IT'S ALL IN THE **(MIND)SET**

THERE MAY BE HONOUR IN SUFFERING, BUT IS IT NECESSARY? NUMB HANDS, HURTING KNEES, FATIGUED NECK MUSCLES, PAINFUL SADDLE-SORES, ALL THAT SHOULD BE A THING OF THE PAST. ROUGHLY TRANSLATING AS THE MUNICH CYCLING LABORATORY, "RADLABOR MÜNCHEN" TELLS US HOW TO AVOID PAIN AND DISCOMFORT IN THE SADDLE.

For professional cyclists who want to get everything they can out of themselves (and their bikes), analysing how they sit on their bikes is often a matter of millimetres. And not just for the professionals. Sitting in the right position is equally important for recreational athletes who go out on their bikes after work to relax and have a bit of fun. Whereas more ambitious cyclists need to concentrate on aerodynamics and on how efficiently the force they generate through their legs is transferred to the pedals, casual riders should be thinking more about ergonomics and a comfortable sitting position. "Sitting in the correct position is the key to having fun and being successful with your bike in the long term," says Pascal Ketterer, head of Munich's much respected "Radlabor". After all, nobody wants hands that go numb and knees that hurt whenever they get on their bike. So, what do we need to do? As a former cycling pro, Pascal Ketterer, head of "Radlabor", is happy to help.

AN EFFICIENT PEDALLING ACTION

The height of the saddle is extremely important for the ideal sitting position. According to Ketterer, it's the most common cause of an "inefficient pedalling action". In other words, if your saddle is set too high or too low, you are more likely to have problems with your knees. If the angle of your knees is too sharp, you won't be able to place enough force on the pedals and will put a lot of strain on your knees. However, if your saddle is too high, you'll be having to overstretch your legs. In other words: you won't be able to reach the pedals with the ball of your foot and each time the pedal rotates, your hip will drop and you'll notice you rock on the saddle. The ideal saddle height is somewhere between these two extremes. When you've found the right position, you won't be rocking on the saddle and there'll be no strain on your knees. If you prefer mathematics and formulas, you can calculate the height of your saddle by multiplying your inside leg length (in cm) by 0.885. It's important to measure from the centre-top of your saddle to the centre of the bottom bracket.

OPTIMUM FORCE

It is also absolutely essential that the foot pedals are carefully adjusted so they are at the right angle and that you wear custom insoles in your cycling shoes. "That's something that even the most experienced recreational riders forget to do," says Pascal Ketterer. And after decades of experience in his "Radlabor", he knows what he's talking about. To ensure that the transfer of force to the pedals is as efficient as possible (and that your feet don't go numb), the pedal spindle must be positioned in the middle between the joints of the big and the little toe. Normal insoles should be replaced by custom insoles (designed for flat-footedness, normal feet, or high arches). These will distribute the pressure more evenly, provide better support, and maximise the transfer of the force.

THE RIGHT DISTRIBUTION

The wrong saddle can make cycling sheer agony. If the saddle that came with your bike isn't the right shape for you, then you're going to have to replace it. The most important thing is that the pressure on your "sit bones" is relieved and the saddle is the right width for you. This will ensure that the saddle pressure is evenly distributed. If you feel that there's too much pressure on your genitals, it's worth taking more measurements to determine the optimum saddle width for you and buying a saddle with an ergonomic shape and a more pronounced channel.

SITTING IN COMFORT

Setting the position of your handlebars is also important when it comes to finding a comfortable riding position. Your arms should be slightly bent, your shoulders relaxed and your back and spine gently curved. In this position you will also be better able to cushion yourself against blows. Ergonomically shaped handlebars and the right lever set-up will also ensure that the pressure is evenly distributed over the palms of your hands. If you're after aerodynamics and speed, you'll want the position of the handlebars to be lower and the saddle setback larger. If you're after comfort, you'll want a slightly higher position, and a smaller setback. Ignoring these suggestions could provoke pain in your shoulders or neck.

When you've done all this: get out onto the road, and enjoy the comfort of your next bike ride.