



Position Statement

Humane Endpoints

In the context of animal-based research, the term “endpoint” ideally corresponds to that point in time when the scientific objectives of a study have been met and any associated pain and/or distress an animal may be experiencing can be terminated, minimized or reduced by ending the procedure, providing palliative treatment, or euthanizing the animal. To the greatest extent possible, pre-emptive euthanasia should be advocated as the humane endpoint for any study in which an animal is likely to progress to an agonal state and eventual death.

The earliest possible endpoint compatible with the scientific objectives of a study should be clearly identified. Likewise, parameters used to define that endpoint should be evidence-based and consistent with applicable ethical, animal welfare and scientific concerns. As a result, there is an obligation to consider all types of information available through published literature, retrospective studies, and the experience of peers when planning an animal study. If historical information is not available, pilot studies utilizing a limited number of animals can help to establish the time course of events for a study and predict when animals will need the most careful monitoring and when intervention is appropriate. The opportunity to compare reactions of control animals to those of treated animals can help to identify ordinary clinical changes, such as alterations in behavior, body temperature, body condition, and weight-loss patterns, which serve as objective indicators of pain, distress, and discomfort. Subclinical changes that signify an impending moribund state are equally important and should be utilized as ancillary criteria during evaluation to support traditional methods of assessment.

Humane endpoints should be identified in advance of the study, clear to all those involved in the research, and fully described in the protocol. Suitable observation schedules should be developed and followed to identify when endpoints have been reached, so that appropriate action may be taken. Personnel must be trained and qualified to recognize when a predetermined endpoint has been reached. Whenever possible, endpoints should be periodically re-evaluated to determine their continued impact on animal welfare and suitability for the research.

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