

MODULE 1: Why Riders need sport-specific fitness training

Think back to the first time you ever rode a horse. If you started riding as a child this might be a little challenging, but if you started as an adult it shouldn't be too hard. You probably remember feeling really awkward, out of balance and insecure. Your natural reaction might have been to curl into something resembling a fetal position, leaning down over the horse's mane and holding on for dear life. This action likely put your heels up into the horse's side, and if the horse had any sensitivity at all, he probably didn't like it and started to fidget – making you feel more insecure and starting a spiral of tension... welcome to riding horses!

However, if you were a child the first time you got on a horse, you probably experienced none of those things. Your body probably relaxed, found its equilibrium, and whatever happened after that happened. You weren't anticipating pain, all of life was insecure (you'd only just learned to crawl, walk, skip, ride a bike, etc... and there was no such thing as fear of failure), so there was really nothing new here, just a warm fuzzy creature under you that was your new best friend, right? Your brain and body were still creating new neural pathways as fast as they possibly could, so it took a lot less convincing to have you sit up, move with the horse and relax.



Children naturally adapt to physical stresses, because their brains are turned "on". From the moment we are born, our brains are processing billions of bits of data, arranging them into categories and patterns, and creating whatever they needs in the form of hundreds of trillions of synapses and connecting non-essential nerve pathways to muscles, joints and tendons. Our brains are self-programming. This time creates the entire foundation for our cognitive, physical and emotional existence from which we experience the whole of our lives!

Naturally, as we age, this process slows down, and many of those trillions of synapses are "pruned" as they fall into disuse.¹ Just as you wouldn't build an entire house out of foundation materials, our brain recognizes when its foundation is essentially complete, and though it has the capability of replacing and re-wiring the foundation pieces, at some point it begins simply re-using what it has rather than creating a new dendrite for each experience we have. This is efficient and saves energy, and is the basic premise behind the formation of habits. It is also the premise behind formation of fear and insecurity. If one experience resulted in pain, our brains will draw on that over and over again, whenever it recognizes a potential pattern. This process strengthens the neural pathways that are already created, which is

¹ <https://thevivacious7.wordpress.com/2007/05/15/making-connections-helping-children-build-their-brains/>

important for survival, but also can leave us “stuck in a rut” in terms of our ability to adapt to changing circumstances.

Other processes slow down as we age, also. Our cellular repair mechanism, for example, slows down until it eventually cannot keep up with the oxidative stress of living, and our bodies ultimately fail to continue producing enough energy to support all its systems, and they fail. If you’ve ever noticed that you could eat anything and everything as a youth and never gain weight, but once you reached a certain age that no longer held true, you have experienced this slowing of your body’s metabolic processes.

As a result of this “slowing down” of the building processes of both the brain and body, it takes greater effort to stay physically fit and mentally alert, and we tend to fall into behavioral and exercise patterns that allow these processes to slow even further, use stimulants to keep our minds alert, the end result being that our bodies maintain only what they need in order to maintain those patterns, all the while our habits are actually sabotaging those efforts.

Exercise programs are designed to change the body, which means they stress the body beyond what it currently is capable of in order to effect changes – changes in muscle development, changes in metabolism of nutrients, and greater efficiency in oxygen uptake by the cardiovascular system. There are beneficial side effects to many exercise programs as well, in that balance and coordination are challenged, which keeps our brains “awake” and ready to process input more effectively. However, when we do the same exercises over and over, there is a limit to the effectiveness of this approach. Our bodies are masters at adaptation and once they’ve made a change, like to create a new pattern, and this can quickly turn into just another “rut”, albeit a much healthier one!

The Rider’s Challenge

Riding presents a tremendous challenge to our brains – namely, that we don’t control the balance and movement of the horse. That means our brains must be capable of instantly detecting and adapting to balance changes not of their own making. All our ingrained patterns of movement and coordination for daily activities and even fitness training simply can’t cope with the unpredictability of movement. Because of this, adult riders struggle mightily to learn how to ride. They take lessons for years, frequently without seeming to make any real progress. This is often because they simply don’t have the neural pathways developed that they need to adapt to the unexpected balance changes. As we age, our bodies become set in their inherent asymmetries, as well, further hampering ready development of the correct muscle memory for riding. Meanwhile, children typically get on and just ride, oblivious to the incredible machine that is their elastic brain, making it all possible with split-second changes to their neural pathways.

The good news is that even though our brains create strong pathways and patterns that it prefers to default to, it remains capable of incredible

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There is no other sport that exactly matches the physical requirements of riding on horses, although many sports combine some of the elements inherent to riding.

Gymnastics and ballet both develop tremendous balance, muscle tone and flexibility, but the gymnast's equipment and the ballerina's barre don't move of their own accord.

White-water kayaking might be considered similar in that the kayak is tossed about by the river currents, but it lacks the same refinement of coordination in the lower body that riding requires.

Surfing comes close in many ways to the coordination, muscle tone and mobility required for good riding, not to mention the unpredictable nature of the water. However, standing balance is quite different than seated balance, which the rider must perfect.

Perhaps the physical activity that most closely matches all the elements of balance, coordination, stability and mobility that riding requires are the Acrobats in circus tents, who do their acrobatics on moving objects such as the trapeze, tight rope, and a variety of objects seen in the performances. Cirque du Soleil performances require a full range of these skills to be highly developed.

change, and can even completely re-wire itself after serious trauma and stroke damage. This occurs through the creation of new neurons (neurogenesis), synapses (synaptogenesis), glial cells (gliogenesis), and blood vessels (angiogenesis), and even genetic changes.² Therefore, fitness training targeted at creating new neural pathways that support the balance, coordination and movements required during riding have an enormous impact on the adult rider's ability to sit in balance, relaxation and confidence on their horses, in movement.

Furthermore, physical training off the horse, utilizing the types of muscle movements and balance adaptations that are required on the horse can stimulate the adult brain to develop the correct neural pathways *before* they actually mount the horse. This work off the horse can significantly shorten the time to mastery for the adult rider. Additionally, it can reduce the recovery of muscle memory for riders who have suffered injuries or have had a break from riding, for one reason or another. And, it can vastly improve the physical comfort of riders who have developed painful stress injuries from riding with asymmetries and improper posture, either on or off the horse.

Four Key Elements to Rider Fitness

There are four key elements to training a rider for optimum facility while mounted: Balance, Coordination, Muscle tone (Stability), and Mobility. We will explore each of these key elements in depth in Modules 2 through 5. For now, let's define why this combination is the key for rider success.

We've already noted how the rider's body must cope with balance changes it has no control over. You may recall a toy that was popular back in the 1970s and 80s called a "Weeble". It was somewhat egg-shaped and weighted in the bottom, so no matter how you pushed it over, it would always come back up to center. The rider's balance must be similar in that it must adapt instantly, and no matter what, bring them back upright and to the center of the horse. For this reason there

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http://dana.org/Cerebrum/2012/Repairing_the_Injured_Brain_Why_Proper_Rehabilitation_Is_Essential_to_Recovering_Function/

should be a strong emphasis on balance training utilizing a variety of methods and postures for a rider's fitness program.

Coordination is highly related to balance, but takes the neuro-proprioceptive concept even further. A rider must be able to coordinate not only balance, but application of one muscle group with the relaxation of another in order to apply aids precisely and in the correct timing. This requires a high degree of body awareness, as well as fine motor control.



Muscle tone or Stability is critical to the rider being able to hold themselves upright on a moving object. Most riders only consider their abdominal muscles as the proper riding muscles, but they are only a small part of the equation. On the flip side, over-strengthened muscles can be detrimental to the appropriate use of stabilizing muscle tone on the horse, so a fitness program for riders must tone the correct muscles without over-strengthening muscles that may be used to compensate for losses of balance.

And finally, mobility is the capstone of a rider's fitness training. Without mobility, muscle tone translates into rigidity, which is antithetical to good riding. And, without stability and muscle tone, mobility would simply translate into floppiness or flaccidity, either of which results in highly ineffective riding. Every part of riding – balance, coordination and stability – require joints that are free of restrictions and which move freely to absorb the motion of the horse through the rider's body in order to remain in constant equilibrium.

In the next module we'll take an in-depth look at balance as it applies to the rider on a horse.

Module 1 Questions

1. Why do riders need sport-specific fitness training?
2. Why is learning to ride so much more difficult for an adult than a child?
3. What are the drawbacks of a generalized exercise program for the rider?
4. What sport most closely resembles riding in its physical requirements?
5. What are the four key elements to a riding sport-specific fitness program?
6. Who is most likely to find learning to ride easier? A 13 year old video gamer or a 35 year old gymnast?