Seizure-alert dogs are focus of University of Florida study

By Sarah Carey, UF Veterinary School: Winter 1998: Seizure-alert dogs

Golden retrievers like Jakey, center, are commonly used as service/assistance dogs for the disabled. Jakey sits with Roger Reep, Ph.D., and Deb Dalziel, a canine information specialist while they review a survey regarding seizure-alert dogs.

Determined to separate fact from fiction, University of Florida researchers are attempting to document the existence of seizure-alert dogs - animals that purportedly can detect seizures about to strike their owners and warn them of the coming trouble. Even a few minutes of advance notice could allow the stricken person to find a safe environment prior to the seizure's onset, take seizure-blocking medication or contact a caregiver or emergency medical help.

"A number of reports in the popular press, electronic media and dog-related publications assert that some dogs have this ability," said Roger Reep, Ph.D., associate professor of physiological sciences at UF's College of Veterinary Medicine. "If these phenomena are real and occur reliably, this offers great hope to people who experience seizures."

"Furthermore, similar to guide dogs who serve as constant companions to visually impaired people, early-alert dogs could allow people who are presently homebound the potential to expand their ability to care for themselves, and in some cases, to obtain employment," Reep said.

Working with a $31,000 grant from the Able Trust, a private, Tallahassee-based foundation that helps people with disabilities find employment, Reep and his colleagues, Paul Davenport, Ph.D., canine information specialist/trainer Deb Dalziel and neurologist Basim Uthman, M.D., will study not just anecdotal evidence from people who say they have such dogs, but also the groups that claim to be able to train them.

A person with recurring seizures is said to have epilepsy - a generic term used to define a variety of seizure disorders, according to information provided by The Epilepsy Foundation of America. About 25 million, or one in 10, Americans have had, or will have, a seizure at some point in their lives.

In the project's first phase, researchers will give 300 questionnaires to patients and former patients of the Epilepsy Clinic at Shands at UF and at the Veterans Affairs Medical Center.

"We are trying to determine if these people have companion animals, and specifically if they have dogs that seem to be alerting them to an oncoming seizure," Reep said. "Our preliminary findings suggest that dogs respond in a variety of ways - barking, nudging, vocalizing, licking, etc., before, during and after a seizure."

Previous VA research has shown that certain events occur in the brain prior to a seizure, Uthman said.

"These events are demonstrated by complex mathematical analyses, but are not readily apparent to the patient, a neurologist, or the patient's family," he said. "It's possible, however, that these changes in the brain might be sensed by a dog."

It has also been suggested that epileptic patients may emit certain odors immediately prior to a seizure, Uthman added.

"A dog has a sense of smell much more powerful than humans," Uthman said. "You and I might not smell a change, but a dog could."

In the study's second phase, the focus shifts to organizations that work with seizure-alert/seizure-response dogs.

"Some of these places make more aggressive claims than others," Reep said. "Different organizations have varying degrees of success."

Researchers want to know what dog trainers have to say about the reliability of training dogs to "detect and alert. "Among the questions team members hope to answer are whether the ability to detect seizures, if some dogs do have it, is a spontaneous reaction or a trainable behavior.

Eventually, the team hopes to bring dogs into the clinical setting where patients can be physiologically monitored, to try to determine the cues to which dogs may be alerting.

"This study represents UF's first scientific approach to determining if these dogs do exist, and if so, whether it would be possible to selectively breed for these traits," said Charles Courtney, D.V.M., Ph.D., associate dean for research and graduate studies at the UF veterinary college.