DRESSAGE TODAY
VOL. 6

EXTRA

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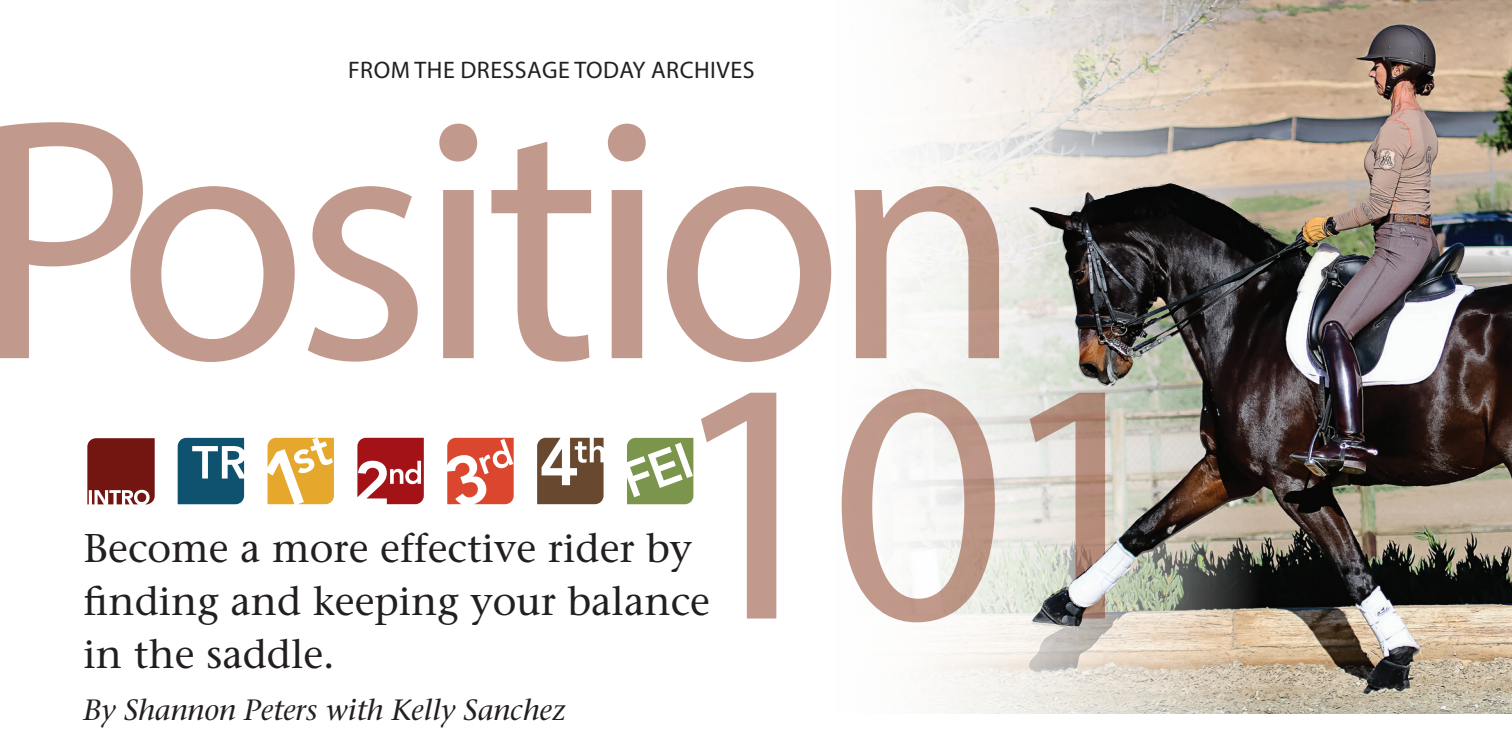
Position 101



INTRO TR 1st 2nd 3rd 4th FEI

Become a more effective rider by finding and keeping your balance in the saddle.

By Shannon Peters with Kelly Sanchez

In dressage, rider position and balance affect everything—the horse's rhythm and tempo, his longitudinal and lateral balance and his willingness to go forward and come back. Being balanced in the saddle will also make your aids more clear to your horse. But as anyone who rides knows, finding and keeping your balance on a living, breathing, moving animal is an enormous challenge. Some people compensate by hanging on to the reins or gripping with their legs or tightening with their back. The result? The horse is heavy; he won't go forward or he won't bend.

It's our job to work with our conformation and that of our horses to find our core strength and balance in the saddle and maintain them every single time we ride. Just watch riders like my husband, Steffen, or Guenter Seidel, Helen Langehanenberg or Ingrid Klimke: Their bodies seem to match their horses' movements exactly; the two of them move as a unit, as if their core structures are working together. That should be the goal for all of us. Try the following exercises and keep the ideas I share in mind every time you get on your horse. As you work to develop a stronger core, you may have to pause frequently in the beginning to reassess and readjust your position and balance.

The Dressage Seat

For almost as long as I've been riding, I've focused on my posture and balance. I'm a small person and these days, I ride some big horses. So I have a checklist that I go through with each horse I ride. If my horse starts to get a bit heavy or gets behind my leg, I always go back to finding my position in the saddle. I ask myself, *How could I sit better to help my horse's balance?*

Before I get to my checklist, let's briefly look at the dressage seat. In classical terms, the dressage seat is formed by the two seat bones and the pubic bone. Together they form a triangle and a base of support for the rider in the saddle. The rider's ability to engage the appropriate core muscles helps stabilize this base and allows the hips to move elastically with the horse's back muscles.

My checklist is as follows: Is my base of support correct or have I collapsed forward or back? Are my lower abdominal muscles engaged enough to maintain the three-point contact? Do I feel a good connection in my second group of muscles that stabilize my base, which is from my belly button to the sternum? Is my sternum elevated softly so that my chest is open and my shoulders are softly back and down, connecting my elbows down to my hips, extending to soft lower arms?

It's the rider's job to find and maintain core strength and balance in the saddle during every ride. Here, Shannon Peters rides Weltino's Magic, owned by Jen and Bruce Hlavacek.

To become more effective riders, we have to look at the parts of our bodies that don't move in harmony with the horse. Some of us have tight legs; others have tight lower backs, braced hips or rigid arms. All these issues inhibit the horse's ability to move freely. I have a longer waist, so maintaining a neutral spine and not allowing my back to hollow when my horse loses his balance and comes against the contact is a challenge that I continually work on.

Exercise 1: Loosen Your Hips, Legs And Lower Back

Every day when I get on my first horse, I do an exercise that I also encourage my students to do. Most of us get in the saddle, put our feet in the stirrups and off we go to ride, not taking the time to recognize tension in the hips, legs and lower back. Try this to loosen those areas:

LA Horstman Photography

1. Sit in the saddle and drop your stirrups.
2. Draw your legs up and over the top of each side of your saddle, close to the pommel. From there, grab the pommel with one hand and the cantle with the other and pull your hips as close to the pommel as you can.

Photos by Rebecca Neff

3. Let your legs drop back down against your horse's sides. You will feel a big stretch in your hip flexors, psoas (the muscles that connect your lower back to the top of the thighs) and inner thigh muscles and, quite possibly, a lot of tightness the first few times you do it.
4. Continue to feel your legs stretching down and try to find the three points of contact in your seat as you walk on a loose rein around the arena for 15 minutes.

Go through your own personal checklist for the first few minutes to find your center of balance and connect your postural muscles. Once you have done this, you'll start to feel how your horse is moving on any given day. Is there a lack of swing through his rib cage or is he swinging more in one direction than the other? Do you feel tightness in your horse's hips or shoulders? A good walk around the arena on a loose rein with your feet out of the stirrups will show you so much before you even pick up the reins. This will help you formulate a plan for your warm-up to improve the suppleness of those areas you feel need attention that day. You'll discover what you need to work on to balance your horse before you start working on more advanced exercises.

Engaging Your Core

Keeping your pelvis in balance in the saddle requires that you engage your core muscles, but for every rider that's a very different feeling to attain because everyone has a different conformation and body type. When I walk off on my horses for a training session, I think about three areas:

1. My lower core muscles from my pubic bone to my belly button, which stabilize and allow my lower back to relax and absorb the horse's movement and keep my pelvis engaged toward the pommel.
2. My middle core muscles between my belly button and sternum, which stabilize the midsection.
3. My sternum upward through the top of my head.

By maintaining good posture and alignment of these areas, you increase your effectiveness in the saddle as well as your ability to use independent, balanced aids.

The higher you move up the levels, the more core stability you need, but being able to separate the parts takes awareness. For instance, your legs and arms will try to balance what your core doesn't balance. So when a rider has a core instability somewhere—it can be in the pelvis, the midsection, the upper chest or the upper

Keeping your pelvis in balance in the saddle requires that you engage your core muscles, but for every rider that's a very different feeling to attain because everyone has a different conformation and body type.

Rebecca Neff

back—it always affects what her arms and legs do. Once you have a strong base of support, your legs and arms can independently give an aid without your body pitching forward or back.

In her book *Centered Riding*, Sally Swift talks about the building blocks of an effective position. Being able to isolate the muscles in your lower and middle abdominals is key to maintaining proper alignment, as does being able to open your chest muscles and contract those of your upper back. Working toward balance and symmetry in these muscle groups leads to a rider who can use independent aids from supple hips and legs as well as soft rein aids from a balanced upper body.

Exercise 2: Engage Your Core

So what does it mean to engage your core? Every rider needs to find his or her deep core muscles without leaning back or bracing. Starting at the walk, try this exercise to attain the feeling of engaged abdominals and a neutral lower spine:

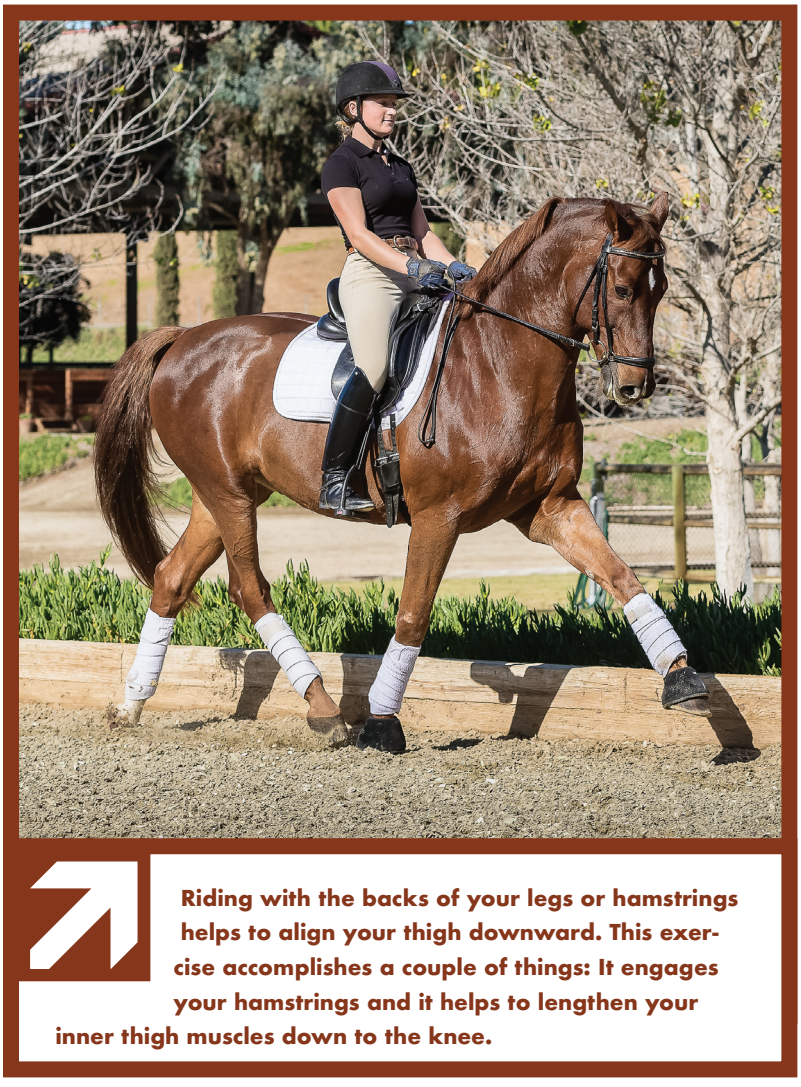
1. Find your neutral lower spine in the saddle by starting with the first exercise (p.3-4) to loosen your hips, legs and lower back.
2. Engage your lower abdominals to feel as though there is a bungee cord pulling your hips toward the pommel, maintaining the feeling you just created with the leg exercise.
3. Without bracing, maintain that positive tension of the bungee cord in your lower abdominals. Then engage and lengthen your abdominals from your belly button to your sternum. I find this to be one of the more difficult things for most riders to do. You should feel like you are balancing your body toward your horse's ears to create the feeling of going with his movement.
4. You should feel as if you could easily lift both legs off the sides of your horse while maintaining the correct abdominal posture.
5. This proper alignment of pelvis and spine should also create a rider that doesn't clench her buttock muscles or grip with her legs or arms for balance.

Improving Your Leg

For riders who need to improve their lower leg position, I first check to see that their seat and balance are correct. This is generally where a loss of position in the lower leg starts: Some riders grip with their knees or sit with their upper body too far back, which sends their legs and feet too far forward to counterbalance. But riders must pay attention to their leg position as well. Maintaining a good ear–hip–heel alignment is what you are aiming for.

Exercise 3: Improve Your Leg Position

Riding with the backs of your legs or hamstrings helps to align your thigh downward. This exercise accomplishes a couple of things: It engages your hamstrings and it helps to lengthen your inner thigh muscles down to the knee. Here's how to improve your leg position:



Rebecca Neff

Riding with the backs of your legs or hamstrings helps to align your thigh downward. This exercise accomplishes a couple of things: It engages your hamstrings and it helps to lengthen your inner thigh muscles down to the knee.

1. While sitting in the saddle, imagine there is a large, soft tennis ball behind each of your knees. Lightly flex your hamstring muscle in the back of each leg so as to hold your imaginary tennis balls in place. Try to maintain the feeling of keeping the tennis balls behind your knees for your entire ride.
2. Stretch your heels down, without bracing or creating tension, maintaining a nice elastic feel down the leg.
3. If you find yourself losing your stirrups, you might need to shorten your leathers until you can achieve more supple hip, knee and ankle joints.

Becoming a More Effective Rider

When I look at a horse and rider, I look at how they move together. Does some part of the rider look disconnected or imbalanced or does she interfere with the horse in some way? Is she sitting on her seat bones, and does the middle of her body stack above her hips? How do her legs drape around her horse? What about her head position? I like to see a cohesiveness in the movements, that the joints in the horse's body look like they're working together with the joints in the rider's body. Horse-and-rider combinations usually reflect one another's dysfunction, so a horse with a tight back often has a rider with a tight back and/or hips. Or a horse that is pulling usually correlates to a lack

Finding My Dressage Seat

By Shannon Peters

I grew up riding Arabians in saddle seat, which meant my feet were up close to the horse's shoulders and my back was hollow. When I switched to dressage at about 19, it was quite a challenge to change the way I sat in the saddle and change the muscles I used to ride in proper alignment, ear to hip to heel. Part of how I learned was from experience on a longe line. Riding without stirrups and reins is the single best way to accomplish finding your center of balance in the saddle. Of course, this requires a good longe horse and an instructor to help you with biomechanics.

I've had some wonderful teachers along the way. My first dressage instructor, "S" judge Debbie Riehl-Rodriguez, taught me so much about basic balance in the saddle and about being an effective rider. Nancy Baker gave me ideas that I use to this day with my riders and myself. My greatest influence has been Karl Mikolka, the former chief rider of the Spanish Riding School, with whom I have ridden for 18 years. He is so adamant about the smallest details, like the thumbs and the elbows and that how you sit in the saddle can enable you to be an effective trainer. I am also fortunate to have my wonderful husband's watchful eye every day. With my own students, I always try to keep things as simple as possible. We might work on one or two things per lesson that they can accomplish before moving on. That way, they always have tools when they're riding by themselves or when they're having difficulties with their horse.

Photos by Rebecca Neff

With correct upper-body posture—chest open, shoulders down, into heavy elbows—make sure you're holding your reins completely and not grasping them with the tips of your fingers. Firmly, but without tension, close all four fingers and turn your hand upright with your thumb on top. Close your thumb flat down on the side of your index finger. To maintain the proper feeling in your hand, your thumb should feel firmest of all.

of balance in the rider or the combination of horse/rider.

If a rider has a good seat, a good leg position and an engaged core, that rider is more likely to be effective. Riders sometimes try to find their balance by squeezing their legs or driving with their seat instead of allowing the horse to come up to them. You create expression, balance and suppleness in your horse through your good position and by not losing your place of balance in the saddle even if your horse loses his.

Your horse will always follow your weight. So if you're sitting out of balance—for example, heavier on one seat bone or collapsed through your hip—the horse will generally follow your weight, no matter what your leg or hand may be telling him to do. It's the job of the rider to communicate her aids clearly to the horse. And it's the rider's responsibility to know how much of an aid she is using and what the response is from the horse.

Create an Elastic Feel

Our goal as riders is to create a place in the contact that you want your horse to come to without tension. Once you've begun to establish a secure, independent seat, you can start to develop a soft, supple contact.

Exercise 4: Develop a Soft, Supple Contact

1. With correct upper-body posture—

your chest open, shoulders down, into heavy elbows—make sure you're holding your reins completely and not grasping them with the tips of your fingers.

2. Firmly, but without tension, close all four fingers and turn your hand upright with your thumb on top.
3. Now the important part: Close each thumb flat down on the side of your index finger. To maintain the proper feeling in your hand, your thumb should feel firmest of all.
4. Develop a good connection in the rising trot. Each time you touch down in the saddle, think of dropping your shoulders into your elbows (with an elevated chest and sternum) and giving your thumb a squeeze to help create the correct feeling to your horse's mouth. This exercise should be subtle enough that no one sees it, but you'll be surprised at how establishing this correct arm/hip position in the beginning can really influence the rest of your ride, because it allows your wrist to softly communicate with the horse's mouth.

Only when we have established an independent, supple seat with the appropriate postural muscles to maintain our balance can we start to truly achieve an elastic connection with our horse.

Rebecca Neff

Shannon with student Ehren Volk on Vaya Con Dios

TIPS:

- Create a checklist at the beginning of each ride.
- Loosen your hips, legs and lower back at the start of your ride.
- Be aware of your posture throughout the day.

Correct Posture as a Way of Life

Many of my students work at desk jobs or drive long distances to get to the barn and it affects their position on the horse: Their heads might be a bit forward or their core is collapsed and their shoulders rounded. It's very difficult to sit correctly in the saddle if you've been sitting for a long time in front of a computer or behind the wheel. Awareness of proper spinal alignment throughout the day is so important. It will help train the muscles you need in the saddle.

Strength training, Pilates, stretching and many other activities are absolutely beneficial to balance muscles that you over- or underuse when riding. Your core muscles can be strengthened outside of the saddle, but be mindful that you strengthen them in the saddle as well. Keeping a healthy balance of work in and out of the saddle will give you many years of comfortable, fun and effective riding and alleviate a lot of structural issues for you and your horse.

Shannon Peters is a popular clinician and teacher as well as coach to her husband, three-time dressage Olympian Steffen Peters. Shannon began riding and competing in Western and saddle seat in her native Michigan. College took her to Boulder, Colorado, where she developed a successful dressage training business before moving to San Diego in 2002. After Shannon married Steffen in 2004, the pair started SPeters Dressage in San Diego. A USDF bronze, silver and gold medalist, Shannon is a three-time national championship competitor: on Luxor in 2007 when the two were crowned Reserve National Champions Intermediaire I; on Flor de Selva in 2009 when they took home fourth place in the Intermediaire division; and on Akiko Yamazaki's Odyssey in 2011 after winning the Grand Prix Special at the Del Mar and Burbank CDIs in California. With Jen and Bruce Hlavacek's Westphalian gelding, Weltino's Magic, Shannon won Reserve National Champion in the 6-year-old division at the 2008 Markel/USEF Young Horse Championships, and Steffen won team and individual gold medals at the 2011 Pan Am Games in Guadalajara, Mexico. Shannon and "Magic" competed through Grand Prix. Special thanks to Shannon's student Ehren Volk riding Vaya Con Dios and to Dawn White-O'Connor riding Aristo for participating in the photo shoot.

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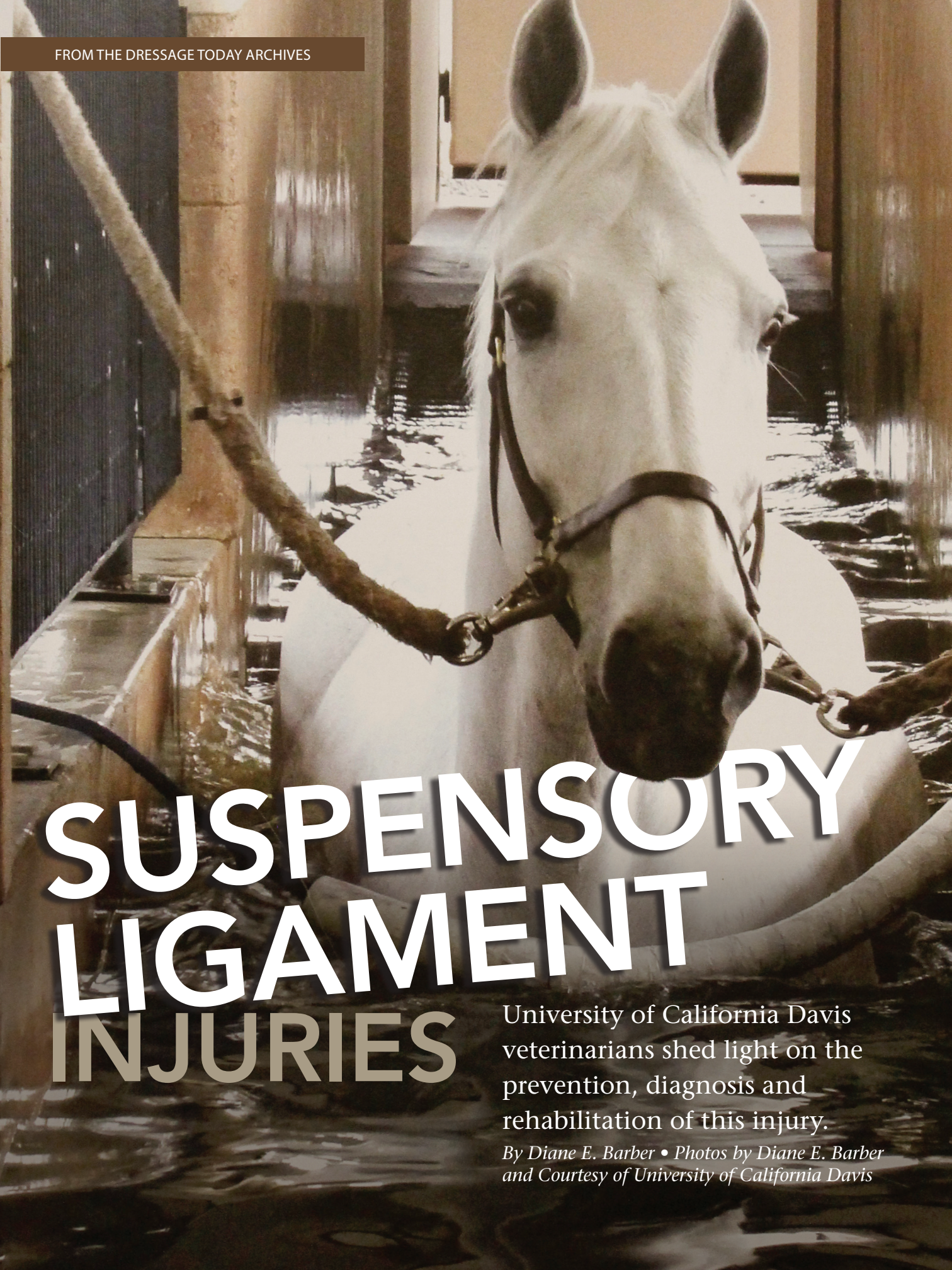


SUSPENSORY LIGAMENT INJURIES

University of California Davis veterinarians shed light on the prevention, diagnosis and rehabilitation of this injury.

By Diane E. Barber • Photos by Diane E. Barber and Courtesy of University of California Davis

"My horse has a suspensory injury" is a commonly heard statement in the equestrian world when a horse is suffering from lameness. What is heard less often is how the injury may have been prevented and the intricacies of what lies ahead on the road to recovery. Having experienced a two-year healing journey for a severe deep-flexor-tendon injury with my own horse, I always keep my radar up regarding information about equine health, particularly leg injuries. So when I was invited by my veterinarian to attend a University of California Davis (UC Davis) event in Los Angeles about sport-horse injuries I seized the opportunity.

Dr. Claudia Sonder, director of the Center for Equine Health at the UC Davis School of Veterinary Medicine, presented the informative educational program. I was fascinated by the university's findings from a national study that yielded discipline-specific injury data and confirmed that dressage horses are predisposed to suspensory-ligament injuries. I also gleaned a better understanding of suspensory ligaments. "In horses, the suspensory ligament is a strong band of stiff collagen fibers that lies along the back of the cannon bone between the splint bones and it helps to suspend the fetlock during limb-loading. It originates at the top of the cannon bone and splits two thirds of the way down, sending branches to each of the proximal sesamoid bones at the back of the fetlock joint. The primary function of the suspensory ligament is to prevent excessive extension of the fetlock joint during the weight-bearing phase of the stride," said Dr. Sonder.

My intrigue with the presentation led to a road trip to UC Davis in Northern California to learn more for this story. The university has been ranked No. 1 in the world in veterinary medicine and is a global leader in equine medical research and education. Dr. Sonder collaborates with a team of 220 veterinarians and nearly 600 veterinary students while overseeing a herd of 200-plus horses and a 113-acre facility at the Center for Equine Health. "We are working on several projects to improve the prevention, diagnosis and treatment of suspensory-ligament injuries in horses, including studies of arena footing and fetlock drop, advanced imaging techniques, regenerative medicine to treat tendon and ligament injuries and objective assessment of lameness," she explained.

Biomechanics and How Injuries Occur

Key to the prevention of injuries is an understanding of how they occur. Dr. Sonder explained that any condition that increases the amount of fetlock drop in the horse stretches the suspensory ligament and when the stretch exceeds the elastic capacities of the collagen fibers, they tear. "We know that horses will overuse their suspensory ligaments to minimize loading painful parts of their limbs, such as sore heels or hocks," she said. "Thus, suspensory ligament injuries can be primary or secondary, depending upon the circumstances. We recognize that horses can have significant suspensory-ligament strain or fiber tearing with minimal overt lameness, which is why so many horses develop chronic suspensory-ligament injuries."

Biomechanics (motion study and the mechanical forces affecting the body) in particular can be a road map to longevity and sustaining a healthy equine partner. A conversation with Dr. Sue Stover, a veterinarian and professor at UC Davis who specializes in musculoskeletal biomechanics, repetitive use injuries and equine locomotor anatomy, shed light on the complexities of her field.

Dr. Stover explained that the suspensory apparatus (the ligament and its two branches) holds up the fetlock and the parts are like links in a chain. If any part of it is damaged, the whole thing will fail. According to Dr. Stover, injuries usually occur because the loads are too great or the intensity of training is too high for the fitness level of the horse. "Things we can do to keep the loads low are to provide optimal surfaces to work in [dirt or synthetic], shoes that will help the horse adapt and a training regime at a level that enhances the horse's musculoskeletal adaptation," she said. "For example, when exposing a dressage horse

Water treadmill at Circle Oak Equine, a University of California rehabilitation partner.

to a new movement for the first time, whether it is as simple as bending or as advanced as passage, stop and reward incremental progress to let the horse adapt versus doing it over and over again. When there is resistance, listening to the horse and not pushing a horse through discomfort is very important. I cannot emphasize that enough. Always step back a little bit and let the horse heal or catch up then move on. There is no more sensitive indicator of that than being an astute observer. Also, do not train on anti-inflammatory medicine to make the horse feel better because the body is not ready to do the work."

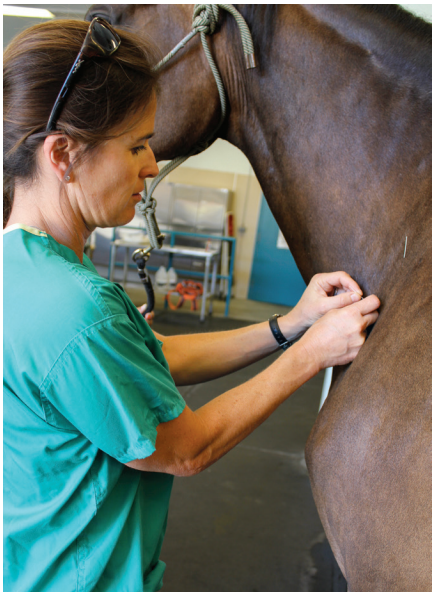
To strengthen muscles, ligaments, tendons and bones, as with humans, a horse has to have a higher level of activity. According to Dr. Stover, short intervals are ideal and, though it takes a lot of work to get a horse fit for his job, substantially less work is required to maintain the desired fitness level. In fact, she cautions that horses can be very susceptible to injuries when they are overworked at their optimum fitness level and therefore recommends a maintenance fitness program instead of a constant intensive training program. "The body is continually regenerating but if damage is too extensive, healing cannot keep up, resulting in inherent weakness and injuries.

Suspensory-Ligament Injury Prevention

By Claudia Sonder, DVM, Director, Center for Equine Health, UC Davis School of Veterinary Medicine

Human and equine athletes struggle with soft-tissue injuries that fail to heal completely. In many cases, this is due to premature return to work before the ligament has regained tensile strength. Tendons and ligaments rarely heal with their original elasticity, which can further predispose them to re-injury. For this reason, detecting suspensory ligament strain early on, before significant tearing has occurred, goes a long way toward preserving overall soundness. There are a few variables that horse owners can control to minimize injury to the suspensory ligament:

- Work with your trainer to develop an exercise program that addresses both cardiovascular and musculoskeletal fitness. Musculoskeletal fitness takes much longer to develop, and a gradual work up to a performance goal is key. Working your horse on different types of footing also helps to develop suspensory-ligament strength. Trail rides or variations in footings at home can help prepare a horse for a new footing at a show.
- Be careful to avoid overtraining. Once a horse has achieved fitness, he takes surprisingly little work to maintain himself. A high number of repetitions of specific athletic tasks over short periods of time promote injuries because the suspensory ligament accumulates damage with insufficient time for the horse's body to repair it. If a horse has mastered the intended level of a specific task on a training day, consider moving to another task rather than repeating the same task multiple times on that day. The musculoskeletal system of horses responds optimally to the level of the task achieved, not the number of times that the task was performed.
- Work with your veterinarian to identify any soundness issues that might predispose your horse to suspensory overload. Front heel pain and excessive fetlock drop are two problems that can overload the suspensory apparatus. Ask your veterinarian to demonstrate ligament palpation so that you can develop the skills to monitor your horse daily before and after work and note subtle changes in thickness or sensitivity.
- Provide your horse with a nutritional program that meets vitamin and mineral requirements and allows the horse to maintain a lean and athletic build. Horses who are overweight will overload musculoskeletal structures that function in shock absorption.
- Schedule a regular shoeing interval to maintain hoof–pastern angle, toe length and medial–lateral balance. As the toe gets longer, greater force is applied to the suspensory ligament during weight-bearing. If the heel is too long, fetlock drop (overextension) is augmented.
- If you notice a little swelling, some heat or a slight lameness—stop, look and evaluate. If your horse is not traveling or performing well on a given day, take time to check things out and involve your veterinarian if the problem does not resolve.



TOP LEFT: Dr. Syliva Oulette (University of California Davis alumna) evaluates a horse in motion. TOP RIGHT: Dr. Sarah le Jeune, a boarded surgeon, sports-medicine specialist, certified chiropractor and acupuncturist, places acupuncture needles in a sport-horse patient. RIGHT: Palpation of the limb provides valuable clues to suspensory health.

Patience is critical in the training process for injury prevention and the overall well-being of horses."

Symptoms and Diagnosis

Since horses instinctively mask pain for survival, injuries can be difficult to diagnose. Suspensory-ligament injuries vary and, though dressage horses are susceptible to them in the front legs, they are more prevalent in the hind legs due to how they are asked to carry themselves with more weight on the back end. According to the UC Davis veterinary faculty, there are subtle indications before lameness actually occurs, such as an unwillingness to collect, a delay in the changes or difficulty changing direction with a particular movement such as a pirouette. When lameness does occur due to a suspensory issue, counter to what is typical of tendon injuries, there can be pain without heat or swelling and if there is heat it can be elusive. In severe incidents, there is a drop in the fetlock.

Ultrasound is the primary way to diagnose a suspensory-ligament injury in many horses. According to Dr. Mary Beth Whitcomb, a veterinarian and UC Davis associate professor who is considered to be one of the nation's leading authorities on equine ultrasound, it is very important that owners and trainers communicate changes in a horse's performance with veterinarians and not assume that because a horse is lame it is a suspensory injury. "Before doing an ultrasound it is critical for the veterinarian to localize the lameness first," said Dr. Whitcomb. "The damage of a mild injury can be hard to see as compared to moderate and severe injuries because muscle appears dark and can be misinterpreted as an injury. MRI is an option, but availability is often limited, it requires anesthesia and it is expensive."

During rehabilitation, Dr. Whitcomb generally recommends ultrasound rechecks every two months to make sure the injury is improving. "Sometimes injuries do not look better on ultrasound, but if they appear stable and not worse that is good."

ABOVE: William R. Pritchard Veterinary Teaching Hospital at UC Davis. INSET: The horse barns at the UC Davis School of Veterinary Medicine

Integrative Medicine And Rehabilitation

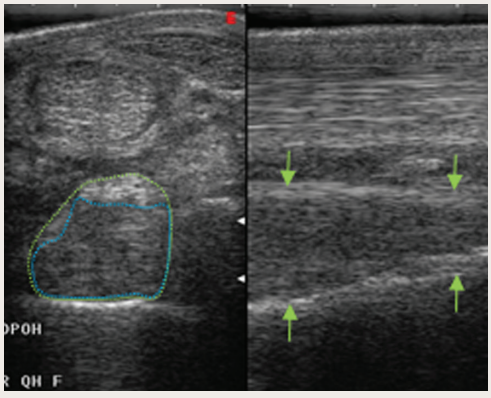
The UC Davis equine veterinary team takes a whole horse approach to medical care and the treatment of injuries.

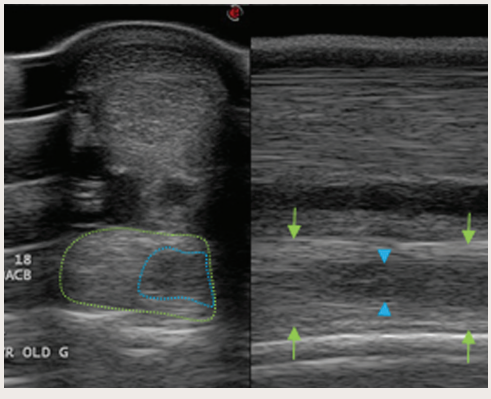
According to Dr. Sarah le Jeune, a boarded surgeon, sports-medicine specialist, certified chiropractor and acupuncturist, they have developed a service at UC Davis called integrated sports medicine. "This basically combines western medicine with complementary therapies, such as acupuncture and chiropractic," said Dr. le Jeune. "Part of what we do with acupuncture is palpation of acupuncture points on the body, neck and the back. Sensitivity in certain points can indicate that something is going on before the horse is actually lame because we have found in studies that there is a direct correlation between back pain and lameness. If a horse is dealing with a leg issue, particularly a suspensory issue, it is going to change how he is using himself and that is going to affect the back. If a horse has subtle signs, I palpate the legs to make sure something is not cropping up. I then do a full lameness exam that includes flexion tests. If I don't find anything there then I am going to assume it is just muscle-pain- or saddle-fit-related problems, which are affecting the efficiency of movement."

The university's research confirms that the primary reason that dressage horses are predisposed to suspensory-ligament injuries is because they are constantly asked to load the hind end to be light in the front end to perform dressage movements. "That takes a lot of core strength to be able to do that. I think many horses have not been able to develop that core strength sufficiently so they are just loading the hind limbs and the suspensory apparatus, which is always under tension when the legs are weight-bearing. It is very important to make sure that the animal is able to do the work it is being asked to do. Otherwise, if they are not able to do it by engaging certain muscle groups that help support the back and the hind end then they are loading a structure in a supraphysiological way and the suspensory apparatus will be the first to go. It is the most highly stressed structure in the leg of a horse," said Dr. le Jeune.

For serious suspensory injuries, Dr. le Jeune recommends developing a rehabilitation program with a veterinarian that includes stall rest, hand-walking, icing, anti-inflammatories and therapeutic shoeing. When available, hydrotherapy is often introduced to the regime to offer partial weight-bearing to support the leg as it recovers to eventual full weight-bearing. The school of veterinary medicine is also committed to researching the benefits of regenerative medicine, shockwave therapy and therapeutic laser on suspensory healing.

A typical rehabilitation schedule for a severe injury is stall rest with hand-walking five to 10 minutes per day for the first couple of months. Over a period of six to nine months, controlled hand-walking is slowly increased, depending





Studying an Ultrasound Image

The photo at right is the leg of a horse with ultrasound transducer placement to obtain images. The ultrasound images (left) show suspensory-ligament body injuries from two different horses. The top ultrasound image is a severe injury of the suspensory-ligament origin (location of the upper ultrasound transducer) in the hind limb. The suspensory ligament is outlined in green. The blue outline shows the hypoechoic (dark) tissue that indicates injury. The right side of the image shows the fiber pattern where a few normal fibers are seen near the top arrows, but the majority of the ligament has short fibers that are consistent with fiber tearing. The lower ultrasound image shows a moderate injury of the suspensory-ligament body before it divides into its two branches (location of lower ultrasound transducer) but from a forelimb. There is a dark oval area (blue outline) within the suspensory-ligament body that is consistent with a core lesion. Abnormal fiber pattern is also seen on the right side of the image (blue arrows). *—Mary Beth Whitcomb, DVM, associate professor, Large Animal Ultrasound, University of California Davis*

upon the degree of lameness and how the injury looks with ultrasound. After successfully reaching one hour of sound hand-walking, the horse can begin under saddle work at a walk. Trot and canter work are gradually introduced with regu lar rechecks along the way.

"Rehabilitation involves changing the work so that you try to do work that is easier for the horse to strengthen other areas to help compensate for weaknesses. You will probably be hand-walking for several months, depending upon the severity of the injury, before gradually moving into work at other gaits. The faster the horse is going, the greater the load is on the suspensory, which is why we want them walking initially. Firm footing is also really important so the fetlock does not drop."

Dr. le Jeune also stressed the importance of fitness and ideal body weight. "Keeping a horse lean and fit is really important. If you take an unfit horse and ask it to do things it should not physically be doing, that is going to cause issues. Being overweight is a problem, too. Any increased weight will increase stress and tension on the limbs, particularly the suspensory apparatus. These are not injuries that occur from one day to the next. They are overload injuries that occur over time and there are subtle signs that develop. Initially, the horse might be reluctant in certain dressage movements, depending upon which leg is affected. That is where a good trainer is important in helping to determine if there is a pain issue or a training issue. And, if pain is related to the change in a horse's behavior, it is important to have a veterinarian check the horse early on."

Diane E. Barber lives in Los Angeles and is a lifestyle writer, interior designer and dressage enthusiast. She has an affinity for Spanish horses and travels regularly to Spain to train with Olympic medalist Rafael Soto.

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