

Saddle Fit and the Changing Three-Dimensional Back of the Horse

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From the measurements which we have accumulated over the last 30 years from about 150,000 different horses, we have determined that about 70% are more strongly muscled on the left as in a); about 10% are even as in b), and about 20% are bigger as on the right (c).

What I can conclude with certainty based on my observations, is that a good 70% of those horses which were measured over the years have a more strongly developed shoulder and shoulder muscles, with a more forward right shoulder. This is what we call 'the natural asymmetry' of the horse.

Our general methodology in working with horses would also seem to underline the affinity we have with the left side of the horse. We lead on the left, we saddle from the left, and we mount from the left. Many horses demonstrate 'uneasiness' when approached from the right; even when brushed on the right. Perhaps it is because they instinctively want to protect their right side, which houses the digestive organs. This seeming anomaly will also be seen when observing horses fighting. The horse will turn its left shoulder towards the aggressor.

When riding it is also seemingly easier to ride to the left, canter with the left lead, and most horse races go to

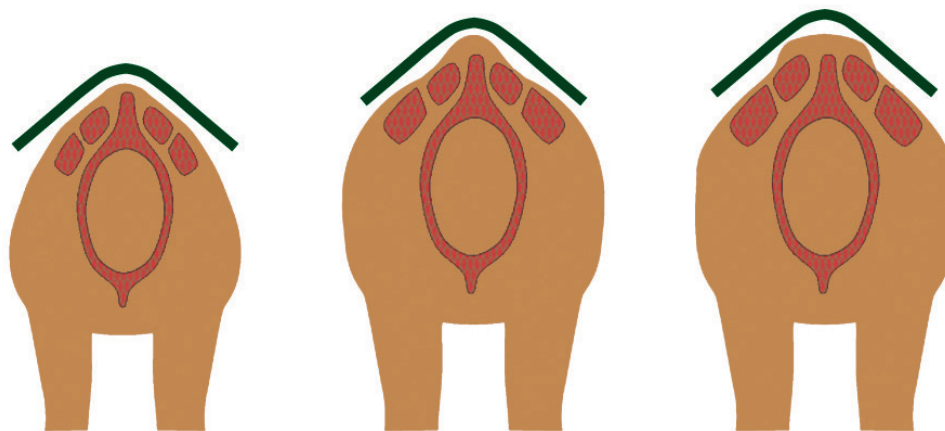
the left, or counter clockwise – perhaps because the horse's 'natural asymmetry' is almost always stronger to the left.

It is a very important point to train and ride the horse straight. In the German training scale it clearly comments and describes the methods that define the rider and provide procedures on how to train and ride their horses to become straight.

It is possible for the rider to counteract the 'natural asymmetry' of the horse by training in such a way that the serratus and the pectorales muscles develop evenly on both sides. However, neither trainer, nor veterinarian, nor blacksmith, nor saddle(r) will have any influence on the skeletal structure (even though the growth plates will not entirely close until around age 6 ½).

The natural asymmetry of the horse has huge ramifications in the consideration of what saddle to buy and how to fit it properly, because the saddle support area begins immediately behind the shoulder blade. The natural unevenness is not only seen in the muscles and skeletal structure at the forehand, but it affects all the horse's joints and most of the rest of his anatomy.

The saddle needs to accommodate and be fitted to the unevenness in the horse's frontal anatomy, especially the



Training will affect the muscular conformation and the three-dimensional back shape and the saddle support area especially during these years of the horse maturing.

size and position of the shoulder blades. Muscles can be developed and changed, but bones as a rule cannot. It is very difficult to determine whether or not there are anomalies in bone structure in the humerus. Even with today's advanced technology, the veterinarian will not be able to x-ray this area, because the veterinarian cannot put an x-ray plate between the front two humerus bones. Various other invasive visual diagnostic tools are not (yet) widely available in their applications for horses because of the size of the machines required for this technology. So – we really don't know whether a horse's innate asymmetry is due to bone structure or muscle formation, and that's why we will not be able to foresee how effective training methods will be to alleviate this occurrence. What we do have however, is various diagnostic tools available on the market to be able to see how the horse's three-dimensional back shape actually does change over time – taking training, nutrition, and the other factors in the circle of influence around the horse into consideration. Of these, the HorseShape® Laser is one of the most innovative and provides a clear visual of these changes.



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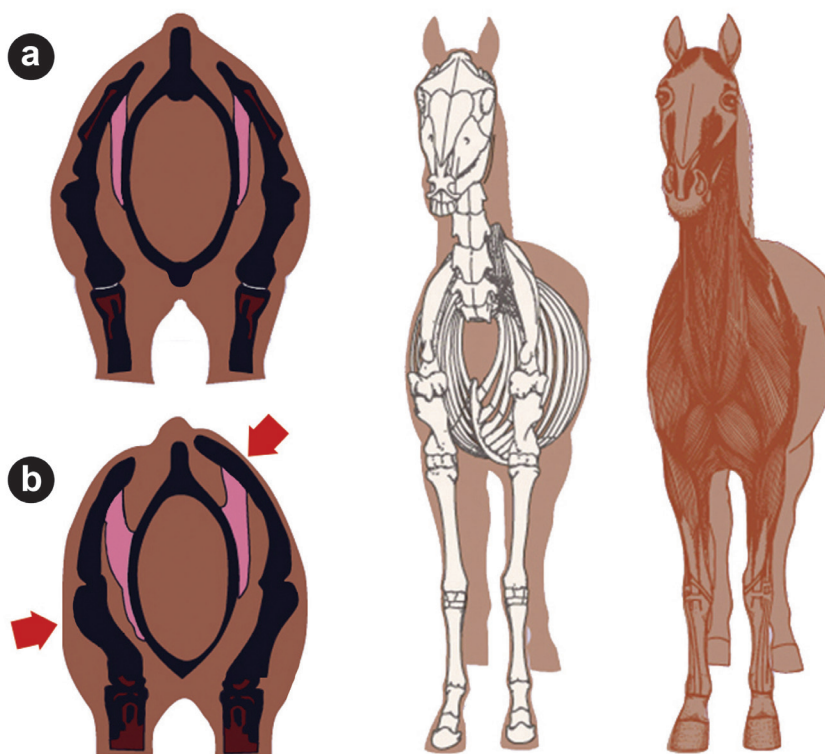
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The cross section shows (a) an even skeletal structure; (b) shows a distinctly higher left shoulder blade with a stronger humerus on the right. Frontal view of the horse: skeletal and muscular structures.




Particularly the shape and position of the gullet plate, the stiffest and most stable part of the saddle, needs to accommodate the unevenness in the horse's anatomy during saddle fitting. Its necessary function cannot be substituted with or eliminated by reflocking, shimming, or the use of other special orthotics in the panel area. Because of the pretty common occurrence of the unevenness at the horse's shoulders, it will usually be necessary to fit the gullet plate asymmetrically in order to achieve this necessary support equally well on both sides. Fitting the gullet plate asymmetrically, will not result in twisting or making a crooked saddle – this concept is something that many saddlers or fitters simply do not understand. Many

use inexpensive saddle trees (where these adjustment are simply not possible), and also have given poor advice to riders who have had their saddles fitted in such a way that the gullet plate is visually crooked, without the benefit of educating themselves as to the reasons behind this asymmetric adjustment of the gullet plate.

As a matter of fact, if this crucial piece of saddle fitting is ignored, and a saddle with a symmetrical gullet plate is put on a horse's back with an asymmetrically muscled shoulder, it will inevitably fall to one side as it is pushed there by the more heavily muscled shoulder (usually the left, twisting the saddle to the right). You will see many instances of pictures of riders from behind sitting on a saddle which seems to have slipped to the right.

When the gullet plate has been adjusted to accommodate the natural unevenness of a horse's shoulder, the saddle should lie straight on the horse and the rider can sit properly and in balance – there will be no unnecessary pressure on the vertebrae or at the shoulder. "So what happens with my saddle if I need it for a horse that has the opposite shoulder bigger?" That is where the advantage or actually the necessity for a tree with an adjustable gullet plate really comes in to play, because the fitter should be able to make any necessary changes as required for any horses over the life of the saddle. The job of the rider is to ride the horse 'straight'; the job of the fitter is to make sure that the saddle (i.e., the tree and the gullet plate) is continually fitted correctly to the changing requirements of the horse. This will allow the optimal interaction between the vertical axis and weight distribution of the rider with the horizontal axis of the horse's back. The saddle needs to be balanced in all directions; front to back, top to bottom. Only then will both vertebrae be able to work as nature intended, protecting the bodies from long term damage while moving in harmony.

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