

Racehorse Rest and Rehabilitation

Racehorses deserve a little R&R, but today their retreats can be more like a high-tech spa than your granddad's pasture

The racing industry has a long-established tradition of giving racehorses a "layup" at the farm for a little rest, relaxation, and recovery. But what if you have a top racehorse that is making

money at the track? Layup time is not profitable from a business perspective. So, is it possible to help them recover faster? That question has spurred the development of special facilities across the country with

teams dedicated to the rehabilitation of performance horses. Two examples of such facilities are Kentucky Equine Sports Medicine and Rehabilitation Center (KESMARC) in Versailles, Ky., and Pegasus Equine Rehabilitation and Training in Redmond, Wash.

A KENTUCKY EXAMPLE

KESMARC was conceived by Hub and Kirsten Johnson when they lived in Texas. As a farm manager, Hub Johnson said he was "frustrated by the care plans available. Every injury was treated the same way." Unfortunately, he did not see much success with the status quo.

In 1986, the farm Johnson managed had 26 horses come from the track with bone chips. Only three recovered to return to racing. Out of his frustration with this return rate came the concept of KESMARC. He and his wife began to place a focus on understanding the unique pathology of equine injury. They wanted to better understand soft tissue injury and develop ways to put tensile strength back into injured areas and to build bone density. They set out to learn and to develop a team of like-minded experts who could take a different approach with a broader array of technologies to increase the success rate of equine rehabilitation.

What has emerged from these early efforts is a facility in Kentucky where staff members take a whole-horse approach. Each injury is assessed within the context of the horse's entire history. Kirsten Johnson said they are able to fully focus on each horse. They have the time to evaluate each individual at a layup facility with many fea-



Swimming keeps a recuperating horse fit, without stressing its joints



tures that are unavailable on the track.

Horses are referred to layup farms from a variety of sources. Area clinics refer postoperative cases for controlled rehabilitation. Trainers and their veterinarians at the track refer horses for a variety of treatments. The goal is to reduce down time and get a horse back to racing fitness.

Dr. Steve Allday, a well-known veterinarian who works regularly on client horses at KESMARC, has extensive experience in dealing with lameness and limb injuries. He noted that for Thoroughbred racehorses, "The perceived problem is not always the actual problem. You need to identify the primary cause (of lameness). You need to dig beyond face value; ask grooms, jockeys, exercise riders, and trainers" about the horse, as well as looking at the horse and the physical signs it is exhibiting.

Allday offers this example of a case he might oversee that is rehabbed at KESMARC.

A horse has chip removal surgery. After two weeks, the sutures are removed. At that point, those in charge of the horse's rehabilitation begin to swim the horse in KESMARC's therapeutic pool. That exercise gets the horse moving, yet imparts no concussive force to compromise the healing injury. Swimming also keeps the horse fit, providing a cardiovascular workout and muscle toning while preserving the joints. In addition, it increases circulation, speeding healing.

The horse will graduate to the Aquatred, an underwater treadmill that allows a gradual loading of body weight on the injured area, with the water providing buoyancy to make the stress load on joints minimal. Finally, the horse will begin walking and working on the rubberized floor of the indoor walking track, with the "forgiving" surface absorbing a good deal of shock, significantly reducing the possibility of re-injury.

Under this plan, the racehorse can be back to racing in six-to-10 months.

This is not an inexpensive regimen, but the cost of using the old method of stall rest and turnout can be much more significant due to time lost from training and a longer rehabilitation time to resume racing. Extensive stall rest also can cause laxity in the muscles and allow scar tissue buildup. Turnout can be beneficial, but horses do not understand gradually coming back to full function, and they are likely to re-injure the healing area when left to their own devices. During the "down time," they lose the athletic conditioning foundation they once had, and it takes at least 60-90 days to re-establish that condition once the injury has healed. The old method offered a horse a

return to racing in eight-to-12 months, and that was only if they did not experience a re-injury.

KESMARC uses a variety of technologies you don't find just anywhere, including the Aquatred and equine swimming pool. The rehab facility also features an EquiGym, a series of moving stalls in a round pen configuration that resembles a hot walker, only the horses aren't tied. The equipment can be set to move the horses in either direction at a walk. KESMARC's indoor walking track shelters horses from the elements and extreme temperatures during their sessions.

Other unique therapies offered include the solarium, a system of lights that simulate sunlight to provide beneficial vitamin D and the behavioral benefits of sun exposure. Vitamin D aids in proper absorption of nutrients such as calcium and phosphate, which are important to bone health. The

solarium also takes the chill away on cold days to help relax muscles, and it helps dry horses more rapidly. KESMARC also offers equine hyperbaric oxygen therapy (HBOT), which provides increased levels of oxygen at higher pressures than normal to saturate the blood with healing oxygen. The patient is placed in an HBOT chamber for a designated period of time at a particular oxygen dose, depending on the individual's condition. It has been proven scientifically to speed healing and bolster the effects of antibiotic therapies in humans, and it has been used to treat a variety of conditions in the horse, including wounds, infections, laminitis, soft tissue swelling, and respiratory conditions. The Johnsons are pioneers in the field of equine HBOT use, and they serve as consultants to many other facilities that offer the therapy across the United States.



Hyperbaric oxygen therapy has proved to be beneficial for treating a variety of conditions



KESMARC features an indoor walking track with rubberized flooring

Scientists at the University of Kentucky's Gluck Equine Research Center are working to add some hard science to the success veterinarians are seeing with horses treated with hyperbaric therapy. They are looking at antibiotic therapy and hyperbaric treatments, and whether or not the synergistic effects of the two treatments combined are greater than the sum of the effects of each used. They also are seeking to find out if the therapies used together affect the horse's immunity. The initial results with in-lab testing in a mini-hyperbaric oxygen chamber are very encouraging. Using these methods, new treatment options using HBOT might soon come to light.

Respiratory problems are often performance-limiting and can even sideline a horse. Dr. Robert Holland, who has extensive experience with equine respiratory conditions, works with clients at KESMARC addressing a variety of breathing problems, including pharyngitis, laryngeal hemiple-

gia, exercise-induced pulmonary hemorrhage (EIPH), and allergies. Maximizing breathing potential can mean the difference between coming in first or finishing off the board, yet these conditions are often overlooked.

While rehabilitation centers are not inexpensive, they do speed recovery, allowing a racehorse to return to training much sooner than traditional turnout at a farm

Holland uses the pool as a diagnostic tool. Horses that "make a racket" while swimming in the pool most often have some type of breathing problem. He has trained the staff to listen for these breathing cues to identify potential problems. He also uses diagnostic tools, such as endoscopy and cytology, along with culture and sensitivity reports, to identify what organisms are at work and could be causing the breathing problems. This helps him put together

the most effective treatment plan for each specific horse.

WASHINGTON REHABILITATION

On the other side of the U.S. in Redmond, Wash., is Pegasus Equine Rehabilitation and Training. Pegasus is the vision of Dr. Mark Dedomenico, who has combined a human medical background as a preeminent heart surgeon with 40 years of experience in the equine business to create the rehabilitation center.

The focus in humans in recent years has been on getting a patient back to full function as rapidly as possible. Dedomenico wants to apply the same forward thinking and new technologies to horses. "We need to get up to speed with horses," he said. He thinks it is important to have the horses recover quickly and safely and be brought back to peak performance in the least amount of time possible.



He, too, has developed a strong team of veterinary advisers and staff to make Pegasus an outstanding facility. In addition to experienced on-site staff and veterinarians that work with cases regularly, every two or three weeks, Dr. Wayne McIlwraith of Colorado State University meets with Dedomenico to develop new research ideas, implement projects, and brainstorm new ways to make the rehabilitation process even better.

Dedomenico is partnering with Colorado State to study recovery from equine knee chip surgery. One study group is participating in his therapeutic program, including HBOT, swimming, and Aquatred work, while a set of controls is undergoing stall rest and turnout. The researchers will determine the difference in recovery rate from limb injury using the different rehabilitation methods.

Dedomenico and McIlwraith are adding the weight of science to the anecdotal data already available for rehabilitating horses.

One of the reasons Dedomenico added HBOT at Pegasus was the success of the treatment given to Terrell Owens, the NFL player who recovered from injury very rapidly using the therapy. Dedomenico feels that hyperbaric oxygen therapy and Polytrack are two outstanding innovations in the world of Thoroughbred horse training. Hyperbaric oxygen therapy reduces swelling and causes cells to grow more quickly. Trainers and veterinarians are seeing fewer injuries in racing animals, due to the widespread installation of Polytrack. Dedomenico feels Polytrack is a great tool.

Pegasus uses the same therapies mentioned in the KESMARC discussion, and, in fact, KESMARC was consulted during the Washington facility's development process. Pegasus has added several other cutting-edge technologies, including stem cell therapy, electromagnetic therapy, and the Game Ready cold compression system. Following trends in human medicine, Pegasus offers Equissage, a deep-tissue massage system that relaxes muscles and increases circulation. Stem cell therapy, performed by veterinarians, is beneficial in the treatment of tendon and ligament injuries that typically do not heal well. Stem cells are injected into injured areas, where they generate new tissue growth. This is a relatively new therapy in the equine world and has shown some real promise in healing difficult injuries.

Electromagnetic pulse therapy is also commonly used for tendon and ligament problems, as well as for swelling and stiffness. It is often used in conjunction with hyperbaric oxygen therapy.

The Game Ready system uses compression and dry cold therapy on a horse's leg to help accelerate healing. It takes the benefits



The Game Ready system uses compression and dry cold therapy to help accelerate healing

of conventional bandaging to a new level, giving a therapist greater control over the delicate compression balance and temperature regulation for maximum healing.

New diagnostics are also being used to monitor the effectiveness of therapy. Pegasus uses digital thermography to look for potential areas of infection or swelling. This noninvasive approach helps identify problems early and gives veterinarians and horse owners an opportunity to resolve issues before they become bigger and more

difficult to manage.

TAKE-HOME MESSAGE

New philosophies and new technologies, coupled with great minds, are sure to continually elevate the level of equine medicine and rehabilitative treatments. Top racehorses are reaping the benefits of speedier recuperation, and owners are cashing in on horses returning to peak performance with shorter recovery times. **D**



Pegasus offers Equissage, which relaxes muscles and increases circulation

GERALD POPE PHOTOS