

US Eventing

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Swimming for Fitness

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As you envision swimming your horse, probably you're thinking of a crystal-clear lake with a sandy beach on a hot summer day and you on your horse's back. Did you imagine a pool inside a veterinary hospital? Swimming has become increasingly popular as a conditioning tool or as a rehabilitation method for horses with certain injuries.

HOW IT WORKS

Before a horse starts a program of swim conditioning or rehabilitation, a complete physical examination is performed. If the horse is swimming as a part of rehabilitation from some musculoskeletal injury, than appropriate radiographs, ultrasound or other diagnostic tests are obtained to assess the extent of the injury or of healing before swimming exercise commences.

Initially the shoes are taken off to minimize the horse injuring himself by interfering. Each horse, however, is re-shod after the first week in the pool, to allow a more efficient "cupping" action to the feet while swimming.

For the first two to four days, each horse is lightly tranquilized to decrease his apprehension of going in the pool. The very first day, he will typically walk right down the ramp into the pool. The second day usually requires a push, and thereafter they go quite willingly. During the first week of swimming, one person walks with the horse on a long head pole, while another walks across the pool from the horse with a rope ("cross-rope") to ensure that the horse doesn't get too close to the wall. After this, the horse is hooked to the arm in the middle of the pool and accompanied by a person walking next to him. Time is gradually increased so that the horse attains 15 full minutes of swimming exercise by the tenth day in the pool (dictated by the individual's condition). This 15-minute daily level is maintained for at least four more weeks, at a cost of \$250 per week which includes swimming and hospitalization.

PHYSIOLOGICAL RESPONSES TO SWIMMING

What effect does swimming have on a horse's condition? Can swimming attain a level of condition in a previously unfit horse, or maintain condition in an already fit horse?

In the late 1970s and early 1980s, a number of studies were performed to evaluate the effect of swimming as a form of exercise on horses. Racehorses

were used so as to compare values obtained on the treadmill or racetrack. Using heart rate as one parameter to measure the degree of challenge to the cardiovascular system, studies show an elevation from a mean of 34 beats per minute (bpm) to a mean of 175 bpm after just 5-8 minutes of swimming. A maximal effort on the racetrack may produce heart rates in the range of 200-220 bpm. From a cardiovascular standpoint, swimming exercise of 5-8 minutes is categorized as slightly "sub-maximal," but controversy exists as to the effect the water has on the body heat dissipation, which may decrease the ability to attain maximal cardiovascular parameters.

Humans swimming at maximal exercise have lower heart rates than while running on the treadmill at maximal levels, so one might assume a correlation with horses. It has been estimated that 15 minutes of swimming exercise is equivalent to five miles at hand-galloping speeds (at approximately 500 meters per minute).

Other parameters may be useful in assessing the condition of horses undergoing swimming exercise. Blood lactic acid (lactate) levels will increase as work effort increases and can be used to evaluate the ability of the horse to recover from strenuous exercise (another indicator of condition). Blood lactate levels can be obtained at varying times following swimming to estimate the relative potential for lactic acidosis, or "tying-up syndrome." Because swimming is not a completely anaerobic form of exercise, these values can be suggestive for a problem, but are not absolute.

Our experience indicates that horses already in good condition that swims because of the season of the year, due to rehabilitation from injury or simply as a change of pace from other training regimes, maintain this level of condition in the pool very well. We can rapidly accelerate them to the full 15 minutes and therefore maintain them at this level for a longer period of time. A horse that is in poorer condition, or that has been laid up due to injury for an extended period of time, can still attain an acceptable level of condition in the pool. However, the rate of increase in time of swimming from day to day had to be more gradual and ultimately more time must be spent in the pool. Heart rate, respiratory rate and blood lactate levels can be obtained at the clinic to evaluate the level of each individual horse.

Although we have had some horses race or compete immediately after swim conditioning exercise, we don't recommend it. It will typically take four to six weeks to prepare a horse for racing level performance after swimming. Some time is needed to reacclimatize the horse to the slightly different propulsive forces required on land than in water.

SPECIFIC INDICATIONS FOR SWIMMING

The majority of the horses we swim at Rochester Equine Clinic are Thoroughbreds and Standardbred race horses. These horses swim for two main reasons: 1) as part of a rehabilitation program for musculoskeletal injury or, 2) a long lay off from performance and a desire to acquire some level of condition before ground work is started again. Injuries are usually those affecting joints, tendons and ligaments. Joint conditions in horse that swim include chip fractures

(after arthroscopic surgery) and other potentially more severe joint fractures and degenerative arthritis. Soft tissue conditions include tendonitis (bowed tendon, following surgery), or suspensory ligament problems.

The most beneficial aspect of swimming for horses is to the ability to increase condition, muscle strength and joint/tendon flexibility without the significant concussive forces they would incur if ridden or treadmilled. We have seen a dramatic improvement in how these horses return to riding/training after swimming.

Olympic Riders Bruce Davidson, Darren Chiacchia and Phyllis Dawson Swim Their Horses for Fitness, Therapy and Pleasure

Olympic rider Bruce Davidson uses swimming as an additional form of exercise for his event horses that are fit and competing. In addition when a horse has an injury when weight bearing exercise might not be possible – stone bruise, grave, nail prick – swimming is invaluable as the fitness schedule remains intact and tying up is avoided. Bruce also uses swimming in the summer when the ground gets hard.

But swimming horses for Bruce is not a “sometime” situation – all his horses swim, and they love it. They may work in the arena, go for a hack, and then go for a swim for therapeutic and fitness reasons, or simply for their sense of well-being. This might be three times a week. To keep a horse tight and fit, their dip would consist of two five-minute swims with a one-minute break. Bruce avoids swimming horses that have back, hock or hind end, or wind problems.

At Chesterland, 30 horses swim each day in the summer in an outdoor pond that consists of 22’ of water, a ramp and an island. Several horses swim at once, each with a handler. Then on some Sundays everyone has fun swim-racing the horses in the pond, with an occasional Jack Russell heightening the emotions from the back of one of the swimmers.

Due to weather conditions in Buffalo, N.Y., advanced rider Darren Chiacchia uses a pool for conditioning his event horses for spring competitions and continues swimming his horses throughout the summer. He takes advantage of a system called “tail-tying” in which the horse swims in a stationary position by being attached by the tail to a cord, then to a spring on a post. Darren feels his method requires more physical effort on the part of the horse, is therapeutic for injuries, is effective for back problems as the horse really uses his head and neck, and is hygienically more efficient due to ease of changing the water more frequently in a small pool.

The only disadvantage is that only one horse can swim at a time. Horses adapt differently to “tail-tying” – some exert a great deal of energy while other like Darren’s advanced stallion Amethyst almost treads water. He builds up to 8 eight – to – ten minute sets with one minute rest out of the pool. With this type of swimming, Darren has brought back horses with injuries though to irreparable.

Lady Rider of the Year (1992) and Olympic competitor Phyllis Dawson also uses swimming as a fitness tool for her horses in training, to bring them to peak of fitness. For those horses, she builds up to three five-minute swims, or two seven-minute swims, three times a week.

Horses with foot problems swim every day for three six-or-seven minute swims, with three-minute rests out of the water. Phyllis feels most horses enjoy this exercise, and learn the routine in three days, with only about one in ten panicking. Living in Virginia, Phyllis also finds swimming horses in her outdoor pond a cooling form of exercise in the hot summer months.