

The Use of Animals in Biomedical Research: Improving Human and Animal Health

Animals used in biomedical research help us:

- understand how our bodies work
- find cures and treatments for diseases
- test new drugs for safety
- evaluate medical procedures before they are used on people.

Why do we have to use animals in research?

Although animals appear to be very different from us, their bodies work in many of the same ways ours do. Researchers who study animals discover information that can't be learned from other sources.

Biomedical research saves lives. Research using animals improves the lives of millions of people each year by giving doctors clues to prevent, treat, and cure illnesses like cancer, diabetes, and AIDS.

New drugs and treatments for diseases are tested on animals to make sure they are safe for people to use.

What kinds of animals are used in research?

Laboratory mice are used more often in research every year than any other animal species. Mice, and other rodents such as rats and hamsters, make up over 90% of the animals used in biomedical research. In addition to having bodies that work similar to humans and other animals, rodents are small in size, easy to handle, relatively inexpensive to buy and keep, and produce many offspring in a short period of time.

However, rodents may not always be the best animal model to use in certain experiments. In these cases, dogs, cats, rabbits, sheep, pigs, fish, frogs, birds, nonhuman primates, or other kinds of animals may be used. All of these animals together make up less than 10% of the animals used in research.

Why can't we use other methods?

We use other methods whenever we can. Computer models and cell tissue studies are used in addition to animal research to discover new ways of solving complex problems.

By studying cells in test tubes, scientists can learn much about how our bodies work, react to disease, and respond to treatment. Computer simulations also aid researchers. But cells and computer models simply cannot mimic the complexities of our bodies. And that's where animals come in.

Because of biomedical research we have:

- heart by-pass and other life-saving surgeries
- organ transplantation
- vaccines to prevent childhood diseases
- many other treatments and cures for diseases.

Animals used in research

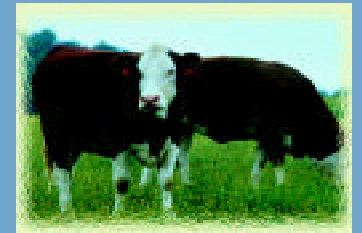


Rats, Mice and other Rodents:

- Diphtheria vaccine
- Typhoid Fever vaccine
- Aging & Alzheimer research
- Cancer & nutrition
- Muscular dystrophy
- Kidney disease research
- Bone research
- Skin transplantation
- Penicillin as an antibiotic
- Polio vaccine
- Measles vaccine
- Regulation of cholesterol
- Hormonal treatment of cancer
- Breast cancer research

Cattle and Swine:

- Smallpox vaccine
- Organ transplants
- Diabetes research
- Development of computer assisted tomography (CAT) scan
- Heart disease and circulation research
- Arthritis and osteoporosis research
- Cure for hand, foot and mouth disease
- Cure for hog cholera



Rabbits:

- Rabies vaccine
- First cataract surgery
- Corneal transplants
- Link between virus and cancer
- Acquired immunity research
- Cholesterol studies
- Effects of aging
- Muscular disease
- Product safety testing
- Drug metabolism research

Animals also benefit from research...

Medical discoveries made through animal studies often reduce disease and suffering of our pets and other animals as well. Some of the many health problems affecting both humans and animals are:

- allergies
- arthritis
- birth defects
- cancer
- tuberculosis
- asthma
- heart disease
- kidney disease
- Lyme disease
- epilepsy
- immunodeficiency (HIV) diseases
- ulcers
- measles
- influenza
- hypertension
- glaucoma
- diabetes
- bronchitis
- leukemia
- deafness
- tetanus

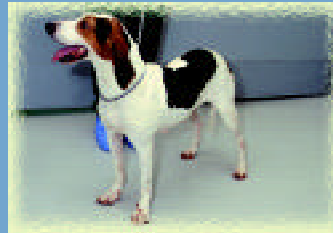
Thanks to animal research...

- nearly 1,000,000 children, age 5 and under, survive each year after accidental exposure to potentially poisonous substances;
- thousands of pet cats and dogs are vaccinated each year and are thus spared from diseases such as feline leukemia, distemper, parvo, and rabies;
- children with sickle cell disease have a greater chance of living longer lives, pain-free;
- 30,000 young Americans, diagnosed with cystic fibrosis, have a greatly increased chance of leading full and healthy lives;
- twelve million Americans, age 6 and older, are able to keep their high blood pressure under control with medication;
- thousands of people receiving kidney, heart, lung, or liver transplants each year have a better chance for normal, productive lives;
- today's children have no concept of what an "iron lung" is because of the virtual eradication of crippling polio.

Together for life...

In the last century, most medical discoveries were possible because of animal research. To build on the great progress we've made in understanding and treating diseases, we need to continue these studies. Cures for diseases such as cancer, AIDS, Alzheimer's disease, diabetes, cystic fibrosis, and muscular dystrophy are in reach, thanks to the animals used in research.

Only through the humane use of animals in research can we hope to continue to improve the lives of both animals and humans. We all owe them a debt of gratitude for the part they play in saving the lives of millions of people around the world.

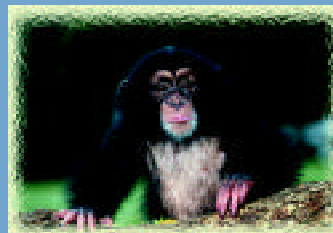
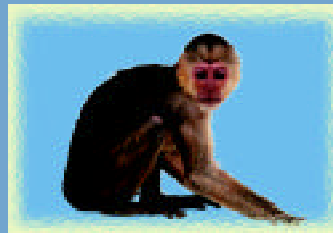


Dogs:

- Cardiovascular research
- CPR techniques
- Vision research (glaucoma, cataracts)
- Digestion research
- Therapeutic use of insulin
- Bone marrow transplantation
- Suture & grafting of blood vessels
- Respiration research
- Anemia therapy
- Cholesterol and heart disease research

Frogs, Fish, Reptiles and Birds:

- Tetanus vaccine
- Malaria research
- Cure for beriberi
- Use of ether as an anesthetic
- Edema treatment
- Importance of vitamins A, C and D
- Cell chemistry research
- Neurobiological studies
- Liver cancer research
- Diabetes research
- Coronary heart disease



Nonhuman Primates:

- Polio vaccine
- Rubella vaccine
- Hepatitis B vaccine
- Cure for yellow fever
- Discovery of Rhesus (Rh) factor in blood
- Treatment of Parkinson's Disease symptoms
- AIDS research
- Measles research
- Anesthesia research
- Periodontal disease research

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AMERICAN ASSOCIATION FOR LABORATORY ANIMAL SCIENCE

9190 Crestwyn Hills Drive
Memphis, TN 38125

901-754-8620 • Fax: 901-753-0046 • E-mail: info@aalas.org

Web: www.aalas.org • Kids web: www.kids4research.org