

*APPI VISION 2020 SERIES – 1*

SETTING APPI VISION 2020 : ANIMAL EXPERIMENTS IN  
PHYSIOLOGY AND PHARMACOLOGY

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**Introduction :**

The Association of Physiologists and Pharmacologists of India (APPI) is a registered professional scientific organisation for physiologists and pharmacologists of India. The majority of members are from medical colleges. Two major scientific objectives of the society are to promote the advancement of Physiology, Pharmacology and allied sciences in India and to help to standardize and raise the level of teaching and research in Indian Universities and other teaching and research Institution in India. As the highest scientific body in this field in the country, the Association has the responsibility to set its policy on animal experiments as a guide to its members, to the regulatory bodies and to the public.

The issue was discussed for the first time under the head, 'Use of animals and human in medical education' during the 59<sup>th</sup> Annual Conference in a panel discussion on **APPI Vision 2020** on 20.12.2012. It was felt that there was a paucity of information among the members regarding current status of animal experiments in the country. Through the discussion it was also revealed that there

is no uniform policy on use of animals in teaching Physiology and Pharmacology across the medical colleges. Many medical colleges have stopped animal experiments for no rhyme or reason. The knowledge about the role of Institutional Experimental Animal Ethics Committee too needs introduction to many and reinforcement if necessary.

Under the present circumstances, it will be timely to have a look at the rules and regulations governing animal experiments in the country. It is for the information of all our members that the Ministry of Environment and Forests (MOEF) is the nodal ministry regarding the use of animals in experiments in India. All the members of the association who are involved in medical education and research are directed to the existing Animal Welfare Act—The Prevention to Cruelty to Animals Act 59 of 1960 **CHAPTER IV: 14- Experiments on animals.** It says, "*Nothing contained in this Act shall render unlawful the performance of experiments (including experiments involving operations) on animals for the purpose of advancement by new discovery of physiological knowledge or of knowledge which will be useful for saving or for prolonging life or alleviating suffering or for*

*combating any disease, whether of human beings, animals or plants”.*

The Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under ‘The Prevention to Cruelty to Animals Act 59 of 1960’ is the most important authority in guiding research on animal experiments. Their role has been exemplary in recent years in revolutionizing animal research in the country. It has brought out clear cut guidelines on animal experimentation for researchers, institutions and animal facilities. The goal of these *guidelines* is to ‘*promote the humane care of animals used in biomedical and behavioural research and testing with the basic objective of providing specifications that will enhance animal well being, quality in the pursuit of advancement of biological knowledge that is relevant to humans and animals.*’ This is a must read for all medical teachers and researchers and should be a part of curriculum to inculcate animal ethics among the medical students from the very beginning of their career.

I find the policies and guidelines described in the CPCSEA guidelines to be essential and sufficient to ensure a high quality of animal care and recommend the use and adopt the same as official policy of the Association on use of animals in Physiology and Pharmacology research and education.

Although there are excellent literature available on animal care, I take this opportunity to impress upon our members what is ‘humane care of animals’ means. Humane care of animals means; (i) those actions taken to ensure that laboratory

animals are treated according to high ethical and scientific standards, (ii) implementation of a humane care program and (ii) creation of a laboratory environment (iii) in which humane care and respect for animals are valued and encouraged.

#### **Animal experiments for undergraduate medical education and the stand of APPI**

“The Medical Council of India (MCI) is a statutory body with the responsibility of establishing and maintaining high standards of medical education and recognition of medical qualifications in India. It registers doctors to practise in India, in order to protect and promote the health and safety of the public by ensuring proper standards in the practice of medicine ([www.mciindia.org/](http://www.mciindia.org/)).

There is tremendous amount of pressure from various sources to discontinue use of animals in experiments in medical education. The apex body MCI regulates standards of medical education in India barring few autonomous medical institutions. It is the only statutory body which safeguards the cause of medical education in the country. This is the time that the MCI should come out with clear guidelines regarding animal experiments in undergraduate and post graduate medical teachings. They should not take a decision in a hurry like UGC which did under duress. Teaching medical graduates and science graduates are two different stories. In medical colleges to teach about human anatomy we use human cadaver. Some of the animal experiments used to demonstrate physiological phenomenon and effects of drugs in pharmacology are irreplaceable in order to achieve learning objective. Antivivisectionists and animal

rights group do not believe in refinement and reduction but want total replacement since these principles still allow use of animals in research. The physiological systems of whole living organisms are complex. It is not only influenced by external and internal factors but also regulated by control systems with precision. The hard fact is that the development of alternatives comes from the scientific community and not from the antivivisectionists or animal welfare groups. The APPI needs to strongly affirm the essential and irreplaceable role of research involving live animals in the advancement of physiological knowledge, human health and animal welfare.

**Role and responsibility of APPI on animal experiments for research and education**

The Association should strongly advocate the responsible use of animals in physiological and biomedical research and education. Animal must be used appropriately adhering to standing guidelines carrying out research that maximizes scientific advancement with the least amount of animal suffering. Efforts should be made to fulfil the following principles :

1. Refinement: To improve experimental procedures in all aspects to minimize any possible discomfort and stress to experimental animals.
2. Replacement: To replace animals experiments with non-animal experiments, whenever possible.
3. Reduction: to use the least possible number of experimental animals to obtain scientifically valuable results.

Keeping the above principles in mind APPI strivee to replace and reduce the number of animals wherever scientifically justifiable, and continuously refine experimental procedures to improve animal welfare. Small animals like frogs, rats, hamsters and guinea pigs are advocated for use as experimental animals. Contrary to ethos of PCA act of 1960, bigger animals like cats and dogs are no longer used in physiology. However, whenever the educational objectives require the animal experimentation, the same may be used.

We bring the following proposals to our members for formulation of a policy of APPI on animal experiments :

1. It is the aim of the APPI that all animal experiments should be designed and conducted on a valid scientific and ethical basis, and that adequate consideration should be given to animal welfare.
2. To ensure that the presentations at academic meetings of the APPI and papers to be published in the Indian Journal of Physiology and Pharmacology should be restricted to those which has the approval by the ethics committee for animal experiments of each institute or university or medical colleges.
3. The association should urge the MCI to clearly spell out its policy regarding use of animals in undergraduate and postgraduate medical education to maintain highest standards of medical education throughout the country.
4. To educate the members about practice of highest ethical standards for doing

animal experiments through regular workshops and seminars.

5. To inform the existing rules and regulations and update any changes to its members from time to time.
6. To air views on changes/amendment for safeguarding the interest of science and animals.
7. It is also the aim of APPI to introduce animal ethics in formal curriculum for medical undergraduate and postgraduates.
8. To create public awareness and share information about the irreplaceable historical impact of responsible animal research and its continued essential role in scientific and medical progress.

**The message of APPI on animal experiments to the public**

The results of animal research are useful to both human and animals. It reveals the basic understanding of working of living organisms, produces new cures, discovers new medicines and helps inventing medical devices. Many drugs are derived directly from animal products. In India the general public is not aware of the benefits of animal research. Animal welfare groups in India is largely represented by the elite and the celebrities. Their views although easily heard by the regulatory bodies, it does not truly represent the voice of the masses. Still they have been successful in abolishing use of animals in biology curriculum in the Indian universities. Now they are targeting medical education. It is important for the public to

know that the animal research is closely regulated by the government and the government funding is the biggest source of research funds. All animals used in funded research are protected by laws, regulations, and policies to ensure the smallest possible number of subjects and the greatest commitment to their comfort. Moreover the scientists procure experimental animals from the government registered breeders. No responsible scientist wants to use animals or cause them unnecessary sufferings, if it can be avoided. It is the responsibility of the academic medical community to ensure that the use of animals in laboratory research and medical education is judicious, responsible, and humane, and that the care provided to these animals fully meets regulatory and legislative requirements. The benefits of animal research have been enormous and it would have severe consequences for public health and medical research if abandoned.

We have to understand the functioning of cells, organs, organ system and the body as a whole. We pursue science for finding solution to eradicate sufferings from human and animals. Before we cure a disease, we have to understand its causes and manifestations. Physiologists do use computer models, cell cultures, genes, tissues, organs, animals and humans to explore the complexities of the systems. All have a role to play in answering different kind of questions. The Association strives to achieve rationalisation, replacement, refinement and reduction in animal experiments without compromising the standard and quality of medical education in the country. It is the firm belief of the Association that further restrictions on the

use of animals in biomedical research and education threatens progress in health care and disease prevention. We strongly support humane treatment of animals and at the same time we urge that there should be a

pragmatic approach towards the use of animals in experiments. Our Association should see that research obstructions must stop, medical education and research must continue.

## REFERENCES

1. The Prevention to Cruelty to Animals Act 59 of 1960. CHAPTER IV: 14- Experiments on animals. <http://moef.nic.in/>.
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3. UGC guidelines on phasing out animal dissection spark controversy. Dec 1, 2011. [www.downearth.org.in/content/ugc-guidelines](http://www.downearth.org.in/content/ugc-guidelines).

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In order to document the vision of APPI (as discussed in APPICON2011) we have initiated the publication of a short series. This is the first article in the series.

*Executive Editor*