The Quarter Horse world is all abuzz about a new genetic disorder that has recently received quite a bit of press in several prominent horse publications. Hyperelastosis cutis (HC), more correctly referred to as hereditary equine regional dermis asthenia (HERDA), causes the skin on a horse’s back to separate, lift off and even tear away when the horse carries a saddle or suffers a skin trauma. In affected horses, there is a lack of adhesion within the deep layers of the skin (dermis), which attaches the skin to the horse. Researchers believe HERDA is due to a collagen defect resulting in fragile attachment of the skin. Even light contact with the skin on the back, neck, hips and sometimes lower legs of an affected horse can cause it to separate and peel off in large sheets, resulting in a gaping wound that exposes the muscle underneath. It has been reported that even normal activities such as rolling in the pasture can cause the skin on an affected horse’s back to rip apart. Currently there is no successful treatment or cure; therefore, affected horses are unsuitable for any purpose other than as research animals for this poorly understood disease.

Researchers at Mississippi State University have reported that affected horses may show behavioral problems as a result of the pain associated with the skin disorder. These behavior issues can be crucial, subtle indicators that the horse is beginning to develop clinical signs of the disease. Many affected horses do not want their backs to be groomed. They may bite, repeatedly move away, pin their ears, swish their tails or show other signs of discomfort during grooming or saddling. Some horses may show signs of discomfort for some time before they begin to have skin separation or peeling, especially if they are only mildly affected.

Affected horses typically do not show signs of HERDA until they enter training and carry a saddle because the horse’s skin appears normal until something pulls or pushes on the affected area. Younger horses are typically diagnoses with HERDA after suffering an injury that tears, scrapes or punctures the affected skin. The healing of these wounds is dramatically impaired and produces awful scars.

It is not known how long HERDA has been around, but approximately 200 cases have been documented since the early 1970’s. At least forty-two of those cases have been reported within the last two years. The disease is thought to be caused by an autosomal recessive gene, meaning that both the sire and the dam must possess the gene in order for the offspring to be affected. This also means that horses that have the gene can be carriers without actually being affected. As long as a carrier is bred to a HERDA gene free individual, the offspring cannot develop the disease. The problem arises when two carriers of the gene mate. This mating will have a 25% chance of producing an affected foal, a 50% chance of producing a carrier, and only a 25% chance of producing a genetically normal foal. However, it is important to understand that breeding a carrier stallion to a normal mare would result in 50% of the offspring being HERDA gene carriers as well (the other 50% would be genetically normal.)
Collaborative research between Cornell University and Mississippi State University has traced the gene back to the very popular Quarter Horse performance lines of Poco Bueno through Doc O’Lena and Dry Doc and their dam, Poco Lena, a daughter of Poco Bueno. Because of this HERDA has been dubbed the “Doc O’Lena disease”. However, this is inaccurate as several HERDA affected horses have been identified that had absolute no Doc O’Lena blood in their pedigrees.

In-breeding the Poco Bueno line, as has been very common and extremely successful, has essentially created a gene pool of carriers, as carriers have unknowingly been used in breeding programs. It is important to realize that not every Poco Bueno-bred horse is a carrier of the disease. At this point in time the only way to identify carriers is by learning that they have produced a HERDA affected foal. Unfortunately breeders who produce foals with the disease may never know that they have done so, since the offspring do not typically show signs of the disease until they reach riding age. By this time the offspring usually have been sold and the breeder does not keep track of the horse it changes ownership. Nevertheless, approximately 100 known carrier stallions have been identified at this time.

The American Quarter Horse Association (AQHA) is funding research at the University of California-Davis to develop a DNA blood test to identify carriers of the HERDA gene. Researchers there anticipate the blood test will be available by 2007. An accurate blood test is integral in the control of the disease, as it will allow breeders to avoid mating known carriers and producing either affected foals or more carriers.

Until the genetic test is established Mississippi State University will analyze pedigrees and provide information regarding the odds of a individual horse being affected by HERDA or a particular mating producing a HERDA foal for a $25 fee which goes toward HERDA research. Pedigrees can be sent to Dr. Ann Rashmir at the College of Veterinary Medicine, P.O. Box 6100, Mississippi State University, Mississippi State, MS 39762