



**CALIFORNIA
SOCIETY FOR
BIOMEDICAL
RESEARCH**

Why are Animals Needed in Biomedical Research?

The use of animals in some types of biomedical research is essential to the development of new and more effective methods for diagnosing and treating diseases that affect both humans and animals. Medical researchers need to understand health problems before they can develop ways to treat them. Scientists use animals to learn more about such problems, and to assure the safety of new medical treatments. Some diseases and health problems involve processes that can only be studied in living organisms. Animals are necessary to medical research because it is illegal and unethical to use humans in early phases of research.

Animals make good research subjects for a variety of reasons. Animals are biologically very similar to humans, in fact, mice share more than 98% DNA with us! In addition, animals also are susceptible to many of the same health problems as humans – cancer, diabetes, heart disease, etc. With a shorter life cycle than humans, animal models can be studied throughout their whole life span and across several generations, in a research setting. In addition, scientists can easily control the environment around animals (diet, temperature, lighting) that would be difficult to do with people, a critical element in understanding how a disease processes and how in interacts with a whole, living biological system. Finally, a primary reason why animals are used is that most people feel it would be wrong to deliberately expose human beings to health risks in order to observe the course of a disease.

It is important to stress that 95% of all animals necessary for biomedical research in the United States are rodents – rats and mice especially bred for laboratory use – and that animals are only one part of the larger process of biomedical research.

Researchers are strong supporters of animal welfare and view their work with animals in biomedical research as a privilege. They are obligated to ensure the well-being of all animals in their care in strict adherence to the highest standards, and in accordance with federal and state laws, regulatory guidelines, and humane principles, and to continuously update animal care based on the newest information and findings in the fields of laboratory animal care and husbandry.

Researchers avoid the use of animals in research whenever it is possible, and continue to search for alternative methods. They subscribe to The 3 Rs (Reduction, Refinement, and Replacement). Reduction refers to methods that result in fewer animals being used to acquire the needed information. This, in some studies, eliminates the use of animals. Refinement concerns the manner in which the animals are treated. This includes new and more effective anesthetics and analgesics, species-appropriate housing, and enrichment activities. Replacement means using methods that do not involve whole animals. Computer models and cell and tissues cultures are examples.

The use of animals in some forms of biomedical research, however, still remains essential to the discovery of the causes, diagnoses, and treatment of disease and suffering in humans *and* in animals for a variety of reasons. Nothing so far has been discovered that can be a substitute for the complex functions of a living, breathing, whole organ system with pulmonary and circulatory structures much like those in humans, animals continue to play a critical role in helping researchers test potential new drugs and medical treatments for effectiveness and safety before using them on humans, and in identifying any undesired or dangerous side effects, such as infertility, birth defects, liver damage, toxicity, and cancer-causing potential. In addition, U.S. federal laws require that non-human animal research occur to show safety and efficacy before any human research will be allowed to be conducted. Not only do we all benefit from this research and testing, but hundreds of drugs and treatments development for human use are now routinely used in veterinary clinics, helping animals live longer, healthier lives.