Association of Primate Veterinarians
Guidelines for Jacket Use for Nonhuman Primates

PURPOSE

The Association of Primate Veterinarians (APV) recognizes that jackets may need to be placed on nonhuman primates (NHPs), and accepts that their use may facilitate aspects of biomedical research projects. To ensure appropriate animal welfare, it is essential that each institution ensures that jacket use is justified and that users are adequately trained and familiar with potential complications associated with jacket use. The following general guidelines provide basic information for researchers, animal caregivers, veterinarians, and institutional animal care and use committees (IACUCs) to consider when assessing the use of jackets for NHPs. Professional judgment should guide development of institutional policies and standard operating procedures (SOPs) to reflect specific research uses.

BACKGROUND

Use of jackets ranges from helpful to critical in specific types of research, but regardless of the purpose, putting a jacket on a NHP can be a stressful experience for the animal. Every project in which jacket use is deemed necessary will benefit by habituating NHPs to the jacket prior to study initiation. Jackets offer advantages in projects in which animals have been instrumented with chronic, indwelling catheters for collection of blood samples or constant infusion of test articles. Other uses include protection of chronic implants or prevention of self-injurious behavior following surgery.

GUIDELINES

Protocol Review
The IACUC should carefully examine each proposal to ensure that jacket use has been described and justified, and that suitable alternatives are not feasible. Each proposal should include a plan to habituate the animal to the jacket and ensure the jacket’s integrity and cleanliness throughout the study (e.g. periodic changes, sanitation, repairs), and should contain a description of the parameters and schedule for monitoring the comfort and health of a jacketed animal. Finally, the IACUC should determine if wearing a jacket will interfere with social housing or implementation of the institutional enrichment program.

Fitting the Jacket
The manufacturer may be consulted for determination of an appropriate jacket size. Although the jackets are roughly sized based on animal weight and length, the fit may need to be customized to an individual animal with plastic zip ties, additional padding, and other adjustments. The jacket should fit snugly and comfortably around the thorax, abdomen, and armholes, and not restrict the
animal’s normal movements or respiratory effort or cause excessive rubbing, which may lead to skin lesions. Stretchable spandex or cotton undershirts may be used to reduce skin chafing. Pockets and inserts may be added to customize jackets for a particular study, but the overall weight and size of the jacket must be considered. Sleeveless jackets or protective vests are available and may be cooler and more comfortable if sleeves are not required for a particular study. Many investigators prefer clipping the hair before jacket application. Others believe that clipping may stimulate itching and that hair provides a buffer that reduces abrasions. Ultimately, either approach requires close clinical vigilance combined with jacket adjustments to accommodate growth and weight gain.

**Jacket Habitation**

Animals should be habituated to wearing the jacket at least 1-2 weeks prior to study initiation. Jackets may produce discomfort, distress, or pain when not fitted properly. In most cases, it is apparent within the first 24-48 hours whether an animal will tolerate a jacket. The limited use of sedatives, tranquilizers, or anxiolytics may be considered to assist with habituation. Animals that fail to habituate to the jacket should not be placed on a study that requires jacket use. Signs of maladaptation include destruction of the jacket, poor appetite, depressed/aggressive attitude, decreased activity, self-injury, and stereotypic behavior. Jacket habituation must include all aspects of the restraint system (e.g. a tether/swivel system or other devices that may be attached to the jacket), usually introduced in a stepwise fashion.

**Monitoring Jacket Use**

The jacket must be examined regularly to ensure proper fit, cleanliness, and to ensure that animals do not sustain injuries from wearing it. The examination frequency is dictated by the duration that animals wear jackets and/or the presence of an internal implant with an exteriorized component. An ill-fitting jacket is more likely to chafe and cause skin abrasions. Minor skin abrasions can often be managed by readjusting the fit of the jacket. The jacket may need to be removed to allow treatment and wound healing. In some cases, the hair covered by the jacket may be clipped when the jacket is removed to facilitate examination or treatment. Jackets should be changed on a regular basis (e.g., weekly or biweekly) or when soiled with feces, urine, blood, or exudates or if damaged. Jackets should be disinfected and laundered after each use.

**Jacket Use for Socially Housed NHPs**

Jacketed NHPs do not need to be routinely exempted from social housing. Each animal and research scenario must be evaluated to determine the impact of social versus individual housing. IACUCs should encourage use of new technologies allowing social housing of jacketed animals (i.e. telemetry signaling in group housed animals).
**Endpoints**

a. The experimental endpoint should be clearly defined and include the duration of jacket use.

b. It is difficult to predict *a priori* how an individual animal will react to wearing a jacket. Any maladaptation must prompt veterinary investigation, treatment, and further habituation or removal from the study.

**Record Keeping**

The clinical veterinarian should examine animals and review records regularly to ensure that the health of each jacketed animal is monitored according to parameters outlined in the protocol or SOPs. Any departures should be investigated and treated accordingly. Records must be available for review by clinical veterinarians, IACUC, and regulatory agencies.

**REFERENCES:**


