

FOUNDATION FOR BIOMEDICAL RESEARCH

– HORSE FACTS –

ANIMAL RESEARCH SAVES ANIMALS, TOO

– THE *MANE* FACTS ABOUT HORSE HEALTH –

- Humans and horses share 95% of their D.N.A.
- Diagnostic tests for several common genetically determined diseases of the horse have been developed as a result of the Horse Genome Project. A wealth of information available from the sequencing of the horse genome, suggests that genetics will have an overriding influence on all aspects of equine research.
- Some of the most promising applications in biotechnology are in the field of animal health, in such areas as assisted reproduction, increased disease resistance, nano-based diagnostic and “smart” treatment delivery systems, new and improved vaccines and refined diagnostic techniques. Further research with lab animals is required before these promising advances are made available to veterinarians.
- While the average life span of a horse is 20-25 years, they often live well past that. The oldest recorded horse was "Old Billy," an English barge. He lived 62 years. One of our poster horses, “Gary,” is 30. The retired Thoroughbred is still going strong.
- The horse is either the primary or secondary host of many infectious agents including: Equine Influenza Virus, Equine Herpes Viruses, African Horsesickness Virus, Eastern, Western, and Venezuelan Equine Encephalomyelitis Viruses, Vesicular Stomatitis Virus, Equine Arteritis Virus, Equine Infectious Anemia Virus, and Equine Morbillivirus (Hendra Virus).
- Horses and humans can both be infected by West Nile Virus and suffer from the resulting disease, encephalitis. Neither species is able to develop sufficient quantities of the virus in their blood to infect mosquitoes that may feed on them. No specific treatment for WNV exists, however a vaccine has been approved for use in horses. Humans suffer a much lower mortality rate from the disease than do horses.
- Immunology research plays an important role in equine health. Once a test is developed to identify the cause of an undesirable immune response, researchers can inform

veterinarians about what treatments to administer and how long or how much of the treatment is needed.

- The term "colic" refers to abdominal pain. The most common cause of colic in the horse is termed spasmodic colic. The intestines become over-active resulting in painful spasms. In serious cases, the intestines can become twisted or impacted, requiring medical or surgical intervention.
- Most equine bone fractures are not spontaneous events, but rather the result of long-term bone fatigue. These fractures are preceded by measurable changes in the bone which leads to micro fractures and eventually a broken bone. An overworked horse is more likely to sustain a fracture, as his bones are denied sufficient recovery time. The old horseman's adage that "a horse needs three weeks recovery from a hard race" is scientifically correct. When Dr. Larry Bramlage operated on Personal Ensign's broken left hind pastern, he used five stainless steel screws to repair the bone. The use of these surgical screws was perfected in studies with lab animals.
- Reproductive problems can have a significant impact on the equine community. Infertility, various causes of fetal loss, and foaling difficulties can pose a threat to the individual horse's health and have financial repercussions for the owners. Personal Ensign for example, suffered from a ruptured uterus during one of her pregnancies. Veterinarians saved her life with medical and surgical intervention, and she continued to produce winning foals.
- Ulcers are one of the most common diseases affecting the GI tract of both humans and horses. Up to 90 percent of racehorses and 70 percent of show horses may have some degree of gastric ulcerations. While prevention is emphasized for both people and horses, multiple medications, including antacids and drugs that decrease acid production, are available for use in horses.
- Like people, horses can suffer from arthritis and bursitis. The stifle, which is the equivalent of our knee, can slip and lock. Horses subjected to overly stressful work, particularly when young, can have bone chips floating in the joints. Arthroscopic surgery is often curative, particularly if the fragments are removed promptly before secondary cartilage damage occurs and degenerative joint disease sets in.
- Cardiac arrhythmias are more common in the horse than in other domestic species. As in human emergency medicine, cardiac electric shock is one corrective technique. The most commonly treated arrhythmia is atrial fibrillation, which is generally treated with quinidine or lidocaine.

- Like humans, horses are susceptible to seizures. While often hereditary, allergies and fatigue are among the many factors that can contribute to the condition.
- Equine Metabolic Syndrome (EMS) is a dysfunction of carbohydrate metabolism in horses. Abnormally high cortisol production leads to insulin resistance, which in turn leads to elevated blood glucose levels since insulin controls glucose uptake. Excess glucose can damage the endothelial lining of blood vessels, contributing to severe laminitis, an inflammation of the tissues inside the hoof, which can ultimately result in lameness. The syndrome can contribute to the development of laminitis, arthritis and other problems including muscle damage, obesity, and abnormal fat deposition. EMS is best managed with a combination of proper exercise and diet to encourage weight loss and stabilize blood glucose levels. Supplements including thyroid hormone, Vitamin E, selenium and chromium have been advocated by some veterinarians in an attempt to reverse the effects of the syndrome. But as yet, no definitive drug or supplement has been proven to be curative.