



WRITER
John Whitney

IMAGES
Jesse Wild

SEAT **OF** POWER!

Finding your perfect saddle can feel like chasing a rainbow but various fitting systems claim to offer solutions...



OUR SADDLE, of the three contact points on the bike – pedals, handlebar and saddle – bears the most weight and can, potentially, have the most damaging effect on your comfort.

Finding a saddle solution depends on your physiology, objectives and ride position, with different theories and solutions used by different manufacturers and fitters, all attempting to solve the conundrum. Methods include measuring sit bone width, pelvic rotation – the position of your pelvis as it would be on the saddle – spinal flexibility, weight distribution, thigh diameter and rider feedback.

Saddle sores had plagued my riding, and it felt like bike fitter, Royce Murphy, (*velocitysportscycling.com*), who'd read about my suffering and offered his services, could provide a solution.

He's one of a handful of fitters in the UK to use German firm gebioMized's pressure mapping fitting technology, which measures the spread of pressure across the saddle, helping the fitter identify an appropriate saddle, or see the customer sit on the right part of their existing one.

UNDER PRESSURE

The gebioMized system involves 64 sensors fitted into a sort of glove that slips onto the saddle, wirelessly transmitting data to a laptop. Murphy uses it as a tool in full bike fits, explaining that you can't do one without the other. How you sit on a saddle is affected by your position on a bike, so what's going on at the other contact points affects what's going on at the saddle.

"Pressure mapping shows us how a cyclist's pressure is distributed across the surface of the saddle while they are riding, giving us objective data," says Murphy.

There are hundreds of saddles available and thousands of potential set-up variations: wide, narrow, curved and flat options (both side to side and front to back), lower noses/varying width and length noses; degrees of flexibility through how the saddles are built; some with cut-outs and grooves that are said to relieve pressure, and varying levels and location of padding.

A saddle's characteristics can have huge repercussions on ride comfort. For instance, more padding doesn't always equate to comfort. "If your saddle is really soft, when the bone's sink into that the rest of you starts to pick up more pressure," says Murphy. "It will distribute pressure more evenly, away from the bones, but into the perineum, where you don't want it."

Pressure mapping is the best way, he believes, to tailor the number of configurations to the rider.

The fit looked at my overall position, including scanning my pedal stroke, via a Wattbike, for pedal stroke imbalances on each saddle, handlebar size and shape and cleat alignment. It produced pressure maps that showed where and how my pressure was distributed, alongside measures of stability through the pedal stroke.

After testing numerous saddles, I settled on Selle Italia's C2, a narrow 136mm-wide, slightly curved saddle with a narrow pressure relieving cut out that suited what Murphy said were my narrow pelvic bones.

"There isn't a formula [to the process]," he says. "You really benefit from trying people on different shapes to find out which one is distributing pressure best."

LET'S HEAR IT

Where Royce Murphy favours a data-driven methodology, Andy Sexton of Bike Science in Bristol (*bike-science.com*) prefers rider feedback and trial and error.

In this free service (with a saddle purchase), he set me up on his fitting jig and tried 20 saddles, all in pairs and each for a brief time (up to 30 seconds, long enough to form an opinion) in a variety of positions, asking me to pick a favourite from the two. These moved to a second round, where a 'blind' shootout whittled the selection down to two, which, if I was a customer, he'd send me out to road test. I opted to test the Fizik Antares, in the R3 large size (152mm width), because I was intrigued by the vast difference in width to the C2.

"It's easy to be numbers driven," says Sexton, "but when it comes to saddles the rider has to make the final judgement."

He too prefers to focus on positional factors first when it comes to saddle discomfort. "If your saddle is too high or your reach too long, saddle discomfort is inevitable," he says.

Like Murphy he encourages extensive real-world testing: "I often have clients who test a number of saddles for weeks, even months, before making a decision."

GETTING FIZIK-AL

Fizik introduced its Spine Concept method for saddle fitting in 2008 and last year, using studies led by Professor Rodger Kram at the University of Colorado, introduced the Spine Concept EVO phone app. It considers rider weight/power, as well as spine flexibility and pelvic rotation.

Fizik had sought to quantify rider comfort. Studies found that the heavier the rider and the lower the power output, the more pressure that's put on the saddle and thus the more support is needed, meaning a wider saddle.

Rider flexibility is also a factor. In a study, 200 male riders rode for two hours and had saddles

blindly switched. Those with more spinal flexibility rated flat saddles more highly, while less flexible riders favoured curved ones. Counter to sit bone-measuring fitting methods, some riders in the study with narrow bones chose the wider saddle, and some with wider bones the narrow. The conclusion was that pressure distribution is more important than sit bone width.

To use the app, you stand upright, place your phone on your chest and bend forwards. It rates you as a 'Snake' (high body flexibility and no pelvic rotation while pedalling – your pelvic stays in a neutral position), 'Bull' (low flexibility, high rotation) and 'Chameleon' (medium flexibility, low rotation).

As a Snake, a flat saddle is selected – it's Fizik's belief that the lack of pelvic rotation means your sit bones are in contact with the saddle and able to cope with the flat shape (nose to rear). As a Bull it's a curved saddle, to relieve pressure brought on by high rotation, and as a Chameleon, it's something in between.

The app asks for your weight and speed on a flat road, which calculates your weight on the saddle and dictates the size required. As an 80kg 'Chameleon' and riding 32kph on the flat, it suggested a large Antares, which is 152mm wide, as opposed to the 140mm regular size – the same saddle selected through Andy Sexton's fit.

ID PARADE

Selle Italia's idmatch system is like being fitted for a suit. A caliper measures the distance between the major tuberosities of each thigh bone. Thigh diameter is measured too, along with pelvic rotation (by bending forward, using an inclinometer inside the caliper). Data is plugged into its algorithm, which gives you your 'idmatch'. Using this, together with information on your cycling discipline, kilometres ridden per year, weight and budget, idmatch suggests a saddle.

My suggested size was L2, and I chose the Flite Flow to test, a flat 145mm-wide model; L meant large (145–150mm width) and 2 meant a moderate size cut-out.

MEAT ON THE BONES?

The focus of Specialized's process is to measure sit bone width. You sit on a padded box for 10 seconds and lean forward with your back straight in an approximate riding position. The distance between indentations is measured.

Saddle fit is one of the 15 steps in the company's Body Geometry (BG) Fit process and its *Fitting Text Book*, used by all certified technicians, has this to say: "When a saddle is the wrong width (too narrow or too wide), the rider will often sit on one ischial tuberosity, twisting the spine in the process... Ideally [the saddle] would be installed during a BG Fit in order to ensure that whilst it might be the ideal saddle choice, it can be installed in the correct position as well."

I didn't go through the full fit process – I was using the fit from Royce Murphy as my default position – but talked through the options with Nic Gharbaoui, a fitter at Specialized's Bristol Concept

To use the app, you stand upright, place your phone on your chest and bend forwards



FIZIK APP £FREE

★★★★★

METHOD
Download the app, hold it to your chest facing forwards and bend forwards, then add in the relevant data

HIGHS
Easy to use, free

LOWS
It's an off-bike solution

CHOOSE IF
You're happy with your position

Store, who used information on the riding I'd be doing and my position on the bike, as well as the bone measurement, to select a saddle, the Phenom, in a 143mm size. My sit bone reading here was 122mm, falling in the middle of the men's sizing range.

TESTING TIMES

The five methods hadn't produced a clear through-line; both Selle Italias had cut-outs; the Specialized had a cut-out and a groove; and the Fizik had neither. There was also huge variation in widths; the Selle Italia C2 was the slimmest at 136mm and the Fizik Antares was a huge 152mm, yet these two were the only ones selected by sitting on the bike.

To keep the test consistent, I used the bike set-up from my first visit with Murphy, along with the same Trek Domane SLR 6 and kit choices, and rode each of the four saddles for around 150 miles across three separate rides, each 50 miles.

Results were mixed, but my saddle-sore problem looks to have been eliminated. Everyone I spoke to insisted how important it was to be set up correctly on the bike, and that goes some way to explaining this.

Of the four on test I'd happily eliminate two. The Selle Italia Flite Flow left me constantly agitating – there were pressure points I didn't feel elsewhere. The Specialized Phenom, slightly narrower than the Flite Flow but more waved front to back, offered better results, even if it wasn't a model I wanted to persevere with, as it offered an overly firm ride.

The gebioMized's selection, via Royce Murphy, was the Selle Italia C2, the narrowest and most generously padded saddle. Lab results were good, producing a map of turquoises and blue, indicating low pressure. It felt good on the road, though I felt the Fizik Antares offered me more, and was a better combined package of comfort and support.

Following testing, I met with Murphy again, bringing the Antares with me to see what results looked like through gebioMized's filter. Data partially confirmed how I felt on the road,



Above left
GebioMized's pad fits over the saddle

Left
The map highlights pressure points

Above right
Simple to use, but awkward in public

Below
idmatch is like
being fitted
for a suit

Right
Other contact
points shape
saddle fit

Far right
Andy talks
John through
the options

showing an excellent pressure map, with lower peak pressures than the C2 and a 50:50 split between right and left legs while pedalling. It did identify marginally more rocking through the pedal stroke than the C2, the narrow width of which perhaps has the effect of wedging my sit bones in place. This was strange as in real-world testing I actually felt better supported on the Antares. The two I liked most were also the most different in terms of width, and shows that there's far more to the equation than just size.

RELIABLE SOURCE

In the Antares, I believed I'd found a saddle worth sticking with. The question then was why some systems hadn't produced an acceptable saddle and how reliable those that worked would be for other riders?

I contacted Oli Beckingsale, a former British Olympic cross-country racer who now co-owns Bristol bike shop BW Cycling (bwcycling.co.uk). Like Andy Sexton, he stocks saddles from an assortment of manufacturers and has the corresponding fitting paraphernalia. Like Sexton, he's not really using them anymore though.

He prefers a rider feedback-driven approach in tandem with bike fit, believing that saddle fitting systems from the major manufacturers are exacerbating a problem in their attempts to solve it. Customers come in expecting it to be the answer to their prayers. They take a demo seat, then a week later they're back, wanting a different one because it hasn't worked.

"It's hassle from the point of view of our business," he says. "If someone wants saddle advice, we do it with a bike fit. Do it properly or they do it themselves, anywhere in the middle is messy."

For Beckingsale, such systems are failing consumers. "The guys designing them are doing

their best, but they're trying to combine all their knowledge into a little box that allows someone to walk into a shop, be served by anyone and be given what they think is their perfect saddle."

With what is often a minimum 30-day guarantee from manufacturers, "there's nothing stopping them going through the whole range. It costs us time and money."

I spoke to renowned bike fitter and biomechanist Jon Iriberry, after reading his article on *Cycling Industry.news* earlier this year. It was an interesting, and largely scathing, piece, aimed at the bike industry, and titled: 'Bike Saddles: Does the industry want an easy answer to a complex problem?' Yes, was his conclusion.

From a bike fitting point of view, in his opinion, "one-stop fitting systems" aren't satisfactory because simplifying such a difficult problem is "almost absurdly reductionist."

"Every bike fitter knows [they aren't solutions]," Iriberry says. "[The fitters] cannot work in the guidelines of the brand because they know it's more problematic than the keys they are given to solve the problem."

Fizik's app falls under the label of what he's rejecting, yet it did a job for me. Would it work for you? It would take a bigger sample size than one to make an assertion either way but it seems doubtful that it would reliably provide a solution. There are too many moving parts to be reconciled by a phone app.

Iriberry's also sceptical, suggesting what it's measuring is no greater than 15 per cent of the →

Results were mixed,
but my saddle-sore
problem looks to have
been eliminated



SELLE ITALIA ID MATCH
£FREE ★★★★★

METHOD
Thigh diameter, distance between thigh bones and pelvic rotation measured, along with cycling goals

HIGHS
Narrows down a wide selection

LOWS
Is a proxy for real-life riding

CHOOSE IF
Used with SI's bike fit tech



ANDY SEXTON £FREE
★★★★★

METHOD
This on-bike methodology is based around correct bike fit and subjective rider feedback on comfort

HIGHS
Casts net wide, then focuses in

LOWS
Lack of objective data

CHOOSE IF
You know a good bike fitter!



Many people put up with pain because they don't know any other way

hours on uneven roads. But as a measure of where you're sitting and how that pressure is distributed, there's no better objective set-up.

As for 'one-stop' systems like Selle Italia, Specialized and Fizik, at best they'll help to narrow down your options, when allied with a full fit, but on their own shouldn't be used to dictate choice.

The on-bike trial and error approach casts the net wide and lets you decide which saddle feels best. Like Andy Sexton says, it's easy to be blinded by numbers: "There are so many factors that go into choosing the right saddle that to focus on any particular metric or electronic system can be misleading. Given enough opportunity and time to try out a range of shapes and styles, most riders can identify what will work for them."

That said, not everyone will know automatically whether what they are feeling is right or wrong. Many people put up with pain because they don't know any other way. Sores, numbness and pain isn't normal and can all be corrected, providing you're on the right size bike.

The C2 and the Antares were good fits – subjectively and objectively, though neither was perfect – and cleared up the problems I was having. The pursuit for perfection, when it comes to this complex problem, might be an impossible chase. Sometimes it's fine to fall short. **PLUS**

information you need to successfully change a saddle. "Sometimes they work, sometimes they won't" is his opinion on sizing systems.

Fizik's method is a move from the focus on sit bone width and there's something in it. But like Selle Italia's idmatch and Specialized's pad, Spine Concept Evo can only ever be a proxy, an off-bike estimate. How can they identify, for instance, the amount, density and placement of padding?

The gebioMized system is the most involved of the tech solutions I tried, offering information in an easy-to-digest way. It certainly advanced my understanding of what I should be looking for and where I need to be sitting.

Pressure mapping, Iriberri believes, has advanced understanding of how we fit to saddles and is the best thing we have right now, even if it's imperfect in the lab. "There's a lot of missing information [in the lab]. The way of pedalling on the road is not the same as in the studio [and] we think the information is poor compared to what's possible outside".

While Murphy can use gebioMized on the road (it uses Bluetooth, so he needs to be within 10m) Iriberri is working on developing new systems that measure pelvic movement in 3D on the road.

FEEL THE PRESSURE

It seems that pressure mapping is the best fitting system currently available. There are issues with it; like any bike fitting system it's dependent on the skill of the fitter, while the lab setting cannot replicate how you interact with a saddle after five



SPECIALIZED ££FREE



METHOD

You sit on a gel pad in an approximate riding position. Sit bone width used with riding preferences to pick saddle

HIGHS

Narrows down choice

LOWS

Sit bone width not definitive

CHOOSE IF

Prepared to pay for full fit

Top left
Spesh's pad takes a print of your sit bones

Below
The space between the middle of each indent is measured

