

# New Device Detects Cruciate Ligament Injury

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Earlier diagnosis and a chance to do something to prevent the problem – may be possible for dogs with anterior cruciate ligament (ACL) injury, the number one cause of lameness in dogs today. The anterior cruciate ligament is an important ligament that helps stabilize the knee; the ACL holds the femur and tibia together and helps maintain normal motion in the knee. When injured, the ligament may stretch, partially tear, or completely rupture. Excessive laxity in the knee is an early warning sign of ACL problems. An injury can occur anytime under normal activity levels. Injuries are especially frequent in overweight dogs, because obesity adds stress to the ligament.

A veterinarian at the University of Wisconsin-Madison School of Veterinary Medicine has designed an instrument that aids in the early diagnosis of a stretched or torn ACL. Up to now, an injured ACL has been difficult to diagnose before the ligament actually ruptures, because there is no easy, objective way to detect partial disruption. Veterinarians have had to rely on subjective physical exams to find potential problems, but it is difficult to detect just a few millimeters of movement – which can be enough to signal partial disruption – with your hand.

"We have developed an objective tool for assessing knee stability," said Dr. Mandi Lopez, a veterinary surgeon and researcher at the School of Veterinary Medicine. While clinical trials are still needed, the tool they have developed for early diagnosis (called the DGY2000) could allow veterinarians to detect partial disruptions of the ligament and stabilize the knee before complete rupture occurs. This would help prevent the associated arthritis and pain.

The DGY2000 consists of a platform with two moving pieces. The dog's leg is strapped onto the platform and the femur is held in place while a small force is applied to the front and then the back of the tibia while radiographs (x-rays) are taken. An exact measurement of the amount of laxity in the joint can then be determined from the two radiographs. A patent has been applied for this new device.

"I know how devastating a ruptured cruciate can be," said Dr. Lopez. "The device has tremendous potential to improve the quality of life of our pets by allowing us to diagnose problems early and intervene before arthritis develops."



Photo courtesy of University of Wisconsin School of Veterinary Medicine