

New vaccine offers hope for dogs with cancer

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Jennifer Weissel and her greyhound, Kelly. Credit: University of Sydney

Jennifer Weissel did not expect her greyhound, Kelly, to live to be "an old lady."

In 2019, Weissel noticed some lumps growing under Kelly's jaw. Specialists at the University Veterinary Teaching Hospital Sydney diagnosed lymphoma, a common, aggressive and usually fatal cancer in [dogs](#).

Even after treatment with chemotherapy, Kelly's cancer continued to progress. Her chance of survival looked slim, so the University's specialists suggested she take part in a safety trial for a new vaccine.

Kelly was injected with a vaccine made from tissue taken from her own tumors. The vaccine, invented by University of Sydney immunologist Dr. Christopher Weir, is a personalized treatment that stimulates the patient's immune system to attack cancer.

Dogs diagnosed with lymphoma typically survive approximately a year. But more than two years on, Kelly's cancer is in remission and she is thriving. She is one of more than 300 dogs who have been treated with the vaccine, which Dr. Weir developed with support from crowdfunded donations. Preliminary results suggest the vaccine has anti-cancer effects in various tumors. It also appears to be helpful in preventing recurrence.

"Thanks to the first trial, we now know the vaccine is safe," says Dr. Weir. "It appears to work for several different types of cancer—particularly well on MAST cell tumors and lymphoma."



Kelly the greyhound on her reupholstered couch. Credit: University of Sydney

The vaccine is an example of immunotherapy, which is considered one of the most promising emerging approaches to cancer treatment in humans. In Australia, it is rare to use immunotherapy in the treatment of dogs, and funding available for this kind of veterinary research is limited. Philanthropic support has been crucial in funding Dr. Weir's work.

Dr. Weir says the vaccine is more cost-effective than chemotherapy, which can cost more than \$10,000 for a single dog. When used in

combination with chemotherapy, the vaccine appears to have the potential to result in long-term remission. While chemotherapy alone can prolong survival, it usually does not save the animal's life. Dr. Weir hopes his vaccine will eventually provide a cheaper, safer and more effective treatment option.

The next step is to test the vaccine's efficacy on specific [cancer](#) types. Dr. Weir is working with Associate Professor Peter Bennett and Dr. Katrina Cheng from the Sydney School of Veterinary Science to trial the vaccine on dogs diagnosed with lymphoma.

Supported by funding from the Ronald Bruce Anstee Bequest and the Canine Research Foundation, they are working to recruit 80 dogs to participate. To prove whether the vaccine increases lifespan in dogs with lymphoma, they will give some patients the [vaccine](#) in combination with [chemotherapy](#), some in combination with palliative steroids, and others a placebo. (Placebos are used in veterinary medicine in order to avoid clinician bias.)

Kelly the greyhound is now 11 years old—the old lady Weissel thought she'd never be. The two of them enjoy daily walks around their beachside village of Maianbar in Sydney's south. Weissel has even reupholstered the old couch Kelly sleeps on.

"I wasn't going to do it because I was sure she wasn't going to live," she says. "But things are looking good now and she's worth it ... She's family.

"I'm grateful we've been given the opportunity to take part in this trial. It's been a blessing."

Provided by University of Sydney

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