When you eat may impact your overall health, nutrition experts say

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Accumulating evidence on the effect of the time of eating in relation to our circadian rhythm and metabolism shows that when we eat may influence our overall health and well-being. A special issue of the *Journal of the Academy of Nutrition and Dietetics* (JAND) on chrononutrition examines the effects of various fasting regimens and covers safety considerations and practical guidance.

The field of chrononutrition is gaining traction as it explores the relationship between temporal eating patterns, circadian rhythms, and metabolism for optimal health.

Guest Editor Krista Varady, Ph.D., Department of Kinesiology and Nutrition, University of Illinois Chicago, specializes in studying the efficacy of intermittent fasting for weight loss, weight management, and lowering the risk of metabolic diseases in obese adults. With more than 15 years of research experience, she is recognized as one of the top researchers in this field.

Dr. Varady says, "Intermittent fasting has emerged as one of the most popular diets for weight loss in recent years. The diet can be defined, in basic terms, as periods of eating, alternated with periods of not eating.

"This special issue examines the effects of various fasting regimens, such as time-restricted eating, alternate day fasting, and the 5:2 diet, on body weight, cardiometabolic disease risk, and sleep and exercise performance in human subjects. Pertinent safety considerations and practical guidance on applying the diets are also covered."

Editor-in-Chief of JAND, Linda G. Snetselaar, Ph.D., RDN, FAND, LD, a professor in the Department of Epidemiology at the University of Iowa, adds, "The findings presented in this special issue have important clinical implications. I believe the timing of eating will become increasingly important as we address dietary interventions related to chronic disease risk factors."

The special issue includes the novel study "Randomized Controlled Feasibility Trial of Late 8-Hour Time-Restricted Eating for Adolescents With Type 2 Diabetes," in which researchers examine the feasibility of eating within an 8-hour window as an interventional strategy for weight loss and glucose management among adolescents diagnosed with obesity and new-onset type 2 diabetes, compared with a prolonged eating window.

Lead investigator Alaina P. Vidmar, MD, Children's Hospital Los Angeles and Keck School of Medicine of USC, explains, "The prevalence of type 2 diabetes in adolescents is steadily increasing, specifically among historically marginalized communities. Many adolescents prefer to go to bed later and sleep in later, so an early eating window may not align with developmental and social schedules that often shift their food consumption to later in the day.

"We trialed a late eating window for our cohort and found that late time-restricted eating is safe and acceptable for this subset of adolescents as it can result in clinically meaningful weight loss, reduction in alanine transaminase, and significant caloric reduction; it did not negatively impact sleep, eating behaviors, or physical activity."

Another paper, "Indices of Sleep Health Are Associated With Timing and Duration of Eating in Young Adults," details findings from a cross-sectional study among 52 young adults without chronic diseases or conditions on whether timing and/or duration of eating behaviors

throughout the day affect sleep health.

Lead investigator Jess A. Gwin, Ph.D., Military Nutrition Division, U.S. Army Research Institute of Environmental Medicine, says, "Breakfast skipping and nighttime eating are among typical eating behaviors observed in young adults in the United States. Our study found that the timing of eating was associated with sleep-wake onset and sleep efficiency. This highlights the need for additional studies to understand whether manipulating the timing of eating occasions to better align with sleep-wake cycles could improve sleep health."

Interventions tailored to individuals' preferences and circumstances may benefit time-restricted eating adherence, according to the article "Time-Restricted Eating in Community-Dwelling Adults: Correlates of Adherence and Discontinuation in a Cross-Sectional Online Survey Study."

Leader of the research team Sydney G. O'Connor, Ph.D., Office of Behavioral and Social Sciences Research, National Institutes of Health, notes, "Dietary adherence is the strongest predictor of successful weight loss and maintenance; therefore, identifying dietary strategies that facilitate adherence is a priority in the field of behavioral weight management. We looked at motivators such as weight maintenance, health (not weight), improved sleep, disease prevention, and drivers such as the ability to work from home and the impact of COVID-19."

Dr. Varady concludes, "Many people stop adhering to standard diets that restrict calories because they become frustrated with having to regularly monitor food intake day in and day out. Intermittent fasting protocols can bypass this requirement by allowing participants to simply 'watch the clock' instead of monitoring calories, while still producing weight loss.

"Furthermore, intermittent fasting does not require the purchase of

expensive food products and allows individuals to continue consuming familiar foods, making it a highly accessible diet, especially for lower resource patient groups. Although fasting regimens are no more effective than other diet interventions for weight management, these protocols offer individuals an alternative, straightforward approach to addressing obesity by omitting the need for calorie counting.

"While weight loss is important, having a diet with a wide variety of nutrient dense foods such as fruits, vegetables and legumes is paramount in maintaining a replete nutritional status. These foods can be both inexpensive and culturally appropriate."

More information: Elizabeth Hegedus et al, Randomized Controlled Feasibility Trial of Late 8-Hour Time-Restricted Eating for Adolescents With Type 2 Diabetes, *Journal of the Academy of Nutrition and Dietetics* (2023). DOI: 10.1016/j.jand.2023.10.012

Charlotte A. Griffith et al, Indices of Sleep Health Are Associated With Timing and Duration of Eating in Young Adults, *Journal of the Academy of Nutrition and Dietetics* (2024). DOI: 10.1016/j.jand.2024.04.016

Caitlin P. Bailey et al, Time-Restricted Eating in Community-Dwelling Adults: Correlates of Adherence and Discontinuation in a Cross-Sectional Online Survey Study, *Journal of the Academy of Nutrition and Dietetics* (2023). DOI: 10.1016/j.jand.2023.12.006

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