



Lameness in the Sport Horse

Part 2: The Hunt for a Diagnosis

By Lindsay Brock/Jump Media



Dr. Kathleen Timmins is a graduate of the Ohio State University School of Veterinary Medicine and an important member of the PBEC team. Photo courtesy of PBEC

The talents of competitive sport horses never fail to impress the human eye; their bodies are magnificent, their athleticism seems endless, and their will to win is often anthropomorphic. But, even the most talented athletes sometimes reach the limits of their bodies. When that

happens to sport horses, it is the job of the veterinarian to step in with ever-evolving diagnostic tools and treatment methods.

This is the second part of a series exploring the most common lameness problems in sport horses and how they are treated in cooperation with the world-renowned veterinarians of Palm Beach Equine Clinic (PBEC), based in Wellington, FL. Dr. Kathleen A. Timmins is a 1993 graduate of the Ohio State University School of Veterinary Medicine and an important member of PBEC team, which places a heavy focus on sports medicine.

From Part 1...

In the first part of this series, we explored the most common lameness issues that present in dressage, eventing, and show jumping sport horses. From obvious injury or ailment to subtle lameness, PBEC's Dr. Ryan Lukens discussed his experiences with sport horse injuries and how to prevent them. If you missed it, check out the November/December 2017 issue of *The Competitive Equestrian*.

Step by Step

According to Dr. Timmins, one of the most useful tools at a veterinarian's disposal is an attentive and knowledgeable owner. Step one in diagnosing a lameness issue is obtaining a thorough medical history.

"Getting impressions from the owner, such as what they feel when riding the horse, what they see, and how long the problem has been present are key pieces of information to obtain before moving forward in the process of making a diagnosis," said Dr. Timmins. "I try and go back as far as I can, even to information provided during the horse's pre-purchase exam.

"Speaking with the people who manage the horse on a day-to-day basis will often uncover a wealth of clues pointing to a possible cause and diagnosis," continued Dr. Timmins. "These people are with their horses every day and know them better than we ever could from an exam."

Step two in Dr. Timmins' diagnostic process includes a hands-on assessment of the horse, including a physical exam and palpations, while still involving the owner or manager in order to identify new or existing abnormalities. This step also includes an observation of the horse's movement on soft and hard ground, in circles and straight lines, as well as under tack.

"These two steps will often reveal something obvious, whether it's an abscess or something else that is causing severe lameness," said Dr. Timmins. "If the lameness is subtle, we will then move on to flexion tests and regional nerve blocks to try and isolate the lameness."

After the initial items on the physical exam check list have been performed with no clear diagnosis, sometimes a third step is required. That step involves advanced methods and imaging in order to explore what exists beneath the skin that may not be obvious to the naked eye.

"At this point, we will sometimes recommend rest and anti-inflammatory medication for a week or two, which will help any soft tissue injuries to resolve themselves," said Dr. Timmins. "However, if the owner is eager for a definitive answer right away, we move on to some more advanced diagnostics. We have a lot of technology at our disposal at PBEC that helps us to pinpoint a problem."

Diagnostics of the Future

When a horse comes up lame, every owner wishes there was a magic button they could push and the cause would be obvious. Thanks to advances in veterinary medicine, that dream has almost become a reality. PBEC veterinarians like Dr. Timmins will often turn to its lameness locator to help them quickly, easily, and correctly identify a problem.

A lameness locator is a biomechanical diagnostic tool that utilizes a real-time, handheld, field-based system to measure lameness with non-invasive inertial sensors. The horse wears accelerometers on the top of its head and hips to measure vertical motion, while a gyroscope sensor placed on the pastern reads side-to-side movement. Working together, the sensors



Dr. Marilyn Connor performing a flexion test at PBEC's Wellington, FL, facility and clinic.



PBEC offers some of the most advanced diagnostic imaging services in the world.



Dr. Santiago Demierre performing x-rays on a PBEC patient.

Photos by Erin Gilmore

accurately detect and quantify forelimb and hind limb lameness by transmitting data to a tablet computer, which performs algorithms to detect and quantify the horse's lameness in each limb.

In addition to standard tools like x-rays and ultrasounds, Dr. Timmins has access to some of the most advanced imaging technology at PBEC.

"Our standing MRI and nuclear scintigraphy machine are very helpful," she said. "The MRI is the gold standard as far as diagnosing a specific problem. You just have to know where to look, which is why we like to use it in conjunction with nuclear scintigraphy, which will point us to the location of the problem."

The process of nuclear scintigraphy is a bone scan that begins with the injection of a radioactive isotope, which attaches to the phosphorous proteins localized within the bone and is absorbed over a few hours' time. A specialized nuclear isotope gamma ray camera is used to capture images of the skeletal anatomy with a 360-degree view. Points of interest "light up" on the image to indicate increased metabolic activity and the site of injury. Similarly, the equine standing MRI produces highly detailed images in several different planes to capture a complete image of a desired area. An MRI is best used to further define a specific area of both bony or soft tissue that has been pinpointed as the origin of lameness. The process can be completed while the horse is in a standing position and requires only light sedation.

"We have also recently installed a computed tomography (CT scan) machine," added Dr. Timmins, who notes that more and more sport horse lameness issues are related to cervical spine issues. "The CT scan is a fantastic tool that quickly gives us a 3-D look at a horse's head, neck, and spine."

While technology is a significant advantage when diagnosing lameness, Dr. Timmins also looks at breed and discipline commonalities to aid in her process. Whenever it's common front-limb lameness in show jumping mounts, or hind-limb stress in dressage horses, all are useful indicators.

"We see so many different kinds of horses at PBEC, and it gives me as a veterinarian the opportunity to learn what lameness issues affect specific breeds, while always going in with an open mind," said Dr. Timmins, who has treated Thoroughbred race horses, barrel racing Quarter Horses, and even Paso Finos from the Miami area in addition to the typical polo, show jumping, and dressage mounts commonly found in the Wellington area. "I love the variety! I think we see more diversity at PBEC than most vets do, and it is really exciting for our cases to be changing all the time."

Coming Up...

This series concludes in the March/April 2018 issue of *The Competitive Equestrian* with an outline of the best lameness treatments and rehabilitation options for sport horses and a look at typical prognoses with PBEC veterinarians Dr. Samantha Miles and Dr. Richard Wheeler. Stay tuned for more from the veterinarians at PBEC!

About Palm Beach Equine Clinic

The veterinarians and staff of PBEC are respected throughout the industry for their advanced level of care and steadfast commitment to horses and owners. With 40 skilled veterinarians on staff, including three board-certified surgeons, internal medicine specialists, and one of very few board-certified equine radiologists in the country, PBEC leads the way in new, innovative diagnostic imaging and treatments. Palm Beach Equine Clinic provides experience, knowledge, availability, and the very best care for its clients. To find out more, please visit www.equineclinic.com or call 561-793-1599. "Like" them on Facebook and Instagram to follow along on what happens in Wellington and more, and get news from their Twitter!