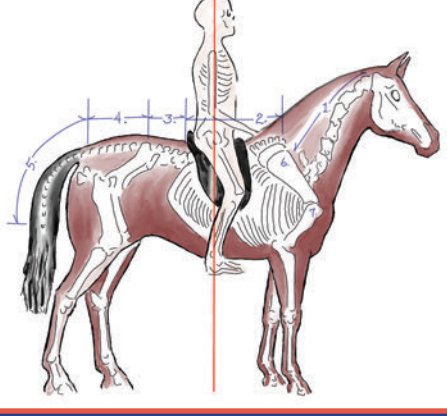
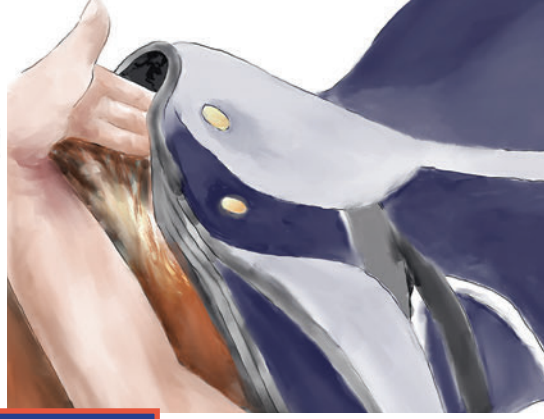
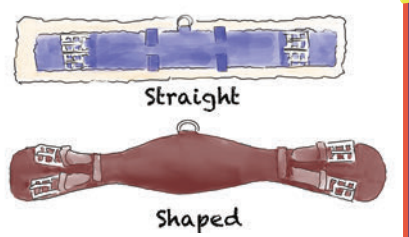
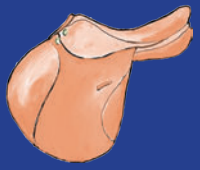




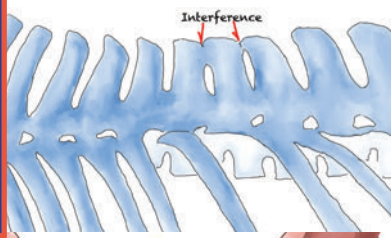


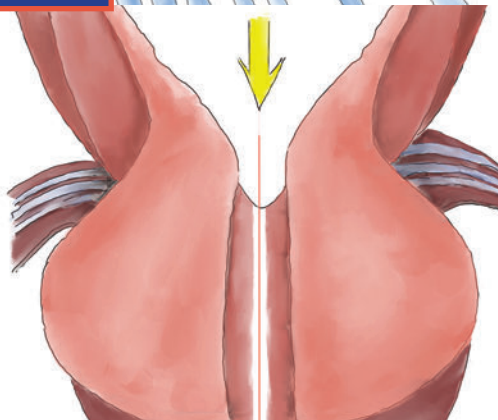
The ILLUSTRATED GUIDE TO SADDLE FITTING

An Easy Visual Reference to Ensuring Health, Comfort, and Performance for You and Your Horse



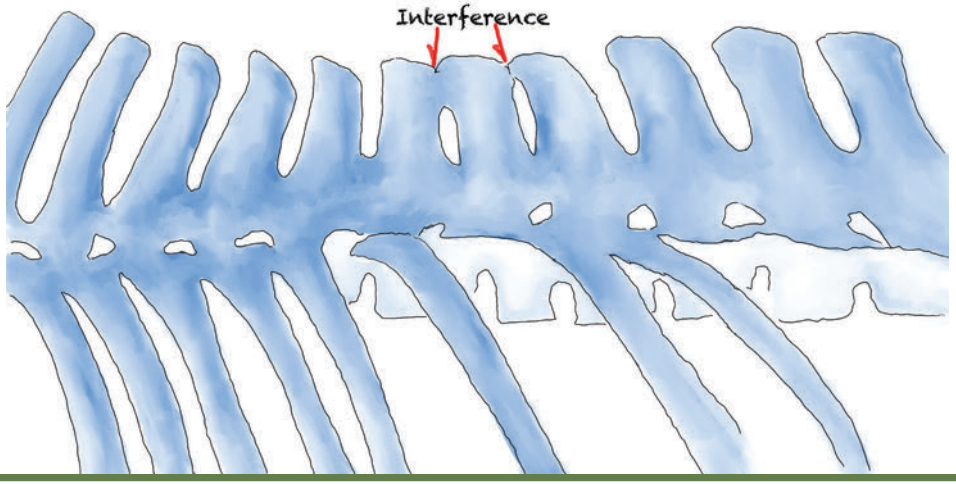
BEVERLY HARRISON
QUALIFIED SMS SADDLE FITTER





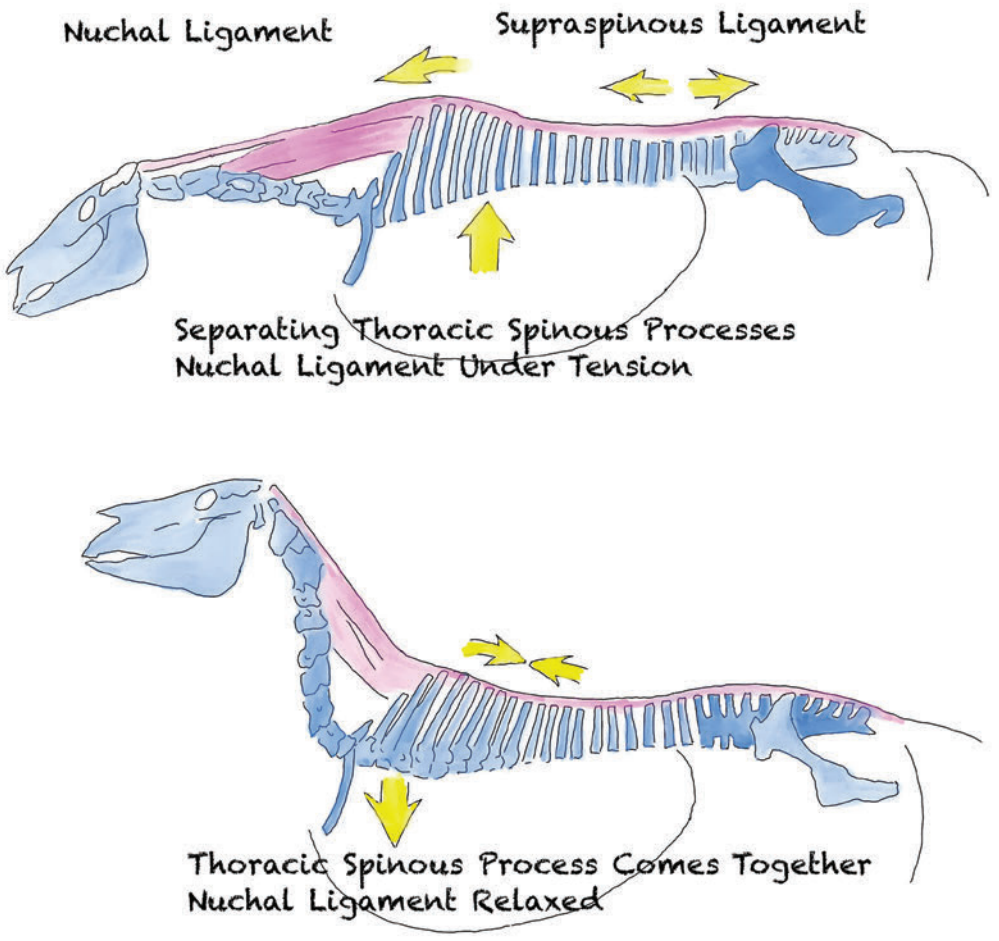
Contents

3.6 KISSING SPINES

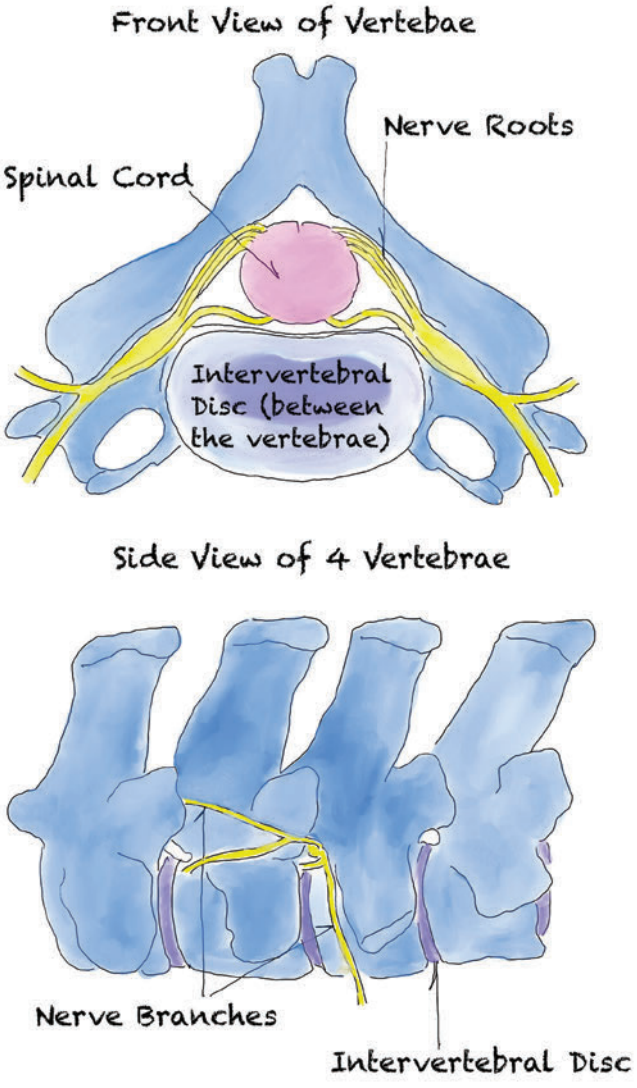


Ligaments, coupled with developed abdominal muscles, provide support and mobility to the horse's spine. Pain from many sources, but from the saddle, in particular, causes a horse to "drop" his back in an effort to pull away from the origin of discomfort, thereby reducing the space between the top of the spinous processes and potentially leading to impingement. In contrast, a strong, elastic, and pain-free back "lifts" toward the saddle, opening the space between the vertebrae, in a way similar to what happens when a horse lowers his neck to graze (**Illustration 3.7 Mechanics of Lifting and Dropping the Equine Back)**. Any compromise of the space and orientation of the spinal column has a direct effect on the *nerve bundles* that run through the spinal column to connect the horse's brain to the *spinal cord*. Notice in **Illustration 3.8 Spinal Cord and Nerve Bundles** how the nerves connect at their roots to the spinal cord and exit through the spinal column. The nerves that extend throughout a horse's body, and in particular, to the limbs, tell the horse where he is in space. This is called *proprioception*. When nerves are constricted, pinched, or blocked, whether from poor spinal position or from direct pressure caused by an ill-fitting saddle,

3.7 MECHANICS OF LIFTING AND DROPPING THE EQUINE BACK



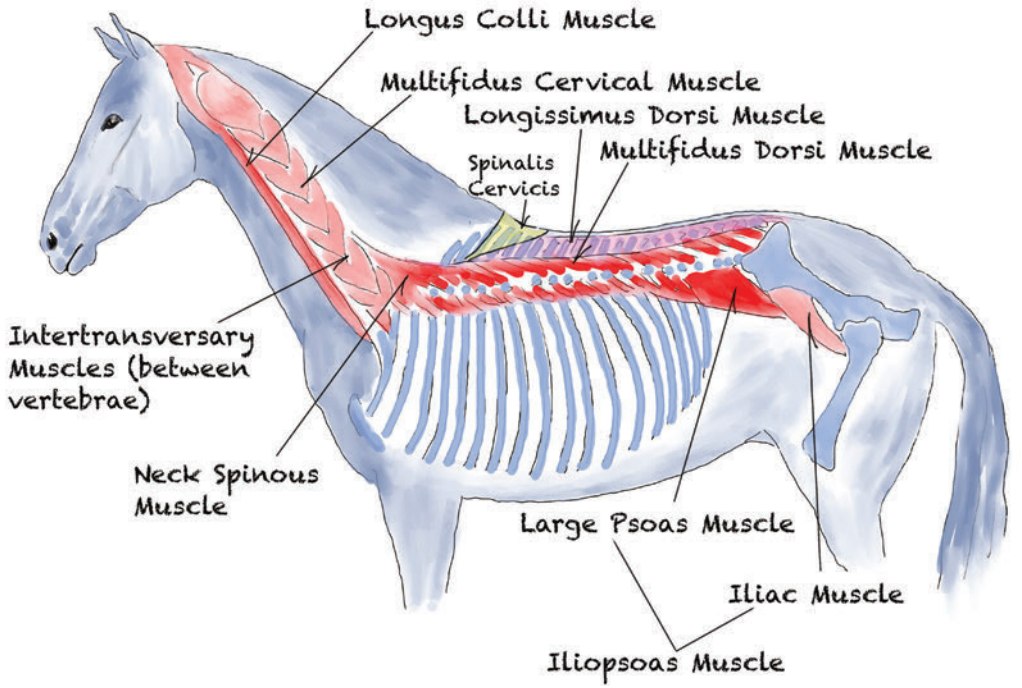
3.8 SPINAL CORD AND NERVE BUNDLES



the horse's proprioception may be compromised, and correct movement may be painful or even impossible.

When the short, deep, *multifidus muscles* (which lie under the very long *longissimus dorsi muscle* are weak and ineffective at stabilizing the spine, the horse will experience pain and fatigue. **Illustration 3.9 Deep Muscles to Stabilize the Spine** shows you how the vertebral column is linked together by these powerful muscles that work to keep the spine lined

3.9 DEEP MUSCLES TO STABILIZE THE SPINE



up in multiple directions. (Note: the complete muscles are not shown in the illustration due to layering, but general areas are indicated.) Even when only a portion of this muscle group is weak or damaged it is likely to affect other areas of the spine. (Current medical research shows very positive results in the individual's comfort and strength through rehabilitation that focuses on strengthening the *multifidus muscles*, in both horses and in humans.)

Superficial Muscle Groups

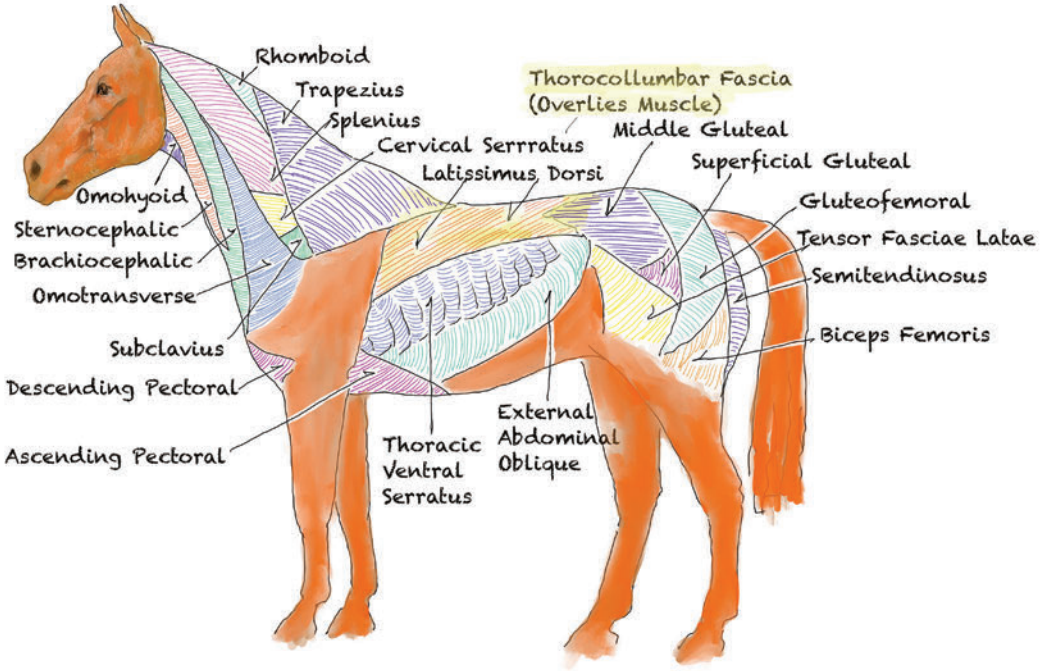
As we take a look at the horse's *superficial muscle groups*, the groups of muscles closest to the skin, consider the following questions:

- Can you picture the particular muscle groups I name on your own horse?
- Can you visualize what muscle groups your saddle sits on?
- How does a horse's shape change when moving under saddle? How does it change in shape from a "warm-up frame" to a "collected frame"? How does your saddle accommodate those postural changes? Or not?
- How does pressure (from the saddle, for example) potentially affect muscle development?
- What is *muscle atrophy* and how do we detect it?

Now take a look at **Illustration 3.10 Superficial Muscle Groups**. A fun project is to use chalk on a patient horse (a pile of tasty hay can help ensure this) and draw out a few of these muscle groups on his body. Then place your saddle on the horse's back *without* a saddle pad, and tighten the girth just enough to stabilize the saddle. Notice the position of the saddle and girth and ask yourself:

How might that addition of tack impact the muscles below?

3.10 SUPERFICIAL MUSCLE GROUPS



Conformation and Condition

Think about the different conformation shapes of a variety of horses: a racing Thoroughbred, a heavy draft horse, and a Quarter Horse, for example. These are well recognized as "types" of horses with a particular "shape" to their conformation, which will affect the size and style of saddle that will fit them best. Keep in mind that conformation is fixed, but fitness and body condition (that superficial muscle shape we just talked about, along with

body fat) are variable. That is why professional saddle fitters use the same numerical scale for condition scoring that veterinarians do, as body condition drastically affects the fit of the saddle.

The following is the scoring system most commonly used by veterinarians and saddle fitters in the United States:

- Score 1: Emaciated. Bones of the spinous processes, ribs, tail-head, tuber coxae, and ischia all very prominent. Bone structure of neck, withers, and shoulders easily visible. No fat palpable over lumbar vertebral transverse processes.
- Score 2: Very thin. Bones of the spinous processes slightly rounded but visible. Ribs, tail head, tuber coxae and tuber ischia are prominent. Bone structure of neck, withers, and shoulders faintly discernible.
- Score 3: Thin. Some fat buildup halfway on spinous processes in loins and tail head, but both are prominent. Individual vertebrae in neck are not visible but can be easily felt. Slight fat buildup over ribs and tuber coxae but still easily visible.
- Score 4: Lean. Slight bony ridge over loins or flat, faint outline of ribs visible. Tail head prominence depending on breed, but fat should be palpable. Tuber coxae bones not easily visible. Withers, shoulder, and neck not obviously thin.
- Score 5: Moderate. Loins are flat (no crease or ridge). Ribs not easily visible but easily felt. Fat around tail-head is spongy, withers somewhat rounded (depending on breed). Shoulders and neck blend smoothly into body.
- Score 6: Moderately fleshy. May have slight crease down loins, ribs palpable with light pressure, and fat around tail-head is soft. Some fat palpable on side of withers, neck, and behind shoulder.

- Score 7: Fleshy. May have crease down loins, and ribs difficult to feel. Palpable fat deposited along withers, behind shoulder, and along neck.
- Score 8: Fat. Negative crease down loins. Ribs very difficult to feel, and fat around tail head very soft. Fat filling area over withers and behind shoulder with noticeable thickening of neck.
- Score 9: Obese. Obvious crease down loins. Fat bulging around tail-head, along withers, behind shoulders, and along neck. Flank filled with fat (no abdominal tuck and ribs hard to palpate).

The assignment of a body condition score informs a temporary saddle fit. As the horse's condition evolves, both in weight and musculature, fit needs to be reevaluated. The saddle sits on an area of fat and muscle along the horse's back. If we fit a horse with a body condition score of "5" when the horse is in significant work, then come back in six months after the horse has been on pasture with very light work and now displaying a body score of "7" (for example), the saddle is no longer going to fit. With this in mind, it is helpful to the horse and to the fit of the saddle if the owner keeps the horse at a reasonably consistent body condition score. (Note that horses scoring at the extremes of the scale on either end are not in a condition where riding, with or without a saddle, is recommended.)

7 Saddle Fit Checklist for the Rider

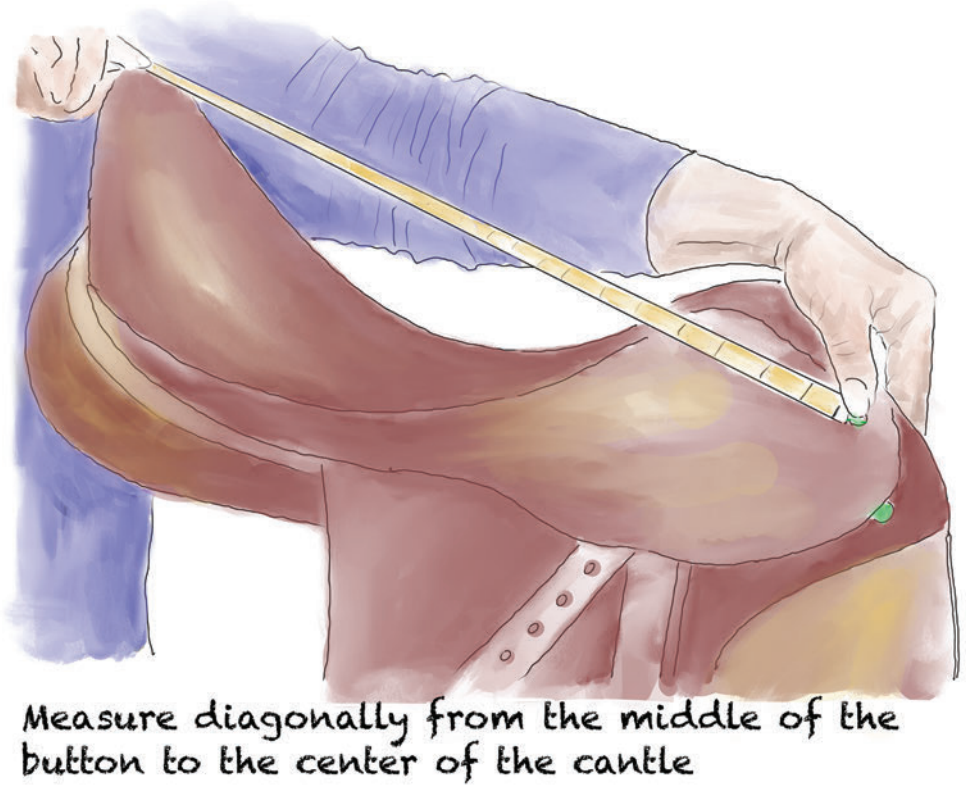
The basics to check the fit of the saddle for the rider can vary depending on the type of saddle (what kind of English riding you do), but most of the criteria are the same, regardless of discipline. The following guidelines apply to all saddles. (There are notations for discipline-specific fit issues.)

The guidance in this chapter assumes the saddle fits the horse well. When the saddle does *not* fit the horse well, the rider will likely be out of balance and uncomfortable, since the horse will be tight in the back with an uneven stride that lacks fluidity.

Rider Saddle Fit Evaluation—Step by Step

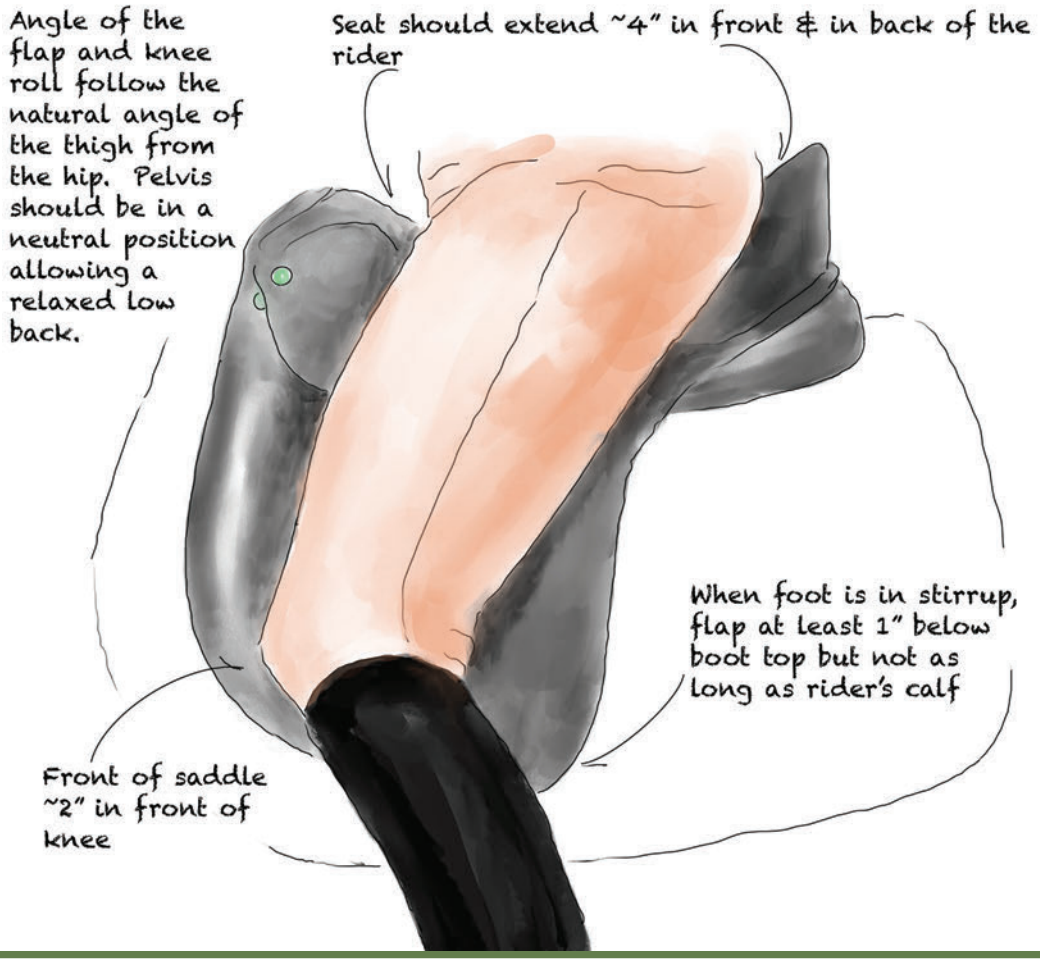
Step 1: *Seat size* is one of the first criteria to check. Saddle size is measured in inches from the middle of the top nail or button, diagonally across to the middle of the cantle as shown in **Illustration 7.1 Measuring Saddle Seat Size**. To determine a seat size that is comfortable for you, the general rule is you want to have a hand's width (about 4 inches or 10 centimeters) in front and in back of your bottom when sitting in the saddle. Consider, for example, Illustration **7.2 Rider Fit in a Dressage Saddle**, which demonstrates how there can be 4 inches of saddle visible in front of you and about 4 inches of space behind you (the same is true for a trail saddle). A jumping saddle seats you in a more forward position (**Illustration 7.3 Rider Fit in a Jump Saddle**) when you make that measurement, so tends to

7.1 MEASURING SADDLE SEAT SIZE

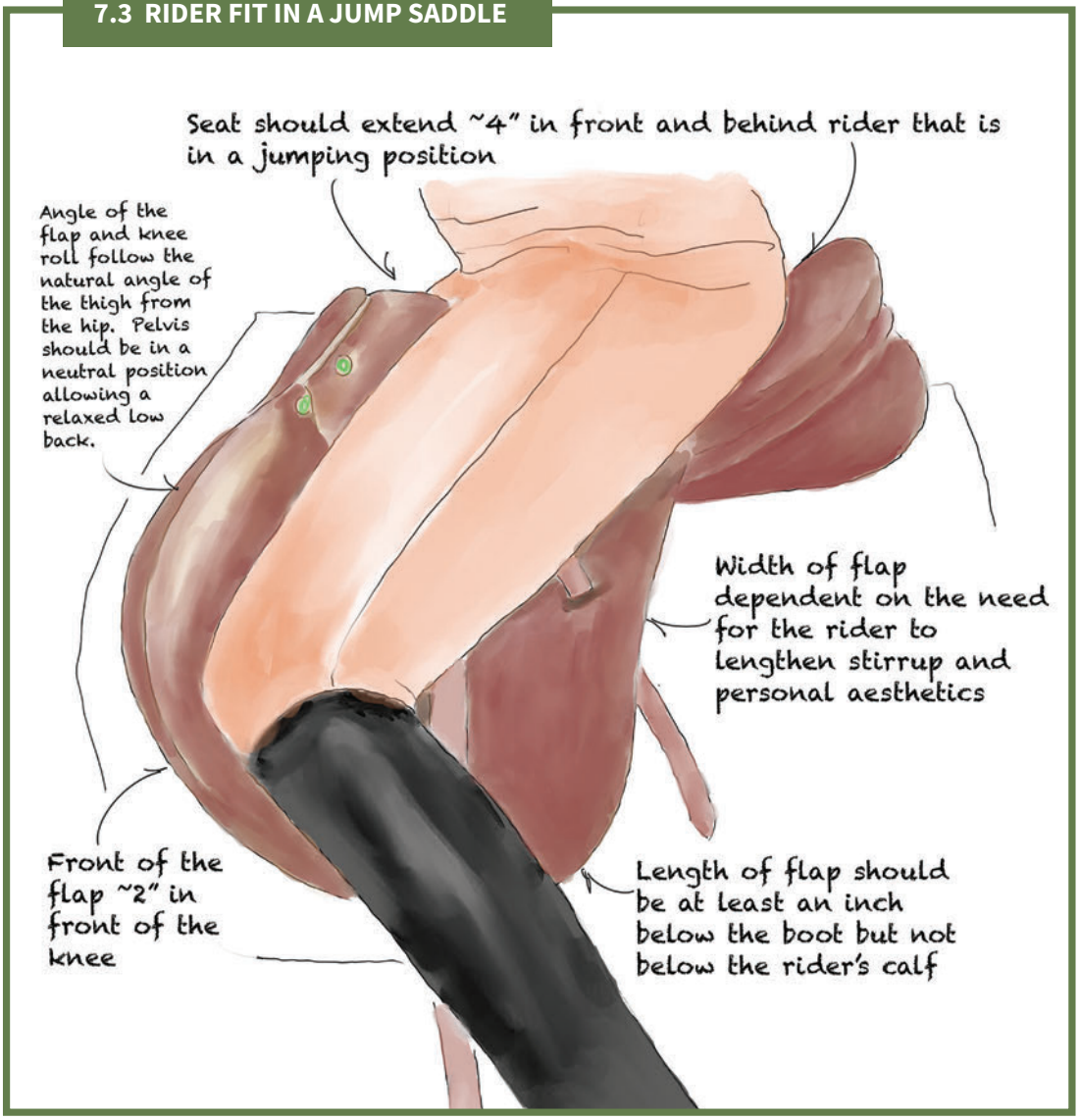


fit a little "tighter." There will be deviations from this guideline for saddles that are deeper or saddles with large knee rolls so comfort and practicality are the final criteria. *A word of warning:* if you are comfortable in a particular 17-inch saddle, for example, *don't* assume another manufacturer, or even another model of saddle from the *same* manufacturer, with the same size will be correct! You must try the saddle out and ride in it!

7.1 RIDER FIT IN A DRESSAGE SADDLE



7.3 RIDER FIT IN A JUMP SADDLE



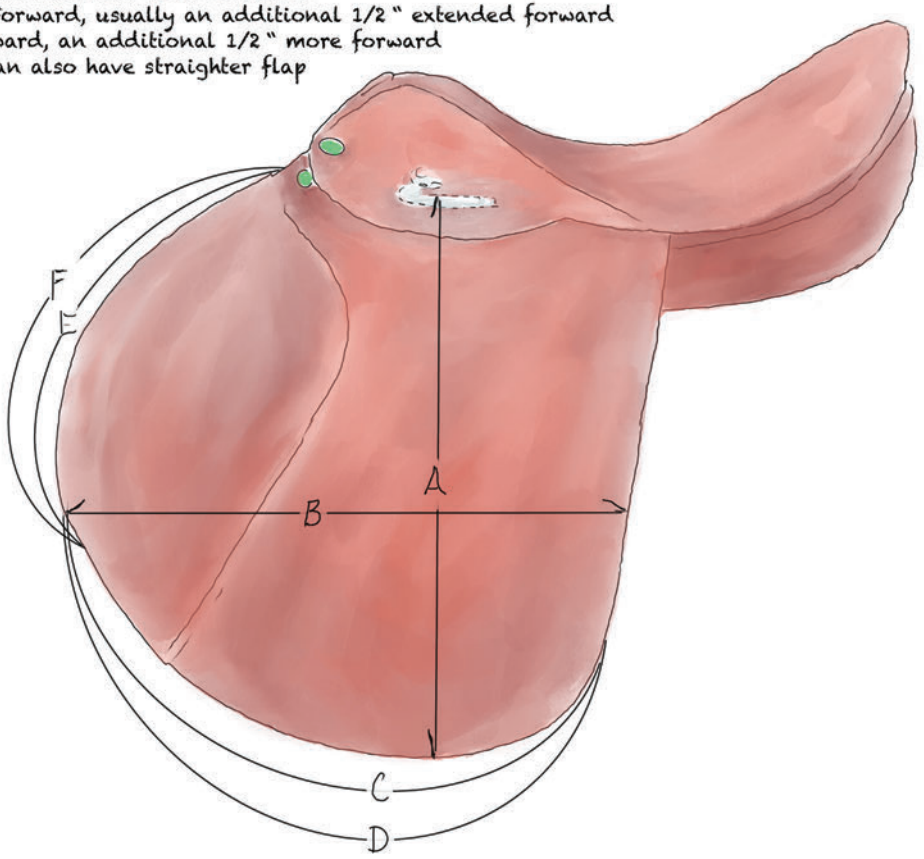
Step 2: *Length of flap* correlates to the seat size in the manufacturing process (**Illustration 7.4 Defining the Flap**). You can look at **Illustrations 7.2 and 7.3** again to see the typical flap for a "long" leg position (dressage, trail) and "short" leg position (jumping disciplines) respectively. But in addition, as the seat size increases, the length of flap gets proportionally longer. Manufacturers of high-quality saddles often offer options to both flap length and *flap angle* (which I discuss next). The length of the flap should protect the rider's upper leg and be long enough that it doesn't interfere with a rider's boot. When a rider has a boot that is too short in the calf or a flap that is too short for her leg, the top of the boot can get stuck on the flap and interfere with the rider's leg aids. Individuals may need a shorter or longer flap than the standard length. An *extra-long flap* is usually a half-inch longer, an *extra-extra-long flap* is usually another half-inch longer yet, and the reverse is the case for flaps that are shorter than standard.

It is important the rider is comfortable and not forced into a position by the saddle.

Step 3: The *angle of the flap* should follow the *natural*, desired angle of the rider's thigh, as seen in **Illustrations 7.2 and 7.3**. When a rider is jumping large jumps, the flap needs to have a more forward angle to facilitate a shorter stirrup. When a rider is in a jumping saddle but mostly rides on the flat, the flap is generally straighter and the stirrup is longer. A dressage rider needs some angle to the thigh but requires a longer stirrup length, so in general, the flap is fairly straight. Again, it is important that a rider is comfortable and *not forced* into a position by the saddle. The rider needs to be able to move and change position freely in the saddle, since that is necessary to follow the movement of the horse. (Note: *Monoflap* or standard *dual flap* options are available in many saddles, letting the rider chose whether she prefers less saddle bulk under the leg. Monoflaps are designed to eliminate the sweat flap next to the horse. They feel quite different for a rider than a dual flap saddle, so it is important that the rider try such a saddle before commiting. Monoflap versions are

7.4 DEFINING THE FLAP

A. Length of Flap, inches, often the same as the seat size
B. Width of Flap, inches
C. Xtra long, usually 1/2" longer
D. XX Long, an additional 1/2"
NOTE: Can also have short or XShort
E. Xtra Forward, usually an additional 1/2 " extended forward
F. XXforward, an additional 1/2 " more forward
NOTE: Can also have straighter flap



generally not favored in hunt seat circles, but they are common for cross-country and for jumpers. They have also become popular for dressage, particularly when a rider prefers a closer feel to her horse.)

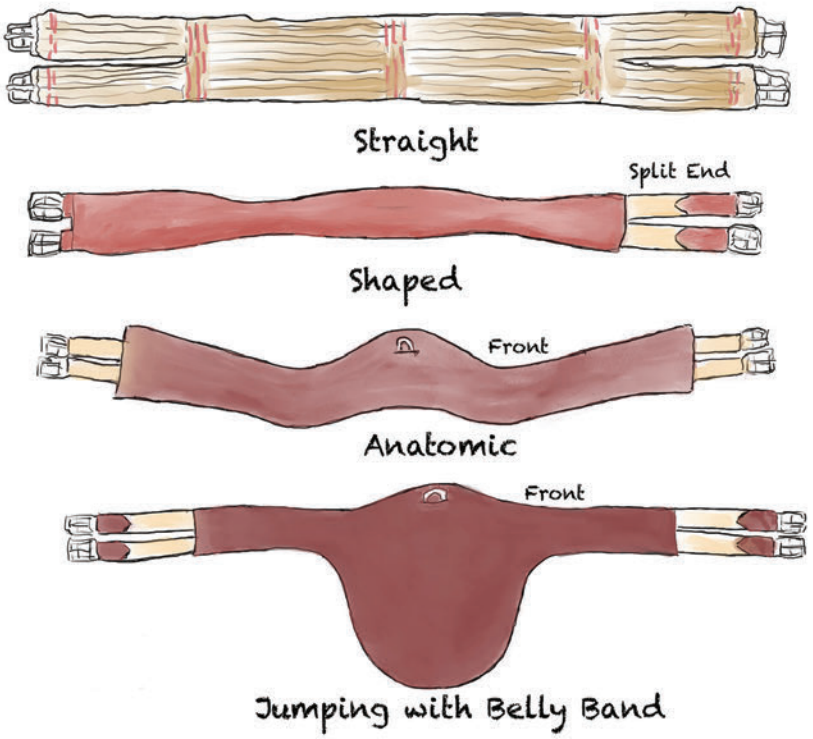
Step 4: The *location of the knee roll* and *thigh block* (when there is one) is critical to the success and comfort of the rider (**Illustration 7.5 Defining Thigh Block and Knee Roll Placement**). The size of a thigh block is less important than the location. In **Illustrations 7.6 and 7.7 Common Rider Fitting Faults**, **Short Stirrup and Long Stirrup** respectively, you can see a few common problems with knee rolls and thigh blocks. Not allowing the necessary movement of the rider's leg can limit the rider's ability. A large number of riders have asked me to put larger blocks or *external blocks,* which are blocks on the outside of the flap that directly contact the rider's leg, on their existing saddles. When discussing the reason for the request, the answer always comes back to *feelings of insecurity*. The insecurity often arises because the saddle is not balanced on the horse or does not fit the horse. Not only does this result in instability, it also can cause backs to brace against rather than absorb movement in *both horse and rider.* However, thigh blocks can cause additional issues. For example, when a block is placed in front of the leg and is too low on the thigh, it can bruise and block the rider's knee and actually *cause* instability in the lower leg.

The idea of a knee roll or thigh block is to support the desired leg position and assist the rider in stability while being unobtrusive. In all styles of saddles, the perfect knee roll or thigh block position is one that the rider doesn't notice while riding but that assists the rider when necessary. Leg support for all saddles can be in the form of a *knee roll*, a padded area in front of the knee area (commonly the only option until more recently), a *thigh block* (the blocks are of a more solid foam material covered with leather available in different shapes and sizes), or a *back block*, used in jumping saddles to keep the rider's lower leg from swinging back. The discipline will dictate which rolls or blocks are desired. Many saddle manufacturers now offer blocks that attach to the saddle surface with Velcro so the block

Shapes of Girths (and Buckle Types)

There are basic shapes for long or short girths (**Illustration 9.6 Shapes of Long Girths** and **Illustration 9.7 Shapes of Short Girths**). These shapes are recent developments as equestrians require girths that take into account the variety of horse shapes we are trying to fit, the increasing athleticism of the breeds, and our increasing understanding of how horses

9.6 SHAPES OF LONG GIRTHS



9.7 SHAPES OF SHORT GIRTHS

are impacted by having the correct size and shape of girth. What are the advantages and disadvantages of the basic shapes?

* **Straight girths** are basically rectangles with buckles at each end. Usually made of leather, but sometimes of cloth or string, they are the most economical to produce. They do not account for the room needed at the horse's elbow and can cause rubbing and sores. They do not provide additional surface area at the sternum and can cause undue pressure

directly underneath the horse. They are, however, versatile and will work on many horse shapes, and in the case of string girths, which allow the shape to conform more readily to the horse's unique features, they can be a good choice.

* **Shaped girths** are tapered like a double hourglass, becoming narrower at the elbow area and wider at the sternum. They are customarily padded and rolled on the edges to reduce the chance of rubbing. These girths work well for horses with uncomplicated conformation and are useful for horses with narrow girth channels. Because they work well on a number of horses, they are a good choice for stables that use a particular girth on multiple horses.

Shaped girths can fit well on a number of different types of horses.

* **Anatomical girths** take into account the many cases where the billets of the saddle, whether long or short, fall behind the girth channel. Horses that have a long, sloping shoulder will require saddle placement well behind the scapula to allow for that horse's unrestricted movement, resulting in billets that fall over the swell of the rib cage, behind the girth channel. If a straight or shaped girth is used on these horses, the girth will pull the saddle forward. An anatomical girth curves forward to go into the girth channel and fall over the sternum. Note that these girths are *not* symmetrical and it is possible to place them on the horse backward (**Illustrations 9.6 Shapes of Long Girths and 9.7 Shapes of Short Girths)** show the front and back placement.

* **Jumping girths** are much wider and much more padded at the sternum, mainly to protect the horse from his metal shoes, often with studs or cleats for traction, when he folds his knees to clear a jump. Horses run the risk of painful bruising and cuts without these protective girths (see **Illlustrations 9.6 and 9.8 Long Girth Placement on Horse**).