

	Laboratory Animal Resources Center	Special Refinement Consideration: <b>Experimental and Humane Endpoints</b>	Date created 4/01/2012. IACUC reviewed 9/13/2017.  1 of 2
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There are some studies that require special IACUC refinement considerations. One refinement consideration is the endpoint of an experiment. The experimental endpoint occurs when the aims and objectives of the study have been met. Another closely linked refinement consideration is the humane endpoint of the study, the point at which the study is stopped to prevent pain or distress to the animal.

In most studies the experimental and humane endpoints correspond, consequently, establishing a study endpoint is relative easy for the Principal Investigator (PI) and IACUC. In some cases, however, the experimental and humane endpoints do not coincide. This is especially problematic when the humane endpoint precedes the experimental endpoint. These types of studies require special IACUC consideration. Examples include, but are not limited to, tumor burden, vaccine challenges, toxicology and infectious disease assessments, cancer models and pain and distress assays.

According to the Guide:

Experimental and humane endpoints should be clearly defined in the Animal Care and Use Protocol, and be reviewed and approved by the IACUC.

Humane endpoint determination should involve the PI, Attending Veterinarian (AV) and IACUC prior to the start of the study.

When establishing humane endpoints, four critical criteria are essential for consideration:

- a precise definition,
- frequency of observations,
- training of personnel,
- required response when the endpoint is reached.

The use of Pilot Studies with limited numbers of animals is an effective method for ascertaining both experimental and humane endpoints.

Specific signs of illness that require AV consultation and may indicate an approaching humane endpoint and the need for preemptive euthanasia are listed below.

- Dehydration, emaciation
- Depressed, restless or aggressive behavior
- Labored respiration, cyanosis
- Neurological signs
- Abdominal distension

- Rough hair coat and/or hunched posture
- Impaired mobility, inability to reach food or water
- Changes in feces/urine and/or perianal soiling, diarrhea
- Eye/nose discharge
- Lack of grooming
- Hypothermia/hyperthermia
- Ulcerated tumor
- Ulcerative dermatitis
- Body Condition Scoring of  $\leq 2$  [<http://research.oregonstate.edu/larc>, Guidelines]

*Summarized by Helen E. Diggs from The Guide for the Care and Use of Laboratory Animals, 2011, Chapter 2: pages 27-28.*