

Succeed with **SCIENCE!**

How's your body sense? Experts from Hartpury College explain how your shape influences your riding and your horse's performance

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We all come in different shapes and sizes, and as riders, it really helps to understand our natural body shape and how it can enhance or limit our ability to ride and compete.

Our own, unique physique is the reason why we feel more safe, secure and supported on some horses more than others. Knowing our natural shape also allows us to understand our own strengths and weaknesses and means we can develop a suitable fitness regime, working more predominantly on suppleness, strength or cardiovascular work, depending on our body type.

Shaping up

Somatotypes were devised by a psychologist called Dr William Sheldon in the 1950s to represent three body types: ectomorph – long and skinny, endomorph – short and fat, and mesomorph – muscular and V-shaped.

Most people are actually a combination of all three, but you can discover your most dominant body type by this system. Simply tick each of the attributes that describe you in the three lists on the right to give a three-number score. Seven is the perfect match, one is a low match, so, say, a pure endomorph would be a 711, a mesomorph a 171 and an ectomorph 117. Most people will be a combination, but usually one will score highest and can be used to design the best health fitness regime for you.

Which body type are you?

Somatotype describes the type of shape that a person matures into. It does not reflect your fitness levels, age or gender, but rather the shape and ratios of your natural body.

Somatotype – ectomorph

This body type is characterised by long, thin muscles and limbs, low fat storage and often a receding chin – usually referred to as slim.

Our photo (right) shows an ectomorphic or slim rider. Ectomorphs have trouble gaining weight and especially muscle, so they need to make sure they eat plenty of protein and do muscle-building, resistance type training such as weights.

- Thin
- Tall
- Light build
- Little muscle
- Little fat
- Narrow shoulders/chest/stomach/hips
- Hard time gaining muscle



Somatotype – mesomorph

This body type is characterised by medium bones, a solid torso, low fat levels and wide shoulders with a narrow waist – usually referred to as muscular.

In this image the lady rider is average in height and her body is well-proportioned. She is well-mounted on a smaller horse than the slim rider, but due to having selected the right type of mare to suit her body shape, they appear equal and in proportion. Mesomorphs have it easier when it comes to getting into shape: a reasonable amount of exercise and a sensible diet go a long way.

- V-shaped
- Little fat
- Muscular build
- Wide shoulders
- Narrow hips
- Easily gain muscle and lose fat



Somatotype – endomorph

This is characterised by increased fat storage, a wide waist and a large bone structure – usually referred to as fat.

The rider in this image is showing that it is not the size of the rider but their balance and independence on the horse that is imperative. She has had a saddle made which fits both horse and rider well, as shown by the ability for the horse to move freely forward, allowing the rider to maintain her own independent position and balance. Endomorphs have more trouble losing fat, so need a lower calorie diet and more fat-burning cardiovascular exercise to stay fit and trim.

- Pear shaped
- Short arms/legs
- Soft build
- Under developed muscles
- Excess fat
- Wide shoulders/hips
- Gain weight easily



Tick the attributes that describe you the best in the lists above to discover your dominant body type



Which horse?

Your natural shape suggests what type of horse, and which riding position, you'll find the most comfortable.

Riders with a slim build and long legs, like Ian here, can ride wider horses. They need a longer stirrup length to accommodate their position in the saddle and are often long in their body ratio from knee to hip, so need a saddle with enough room in the seat to accommodate this.

People with a shorter, more athletic body may need to ride with a shorter stirrup length to accommodate their high shape. They are likely to find the jumping position easier as it allows them to use the strength in their legs, although their balance may be less established. They are also best suited to narrower horses to allow their inner thighs to come into better contact with the saddle.

The effect of experience

As your riding skills develop, your natural posture on the horse becomes more independent and your position will improve. Research has explained the difference in the use of various muscles in the upper body and arms in the stabilising of the rider's posture

when riding on the flat.

The more educated rider will have greater postural control over their shoulders and back muscles, enabling them to maintain an independent, more vertical position than those of a novice or less skilled rider.

The novice rider is inclined to tip forward and ride with a straighter arm and round shoulders. The educated rider can sit taller and straighter and maintain flexion through their elbow, producing a more consistent feel and connection from the hand to the bit.



The more educated rider (left) can keep a more vertical position than the novice (right) who tends to tip forward with round shoulders



Turn your weaknesses into strengths

If you want to improve your riding skills, it's important that you understand where you have natural strengths and weaknesses as a person, and also as an equestrian athlete. When someone finds difficulty in undertaking a skill on their own without a horse, often the weakness is highlighted when mounted – and usually magnified when jumping!

Exercise

Find your postural strength on the ground...

A simple exercise is to stand on one foot with the other held off the floor. Hold this posture for a count of up to a minute, then repeat it on the other foot.

Many people find it difficult to maintain an independent balance for any length of time in this position and you'll usually find more strength or postural stability on one leg than the other. Transfer this to when you're on the horse, and you'll find you'll show preference to your stronger and more stable side.

...and on the horse

This exercise can be taken a stage further when you're mounted. With the horse in halt, stand up vertically (top right photo). Of course in halt, this is a false position for riding, but it allows you to identify your postural stability, independent of the horse.

You should stand over the front of the

pommel, allowing your lower leg to stabilise under your body – as guidance, the stirrup leather should be hanging vertically down. Then, lower yourself gently into a seated position on the saddle, keeping your lower leg in the same place. This will encourage the

straight line you want from your shoulder through to your hip and down to your heel.

Once you can stand in a vertical position in halt, you can develop it in walk, trot and canter (left). The best person to assess if you've achieved this or not is you – you can either do this exercise or not! Remember, it's only a balance exercise and once achieved, you should focus on riding in your independent light seat.

Simple exercises can enhance your 'proprioception' or feel of what's right and what's wrong

Exercise

To develop awareness of your arm position

Place large elastic bands around both of the rider's elbow joints. This stimulates the proprioception (feel) of the apparent restriction in the arm that novice riders often feel. Therefore, it encourages you to be more aware of maintaining flexion in your arms whilst keeping an elastic 'feel' through to the rein and ultimately the contact.



Rider symmetry and fitness



Lungeing can identify all sorts of rider body issues

There is little research into the impact of the rider on equine performance. However, some initial studies have begun to consider the effect of rider asymmetry. As with the horse, postural asymmetry in the rider can be inherited or acquired as a result of injury. We have to consider that if our equine partner is also asymmetrical this complicates matters further!

One study found that right-handed riders turn left along the head-to-toe line of their body with a greater range of movement in their right shoulders and arms. During riding, they moved less during left canter than right canter, and less in walk than in trot. It was considered that the left rotation made it more difficult for the riders to move with the horse and maintain consistent aids for a secure and stable right canter. This study also discovered that that all riders had legs of unequal length.

More work in this field is required to fully evaluate the impact of asymmetry for performance and its impact on injury rates. It would also be interesting to see if, as with horses, more symmetrical individuals are better riders.

However, it's beneficial for all riders to go back to basics and book a lunge

lesson, particularly after a fall or injury, to evaluate what their body is actually doing and how it moves relative to the horse.

Most inconsistencies observed by coaches are rider-related and are human anatomy issue, not due to the horse they are riding. The message? If you want to improve your performance, sort yourself out first and give your horse a chance to perform at his best!

Fit to ride?

To ride at your best, you also need to be fit – as fit as your horse! Of course, if done correctly and progressively, riding will condition your muscles for the sport, improve your co-ordination and reduce fatigue.

You should also consider developing your fitness outside of your riding activities, especially if you want to compete and/or have a sedentary job. Cardiovascular work is important to develop rider fitness – any activity that is carried out for over 20 minutes and raises the heart rate is suitable.

Exercises such as cycling, swimming and running are ideal as they also develop co-ordination so they naturally support the requirements for riding.

Monitoring your progress

One of the simplest ways to assess fitness is Heart Rate (HR) monitoring. You take your resting heart rate, perform some exercise, take the heart rate again and then time how long it takes to return to normal. The fitter you are, the slower your resting heart rate will be and the more quickly it will return to normal after exercise.

Heart rate monitors and watches are available from sports shops, and as well as measuring your heart rate during exercise like running or cycling, can also be used while training your horse. It's useful to compare your fitness with your horse's whilst you're preparing for competition, too.

Try taking your heart rate immediately after a competition and link it to how you feel you coped. Research has identified that under pressure, a rider's HR may escalate beyond the normal parameters. Learning how to deal with the pressure and stress of competition is all part of performance preparation and involves coping strategies we'll describe in May 2012 *Horse&Rider*.

Exercise Condition yourself for cross-country riding

To train and prepare for the demands of cross-country riding, you should condition yourself to riding at a much shorter stirrup length than for showjumping.

Pull up your stirrups, ideally two to four holes, when cantering and galloping and during general fast work. This will develop the muscle condition in your legs, especially your quadriceps, and your postural stability to produce a more secure position when you're competing back at a more regular stirrup length. This in turn will enhance your own confidence in your fitness, balance and posture, producing a safer position and reducing fatigue.

Symmetrical horses are better performers – could this applies to riders, too?



Every little counts when you're keeping fit

Relying on your horse?

Research indicates that many riders rely upon the horse to support their own lack of fitness. This is particularly evident in cross-country activities where there is evidence that most faults and rider falls occur in the latter part of the course, and are expected to be as a result of poor rider stability, conditioning and fitness. Some types of fences are particularly relevant when comparing rider mistakes and falls. Research has proven that drop

fences, water jumps and spreads are particularly likely to cause problems for the less-than-fit rider. So stay fit for your horse's sake – and your own!

Next month

Find out how choosing the right saddle for your body shape and your discipline can make a huge difference to you and your horse's performance.

