KETO or HIGH CARB?

The department of kinesiology is turning nutrition research into a team sport.

BY RACHEL HEDSTROM | GRAPHIC BY MIKE DEL VECCHIO

Ketogenic diets — often referred to simply as “keto” — are popular among people attempting to lose weight and improve mental acuity. This diet is also gaining interest among athletes who believe it can help improve performance. But does it?

Literature on the effects of a keto diet — one that is very low in carbohydrates — on athletes is scarce. To help bridge that gap, faculty, graduate students and undergraduate students in kinesiology are comparing a ketogenic diet with a diet high in carbohydrates. Their purpose is to evaluate the diets’ effects on energy expenditure, blood lipids, sleep quality, appetite, and cognitive function and mood in cyclists and triathletes.
Shah said that a sizable research group, with members who represent a diversity of study interests, creates more opportunity for data collection. This in turn gives undergraduate students the opportunity to be key players on the team alongside experienced researchers. “Collecting data, administering the drinks, analyzing the dietary records — they were helping with many aspects of the study,” Shah said. “This study needs undergraduate students, and they learn so much more by working together as a team than they might have individually.”

Appetite
In nonathletic populations, ketogenic diets have been shown to reduce appetite. Is this the same for athletes? If so, a keto diet will affect energy intake, which could have negative effects on the immune system and reproductive function.

Energy expenditure
Among nonathletes, the metabolic rate after ingestion of a meal is lower for several hours after consuming a low-carbohydrate meal compared with eating a meal high in carbohydrates.

Blood lipids
Ketogenic diets lower triglycerides and raise HDL cholesterol. They are very high in saturated fats, which may raise LDL cholesterol in some individuals.

Cognitive function and mood
The few studies in this area have conflicting results. Some suggest a decline in cognitive function following the consumption of a ketogenic diet, while others report no effect.

Sleep
Sleep issues are common among athletes, and diet composition is thought to have an impact on quality and duration.

A well-balanced team to process data
Meena Shah, professor and chair of kinesiology, and doctoral student Andy Kreutzer lead a multidisciplinary team of researchers that includes doctoral students Austin Graybeal and Kamiah Moss; master’s students Petra Rack, Garrett Augsburger, Kaitlyn Harrison and Ashlynn Williams; undergraduate students Emma Wichman, Jorde Trudel, Desiree Tadwilliams and Megan Conger; and faculty members Robyn Trocchio, assistant professor of kinesiology, and Jada Willis, director of interprofessional education and assistant professor of nutritional sciences.

Study: The effect of diet composition on performance, energy expenditure, blood lipids, subjective and objective measures of appetite, sleep quality, cognitive function and mood in highly trained cyclists.