

Skills Masterclass

OFF-THE-BIKE BOOSTERS

Cycling performance gains don't have to come from time in the saddle. Here are four sports that'll enhance your riding

Cycling may be your main sporting love, but dreary winter months are the perfect time for a break from the bike and embracing new challenges. While we may feel reluctant to leave the sanctity of the saddle, other sports or activities can bring performance benefits to the next season's events.

"The body needs new stimulus," explains physiotherapist Bryan McCullough, "to prevent stagnation of training as well as firing up neural pathways and improving neural motor coordination." Cycling needs many physical attributes but "continued bike training is demanding on joints, muscles, tendons and connective tissue, through repeated identical movements and leads to imbalances," according to coach Chris Knight.

It's helpful mentally to break from following a training plan, too. Some cyclists choose to follow a pro cycling plan, or cherry-pick sessions from one, but accommodating them into real life can be mentally taxing. As Bryan says, "You have a tank of tolerance for recovery – and only so much capacity to deal with life and cycle stress. That tolerance can fail with an injury if you get the balance wrong."

Cross-training challenges and strengthens the body and mind in different ways. Sports psychologist Dr Josephine Perry, author of *The 10 Pillars of Success*, explains: "When we pick up another sport, it often

makes us realise all the things we love about our main sport – it helps us to be grateful for the mastery we've built, the security of knowing what to do and the sense of belonging we have to it.

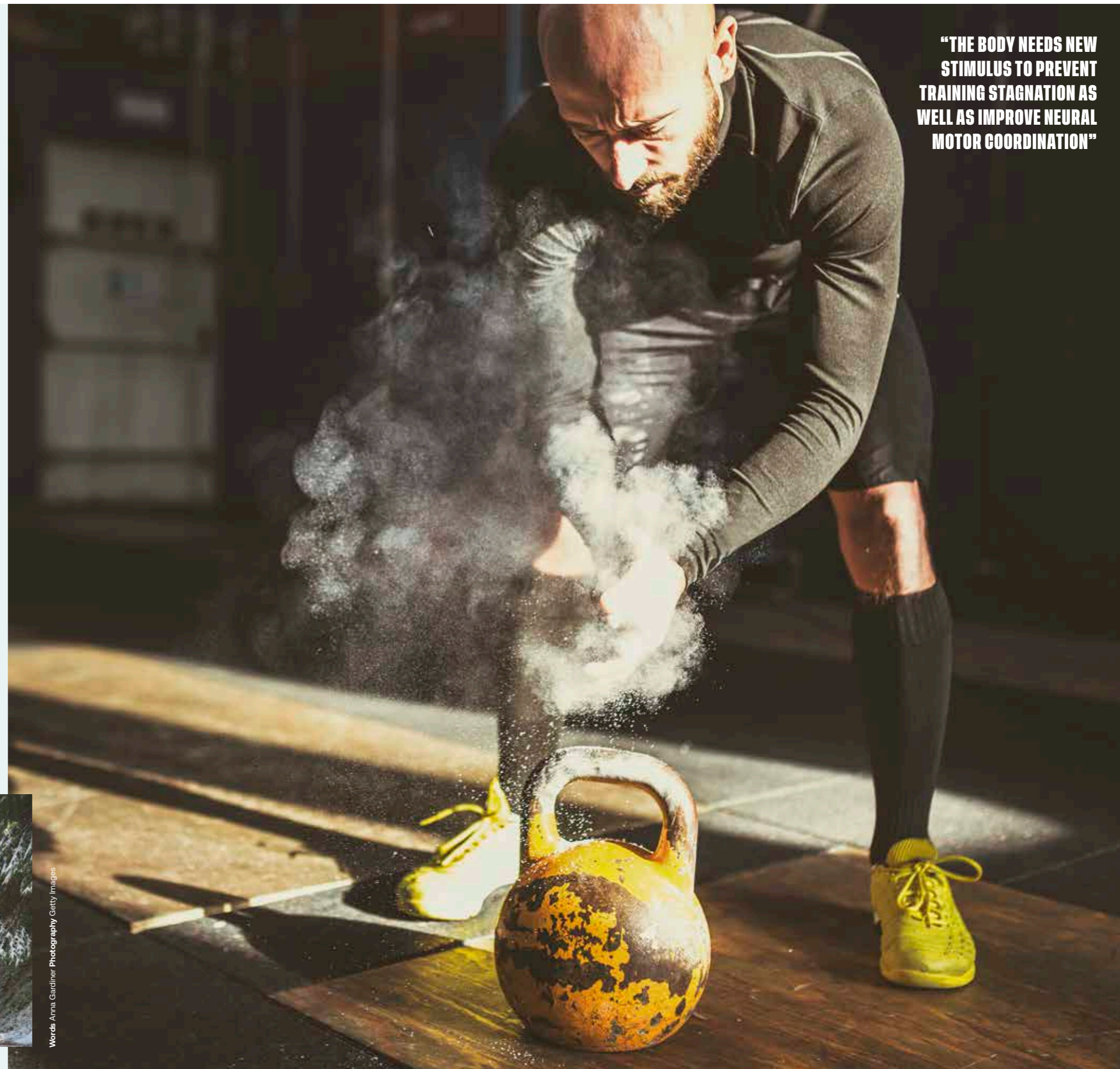
"When we've ridden bikes for a long time, the process is embedded, and we develop rigid ideas of what a 'good' outcome is. The beauty of trying new challenges is you learn new systems, structures and rules so that everything you do becomes about the process, rather than the outcome, and it refreshes the way you think about improvement."

Embracing running, swimming, CrossFit or the gym can help develop new physical and mental strengths, which will enhance your cycling performance. Here we look specifically at how each discipline will benefit the bike.



Right Give your body – and mind – a break by trying something new this winter

Below New sports can bring performance benefits to cycling



"THE BODY NEEDS NEW STIMULUS TO PREVENT TRAINING STAGNATION AS WELL AS IMPROVE NEURAL MOTOR COORDINATION"

Words: Anna Gardiner Photography: Getty Images

Technique Tips

Hit the gym

Strength training brings multiple benefits, both for your cycling and overall health and fitness



The expert Bryan McCullough

Bryan (MSc Sports Medicine and IBFI Level 2 certified bike fitter) is a specialist musculoskeletal physiotherapist with a lifelong passion for cycling. He owns a clinic outside Bath, The Bike The Body, where he combines his 16 years of physiotherapy experience with state of the art bike-fit technology and rehabilitation equipment, helping riders of all levels find their perfect fit.

01

What are the benefits?

● Many of us think that cycling regularly is enough for strength, fitness and health. Unfortunately, cycling is, in relative terms, non weight-bearing but to maintain bone health, weight-bearing activities involving strength and load are required. A *Systematic Review of Bone Health in Cyclists* found that there's an increased risk of osteoporosis for cyclists, and so it's vital that we do strength work for lifelong bone and joint health. "Cycling is largely a concentric activity – meaning that muscles are shortening as the legs push through the pedal. Eccentric (lengthening) strengthening in the gym stimulates different mechanisms of muscles, helping them reach their full range of movement," says McCullough.

02

Getting started

Strength work involves body weight, resistance bands, free weights or machines. Obviously gym usage



"THERE'S AN INCREASED RISK OF OSTEOPOROSIS FOR CYCLISTS SO IT'S VITAL WE DO STRENGTH WORK FOR BONE AND JOINT HEALTH"

is ideal, but you can bring the gym to you by investing in dumbbells, kettlebells and anything your budget can stretch to. Space-saving kit such as adjustable dumbbells are ideal.

03

How to do it

McCullough recommends strengthening both the upper and lower body for cycling power. "Good core strength is needed to transfer force through the legs and therefore the pedals. Free weights are perfect, forcing the core musculature to maintain balance and stability. Additionally, a moderate to heavy load on the legs is ideal."

04

Nutrition and recovery

● Protein requirements increase with strength work as this macronutrient is full of amino acids, the building blocks that repair and rebuild skeletal muscle and connective tissues. A 2022 study published in *Sports Medicine* recommends 1.5g of protein per kilogram of bodyweight. "Sleep is also a crucial element of recovery and repair," adds McCullough.



Above Strength work improves your core, which benefits you on the bike

ULTIMATE SESSION

Leg boosters

Benefits Leg strength will increase load and power through the pedal stroke. Weight is specific to the individual: start off with lower weights, building up over time.
Kit needed Free weights of a suitable weight.
Nutrition Substantial meal 2 to 3 hours prior to workout.
Warm-up 10 minutes on bike followed by air squats (no weights), calf raises (push up onto your tiptoes then lower), lateral band walk (walk with an exercise band looped around your lower legs).

Main set 3 sets of the following:

- **Weighted/back squats** - build to 10-12 reps of a medium weight, with a weight bar across your upper back or holding a weight in both hands in front of you at chest level.
- **Single-leg deadlifts** - low weight, concentrating on form/balance (8-10 each side), Hinge at your hips to pick up a kettlebell or dumbbells from the floor, lifting one leg straight out behind you as you lower, then hinging back up with the weight(s) in your hands.
- **Bulgarian split squats** - concentrating on form/balance (8-10 each side). Stand in front of

a weights bench or similar with your back to it and lift one foot up behind you, resting the top of it on the bench. Lunge forwards then push back up. You can hold dumbbells by your sides to progress this move.
 ● **Kettlebell/dumbbell swings** - engaging your glutes (10-12 reps). Stand with feet shoulder-width and a kettlebell on the floor in front of you. Hinging at the hips and bending your knees slightly, pick up the kettlebell and pull it back between your legs to create momentum to then swing it forwards and up to shoulder

KEY HOME-GYM TRAINING KIT

Equipment to help you get the most from your workouts



01 Braingain 24kg adjustable dumbbells £229.99

● A perfect piece of space-saving kit. Ranging from 2.5kg to 24 or 32kg, these are easy to adjust and are brilliant for progressing strength work gradually.

02 TRX Move System £79.95

● Suspension trainers like this one use gravity to build functional upper-body, lower-body and core muscles and you don't need a huge amount of space to use them.

height. Let it return to between your legs and repeat.

- **Single-leg bridges** - engaging your glutes (10-12 reps). Lie on your back on the floor, arms by your sides. Lift one leg off the floor, keeping it straight, then push your hips up until your body and lifted leg are all in a diagonal line. Lower and repeat.

Cool-down Stretch out the muscles you've been working.

Nutrition Eat some protein and fast-digesting carbohydrates within 20 to 40 minutes of finishing.

Below Upper body work is important for cycling power



Technique Tips

Swim for success

Swimming is a good way to boost your cardio endurance and efficiency ready for the spring



The expert Chris Knight

Chris Knight is a run, swim & cycle coach at Espresso Cycle Coaching, a qualified British Triathlon Level 2 coach and has a Remedial & Sports Massage diploma. He has represented GB as an age-group athlete at the ITU Long Distance Triathlon World Championships. He is also an Ironman and 70.3 World Championship qualifier and races for Team Trident in Hitchin.

01 **What are the benefits?**
 ● Swimming is a full-body workout but without the stresses of impact. It benefits cycling by aiding cardiovascular endurance and VO₂ max, which maintains or improves lung capacity and aerobic efficiency. Coach Chris Knight describes how “rotational movements from swimming will help strengthen your core – key for cycling performance and endurance”. There are great gains to be made in even a 30- to 45-minute session, so frequent sessions are easier to fit in the week than bike rides. It can help improve flexibility and overall is an excellent cardio

workout that gives resistance training to the whole body.

02 **Getting started**
 ● Outdoor swimming is generally out over winter, so the pool is ideal to work on technique. It’s worth investing in lessons or joining a club that has coached sessions to maximise your gains. Aqua jogging provides variety, and the resistance of the water forces the legs and glutes to work extra hard.

03 **How to do it**
 ● “Swimming loads the shoulders more than most cyclists are used to

Right Swimming counts as active recovery because it is low impact

Below Give yourself a full-body resistance workout in water



so if you’re not a regular swimmer build it up gradually. Some strokes, like breaststroke, can cause issues to the knees with the kick, or your neck as it’s hyper-extended,” explains Knight.

04 **Nutrition and recovery**
 ● “Swimming is a great active-recovery session: it’s low impact on the body and can be used as an active stretching session after other hard workouts,” says Knight. “Post-exercise nutrition should be appropriate to restock the glycogen store and aid with recovery.”

ULTIMATE SESSION
Sub-threshold pace holder (1,600m)

Kit needed Pull buoy, fins, kickboard.
Nutrition Eat a small, high-energy meal/snack (oats, pasta, sweet potatoes) at least an hour before your swim.
Warm-up 2 x 100m freestyle, nice and relaxed breathing every 3 strokes.
 2 x 50m freestyle, pull buoy, build the pace over the 50m.
 2 x 25m kickboard, kick from the hips and brush the big toes together every 3-4 kicks.

2 x 25m freestyle, max efforts.
Main set 5 x 100m freestyle, 80% perceived effort or CSS pace if you have one (CSS stands for critical swim speed: equivalent of cycling’s FTP, or your lactate threshold, worked out using your times for a 400m time trial and a 200m time trial, taking a 5-8min active recovery – slow swim/stretch – between the two. Use an online CSS calculator to get your score).
 5 x 100m freestyle, holding the average pace from the set above, with 10sec rest between each 100m.
Cool-down 100m freestyle, easy pace.
 100m freestyle, pull buoy, easy pace.

KEY SWIMMING KIT

Stay on target in the pool with these aids



01 Beco Senior pull buoy £9.99
 ● A great cheap piece of kit. Place the float between the legs to position the body in a much better aquadynamic position.

02 Finis Tempo Trainer Pro £62.99
 ● This fits under your swim cap and gives adjustable audible beeps. You can set it to help maintain a lap pace or stroke rate.



Left You can gain a lot of benefits from relatively short runs

Technique Tips

Ramp up your runs

As well as being a great aerobic workout, running strengthens your bones and joints

01 What are the benefits?

● "Running helps strengthen muscles, joints and connective tissues by introducing appropriate impact forces that are lacking in cycling," explains triathlon coach Chris Knight. It also has the advantage that a very aerobically beneficial workout can be done in a relatively short session. "Generally an endurance run session is shorter than a bike session, meaning less time away from the family or training in bad weather over the winter months," adds Knight.

02 Getting started

● Running's popularity is partly due to not requiring anything but a pair of trainers to get started – but that's like saying cycling doesn't need much more than a bike. However, investing in a running gait analysis and shoe fitting is important for running longevity. Road running is easier to access, but off-road running is more strengthening and brings the added mental-

health benefits that being in the countryside can provide.

03 How to do it

● "Running is a high-impact activity and needs building up carefully," says Chris. Most injuries occur by running too far, too often or too fast, so it's essential to introduce longer times and distances gradually. Running off-road uses muscle groups more dynamically than on-road due to the mixture of terrain and elevation that means your muscles have to work to stabilise as well as move you forwards.

04 Nutrition and recovery

● It's sensible to eat about two hours prior to a run – ideally a carbohydrate-rich light meal or snack – to reduce the likelihood of gastrointestinal issues. Gels are ideal for sessions lasting longer than an hour. In terms of recovery, cool down gradually, stretch using some Pilates/yoga moves and eat within 20 to 30 minutes.

ULTIMATE SESSION

Tempo hill repeats

Kit needed Run kit.

Nutrition Energy-rich snack 30-60mins prior to session.

Warm-up 10-15mins easy running. 2 x 100m strides accelerating for 80m to nearly flat out, decelerate over last 20m, walk back and repeat. 1 x 100m of 'butt kicks' for 20m, then accelerating for 60m and decelerate for 20m.

1 x 100m strides doing 'high knees' for 20m, then accelerating for 60m and decelerate for 20m.

Main set Use slight incline of just over 100m in length. 10 x 100m hill efforts. Run these efforts at tempo; they should feel comfortably uncomfortable – like you're working hard, but not racing. Perceived effort of 8/10 where 5 is comfortable and 10 is racing. Jog back to start point.

Cool-down 10-15min easy, reducing pace and heart rate. 1 x 100m of 'high knees' for 20m, then accelerating for 60m and decelerate for 20m.

KEY RUNNING KIT

Use these to help pace your runs



01 Shokz OpenRun £129.95

● These headphones are a game changer, allowing you to simultaneously run while listening to music/podcasts as well as keep an ear out for hazards. Much safer than normal earphones.

02 Stryd Foot-pod £139

● This foot pod that clips onto your shoe gives power data which can be used in a similar way to the way power is used for bike training and racing, and can also help with pacing when paired with your smartwatch.

Technique Tips

Head to crossfit

The complete workout, this builds muscular endurance, strength and power plus cardio

01 What are the benefits?

● You think you're fit and then you try Crossfit. Initially, sessions leave you feeling like you've been hit by a bus – in a good way. Workouts are constantly varied, functional movements performed at high intensity, using all muscle groups in a way that consistently challenges them. There's no just legs or upper-body day, so it develops full-body strength over time. A class is split into three parts: the warm-up, the skill/strength set followed by the workout of the day (WOD). The whole session helps to build explosive power too, not just strength or endurance, so it's ideal for hill climbs. "It's a great training programme for cycling as one of the main focuses is on building a strong aerobic system," says Basset-Smith.

02 Getting started

● Crossfit's reputation is of being risky for injury, although much of that is probably down to user error rather than the actual movements. Joining a Crossfit gym is important as there are bespoke coaches ensuring movements and weights are performed safely and effectively.

03 How to do it

● Although some of the movements require skill and coordination, there's an emphasis on learning them well so that they're safe and productive. "We get the individual to master the mechanics of the movements; drill in and repeat consistently good patterns of movement, then add in intensity to maximise the benefits of each action," explains Basset-Smith.

KEY CROSSFIT KIT

Create your own Crossfit zone at home

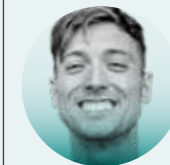


01 Blk Box 3 Hole Hand Grips £20

● These help provide protection from calluses and blisters on your hands as well as improved grip for bar and barbell work.

02 Blk Box 3 in 1 wooden plyo jump box £108

● Great to build confidence, and as an all-round useful piece of home gym equipment.



The expert
James Basset-Smith

James is an experienced Crossfit coach and co-owner of Crossfit gyms in the South West. He has trained for Ironman competitions and is a keen advocate of creating performance power through Crossfit to translate into your specialist sport.

04 Nutrition and recovery

● Three or more classes a week ensure optimal gains. Having a day off in between is important, particularly for newbies, to rest and for muscle adaptation, which happens when you're not training. Workouts can leave you starving but prioritise that protein refuelling/recovery window in the 20-30mins post-workout and don't overindulge.

ULTIMATE SESSION

Benefits Builds strength and muscular endurance. The aim is to go fast but recover and repeat efforts, building a stronger aerobic base and threshold.

Kit needed Barbell and plates & pull-up bar.

Nutrition Energy-rich snack within 2 hours of training.

Warm-up Squat-specific hip mobility, aerobic activities.

Main set 5 sets of 5 reps of barbell front squats.

Workout Every 3mins x 5 sets (15mins total). 200m run.

10 barbell front squats (light moderate load).

10 bodyweight pull-ups.

Rest in remaining time.

Cool-down Steady reduction in HR, then long static stretches.



Left Crossfit uses high-intensity functional movements