

## Expert advice

# Q&A

YOUR TECHNICAL, LEGAL, AND HEALTH QUESTIONS ANSWERED. **THIS ISSUE:** DEALING WITH ANAEMIA, SPOKE BREAKAGES, AVOIDING FALLS, AND MORE

## MEET THE EXPERTS



**DR MATT BROOKS**  
Cycling GP {Health}



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{Technical}



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A blood test to check iron levels

Left: Nick Moore / Alamy

### Health

## CYCLING WITH ANAEMIA

**I've found myself exhausted for days after harder-than-usual rides. I've also noticed that I'm prone to viral infection.**

**A blood test revealed that I am slightly anaemic (13.2g/dl). My GP has asked for another test in three months. At 65, I wish to carry on cycling. Must I stop/reduce the long, hard rides to prevent 'crashing'?**

**Eric Gorton**

**A**naemia is the term used for levels of haemoglobin in the blood which are below normal. Haemoglobin binds oxygen, so anaemia results in less oxygen being carried around the body. Symptoms include feeling breathless, dizzy and tired. The

severity of symptoms will, in part, depend on the level of anaemia.

Red blood cells are made in the bone marrow, and a constant new supply is needed to replace old cells that break down. This requires a healthy bone marrow and nutrients including iron and some vitamins such as vitamin B12 and folic acid.

A one-off haemoglobin level just below normal needs repeating as it may be transient. However, if the anaemia is persistent or worsening, investigation will be required to identify the cause. Your GP can do blood tests to check iron stores, vitamin B12 and folate levels. Other tests may be required – for instance, looking for possible blood loss in iron-deficiency anaemia.

Iron-deficiency anaemia may be due to: blood loss (for instance, from the bowel); pregnancy or heavy menstrual periods in women; poor diet; or poor absorption of iron e.g. in coeliac disease. Other causes of anaemia include folic acid and vitamin B12 deficiency, red blood cell disorders, bone

marrow problems, and chronic conditions like rheumatoid arthritis or kidney disease.

Treatment of anaemia depends on the cause but may involve iron tablets or vitamin B12 injections. In mild anaemia, symptoms are likely to be less problematic although this will depend on factors such as your general fitness and other health conditions. You may have to reduce longer more strenuous rides to compensate but if the cause for your anaemia is identified and treated, this may only be temporary.

**Dr Matt Brooks**

### Doctor callout

**After 10 years of writing for Cycle, Dr Matt Brooks is standing down in 2018. Would you like to be paid to answer one health query per issue? You must be a cyclist with wide-ranging medical knowledge – for example, a GP. For details, email [cycle@jamespembroke.com](mailto:cycle@jamespembroke.com).**

## Technical STRONGER WHEELS

**Q** I recently broke three spokes on my Genesis Tour de Fer 20, during a tour of the Western Isles with two rear panniers. The first spoke broke on Harris, immediately buckling the rear wheel. I caught the ferry back to Portree on Skye, and local cycle shop Island Cycles replaced it. During the repair, they found a second broken spoke. Thirty miles later, another broke.

During my trip, I had hit two hidden pot-holes but I wasn't riding off-road. I am looking for ways to avoid this happening in future. One option is to have the wheel rebuilt (as well as avoiding potholes). But is there any guidance on working out how much weight we should carry?

Alan Bowie

**A** Hitting a pothole may dent a rim but is unlikely to break a spoke unless it is already weakened by fatigue, which is the factor responsible for almost all spoke failures. The best way to avoid spoke fatigue is to go to a skilled builder, who will advise on spoke count and rim weight (heavier rims are stronger...) and use correct spoke tension and proven stress-relieving techniques to minimise the cyclic loading responsible for fatigue failure.

As a rule of thumb, 36 spokes is the minimum count for any 700C wheel expected to carry a pair of loaded panniers; smaller wheels (e.g. 26in/ISO 559) are inherently stronger and you may find 32 spokes sufficient, depending on rider weight. Obviously, it is a good idea to avoid potholes where possible.

Richard Hallett



A perpendicular crossing is safer

Left: Carl Wyn Williams / Alamy

## Technical FRONT WHEEL SWEPT AWAY

**Q** Can you explain this particular type of crash? I was going slightly downhill on a tarmac cycle track. Ahead was a closed steel gate, but to the right, just off-piste on the grass, was an open cattle gate. I went to turn across the kerb onto the grass for the open gate, but I didn't turn: the front wheel touched the kerb, then ran down that straight into the steel gate. BANG!

How does it happen? The nearest analogy I can think of is trying to drill into a steel plate at an angle. The drill skids off. But what are the physics?

It's clearly best to get the front wheel to cross rails, pipes, roots and kerbs as near to a right angle as possible. Another tactic I have used in the forest is to throw my weight right back. But on occasions, I have jumped the first root and then landed on a second that led me at enhanced speed into a tree trunk.

Martyn Dyer-Smith

**A** The maths needed to describe the physics of such crashes is, er, challenging. A simple explanation is that a single-track two-wheeled vehicle will begin to fall to one side as it rolls, and will topple unless corrected. It is kept upright by steering into the direction of lean; this shifts the tyre contact patch sideways under the mass of the rider and bike, making them then lean to the opposite side, which is corrected in the same way, etc. This only works provided the front (steering) tyre has enough grip on the ground to shift its contact patch in the required direction.

If grip is insufficient, or if there is an obstacle such as a kerb preventing the front wheel from moving in the direction of steer, the contact patch won't travel sideways to correct the initial lean and the bike and rider will fall to that side. The obstacle doesn't need to be high; I once fell off when my front wheel refused to climb over a wet, slippery bead of bitumen road sealant raised about 5mm proud of the road surface.

If you hit a log, kerb or similar at an acute angle, the effect is to push the front wheel to the side, creating a lean that the wheel can't correct. If you hit the obstacle at around 90°, there's little or no sideways deflection. Lifting the front wheel over an obstacle removes the immediate need to use its surface to gain steering and balance traction but merely postpones the moment grip is required until the tyre touches down; if it lands on something slippery, the result is usually a fall.

Richard Hallett



Wrong dropouts for hub gears? Fit this

## Technical HUB GEAR CHAIN TENSION

**Q** I'm considering replacing the derailleur system on my commuter bike with a hub gear. What is the best way of tensioning the chain, assuming a vertical dropout? I have a couple of Sturmey 5-speeds with hub brakes. One of them is new, so it should work, and the range is as wide as the gears I actually use. Unfortunately, the frame has vertical dropouts, giving no room for chain tensioning by shifting the wheel. Any suggestions welcome, as are thoughts on the suitability of these gears.

dsmithave, via the Cycling UK Forum



26-inch wheels are a bit stronger

Don't overtake other cyclists too closely



  
**Cycling UK forum**  
 Need an answer to a question right now? Try [forum.cyclinguk.org](http://forum.cyclinguk.org)

**A** If you are happy with the gear range – and weight – of the hub in question, then why not use it? The modern SunRace-manufactured SA hubs are a little on the heavy side compared with, say, Shimano’s Alfine 8, but will do the job. With a freewheel, there’s no force transmitted through the return run of the chain and, provided your right-hand vertical rear dropout has a derailleur boss, you can keep the chain under control using one of the many tensioners sold for this purpose. Take a look at designs by ETC, Shimano, or Surly (whose Singleator is pictured on the previous page).

**Richard Hallett**

**Legal PASSING DISTANCES**

**Q** Does the Highway Code’s Rule 163 on passing distances also apply to cyclists overtaking other cyclists? Riding my tandem, I was passed by a group of 20 cyclists, riding two abreast, with a clearance of virtually zero. A wobble from me would have brought the entire group down. I can only assume that the near-zero clearance was to prevent

**the outside riders crossing the centre of the road into passing traffic.**

**Phil Morris**

**A** Rule 163 of the Highway Code states that road users should only overtake when it is safe and legal to do so. This rule is also applicable to cyclists, as indicated by Rule 67 of the Highway Code. This suggests that Rules 162-169 in relation to overtaking also apply to cyclists. In the situation you have described, it appears as if the group of cyclists failed to take into account the Highway Code and, as a result, put yourself and themselves in a potentially dangerous position.

Rule 66 states that cyclists should never ride more than two abreast. When the group of cyclists overtook you, they should therefore have completed this manoeuvre individually rather than as a group.

It should be noted that where the word ‘should’ is used in the Highway Code rather than the word ‘must’, a rule is not a legal requirement; if disobeyed, the perpetrator is not committing an offence. However, non-compliance with rules may still be

Left: format4 / Alamy

used in evidence to help establish civil or criminal liability. As an aside, if you are involved in a collision with another cyclist, it may be difficult to pursue a claim against them for purely practical reasons. This could be because they don’t have any insurance or sufficient means to be worth suing. Members of Cycling UK can take some comfort: you have third-party insurance from your membership, which covers you against any damage or injury you may cause whilst riding your bike. If you are involved in a collision or an incident and you believe that there may be a claim against you, ring Cycling UK’s Accident Helpline on 0844 736 8452.

**Richard Gaffney**

**Technical SMALLER CHAINSET ON MOULTON**

**Q** The Sugino OX901D 40-30t chainset would seem an ideal replacement to my Ultegra compact double chainset 50-34t chainset, as I’m 78 with artificial knees and struggle when cycling on the Isle of Wight. My bike is a Moulton fx, which has a fixed hinge for the front mech, and as a consequence it cannot be lowered to accommodate smaller chainrings. Would it be possible to have a replacement re-engineered in order to allow the adjustment to be made?

**Brian Wey**

**A** If you have a ‘braze-on’ front derailleur mount, one option is to try a SRAM front derailleur mech; these have two threaded mounting holes and work with a wide range of chainring sizes. Alternatively, a frame builder should be able to extend the derailleur mount, although there may be some damage to paintwork.

**Richard Hallett**



A braze-on mech with adjustability

**Contact the experts** Email your technical, health, legal or policy questions to [editor@cyclinguk.org](mailto:editor@cyclinguk.org) or write to **Cycle Q&A, PO Box 313, Scarborough, YO12 6WZ**. We regret that Cycle magazine cannot answer unpublished queries. But don’t forget that Cycling UK operates a free-to-members advice line for personal injury claims, tel: **0844 736 8452**.