A SINGLE BOUT OF MODERATE-INTENSITY CYCLING REDUCES POSTPRANDIAL TRIACYLGLYCEROL CONCENTRATIONS AFTER A MODERATE-FAT MEAL IN YOUNG MEN

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Aerobic exercise has been shown to lower postprandial triacylglycerol concentrations after a meal(s) of high-fat content (>60% of total energy) (Gill and Hardman, 2003). This study examined the effect of moderate-intensity cycling on postprandial triacylglycerol concentrations after subjects consumed a meal of moderate-fat content (45% of total energy). Eight male subjects, aged 24 ± 1 years (mean ± SE), completed two, 2-day trials (exercise and control) at least one week apart in a randomised, repeated measures design. On day 1, subjects either cycled for 30 minutes at 65% of maximum heart rate in the afternoon or rested (no exercise). On day 2 of both trials, after overnight stay with an 11-hour fast, subjects rested and consumed a test meal of moderate-fat content (0.61g fat, 1.34g carbohydrate, 0.37g protein, and 52kJ energy per kilogram body mass) for breakfast. Venous blood samples were collected in the fasted state and further blood samples were collected at bihourly intervals for 6 hours postprandially on day 2. Postprandial serum triacylglycerol concentrations were significantly lower on the exercise trial compared with the control trial (two-factor ANOVA, main effect of trial P=0.002). Six-hour area under the curve values for serum triacylglycerol were significantly lower on the exercise trial compared with the control trial: exercise 9.10 ± 1.75 mmol.6h/L, control 12.22 ± 1.92 mmol.6h/L (paired t-test, P=0.003). These findings demonstrate that 30 minutes of moderate-intensity cycling performed the day before a meal of moderate-fat content is effective at lowering postprandial serum triacylglycerol concentrations in young men.

Reference

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