

Pacemakers Keep Dogs' Hearts Beating

By Susan Chaney

Posted in: [Canine Health](#), [Right Now!](#)

No one really knows how many dogs get pacemakers each year. But the people whose dogs' lives are saved by the devices don't really care.

Yes, in case you hadn't heard, dogs can get pacemakers if their hearts don't beat often enough or beat irregularly. The first such implantation was done in 1968, but the procedure became more popular starting in the late 1980s.

Ashley Saunders, D.V.M., has been fitting pacemakers into dogs at the Texas A&M Veterinary Medical Teaching Hospital since 2005. She puts in more than 15 each year. And that happens in veterinary school hospitals and specialty veterinary hospitals all over the country.

"I think the coolest thing about it is that people come in and think they're dogs are slowing down because they're older," she says. After the surgery and recovery, "the owner is so happy and impressed because their dog is normal and can go on for years and years."

In fact, barring other health issues, a dog with a pacemaker will have a normal life span for its breed and size, she says. Otherwise, once dogs are symptomatic, "it's only a matter of time before they die suddenly or they're debilitated by it," she says.

Most dogs get pacemakers because their heart rates are too slow. This shows up as a dog not being able to exercise like it did in the past. It may just move more slowly and tire more quickly, or it may have fainting episodes. Saunders explains that when the top of the heart – the atrium and the bottom parts – the ventricles – don't communicate well, the heart rate suffers.

The majority of pacemakers are inserted in back of the neck on the side where the external jugular vein is. The surgeon creates a pocket under the muscle, Saunders explains, into which the pacemaker is tucked, then sutured. A lead runs from the device down to the heart's right ventricle where electrical impulses then stimulate it to contract, or beat, somewhere between 80 and 150 times per minute. Most of the time, once healed, the pacemaker cannot be felt by someone petting the dog, Saunders says.

Some breeds are more susceptible to heart problems, and other dogs just develop issues as they age. Saunders says a slow or irregular heartbeat is not caused by anything an owner does or doesn't do. "It's something going on at the cellular level in the heart," she says, "a problem with the electrical activity in some way."

Cardiac specialists like Saunders rely on EKGs to tell them what's going on in the heart. Once they see that it's a heart-rate problem, they can decide whether a pacemaker is appropriate.

Although the surgery isn't inexpensive, about \$2,500 depending on what part of the country you live in, it's no longer uncommon. Saunders attributes its growing acceptance to the fact that pet owners are more aware of veterinary specialties and just what's possible, plus the dog's elevation from a backyard pet to a member of the family.

A canine pacemaker has yet to be developed, so veterinary cardiologists rely on human devices that have sat too long on manufacturers' shelves to be put into people. Many pacemakers – and the all-important leads – go through a clearinghouse, Companion Animal Pacemaker Registry and Repository, or CanPacers. It was founded in 1991 by David Sisson, D.V.M., an Oregon State University College of Veterinary Medicine professor of cardiovascular medicine. Guidant, Medtronic and St. Jude Medical make major donations of pacemakers to the clearinghouse. Prior to the formation of CanPacers, devices were donated by human patients for use in dogs after the people died.

The change in a dog after surgery still awes Saunders. "It's amazing," she says. "It just puts them back to normal."

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