



This talk will describe a series of exercises performed from the ground that use the horse's own muscles to mobilize the intervertebral joints in the neck and back. The exercises strengthen the muscles of the horse's core and improve the horse's balance during athletic activity.

Author - Dr. Hilary Clayton

Dr. Hilary Clayton is a veterinarian, researcher and trainer. Her research interests are in equine sport sciences, especially biomechanics and conditioning of sport horses, and the interaction between rider and horse. She has competed successfully in many equestrian sports and is currently competing at the Grand Prix level in dressage. She has earned USDF gold, silver and bronze medals riding a horse bred by Michigan State University.

Regardless of the type of activity they participate in, athletic horses benefit from performing exercises that improve their flexibility and muscular strength. This talk will describe a series of core training exercises that are performed from the ground with the objectives of improving flexibility in the neck and back, activating and strengthening the muscles that round and bend the back, and strengthening the muscles that stabilize the horse's hip and pelvis. The exercises are an equine equivalent of Pilates exercises in people and they are a form of cross training, which emphasizes the use of a variety of different types of training to improve the horse's fitness and strength. By incorporating a variety of types of exercises in the training program, the horse develops a wider range of athletic skills with less risk of repetitive use injuries.

In human athletes it has been proven scientifically that strengthening of the core stabilizing muscles enhances athletic performance and reduces injuries. The same benefits are desirable in equine athletes regardless of whether they are used for pleasure or competition. Changes in posture and flexibility of the neck and back may become apparent within as little as a couple of

weeks after starting the core strengthening exercises, whereas muscular strength will continue to improve slowly over a period of several months.

Each core training exercise is based on a physiological response that has beneficial effects on the horse's body. It is not necessary to perform all the exercises to reap benefits; you can choose the ones that are most appropriate to address areas of weakness in your horse's posture or performance. Many of the same exercises can also be applied therapeutically by veterinarians and therapists to target specific problems.

If your horse has a history of musculoskeletal injury or neurological disease, you must discuss the concept of core training exercises with your veterinarian before commencing the program. The effects of core strength on dynamic stability and balance can be very beneficial during rehabilitation but it is important to wait until the appropriate stage of the healing and recovery process before using the exercises.

Getting started on a core training program is easy and requires minimal investment in equipment and supplies. Safety precautions include wearing protective footwear and gloves (leather works well). Gloves are really important to protect your fingers when performing baited (carrot) stretches. In addition, you can make a simple finger protector from a piece of plastic, such as the lid of a coffee can with an X cut in the center to pass the bait through.

The exercises will be described under the headings of dynamic mobilizations, core strengthening and balancing exercises.

Dynamic Mobilizations

Dynamic spinal mobilization is achieved by having the horse follow a controlled movement pattern designed to enhance suppleness of the neck and back during athletic performance.

A bait (food source) is used to entice the horse to move into the required position. Carrots cut into strips about 1 cm in diameter work well. Remember to wear leather gloves to protect your fingers. As an alternative you can teach the horse to perform the stretches using target training. Work in an enclosed area on a level, non-slip surface, such as an arena, round pen, paddock or large, well-bedded stall. In the beginning, it is helpful to back the horse into a corner or stand him against a wall until he learns to follow the bait with his head rather than by moving his legs.

Start each exercise with the horse standing in a balanced position. Often, horses adjust their position during the exercises to maintain their balance, especially in the learning stage, so stand in a safe place relative to the horse, never directly behind the hind limbs, and give yourself room to step away from the horse if necessary. Be observant of the horse's head position, body posture and reactions as you perform the exercises.

The first set of mobilizations is designed to round (flex) the horse's neck and back. The chin is enticed toward three positions: at the chest, between the knees and between the front fetlocks (picture below left). Each exercise rounds a specific part of the neck and back. The second set of mobilizations is used to improve lateral bending of the neck and back by enticing the chin sideways toward three positions: the girth, the flank and the hind fetlock on each side (picture below center). The neck should bend evenly along its length rather than forming a hinge just in front of the shoulders

Initially, be content with a small amount of movement in the required direction. Over time, ask the horse to reach a little further until achieving the desired position or reaching the end of the range of motion. Encourage the horse to maintain each position for several seconds then allow the muscles to relax after each attempt. Repeat each rounding exercise 3-5 times daily, and do 3-5 repetitions to each side for the lateral bending exercises. The horse controls the amount of motion and is never forced into an uncomfortable position by manual pressure. Since the horse's own muscles are used to flex and bend the intervertebral joints, the exercises also have a strengthening effect.

After doing the rounding and lateral bending exercises, it is useful to stretch out or 'unwind' the neck (picture below right). For this exercise the horse's chest is restrained to stop him stepping forward and his chin is enticed forward and outward with the neck lowered.

Core Strengthening Exercises

The core muscles are used to round and bend the horse's back during exercise. These muscles include the abdominal muscles, the sublumbar muscles and the back muscles that control the horse's posture and stabilize the spine and pelvis, especially in highly collected movements. Core strengthening exercises activate this important group of muscles by stimulating flexion and/or lateral bending of the intervertebral joints. Different techniques recruit different areas of the back and the techniques can be combined to stimulate multiple muscle groups simultaneously. Core strengthening exercises improve the horse's posture and carriage and are particularly valuable in horses with a hollow topline or sagging abdomen.

Core strengthening exercises are based on the application of pressure to specific anatomical areas of the horse's body. The horse responds by lifting and/or bending his back. If you have strong hands and fingers, the pressure can be applied manually but if you don't have strong fingers, you can put on a thimble or use a blunt-edged object, such as the rounded edge of a hoof pick, to apply pressure. Position your feet to stabilize your own balance while avoiding the

risk of being trodden on if the horse steps sideways, and practice good posture as you perform the exercises: bend your knees, pull in your abdomen and straighten your back.

Upward pressure on the sternum, starting between the chest muscles and slowly sliding the pressure back between the front legs and over the girth line stimulates the horse to lift his chest and back. The area being lifted starts at the withers and moves back behind the withers and to the area under the saddle as the pressure is applied further back (picture below left). Pressure on the vertebrae above the tail head is used to lift the lumbar region behind the saddle and to tuck the pelvis. Start with pressure on the first vertebra above the tail head and work forward until you find the “sweet spot” where the horse responds by tucking his pelvis and rounding the lumbar vertebrae (picture below right). Pressure applied in the groove between the muscles on one side of the haunches stimulates a combination of lifting and lateral bending in the lumbar region.

Encourage the horse to maintain each position for several seconds by maintaining the pressure, then allow the muscles to relax after each attempt. Repeat each core strengthening exercise 3-5 times daily, and do 3-5 repetitions to each side for exercises that have a bending component.

Balancing Exercises

Balancing techniques apply manual techniques to teach the horse to activate muscles of the thoracic sling, trunk and pelvis that are important for improving balance and stability during athletic performance.

The horse is induced to use active muscular contractions to shift his center of gravity back toward the haunches by engaging the muscles of the thoracic sling. These muscles are used during ridden exercise to prevent the horse going on the forehand and to improve collection and self-carriage. In other balancing exercises, the horse resists displacement of the haunches in response to a pushing force (perturbation) by activation of muscles that stabilize the hip and pelvis. Contraction of the pelvic stabilizer muscles is evident around the hip and stifle as the horse performs the balancing exercises. These muscles control movements of the horse's pelvis when the hind limb is grounded and the horse is moving sideways or turning around the hindquarters, as in a pirouette or spin. Strengthening these muscles is particularly beneficial in horses with wobbly hocks.

The first balancing exercise uses pressure applied to the front of the horse's chest to stimulate the horse to lean back toward the haunches by contracting the thoracic sling muscles. This is a fairly subtle movement. The tail pull exercise (photo below left) involves pulling the tail sideways

to stimulate activation of the pelvic stabilizer muscles to maintain the horse's balance as he resists stepping sideways. Other balancing exercises involve rocking the horse's weight back and forth with a front or hind limb raised (photo below right). The balancing exercises can be combined with exercises that lift and round the horse's back.

Further Reading

ACTIVATE YOUR HORSE'S CORE is available as a book and 95 minute DVD from:

www.SportHorsePublications.com