Research findings

Effect of Exercise Intensity on Glucose Requirements to Maintain Euglycemia During Exercise in Type 1 Diabetes

Age Range: 13 to 25 years

WHAT WAS THE AIM?

Currently, in order to prevent a hypoglycaemia (low blood glucose level), patients are advised that the amount of carbohydrates consumed should increase with the intensity of the exercise, however it's not clear exactly how much carbohydrates should be eaten depending on the exercise.

The aim of this study was to investigate the link between exercise intensity and the amount of carbohydrates required to prevent hypoglycaemia in patients with type 1 diabetes.

HOW DID WE DO IT?

Study participants were tested exercising at four different intensity levels, over four separate days, and at 40 minutes at a time. Intravenous glucose to maintain normal blood glucose levels was administered during the sessions.

WHAT DID WE FIND?

It was found that the risk of hypoglycaemia during exercise was not high when performed under basal insulin conditions. More importantly, the amount of carbohydrates needed to prevent hypoglycaemia did not increase linearly with exercise intensity.

Therefore an increase in carbohydrates consumed, is not necessary to prevent a hypoglycaemia when exercise intensities are high**.**

WHAT DOES THIS MEAN IN PRACTICE?

Exercising at higher intensity, such as sprinting, requires less carbohydrate than expected. These research findings will help refine exercise guidelines and make it easier for individuals with type 1 diabetes by providing a baseline to follow. Refining the carbohydrate strategies for exercise will also help avoid excess carbohydrate intake during exercise.

WHAT'S NEXT?

Studies are now being conducted to find the oral equivalent of glucose requirements during exercise. These findings will then be translated into clinical practice through the development of new and more accurate evidenced based guidelines.

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