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LIVER

Potential of resistance exercise as a lipid-lowering treatment for NAFLD that is independent of weight loss

Researchers at Newcastle University in the UK have shown that resistance exercise reduces liver fat levels in patients with nonalcoholic fatty liver disease (NAFLD), and could provide an alternative to lifestyle interventions that target weight loss. "Our observations show that there are benefits to being physically active that extend beyond weight loss for people with NAFLD," explains Mike Trenell, corresponding author.

Lifestyle interventions to reduce weight are the standard therapy for NAFLD. Such weight loss reduces intrahepatic lipid (IHL) levels, but is difficult to maintain. Aerobic exercise seems to benefit the liver, independent of weight loss, but with a high cardiorespiratory demand, long-term compliance is poor. As resistance exercise has a lower cardiorespiratory demand and may be easier to adhere to, Trenell and colleagues studied its effects on IHL levels and metabolic control.

Adults with NAFLD were randomly assigned to either continue standard treatment or follow an 8-week weight training program consisting of biceps curls, triceps presses, chest presses, shoulder presses, seated hamstrings curls, calf raises, leg extensions and lateral pull downs—exercising for 45 min to 1 h, three times per week. BMI and body dimensions remained constant in both groups, but resistance training led to an overall decrease in the IHL level of 13% and improved glucose control by 12%. Insulin sensitivity and fat oxidation also improved, independent of weight loss.

Image courtesy of M. I. Trenell

Trenell and his team are working with European collaborators to translate their findings into clinical benefit "The pressing challenge is to understand how best to combine physical activity and nutrition to produce sustained benefit to people with NAFLD," concludes Trenell.

Andy McLarnon

Original article Hallsworth, K. *et al.* Resistance exercise reduces liver fat and its mediators in non-alcoholic fatty liver disease independent of weight loss. *Gut* doi:10.1136/gut.2011.242073