

Using Exercise Heart Rate

Like the combustion engine of a car, your horse breathes and uses oxygen and feed to generate energy, which in turn enables it to run fast. Its heart and lungs provide a delivery service taking the oxygen to the working muscles, which in turn use the oxygen to “burn” carbohydrate and / or fat to provide energy for the muscles to contract. How well the horse carries out this function depends upon its breeding or genetics, age, state of health and level of fitness.

So how can you, the trainer, improve your horse’s ability to provide the energy required for its muscles to function effectively? Obviously, you put it into training! And fortunately horses are like humans in that their bodies are able to adapt to the physical stresses placed upon them via your training program. By exposing your horse to a well-designed training program, you start to stress or overload the horse’s energy systems, bones, muscles, tendons and ligaments. If your program also includes well placed recovery bouts between training sessions, the horse’s body adapts to the overload process to make itself stronger and fitter. These adaptations or changes occur slowly over time. So, for continued improvement within a training program, you must continue to stress or overload the horse through an increase in the volume (distance or time) and intensity (speed or “hardness”) in your training program. In other words, as the horse adapts to your training program, you need to gradually train it harder.

So how do you know if you are training your horse at the right level of “hardness” or stress?

You would probably answer this question by saying you measure the horse’s running or pacing speed, or look at its breathing pattern or sweating pattern or even see how it recovers after the training session. For example, many trainers use a stethoscope to measure recovery heart rate when the horse has returned to the stable (Polar VetCheck is now available and has been designed to replace the stethoscope – see our product section for more information). However, because of improved technology, there is now another method trainers can use to measure how hard their horse is working – the horse’s exercise heart rate. Heart rate is often used as a standard measurement for training intensity because *the harder the horse works, the higher its heart rate will be*. Hence, your horse’s heart rate during training is an excellent “trainer’s tool” for prescribing and monitoring *how hard* your horse is working during the training session. Remember however, there is nothing magic about a heart rate monitor and it is a tool that should be used in conjunction with all the hard-earned knowledge and experience you have accumulated

as a trainer. However, after several sessions of heart rate monitoring, you will start to find that the information provided will confirm or highlight a condition that you may have suspected was in existence, or it may help you to recognize one that you weren't able to confirm with you naked eye. You may also start to realize that some aspects of your training are either too hard or too easy for your horse.

Knowledge and understanding about how hard your horse is working is the single most important factor in your training program. And this is especially the case if you have several horses in your stable to train, or if, some other reason, you only have a limited amount of time each week to train each of your horses. If you use the horse's training time efficiently by working it at an appropriate intensity, then you can expect to achieve positive results as your horse responds and adapts to the physical demands of the training program. Similarly, lack of understanding about appropriate training levels can result in many serious problems and conditions. Training the horse too hard for too long may cause long term fatigue and continual injury, whereas training at too low an intensity produces very slow progress, with minimal or no result.

Figure 1 gives an example of how a trainer has used heart rate to control the training session of his horse Lovestad.

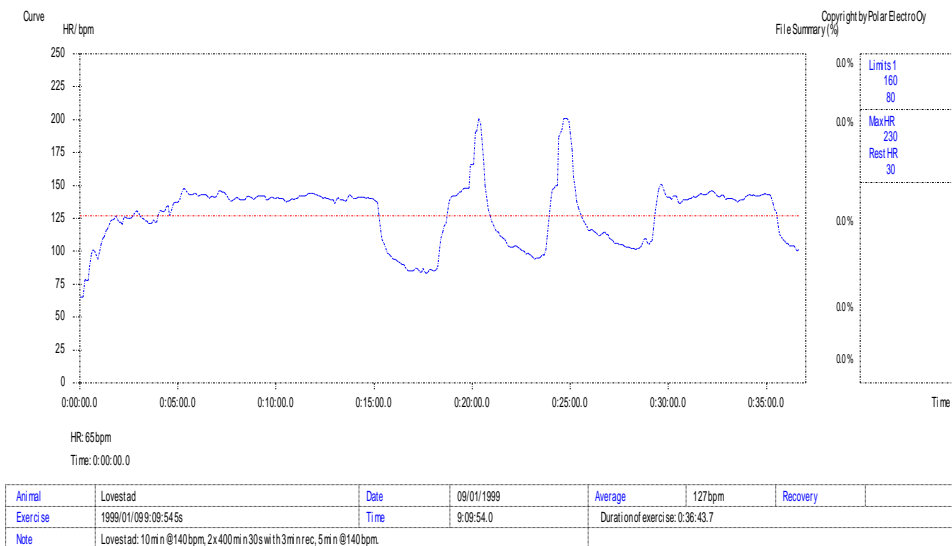


Figure 1 Heart rate trace during a 35 min training session

The aim of the session was to give Lovestad approximately 20 minutes of continuous pacing at approximately 60% of his maximum heart rate, interspersed with two 400-meter efforts each completed in 30 seconds. From the graph you can see that the first 5 minutes was more of a warm-up period and was completed at around 120 beats per minute or 50% of Lovestad's maximum heart rate. The next ten minutes were completed at around 140 beats per minute or 60% of Lovestad's maximum heart rate. Lovestad then walked for three minutes during which time his heart rate dropped to 95 beats per minute. He then paced 400 meters in 30 seconds where his heart rate reached 201 beats per minute. After another three-minute walk he repeated this effort. Finally, after recovering back to 100 beats per minute he paced for another five minutes at 140 beats per minute. Five minutes after arriving back in the stable his heart rate was back to 67 beats per minute.

From this example you are able to see how the trainer controlled the continuous endurance work at about 60% of the horse's maximum. The trainer also used the horse's recovery heart rate between the speed efforts to help determine the length of recovery time between each effort. And finally, the horse's "recovery" heart rate back in the stable gave the trainer information on how the horse had handled the whole training session. Combining this information with the trainer's "gut feel" produced a much more controlled and professional training session. It also provided the trainer with much more information if he decided to make any changes to the program.

In summary, incorporating heart rate measurement into your horse's training program will help maximize its genetic potential and racing performance. In addition, you will start to learn how each of your horses respond to different types of training, tracks and environmental conditions, and you will certainly be seen to be more professional and accountable by your owners.

Summary Points

- Improved technology now enables heart rate to be easily measured on your standardbred
- Intensity or how hard your horse is working is the single most important factor in your training program
- The higher your horse's heart rate, the harder it is working. Hence the reason why the horse's heart rate is such a good measure of training intensity or "hardness"
- Measuring your horse's training and recovery heart rates will enable you to:
 1. Maximize your horse's genetic potential

2. Control each training session
3. Make better decisions when it comes modifying your training program