



Appendix 1

Position Statement Affirming the Importance of Appropriate Animal Care and Use

CONTENT

AO Foundation Guiding Principles on the Human Care and Use of Animals in Research and Education

The use of vertebrate animals in researchⁱ and educationⁱⁱ is an essential component of advancing our understanding about human and animal function. This knowledge is important for improving human and animal health and welfare through disease prevention and cures, new treatments, and drug and device development. The AO Foundation, understanding that using animals is a privilege entrusted by society, is committed to ensuring the health and welfare of animals as an integral consideration when they are used for these purposes.

The following principles govern the responsible use of vertebrate animals employed in scientific and/or educational activities by the AO Foundation, its Service Units and Clinical Divisions, its Affiliatesⁱⁱⁱ, and all individuals and institutions undertaking AO-endorsed^{iv} or AO-funded activities.

- I. The advancement of scientific knowledge is important for improving human and animal health and welfare. Animals play a vital role in these scientific activities and good animal welfare is integral to achieving scientific and educational goals. Decisions regarding the welfare, care, and use of animals must be guided by scientific knowledge and professional judgment, reflect ethical and societal values, and consider the potential benefits and the impact on the well-being of the animals involved.
- II. The use of animals for scientific and/or educational purposes is a privilege that carries with it moral obligations and responsibilities to ensure the welfare of these animals to the greatest extent possible. This is best achieved where there exists a culture of care and conscience in which individuals working with animals willingly, deliberately, and consistently act in an ethical, humane, and compliant way. The AO Foundation and all those working under its auspices^v or in receipt of AO funds have an obligation to demonstrate respect for animals, to be responsible and accountable for their decisions and actions pertaining to animal welfare, care and use, and to ensure that the highest standards of scientific integrity prevail.
- III. Animals should be used only when necessary and only when their use is scientifically and ethically justified. The principles of the Three R's – Replacement, Reduction and Refinement – must be incorporated into the design and conduct of scientific and/or educational activities that involve animals. Scientifically sound results and avoidance of unnecessary duplication of animal-based activities are achieved through study and understanding of the scientific literature and proper



experimental design. When no alternative methods, such as mathematical models, computer simulation, in vitro biological systems, or other non-animal approaches, are available to replace the use of live animals, the minimum number of animals should be used to achieve the scientific or educational goals. Cost and convenience must not take precedence over these principles.

IV. Animals selected for the activity should be suitable for the purpose and of an appropriate species and genetic background to ensure scientific validity and reproducibility. The nutritional, microbiological, and general health status as well as the physiological and behavioral characteristics of the animals should be appropriate to the planned use as determined by scientific and veterinary medical experts and/or the scientific literature.

V. The health and welfare of animals should be primary considerations in decisions regarding the program of veterinary medical care during animal acquisition and/or production, transportation, husbandry and management, housing, restraint, and final disposition of animals, whether euthanasia, rehoming, or release. Measures must be taken to ensure that the animals' environment and management are appropriate for the species and contribute to the animals' well-being.

VI. The welfare, care, and use of animals should be under the supervision of a veterinarian or scientist trained and experienced in the health, welfare, proper handling, and use of the species being maintained or studied. The individual or team responsible for animal welfare, care and use should be involved in the development and maintenance of all aspects of the animal care program. Animal health and welfare should be continuously monitored and assessed with measures to ensure that indicators of potential suffering are promptly detected and managed. Appropriate veterinary care must always be available and provided as necessary by a veterinarian.

VII. Investigators should assume that procedures that would cause pain or distress in human beings also cause pain or distress in animals, unless there is evidence to the contrary. Thus, there is a moral imperative to prevent or minimize stress, distress, discomfort, and pain in animals, consistent with sound scientific or veterinary medical practice. Taking into account the research and educational goals, more than momentary or minimal pain and/or distress in animals should be managed and mitigated by refinement of experimental techniques and/or appropriate sedation, analgesia, anesthesia, non-pharmacological interventions, and/or other palliative measures developed in consultation with a qualified veterinarian. Surgical or other painful procedures should not be performed on unanesthetized animals and must only be performed by veterinarians or scientists who have appropriate training and experience in completing those procedures.

IX. There exists a responsibility to ensure that personnel responsible for the welfare, care, and use of animals are appropriately qualified and competent through training and experience for the procedures they perform. Adequate opportunities should be provided for on-going training and education in the humane and responsible treatment of animals and for supervision of personnel to ensure proficiency and the use of appropriate procedures.



X. While implementation of these Principles may vary from country to country according to cultural, economic, religious, and social factors, a system of animal use oversight that verifies commitment to the principles must be implemented in each country in which AO-endorsed or AO-funded research or educational activities take place. This system should include a mechanism for authorization (such as licensing or registering of institutions, scientist, and/or projects) and oversight which may be assessed at the institutional, regional, and/or national level. The oversight framework should encompass both ethical review of animal use as well as considerations related to animal welfare and care. It should promote a harm-benefit analysis for animal use, balancing the benefits derived from the research or educational activity with the potential for pain and/or distress experienced by the animal. Accurate records should be maintained to document a system of sound program management, research oversight, and adequate veterinary medical care.

XI. The AO Foundation requires all institutions conducting AO-endorsed or AO-funded research and/or educational activities that use animals to be accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC). In the absence of AAALAC accreditation, the institution must have on file an active^{vi} AO-approved Research Animal Program Description.

The AO Foundation Guiding Principles on the Humane Care and Use of Animals in Research and Education are derived from the content of the ' International Guiding Principles for Biomedical Research Involving Animals December promulgated by the Council For International Organization Of Medical Sciences and the International Council for Laboratory Animal Science (2012)'.

ⁱ Research is defined as “the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.”

ⁱⁱ Education is defined as “the act or process of imparting or acquiring particular knowledge or skills, as for a profession.”

ⁱⁱⁱ ‘Affiliate’ is defined as “any subsidiary group or individual attached or connected to an organization or larger body.”

^{iv} Endorsed is defined as “having the public approval or support of.”

^v Auspices is defined as “having the patronage, support or sponsorship of.”

^{vi} Within 3 years of last date of AO approval.