

# MONITORING EQUINE FITNESS

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During the late fall and winter months, many horse owners are not able to ride as often as usual due to weather and shorter daylight hours. Often, spring brings warmer, milder weather, and horse owners are eager to get back in the saddle and pick up where they left off the previous year. During periods of rest or decreased levels of activity, horses can lose fitness and conditioning. Similarly, horses that are consistently worked should be monitored for progress and current fitness level. Keeping track of a horse's fitness can be an important tool to prevent injury and overwork when developing or assessing training programs for all exercising horses. Before heading out for long trail rides, hacks or a competitive show, make sure horses are prepared physically by assessing the horse's fitness level (Image 1).



*Image 1: No matter what discipline or breed, before beginning a new riding program or getting back to regular riding assess your horse's current fitness level. (Image credit: Sarah Chabot)*

## Equine Fitness and Training

Similar to humans, horses have the ability to increase their tolerance to activity through physiologic adaptation or adjustment of the body systems to cope with the activity level. Just as it would be unreasonable to expect a person to complete a half marathon after taking the winter off from physical activity, it is unfair to ask horses to perform intense workloads without easing back into a normal activity level. Fitness involves multiple body systems and includes efficient thermoregulation (sweating), cardiovascular, respiratory and skeletal muscle function, along with bone strength. A good conditioning program will improve the horse's ability to perform by challenging these systems, or "fitness," and is specific to the type of activity the horse will perform. For example, a horse may be fit for a draft-pulling competition, but they would be ill prepared for an endurance race and vice versa.

Training varies slightly from conditioning or fitness and is defined as the horse learning a new skill or activity. Conditioning and training can be done at the same time, but it is important to understand the difference between each of these activities and their role in equine performance. For example, a runner can work on running form while covering many miles in preparation for a long distance race, similar to the way in which a rider can aid the horse to travel in the proper frame

while trotting along the rail. Both of these are good examples of conditioning. If the horse was learning to navigate a new trail obstacle, the rider would be training a new skill for the horse, but not much conditioning or fitness would be achieved during this time.

Both training and conditioning are very important for many aspects of equine performance. When developing an exercise program, consider completing activities similar to the environment in which the horse is expected to compete or perform. For example, horses trained in flat, soft, sandy areas will not be well prepared for hills and hard terrain. If preparing for events requiring bursts of high-intensity exercise, such as speed events, cutting or jumping, be sure to provide the horse time to regain their fitness for these activities as well.

## How Much Time Is Needed?

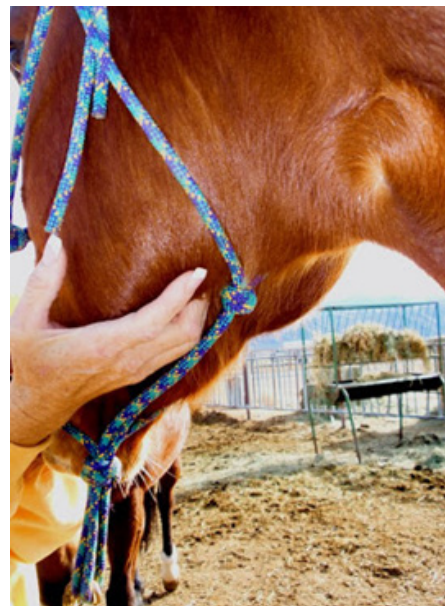
In general, horses maintain their current fitness level for the first three weeks of inactivity. A good rule to follow is for every day off, a horse will require one day of conditioning to regain the lost fitness. After eight weeks of inactivity, the horse will have lost a substantial amount of fitness and should be reconditioned with low-impact time under saddle, such as hacking or flatwork. It is also important to remember that while muscle responds relatively quickly to a training protocol, bones, ligaments and tendons are slower to adapt and need time to adjust in order to avoid injury.

“Take the time it takes” is a phrase often used when training horses to learn new skills, but the concept is easily applied to fitness as well. Allow your horse plenty of time to regain appropriate muscling and for other body systems to adapt to the desired level of activity. Rushing through conditioning and other fitness exercises can

lead to suboptimal performance, injury and a slow progression for future training sessions.

## Monitoring Fitness

The easiest and best way to monitor your horse’s fitness is through heart rate recovery after exercise. Begin by taking the horse’s resting heart rate while the horse is in a calm, quiet state. The easiest place to take the horse’s heart rate is the mandibular artery, just under the jaw. Curl the fingers of your hand in the groove between the horse’s jaw, and pull back towards you. A cord-like structure should be found, and when slight pressure is applied, the pulse can be felt (Image 2). Time the number of pulses over 60 seconds to determine how often the horse’s heart beats per minute.



*Image 2: To take the horse’s heart rate, place your fingers in the jugular groove. Curl your fingers backward until a cord-like structure can be felt. Apply slight pressure to feel the horse’s pulse, and count the number of pulses over 60 seconds. (Image credit: Lew Strickland, the University of Tennessee)*

The heart rate can also be measured by using a stethoscope in the heartgirth, directly behind the elbow on the left side of the horse. A mature horse's resting heart rate should range from 28 to 40 beats per minute. If the heart rate is above this range, let the horse relax and try again a few minutes later. Next, after completing a ride/workout, monitor the time it takes the horse's heart rate to return back to the normal range. Begin by completing a normal ride/workout/activity, and immediately after finishing, take the horse's heart rate. It is important to take this measurement after the peak of exercise intensity, as this will provide the best indicator of the horse's fitness. Do not walk the horse around or wait for them to "cool down," as this will not provide an accurate reading of the horse's heart rate after the peak of exercise intensity. For example, if completing a reining pattern, take the horse's heart rate immediately after completing the pattern, but before walking the horse around or out of the pen.

If the horse's heart rate returns to the normal range at or before 15 minutes after exercise has ended, the horse has been worked adequately to maintain fitness considering the current fitness level. This level of activity will allow the horse to maintain its current fitness but will not increase their overall fitness level. If recovery is achieved within 30 minutes after exercise, the horse has been stressed within an acceptable limit to increase fitness. In the event recovery to the normal heart rate range takes longer than 30 minutes to achieve, the current exercise activity may be too challenging for the horse based on their current fitness level. Consider scaling back the activity/intensity

level of exercise and completing conditioning work until the horse has an opportunity to increase fitness level.

Similarly, recovery of the horse's respiratory rate can also be used as an indicator of fitness. Respiration rate can be taken by watching the horse's chest move in and out with each inhalation and exhalation for one breath. Also, feeling for air moving out of the nostrils can be an effective way to determine respiration rate. A stethoscope can also be used to listen for breath as air travels across the trachea. Be cautious that the horse is not sniffing, as this can make the resting respiration rate appear abnormally high. The normal resting respiration rate for an adult horse is 8 to 12 breaths per minute. Once the resting respiration rate is determined, then follow the procedure detailed above; complete an activity and upon finishing, check the horse's respiration rate and monitor the time it takes to return back to resting values.

These tests can be repeated frequently and should be used consistently during any exercise program. Make sure to complete the same exercise in order to monitor the horse's progress through the training program or riding season. For example, jump a complete course, ride a set distance at a specific gait, or perform a set of maneuvers like what would be expected for a reining pattern or dressage test. By keeping the level of exercise consistent, the horse's ability to tolerate this level of activity at a set intensity will become evident. Ideally, the horse should be able to recover faster and perform at a higher level of work as they become more fit. Increased fitness will be displayed by a faster

recovery rate and a lower heart or respiration rate immediately after the exercise activity is complete. For more information on assessing your horse's fitness or developing a training or conditioning program, contact your local county Extension agent.



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