

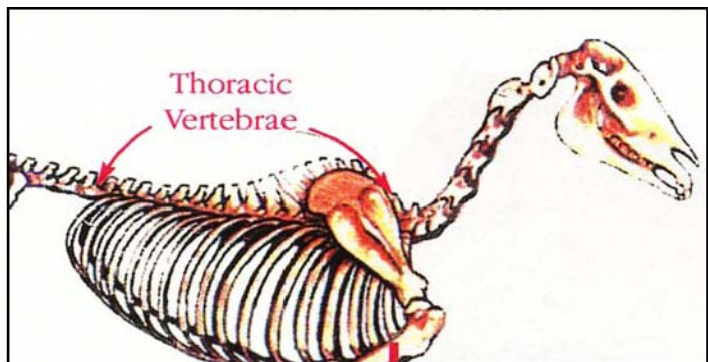
1ST LESSON OF BIOMECHANICS

TOPLINE STRUCTURE

First article in a series of six on horse biomechanics

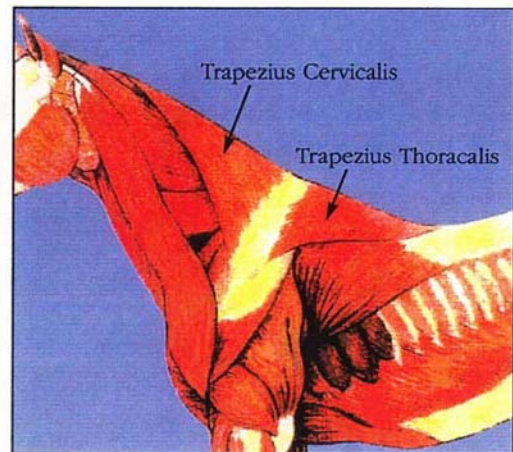
Look at the spine of the horse in the below skeletal illustration. Notice the place where the rider sits. Can you see that the vertebrae turn toward one another? Notice that when the horse goes round the spine would fan open creating a better place for the horse to carry a rider.

When the hind legs of the horse are swinging under the horse, the spine is opened up from the back end of the horse. The spine fans open due to the horse sitting a bit to allow his hind legs to propel him forward. The skeletal structure of the hind-end pulls the spine open from the back-end.



Notice in the next illustration, the Trapezius muscle is in two parts. One half covers the spine and the other half covers the neck. When this muscle is stretching forward the spine is pulled open from the front.

It's important that the rider does not pull the head to be on the bit, or this Trapezius muscle will not pull the spine open and help the horse to become strong through his entire body, only his neck will be strong.



The trapezius must stretch forward and down. To do this the horse must be stretching for the bit. The horse needs his head and neck for balance, but also to stretch his spine open, and also to allow his hind legs to come under his body.

The Training Scale and How Rhythm and Looseness Help the Topline (Rhythm...Looseness...Contact...Impulsion....Straightness...Collection) is a great checklist on how to remind yourself that your horse is going in a correct manner. Rhythm is what you feel under you and behind you.

1. When the rhythm is steady and under you, the spine is opening from behind the horse.
2. When there is Looseness the horse is stretching for the bit, the spine is opened from the front of the horse.

To conclude, the topline of the horse must be round for it to benefit the horse. If the horse has a chance to lift his back up and swing along over his topline, the first piece of the training puzzle is in place. With the horse going in an open spine fashion the muscles elongate and swing better with time.

Written by Betsy LaBelle

With the idea of helping Pony Clubbers understand the biomechanics of horse and rider better. Betsy finished as a Graduate B from North Star Pony Club.

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