Implants, of the type used in human orthopedics, and the Anderson sling, which was perfected at UC Davis for airlift rescue of horses, are serving important new roles in medical management strategies for successful equine orthopedic surgery.

“The aim of UC Davis’ equine orthopedic surgery program is to provide optimal care for patients suffering from catastrophic fractures,” says faculty member Larry Galuppo. The Veterinary Medical Teaching Hospital program encompasses everything from transport to specialized care during recovery.

“We use a special trailer equipped with the Anderson sling that can get a horse to the hospital in better condition for surgical management of long bone fractures—those of the cannon bone, radius and tibia in the leg,” says Dr. Galuppo. The animal is sedated, fitted with the sling, and lifted using hydraulics.

Another new technology being developed, through the school’s Veterinary Orthopedic Research Laboratory, is the “intermedullary interlocking nail,” which has been used successfully in human orthopedics for a long time.

“The problem in fracture repair,” says Dr. Galuppo, “is to develop implants that are strong enough to support the weight of a horse. We test each newly designed implant, which is suited in shape and strength to a particular fracture, on machines that mimic the physical stresses that will exist in a horse.”

A standing horse bears approximately 600 pounds on the front legs, but during recovery from anesthesia and each time a horse attempts to rise to a standing position, forces of up to 3,000 pounds can be generated. Without assistance, a repair that took 8–10 hours can be destroyed in seconds.

While the horse awakens from general anesthesia, the Anderson sling supports the animal in a nearly standing position. “Using the sling during recovery, we’ve had success with our last 12 out of 13 cases,” says Dr. Galuppo. Patients are also maintained in the sling for protection of their repaired limbs throughout bone healing, which generally takes 10–12 weeks.

“As the interlocking nail is still in the developmental stage, we rely on bone plates predominately, with fairly good success,” says Dr. Galuppo, “and we are making advances. There is hope for horses that experience long bone fractures.”

In most cases, long bone fractures occur when horses get kicked. Dr. Galuppo cautions that, when adding a new horse to a paddock or keeping a horse overnight in a strange barn, care be taken to avoid situations that might put horses at risk of getting into a kicking battle.

For more information, contact Dr. Larry Galuppo at the Veterinary Medical Teaching Hospital Large Animal Clinic, (530) 752-0290.

New Hope for Horses with Bone Fractures

The Anderson “airlift” sling, designed to give structural support to a horse’s skeleton during transport, also supports the horse during recovery from anesthesia and during healing of the repaired leg fracture.

A bone implant or “intermedullary interlocking nail” for fracture repair must be strong enough to withstand the immense physical stresses experienced by the equine leg.

X-rays, right: (b) A long “nail” implanted along the bone axis interlocks with bolts, and bone fragments are encircled with wire to repair a compound fracture (a).

$1 Million Endowment to Fund Racehorse Medical Research

A $1 million endowment has been established by a Southern California charitable foundation to support research at the Center for Equine Health (CEH) related to the orthopedic ailments of racehorses. The endowment was given by the Dolly Green Research Foundation to provide perpetual support for the J.D. Wheat Orthopedic Research Laboratory at UC Davis. The laboratory, one of the principal CEH research units, is a nationally recognized leader in the study of equine athletic injuries. It was named in honor of Professor Emeritus John D. Wheat, a member of the first faculty of the School of Veterinary Medicine.