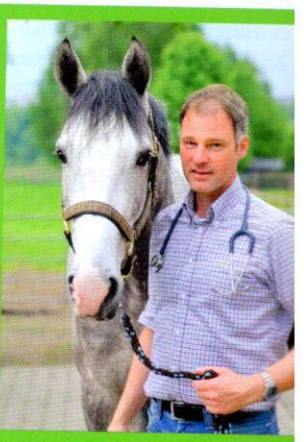
HORSE INTERNATIONAL

The professionals' choice

Diagnosing lameness

The mystery called lameness

The first step in diagnosing lameness is always palpation of the legs and back



The expert

Dr. Mark Kaminski was born in 1970 in Essen, Germany. H studied veterinary medicine in the city of Gießen and opened his own veterinary practice for horses in 2004 in Bochum. Kaminski specialize in horses and equine orthopedics, as well as being a FEI- veterinarian. He also runs an online pharmacy for equine products. www. pferdepraxiskaminski.de.

Unsound or truly lame? When a horse shows lameness, the great puzzl of trying to diagnose the lameness begins. Which the four legs is affected in the first place is not something anyone can se at first glance. Part one of the road to diagnosing lameness – step by step.

"We assumed he was lame in the right foreleg," Tanja Kiefer says while she strokes her grey PRE-stallion, "But then it turned out he was lame in the left." It is reminiscent of a game. Everything is fine in walk, but at a trot, the horse is clearly unsound. But is it an irregularity or a real lameness? And above all, in which leg?

all look on and suggest possible causes. But not even professionals can always see immediately where the natural movement of the horse is disrupted. And so it often happens that the veterinarian suddenly targets a completely different leg. The right way of diagnosing lameness is key in this process. But what does that right way look like? Specialized equine veterinarian Dr. Mark Kaminski from Bochum, Germany, explains how it is done.

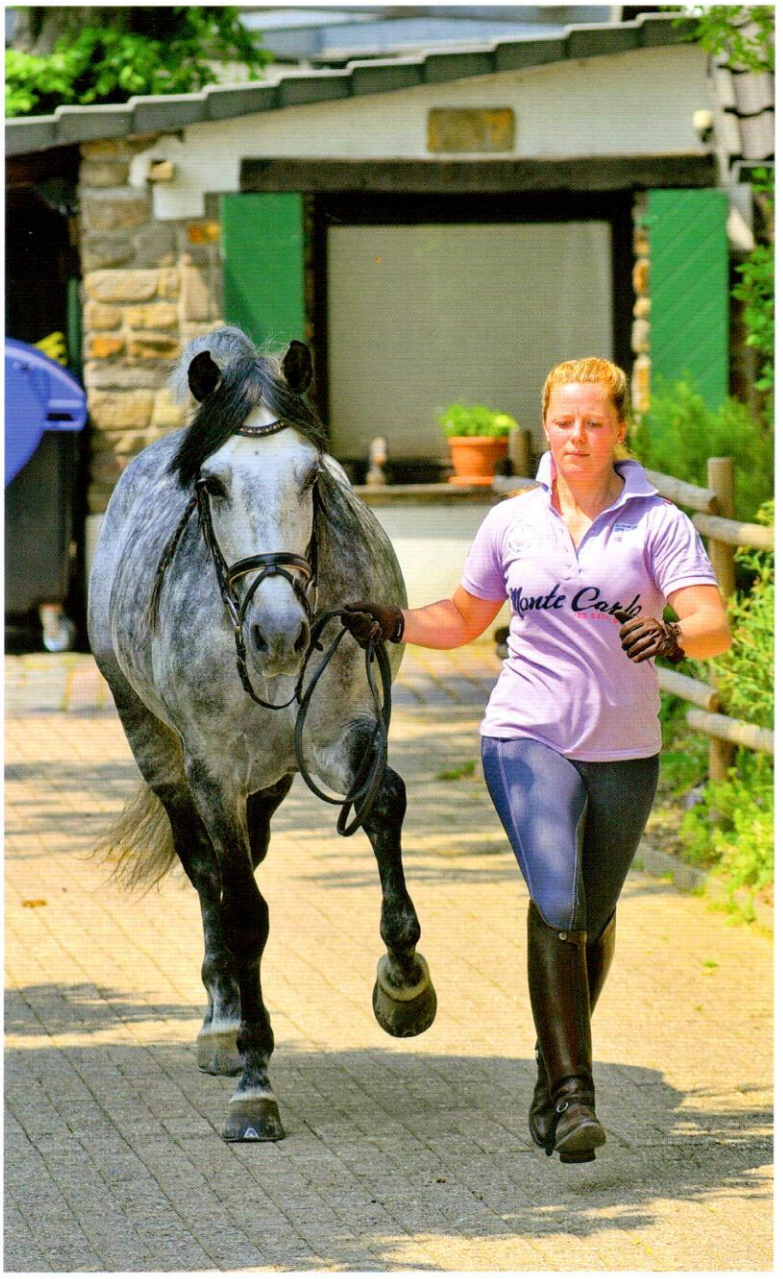
PRE- stallion Cariño is a mystery to his owner Tanja Kiefer. "We were training at a friend's place," she says, "he was already very unsound in walk, but we couldn't tell what it was yet." Rest and cooling notwithstanding, a veterinarian should be consulted. "I first observed the horse in his home stable," Dr. Mark Kaminski says. He showed a clear lameness in his left foreleg, and Tanja Kiefer took the 8-year-old grey to Kaminski's practice the day after for a thorough lameness exam.

Station I: palpation

"We always start in walk on a hard surface," the veterinarian explains as Cariño is unloaded from the trailer. But before the motion analysis begins, Kaminski does a palpation exam – feeling each of the legs. Not only the apparently affected foreleg plays a role in this. The horse's back and the hindlegs are also examined by the veterinarian. He palpates everything from the hoof wall, over the joints, the tendons, and the fetlock joint, right up to the carpal joint. He checks the splint bones and the suspensory ligaments, and tests whether the horse shows an adverse reaction to rotation of the joints. The grey horse shows no signs.

Station II: straight line on a hard surface

The examination continues on a flat, paved surface. The walk is the best gait to see how the horse tracks: whether it puts both feet on the ground equally or whether it has an asymmetrical gait, for instance rotating his hoof outwards or such. "Comparing both sides of the horse can identify a lot of problems." But the hindquarters also play a role. In its rising and falling motion, asymmetries tend to stand out. After two straight lines in walk, Kaminski asks Cariño's owner to



The examination in motion starts on a hard surface.

is most prominent in turns." One sharp turn to the left is followed by a sharp turn to the right. Still the grey horse is not evidently lame. "Yesterday he showed a clear lameness in the turns," the veterinarian says, and he asks Tanja Kiefer to trot the stallion – still on the hard surface. "As a rule, lameness is most clear in trot. If a horse is already lame at a walk, you are dealing with a severe lameness." But why the

is stressed and so becomes more evident; while on a soft surface, problems with the tendons and ligaments are emphasized," Kaminski makes a general distinction. He observes Cariño at a trot from the front, behind and from the side. For inexperienced eyes, there is still no clear lameness present. "Gaited horses mostly have very pronounced action in the forehand, often making a slight lameness hard to

Grades of lameness

"There is clear and vague lameness," Dr. Kaminski explains. They are classi mild, medium and sever graded one through five, follows:

Grade 1: mild and vague a few unsound steps are often not perceptible for inexperienced eyes.

Grade 2: mild and clear. concerns all lameness th also clearly visible in tro inexperienced people. Th may vary from a very sli unsoundness to severely movement.

Grade 3: medium. Alread visible in walk.

Grade 4: severe. The hors only partially able to bea weight on the leg in walk

Grade 5: most severe. Th horse cannot put any we on the leg at all.

usually also of importance. handler should not disturb natural movement pattern horse. They should not look the horse or hold the reins rope too firm or too lose," h as a tip. "The horse should presented with a light conta be free to balance itself." Ke pull on the lead as little as to keep the horse's head sti keeping an even tempo thro and really keeping a straigh curved or waving line can n slight lameness appear mar worse. "The horse should al turned to the right," Kamins states. This is to enable the on the left side of the horse maintain control the entire

"Any inflammation that triggers pain, resul in a swelling." - Dr. Mark Kaminski

the horse turns in a smaller The only exception to this r when the horse has an inju right foreleg and has to be t the other way.

Station III: the paved

by his owner at a trot. "On a , the bones and joints of the r extremities are stressed, to ke signs of lameness," the e veterinarian says. Why r is not a part of this station plained as follows: "In canter, ness will only present itself later stage; long after it was visible in trot. Canter can be ul in further diagnostics, to ntermittent strain on the e and so provoke the eness." This should be done r saddle on a soft surface. e are some types of lameness are more easily distinguished nter. On the paved circle, trot e most important gait. The r structures of the hoof, such e navicular area and the r aspect of the corium are ssed and are checked for itivity. "We want an easy ," Kaminski explains, "When rse trots too fast, lameness be disguised." On this surface , very excitable horses are ly sedated. Cariño does not this – the 8-year-old PRE- ion trots two laps on the left and two laps on the right . This is enough for Dr. Mark inski and his colleague Dr. ning Löbert to detect a light eness on the left. "But it is h better than it was erday," Kaminski states. But hich cases it is always essary to have a veterinarian at the lameness? "With eness that is already evident alk. This is a severe lameness, a veterinarian should always alled. In the case of acute eness in trot, the affected leg uld be palpated and compared with the other leg, to see whether any asymmetries can be found. If so, it is best to call the veterinarian right away. When the leg still functions without any abnormality and the lameness is only mildly evident; it is often best to wait and see. The horse can be exercised calmly in walk. If it is lame in walk, the horse should be rested. Everything that shows up acutely can be gone just as quickly. You can wait one or two days to see if it recovers by itself."

Station IV: soft surface

Diagnosing lameness is like a puzzle, which has to be assembled from various examinations," Kaminski compares. "When observing the horse in a straight line, the question is whether we can speak of lameness at all." Terms such as unsoundness or irregularity are not just pretty words. Plain and simple they can be labelled as lameness. How clearly the lameness is visible is an indication of its severity. Cariño's mild lameness is now examined on a soft surface; "this will show us whether the soft surface makes the lameness worse." The springy surface puts more strain on the tendons and ligaments. Tanja Kiefer asks for a trot. "Leave the reins a little bit longer, so he can balance himself better," Kaminski advises. The horse should again be disturbed as little as possible in his natural movement. "A certain amount of contact can be taken up, but the horse should not be collected too much or the lameness might be ridden out." Cariño trots a circle around the veterinarian. "Now post on the wrong diagonal," Kaminski asks the rider, "Lameness in the ligaments is stressed a little bit better that way. These show up on the offside on a soft surface." Changing

You flex for about a minute with 100 Newton-meter, which translates to a pressure of about seven kilograms on the joint."
- Dr. Mark Kaminski

How can you determine which leg is lame?

In the forelegs, this can easily be determined by the nodding of the horse's head. The horse drops his head when the healthy leg lands on the ground.

On a circle, the bones and joints of the lower extremities are stressed, to provoke signs of lameness.

When a soft and when a hard surface?

On a hard surface, pain reactions in the bone and joints are stressed. On a soft surface, lameness caused by an injury to the tendons or ligaments is emphasised.

hands is very important, to compare both sides of the horse. The veterinarian asks about rider's feeling. "I think he is clearly more unsound on the right," she says. Kaminski nods. From his perspective, the horse did not move pain free on his right leg on the left hand. When the leg is palpated again, a slight swelling on the upper aspect of the suspensory ligament is unveiled. "The lameness he showed yesterday in the turns on the hard surface actually doesn't match this," the veterinarian explains, "we might be dealing with two completely different matters here." In order to judge the swelling in the tendon sheath more accurately, Tanja Kiefer is asked to ride her PRE- stallion normally for another five minutes. "Any inflammation that triggers pain, results in a swelling," the veterinarian states. Under stress, the swelling should increase again; as should the lameness. For Cariño, this is the case.

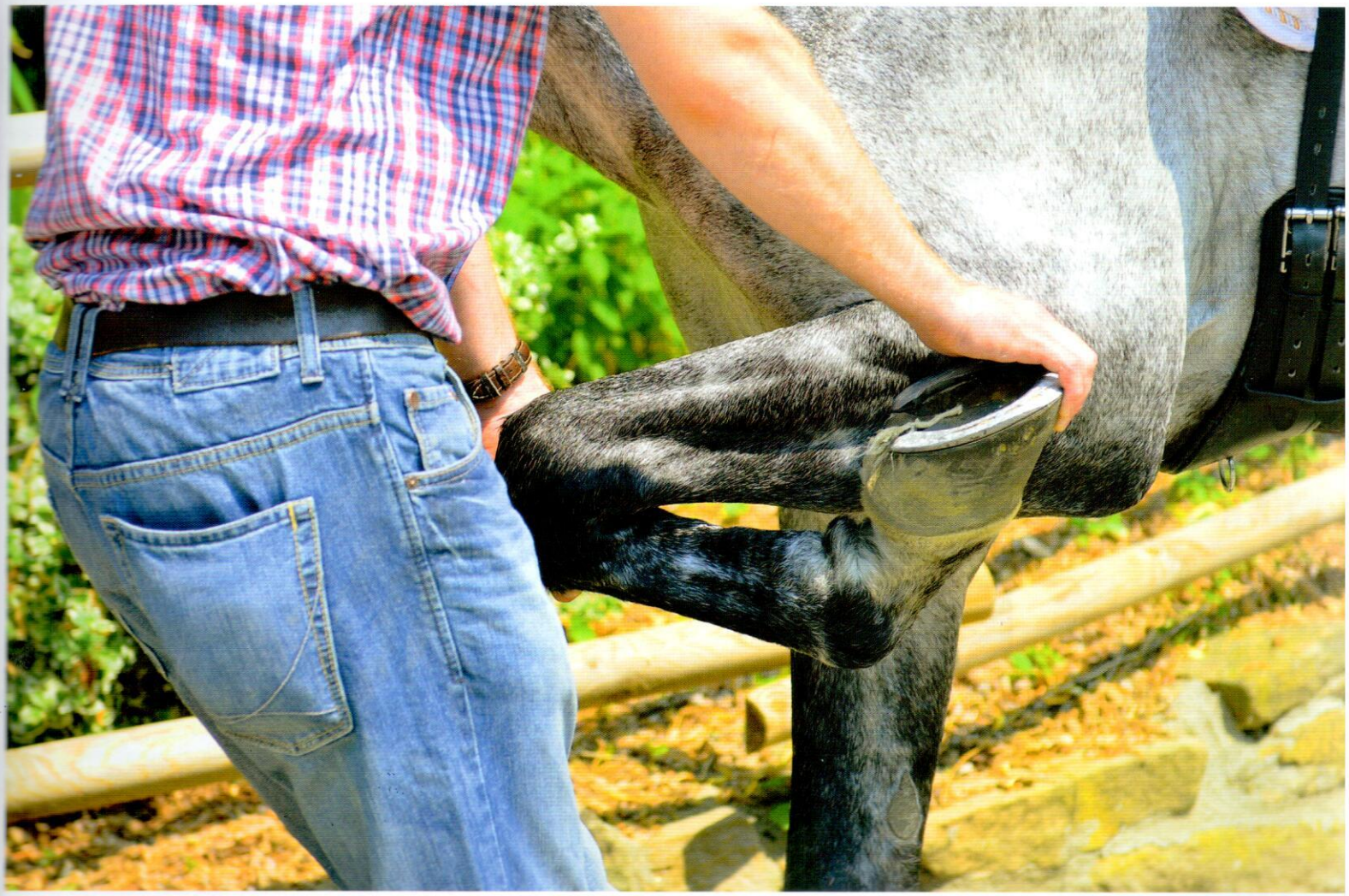
Station V: flexion tests

The puzzle for the cause of the lameness continues step by step. The mild lameness is now also more clearly evident in the support phase on the hard surface. A flexion test will provide exclusion of any other pain reactions. A flexion test is executed to put extra stress on a joint for one last time, to provoke a possible pain reaction. "You have to judge it in relativity," Kaminski emphasises. "Young horses always react stronger to flexion tests than older horses, and Thoroughbreds almost always react, as a rule. Gaited horses often also give a stronger reaction than for instance warmbloods." The veterinarian explains there are actually only two reasons to execute a flexion test. Firstly, the pre-purchase exam. "The joints and the structures surrounding the joints are stressed to provoke a light inflammatory reaction." Each joint throughout the leg is stressed equally in the flexion tests. "You flex for about a minute with 100 Newton-meter, which translates to a pressure of about seven kilograms on the joint." The comparison between both sides of the horse plays a large role in this, because as mentioned above, different types of horses generally react different to flexion tests. A flexion test can also be conducted in case of lameness; but in case of strong suspicions because of swelling or such, only one or a few joints are flexed more powerfully. "When I flex the pastern joint, of course the surrounding structures are also flexed a little," Kaminski admits. The same is true for the carpal joint. Strong reactions can be provoked here. "It is more difficult in the elbow- or shoulder joint, but even these can be flexed isolated, as well as the knee in th hind leg." In Cariño's case the flexion test follows the examination under saddle, but once again on a hard surface. Veterinarian Dr. Henning Löbert i now on site and first flexes the carpal and pastern joints of the right leg; and provokes a severe pain reaction from the stallion. When Löbert releases the leg, Tanja Kiefer immediately trots away on a straight line. The 8-year-old grey markedly shows more lameness than before. "Nov it is interesting to compare sides, Dr. Mark Kaminski says. With the flexion test of the left leg, Cariño gives absolutely no reaction at al This means that the swelling of the upper flexor tendon sheath i the right leg is clearly causing him pain, while the thin and delicate tendon on the left seem to be in order. <<

Text by Sarah Schnieder, Reiter Revue International

Next time in Veterinary Focus

Part two of Diagnosing Lameness: advanced diagnostics, radiographic imaging, local anaesthesia and a look at some other practical cases.



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