



U.S. Department of Veterans Affairs

Veterans Health Administration  
Office of Research & Development

## OFFICE OF RESEARCH AND DEVELOPMENT

*For more than 90 years, the Veterans Affairs (VA) Research and Development program has been improving the lives of Veterans and all Americans through health care discovery and innovation.*

### Animal Research

#### Overview

VA research is unique because of its focus on health issues that affect Veterans. It is part of an integrated health care system with a state-of-the-art electronic health record and has come to be viewed as a model for superior bench-to-bedside research.

VA's first priority is to provide the best care and services to our nation's Veterans. VA's research helps to make that possible through life-changing and lifesaving innovations. From the implantable cardiac pacemaker to the nicotine patch, these fruits of VA research improve the lives of not only Veterans, but people around the world.

To conduct research needed to improve medical treatment for humans, it is often necessary to work with animal models. Animal research was involved in the development of almost every modern drug. It was also important to many lifesaving discoveries, such as insulin use in diabetes, many vaccines, pacemakers, and kidney dialysis.

VA allows research with animals only if it is scientifically necessary and

if the welfare of the animals is taken care of. There are a lot of rules about how to take good care of the animals, and VA requires anyone studying animals in VA research to follow all the ones that most universities and federal research institutions follow. VA takes seriously and reports of nonadherence to standards and immediately reviews and corrects processes if and when those issues arise.

#### Background

More than 99% of the animals used in VA research are rats and mice. In rare instances, the scientific goals require the use of dogs. Dog studies currently include:

- Studying ways of preventing serious and potentially fatal lung infections that individuals with spinal cord injuries are vulnerable to because they are unable to cough effectively.
- Developing accurate and long-lasting glucose sensors for diabetic human patients to allow continuous monitoring and insulin delivery to maintain optimal blood glucose levels.

- Understanding and treating dysfunction in the brain circuits that control breathing.
- Meeting a Congressional mandate to establish scientific evidence as to whether service dogs reliably reduce the symptoms of PTSD in Veterans.
- Gaining insights into narcolepsy, a neurological disorder that disables humans, through observational studies of a unique colony of naturally narcoleptic dogs.
- Developing novel treatments for human heart conditions like atrial fibrillation and heart failure.

#### Oversight

All VA research must follow USDA Animal Welfare Act regulations and NIH's Public Health Service policy. All VA programs also have to be accredited by AAALAC International, which is the accepted international standard for showing commitment to responsible animal care and use.

Deciding what animal research is necessary involves getting each proposed project reviewed by other scientists. If they decide that the work

*(Continued on back)*



U.S. Department of Veterans Affairs

DISCOVERY ★ INNOVATION ★ ADVANCEMENT

[www.research.va.gov](http://www.research.va.gov)



is worth doing, the proposal gets reviewed to make sure that it will be done in ways that safeguard the welfare of animals. This is done by the local Institutional Animal Care and Use Committee (IACUC). This committee looks at whether the proposal to study animals is well-justified, and whether it includes all the required safeguards, to make sure that the animals are treated as well as they can be.

The VA's Chief Veterinary Medical Officer reviews all projects before VA funding is approved.

The IACUC also evaluates the entire animal research program twice every year. Every three years, each VA animal research program has to get inspected by AAALAC International, which determines whether its accreditation will continue. VA also uses the extra step of

periodic inspections by the VA Office of Research Oversight.

### The Future of Research

To understand the value of studying animals, we have to think about the costs of failing to conduct that research. If we as a society choose not to do the research with animals needed to better understand the neural mechanisms of coughing, then we have to accept that we won't be able to help people who can't cough normally, such as people with spinal cord injuries, and that this will leave them at risk of dying of pneumonia. If we choose not to do the research with animals needed to develop better insulin delivery systems for people with diabetes, we have to accept that we can't reduce their risks for

nerve pain, kidney failure, heart disease, impaired vision, and severe infections. If we choose not to do research with animals needed to understand the electrical properties of the heart, we have to accept that we won't be able to improve how we treat people when the electrical properties go haywire, and people will continue to die when that happens.

Generally, if we choose not to study research animals, we must accept that medical progress will be limited. Or we must accept that research will have to be done with human subjects, and accept that many more results that we don't want will happen in people. The knowledge that we can gain from responsible studies of animals can protect people from harm.

#### WHY ARE ANIMALS USED?

*Animal research has been and will be crucial for development of new drugs, medical devices, surgical techniques, and methods of preventing disease and suffering in Veterans. About half of all VA-funded research projects currently involve animals. Animal research was important for all of the following discoveries:*

*Insulin use in diabetes*

*Polio, meningitis, tetanus, whooping cough, measles, mumps, rubella vaccines*

*Cardiac catheterization*

*Heart pacemakers*

*Cancer treatments*

*Organ transplants*

*Kidney dialysis*

*Identification of all needed dietary vitamins*

*Safe and effective anesthesia for surgery*

*Blood typing for transfusions*

*Treatments for depression*

*...Almost every drug ever developed!*

