

Safety against Diabetes via Optimizing Circadian Intake Patterns: Science Evolution Cropped

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Keywords: Diabetes; Metabolism; Circadian phase; Intake rhythm

Introduction

Discerning optimal circadian rhythms of consuming different nutrients over the 24-h is an innovative science with significant health and economy implications. Practicing this innovative science promises improvements in human health and life quality through minimizing risks from obesity, diabetes and related complexities. Effective public education is a final frontier in infrastructuring this public science in national and global communities.

Creative Science Evolution

This public health policy-making paper delineates circadian timing of nutrient intake as a feasible practice to help minimize risks of high blood sugar and pressure. Typically, much research has been devoted to optimizing daily amount and feature of food intake in improving public nourishment and health. Yet, an influential pragmatic science is timing of taking a variety of nutrients over the circadian almost 24-h period.

The innovative practical science of circadian intake timing originates from a natural life model. As such, the evolutionary nature of life contributes to development of circadian patterns of cell physiology, biochemistry, and genomics [1-3]. This means that alterations in metabolic properties occur based on the time of the circadian phase. These alterations may certainly be not dependent on nutrient intake per se [4-6]. Food intake as a chronobiological coordinator of intermediary metabolism is integrated with the circadian timing towards homogenizing cell biochemistry and omical characteristics [7,8]. To exemplify, taking the same quantity of the same food item at different hours of the circadian phase may have significantly different metabolic fate. To emphasize, nutrient modification, cellular waste management, exposure to pathological conditions depends on at what time of the circadian phase nutrients are ingested, digested, assimilated, and metabolized.

In essence, human glucose tolerance and insulin efficiency decrease as evening and night begin and day-time finishes [4,9]. This occurrence describes how the circadian nature lifespan has evolved to enable the body to cope with the surrounding environment effectively [10]. From endocrinological and functional perspectives, sleeping and resting are linked to a dramatic drop in gastrointestinal and splanchnic metabolism during continuous assimilative and metabolic workload. Due to the decreased energy requirements during inactive periods overnight, human body does not need much insulin and other metabolites and proteins to bioprocess substrates. Thus, glucose overflow during evening and night would likely impose serious challenges to normal intermediary metabolism and overall body health.

The public health programs must practically educate how circadian timing of nutrient ingestion and assimilation affects endocrinology, metabolism, and both individual and social health. Consuming energy-dense foods should rather be scheduled for early morning

and day time of the greatest brain and physical activity. In contrast, large concentrated meals must be avoided overnight [8,10]. It is recommendable to take frequent but small food meals during day and few fruity evening meals. This is the message coming from human evolution within the nature [11]. It is required specific guidelines be formulated for varying age and activity groups, physiological and health situations, working and exercising conditions. The dietary references of intake [12] should develop educational capacities to include such greatly missed scientific principles towards healthy lifestyles on a global scale [13]. Corresponding public programs on timely and adequately intense exercise that fits circadian rhythms of eating and resting must also be developed [14-16]. This is key to optimizing cellular efficiency and waste management towards optimal longevity and satisfaction. Many complex health issues of namely cancer may be tackled with such a circadian rhythmic programs [17,18].

Implications

The dramatically rising cases of diabetes and metabolic abnormalities necessitate development of workable, simple and economical strategies for cure and prevention. When during the 24-h phase to take which food ingredient or nutrient is considered an ultimate authority in accomplishing quality life as a worldwide success. Nonetheless, while apparently simple to follow, pragmatic real-world optimization of intake timing needs meticulous and persistent educational and fundamental work. This must be accompanied by a highly disciplined program for rhythmic and regular physical activity.

Acknowledgements

Thanks to the Ministry of Science Research and Technology, National Elite Foundation, and University of Zanjan for supporting the author's global initiatives and programs of optimizing science edification in the third millennium.

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Received May 20, 2015; Accepted May 22, 2015; Published May 23, 2015

Citation: Nikkhah A (2015) Safety against Diabetes via Optimizing Circadian Intake Patterns: Science Evolution Cropped. Adv Crop Sci Tech S1: e001. doi:10.4172/2329-8863.S1-e001

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Citation: Nikkhah A (2015) Safety against Diabetes via Optimizing Circadian Intake Patterns: Science Evolution Cropped. Adv Crop Sci Tech S1: e001. doi:10.4172/2329-8863.S1-e001

This article was originally published in a special issue, **Modern Trends in Crop Science** handled by Editor(s). Dr. Mariam B Sticklen, Michigan State University

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