skin Tenting/Sunken Eyes			X	X	X	X
Dilated Pupils						X
Eyelids Partially closed and matted with dry material	X					
Grinding Teeth					X	X
Hair Loss	X					
Hypothermia		X	X			
Increased Depression		X				
Increased Salivation			X			X
Increased/Decreased Movement	X			X	X	X
Increased/Decreased Timidity			X			
Muscle Rigidity, Lack of Muscle Tone				X	X	X
Ocular Discharge	X	X				
Opened-Mouth Breathing				X	X	X
Rapid Breathing				X	X	X
Redness or Swelling Around Surgical Site				X	X	X
Restless Sleep/Increased Sleep		X	X			X
Self-imposed isolation/hiding				X	X	X
Self-mutilation, gnawing at limbs				X	X	X
Sores (facial, body)	X	X				
Tearing (may include Porphyria), Lack of Blinking Reflex, Ocular Discharge					X	X
Twitching, trembling, tremor				X	X	X
Unkempt Appearance (Erected, Matted, or Dull Haircoat)				X	X	X
Vocalization (increase/decrease)			X			
Vocalization (Rare)				X	X	X
Weight loss	X		X	X	X	X