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Walking Tall

Jimi Cook's 'miracle tissue' could help millions of people, and dogs, walk easier.

By Vincent Kobylak
Photos by Adam Masloski & Steve Morse

Libby's legs had been bothering her for some time, so there was little surprise when a trip to the clinic revealed a not-uncommon diagnosis: torn ligaments and damaged cartilage.

Without help, Libby would continue to hobble along painfully, favoring her forelegs. So this four-year-old chocolate Labrador from O'Fallon, Mo., recently found herself being prepped for arthroscopic surgery on James Cook's operating table at the University of Missouri's [Veterinary Medical Teaching Hospital](#). It was as sophisticated an operation as anything a professional athlete might get for a bum knee, and it would likely let her walk comfortably again.

Veterinary medicine has become a highly specialized field with its own cardiologists, radiologists, oncologists and even ophthalmologists who serve the animal kingdom. Often the research advances these veterinarians achieve do more than just benefit the animals they treat. What Cook, a veterinary orthopedic surgeon, is doing could soon end up being of enormous help to the growing number of people who suffer from arthritis in their knees.

Using a new medical material made from refined pig gut, Cook has fashioned an implant that can renew a badly torn meniscus, the crescent-shaped disc of cartilage that serves as a critical cushion between the bones of the knee joint. The implant has worked wonders in research dogs, promoting the growth of meniscal tissue to the point that the animals were able to walk normally.

"We've seen beautiful regeneration," says Cook, an associate professor in the [College of Veterinary Medicine](#). "What was amazing is that the dogs basically grew a new meniscus that was almost 100 percent normal. It looked good, and more importantly, it performed its normal functions." Cook is awaiting approval by the [U.S. Food and Drug Administration](#) to use a human version of the implant in clinical trials on people. Orthopedic surgeons in Memphis, Tenn., Indianapolis, Albuquerque, N.M., and Tucson, Ariz., have already been lined up to begin using it on small numbers of patients.

Success could mean great relief for millions of people

who suffer meniscal damage through injuries or a lifetime of wear and tear. About one million meniscal surgeries are performed each year in the United States alone, and even the most successful surgery is usually just a temporary fix. Most surgeries involve the simple removal of damaged portions of the meniscus. While such operations can relieve pain and get patients back on their feet, the loss of meniscal tissue leaves the knee without the full use of its natural shock absorber. Inevitably, these patients will develop arthritis.

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