

Study Shows Rabies Vaccine Is Effective for at Least 5 Years

The 5-year Rabies Challenge Fund milestone has been achieved, and Dr. Jean Dodds, a developer of the challenge is here to discuss its findings, vaccines in general, and the practice of veterinary medicine in 2021.

Analysis by [Dr. Karen Shaw Becker](#)

[Download Interview Transcript](#) | [Download my FREE Podcast](#)

STORY AT-A-GLANCE

- The one and only Dr. Jean Dodds is Skyping with me today to discuss the Rabies Challenge Fund and several other vaccine and veterinary-related topics
- The Rabies Challenge Fund's 5-year study has wrapped up, and Dr. Dodds and her colleagues have validated that the vaccine is indeed effective for at least 5 years
- The next step will be to get in front of the USDA to encourage the agency to approve the specific vaccine used in the study for 5 years

Editor's Note: This article is a reprint. It was originally published July 10, 2021.

Today I'm talking by Skype with Dr. Jean Dodds, who is back by popular demand to update us on the Rabies Challenge Fund, as well as potential new vaccine protocols, titer testing, and all things immunization and vaccine related. Following are some of the highlights of our conversation specific to the Rabies Challenge Fund and vaccines, but I encourage you to view the entire wide-ranging discussion in the video linked above.

Origins of the Rabies Challenge Fund

The Rabies Challenge Fund was developed by Kris Christine, the eminent immunologist Dr. Ronald Schultz, and Dr. Dodds.

"We decided we had to do something about the fact that more and more animals seemed to be reacting adversely to the mandated legally required rabies vaccines," Dr. Dodds explains.

"We decided to ask the public to help fund a study to determine how long the current licensed rabies vaccines actually last and protect the animals that are vaccinated. Even though current rabies vaccines — after the first two doses — are licensed for three years, we believed they could last from five to seven years, for example."

Dr. Dodds and her colleagues began collecting donations not from the vaccine industry, but from private individuals and groups all over the world who wanted to support the study. Donation amounts ranged from \$10 up, and they were able to raise \$1.5 million.

They decided to conduct the study collaboratively with the University of Wisconsin in a privately owned veterinary Beagle breeding facility. Beagles were chosen because the average dog vaccine is tested in animals of that size. The team also decided to follow the exact protocols required by the USDA Title 9 to license a rabies vaccine in order to prove the validity of their study.

"We started raising the money in 2009," says Dr. Dodds. "We knew that we needed at least 20 animals, control animals, and 20 rabies virus exposed animals to meet the requirements of the USDA regulations.

We selected one particular vaccine to start with, and then that vaccine went off the market because the company was bought by another company. So, we had to start over again with an equivalent vaccine from the new company.

We soon realized we needed more than 40 animals, because over a period of five to seven years, some of them would drop off the protocol for something unrelated to the study. So, we actually started out with 92 Beagle puppies, all female and intact. When the study was completed, we had 35 remaining.

The dogs were kept in an isolated veterinary facility with free-ranging exercise. They were given two doses of rabies vaccine. At the end of the five-year and seven-year studies, our plan was to challenge at least 20 of them with rabies virus to show they were protected by this vaccination, and the others would be controls."

Study Showed Rabies Vaccine Is Effective for at Least 5 Years

At the end of five years, Dr. Dodds and her colleagues needed a challenge virus from the USDA (which is the sole source), and the agency didn't have any. So, there they were with their five-year-old Beagles and no virus to challenge them with to move to the next phase of the study. It wasn't until the dogs were nearly six and a half that they obtained a challenge virus. It was very frustrating for everyone concerned, but it was no one's fault.

Meanwhile, animal activist groups were voicing concerns about the need to challenge some of the dogs with live rabies virus.

"They had horrible visions of the animals suffering and seizing and dying of rabies unattended in the dark," Dr. Dodds explains. "And I can understand that, but quite clearly that was not the case. The animals were in a pathogen free facility.

They were monitored 24-hours a day. At the first sign of ADR (ain't doing right), they were treated, and then, if necessary, humanely euthanized. None of the animals suffered from clinical rabies.

An important thing to know is that in order to license a rabies vaccine, only 88% of the animals need to survive the challenge. It's quite remarkable. That means that even though 12% of the animals didn't survive, it's still okay to license the vaccine. I guess it's unrealistic to assume that 100% of the animals will survive.

When we actually challenged the dogs, who'd been vaccinated six and a half years earlier, we found that 80% of them survived, which is acceptable to the USDA. So, to be conservative, what we can say is that at five years, without any question, 80% of the animals that we challenged survived. And, of course, the unvaccinated animals who were challenged were humanely euthanized."

Because this type of study had never been done before, for ethical reasons Dr. Dodds decided not to challenge the standard 20 dogs at a time, but only five at a time until they reached 20. After all, what if they were wrong and the rabies vaccine the dogs received as puppies was no longer protective?

"So that's what we did," says Dr. Dodds. "Were 80% okay? Absolutely. And what we did, by the way, was we actually took another group of animals and vaccinated them with a recombinant feline rabies vaccine, because there was no recombinant canine vaccine for rabies at that time."

We wanted to see if they had antibodies to the rabies virus and memory cells. They had immune memory cells against rabies that couldn't be detected with the antibody test.

These animals' titers went sky high, 12 or 15 international units, as opposed to what's necessary for protection, which in our country is 0.1. We had hundreds fold increases in protection, which meant that even though their rabies serum antibody titer fell below what was accepted (0.5 for WHO, or 0.1 for CDC), they were protected through their immune memory cells.

That's very comforting to us as veterinarians. Animals who've been vaccinated but no one knows how long ago have good memory cell immunity."

After the five-year challenge study was complete, Dr. Dodds and her colleagues wanted to approach the USDA and ask if they would agree to extend the licensing to five years on the one rabies vaccine. However, the other vaccine manufacturers won't be happy about that, and in addition, the USDA has a lot on its plate, so Dr. Dodds decided to wait.

"I'm sort of waiting till maybe the end of the year," she says. "Hopefully if the pandemic wanes, along with some of the other things the USDA is dealing with, like the rabbit hemorrhagic fever issue and the wildlife wasting disease issue, then maybe we can get heard. There's no point in asking them when they're too busy to take our issue seriously."

The 4-1-1 on Veterinary Vaccines

I asked Dr. Dodds if she could provide us a brief explanation about the different veterinary vaccines, how they're made, and their different physiologic and immunologic effects and immunologic effects in the body. It's a point of confusion for both veterinarians and pet parents.

"The killed vaccines such as the rabies vaccines have adjuvants in them," she replies. "Either mercury or aluminum. And only two of the current licensed canine rabies vaccines do not contain mercury salts. Certain viruses produce immune memory cells that last for a long time, basically lifelong. They include feline panleukopenia, which is a parvovirus, canine distemper, canine hepatitis, and canine parvovirus."

They produce sterile immunity, which means once the animal has immune memory and circulating antibody, they cannot be reinfected. They can have the virus enter their body and then leave in the urine or the stool and infect others potentially, but they cannot be reinfected.

Those vaccines are excellent because they produce sterile immunity, but rabies doesn't, nor does Leptospirosis, influenza, or Lyme. All those things are relatively short lived and last only about a year."

I want to take this opportunity to thank Dr. Dodds for her 56 years of not just committed service to pets, but also for being a role model, especially for sensitive women veterinarians. She has encouraged generations of veterinarians to speak up and speak out about what they're seeing in their practices and about the practice of veterinary medicine as a whole.

She has given so many veterinarians the confidence to talk about issues that our profession isn't addressing, and I'm so grateful to her.

Again, please listen to our full interview (linked at the top of the article), as we covered a wide range topics and issues. You can also find Dr. Dodds and her wonderful products such as the NutriScan and CellBIO tests, at **[Hemopet](#)**.
