

'Star Trek' for animals: A wireless medical monitor for your pet

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The monitoring device for animals recovering from surgery typically hangs on the side of a cage in which a mending animal stays while healing. The power transmitted by the device equates to about 1 percent of that transmitted by a cellphone.

The next time you take Fluffy in for surgery, the veterinarian may be able to monitor her post-op progress from a smartphone.

Perhaps more significant, there will be no wires connecting the monitor to Fluffy, which means safer and more comfortable healing.

Picture the medical tricorder used by Dr. Leonard "Bones" McCoy in the 1960s TV series "Star Trek" and you begin to get the idea. The [device](#) may be available commercially in less than a year.

Jenshan Lin, a professor of electrical and computer engineering at the University of Florida, has developed a device that monitors heart rate and respiration wirelessly using radio waves, eliminating the need for leads to be attached to the animal's body. Currently, vets typically have to check on [animals](#) visually after surgery almost constantly – and even then without actually monitoring them because wired leads can't be attached to them lest the animal tear them off or dislodge them.

Constant [monitoring](#) means any problems that crop up can be caught and treated more quickly.

"You'll be able to do this [monitor an animal] 24 hours a day, seven days a week," Lin said.

The data also can be uploaded to the cloud, making it accessible from anywhere, any time.

"That will be awesome, to be able to check on the animal from anywhere, even from home," said Laura Cohen, owner of the High Springs Animal Hospital, where Lin's monitor has been tested in real-world conditions. "You can keep up with how they're doing all the time."

Tim Toppen, CEO of Gainesville-based TruVitals, the company that licensed Lin's technology, said the device will be available commercially next fall.

Toppen said he decided to pursue the animal application first because the technology is disruptive in that market. "It provides a capability that does not currently exist, and we believe we can improve the standard of

care in veterinary medicine," he said.

The idea has been around for decades. A sort of pre-historic version of the device was built in the early 1970s, but it was the size of a small refrigerator and was by no means portable. Technological advances during the past 40 years finally made possible a device that is both portable and powerful.

Lin's 21st-century version is about the size of a Kindle tablet – though thicker—and has a range of 10 feet. It typically hangs on the side of a cage in which a mending animal stays while healing. The power transmitted by the device equates to about 1 percent of that transmitted by a cellphone, Lin said. That translates to safety and long battery life.

Up next: the human application.

Initially, Lin said, vital signs to be monitored would be limited to [heart rate](#) and respiration, like the animal version. Eventually, though, that could be extended to include surface skin temperature.

Said Toppen: "The technology is really just the tip of the iceberg here. We're at the threshold to collect a lot more information than we initially envisioned," adding that he plans to begin the FDA approval process for human use early this year and hopes to have it by early 2016.

Provided by University of Florida

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