Researchers seek predictors of exercise effectiveness for weight loss

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(Medical Xpress) -- Most individuals trying to lose weight will increase physical activity as part of their strategy. For many, however, adding structured exercise does not result in weight loss, according to research. Offsetting the exercise with increases in eating and decreases in non-exercise physical activity appear to be significant factors limiting the effectiveness of exercise interventions.

University of Georgia College of Education researcher Michael Schmidt is leading a study to determine whether a number of psychological and eating behavior traits predict these compensatory behavior changes-information that could be used to help tailor and target weight management exercise interventions, according to Schmidt.

Schmidt, an assistant professor and graduate coordinator of the exercise science program in the college's department of kinesiology, is leading the multidisciplinary study, funded by a two-year federal grant from the National Heart, Lung and Blood Institute. Co-investigators include fellow associate professor of exercise science, Ellen Evans; James MacKillop, an associate professor in UGA's Franklin College of Arts and Sciences' department of psychology; and Stephen Rathbun, an associate professor in the College of Public Health's department of epidemiology and biostatistics.

While 150-250 minutes per week of moderate-intensity exercise is recommended for preventing weight gain and promoting modest weight loss, substantial individual variability has been observed in the

effectiveness of structured exercise to achieve expected levels of weight loss due to responses that compensate for the increase in exercise.

For each individual, the type and magnitude of these compensatory responses will predict the effectiveness of exercise to prevent weight gain or promote weight loss and, ultimately, cardiovascular health. Recent research has focused on the timing and magnitude of these changes in different population subgroups and across different intensities and durations of exercise. However, few studies have sought to identify the characteristics and traits that predict individual differences in the magnitude and direction of these compensatory behaviors.

The UGA study looks to: identify psychological predictors of compensatory changes in diet and non-exercise physical activity in response to initiating a structured exercise program; assess the relative importance of diet and activity changes in the total compensatory response; and evaluate the influence of baseline body composition on compensatory changes in energy intake and expenditure.

To meet these goals, a uniformity trial comprised of a series of four identical eight-week moderate-intensity walking interventions will be conducted in a community-based sample of 120 sedentary, premenopausal women. Psychological characteristics and traits known to be related to other health behaviors (such as smoking and substance abuse) will be assessed at baseline, and changes in energy intake and energy expenditure will be measured during the course of the intervention to determine compensation behaviors.

Multiple regression modeling will then be used to identify the psychological and physiological factors that explain substantial individual differences in compensatory behaviors among these women.

"The knowledge generated from this study will position the team to design a larger weight management intervention trial to explore the efficacy of a tailored approach that recognizes and attempts to manage identified psychological characteristics and traits among individuals differing in weight status," said Schmidt.

Provided by University of Georgia