

# The Debate About the Dressage Horse's Frame: What's it all About?

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During the last few years there has been an ongoing and sometimes heated debate about the frame of the horse – the way to ride “on the bit” – and the way in which today’s dressage horses are ridden compared to the way they were ridden about 30 years ago.

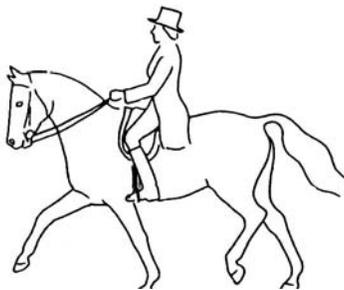
But it is not so easy to keep up with what this debate is actually about. It requires quite a bit of knowledge of the anatomy and biomechanics of the horse in order to understand how the different ways of riding affect him.

This is a comparison of how the dressage horse was framed 30 years ago as compared to now, and some theories about how this impacts him.

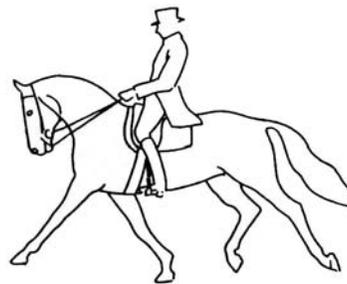
During the last 30 years dressage riding has developed a lot in terms of the way the rider works and balances his horse. Today’s dressage horses are tremendously gymnastic and very obedient, but if we compare Liselott Linsenhoff and Piaffe’s ride during the 1972 Olympics (Gold Medal) to today’s elite riders we can see that the horses’ frames and self-carriage differ quite a bit.

In the seventies the elite horses were ridden with the nose in front of the vertical and the poll as the highest point. Today’s elite horses often have the nose behind, or extremely behind, the vertical and the third vertebra of the neck is the highest point.

This situation is the basis of the debate about the different frames. Let’s clarify these terms right from the beginning!



*Liselott Linsenhoff and Piaffe won the Olympic Gold Medal in 1972. The nose is well forward and the poll is the highest point. (Identical drawing from a photo).*



*An elite horse and rider year 2000. Observe that the trot is four beat, the left hind foot has left the ground while the right front foot is still on the ground. The nose is behind the vertical and the third vertebra is the highest point of the neck. (Identical drawing from a photo).*

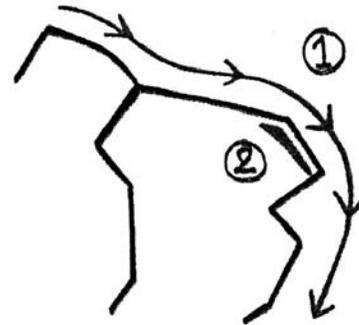
By nature, a horse carries about 60% of his weight on the front legs and about 40% on the hind legs. When a rider sits on the horse he exacerbates that imbalance with the result the horse falls even more on his forehead.

To avoid wear and tear on the horse, the dressage rider tries to rebalance the horse by teaching him to use his hind legs, pelvis and back to create a lever that elevates the forehead so that the horse comes more in balance. This takes place when the horse “tilts his pelvis” so that the joints in his hind legs angle more, that is to say, the horse steps more under himself. At the same time a continuous string of muscles is created along the top of the horse, from the hind quarters through the neck to the poll.

Under these circumstances the loin muscle (ileopsoas) is also important when by contracting, it acts to bend the thigh joint and to draw the lower part of the pelvis forward.



*Resting frame*



*The center of equilibrium moved toward the back. 1) The continuous string of muscles 2) The loin muscle*

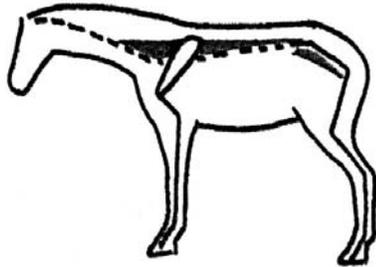
The following explanation is a brief description of the main principles involved in the continuous string of muscles - the lever - that elevates the forehead. The muscles of the hind legs, the adductors and abductors, as well as some other less important muscles will not be included in this discussion.

The string of muscles is described from the back and goes towards the front.

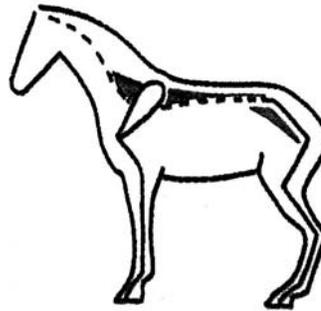
The longissimus dorsi is a “backstretcher”; quite opposite to what most riders believe, it stretches and lowers the back. Consequently it is wrong when many riders say: “The horse is not working with his back” when the horse is moving with a lowered back and raised neck. To the contrary, in this situation the back muscles are working really hard – but in a way that doesn’t benefit the horse.

The back should instead form a bridge from the hindquarters to the front, and in this way lift up the front end. This is where the loin muscles have an important function in bringing the hindquarters forward and under, and in preventing the back from hollowing (see upcoming comment about the abdominal muscles).

The longissimus dorsi reaches from the pelvis, sacrum and thoracic vertebrae to the last 3 through 7 neck vertebrae. As a result of this, it influences the first half of the neck (as seen from the withers) and is among the things that create the elevation of the neck when the horse goes correctly on the bit.



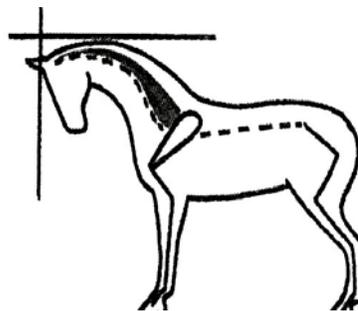
*The longissimus dorsi and loin muscle relaxed.*



*The longissimus dorsi and the loin muscle at work.*

Therefore, the horse should not work long and low, but, to achieve improved circulation, relaxation and stretching of the back muscle, and to keep the work from becoming static, it is extremely beneficial to vary between collection and long and low. For example, to collect for 10 minutes, ride long and low for 2 minutes, collect for 10 minutes, etc. The length of time depends on the horse's condition and muscle status.

You often hear riders say, "Now the horse is working with his back" when the horse is working in a long and low frame. That's wrong. The back is not *working* - it is relaxing, and if the horse is reaching forward and down correctly the back is also stretching.

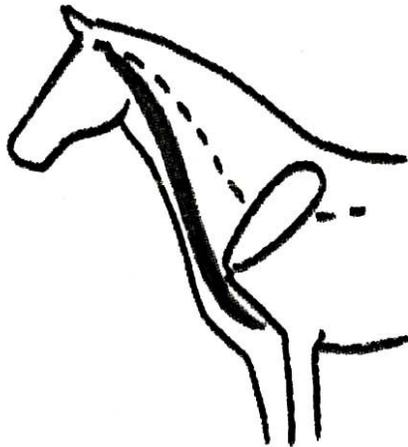


*Splenius and semispinalis capitis relaxed (not at work). The third vertebra is the highest point, and the nose behind the vertical.*

The next muscle of importance in the muscle string is the splenius. This is a strong muscle that reaches from the 3-5 thoracic vertebrae to the neck and first cervical vertebra. The splenius lifts the head and neck. When the longissimus dorsi is working but the splenius is relaxed, that is, there is a break in the string at the splenius, the horse ends up with the third neck vertebra and not the poll as the highest point – he is "overbent". Since the splenius also influences the head, the nose will also come behind the vertical when

the splenius becomes inactive. The muscle semispinalis capitis also functions in a similar way.

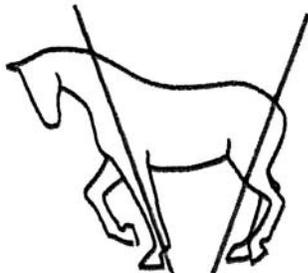
This is the frame in which many dressage horses are ridden today. As a result the horse doesn't work in the most beneficial way. The string of muscles is disconnected and he loads his front end more by unnecessarily dropping the weight of his head and neck onto his forehead.



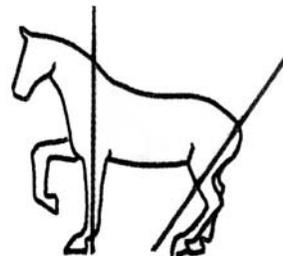
***Brachiocephalicus.***

A muscle that does not belong to the string, but should nonetheless be mentioned in this context, is the brachiocephalicus. It reaches from the neck down to the forearm. It has several functions; one of them is to pull the front leg forward. It can also bend the neck and get the nose to reach forward.

When the horse ends up with the third vertebra as the highest point and the nose behind the vertical, he is unable to use the brachiocephalicus properly. This can sometimes be clearly seen in the piaffe, where horses that are ridden with a low neck and the nose behind the vertical often show less elevation of the front legs than horses that are ridden with a higher neck and the nose more forward. Such a horse will also sometimes defend himself by moving his front legs in under his body which in turn limits his ability to shift his weight back.

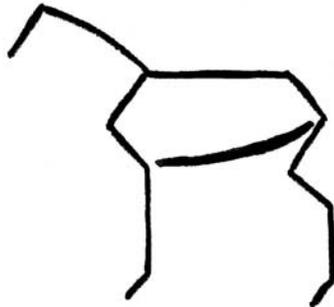


*Piaffe. The knee (carpus) is not lifted high enough. The front legs move in under the horse.*



*Piaffe. Knees more elevated. Only the hind legs move in under the horse.*

The abdominal muscles are also of great importance. The internal and external abdominal obliques stabilize the spine and to some degree move the lower part of the pelvis forward. And it is primarily the rectus abdominis that helps the horse step under by bending between the sacrum and loin, lower back and back. It also acts to stabilize the torso. The abdominal muscles also counteract the back muscles so the back doesn't drop when the horse compresses his back muscles. They also stabilize the horse in trot and canter by limiting the degree of vertical movement in the back.



*The rectus abdominis.*

The various training methods agree that the better trained the horse is, the more he will be able to collect. A young, untrained horse must not be required to go in the same degree of collection as an older, more trained horse. This is something we should never forget when we start training our horses.

Why has it turned out this way? Surely no one rides his horse in the wrong frame on purpose. We love our horses and only want the best for them, but perhaps we have become “too good” at training our horses to perform difficult movements – but at the same time haven't kept up and acquired the necessary knowledge to really understand riding.

Maybe the requirements for anatomy and biomechanics in the education of trainers and judges should be increased so they can give their riders a better biomechanical perspective of the horse's ability to work. If one lacks the knowledge one won't question the development; presumably it is the lack of this knowledge that results in so many riders confusing strength with thrust – we think when there is a good amount of thrust there is also a good amount of strength, which is not at all the same thing.

What should we do then, so that things will turn out right? Unfortunately there is no universal solution, but there are a few tips. Think about strengthening the horse's abdominal muscles, as this helps the back a lot. This can be done by going over small jumps, trotting over cavaletti, walking in snow, and climbing. Warm your horse up more in canter than in trot, this engages more muscle groups. Vary between collection and long

and low for short periods of time to increase circulation and to decrease tension in the back. And most importantly – get help from a knowledgeable trainer, learn as much as you can about biomechanics and dare to question why you are doing what you are doing.

This article was previously published in the Swedish magazine *Ridsport*.