



## Behind medical breakthroughs: animal studies

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By Dana Director



Last week, The Oregonian shared some exciting news from OHSU of an encouraging step in the long, hard effort to generate an AIDS vaccine ("OHSU takes new aim at HIV," May 12). In short, researchers at Oregon Health & Science University's Vaccine and Gene Therapy Institute and the Oregon National Primate Research Center developed a vaccine candidate that shows great promise. When tested in rhesus macaque monkeys with the monkey version of HIV (called SIV), animals responded very positively. In fact, more than a year following vaccination, many of these animals still seem to be completely virus-free.

One of the exciting aspects of this unique vaccination method is its own use of a virus carried by the majority of the population, called cytomegalovirus. CMV has little to no health effects in most people; however, it sticks around all of our lives. Given HIV's own persistence, CMV's trait of causing lifelong infection may be the best way to banish the AIDS-causing virus from the body permanently.

There are several years of research to be conducted before a vaccine could be in hand. As OHSU researcher Louis Picker explains it, "Developing a vaccine for AIDS is like climbing a cliff that has never been conquered before. With this week's news, we have a path to the top. But the long climb remains ahead."

As we begin the next steps in this exciting research, we should take a moment to note that this is another reminder of the necessity of animal studies. Conducting this type of vital research in humans is simply not possible. In understanding disease and in developing new treatments and therapies, there needs to be a series of steps that take place between the researcher's test tube and the physician's hypodermic needle.

In this case, more than 10 years of research studying CMV in humans and animals along with studies of the monkey version of HIV revealed the tools that allowed this success. Highly regulated animal studies paved the way from an idea on paper to the vials of test vaccine that Picker and others will now work to perfect.

Of course, this is not the only case where the role of animals was essential. JAMA,

The New England Journal of Medicine, Science, Nature and hundreds of other respected medical journals publish proof-positive of the need for animal studies on a weekly basis, and this has been the case for decades. Polio vaccine, penicillin, blood transfusions, knee and hip replacements, organ transplantation -- all of these medical success stories that save both human and animal lives are the result of animal-based research.

While it is, of course, unknown whether OHSU's AIDS breakthrough is the magic bullet we have all been waiting for, it will most certainly play a key role in the quest to develop an AIDS vaccine. When this task is eventually accomplished, we must not forget the important role that animals played in this health advancement and the thousands of others that came before it.

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