Virtual Dog as Teaching Tool for Acupuncture

Engineering students collaborated with a veterinary professor to create an anatomically accurate virtual dog.

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Photos courtesy Colorado State College of Veterinary Medicine and Biomedical Sciences

Narda Robinson, DVM, the Shipley Complementary and Alternative Medicine chair at Colorado State University’s College of Veterinary Medicine and Biomedical Sciences, has teamed with CSU electrical engineering undergraduates to build a virtual dog to make learning acupuncture easier and to remove the stress on live animal models.

In an effort to mimic the feel and force of administering acupuncture needles, the engineering students based their creation on the MRI of a real dog. The simulated Labrador Retriever attempts to re-create varying densities of bone, muscle, skin, and fat to teach veterinary medicine students the proper feel of administering the needles.

“SimPooch can be a teaching tool and a testing tool,” Robinson said. “Since the model is portable, students can learn and test it anywhere. No live dogs are needed, and students can practice their techniques over and over again without causing stress to live animals.

“Anatomy is the basis of medicine and, as such, is the basis of acupuncture. Acupuncture works by nerve stimulation. If students are too far from the nerves they need to stimulate to promote healing, the benefits of treatment will be diminished. Teaching students how to locate points based on an anatomically accurate 3-D model will improve their palpation techniques, location skills, and treatment outcomes.”

Other applications could include nerve blocks for interventional pain relief and for other approaches commonly performed in radiology and oncology, Robinson said.