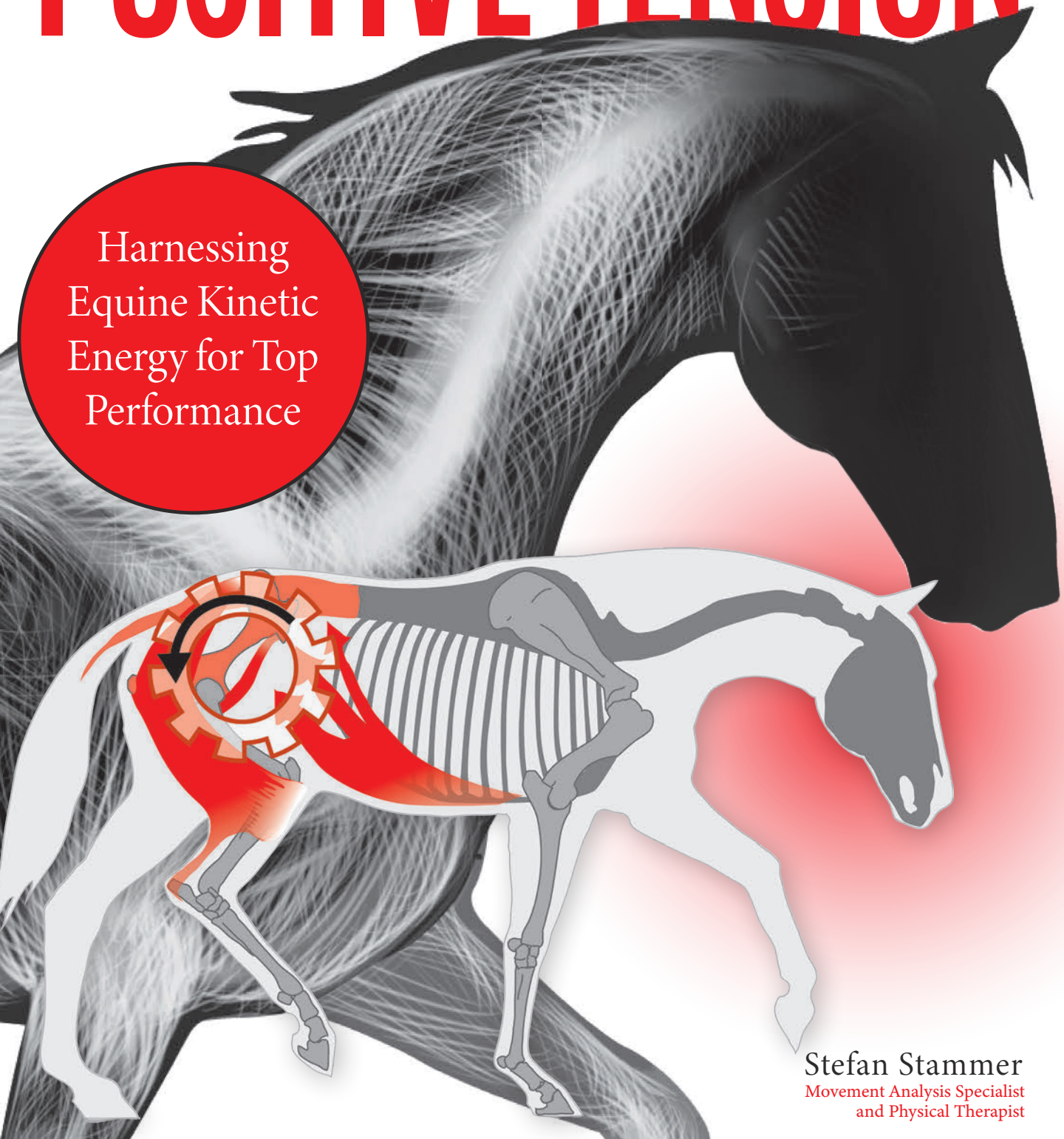
THE HORSE IN POSITIVE TENSION

Harnessing Equine Kinetic Energy for Top Performance



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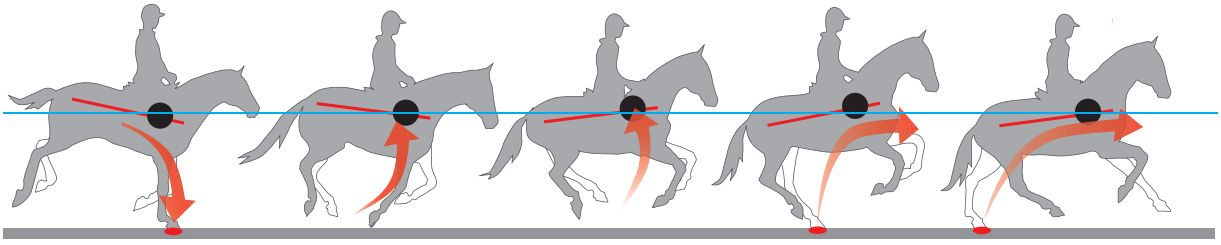

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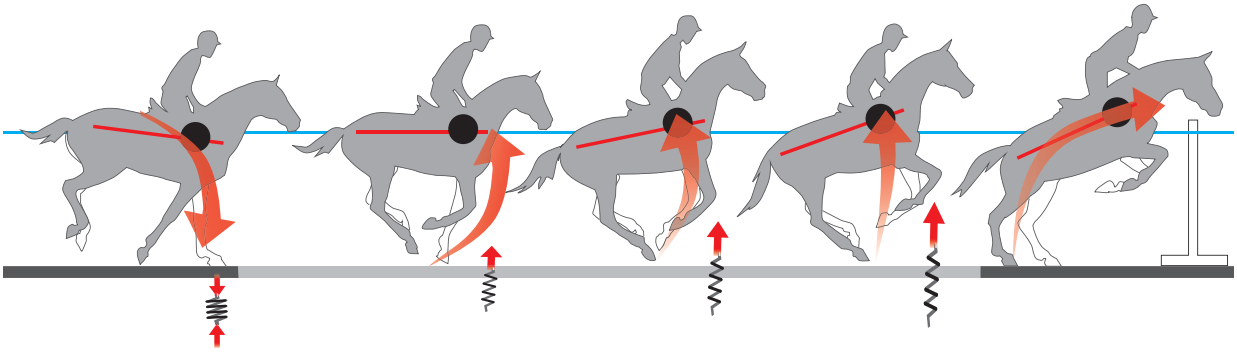

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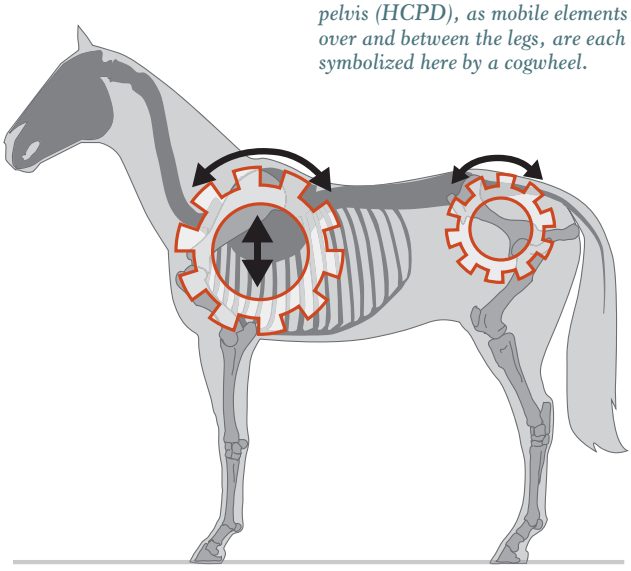
The Transmission of Power

What does it mean, from a functional perspective, to say the horse *carries himself,* or his *back is swinging,* or a *leg mover* has become a *back mover*? Is it enough when he *lengthens the neck,* or is a horse categorically *in front of the leg* when the *hindquarters are engaged*? All these catchphrases are only small parts of the horse's complex system of *active stabilization*. To clarify matters, it is worth pursuing the path of movement energy further.

The Transmission of Power in More Detail

The most important interfaces within this system are those regions where the movement energy from the legs is transferred to the torso. They are called the "front center of power transmission" (FCPT) and "hind center of power development" (HCPD) in this framework.



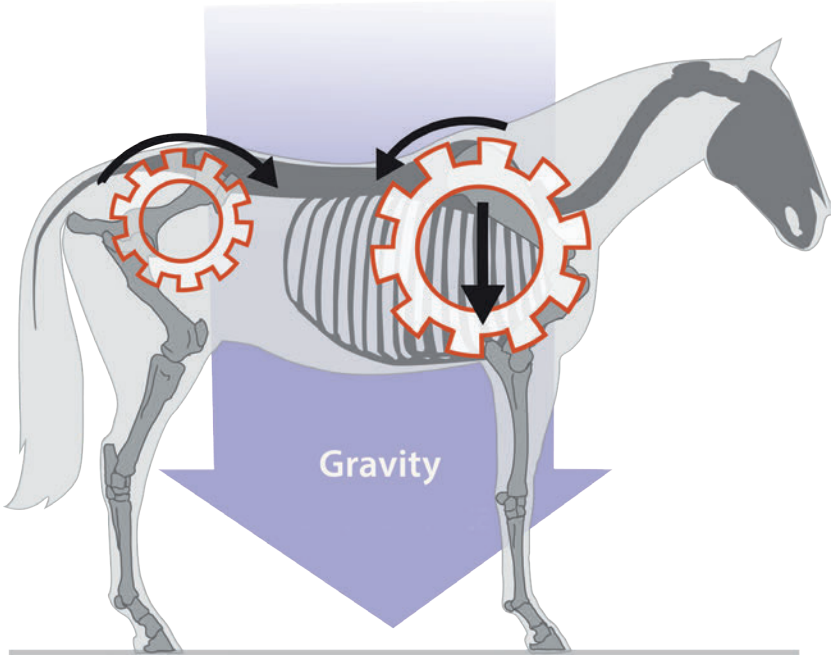
The horse's thorax (FCPT) and pelvis (HCPD), as mobile elements over and between the legs, are each symbolized here by a cogwheel.

Structure of the Front and Hind Movement Centers

The neck-chest complex, which connects to both front legs through the shoulder girdle, forms the FCPT.

The HCPD includes the bony pelvis ring, the lumbar column, the sacrum, and the coccygeal vertebrae. The biggest difference between the HCPD and the FCPT is that the HCPD has a stable joint connection to the legs. While in both cases, this connection is only achieved through tendons and muscles, the hind end has the two large hip joints, which represent a nearly fixed rotational axis. Thus, movement energy from the hindquarters can generate a larger leveraging effect through the hip joints, in a forward movement direction, than movement energy from the forelegs.

Both the FCPT and the HCPD are mobile. Viewed in profile, the FCPT can be raised and lowered, as well as rotated toward the head and the tail. The HCPD can also rotate toward the head and the tail. Depending on how these movement centers are positioned, the direction and manner of power transmission can change.

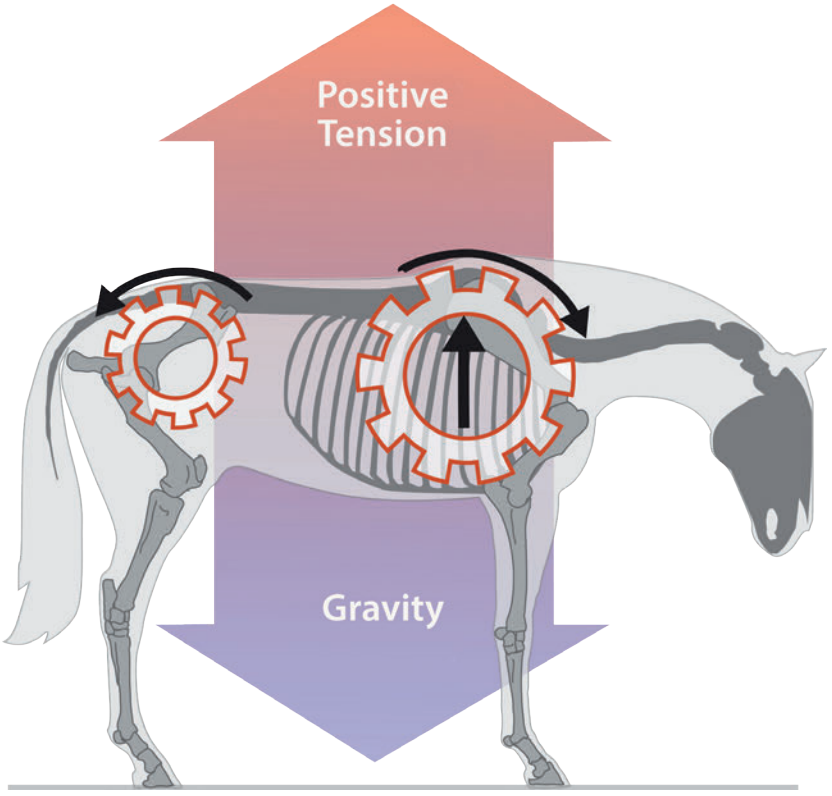


When gravity is exerting a downward force on the horse, these two cogwheels move toward the center of the horse and approach one another.

Horse or Riding Horse?

There is one fundamental difference between an untrained horse and a riding horse. That difference is in *how* stabilization works against gravity. The untrained horse's natural movement pattern is geared solely toward efficiency. Initially, flight is essential for survival. At top speed, a tense back presses the torso downward and exerts force on the tendons and joint systems of the spine. This system is comparatively stable with little effort. All energy reserves can be used for forward movement. The horse's motor skills, geared toward maximum performance during flight, develop to accomplish this.

Once flight mode has ended, any strained structures can recover over several hours or days, grazing at the walk, at maximum relief.



Positive tension works against gravity and opens the horse's topline, reversing the rotation of the cogwheels.

The riding horse, however, is supposed to follow another movement plan. He is expected to carry himself actively, and take direction from the rider's very light aids, on straight and curved lines. This can work successfully, but the manner of power transmission has to change. The horse's torso must be raised upward against gravity and cushioned by his muscle slings in the supporting leg phase. This kind of positive body tension creates an active equalizer for the force of gravity, but one that is still manageable for the rider. The horse feels light and elastic. The lightness felt is ultimately dependent on a functional, athletically organized movement pattern.

The natural movement of the untrained horse and of a riding horse.

The phrase ***"the horse needs to carry himself"*** *can absolutely be taken literally.*

With respect to methodical training, it isn't maximum performance that needs to be developed, but the direction in which this performance is guided. For this, the riding horse particularly needs those muscles that cushion his mass against gravity. This is the proper way to approach training any riding horse, as well as the focus of athletic training.

Riders can only indirectly have an influence on the development of power. Developing control over the transmission of that power is their sole and most important task.

To fully understand this process, we will first analyze the two movement centers independently of each other.

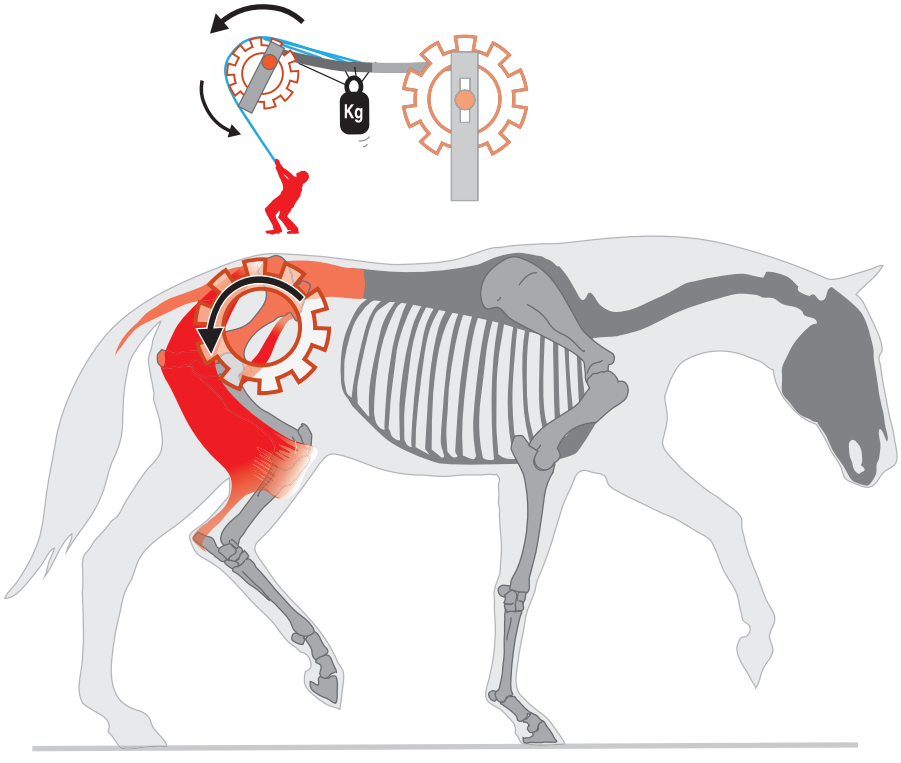
A long way from crawling to walking …

… and a long way from a young horse to an adequate riding horse.

An Interesting Comparison

In terms of the time involved, this process is definitely comparable to the movement development of humans as they work to achieve their erect posture. It takes at least three to four years before horse and human can *actively stabilize themselves against gravity*. For humans, this takes place at the very beginning of movement development from infant to toddler. About four years pass until a child is able to cushion an upright posture against gravity, when walking, with a true moment of suspension. The horse has this ability from the onset, but active, muscular stabilization against gravity is reserved for the training of the riding horse, and also takes approximately four years to develop. For the horse, this movement pattern is the basis for the optimal transmission of power, which is manageable for the rider in any equestrian discipline.

No training is necessary for the development of leg movement—but it's essential for the development of activity in the back.

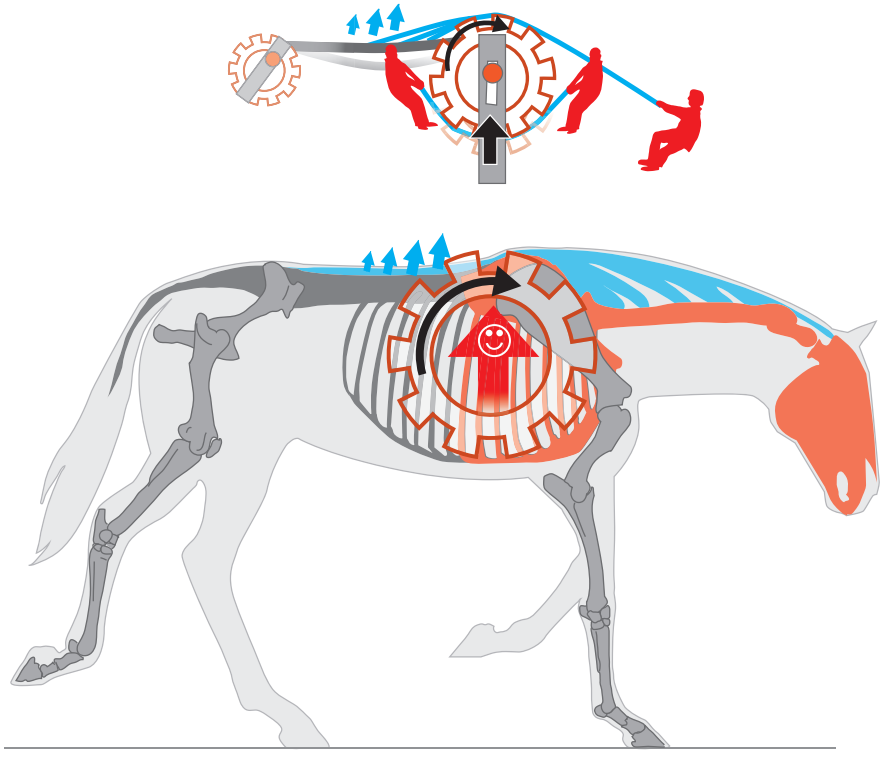


The active rotation of the pelvis in a backward direction organizes the increased absorption of energy and thus the elasticity of the hindquarters.

The Hind Center of Power Development (HCPD)—Carried Actively

If we don't limit ourselves to seeing the legs as part of the horse's hindquarters, but widen our perspective, functionally speaking, to the loin-pelvis region, fascinating mechanisms become apparent.

The change in the position of the HCPD means a rotation of the pelvis toward the tail. Riding theory calls this *stepping under* or *engaging the hind legs*. In well-schooled horses, this position of the pelvis leads to an ideal positioning of the hind legs for the conversion of forward thrust into carrying capacity. Bringing the hip joint closer in the direction of the horse's center of gravity shortens the horse's frame and makes the lever effect of the hind legs more favorable for maximizing carrying capacity. The muscles of the hind legs do not carry more weight, but change the position of the pelvis to raise the basic tension of the HCPD.



The functional chains of the front center of power transmission (FCPT).

The Front Center of Power Transmission (FCPT)–Carried Actively

This conceptual framework for understanding movement ascribes a much more important role to the horse's forehand than is the case in other common frameworks.

The thorax in trained horses is centrally raised above the shoulder girdle; it is in balance, and its position is controlled by the muscles. This makes it possible for the horse to react to the rider's aids and optimally manage his movement energy for the task at hand. The muscle group of the shoulder girdle is responsible for lifting the thorax.

Only an actively carried ribcage can enable the topline to do its job.

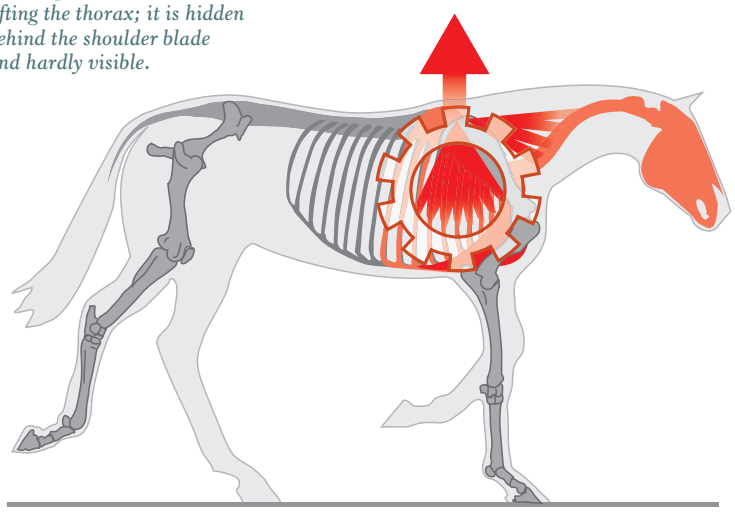
Only by raising the withers, for example, are the topline muscles able to carry the neck in its entire length. Only active musculature can functionally stretch, and thus actively arch passive structures–for example, the long nuchal ligament (again, comparable to opening an umbrella). Depending on the horse's level of training, this position is infinitely flexible, used for everything from a forward and downward movement with impulsion to high-level collection.

Structure and Function of the Front Center of Power Transmission

The horse's "engine" is in the back. In equestrianism, this statement is set in stone. And in general, this is correct, where forward movement is concerned. But the FCPT has, at minimum, an equal share in performance ability, since it is mainly responsible for transferring movement energy from the hind end. That energy can be slowed down, or redirected into forward or cadenced uphill movement.

Balance as a Feat

The horse has to perform with astonishing effort to reach a balance that demands active muscle engagement and hold it for every step. The thorax weighs about 450 pounds (200 kilograms). This weight has to be lifted and balanced.



The shoulder girdle, depicted schematically here, is the most important muscle for lifting the thorax; it is hidden behind the shoulder blade and hardly visible.

The development of this new position is no different from riding theory asking *for the horse to carry himself*. Yes, he quite literally carries himself. In this context, the responsibility of the rider's leg also becomes clear. It certainly does more than simply engage the hind legs. Together with the rider's other aids, the legs create the pivotal impulse to lift the thorax between the scapulae, particularly in young horses.

The Neck as a Balancing Pole

It is the responsibility of the upper neck muscles to develop and maintain the horse's balance in every step or stride. The *actively carried neck* functions as a counterweight for the torso weight of the horse and the weight of the rider. The individual balance of the horse, as well as its dynamic adjustment, are criteria for determining the position of the neck. The muscles of the topline are supported in this task by abdominal and thoracic muscles.

Neither "the higher, the better" nor "the longer and lower, the better" applies. Training takes place between these two extreme positions: the constant use of the neck to balance actively.

There are many decisions to be made: a little more or a little less forward, a little more leg or the neck a little deeper, restrain or encourage, support with the hand or not, back on the longe line or trot poles, trail riding or riding in the outside arena, free-jumping or being out in the field …. Any of these decisions can be right or wrong, depending on whether it's helpful for any individual horse in a particular situation to develop an *active balance with muscular engagement* or not.

The neck as a balancing pole and training element for the shoulder girdle.

There is no one correct position for the neck. On the contrary, since the neck has to be actively carried together with the torso, it's imperative to constantly change positions slightly. Fatigue of the active muscle chains can only be avoided by shifting between fascia bundles, engaging new areas and giving previously engaged areas a break. That's all—but "that's all" doesn't mean it's simple.

Active Muscle Chains

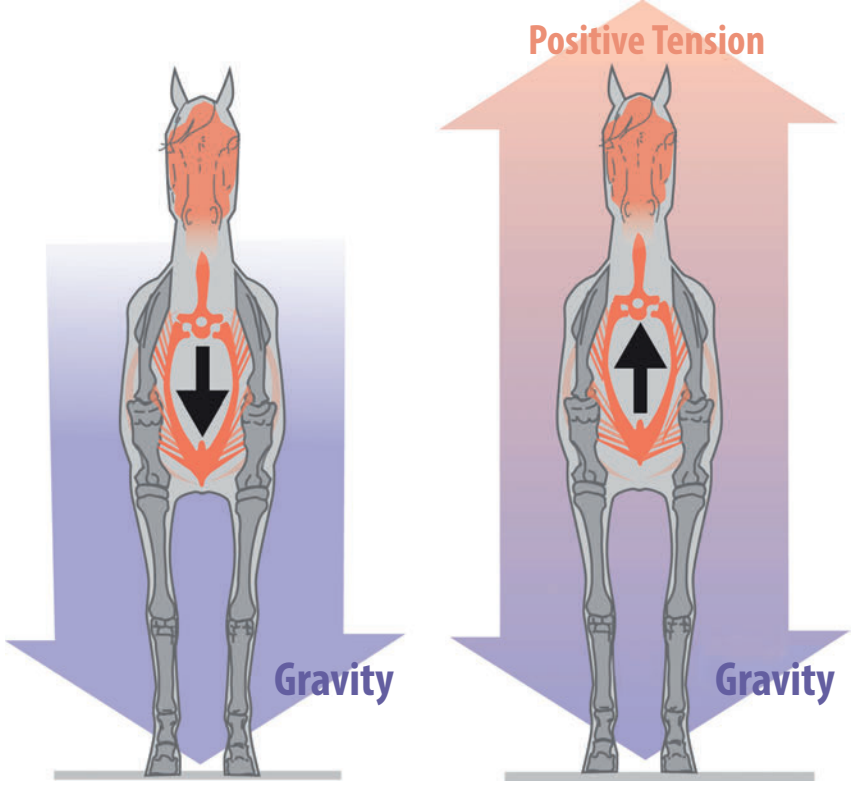
- torso support muscles
- topline
- straight abdominal muscles

Signs to Look For

- a beautifully developed topline, tapering evenly from the neck base toward the head
- a well-filled-out area behind the upper part of the scapula
- broad chest with a straight alignment of the legs

The pattern of muscle engagement in an active FCPT.

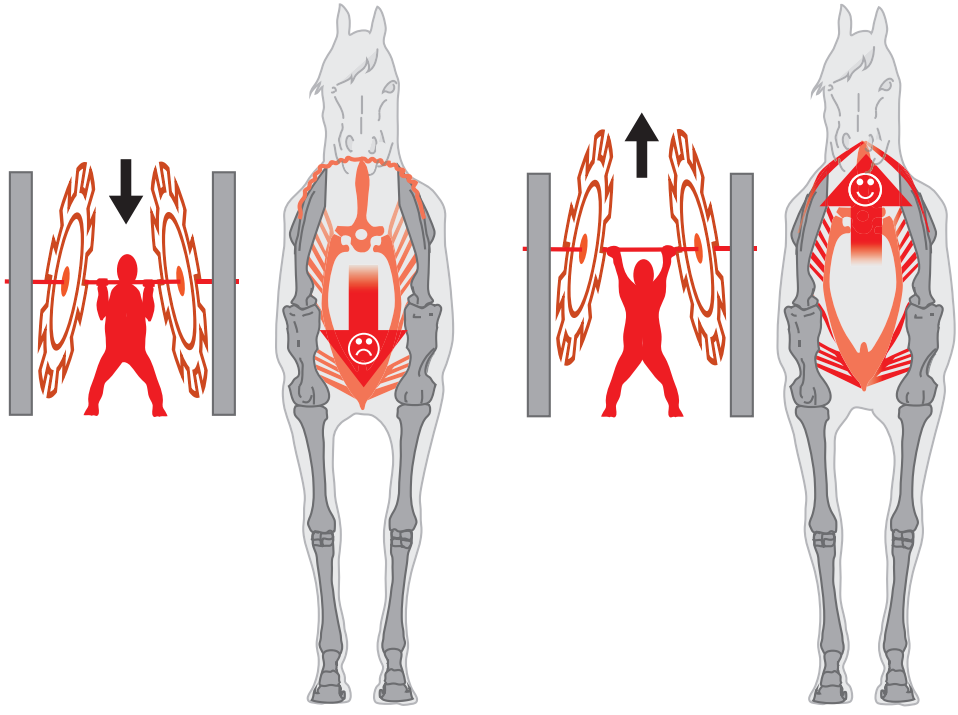
3 The Third Dimension–Changing the Perspective



The effects of gravity seen from the front—stabilized passively (left) and actively (right).

The Biomechanics of the Horse in the Third Dimension

This chapter looks at the effects of gravity when observing the horse from the front or back. Most anatomical pictures that we see show a horse in profile, either standing or during the moment of suspension. A complete picture of the horse's movement can only be formed when the third dimension is included. If gravity works downward freely, the thorax falls down between the front legs. If the horse lifts his thorax, he develops a counter to gravity, and creates an active, dynamic balance. We will begin by looking at the horse from the front. From this perspective, which shows the horse standing on two legs, the weight of the torso is divided across two axes and supported on the ground.

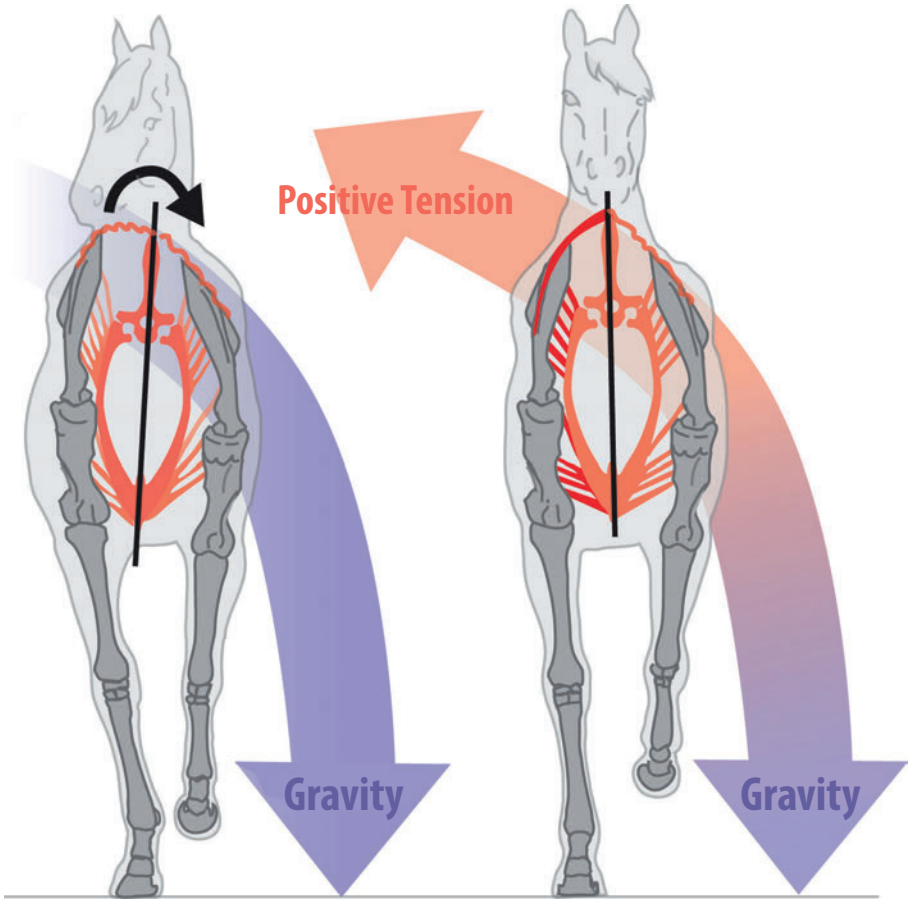


The thorax is actively lifted between the shoulder blades, as seen from the front.

This image shows the shoulder girdle, which lifts the thorax equally on both sides. The upper structures of muscle and fascia around the withers are only arched when in a raised position. This movement can be felt when the horse is standing and a person on the ground prompts the horse to lift his thorax.

There is one muscle that matters most to the stabilization of the FCPT in the third dimension: the trapezius muscle. If the thorax is lifted by the shoulder girdle structures, it stabilizes the entire FCPT like a tent, where all the tent's sides become taut when the center post is set up.

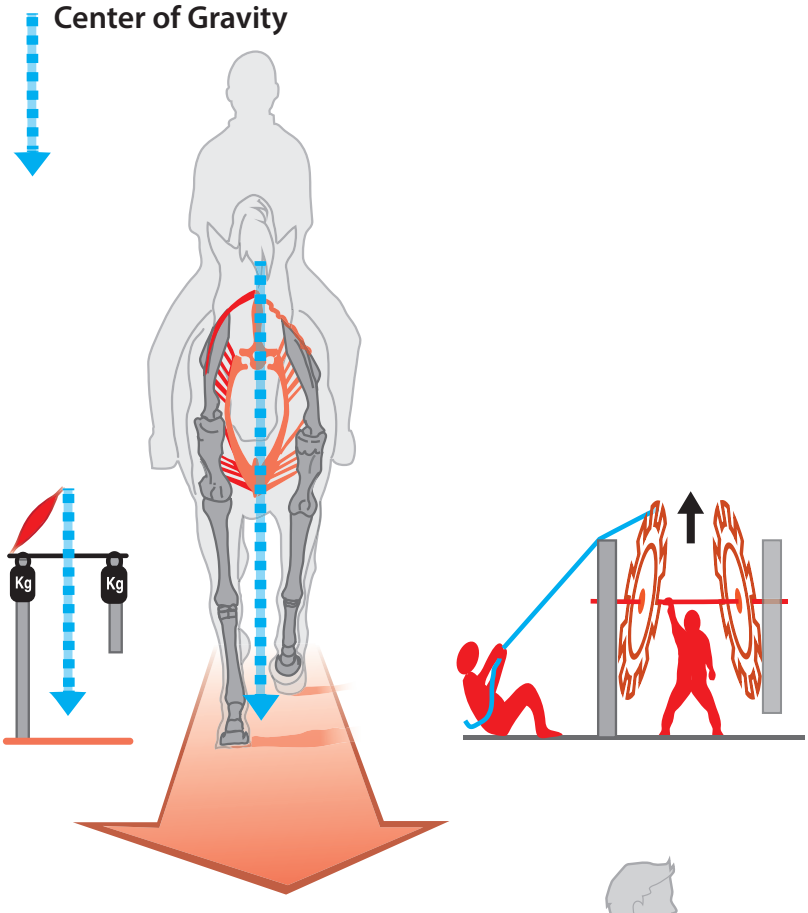
The trapezius muscle is only spread open (think of an umbrella), actively arched, and able to do its job if the thorax is raised.



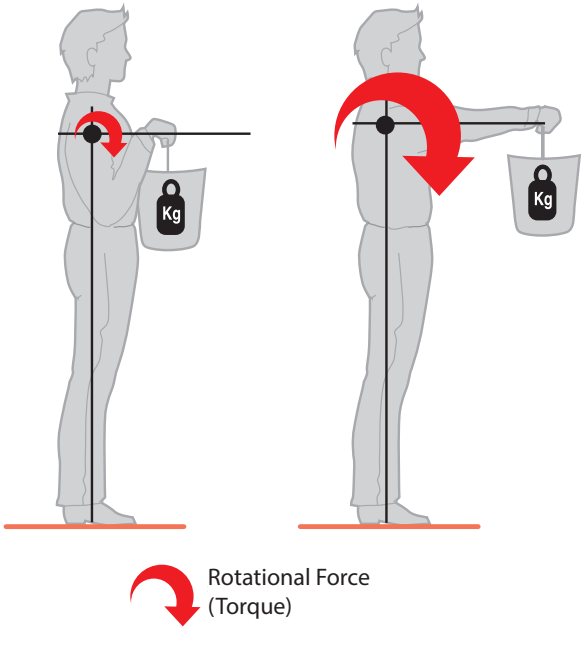
The effects of gravity seen from the front—stabilized passively (left) and actively (right).

The Third Dimension in Movement

The instant when the horse starts to move is interesting to observe, from a biomechanical perspective. To understand this important moment from this angle, we have to take a little tour of the world of leverage principles in physics. Once the horse starts moving, in terms of the FCPT and HCPD, there is almost always only one leg touching the ground. The thorax wants to lower, together with gravity, toward the side of the leg about to swing forward in the sequence of legs (the "swinging leg"), and it can only be held in place by the muscular activity of the other side of the horse–the side on which the leg is touching the ground and taking the horse's weight (the "supporting leg").



The processes occurring in the FCPT to stabilize against gravity, as a schematic illustration showing the body's center of gravity.



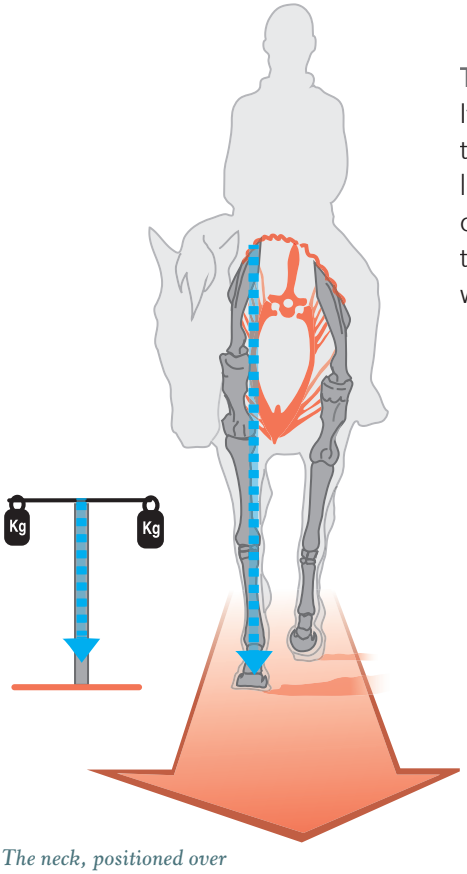
Levers Create Rotational Force (Torque)

The mass of the torso no longer has an effect on the axial position of the supporting leg. This creates a lever between the body's center of gravity and the axis of the supporting leg. Depending on the horse's reaction to this change, the rotational force created by the weight of the torso decreases or increases.

Even if the weight stays the same, the length of the lever can multiply the rotational force.

Balancing Rotational Force

There are different ways for the horse to balance against this rotational movement. He can use his neck as a balancing pole, he can lower his torso and twist it, or he can actively stabilize it through the development of muscles.

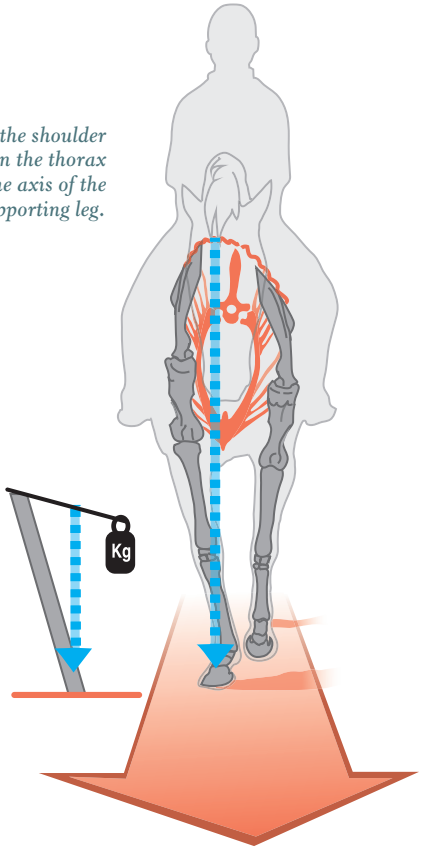


The neck, positioned over the supporting leg, acts as a counterweight to the mass of the thorax.

The Neck as a Balancing Pole as Seen from the Front

If the horse moves his neck past the supporting leg to the outside, the center of gravity shifts toward the axis of the supporting leg. The lever of the mass becomes shorter and relieves strain on the shoulder girdle. The rotational force is almost completely dissolved, and the resulting stress on the shoulder girdle is about the same as the weight of the forehand.

Falling out over the shoulder means a distortion in the thorax and a change in the axis of the supporting leg.

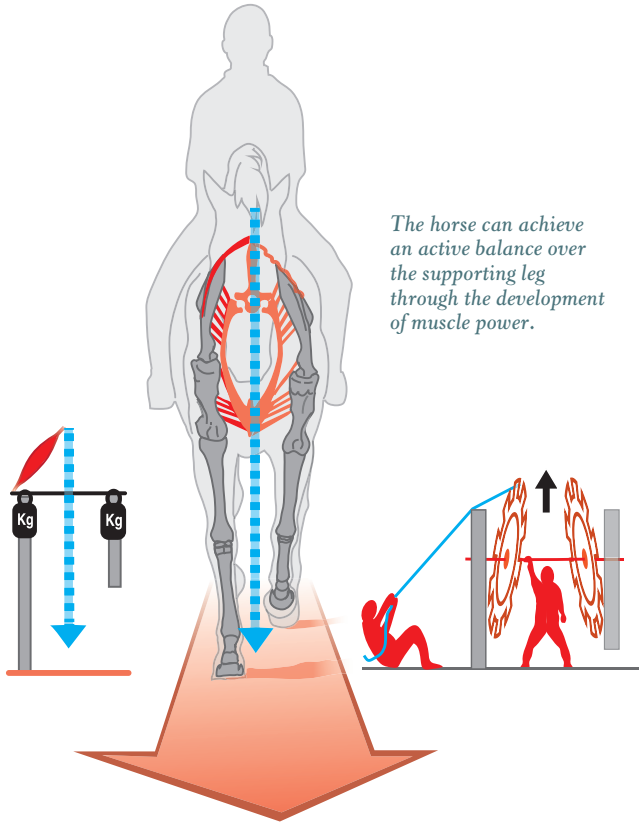


Falling Out over the Outside Shoulder

The second option for the horse to balance himself is falling out with the shoulder of the supporting leg. The horse steps toward the middle and under his center of gravity with his foot, and lowers his thorax toward the side of the swinging leg; this strategy also reduces the rotational force to about the same weight as the forehand.

Stabilization Through Active Muscle Slings

If the horse has to carry himself according to the classical principles of riding theory, this means a great deal of physical effort, especially in the third dimension. If the neck is to be carried firmly in the center (when seen from the front), the horse's center of gravity shifts away from the supporting leg and extends the length of the lever involved. Thanks to this added leverage, the rotational force that needs to be stabilized now amounts to about two-and-a-half times the front torso's weight, which means a load of over 1,500 pounds (about 700 kilograms) for a Warmblood horse. If the FCPT system is to remain in balance, its stabilizing muscle chains have to exert an equal amount of force to maintain balance and rhythm. Holding the neck in a central position in front of the body is by no means a given, but a goal of training! Therefore, a judge's note in a score sheet at a dressage show commenting that the horse is "swaying" or "wobbling" on the centerline cannot be corrected by strengthening the rider's aids, but only by strengthening the horse.



The horse can achieve an active balance over the supporting leg through the development of muscle power.

The Hollow and Stiff Side

A horse does not have two equally strong muscle slings in his shoulder girdle when he is first started under saddle. To relieve strain on the weaker side of his shoulder girdle, the horse will instinctively move his neck to that side–to use it as a balancing pole. This side is the "hollow" side. Being able to lead the neck away from the weak side of the shoulder girdle is dependent on developing the horse's muscle power. He has to build up a muscular counterweight in the shoulder girdle to control the weight of his neck. Straightening the horse cannot be achieved by improving mobility in the short term, but only through long-term gymnastic strengthening of the horse.

Therapy

Application of kinesiology tape for the support of the horse's hind movement chain.

The field of physical therapy has changed significantly over the last 20 years. Where previously many therapeutic techniques were carried out to achieve individual effects, today, holistic conceptual frameworks are at the forefront. Where single muscle groups were stiff or painful, they used to be managed with stretching and massages. The use of physical therapies such as the application of cold, heat, or electrotherapy supported these treatment effects. Today, it is much more common to try to understand the mechanism behind the tension in any individual muscle group, and start there. Generally, everything is about entire functional chains, where weaknesses, instabilities, and movement restrictions take turns. Certain mechanisms within the body have to be examined to recognize problems within these functional chains. The aim of therapeutic work is to strengthen weaknesses, and at the same time maintain strengths.

Stabilization from the Inside Out

The organization of muscular stability from the inside out is an important mechanism within these functional chains. Studies on humans, examining the processes that take place within muscle chains, have shown that the movement of joints always has to be initiated by a stabilization of the musculature closest to the spine. If this is not the case, small shear and rotational movements are triggered, which will lead to inflammation or arthritis in the joints of the vertebrae and their ligament structures, in the long term. This mechanism can be observed especially clearly in patients with back aches. Over time, this will lead to a cycle of pain, fatigue, and instability.

With regard to a horse and the functional movement framework illustrated in earlier chapters, this means: Even from this perspective, guiding a horse to work "over his back" is not just a nice idea that will make it possible to ride the horse with very fine aids. It is a necessity in order to effectively maintain the horse's health in the long term. The muscles close to the spine can be used for direct stabilization, preventing those small shear and rotational movements, only if the lower muscle chains can functionally carry the horse.

Stammer Kinetics as an Independent Concept

The biomechanical model of the movement organization of the horse's body, as introduced in earlier chapters, is the foundation for a paradigm I developed for the analysis, therapy, and development of the functional movement patterns

of the horse. Just like the training of a riding horse, this perspective follows the functional chains of the horse's body, which work against gravity and centrifugal force.

The muscles, the connective tissue structures, and all parts of the skeletal system have to be able to fulfill their *functions*. If this is not the case, any active attempt at correction of movement patterns during *training* is doomed to fail. It can happen that one dysfunction or another can be *corrected* in movement by the trainer. But if this is not the case after several days–or, in exceptional cases, weeks–these incorrect movement processes should be analyzed from a therapeutic perspective.

This book is not a therapeutic textbook, but I would like to give a glimpse into this kind of movement analysis of a horse.

The main parts of this approach are *active-dynamic myofascial mobilization* and *manual functional analysis*. In the process, the movement chains of a correctly ridden horse are triggered and assessed at a standstill, as realistically as possible. Depending on the diagnosis, these chains can then be mobilized or stabilized through different techniques. There are three different functional chains in this context, with corresponding therapeutic concepts.

- interdependence between mobility and position
- interdependence between position and function
- interdependence between function and training

Interdependence Between Mobility and Position

If a horse is to work "over his back," he has to be able to lift his thorax between his front legs, and maintain this position when moving his front leg forward. This skill can be tested with special therapeutic techniques.

Active-Dynamic Myofascial Mobilization

This somewhat awkward description disguises the basic understanding that a horse lifts and elastically bounces in his functional chains–which consist of muscles, tendons, and fascia–to counter the force of gravity, as has been explained in earlier chapters. During this process, the fascia systems are the key, and the link for the horse's catapult-like elasticity. The fascia are always the link between individual functional units, from the smallest bridging unit within a muscle to the large body sections of the torso and the legs.

The difference with this concept for the horse, as compared to classical, manual therapy for humans, is the work done by the active movement chains. During

Lifting the thorax leads to a lowering of the neck, creating the horse's willingness to stretch if the processes' coordination and dynamics are correctly observed.

If the movement chains of the FCPT function optimally, the horse can maintain his topline correctly when stretching his front leg forward.

mobilization of the joints, a person is positioned in such a way that most or all of the muscles surrounding the joint are relaxed, and no longer work against gravity.

The therapist then moves the person's joints passively until their movement limit has been reached. She can give verbal movement instructions and directions, which can then be actively carried out by patients requiring special techniques. This is not possible with horses, obviously. If the horse's front leg is lifted, he has to rebalance over his supporting leg. It has been explained in chapter 3 (p. 52) how difficult this can be. If a horse is to avoid hanging in his passive compensation pattern and bringing his back into an unfavorable hyperextension, he has to find a way to actively balance. My approach is to integrate mobilizing techniques into dynamic activating techniques. In doing so, coordinative processes are encouraged in a way that's congruent with functional stability in the riding horse. The picture series above gives an impression of the procedure involved in this active-dynamic mobilization.

How It Works under Saddle

If you now think that riding only works with the outside help of therapists, we have definitely overdone the analysis of this entire system. Colonel von Stecken has it in a nutshell: "Riding right suffices." He is absolutely right when it comes to a healthy horse that hasn't learned any incorrect movement habits. The previously mentioned processes will work without additional help, if a young horse is professionally and correctly trained. Therapeutic options only start when a trainer reaches her limits and cannot find the reasons for these limits.

Dependence Between Position and Function

The capacity of the horse to carry himself, as postulated by riding theory, is not innate, but depends on his ability to actively change the position of his thorax

and pelvis. Manual functional analysis uses this fact to get an idea of the actual condition of the horse's coordination. This gives important information to the rider, including how much she can ask of her horse and when the point of overload has been reached by demanding something of the horse that he can't physically do. Therapists can simultaneously use these techniques to break up or at least reduce existing movement restrictions in order to facilitate an improved elasticity against gravity for the horse.

Coordinative Processes

This example illustrates exactly how movement patterns can be observed and how deeper underlying structures can be reached through this treatment.

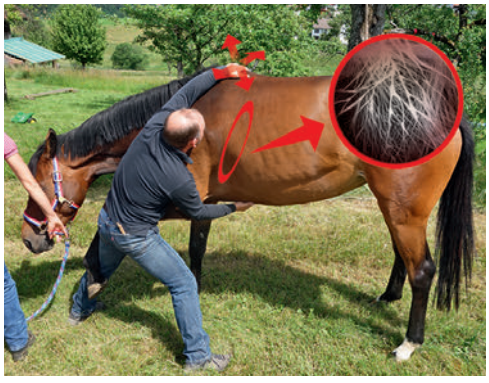
First, the therapist lifts up the front leg. This is where the active diagnosis of the supporting leg begins. How does the horse balance?

Where does the horse's neck move to? Does he stand securely on three legs, or not? How does he react if the therapist tries to unsettle his balance? In the process, the supporting leg's coordination and stability are checked. Once the horse stands safely on all four legs, the movement of the shoulder joint in extension begins.

The shoulder joints' flexors are those muscles that can slow down or inhibit movement. The horse has several of them. Some are fixed to the shoulder blade, and one attaches to the back fascia, close to the spine. Depending on which structures "brake" first and where the first resistance can be felt, the experienced therapist can find the affected structure. She can also feel whether these are stiff muscles or stiff tissues within the muscles by means of assessing the feeling of resistance.

The forearm is brought forward and downward.

- *Stiff muscles* can result from pain, chronic overload, or stress. Distinct tests can narrow down the options.
- *Stiff tissue* can also result from pain, chronic overload, or stress, but it generally takes longer for them to be affected, compared to muscles.
- In addition, *blockages* from different body areas (spine, inner organs, energy system) can lead to these symptoms.



Including the deeper lying fascia structures of the torso in the analysis, through additional lifting of the thorax.

This list is not exhaustive but gives many potential reasons for a *movement restriction.*

If the movement is continued and guided toward stretching, more and deeper layers of fascial structures are incorporated into the movement pattern. I have already pointed out the importance of these structures within movement. Hence, a crucial focus must be placed on the elasticity and dynamic motion of the fascia from a therapeutic perspective. Soft, floating movement, which the therapist can carry out through either repetitive activation of the muscle chains or the dynamics of her own movements, is ideal to sustainably and effectively affect these structures. If all these structures are thoroughly mobile, we finally move on to the joint. Movement restriction–for example, in the shoulder joint–can be created through calcification; a joint can also be "jammed" by a free joint body (chip), irritated by a non-inflammatory arthrosis, or painfully restricted by inflammation. Blockage in the joint itself may stem from a neuronal reaction (a reaction triggered by the nervous system) inside the joint capsule, which limits movement. Depending on the root of the restriction, it may or may not be something that can be resolved by a therapist through manipulation. If it is resolved, the therapist continues to work more inside the deeper and functionally more demanding systems of liquids and the craniosacral system. However, if, for example, the horse's movement is structurally restricted by calcification, the possibility of mobilization is very limited, and may sometimes even be impossible without causing damage. In these cases, the therapist has to know and assess her limits honestly.

This little journey through the simple movement pattern of stretching the front leg clearly shows how many factors may be causing or contributing to a movement restriction. The training and experience of a therapist have to reflect this complex multitude of variables to work responsibly and with success.

How It Works under Saddle

In the end, the rider does not do anything differently when she works her horse correctly "over his back." His systems are brought into the correct position and are counter-mobilized. The image the rider has to internalize is the active lifting of the horse's thorax between the shoulder blades. The impulse of both seat and leg aids plays a decisive role in their connection with the rein aids in the development of this positive arc of tension.

The horse opens up forward and upward in his shoulder girdle and meets the rider on his way upward in between her seat bones. At the same time, the horse closes up behind, forward and downward from the pelvis, and thus actively engages under his center of gravity with his hind legs. The key to this element of movement is active forward motion. Ideally, the horse finds a way into this movement pattern during the warm-up phase, after an extensive walk phase. The described process is very demanding for the muscles of young horses who are not yet very athletically trained, and should always be combined with sufficient walk breaks.

Developing the willingness to stretch forward and downward during rehabilitation. Here, the system connecting the front leg, shoulder girdle, and neckline is shown. The nose line can only find its correct position in front of the vertical once the FCPT has reached its full movement potential.

Dependence Between Function and Training

Strengthening

The structural strengthening of the shoulder girdle begins once the horse's movement aligns with the first three principles of the Training Scale: rhythm, suppleness, and contact. The phrase "the horse carries himself" has to be taken quite literally in this context. If the basic gaits with impulsion are optimally coordinated, the riding horse elastically bounces his torso mass upward and "catches" it again in the supporting leg phase. His muscle chains can only be structurally and functionally strengthened within this movement pattern. Conversely, this means that any form of work in fatigued muscles has to be avoided, as the horse will initially lose the arc of tension between thorax and pelvis. The hind legs pushing forward can continue working for a long time, the neck can maintain its arched position, and the horse can still lift his legs off the ground with enough momentum for a while. Nevertheless, the very important athletic and coordinative training will be severely disrupted. The therapist or trainer has to use the principle of interval training to prevent this. Interval training means individual short, but intensive training units that engage the horse in correct movement patterns, which are regularly adjusted to the horse's performance ability. Compared to humans, this training method corresponds to gymnastics. Here, the athlete also trains solely with her own body weight, in different angles and at different levels, and not with equipment in the weight room.

How It Works under Saddle—Work over Trot Poles

Work over trot poles, as has been described in the chapter on training, is a good example. If the movement pattern has been correctly schooled, as described, and can be carried out by the horse in a manner governed by the first three steps of the Training Scale, it is not enough to work the horse over trot poles every now and then, once the horse has reached a certain athletic level. His training should be structured as follows to strengthen his shoulder and pelvic girdles:

Training programs only have a positive effect if all movement is carried out correctly.

Trot over five to seven poles five times back to back, then take a break of two to three minutes. Repeat this series three to five times, depending on the horse's current level of training. For the untrained horse, the two- or three-minute break should be in walk on a long rein. For athletically well-trained horses, this break can also be carried out more actively–for example, in canter.

Gymnastics (Grids)

In addition to preventing injuries, an athletically developed and shaped shoulder girdle is decisive for performance ability in the training of a jumping horse. A powerful shoulder girdle can save up to two-tenths of a second in the landing after a fence. On a course with 14 fences, this can mean saving up to 2.8 seconds. Gymnastics, or grids, have long been established in daily training routines. This effect can be significantly increased with ideal adjustment of gymnastic lines. The height of the fences should be chosen so the horse really takes off and shows a good bascule. In the language of the movement centers, this means the thorax is "catapulted" upward between the front legs. If this does not work, the trainer has to work with different methods for as long as it takes for the horse to automate the correct movement pattern. *Without this movement pattern, there is no training for the shoulder girdle muscles.* Once this has been achieved, the jump height should be set to between 3′ and 3′6″. A combination of three or four fences, set at a distance of one stride apart, is ideal for optimizing the stress on the muscles in a gymnastic. The horse should jump this line three to five times, back to back, per training set, followed by a three-minute walk break. The next set is then also repeated three to five times, depending on the level of training.

TIP

This training setup can be used every two to three days, for a duration of about 20 days, during the build-up phase of a horse between longer competition breaks–followed by a week of quiet gymnasticizing flatwork. The rider should feel a notable increase in the quality of the horse's jumping pattern after such a training sequence.