

# Should animals be used for research purposes essay sample

[Environment](#), [Animals](#)



Should animals be used for scientific research and experimentation? From ancient times, humans have relied on animals for their survival either as food (sheep, cow) or for competition (horses) and companionship (dogs). As humans became more familiar to their environment, they then also started utilizing animals for attainment of knowledge dating back to the days of the great physician Galen (129-200 AD), who used animals to exhibit that arteries contain blood and not the air (qtd. in Giridharan). This observation of humans about biological similarity and capability of animals to suffer same health problems as that of humans marked the beginning of usage of animals for research and experimentation.

Although vivisection (animal testing) is regarded as an act of cruelty by many people on ethical and moral grounds and is not considered efficient however, animals should be used for scientific research and experimentation because this methodology of research has provided cure for many diseases, has improved our living standards and has proved beneficial for environment. Since most of the organs in animal body (heart, liver, lungs) resemble human organs and work in somewhat similar manner to that of organs in human body, testing and experimentation on animals for scientific research have played a vital role in providing cure for many diseases. There are many diseases and health problems that involve processes which can only be studied in living organisms, for which animals according to medical experts are the most suitable models as opposed to using humans which is very complex and impractical.

It is because of animal usage in research that medical experts had been able to discover and provide cure for many fatal and incurable health problems such as heart diseases, HIV/AIDS, bacterial infection, cancer and so on. According to American Physiological Society (APS), research on dogs contributed the most in studying and understanding of the ways of managing heart diseases (qtd. in American Physiological Society 2006). It is the result of experimentation on dogs that techniques for diagnosis of working of heart such as electrocardiography, cardiac catheters, angiograms and coronary blood flow measurement were developed (American Physiological Society 2006). Surgical techniques such as cardiac bypass, angioplasty, and heart transplants have also been made possible through experiments on dogs (American Physiological Society 2006).

As per Indian council of medical research, animals are capable of producing useful medical substances in their blood or milk such as vaccines, hormones and antibodies that are essential for medical treatments and diagnostic tests (qtd. in Giridharan). This fact have also been approved by researchers at University of California, Los Angeles (UCLA), who claim that studies and research on animals have provided treatment to many lethal diseases such as breast cancer, tuberculosis and progeria (qtd. in UCLA). Using mice, researchers at UCLA have been able to develop monoclonal antibody treatment “ Herceptin”-the first cancer fighting drug- that successfully targeted a specific genetic alteration and reduced side effects attached with other conventional treatments such as nausea and hair loss (qtd. in UCLA).

Also, as tuberculosis bacterium in pigs is remarkably similar to the tuberculosis in humans, UCLA researchers have been able to develop new vaccines using guinea pigs for tuberculosis treatment (qtd. in UCLA). Moreover, progeria which is a disease characterized by accelerated aging and cardiovascular disease in children, has been provided cure utilizing mice by researchers (qtd in UCLA). Based on their experiments on mice, the researchers prepared drugs that improved bone density, reduced bone fractures, aided weight gain and delayed the origination of progeria (qtd. in UCLA). Humans have therefore benefited significantly from animals in the form of treatments they derive from the study and experiments on animals.

Another reason justifying the use of animals for scientific research and experimentation is the contribution it has made towards the improvement of our standard of living. According to National Institute of Health (NIH), medical research using laboratory animals have been a vital factor that has bestowed upon us a longer lifespan (qtd. in National Institute of Health). Because of utilizing animals in research a person who was expected to live no more than 40's in the twentieth century is now expected to live up to 70's or 80's (qtd. in National Institute of Health). Ranging from discovery of antibiotics and insulin to the possibility of blood transfusions and treatments for cancer, all discoveries and treatments have been made possible through animal research in order to ensure improvement in quality and duration of human life (qtd. in Illman).

Prevention from amputation or organ damage through development of meningitis vaccine by research on mice, possibility of curing kidney failure

by kidney transplants as a result of research on pigs and dogs, introduction of polio vaccine to save millions of life through experimentation on monkeys and many other similar discoveries have greatly contributed for ensuring a longer life (qtd. in Illman). Apart from these, insulin for diabetes and neural-implants such as deep brain stimulation for treatment of Parkinson's disease has also contributed as life savors (qtd. in Illman). Researchers claim that people have been able to enjoy a better quality of life because of subsequent development of new medicines and treatments (qtd. in Festing et al).

According to American Heart Association (AHA), research involving animals such as dogs have led to improvement in living standards by declining death rates from cardiovascular disease (qtd. in AALAS). A child was born without the left ventricle of his heart, which is the major blood pumping chamber, that reduced his chances of survival but through series of new techniques first applied on animals, child's life was saved which without any doubt portrays animal testing as a life savior (qtd. in Jha). Moreover, the development of skin grafting, from experiments on pigs, to cure burnt skin (qtd in National Institute of Health) and the development of an entire artificial heart that relied on a number of clinical trials first tested on animals (qtd in UCLA) to aid in pumping blood also marks improvement in living standards.

Using animals for research, betterment in standard of living can also be highlighted through advancement in field of medicine and the educational sector. In helping students to understand basic anatomy and physiology of man, teachers use animals for demonstrations and experimentation at

schools and colleges (qtd. in Giridharan). Students of medical and allied health professions such as dentistry and physiotherapy as well as veterinary and agricultural science students gain knowledge and acquire specialized skills when provided vocational training on animal experimentation (qtd in smith et al. 35).

Also, the students of more research oriented professions such as zoology or pharmacology use animals as their tools in answering questions about the natural world and in solving research problems (qtd. in smith et al. 35). Huge reliance on animals in medical education has hence been the major cause for development of treatments for many diseases which in turn is the main element of improvement in our living standards. Animal testing is thus claimed to have benefited humans with a longer and a healthier life by means of adding a great pace to the field of medicine. Contrary to the above mentioned benefits that justify that animals should be used for research and experimentation, there do exist barriers that restricts animal use for testing on ethical and moral grounds. According to researchers at Santa Clara University, about 8 million animals are exposed to painful testing measures during vivisection among which 10 percent are not even given pain killers (qtd in Claire et al).

As per a report, every year 70 million animals in America are maimed, burnt, genetically manipulated, blinded and otherwise hurt and killed in the name of science by private institutes, government agencies, educational institutes, household product, cosmetics companies and scientific centers (qtd. in Jha). Cruel and harsh treatment towards animals had been even realized by one of

earlier vivisectionist scientist ' Hooke' himself (qtd. in Voltaire. 14). Hooke stated that he will not be able to repeat his experiment because it was unethical and cruel as in that he opened the thoracic cavity of a dog to observe the functioning of its heart and lungs by cutting away the diaphragm which led to animal's death, despite the fact that he tried to keep it alive on artificial respiration by inserting a pipe in its throat (qtd. in Voltaire. 14).

Such type of practices raised earlier criticism and became the cause that led towards the passing of the first Cruelty to Animal Act in 1876 by Queen Victoria in Britain to ensure that welfare of animals used in laboratories was a legitimate consideration (qtd. in Voltaire. 14). Even though Queen Victoria expressed her concerns for animals through this Act however, by passing this Act she did not ban the usage of animals for research and experimentation instead she just defined certain parameters under which scientific research involving animals should be conducted (qtd. in Voltaire. 17-18). The measures she suggested included: animals should be given anesthesia before performing any procedure, painful experiment would not be justified if being conducted to demonstrate a known fact, efforts should be made to ensure success whenever painful experiment was necessary so that it need not be repeated and lastly, operations on living animals for merely gaining new operating skills should not be permitted (qtd in Voltaire. 17-18).

These measures thus provide evidence that Queen must have realized the significance of animals for advancement in medicine. This Act later became the basis for launching of the Three R's concept in 1959 by British zoologist

William Russell who also acknowledged that animals should be used for scientific research but under certain restrictions, as using animals for such purposes was beneficial (qtd. in Stephens et al). These three R's namely Replacement, Reduction and Refinement are the basis for utilizing animals in laboratory even today, adherence to which is thus essential for every scientist around the world (qtd. in Gauthier et al 3). Replacement require substituting sentient animals (vertebrates example shark) with less sentient ones (invertebrates usually worms, bacteria) (qtd. in Gauthier et al 3). Reduction requires reducing the number of animals in scientific researches that can be made possible by relying on other alternatives such as in vitro research (in a test tube), computer simulators and imaging techniques besides depending merely on animals (qtd. in Gauthier et al 3).

Refinement, on the other hand, states that in any experiment conducted on animals, the distress or pain caused shall be minimum (qtd. in Gauthier et al. 3-5). Following this Three R's concept marked a significant progress towards protection of animal rights as is evident from a report of United States Department of Agriculture (USDA) that stated that among the animals tested in laboratories under Three R's principle, 61% suffered no pain at all, 31% animals got their pain relieved through anesthesia and only 6% suffered pain but that was minimal (qtd. in Jha). Also in accordance with a report published by American Association of Laboratory Animal Science (AALAS) number of cats used for research declined by 66% following the Three R's principle (qtd. in AALAS).



Adaptation of this principle thus rightfully clarifies that laboratory animals, while being used for research and experimentation, are not dealt or treated with harshness or any act of cruelty instead their rights are guaranteed and they are kept with special care. Therefore it has become obvious that animals should be used for scientific research purposes as the benefits they provide in research have been accepted and recognized by even the authorities working for animal rights protection (qtd. in Festing et al). Moreover, it is often argued that vivisection or the experimentation performed on animals for scientific research is inefficient because it may lead to disastrous outcomes. According to David Wiebers, utilizing cats, rodents and other animals for experiments contributed to the development of 25 compounds that aimed at reducing damage from ischemic stroke (caused by lack of blood flow to the brain) but none proved efficient in human trials (qtd. in Barnard et al).

Also many substances that received approval from US Food and Drug Administration after appearing safe in animal studies, proved harmful to people such as fialuridine- an antiviral drug- which seemed safe in animals but caused liver failure in 7 of 15 humans who took this drug (qtd. in Barnard et al). Thalidomide drug which was approved to combat with nausea associated with pregnancy but which actually resulted in birth defects and approval of anti-arthritis drug Vioxx that led to heart failures in humans are other examples of inefficient results derived from animal testing that were suited to animals but harmed humans (qtd. in Pro-test). On the contrary, using animals in experiments have also played a fundamental role in modern

medical treatments. Utilizing animals, scientists have been able to establish causes of and vaccines for dozens of infectious diseases such as tuberculosis, rabies, whooping cough, poliomyelitis, diphtheria, tetanus, rubella, mumps and measles (qtd. in Botting)

. Also, in case of certain lethal diseases such as HIV/AIDS or Alzheimer, it becomes hard to anticipate how new and better vaccines for these diseases can be developed without relying on animals (qtd. in Botting). This is because treatments of such fatal diseases purely depend on results from animal testing (qtd. in Botting). Furthermore, the successful surgeries being conducted everyday which have been made possible from animal experimentation such as open heart surgery, liver transplant and kidney transplant, are brilliant examples to portray animal testing and experimentation as efficient (qtd. in Botting). Apart from these, animal testing have also provided efficient solution to insulin-dependent diabetic patients by introduction of insulin and have also led to elimination of ' Helicobacter pylori' infection through the development of anti-ulcer drugs (qtd. in Botting).

Thus it can be concluded that although there do exists a margin of error when applying the results of animal experimentation on humans, animals usage for scientific research should not be discouraged instead it should always be promoted and encouraged because it has served the most to our medical advancement. In addition to the benefits described earlier, another advantage of using animals as models for scientific research is the benefit it provides to the environment in the form of human and animal welfare. Using

animals for scientific study has added a comfort in our lives. Almost every effort for the prevention, treatment, cure and control of human diseases and sufferings rely on knowledge attained through research with laboratory animals (qtd. in Pro-test).

Development and the use of antibiotics, possibility of blood transfusions, dialysis, organ transplantation, vaccinations, chemotherapy, bypass surgery and joint replacement are some of the many therapies resulting from animal experimentation that ensures human welfare (qtd. in Pro-test). On the other hand, this environmental benefit resulting from animal based research is also extended to animals themselves (qtd. in Speaking of Research).

According to an advocacy group ‘ Speaking of Research’, most of the therapies and treatments, such as medications to kill parasites and vaccines against rabies, feline leukemia and hepatitis that are used to cure animals have been made possible from animal aided scientific research (Speaking of Research).

According to National Institute of Health, apart from providing benefits to humans, animal testing also ensures animal welfare such as: development of parvovirus vaccine for dogs as per research on viruses, savior of endangered species (bald eagle, pandas, white tigers, red wolf and alligators) as a result of research on reproduction, nutrition and toxicology, development of cat leukemia vaccine for cats on account of research on HIV/AIDS and the provision of diabetes and heart disease treatments for pets resulted through research on chronic disease treatments (qtd. in National Institute of Health). Animal welfare derived from animal based scientific research has also been

acknowledged by Australian and New Zealand Council for the Care of Animals in Research and Training (ANZCCART).

According to researchers at ANZCCART, at least 56 of many infectious diseases which can cause health problems in animals can now be provided protection (qtd in ANZCCART). Diseases such as Calicivirus infection, leukemia and herpes virus in cats, distemper, kennel cough complex and rabies in dogs, equine abortion, influenza and strangles in horses, louping-ill, foot and mouth disease and pasteurellosis in sheep and cattle and also the egg drop syndrome and infectious bronchitis in poultry have now become curable that indicate animal welfare as per ANZCCART (qtd. in ANZCCART). Harm minimization as per Three R's principle also guarantee animal welfare (qtd. in ANZCCART). Also, variety of chemicals and medicines used in farming, industries and as household products, which are tested for their safer use through experimentation on animals in order to avoid pollution and associated health hazards and for proper healthy maintenance of the environment, do help maximizing the welfare (qtd. in Giridharan).

Hence animals should be used for scientific research and experimentation as they play a vital role in providing benefit to the environment in the form of welfare to humans and animals. Despite the fact that anti-vivisectionist and animal rights extremist groups do not encourage animals to be used for experimental research on ethical and moral grounds and on the basis of room for inefficiency in animal testing, animals should be used for scientific research and experimentation because their contribution in providing cure for many diseases, raising our standard of living and ensuring environmental

benefits is worth a lot which cannot be undermined. However, it must be ensured that vivisection is done in accordance with the standards specified by concerned authorities otherwise of which animal testing would be prohibited and the benefits it provides cannot not be availed.

#### Work cited

AALAS. “ Animal Research FAQ.” American Association for Laboratory Animal Science. 2005. Web. 26 Dec. 2011.

[http://www.aalas.org/association/animal\\_research\\_faqs.aspx](http://www.aalas.org/association/animal_research_faqs.aspx)

Andre, Claire, and Manuel Velasquez. “ CDE LINCOLN-DOUGLAS Case Series.” CDEDebate. com – CDE Debate and Extemp – Home. Sept.-Oct. 2011. Web. 25 Dec 2011 [http://www.cdedebate.com/index2.php?option=com\\_docman](http://www.cdedebate.com/index2.php?option=com_docman) ANZCCART. “ Animal Welfare.” The University of Adelaide. ANZCCART News, 2008. Web. 27 Dec. 2011.

<http://www.adelaide.edu.au/ANZCCART/humane/welfare.html>.

Barnard, Neal D., and Stephen R. Kaufman. “ Animal Research Is Wasteful and Misleading.” Feb. 1997. Web. 26 Dec. 2011. <http://mipwww.life.uiuc.edu/404%20Docs/SciAm%20articles/AnmResrchProCon.pdf> Botting, Jack H., and Adrian R. Morrison. “ Animal Research Is Vital to Medicine.” Feb. 1997. Web. 26 Dec. 2011. <http://mipwww.life.uiuc.edu/404%20Docs/SciAm%20articles/AnmResrchProCon.pdf> Festing, Simon, and Robin Wilkinson. “ The Ethics of Animal Research: Article: EMBO Reports.” Nature Publishing Group: Science Journals, Jobs, and Information. EMBO, 2007. Web. 28 Dec. 2011.

<https://assignbuster.com/should-animals-be-used-for-research-purposes-essay-sample/>

<http://www.nature.com/embor/journal/v8/n6/full/7400993.html>

Gauthier, C., and G. Griffin. "Using Animals in Research, Testing and Teaching." (2004): 1-12. Web. 26 Dec. 2011.

[http://mavaddat.homestead.com/files/Using\\_animals\\_in\\_research\\_testing\\_and\\_teaching\\_C.\\_Gauthier.pdf](http://mavaddat.homestead.com/files/Using_animals_in_research_testing_and_teaching_C._Gauthier.pdf)

Giridharan, N. V. Use of Animals in Scientific Research. Publication. Indian Council of Medical Research May 2000. Web. 25 Dec. 2011.

<http://icmr.nic.in/Publications/Publications.html>

Illman, John. "MEDICAL ADVANCES AND ANIMAL RESEARCH." RDS:

Understanding Animal Research in Medicine and Coalition for Medical Progress, 2007. Web. 25 Dec. 2011. [http://www.understandinganimalresearch.org.uk/resources/document\\_library/download\\_document/?document\\_id=8](http://www.understandinganimalresearch.org.uk/resources/document_library/download_document/?document_id=8)

Jha, Alok. "Life in a Laboratory." 22 Mar. 2006. Web. 26 Dec. 2011. [http://intra.collegebourget.qc.ca/spip/IMG/pdf/Animal\\_testing.pdf](http://intra.collegebourget.qc.ca/spip/IMG/pdf/Animal_testing.pdf)

National Institute of Health. Animals in Research. Medical Research with Animals. NIH 08-6436. Web. 25 Dec. 2011.

<http://science.education.nih.gov/animalresearchfs06.pdf>

Office of Media relations. "Animal Research Generates New Treatments, Benefits Society." UCLA Newsroom. UCLA Newsroom, 12 Feb. 2008. Web. 25 Dec. 2011. <http://newsroom.ucla.edu/portal/ucla/animal-generates-new-treatments-45057.aspx> Pro-Test. "FREQUENTLY ASKED QUESTIONS." Pro-Test: Standing up for Science. 2006. Web. 26 Dec. 2011.

<https://assignbuster.com/should-animals-be-used-for-research-purposes-essay-sample/>

<http://www.pro-test.org.uk/facts.php?It=b>

Smith, and Boyd. "Animal Experimentation: A Student Guide in Balancing the Issues." 1-62. ANZCCART, 1991. Web. 26 Dec. 2011.

<http://www.adelaide.edu.au/ANZCCART/resources/AnimalExperimentation.pdf> Speaking of Research. "Veterinary Benefits | Speaking of Research." Speaking of Research | Improving Understanding about Animal Research / Animal Testing. 27 Mar. 2008. Web. 26 Dec. 2011.

<http://speakingofresearch.com/facts/veterinary-benefits>

Stephens, Martin L., Alan M. Goldberg, and Andrew N. Rowan. "The First "Forty" Years of the Alternatives Approach Refining, Reducing and Replacing the Use of Laboratory Animals." 1994. Web. 26 Dec. 2011. [http://www.humanesociety.org/assets/pdfs/hsp/MARK\\_State\\_of\\_Animals\\_Ch\\_08.pdf](http://www.humanesociety.org/assets/pdfs/hsp/MARK_State_of_Animals_Ch_08.pdf) Use of Animals in Biomedical Research: Understanding the Issues. Publication. AMERICAN ASSOCIATION FOR LABORATORY ANIMAL SCIENCE. Web. 25 Dec. 2011. <http://www.aalas.org/pdf/08-00007.pdf> Voltaire "Animal Experimentation: A Student Guide in Balancing the Issues." 1-62. ANZCCART, 1991. Web. 26 Dec. 2011.

<http://www.adelaide.edu.au/ANZCCART/resources/AnimalExperimentation.pdf> "Why Do Scientists Use Animals in Research? | Animal Research Questions and Answers | American Physiological Society." © The American Physiological Society. The American Physiological Society, 2006. Web. 25 Dec. 2011.

<https://assignbuster.com/should-animals-be-used-for-research-purposes-essay-sample/>