

# Companion animal patients aid scientists' search for human health solutions

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Whiskey, a Munsterlander dog, benefitted from cutting-edge biomedical technology to regrow his jawbone. Credit: Gregory Urquiaga/UC Davis

Dogs and cats may provide their human companions with more than love and affection. From cancer and osteoarthritis to inflammatory bowel and heart disease, animals are afflicted with many of the same ailments

found in people.

These correlations make companion animals ideal models for naturally occurring diseases, according to a collaborative group of UC Davis researchers in the cover article of the Oct. 7 issue of *Science Translational Medicine*.

The team—comprised of basic, translational, and clinical scientists in the School of Veterinary Medicine, the School of Medicine and the College of Engineering—presents a perspective on how the knowledge gained from [veterinary medicine](#) can serve as a bridge to not only better understand human diseases but also reduce failure rates of human clinical trials and accelerate the approval and delivery of new therapeutics for humans.

"Because they may provide better models for human disease, companion animals are now being considered critical links between basic and preclinical research in small-animal induced disease models and human clinical trials," said Dori Borjesson, a veterinary clinical pathologist and professor in the School of Veterinary Medicine. "Both veterinary and human patients benefit from this new translational research paradigm."

While rodent models of [human disease](#) are essential to basic research, they can be poor predictors of outcomes of [human](#) clinical trials, the team writes. But the increasing participation of [companion animals](#) in [clinical trials](#) over the past several years has provided valuable insight for translational researchers. Like humans, cats and dogs exhibit genetic variability, eat diverse diets, have varying personal habits and live in a wide range of environments—all of which play a role in various disease processes.

A recent example of the potential for translating to humans knowledge that was gained from animals involved reconstruction of mandibular

(jaw) bone using a regenerative approach that is now in routine use at the UC Davis veterinary hospital. Veterinary surgeons at UC Davis teamed with biomedical engineers to adapt cutting-edge technology to regrow missing mandibular bone in dogs.

That technique has been used on more than 20 dogs that have lost bone to injuries or removal of cancerous tumors. Researchers anticipate the procedure in canines will prove instrumental in solving this difficult problem in humans.

**More information:** "Companion animals: Translational scientist's new best friends." *Science Translational Medicine* 07 Oct 2015: [DOI: 10.1126/scitranslmed.aaa9116](https://doi.org/10.1126/scitranslmed.aaa9116)

Provided by UC Davis

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