



A glucose/fructose blend of carbs can keep you riding at sportive pace for longer

# RIDE ON: ACHIEVE A 25% STAMINA BOOST

**New research reveals that a nutrition strategy that combines two types of carb can increase your performance by a quarter with no extra training**

A NEW STUDY of cyclists has revealed dramatic performance gains when they switched to a nutritional strategy designed to maximise carbohydrate ingestion.

The riders were able to cycle for an extra 15.8 miles (26 per cent further) without their pace dropping when they fuelled according to a scientific nutrition strategy. This was achieved despite the riders consuming their normal energy drinks and gels during the control stage of the trials.

Exercise physiologist Dr Carrie Ferguson attributes the improvement to “the ingestion of multiple transportable

carbohydrates”. Previous studies have shown that the human body can absorb a maximum of 60g of carbohydrate per hour to produce energy. Consuming more than this amount has no additional benefits because the intestinal transporter responsible for absorbing glucose becomes saturated.

However, when a different type of carbohydrate, fructose, is consumed the body can process this additional energy because fructose is absorbed by a separate transporter.

This potentially raises maximum energy

consumption from 60g/hour to 90g/hour by using energy drinks and gels that deliver glucose and fructose in a ratio of 2:1.

The result is a step-change in performance, according to Dr Ferguson’s research. For example, a cyclist who is only just able to match the pace of his mates over a 60-mile sportive would be able to ride a 75-mile sportive at the same pace, with no extra training.

The research also revealed the tendency for riders to consume too little carbohydrate when calculating their own nutritional strategy – an average of 40g/

hour compared to the 94g/hour of the scientific strategy.

“Most of the riders were underfuelling,” says Dr Ferguson. She adds that, “If you’re consistently taking on fuel it’s better in regular doses from a drink than having 60g in one go from a gel, which can lead to feelings of bloating. You can’t absorb 60g of carbohydrate in a minute – it takes an hour.”

A previous study at Glasgow University has already shown how cyclists fuelled by 2:1 glucose/fructose drinks and following scientific feeding guidelines rode a 40-mile time trial on average five minutes and 45 seconds faster compared to the same time trial powered by their normal nutrition.

**“This potentially raises maximum energy consumption from 60g/hour to 90”**

## THE SCIENCE BIT



Dr Ferguson monitors the riders

To explore the impact of using a glucose/fructose energy source, a group of experienced cyclists rode twice in lab conditions, with their bikes fitted to a Computrainer – a turbo trainer with a computer screen.

For the first ride, the cyclists were split between those who followed their normal nutrition strategy and those who followed a strategy devised by sports nutrition specialist High5, consuming both 750ml of High5 EnergySource and one High5 EnergyGel Plus per hour.

Following a 10-minute warm-up the riders completed six laps of a 10-mile circuit that included two sustained climbs, at the pace they would normally tackle a 60-mile sportive.

When they had completed 60 miles their speed over the first mile was loaded on to the Computrainer, which then generated a ‘virtual’ cyclist to pace them at this speed. The riders had to sustain this pace for as long as they could, with the aim of riding as far as possible. The test finished when the subjects fell 0.3 miles behind their pacer.

A fortnight later, the test subjects returned to the lab for a similar test. Those who had fuelled themselves with their own nutrition in the first test switched to High5’s strategy, and vice-versa. The riders then cycled the same 60-mile route again, paced at their original speed, before trying to keep up with their virtual pacer. The test again ended when the riders fell 0.3 miles behind the pacer.

**RESULTS: Following the High5 strategy the riders were, on average, able to ride an additional 15.8 miles (26 per cent) compared to fuelling their rides with their own nutritional strategies.**

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