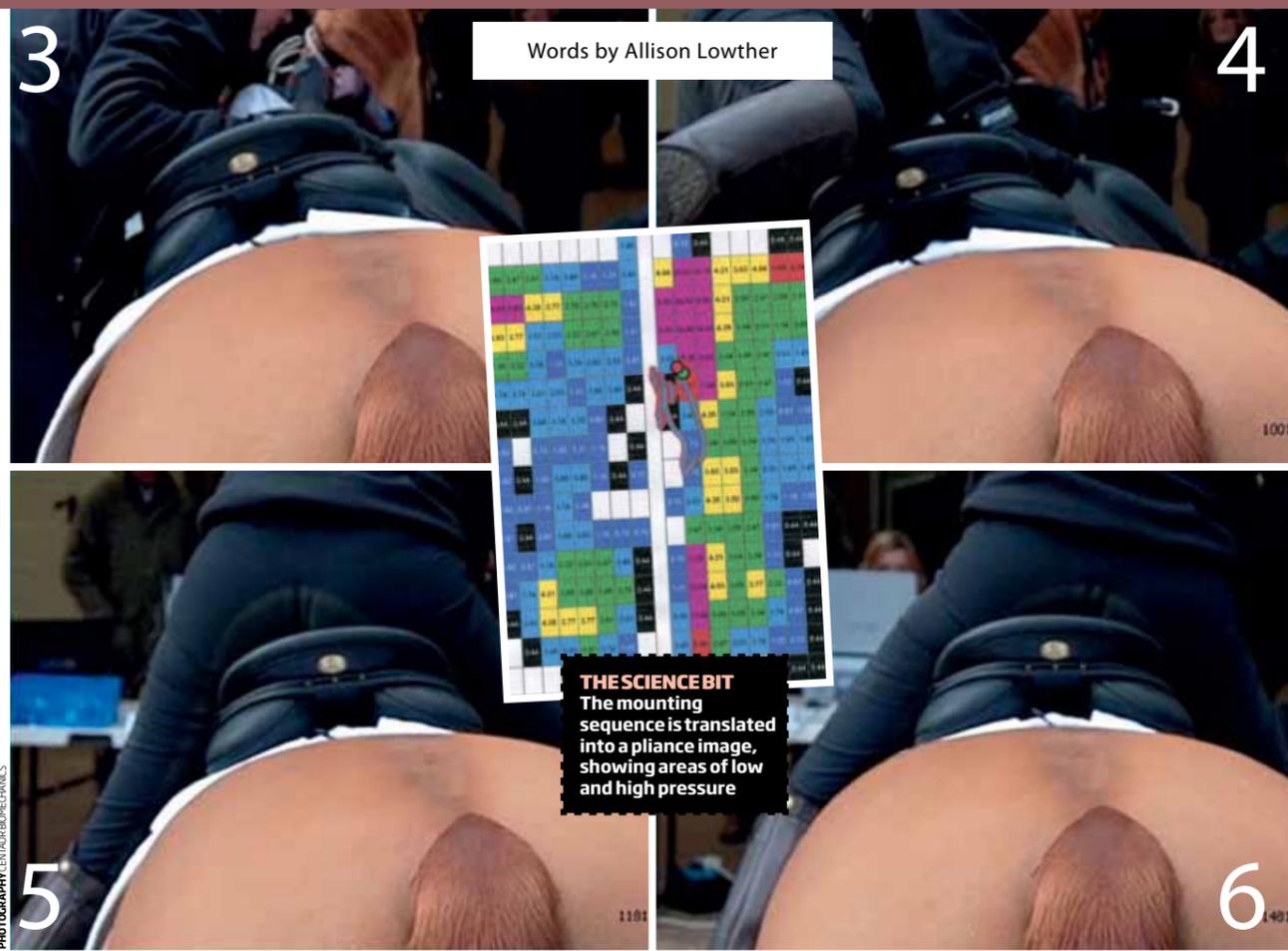




# Mounting pressure

We've assumed for years that mounting from the ground isn't good for our horses – now there's scientific evidence to back this up. So what is the best way to get on?



PHOTOGRAPHY: CENTAURBIOMECHANICS

# Gear Research



**T**he Society of Master Saddlers (SMS) recently spent a day scientifically testing and researching different ways of mounting. Equine and human physios would be quick to say mounting from the ground isn't recommended but, as horse owners, it would be great to know what is the best way to mount - and now this research gives us the answers.

## The pliance system

**T**he SMS used a pliance system to carry out and record the results of its testing. The pliance system is a sensor mat with more than 200 sensors in it. The mat is placed under the saddle directly on to the horse's back. Readings are sent to a computer via Bluetooth. As each test is carried out the readings are analysed and displayed as three moving graphs and colour images

on the computer. 'Hot' red or pink areas indicate harmful pressure points. The pliance system gathers data at all paces and during jumping. Some saddle makers are now using the pliance system when designing new saddles.

## Aims of the test

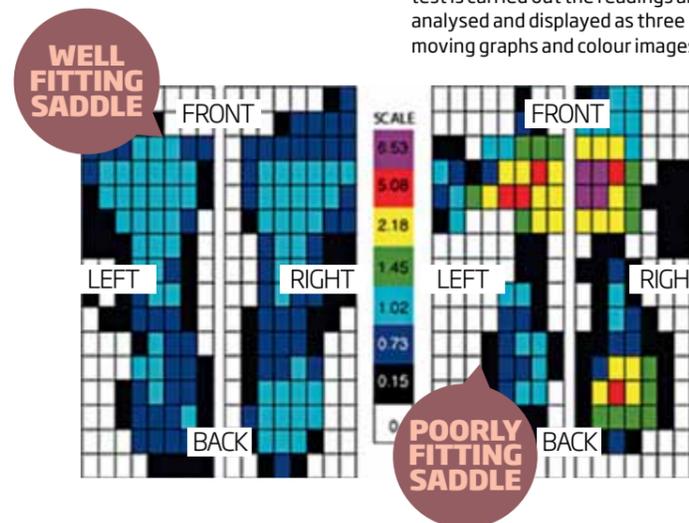
- The SMS had three aims for this testing:**
- To establish the effects of different types of mounting*
- To establish the effects of different riders when mounting*
- To establish the best way to mount*

proportion of the mat is coloured, showing good panel contact with the horse's back and a good weight-bearing area. The hotter the colour the higher the peak pressures - here light blue (140psi)

## How to interpret the pliance readings

The images left show two pressure readings from two different saddles. The one on the far left shows the pliance reading from a well-fitting and well-designed saddle. You can see that the colours are even on the left and right throughout the whole length of the saddle, showing balanced pressure distribution. A large

is the highest colour recorded, which shows a low peak pressure. The image on the right tells a different story - the pressure distribution is asymmetric left to right and also unbalanced front to back. A smaller proportion of the mat is coloured, showing a much smaller contact area. The pink and red readings indicate high pressure points, which could cause problems for the horse.





## The testing

The testing was carried out using five riders of different heights, weights and abilities. Two horses were used throughout the testing - a 17.3hh Hanoverian mare and a 17hh mare. Both horses are in regular work and in good physical condition.

To try to keep the testing as true and fair as possible, one test saddle was used - both horses were fitted with a used Fairfax dressage saddle. Also, the same girth and saddlecloth were used on both the horses during the testing.

Each rider mounted each horse in six different tests, with the results recorded for every method. The six different ways or mounting used during the testing were:

- Unaided from the ground
- Supported from the ground (the right-hand stirrup leather was held)
- With a leg up
- From a low block (22½in high)
- From the low block supported (the right hand stirrup leather was held)
- From a high block (38in high)

After all the testing was completed the results were analysed to give an average pressure reading for each mounting method - the results showing how each method affected the horse and saddle

## It's all in the technique

It was also noted that the position of the rider's hands during mounting dramatically affected the pressure readings. The worst results were seen when the left hand was on the pommel and the right hand on the cantle. The best readings were seen when the rider placed her left hand on the horse's wither and her right hand on the offside of the saddle behind the flap.

Another common method used for mounting is bouncing a few times to build up momentum. When any

of the riders used this way of mounting from the ground it caused much more leverage on the saddle and increased the pressure on the horse's spine.

Also, it has been assumed that a smaller, more agile rider will be able to mount more easily and put less pressure on the horse's back and less strain on the saddle, but this testing proved that the greater the difference between the height of the rider and the height of the horse has

proportionally far greater impact on the results than the technique, weight or agility of the rider.

Having your stirrup leather longer to help you mount also increased the amount of pressure.

When the testers were given a leg up the results improved dramatically when the person giving the leg up supported the rider's knee and ankle - this method gave significantly lower peaks compared to giving a leg up holding the rider's shin and ankle.

## The results

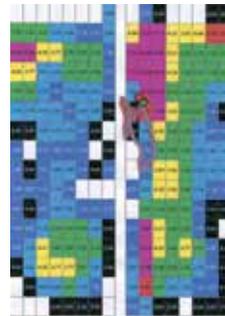
There was no surprise that mounting from the ground caused the most pressure. It made little difference which rider was mounting. The lowest pressure recordings were when the rider used the high block, putting no pressure on the stirrup to mount.

### Saddle movement

The biggest surprise was to see how much the saddle moved across the horse's spine during mounting - this was also reflected in the pressure results. The pressure on the horse's back was almost in an identical position whoever mounted and whatever method was chosen (along the front edge and back of the saddle).

### Mounting technique

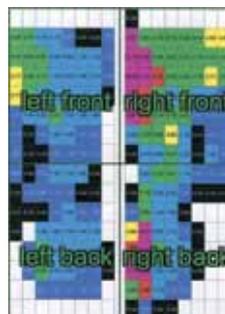
The technique rather than the fitness of the rider got the best results. The better readings came when the rider pushed up using her legs to mount rather than pulling herself with her arms.



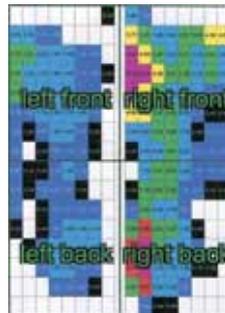
**ABOVE**  
Mounting from the ground caused high, uneven pressure  
**BELOW**  
Using a 38in mounting block reduced the pressure considerably



**UNDER PRESSURE**  
You can see here just how much the saddle moved when the rider got on from the ground



**AVOID**  
Poor hand position



**RIGHT**  
Good hand position



**OBSERVE**  
Take note of your horse's behaviour when you mount - how has he adapted to the process?

**REDUCE PRESSURE**  
Use a high mounting block wherever possible and avoid putting weight in the nearside stirrup

### How horses cope with mounting

During the testing it was observed that both horses showed different counterbalancing actions as the rider was mounting. One (Bo) raised her head when each rider went to mount, whatever method was being used and the other horse (Gwen) bent her head to the right and brought her off foreleg forward as each rider mounted. Both horses are 11 years old.

## Conclusion

Where possible, mounting from a high block where you can simply put your right leg over your horse and sit in the saddle without using the left stirrup for support is the best option and gave the lowest readings throughout the testing

The next lowest readings came from mounting from a lower block but having the opposite stirrup supported during mounting - having a leg up produced similar results

The technique we use as we mount is also important - in particular where we place our hands significantly improves the results, and reducing the number of bounces and the length of time hanging from the nearside stirrup also reduces the amount of pressure put on the horse's back

## The Society of Master Saddlers (SMS)

Wherever you see this logo you can have confidence, knowing you're going to receive a professional and knowledgeable service, whether you're buying a new saddle or need a saddle altering. Members of the SMS are the best in the industry. A SMS retailer will stock at least three different English manufactured saddles and have at least 50 saddles in stock.

You can search for your nearest SMS fitter and retailer by visiting [www.mastersaddlers.co.uk](http://www.mastersaddlers.co.uk)

The SMS has set out a test programme to provide scientific data to help prove or disprove common theories relating to saddle fitting, design and use. It wants to provide SMS members with more knowledge, which will help them give you, the customer, a better service. 

### Thanks to

Centaur Biomechanics for the use of its images. Centaur Biomechanics offers services such as gait analysis, rider analysis, rider clinics, lectures and saddle analysis.

Russell Guire, who founded Centaur Biomechanics, is also the British Equestrian Federation's official gait analyst and works with team physios and farriers. Russell also works with the riders on the World Class Development Programme in providing rider analysis to all disciplines - dressage, show jumping, eventing and para dressage. For more information visit [www.centaurbiomechanics.co.uk](http://www.centaurbiomechanics.co.uk)

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