

## **Influence of Acute Exercise on Postprandial Lipemia and Fat Oxidation in Active Cannabis Users**

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### **ABSTRACT**

Adults residing in industrialized nations spend most of their day in a postprandial state. This can cause prolonged elevated levels of triglycerides and glucose post-meal, leading to increased risk of cardiovascular and metabolic disease. In epidemiological literature, cannabis users have been reported to have similar or lower levels of blood lipids compared to nonusers. However, postprandial responses and whether prior exercise improves postprandial lipemia (PPL) in this population is not known. **PURPOSE:** To examine the influence of prior exercise on PPL in active cannabis users. **METHODS:** This analysis presents preliminary data from a larger ongoing study comparing prior exercise and PPL in cannabis users and non-users. Seven active cannabis users (Age:  $30 \pm 7$  years; BMI:  $24.3 \pm 3.4$  kg/m<sup>2</sup>; VO<sub>2</sub>max:  $47.5 \pm 10.8$  mL/kg/min) completed 1 hour of exercise at their ventilatory threshold (VT) the evening before a high-fat, high-sugar liquid meal containing 15 kcal/kg body mass. Substrate oxidation, blood pressure, and capillary blood samples were obtained before and every 30-60 minutes post-meal for 3 hours. Blood samples were analyzed for glucose and triglycerides. Repeated-measures ANOVAs were utilized to examine differences in variables between conditions, across time, and their interaction. Area-under-the-curve (AUC) for glucose and triglycerides were calculated by the trapezoidal rule. **RESULTS:** Participants exercised at an intensity of  $96 \pm 5\%$  VT ( $73 \pm 11\%$  VO<sub>2</sub>max) and expended  $790 \pm 168$  kcals with an average RER of  $0.92 \pm 0.03$ . Post meal ( $1141 \pm 200$  kcals), all variables had significant effects of time ( $p < 0.05$ ), but no significant effect of condition (Control vs. Exercise) or interaction ( $p > 0.05$ ). AUC for triglycerides ( $p = 0.057$ ) and glucose ( $p = 0.243$ ) were not significantly different between conditions. **CONCLUSION:** In the present analysis, exercise did not acutely affect cardiovascular or metabolic responses to a high-fat, high-sugar liquid meal. Larger sample sizes will facilitate better comparisons.