Glycemic and Insulinemic Response to Preexercise Carbohydrate Feedings

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The effects of preexercise hyperinsulinemia on exercising plasma glucose, plasma insulin, and metabolic responses were assessed during 50 min cycling at 62% VO2max. Subjects were fed a 6% sucrose/glucose solution (LCHO) or a 20% maltodextrin/glucose solution (HCHO) to induce changes in plasma insulin. During exercise, subjects assessed perceived nauseousness and lightheadedness. By the start of exercise, plasma glucose and plasma insulin had increased. In the LCHO trial, plasma glucose values significantly decreased below the baseline value at 30 min of exercise. However, by 40 min, exercise plasma glucose and insulin values were similar to the baseline value. Exercise plasma glucose and insulin did not differ from baseline values in the HCHO trial. Ingestion of LCHO or HCHO was not associated with nausea or lightheadedness. It was concluded that the hyperinsulinemia induced by preexercise feedings of CHO did not result in frank hypoglycemia or adversely affect sensory or physiological responses during 50 min of moderate-intensity cycling.