



directly against the carbon fibre tube wall and can pull through if even lightly overstressed, weakening and enlarging the rivet holes. Assuming this is the case, the tube can be restored to full strength by a specialist repairer such as [carbon-concepts.co.uk](http://carbon-concepts.co.uk).

**Richard Hallett**

## Technical

### Lower gearing

**Q** I am finding the lowest gear insufficient on my Haibike e-bike, which has 9-speed Shimano Alivio. The largest sprocket is 34t. What would be the largest I could fit without changing much? Could I fit, say, an 11-40t cassette, maybe with a new derailleur and chainring or perhaps by adding a RoadLink gear hanger extender? Would switching to 10-speed improve the choice of ratios?

**Rob Wharton**

**A** Since your current rear mech will already handle a 34t sprocket, the simplest option – and one I recently used – would be to fit a Wolf Tooth RoadLink or one of the budget copies, along with an 11-40t 9-speed cassette; SunRace makes one. This worked for me without needing additional chain links as I always run the longest chain possible without sag in the smallest sprocket/chainring combination. If yours is shorter, you may need to add some links.

As said in the RoadLink review in the Dec 2015/Jan 2016 issue, there's no reason why the link should not work with a 9-speed transmission since it simply repositions the rear mech. Going to a 10-speed 11-40 cassette would increase your choice of



ratios and close the gaps but would not improve the spread of your gearing – and would require further expenditure on components.

If the 40t sprocket doesn't give you a low enough bottom gear, consider a chainset with smaller inner chainring, such as the Spa Cycles TD-2 Super Compact.

**Richard Hallett**

## Health

### Too much sugar?

**Q** Sports-focused cycling media tell us that professional cyclists are posting record times thanks to maxing out on carbohydrate. While it's explained that the intake common for pros (120g of carbs per hour) involves training your gut to tolerate that amount, it's frequently stated that an intake of 60g of carbs per hour is desirable to unlock performance gains, even for amateurs. Aside from the short-term ill effects that eating that much carbohydrate can cause, are there any implications for long-term health? I'm thinking of metabolic disorders like diabetes.

**Ben James**

**A** When cycling intensively or for a prolonged period it is possible to burn off all the glucose available in the muscles and go into deficit. This is what we call 'bonking' on a ride. To avoid this, as you say, you need to take in 30-60g of carbohydrates an hour, as well as adequate water and electrolyte salts. Most cyclists will do this with a combination of hydration drinks and snacks, such as fruit or cereal bars, gels or chews. Drinks can be just electrolyte salts with no calories or full energy replenishment with up to 60g of carbs in a bottle, as well as sodium and potassium salts.

It is quite possible to overload on glucose but the result is likely to be nausea and bloating rather than a turn of speed. On a hot day, drink plain water or electrolyte drinks to satisfy thirst, and consume the carbs in snack form. On very long rides you will see endurance riders eating tins of peaches, rice pudding or beans



on toast. Salted, cold, boiled potatoes are another favourite snack.

On a day of effort

all the calories will be burned off and you will need a good meal of carbs and protein afterwards to replenish stores. But beware consuming excessive carbs on low-exercise days, which will just lead to laying down fat. This can indirectly make diabetes more likely but eating sugar does not in itself cause this condition.

**Dr Kate Brodie**

## Technical

### Bearings problem

**Q** I've been having problems with my Schwinn hybrid. The rear hub (a threaded one with a screw-on freewheel) was faulty, so a local bike shop replaced the rear wheel for me. But the wheel doesn't spin as freely as it should. It's not the brakes or anything else rubbing. I don't know what my rights are now, but I feel it's not fit for purpose.

**Robin Grimmer**

**A** This is hard to assess without seeing and handling the wheel but, assuming it's new, it could simply be the result of over-tightened bearings. Cup-and-cone wheel bearings are often tight from new, even from a manufacturer such as Shimano. They can usually be adjusted to turn more freely without any slack.

If the hub has cartridge bearings, these may have rubber seals to keep out dirt. Such seals increase drag and can make the hub axle feel stiff to turn, although it should still complete several turns if spun in the frame. If the wheel doesn't, ask the shop to explain why not or to adjust the hub bearings so that it will.

**Richard Hallett**

## Get in touch

**EMAIL** your technical, health or legal questions to [editor@cyclingsuk.org](mailto:editor@cyclingsuk.org) or write to Cyclopeda, Cycle, Cycling UK, Parklands, Railton Road, Guildford, GU2 9JX. 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: 0330 107 1789**.