

# MU researchers pioneer animal diabetes treatment

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Amy DeClue is an MU assistant professor of veterinary internal medicine.  
Credit: MU News Bureau

Studies show the incidence of diabetes in dogs has increased 200 percent over the past 30 years. Now, University of Missouri veterinarians have changed the way veterinarians treat diabetes in animals by adapting a device used to monitor glucose in humans.

Dogs are susceptible to type 1, insulin-dependent diabetes. Affected animals are unable to utilize sugar in their [bloodstream](#) because their bodies do not produce enough insulin, a hormone that helps cells turn sugar into energy. Veterinarians treat animals with this type of diabetes

similarly to the way humans are treated, with [insulin injections](#) and a low-carbohydrate diet.

Amy DeClue, assistant professor of veterinary internal medicine, and Charles Wiedmeyer, assistant professor of veterinary clinical pathology, have been studying the use of a "continuous glucose monitor" (CGM) on animals since 2003. A CGM is a small flexible device that is inserted about an inch into the skin, to constantly monitor glucose concentrations.

"Continuous glucose monitoring is much more effective and accurate than previous [glucose monitoring](#) techniques and has revolutionized how veterinarians manage diabetes in dogs," said DeClue. "The CGM gives us a complete view of what is happening in the animal in their natural setting. For example, it can show us if a pet's [blood glucose](#) changes when an owner gives treats, when the animal exercises or in response to [insulin therapy](#)."

CGMs have become more commonly used in dogs with diabetes that are not responding well to conventional treatment. The monitor provides detailed data for glucose concentrations throughout the course of three days in a dog's usual environment, so veterinarians can make better treatment decisions. Previously, veterinarians would have created an insulin regimen based on a glucose curve by taking blood from the animal in the veterinary hospital every two hours over the course of a single day. The glucose curve was often inaccurate due to increased stress from the animals being in an unnatural environment.

Dogs show clinical signs of diabetes similar to humans. Clinical signs include increased urination, thirst, hunger and weight loss. Typically, no direct cause is found for diabetes in dogs, but genetic disposition and obesity are thought to play a role in causing diabetes, according to DeClue. Just like people, dogs suffering with diabetes must be medically managed or complications can arise.

"Typically, dogs that are treated properly for diabetes go on to live a long, full life," said Wiedmeyer.

"Actually, dogs with diabetes are similar to young children with diabetes but somewhat easier to manage. Dogs will eat what their owners give them at the same time each day and they won't ask for a cupcake at a friend's birthday party. With tools like the continuous glucose monitor to assist with disease management, the outlook is very good for a dog with diabetes."

In the future Wiedmeyer projects that the device will become smaller and less invasive. In addition, he hopes device manufacturers develop a device that would monitor blood sugar levels remotely.

DeClue and Wiedmeyer's most recent article on methods for monitoring and treating diabetes in [dogs](#) was published in the journal, *Clinic in Laboratory Medicine*.

Provided by University of Missouri-Columbia

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