

# How Do We Keep Eventers Sound?

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The challenges faced by the modern event horses are huge. Our equine tri-athlete is expected to remain sound despite a grueling training schedule, hard footing and ever more technical cross-country jumping courses. Yet the horse is expected to remain obedient and collected at the dressage phase. They are to be very fit and athletic, with the ability to recover and shed heat rapidly on the cross-country day. Finally, sound and supple for the final day horse inspection and show jumping competition.

How can we help the horse accomplish this seemingly insurmountable task? First, let's understand what issues and problems affect these amazing athletes and what we can do to help these horses succeed.

## 1. Footing

The upper level event horse is expected to compete successfully at speed between 570 and 690 meters per minute on a variety of footing surfaces. In the fall season in the U.S.A., this usually means the horse has been training at speed on hard dry footing during most of the later summer and early fall. Lately much attention has been given to maintenance of cross-country course footing. Rotovators, spike aerators and other footing treatment devices have been employed to try to keep the horses from competing on the equivalent of concrete. Unfortunately, the often overlooked surfaces that cause the majority of the injuries are the training surfaces prior to the Three-Day Event (3DE). Too many riders in the U.S. continue to train by running their horses up rock hard gallops, causing concussive injuries or run their horses on deep sand flat tracks, thereby increasing the incidence of soft tissue injuries.

## 2. Heat and humidity and myositis

Emphasis on "making the time" in an ever more competitive sport has all but driven every other breed but the Thoroughbred from the sport of Three-Day Eventing in the U.S.. In a hot and humid environment the lean Thoroughbred horse has a much better chance of successfully shedding the heat. This was well illustrated at the Atlanta Olympics where Thoroughbreds were the predominately successful breed. The excellent preparation of the 3DE horses, with a combination of very fit horses and well hydrated horses saw a very low incidence of myositis for a hot and humid American event (1 out of 100) on the

cross-country days at the Atlanta Olympics. The lessons from Atlanta about heat and humidity have proven invaluable around the world but 3DE horses will continue to be at risk from heat and humidity because of the constant variability of the climate. Count on the unexpected to be commonplace if you aren't prepared for it.

### **3. Medication rules**

In 1992 the FEI banned phenylbutazone from its competitions and has shown no inclination to remove the ban. This has spawned a huge growth in the amount of alternative medicine and the number of physiotherapists that the 3DE horses are exposed to. This has also resulted in an increase of use of illicit (non-testable drugs) and the use of therapeutic medications close to the time of competitions. The use of normal therapeutic medications close to competition can be problematic due to the variability of published clearance times as well as the inconsistent ability of various laboratories to detect common medications at the same clearance times. This combination of factors has made it more challenging for treating veterinarians to administer needed therapeutic medications to 3DE and Dressage horses in a timely and logical fashion.

### **4. Concussive trauma**

This most commonly happens in the two months prior to the 3DE when the majority of the speed conditioning is being done. Obviously footing as discussed previously is a significant factor. In training horses with concussive injuries the rider would have the option of reducing the amount of gallops by one third and replacing this with swimming to reduce footing concussion. There are a variety of techniques to reduce concussion, including up hill gallops, footing treatments and swimming and Equitread.

Diagnosing the concussive injury can be difficult. Often foot and fetlock problems are bilateral and the extent of the problem may not be evident until regional anesthesia has been applied to one side. A comprehensive exam for concussive injuries would begin with a detailed clinical exam and may well progress to radiology or nuclear scintigraphy. Regional anesthesia may be needed to confirm areas to be treated.

In competition, at a 3DE, footing concussion is a commonly occurring problem. The most likely problem would be sore heels or sore soles or coffin joint inflammation. Here is where it is invaluable to have a good farrier present who is willing to work into the evening to assist the veterinarian with the design and fitting of shoes to relieve the

concussive inflammation. Obviously working ahead of time to make sure the shoes in the training time frame are level and well balanced will reduce the amount of work on Saturday night at a 3DE.

Treatment of concussion related problems prior to the horse's 3DE (two to four weeks prior) often centers around intra-articular treatment of the inflamed joints with hyaluronic acid and a cortisone such as triamcinalone. The most commonly treated joints are the hocks, the front fetlocks, the front coffin joints and stifles in that order.

Extracorporeal shockwave therapy (ESWT) is also used for treatment of concussive injuries in this time frame but is often used one to two weeks prior to the 3DE. The use of this is aimed at supplementing therapy to joints that have not responded to intra-articular therapy or problems that are too close to competition to administer other medications.

Preventative use of Adequan (PSGAG's) and Legend or Hyonate in the weeks leading up to a 3DE have been helpful in reducing the amount of concussive related injuries. However, in an acutely concussed joint it has not replaced the effectiveness of an intra-articular injection.

## **5. Soft tissue trauma**

Because of the speeds and the amount of conditioning required for upper level 3DE horse, soft tissue injuries are unfortunately a frequent problem. The most commonly injured digital soft tissues structure is the superficial digital flexor tendon (SDFT), the next most common is the body or branch of the suspensory ligament. The order of commonly seen soft tissue injuries continues with the origin of the suspensory, proximal suspensory desmitis and inferior check or accessory ligament desmitis as the least common. All of these soft tissue injuries are usually in the front leg of the 3DE horse. The deep digital flexor tendon (DDFT) is rarely injured in the 3DE horse but it can be. The most common sites for DDFT injury are in the navicular area and the palmar third phalanx or in the middle of the third metacarpal bone region.

Teaching the rider or groom to pay attention to the legs on a daily basis is the best method to catch the problem early before significant damage is done. Any evidence of heat or soft tissue deformation is significant. Careful daily palpation reveals changes in size, shape and consistency.

Diagnostically, thermography if done on a regular basis may reveal the problem up to two weeks previously and this technology can be

used following the injury during the rehabilitation period. Diagnostic ultrasound is the gold standard for evaluating the degree and prognosing the soft tissue injury.

Treatment consists of reducing the inflammatory process of the soft tissue injury and beginning graduated controlled exercise. Large core lesions should receive ultrasound guided tendon puncture (UGTP). ESWT is also used on tendon and ligament injuries to reduce the amount of soft tissue edema. ESWT has proven very successful in the early mild edema case, sometimes returning the horse to work and in the more severe case following UGTP. Many 3DE horses with tendon and ligament injuries can be successfully treated, rehabilitated and returned to their previous levels of work.

## **6. Back problems**

The incidence of back problems in the 3DE horse is fairly high as you would expect for any extreme athlete. The majority of back problems are due to secondary biomechanical movement from hind limb asymmetrical gaits. However, a growing number of back problems are primary, such as overriding dorsal spinous processes, arthritis of the dorsal articular processes and instability of the sacroiliac joint. A significant diagnostic effort is required to differentiate between these clinical entities. This will require a detailed clinical examination as well as any of several diagnostic imaging modalities. Ultrasound, radiography, and nuclear scintigraphy are the primary diagnostic tools.

Treatment of back problems in the 3DE horse has never before had so many successful options. The days of giving Bute and resting (which is usually not successful) is over. Treatments consist of ESWT, ultrasound guided articular injection, acupuncture, acu-injection, mesotherapy and chiropractic manipulation, as well as a full range of alternative therapies. It is unusual, if the diagnostic and therapeutic effort is made, not to be able to return the horse back to work. As is the current trend in treating human back problems, it is important to return the horse to an active state as soon as possible to prevent muscular atrophy. Muscular development is to be encouraged since ultimately these muscles will be needed to support whatever the primary bone or muscular back problem is. If the back problem is secondary to a primary hind limb lameness then both problems must be treated to return the horse to athletic soundness.

## **7. Summary**

If the full range of diagnostic and treatment modalities can be brought to bear on the athletic trauma of the 3DE horse in a timely fashion, most of these horses can be kept in a competitive form. It requires a combination of careful observation and aggressive application of needed diagnostic and therapeutic tools as well as excellent farrier support.