AAALAC TRIENNIAL ACCREDITATION SITE VISIT

It seems only yesterday, but three years have passed and it is once again time to focus attention on our next visit by the site assessment team from AAALAC, International.

Part of the process of preparation involved reminding ourselves about AAALAC, its mission, and its purpose. Many of the articles in this issue of ‘Animal Tracks’ address AAALAC. Please review these, and begin to prepare your research or care area for visits by the AAALAC, International site assessment team.

Wishing you a strong and successful research month.

AAALAC MYTHS VS. FACTS

Myth #1: AAALAC International is a regulatory agency.
Fact #1: AAALAC International is a private, non-profit, non-government organization that provides independent assessment of animal care programs.

Myth #2: AAALAC International conducts inspections of animal care and use programs.
Fact #2: AAALAC International evaluates programs through a voluntary, peer review process.

Myth #3: AAALAC International establishes policies and regulations.
Fact #3: AAALAC International evaluates animal care and use programs based on recommendations in the Guide for the Care and Use of Laboratory Animals (Guide), NRC 1996 and other widely accepted guidelines.

Myth #4: An institution’s evaluation and report is available to the general public.
Fact #4: The accreditation process is confidential. The evaluation and its results are known solely by the institution and AAALAC International. AAALAC International is not subject to federal freedom of information requirements, therefore our confidential business practices and unique research procedures are protected.

RECOGNICIAN & ALLEVIATION OF PAIN IN ANIMALS

Ed Note: The National Research Council has published a new report on recognition and alleviation of pain in laboratory animals. A report brief begins on Page 4 of this issue. Full text is available at the NRC/NAS web.

Scientists rely on animals as one research avenue to understand, treat, and cure diseases that plague both humans and animals themselves. In most situations, laboratory animals need not experience pain.

The alleviation and prevention of animal pain is both an ethical and moral imperative; minimizing animal pain is also scientifically and practically beneficial. For these and may other reasons, proper care and use of laboratory animals is a priority for the scientific community.

This report, written by a committee convened by the National Research Council (NRC) at the request of the New Jersey Association for Biomedical Research (NJABR), is an update of the 1992 NRC report Recognition and Alleviation of Pain and Distress in Laboratory Animals. Since that report was published, significant scientific progress has been made in the areas of animal welfare, stress, distress, and pain.

Because the concepts of pain and distress are two distinct concepts from a scientific perspective, the update was issued in two separate documents. The first, Recognition and Alleviation of Distress in Laboratory Animals, was published in March 2008.

This report’s conclusions and recommendations are intended to help scientists, veterinarians, research administrators, institutional animal care and use committee (IACUC) members, and animal care staff to understand the basis of animal pain, recognize and evaluate its presence and severity, and appreciate the means by which pain can be minimized or abolished.
Myth #5: AAALAC Site Visitors are full time inspectors.
Fact #5: The members of AAALAC’s Site Visit Team are individuals who manage and operate animal care programs, and perform site visits as a professional duty.

Myth #6: Accreditation has little value to our institution.
Fact #6: Accreditation is recognized by Congress and all major funding agencies as the best method to assure responsible fiscal management and humane animal care & use. Accreditation is an affirmation of Duke’s accountability to the public through our confidence of submitting ourselves for this independent review by knowledgeable professionals. Accreditation promotes ethical practices and encourages consistent standards of animal care and use, while supporting institutional goals and individual scientific needs.

Myth #7: Every institution which uses animals is accredited—it’s the law!
Fact #7: There is no regulatory requirement for accreditation. Accreditation is voluntary. While there is no clear accounting of how many institutions use animals in research, testing, or teaching, the general sense is that there are approximately 10,000 animal using institutions world-wide. Of these, only 750 are accredited. Duke is one of those top tier institutions which has met the requirements for accreditation.

Myth #8: The inspection will only involved the IACUC.
Fact #8: All aspects of animal care and use at Duke will be reviewed by the site team, this includes all care operations, all laboratories where animals are used, all drugs management systems, all review and oversight practices, and all training activities. This accreditation assessment will involve, to some degree, everyone who cares or uses animals in or under a Duke protocol.

Myth #9: Duke has a troubled history of accreditation.
Fact #9: Duke as a strong history of accreditation, beginning with our original accreditation in 1976 and continuing through the most recent site visit in 2006.

Myth #10: We know exactly when the site team will be at Duke, and which day they will be in which laboratory.
Fact #10: Well, not exactly. Due to the complex and very busy nature of our campus and our colleagues, we have requested the first week of October as the site visit date. We expect this will be the assessment period, but a final decision on the site visit date will not be available until later this summer. While our researchers do an outstanding job of assuring animal welfare and quality research outcomes every day, accreditation is an important activity and only occurs once every three years, so we certainly want to be prepared and place our best foot forward.

Please stay tuned to the ‘Animal Tracks’ and other advisement of education opportunities in preparation for the 2009 AAALAC Triennial Site Visit. For specific questions, please contact the Office of Animal Welfare Assurance (Mr. Bill Wade) at 668.6722

AAALAC Will Want to Know …

When AAALAC visits later this fall, the AAALAC site team will visit research laboratories. Their goal: To find evidence of knowledgeable staff performing approved animal care practices. They will seek to accomplish this goal by asking the laboratory staff open ended questions. They are wondering if the research and care staff have a good understanding of the process of animal care, animal use, and animal oversight. What kind of questions might the site team ask?

- Tell me about your participation in the Duke’s occupational health and safety program? When is the last time you completed a health surveillance questionnaire?
- Where would you report a concern regarding suspicious or inappropriate animal care or use?
- What do you do if someone unfamiliar is seen walking through your laboratory? Through the Vivarium?
- Do you perform euthanasia? CO2 euthanasia? Barbiturate euthanasia? Have you completed the CO2 euthanasia web training? What is the preferred method for assuring euthanasia was effective? If you discover a live animal in a carcass freezer, what do you do?
- What ‘patient monitoring’ actions do you perform while your animals are under anesthesia? Where do you record these observations? Please show us your animal records.
- How were you trained to do the procedure I am observing today? How many years experience do you have?
- What are the procedures for using ‘controlled’ drugs?
- How do you dispose of expired animal drugs?
- What were the results of your last compliance liaison review? Were the concerns corrected? How?
- Does the animal program have a web site? Where do you get copies of the forms necessary for a protocol amendment? An annual report?
- Where is the lab copy of the animal protocol you are performing today?
- How do you transport animals around campus?
- Who is the DLAR veterinarian that you work with? Have you ever called them with a problem? Was it resolved?
- Why are you wearing protective clothing? Is this a biohazard?
- Do your wear a N-95? Was it fit tested?
- Do you keep animals in the lab longer than 12 hours? Show us your daily observation records (if > 12 hours)?
- What is the IACUC? The DLAR? The OAWA?

Please consider using this list of questions as a basis for discussing the AAALAC Site Visit with your laboratory staff. If you would like to have someone from the animal program attend your next lab meeting to help craft appropriate answers to these questions about Duke’s animal care & use program, please send an Email to ron.banks@duke.edu.
NEW REQUIREMENTS FOR MEDICAL TRAINING PROTOCOLS

At the May meeting of the Duke IACUC, the Committee discussed established a post-training survey requirement for medical or surgical training activities.

The Duke IACUC recognizes the vital role live animals can play in medical or surgical training, but also views the use of animals in training endeavors as a unique societal privilege with specific ethical guidelines. Noting that certain types of training is under increasing scrutiny by the Federal Agencies which oversee animal usage, and that training use of animals is a prime target of groups that are opposed to the use of animals in either experimentation or training, the Committee determined that a student/trainee survey will benefit the institution, teaching faculty, and the IACUC. The survey will:
- Capture evidence for the IACUC’s federally required ongoing review of the need for live animals in training programs;
- Assure the teaching faculty have met the federal mandates for such activities; and
- Provide useful feedback on the animal based component of your program.


COMMON AAALAC QUESTIONS
(Fore-Warned is Fore-Armed!)

AAALAC will be on campus this fall. As you consider your laboratory’s preparation for this important activity, please assure you can answer ‘YES’ to each of these questions:

1. Do we have copies of all of our approved protocols where our research staff can review them?
2. Are all of the research staff familiar with the protocol procedures they are working on? (can they discuss what they are approved to do with a site visitor?)
3. Are we using only analgesics/anesthetics that are in our approved protocol? Are the Controlled Drug records current and accurate?
4. Do we have an IACUC exemption for keeping animals in our laboratory >12 hours? (applies to those labs maintaining animals outside of a DLAR vivarium).
5. Are we following the HUMANE ENDPOINTS listed in our protocol?
6. Do all of our staff understand (and can they explain) Duke’s veterinary care reporting system?
7. Does our research staff know how to contact a Duke veterinarian after hours if needed?
8. Can all of the surfaces in our animal housing or use areas be effectively sanitized?
9. Have our research staff completed the required animal training? Safety training?
10. Are all of our cages of animals labeled with CURRENT PROTOCOL cage cards having the required PI information?

NOTE: If you or any laboratory member does not understand or cannot answer ‘YES’ to every question, please contact Bill Wade, LATG at OAWA (668-6720). The animal program would like to help your lab be a shining star during the 2009 AAALAC accreditation site visit!

NEW IACUC POLICY ON SOURCE FOR FELINES

During the May 2009 IACUC meeting, the committee established a policy that only purpose bred felines would be used for Duke related research. This policy falls in-line with existing Duke policies for other species (dogs). Contact DLAR for ordering information.

PAINFUL Q & A

QUESTION: What are common signs of pain or distress in animals?
ANSWER: Common signs of pain or distress in animals include:
- Guarding (protect a part), or move away, crying when palpated, self-mutilation, licking, biting, scratching
- Shaking, rubbing the wound, restlessness, pacing, lying down and getting up, shifting weight, sweating
- Lying down for an unusual length of time, appearing dull or depressed, reluctance to move
- Difficulty in rising, ruffled fur, unkempt, head down, tucked abdomen, hunched, facial distortion

QUESTION: How does the IACUC review protocols involving some degree of potential pain or distress?
ANSWER: The IACUC’s looks for scientific justification for any amount of animal distress or pain. The IACUC must be assured that there is a mechanism in place for prompt reporting of sick animals to the veterinary staff. The IACUC must confirm the investigator has shown they have considered all the options for minimizing pain and distress that do not compromise the scientific validity of the experiment. The IACUC looks for objective assessment (choosing appropriate parameters and quantifying observations) of distress measurement.

For more information on pain or distress assessment, contact OAWA (668-6720) or DLAR (684-8482).
Recognition and Alleviation of Pain in Laboratory Animals

Minimizing and alleviating pain in laboratory animals without compromising the methodological integrity of a research project is important both ethically and legally. Fortunately, recent scientific progress has expanded the understanding of pain and increased the ability to prevent and alleviate it in laboratory animals. This report updates 1992 National Research Council guidelines for those involved in the care and use of animals in the research environment. It aims to increase awareness of the sources and recognition of pain in laboratory animals and to increase ethical sensitivity in those who use and care for them.

Many scientific advances in biomedical research would not be possible without the use of laboratory animals. Scientists rely on animals as one component of research to understand, treat, and cure diseases that plague both humans and the animals themselves. In most situations, laboratory animals need not experience pain. The alleviation and prevention of animal pain is both an ethical and moral imperative; minimizing animal pain is also scientifically and practically beneficial. For these and many other reasons, proper care and use of laboratory animals is a priority for the scientific community.

This report, written by a committee convened by the National Research Council at the request of the New Jersey Association for Biomedical Research, is an update of the 1992 National Research Council report Recognition and Alleviation of Pain and Distress in Laboratory Animals. Since that report was published, significant scientific progress has been made in the areas of animal welfare, stress, distress, and pain. Because the concepts of pain and distress are two distinct concepts from a scientific perspective, the update is being issued in two separate documents. The first, Recognition and Alleviation of Distress in Laboratory Animals, was published in March 2008.

This report’s conclusions and recommendations are intended to help scientists, veterinarians, research administrators, institutional animal care and use committee (IACUC) members, and animal care staff to understand the basis of animal pain, recognize and evaluate its presence and severity, and appreciate the means by which pain can be minimized or abolished.

What is Pain?

According to the International Association for the Study of Pain, pain in humans is “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.” Assessing animal pain is complex and challenging to measure in an objective manner. Some behavioral signs, such as withdrawal reflexes in animals with central nervous system damage, do not necessar-
ily indicate pain. Determining whether such behavioral responses indicate pain, and, conversely, whether their cessation indicates the successful abolition of pain, is an ongoing challenge. Until better pain measurement tools are developed and validated, behavioral indices and careful extrapolation from the human experience are used to assess pain in research animals.

Based on an extensive review of the available scientific literature, the report concludes that all vertebrates should be considered capable of experiencing pain.

Pain in Animal Research

In most experimental and husbandry situations, laboratory animals need not experience pain. And if they do, its alleviation and prevention is both an ethical and moral imperative as well as scientifically and practically beneficial. For example, effective pain management can improve healing rates and avoid potentially confounding effects on such diverse biological functions as immunity and sleep.

There are some situations in which animal pain is unavoidable, such as when pain is a tool to motivate or shape behavior, or when pain is the focus of research. The ethical justification for such research should consider both the costs to the animal and the anticipated benefits of the research to humans and animals: the greater the cost to the research animals, the stronger the scientific and ethical justification of the research should be. These ethical expectations are embodied in the principles of the Three Rs: Replacement, Refinement, and Reduction (see box).

Anticipating and Recognizing Pain

Understanding the potential causes of pain in research animals is critical to anticipating and recognizing situations in which pain is likely. A general rule of thumb is summed up as “if it would hurt you, it probably hurts the animal.” However, there are well-documented variations in how different species respond to potentially painful events; therefore, pain in animals should be assessed on a case-by-case basis. One cannot assume that what causes pain in humans will do so in all other organisms, and conversely, that what does not cause humans pain is equally benign in all other organisms.

Circumstances Causing Pain

The report outlines five primary circumstances in which laboratory animals experience pain. These circumstances vary in their duration and intensity of pain, as well as in the nature and strength of their ethical justification.

• Pain as a result of non-research related disease or injury (such as from aging-related diseases).
• Pain as a result of animal care or veterinary treatment (such as castration, microchip implantation, or injections).
• Pain as a by-product of research, in which pain is a consequence of research but is not an element of the research or the study focus (examples include animals involved in research on disease, toxins, tissue damage, drug dependence, or surgery).
• Pain as a tool to motivate or “shape” behavior.
• Pain as the focus of research.

Assessing Pain

Recent scientific research has considerably advanced our understanding of animal pain; however, there are still few scientifically validated pain assessment techniques. Therefore, in most circumstances, pain is assessed based on the appearance of an animal and its overall behavior. Current best practice is to combine a structured clinical examination with a good knowledge of the normal appearance and behavior of the animals involved.

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**Replacement, Refinement, and Reduction**

The “Three Rs” provide the underlying principle to the ethical care and use of laboratory animals:

- **Refinement** of experimental procedures to reduce or eliminate pain and distress. Where the use of animals is unavoidable, minimize pain, distress, lasting harm, or other threats to animal welfare. For example, researchers should ensure that accommodation meets animals’ needs; use pain treatment drugs; and specify humane endpoints—that is, when a study design should be changed or a study ended early due to concerns about animal pain, distress, or welfare.

- **Reduction** in the number of animals being used. Use methods that enable equivalent information to be obtained from fewer animals or more information from the same number of animals, such as through the use of advanced imaging techniques.

- **Replacement** of animals with other reliable models. For example, use alternative methodologies, such as computer modeling, or replace higher order animals with those of a lower order (such as using amphibians or invertebrates instead of mammals).
This report provides a pain assessment check-list for laboratory technicians and animal caretakers, along with a detailed list of behavioral signs of persistent pain (such as guarding, abnormal appearance and behavior, vocalization, and refusal to eat or drink). The report also describes species-specific manifestations of pain in nonhuman primates, dogs, cats, laboratory rodents, rabbits, farm animals, birds, reptiles, fish, and amphibians.

Alleviating and Treating Pain

Laws and regulations require that investigators adequately control pain in research animals, unless the outcomes of an experiment would be negatively impacted. Alleviating pain in research animals typically refers to reducing its duration and/or intensity, as those two characteristics affect aversiveness. Although regulations suggest that only non-brief pain requires treatment, animals subjected to multiple episodes of momentary pain also may benefit from pain alleviation.

Pain alleviation strategies may include preventative measures, therapeutic measures, or a combination of the two. Preventative measures include appropriate animal handling and restraint, minimization of tissue trauma during surgery, the use of minimally invasive surgery techniques (such as fiberoptic technologies), and other non-pharmacological methods.

Therapeutic measures include the use of general and local anesthetics, analgesics, and sedatives or drugs that relieve anxiety. Pain management goals range from total elimination of pain as, for example, during general anesthesia for a surgical procedure, to pain that is tolerated without compromising the animal’s well-being. The report provides reference tables to inform which approaches laboratory personnel should consider in circumstances of low, medium, and high levels of pain, as well as tables outlining the properties of various classes of drugs and when to use them.

- **General anesthesia**: Animals are anesthetized (completely numbed) in order to undertake procedures that would otherwise cause pain.

- **Sedation/anxiety relief**: These drugs are often used in combination or with general anesthetics to modulate, block, or relieve pain.

- **Analgesia**: These reduce pain locally or temporarily. Although analgesia is defined as “lack of pain,” complete elimination of pain in awake animals is commonly neither achievable nor desirable (the ability to feel some pain prevents an animal from further damaging an injured area, for example).

Humane Endpoints

Humane endpoints define when a study should end or the study design be changed due to animal pain, distress, and welfare considerations. Adopting humane endpoints is necessary for the sake of animals.
Committee on Recognition and Alleviation of Pain in Laboratory Animals: Gerald F. Gebhart (Chair), University of Pittsburgh; Allan I. Basbaum, University of California; Stephanie J. Bird, Waltham, MA; Paul Flecknell, Newcastle University; Lyndon Goodly, University of Illinois; Alicia Z. Karas, Tufts University; Stephen T. Kelley, University of Washington; Jane Lacher, The Dow Chemical Company; Georgia Mason, University of Guelph; Lynne U. Sneddon, University of Liverpool; Sulpicio G. Soriano, Harvard University; Heidi L. Shafford (Consultant), Veterinary Anesthesia Specialists, LLC; Lida Anestidou (Study Director), National Research Council.

The National Academies appointed the above committee of experts to address the specific task requested by the U.S. Department of Agriculture. The members volunteered their time for this activity; their report is peer-reviewed and the final product signed off by both the committee members and the National Academies. This report brief was prepared by the National Research Council based on the committee’s report.

For more information, contact visit the Institute for Laboratory Animal Research at http://nationalacademies.org/ilar. Copies of Recognition and Alleviation of Pain in Laboratory Animals are available from the National Academies Press, 500 Fifth Street, NW, Washington, D.C. 20001; (800) 624-6242; www.nap.edu.

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