

Building a Sound Future

How to start a young horse correctly.

By Nancy S. Loving, DVM

2



You proudly survey your young horse as you consider sending him off for training to get started under saddle. He's turning 3 years old, and you are eager to begin your working relationship with him. You know there are problems in starting a horse too young, with soundness issues surfacing later in life due to premature or incorrect training, but you wonder how to determine when the right time is.

FROM THE PAGES OF:
HORSE
ILLUSTRATED
MAGAZINE

A Good Question

In the horse world, there have long been misconceptions about the proper timing for starting young horses into steady exercise. The tendency is to over-coddle them when they are very young, and then overface them with exercise demands when they are only just a bit older, yet appear physically mature. One common mistake is housing a young horse in a stall or small area where he doesn't have a chance to run, play and kick up his heels. The impact of a little bit of sprint exercise, which is what young horses do in turnout, is what builds the strongest bone, as well as improving neuromuscular agility. (See "[Stall Vs. Acreage](#)") Another mistake is the tendency to take a relatively idle young horse and send him off for training where he is asked to perform rigorous exercise every day for a few months to "break" him to saddle. This potentially fatigues unprepared muscles, tendons and ligaments, and bruises tender feet. Then, there is the likelihood that the horse will develop soreness and discomfort, which can lead to associated behavioral problems.

The question of time to start training isn't so much about the when as the how. "Training" should begin very early. In the early months following birth, a young horse's musculoskeletal tissues experience a dynamic development phase related to growth. During this time the tissues are extremely adaptive and changeable. This is especially true of joint cartilage, tendon and bone. Exercise early on impacts the health of these tissues and their resistance to injury, with these effects lasting into a horse's later years.

Growth Plates

Conditioning strategies have evolved through scientific application and understanding of exercise physiology that has taken great strides in recent decades. We now know that basing maturity on growth plate closure is inappropriate to determine how to train a horse for athletic longevity.

Historically, people have measured a horse's skeletal maturity by growth plate closure. However, this technique has only slight relevance. The growth plates of the knees and hocks are well closed by 1 1/2 years of age, 2 years at the latest, and so this becomes a moot issue in considering when to start your young horse in simple training.

One relevant feature of growth plates pertains to any conformational crookedness of the limbs, known as angular limb deformities. If a horse is toed-in or toed-out from the fetlock, surgical correction must be done before he is 2 months old. For angular rotations based around the knees or hocks, surgical correction should be implemented no later than 5 to 6 months of age to achieve reasonable success. A horse with a conformational imperfection, such as a crooked leg, will need more time and diligence in developing his musculoskeletal system with proper training. The objective is to strengthen the support structures in his legs to minimize rotational and twisting forces on a crooked limb.

Adaptive Changes in Response to Exercise

Withholding exercise in the first months and years predisposes a horse to a myriad of joint or tendon issues later in his athletic life. Confining a young horse leads to varying degrees of atrophy throughout his body, but especially reduces the thickness of his joint cartilage. Thinned cartilage is more at risk of injury.

Loading the limbs through exercise (called “dynamic loading”) stimulates adaptive responses in long bones and in joint cartilage; these responses are critical to protecting the joints from incurring too much impact stress under reasonable athletic conditions. The largest adaptations of joint tissues to limb loading occur within the first 5 months of life. These young, developmental adaptations continue through at least 18 months of age. Similar adaptive changes occur in exercised tendon and ligament tissues, which respond favorably to mild to moderate daily exercise. These soft tissues maintain their elasticity and rebound abilities when loaded, and also improve in fiber alignment and orientation to impart tissue strength.

Training Programs

Training is an ongoing, controlled process of steady increases in demand. The safest way to start any horse, especially a young horse, is to apply low-intensity training to stimulate his different musculoskeletal systems to respond and adapt to incrementally increasing levels of exercise stress. This type of exercise relies on walk and trot at slowly increased durations, eventually reaching a steady program of long, slow-distance training, or LSD. The distance or time you ask the horse to exercise is increased while the intensity remains moderate, no faster than a working trot to start. In this way, a young horse’s bones, joints, tendons, ligaments and hooves receive relatively low impact, but the cardiovascular system develops to improve endurance and stamina. At the same time, the neuromuscular system improves in agility. All the while, a young horse’s confidence steadily improves, particularly if he is not overfaced early on. For a young horse, 2 to 5 years of age, LSD work may continue for months before he is asked to proceed at more rapid paces.

A training strategy should expose your young horse to a variety of exercises to improve every musculoskeletal component. This may include a combination of arena or round-pen work at walk, trot and canter, or hill work, or cavalletti poles, or running free in pasture turnout. Regardless of the athletic discipline to be pursued, there are basic starting points to build a strong foundation.



Protecting Bones and Joints

Studies have shown that unrestricted turnout exercise 24/7 results in better bone density and reduced developmental orthopedic disease (DOD). A young horse confined to a stall does not develop the bone density of a youngster that is given the opportunity to exercise. Exercise restriction retards normal joint development, creating a longer opportunity and greater risk to incur DOD.

A concept known as “enhanced cyclic loading” stimulates improved structural stability of joint cartilage and bone. This is achieved with moderate exercise. Moderation is key: Excess exercise damages the tissues, whereas too little exercise does not promote adaptation and conditioning that enable a horse to perform well in his later years.

Studies have demonstrated that a very short duration of sprint activity is advantageous for optimal bone density and strength, and to elicit protective remodeling of the joint tissues. Short periods of impact loading, such as trotting on a hard surface, are able to stimulate improved bone condition with an increase in mass and density, particularly in the long bones of the skeleton. For most performance and pleasure pursuits, a horse’s skeleton can be adapted by trotting on a firm surface for short periods, or with sprint gallops in turnout.

A gallop for less than one-fourth of a mile (400 meters) is all that is needed to stimulate such an adaptive response for a racehorse, but for most pleasure and performance horses, this is usually accomplished in a large pasture turnout where a young horse can play. If pasture is not available, then the young horse should be exercised or ponied off a reliable older horse while encouraged to move at a vigorous trot on a firm surface, but he need not travel more than one-fourth of a mile. The speed demanded for this task should be increased slowly over a period of time. In order to avoid soft tissue or joint injury, the young horse is only urged to faster speed after he has been conditioned with LSD work for a couple of months.

Too much high-intensity impact can backfire. Instead of achieving adaptation, joint deterioration is the result. Joint cartilage that is damaged from too much impact stress will later develop degenerative joint disease, or arthritis. A common-sense approach of “less is more” enables you to implement short periods of impact exercise that stimulates a beneficial adaptive response in the joints and in long bones. As efforts are made to protect growing joints and bone, these same techniques will take care of tendons, ligaments and muscles during their development.

Exercise Moderation

Steady, moderate exercise at walk and trot first on level ground, then later adding in hill work, is the best way to develop a young horse's physical and mental strength. Yet, for you to be safe in the saddle requires some amount of arena or round-pen work to teach the horse to respect your cues. Everyone has a different way of accomplishing this: Some use round-pen work with natural horsemanship tools; others use arena work on the longeline. Whichever way you choose, think "moderation." Short training periods (20 – 30 minutes) in the round pen or on a longeline can yield significant results without physical duress. Extended training periods (longer than 30 minutes) on the longeline or ridden round and round in circles can place excess torque on developing joints and bones. Sudden stops, turns or rollbacks also increase impact wear on the limbs. Similarly, too many consecutive training days add cumulative stress load to the musculoskeletal system.

Common sense should prevail, using some general guidelines:

- Allow for 5 – 10 minutes each of warm up and cool down.
- Limit circle work or repetitive exercises to less than 20 - 30 minutes each session.
- Limit intense training periods to every other day or once every two days to allow for tissue rest and recovery between training periods.
- Turn horse out to pasture whenever possible for rest and recovery between training sessions.

On the "off" days, utilize other training techniques, like ponying the youngster behind an experienced horse for short mileage at a slow to moderate speed, or ground handling work, or accustoming the horse to equipment and tack. These days are also useful to teach the youngster about trailer loading, tying, grooming and leg handling. Every opportunity should be taken to teach a young horse to respect your space and to be tractable to being led in any direction. The time taken to teach good ground manners will yield dividends once you're in the saddle.

Nancy S. Loving, DVM, is a performance horse veterinarian based in Boulder, Colo., and is the author of All Horse Systems Go.

This article originally appeared in the April 2007 issue of Horse Illustrated. [Click here](#) to subscribe.