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Thirst for Science: University 'Home Brew' Boosts Sports Performance

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A new sports drink developed by University of Birmingham scientists improves the performance of athletes by twice as much as traditional sports drinks, research finds.

Professor Asker Jeukendrup, of the School of Sport and Exercise Sciences, has discovered athletes perform better when they drink his 'carbohydrate cocktail' of glucose and fructose, because it allows the body to burn more carbohydrate – and generate more energy – than traditional glucose based drinks.

Dr Jeukendrup's research group has attempted to find ways to increase energy delivery to the muscle. Previous research showed that the body could only burn 60 grams of carbohydrate per hour. University of Birmingham research found consuming multiple sources of carbohydrate, such as glucose and fructose, can burn up to 105 grams (or 420 calories of carbohydrate) an hour - an increase of 75 per cent.

Professor Jeukendrup said: "By using different types of carbohydrates that are absorbed by different mechanisms we can increase the delivery of carbohydrate to the working muscle. This extra fuel injection into the engine (muscles) resulted in an 8% improvement in performance compared with drinks that contain only one type of carbohydrate. Those traditional drinks already improved performance by 11% compared with water."

The drinks developed in Birmingham have already been used by several elite athletes and has been used since 2003 in the Tour de France.

The new study is the culmination of seven years' work and more than 15 publications on the topic. In those publications it was demonstrated that certain mixtures of carbohydrates were burnt more readily than others, fluid delivery was improved, drinks were better tolerated, there were less indications of fatigue during very prolonged exercise and now this study has demonstrated clear performance benefits.

Superior endurance performance with ingestion of multiple transportable carbohydrates

Kevin Currell and Asker E Jeukendrup is published in Medicine and Science in Sports and Exercise in February 2008 .

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Notes to Editor:

The School of Sport and Exercise Sciences has an excellent research base. It achieved a 5*A rating in the 2001 national Research Assessment Exercise (RAE), the highest rating available. Recently the HEFCE research re-grading exercise among 5* departments has elevated the School's rating from 5* to 6*.

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