Exercise prevents fructose-induced hypertriglyceridemia

May 17 2013

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Léonie Egli, from the University of Lausanne in Switzerland, and colleagues examined the effects of exercise on circulating lipids in eight healthy males fed a weight-maintenance, high-fructose diet. Participants were assessed after four days of a diet low in fructose with no exercise (C); a 30 percent fructose diet with no exercise (HFr); or a 30 percent fructose diet with moderate aerobic exercise (HFrEx). On the fifth day, [^{13}C]palmitate in triglyceride-rich lipoprotein (TRL)-triglycerides (TG) was measured using a nine-hour oral fructose loading test.

The researchers found that HFr correlated with increased fasting glucose , total TG, TRL-TG concentrations, and apolipoprotein B48 concentrations, as well as with increases in post-fructose glucose, total TG, TRL-TG, and [^{13}C]palmitate in TRL-TG, compared with C. Fasting and post-fructose TG, TRL-TG, [^{13}C]palmitate concentration in TRL-TG, and apolipoprotein B48 concentrations were completely normalized with HFrEX. Compared with HFr, HFrEx correlated with increased lipid oxidation and plasma non-esterified fatty acid concentrations.

"These data indicate that exercise prevents the dyslipidemia induced by high fructose intake independently of energy balance," the authors write.

One author disclosed financial ties to Nestle and Ajinomoto Co.

More information: Abstract
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