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How to ensure your horse is fit

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David Marlin obtained his PhD from Loughborough University in 1989 based on work undertaken at the Animal Health Trust on the metabolic response to high-intensity exercise and training in the Thoroughbred racehorse. He then worked for 3 years as an exercise physiologist for racehorse trainer Luca Cumani in Newmarket. From 1993-1996 he undertook studies on thermoregulation and transport of horses relating to the 1996 Atlanta Olympic Games.

His main areas of professional interest are respiratory function in man and animals in health and disease with special focus on asthma, thermoregulation and general exercise physiology. From 1990 until 2005 he worked at the Animal Health Trust in Newmarket. He currently works as a scientific consultant, as a director of a nutrition company and holds the position of Visiting Professor in Cardiorespiratory Physiology at the University of Bristol. He is the author of over 150 scientific papers and book chapters.

David's other affiliations and positions include Sports Science consultant to the British Equestrian Federation, member of the editorial board of the Equine Veterinary Journal, member of the Specialists Consultants Board for Equine Veterinary Education, author of Equine Exercise Physiology, Visiting Professor at Nottingham Trent University, International Committee Member of the International Conference on Equine Exercise Physiology, Board Member of the Veterinary Comparative Respiratory Society and editor of Equine and Comparative Exercise Physiology. David has been working with the FEI in the lead up to the 2008 Beijing Olympics advising on climate considerations for the Equestrian Disciplines, which will be held in Hong Kong. He is also jointly leading the FEI Initiative for Welfare in Endurance with Prof Leo Jeffcott.

What do we mean when we say to someone else 'my horse is fit'? In almost all cases we are trying to get across that our horse would be able to cope with a form of exercise or competition. However, if we do not give a little more detail it can be hard for the person we are addressing to understand exactly what we mean. For example, a horse that has been at pasture for a year, with no other form of exercise, may be fit enough to be ridden for 30 minutes at a walk, but not fit enough to be ridden at a fast gallop. If we look at a dictionary definition of fitness, it may say "well adapted or suited" or "in good athletic condition or health". However, this is a very simplified definition. Just think of the difference between a 'fit' racehorse and a 'fit' hunter. These horses may be well adapted or suited for what each is going to be asked to do, but they are not going to be asked to do the same. Similarly, an elite endurance horse that can cover 160 km at over 20 km/hour must be supremely fit, as must a Thoroughbred racehorse that wins the Derby. However although fit, the Derby winner would struggle and be unlikely to be able to complete 160 km and vice versa for the endurance horse in the Derby. So, when we talk about fitness, we have to put it in context of what we expect or are going to ask our horse to perform.

We train horses to get them fitter. Why do we want a fit horse? The first reason is that fit horses usually perform better. The second reason is that fit horses should be less likely to injure themselves. Despite this, there is a high prevalence of injury associated with horse training and competition which should lead us to question if we train horses the right way. My personal view is that we train horses too hard by working them too frequently and that we could achieve the same level of fitness but with less exercise.

If we are told we have a fit and an unfit racehorse, and we race them together there are a number of things we might expect to happen. The fit horse should have a good, expected or acceptable performance. It should show a 'clinically' normal response during exercise and recovery (ie it should not sweat excessively, have a very high temperature, stagger, cough, etc). We should be able to predict how the individual body systems will react (eg how high the heart rate would be). After exercise the fit horse should have a rapid recovery, show normal behaviour and have a normal thirst and appetite. In contrast, an unfit horse would probably have a poor performance, abnormal or extreme responses to exercise (eg a very high heart rate), slow recovery after exercise, it may be unsteady on its feet and weak, the horse may be lame or become stiff or ill (eg develop colic), have reduced or greatly increased thirst and appetite and may become depressed.

One of the main problems with understanding 'fitness' is that it is a subjective term. It's very hard to put a number on something like fitness and therefore be objective about it. The only time we truly know a horse's fitness with a high degree of certainty is when the horse is unfit. Imagine a line from unfit to 100% fit. As soon as we move along the line and away from unfit it's hard to know how far we have to go to reach 100% or maximum fitness. In fact, in the real world, horses probably never reach maximum fitness. This is because horses exercised intensely and for long periods may develop other problems that cause the rider or trainer to ease back. These problems can be behavioural or physical and can include lameness, reduced appetite, weight loss, depression and reduced rather than improved performance (sometimes referred to as overtraining).

So what is the best way to train horses to get them fit? In general terms, it is necessary for the horse to train using speeds or movements required during competition. If a horse is only trained by trotting and is then asked to canter during competition, then the muscles, skeleton and heart will not be adapted to cope with this. Remember that most horses will attain most of their increase in fitness in around as little as 16 weeks of training and that continuing to train at fast speeds for long periods beyond this has little additional benefit and is more likely to result in injury. The best way to train for fitness is to use equally spaced sessions. A fitness training day every other day is much better than three days in a row. Most horses do too many miles and not enough quality exercise that helps develop the heart and muscles. As a result, injury to the bones and joints is common. When horses have completed around 16 weeks of training they do not need to be trained every day to keep them fit. Horses keep their fitness much better than people – even 1–2 weeks of rest or light exercise will have very little, if any, effect on the fitness of a horse. Increasing fitness is also about many days of exercise rather than single pieces of exercise. Competitions are for telling you how good your training has been. On their own they do nothing to increase fitness – unless you are competing 3 times a week. The best way to understand how you are training your horse is to use a heart rate monitor so you can see how hard you are making your horse work.

Finally, if you think your horse is not fit enough, then go with your instincts. Better to live to run another day than to take risks and induce injury.