

NEW RIDER'S GUIDE

How to transform from a cycling novice into a fit & confident rider p34



THE UK'S BEST-SELLING CYCLING MAGAZINE

CYCLING

PLUS

ISSUE 416 ● APRIL 2024

EASY WINS

Sure-fire steps to smash your next major event

10 UK ROUTES YOU MUST RIDE IN 2024

The Bike Test

SUPPLEMENT YOUR SPEED?

● The real impact of ketones, collagen & CBDs on performance

BEAT THE ELEMENTS

Jackets, gloves & gravel bikes on test

ourmedia

APRIL 2024
PRINTED IN THE UK
£9.50



GO THE DISTANCE!

RIDDEN & RATED Great value all-rounders from Cannondale, Cube and Ridley

Boost your ride

Performance Q&A The big cycling questions answered by our team of expert coaches, nutritionists and riders



01

WHAT SUPPLEMENTS WILL IMPROVE MY PERFORMANCE?

Creatine, sodium bicarbonate and caffeine all have a solid base of evidence behind them. But what about the new wave of performance-enhancing supplements? We investigate four credible options...

Collagen

Collagen makes up a whopping 30% of total protein

Supp start?
Is it time to embrace the new wave of supplements?

mass in your body and is a must for performance enhancers such as joint mobility, strong bones and healthy muscles. It's why Greg Whyte OBE launched U-Perform with collagen at the heart of the range.

Nutritionist Peter Res has worked with Ajax FC. "We've improved recovery rates of our athletes by supplementing with gelatin," he says. "It's a powder and you dissolve it in hot water."

The theory goes that collagen is essentially the

TOP TIP

Collagen is important for older cyclists as evidence suggests we lose 1.5% of collagen each year after 20. By the time we reach 40, levels may have dropped by 30%. By 50, it's 45%; by 60 it's 60%

same 'material' as that found in tendons, ligaments and bones. When you break a bone or tear a ligament, the first bridges over the injury are collagen. "The ingested collagen contains the same amino acids as the collagen in our body, so provides all the building blocks," says Res.

Exercise also increases collagen production. A 2017 University of California study found that short periods of exercise with at least six hours of rest increased collagen production. When participants took 15g of gelatin an hour before six minutes of skipping, it doubled the rate of collagen synthesis. This means cyclists could take a gelatin or collagen supplement before a short session in the morning to boost their collagen levels and so increase their resilience to a lengthier afternoon ride.

Cannabidiol (CBD)

"Pain relief and improved sleep are two reasons for taking CBD," says Graeme Close, professor of human physiology at Liverpool John Moores University. "The body has an endocannabinoids system, which is crucial in pain management, and CBD is a cannabinoid that can bind to these receptors."

However, you may need to take a huge amount to

enjoy much pain relief. Two CBD products, Sativex and Epidiolex, have licences to treat MS sufferers and epileptics, respectively. "With Epidiolex, you start at 500mg [a day]," says Close.

"Whether athletes would take it in those quantities, with the potential risk of anti-doping plus the cost (£35K a year in that amount), is unlikely. But the evidence behind the smaller dosage isn't quite there." This is reflected in the experiences of rugby players that Close has studied, who admitted little pain relief. They did, though, report better sleep. The Food Standards Agency recently lowered its recommended safe upper limit of CBD to 10mg a day for healthy adults.

Ketones

Ketones are an energy source produced by the liver during periods of low carb intake. If you consume extraneous ketones, the idea is that you'll spare precious glycogen for hard efforts by tapping into these more readily available ketones that deliver a higher energy yield than carbs.

So are ketones more important the longer you ride? Not necessarily. "We had cyclists ride for 180mins before a 15min time-trial, both with and without ketones," explains Leuven University's Peter Hespel. "The glycogen concentration in both groups was the same, as were the TT results. I've never understood the physiological mechanism behind ketones improving intense efforts. And, actually, they could impede hard efforts." That's because ketones are acidic. When you climb a hill, you generate lactic acid and hydrogen ions, which also have a low pH and, eventually, they cause a drop in power output and speed.

Arguably, the benefits of ketones come when you're sedentary. Further research by Hespel saw cyclists do three weeks of intensive



"What's plausible is that probiotics indirectly facilitate performance by keeping athletes healthy"



\$20b

The CBD market is expected to harness \$20-billion in sales by 2024

training, with one group consuming ketones and the other a placebo. The ketone group kept up a higher training load as time wore on by maintaining caloric intake and sleeping better.

"During extreme day-by-day exercise, athletes struggle to eat, and sleep badly. We showed that these groups had different hormonal profiles, specifically the stress-induced hormone GDF-15, a key hormone involved in appetite regulation." A gradual increase in GDF-15 concentration kills the urge to eat, but ketones suppress this. Cue the greater calorie intake and better performance. One idea why sleep may have improved is through delivering more 'brain fuel'. So if you're a top cyclist, there's a case for ketones (a month's subscription from HVMN is \$108), yet arguably for recovery rather than directly increasing your physical output.

Probiotics

The use of prebiotics (fertiliser for existing bacteria) and/or probiotics (adding bacteria) in the gut microbiome for boosting performance has been attracting attention. The research is equivocal

when it comes to a link between better gut health and a new PB, but prebiotic and probiotic supplements are still useful. "There isn't strong evidence that both directly influence athletic performance, although one study showed probiotics improving running time-to-exhaustion in the heat," says Dr Patrick Wilson, author of *The Athlete's Gut: The Inside Science of Digestion*. "What's more plausible is that probiotics indirectly facilitate performance by keeping athletes healthy," Wilson adds. "There's evidence in both athletes and non-athletes that taking a probiotic can reduce the chances of coming down with an upper respiratory tract infection (URTI)."

So, time to start fermenting? "Taking a probiotics is the wisest approach if you've a specific goal like reducing the odds of picking up an URTI or preventing diarrhoea while being on antibiotics," says Wilson. "Probiotic-containing foods like yoghurt and sauerkraut are great but offer less certainty in terms of the specific strains and dosages that you get from eating them." **James Witts**

Images: Getty Images; Steve Sayers

02

WHAT SHOULD I DO IF I'M INVOLVED IN A CRASH?

As thrilling and liberating as cycling is, there's always the chance of being involved in an accident with motorised vehicles, pedestrians, potholes or other cyclists. So what should we actually do if a collision happens? We asked Tim Ransley, a partner and solicitor in the Personal Injury Department at Bennett Griffin (bennettgriffin.co.uk) for his key legal advice...

What should you do immediately after a crash?
It's likely that you'll be in shock and the adrenaline will be rushing through your veins. The first thing to remember is to get somewhere safe as you might still be in danger. It sounds obvious but if you need medical help, phone an ambulance, and get a hospital check-up if your helmet is damaged. The advantage of this is that it'll act as a permanent record of the accident, which could be the difference between



recovering the cost of a replacement bike or not. Then check your bike is roadworthy. You don't want your frame failing on you when you've already picked yourself up off the concrete.
If the driver seems reasonable then ask them for their details. If they're on the angry side then don't rile them, but take a picture of their registration plate so you can search for their insurance details. Write a description of them in your phone. If anyone witnessed the accident, get

MORE INFO

The Brushett v Hazeldean case that was settled in 2020 highlights the risks of not having any insurance if you're cycling regularly. Pedestrian Gemma Brushett was looking at her phone while crossing a road in front of the cyclist Robert Hazeldean, yet she was entitled to a payout after the collision because she'd put in a claim and Hazeldean hadn't.

them to write their details in your phone. Independent witnesses will often decide a case in your favour. Finally, it's always a good idea to report any accident to the police.

What happens if the crash was caused by a pothole?

If you came off because of a pothole, take a picture with something in it like a multi-tool to give an idea of the depth. And then take a photo of the general area so you can locate where it happened. If you're on a new route you may not remember where you crashed and you'll need this info later. Establishing fault is hard when it comes to crashes caused by potholes. You need to show that the defect was sufficiently serious, but then that the Highways Authority responsible for the upkeep of the road hasn't followed their own policies and procedures in repairing the defect.

What type of insurance do you recommend for cyclists?

I'd always recommend that some sort of insurance covers

Safety first
Find a spot that's out of danger

your bike and accessories away from your house. That's because if you're partially at fault then you might only be able to recover a percentage of the cost of the damaged items. In addition, you'll probably have to wait to the end of your case to recover that outlay and you'll only be able to claim the current value of your bike, not a shiny new replacement. Claims involving potholes are also difficult to win so don't rely on a successful claim covering the cost of that new bike.

What are the key legal rights and issues I might face?

Road users owe others a duty to take care when using the roads. The changes to the Highway Code in 2022 added further protections for cyclists and there's now a hierarchy of road users placing those most likely to be injured in the event of a collision at the top. It doesn't remove the need for everyone to behave responsibly, but it does mean that road users who can cause the

Code of conduct
Highway Code changes in 2022 should be beneficial to cyclists

greatest harm bear the biggest responsibility to take care. The onus is on you as the injured party to prove everything and this is where a good solicitor comes into their own. Your witness evidence will be crucial in establishing whose fault the crash was. If the circumstances surrounding the collision are complicated, then evidence can be obtained from an accident reconstruction expert. If the police turn up then there might be good evidence within their report, especially if they've closed the road.

Are there any legal requirements for kit?

The first thing to say here is that there is no legal obligation on cyclists to wear helmets in the way that there is for a motorcyclist. That being said, if you aren't wearing one then the insurers will try to argue that your damages should be deducted in light of that decision. In the legal world this is called contributory negligence. These



Head wear
Wearing a helmet might help you with insurers

arguments are usually on the basis that the Highway Code basically says it's a good idea. But the Highway Code also says that pedestrians at night should wear fluorescent clothing such as sashes, gilets and armbands. Courts are therefore very reticent about deducting damages for not wearing a helmet. However, if you ride at night with no lights, it's a different story and you can expect a court to reduce damages for this reason.

What happens if the accident is my fault?

It's rare that a cyclist is totally at fault for an accident, but if you hit a pedestrian then you could be faced with a claim yourself. Remember liability can be split between two parties when it comes to fault and this is often the case with pedestrians. If you think you were partly at fault, then don't admit anything at the time and when you get home write down what happened and sign it. If you have insurance, report it to them immediately. If you don't and you are hit with a claim, don't bury your head in the sand, contact a solicitor as soon as possible.

I'm wary of ambulance-chasing firms. How do I know a solicitor is legit?

You shouldn't automatically be wary of a no-win, no-fee solicitor as the majority of cases are funded this way. But, just like any industry, there are good lawyers who will fight every step of the way for you and those who don't. It's key you instruct someone who knows what they're doing and is experienced in pursuing cycling cases. Look for someone who is recognised by Chambers and Partners (who produce international legal rankings), or read public reviews such as Review Solicitors to see what clients say about them. Don't just rely on whoever comes out top on a Google search. **Tim Ransley**

1.5m
The minimum space drivers should give cyclists when passing them



Images Getty Images



03

CAN I LOSE BELLY FAT BY CYCLING?

Belly fat is a concern for many and is associated with a number of pathological risks, with men more prone than women to accumulate fat in this area. Although most experts think targeting belly fat through exercise isn't possible, losing fat everywhere will reduce stomach fat stores.

Consuming fewer calories than you expend is the way to do this. By calculating how many calories exercise burns, you can create a negative energy balance by tailoring your eating. But bear in mind that a calorie deficit impairs recovery, so don't cut your food intake while training hard (always seek expert advice before

FAST FACT

Increasing your calcium intake, through milk, cheese, Greek yoghurt, eggs and leafy greens, can protect your bone health. Fruit and veg will aid your immunity. Omega-3-rich food, such as nuts and seeds, will help protect your heart and joints

trying to lose a lot of weight). Fat is the body's preferred fuel source when you ride in your lower-intensity training zones, such as zone two in a seven-zone model. Training in the fat-burning zone improves cycling endurance and aerobic capacity or VO₂ max.

Just remember that burning fat by cycling may not equate to losing weight, as Asker Jeukendrup, Team Jumbo-Visma's nutritionist, explains:

Slow courses
Riding slower can help you burn fat

"You can have high rates of fat burning and not lose any weight at all, or even gain weight. Weight loss is all to do with energy balance. If you burn more than you've taken in, you'll lose weight."

Calculating exactly what is energy in and energy out isn't easy, but when short of calories, the body uses stored fat for energy and to top up depleted muscle glycogen stores. Over time, this process reduces body fat.

Matt Fitzgerald, author of *Racing Weight: How to Get Lean for Peak Performance*, says "anatomically specific weight loss" is possible, but not from the belly. "People doing sit-ups to lose belly fat were scoffed at, but more recent research has shown that there's site specificity," he says. Cyclists often have leaner legs than the upper body, so anytime you do whole-body aerobic exercise you will lose fat everywhere, but it's more concentrated in areas where the muscle is active.

So, how can I burn fat by cycling? The short answer is by riding slower. As intensity increases, the proportion of fat to carbs your body resorts to in order to fuel cycling decreases. This is because fat reserves are nearly unlimited even in the leanest athletes, with your body trying to preserve its finite carb stores for when energy is needed quickly. **Jack Evans**

'05
A 2005 study showed that women are better at oxidising fat than men



Images: Getty Images, Russel Burton Illustrations: George Sturge



Q&A

WHAT'S THE BEST ANKLE POSITION WHEN CYCLING?

The constant flexion and extension of your ankles during the pedal stroke was long considered desirable for a fluid and efficient pedalling technique. However, comprehensive analysis of professional cyclists' video footage has shown no evidence that they consistently display significant ankling action. Some cycle with their toes more pointed, some with almost flat feet, while some exhibit a degree of flexion, but there's no pedalling technique consensus.

Rather than focusing on what your ankles are doing, if you're concerned about your pedalling technique and efficiency, your priority should

be getting a physio-led 3D motion-capture bike fit. There's little point trying to improve your pedalling style if your position on the bike isn't right. In fact, excessive ankling can be a sign of incorrect saddle height.

Once you're happy with your position, training tools such as Wattbike's Polar view are great for dialling in your technique. A more traditional way to develop perfect pedalling is to use rollers. If the whirl of the rollers is constant, it means your pedal stroke is smooth and even.

Rollers are three metal or plastic cylinders/rollers in a frame, with the bike balancing on top of the rollers instead of being held in a fixed position as it is on a turbo/smart trainer. This produces a more life-like riding feel as you have to balance yourself as you pedal, just like you would when cycling outdoors. Rollers are also quieter and more portable. **Nik Cook**

How do women's recovery needs differ to men's?

The accepted requirement for 20g of protein post-exercise isn't appropriate for women during every stage of the menstrual cycle, nor for peri- or post-menopausal women. "Our protein needs are higher due to oestrogen's influence in the brain, and the reduced amino-acid pool; and we need more leucine in the high-hormone phase to counter this," says Dr Stacey Sims. "Peri-menopausal and postmenopausal women have shown that 40g is what's needed post-exercise to get the repair going." So how much is this in real



terms? 40g of protein is roughly equivalent to a large chicken breast, a 6oz steak or a cup (237ml) of firm organic tofu.

Is it possible to increase my mitochondria?

Mitochondria, found in the cells of every complex organism, produce about 90% of the chemical energy that cells need to survive. While it's a complex topic, studies have shown that how much you train determines how much mitochondria your cells will contain, and how intensely you train determines how powerful each unit of mitochondria is. So to get more, you need to do more training. Up intensity to boost their power.

Does blood donation affect cycling?

A pint of blood makes up 10-15% of your blood volume. Your plasma volume will recover within about 24hrs after donation, but the haemoglobin in your red blood cells – the protein that transfers oxygen from your lungs to your muscles – won't return to normal levels for 2-4 weeks. Studies on exercise performance after blood donation have conflicting results; some reported no differences in fatigue, heart rate and pulse, while others detected decreases in oxygen delivery to muscle tissue. But the Red Cross explicitly tells donors not to do any vigorous exercise for the rest of the day.

WALL QUAD STRETCH

Try this move to increase range of motion and flexibility in your hip and knee joints



01 Start facing away from a wall in a tabletop position on your hands and knees. Place a blanket under your knees if this is uncomfortable.

02 Step your right foot between your hands. Raise your left foot so that you can place the top of it on the wall with toes pointing upwards.

03 Push your left knee towards the wall to feel a stretch through your quad. The closer your knee is to the wall, the more you'll feel the stretch.

04 Choose whether to stay in this position with your hands by your right foot, or walk your hands up onto your right thigh and lift your chest up. Tilt your pelvis down and squeeze your glutes.

05 Aim to hold this position for 30 seconds, then switch to the left leg. Repeat x 5 for each leg. Pushing your bottom back towards the wall will give you a bigger stretch.