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Saddle Fit and Asymmetry in Both Horse and Rider

Rider balance and equine asymmetry are hot topics right now, and for good reason.

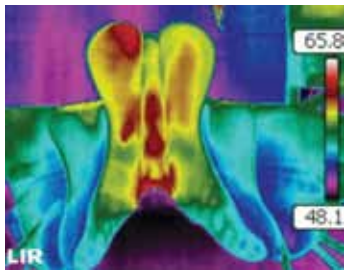
When you look at pictures of riders from behind—even top riders—often they are not sitting quite straight in the saddle. So even though the saddle looks absolutely straight and perfectly fitting when the horse is in the crossties, crookedness issues begin as soon as he begins to move.

Effect of Rider Position

In my experience, the saddle may stay in place for about two minutes. Then the rider starts to shift his or her position. Nine out of ten times the problem begins in the pelvis and legs. Next riders will compensate in the lumbar part of their back. Then it moves to the upper body: most of the time they have a rotation somewhere in their back causing one of their shoulders to be higher than the other. On that side, they also hold their hand higher.

As a result, the saddle begins to shift over to one side or the other, usually to the right. The longer they ride, the more movement can be expected. Afterwards when the rider removes the saddle off of the horse's back and examines the dust pattern, what he will find is a little more dust on the side where the rider sat "heavier" to compensate.

After years of saddle fit experience, I believe the rider actually has quite a bit of influence on how straight the horse is—and how straight the horse becomes. I have only seen a handful of horses where the trapezius and the long back muscle (longissimus) were fairly naturally even on both sides.



This thermographic pattern shows the uneven contact on the panels of a dressage saddle. The saddle pinches at the withers and there is more heat on the left side, indicating a stronger left shoulder that is pushing the saddle over to the right. At the rear, the panels impinge on the horse's vertebrae.

The dilemma is that in order to protect the horse against long term damage, the rider needs help from instructors to learn to ride with better alignment. That isn't our job as saddle ergonomists or saddle fitters. Trainers frequently remark that the horse is the problem because he is crooked. Do we adjust the panels of the saddle so the rider is less crooked or do we leave the saddle as is and live with the ongoing slippage during riding? Does the rider have the responsibility to take care of his body so he won't 'damage' his horse? The answers to these questions would be that the saddle should be adjusted to accommodate, and that the rider does share in the responsibility to strive for straightness and balance.

Based on the circle of influence on the horse (see chart below and more explanation in *Warmbloods Today*, September/October 2015, "Saddle Fitting 101"), there is more than one factor that can influence the horse's or rider's physical conformation within a very short time frame—sometimes even from one day to the next!

There are three possibilities the saddle fitter, trainer and rider have to choose from based on the individual circumstances in order to fix the problem today:

❶ The panels can be adjusted to compensate if the rider is 'structurally uneven.' (Flocking can be adjusted to compensate for situations like this.)

❷ If the rider has poor posture, then I would suggest the rider needs to work on his/her straightness by doing various core strengthening exercises. The saddle should never be used as a 'seat prosthetic.' The saddle is there to protect horse and rider from long term damage and not to be used as a crutch if the rider has no body control.

❸ If the horse has one shoulder that is larger than the other, then the saddle will sit straight in the static fit but the

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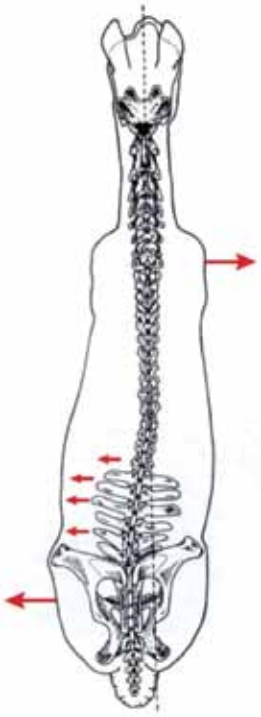
larger (most likely left) shoulder will push the saddle to the hollow side (most likely the right) as soon as movement begins. With a larger left shoulder, for example, the left tree point of the gullet needs to be opened, with the right one supported by the same amount. This way the saddle has an opening on the left side and room for the larger left shoulder to come through without pushing the saddle to the right during movement. An asymmetric adjustment to accommodate the larger shoulder would be ideal, but not many saddles can actually be adjusted in this manner. An even adjustment, which ensures the larger shoulder has enough room to move and a shim under the other, smaller shoulder, will also do the trick.

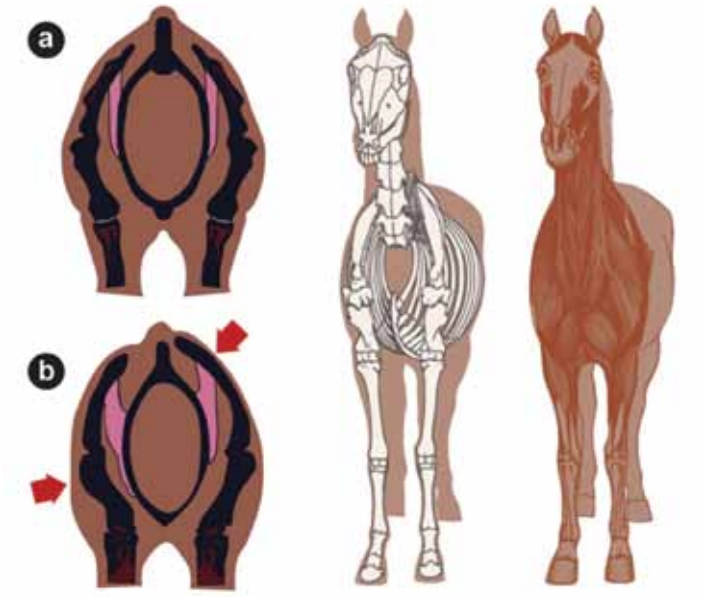


RIGHT: If the gullet plate has not been fitted to accommodate the horse's (larger) left shoulder, the saddle slips to the right and puts excess pressure on the back of the left panel and left side of the spine, which the horse tries to avoid by deviating to the right through the right shoulder (arrow).

Asymmetry in the Horse

There are many theories on what causes asymmetry in horses: it could be genetic (just like most humans are 'right-handed'); it could be because of the way the fetus grows in the womb; it could be a result of domestication and the conditions under which we keep our horses. In my 38-plus years of working in this industry, my saddle fit technicians and I have measured and observed upwards of 150,000 horses on pretty much every continent. The majority of them had a definitely stronger muscled left side, with a shoulder blade that was higher and further back than on the right. This becomes very obvious during dynamic movement—pushing the saddle over to the right if it has not been properly adjusted to accommodate this larger shoulder. As a result, it causes the rider to sit crookedly out of balance and he will compensate by leaning to one side.

You'll notice the left canter lead is much easier with most horses. We lead on the left, we mount from the left, we saddle from the left. When horses fight, the defense is to turn the left shoulder to the aggressor. Interesting, isn't it?



ABOVE: These cross sections show (a) even skeletal structure and (b) distinct asymmetry with left shoulder blade higher and a stronger humerus (upper arm) on the right of the horse.

Conference Findings…

In 2015, the Saddle Research Trust held an international conference. One of the hot topics was the interaction between equine lameness and saddle slip. Although my experiences indicate that saddle slip causes lameness issues rather than the other way around as suggested at the conference, there were still several pieces of information that emerged from the event that are consistent with what I know and teach about saddle fitting:

- **Saddle fit must include fitting the rider correctly.**
- **Saddle slip is due to asymmetries of the horse, the rider and/or the saddle.**
- **Rider crookedness is more likely a result than a cause of saddle slip.**
- **More frequent (than annually) evaluations may be needed because a horse's back changes with seasons, body weight and workload.**
- **Riders ride (foot pronation or not) as they walk. (We ride as we are, so it would follow we ride as we walk too.)**
- **Riders need good core strength and should be symmetrical themselves in order to make their horses symmetrical.**
- **Early detection of saddle slip is important.**

…and Personal Conclusions

As previously mentioned, I tend to disagree with the idea that lameness is to blame for saddle slip (if your saddle is slipping and your horse isn't right, call a vet for a lameness exam), rather than what we see as the domino effect in saddle fitting: the natural asymmetry in the horse causes 'saddle slip,' which in turn causes the saddle to ride on reflex points (sometimes resulting in 'negative' or unwanted behavior). This then causes lameness because the horse hollows

his back and cannot engage his hind or lift his front end, and therefore is being ridden on the forehand. (And as a result is more likely to remain asymmetrical and have joint issues.)

Further, if a symmetrical saddle is used on an asymmetrical horse, the larger and more rearward shoulder (usually the left one) causes the saddle to twist and/or rotate toward the side of the smaller and more forward shoulder (usually the right). The gullet plate of the saddle has to fit the profile of the horse's shoulder-wither area, matching it in width and angle.

If a horse is asymmetrical and the saddle fitter is able to open the gullet plate on the larger side to accommodate the larger shoulder, the saddle will stop slipping (twisting/rotating) and won't ride on the horse's spine. The rider can now be straight and, if the riding is correct, the horse will bring his back up and use it, engage his hind end and begin to lift his front end up. Now there is finally a chance for the rider to help make the horse straighter. When the horse is measured and found to be even, the gullet plate is brought back to symmetrical, where it can stay as long as the horse remains even.

▶ I am not differentiating between a saddle twisting (yaw) and a saddle rotating (roll). While both are undesirable because either way a panel is too close to the spine and spinal ligaments, a saddle that twists because one of the horse's shoulders is larger and farther back than the other really causes problems when the rear portion of that panel rides on the spine. Often we see saddles that are too long, so that incursion onto the spine is behind the 18th vertebra onto the lumbar area (the area which leads to the 'bucking' reflex). More often than not, asymmetry causes both a twisting and a rotation.

▶ Riders are sometimes encouraged to watch for rub marks on hair coat, dry spots within sweaty areas and wavy hair as signs that something is wrong. While these can signal a saddle fit issue, by the time they are visible, too much damage may already have been done.

▶ What about all the behavioral signs that the horse is trying to tell the rider the saddle does not fit? Horses who are resistant, hollow, head-up, tail-swishing, girthy, have gait abnormalities and are 'cold-backed,' or ones who are rushing, bucking, stumble frequently or have an overall poor work attitude are all sending an important message. While this negative behavior can be caused by a variety of things, please don't wait until your horse experiences these dramatic physical signs to decide that perhaps it is actually the saddle causing pain and dysfunction.

To learn more: in my book *Suffering in Silence,* Jane Savoie was kind enough to write an insert on exactly this topic: "How to Fix Rider and Horse Crookedness." You can find her thoughts on pages 83-84 or I will be happy to send you a white paper of her points if you email me at *Jochen@schleese.com*.