

## Timing of Intake and Exercise: Creating a Public Probiotic

Nikkhah A\*

Department of Animal Sciences, Faculty of Agricultural Sciences, University of Zanjan, National Elite Foundation, Iran

\*Corresponding author: Akbar Nikkhah, Chief Highly Distinguished Professor, Department of Animal Sciences, Faculty of Agricultural Sciences, University of Zanjan, National Elite Foundation, Foremost Principal Highly Distinguished Elite-Generating Scientist, Iran, Tel: +98-24-33052801; E-mail: [anikkha@yahoo.com](mailto:anikkha@yahoo.com)

Rec date: Sep 23, 2015, Acc date: Sep 25, 2015, Pub date: Sep 26, 2015

Copyright: © 2015 Nikkhah A. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

### Abstract

This article introduces timing of intake and exercise as an innovative public science to improve life quality in the postmodern era. Food intake and exercise at certain times of the circadian phase when the body is internally prepared to optimally bioprocess nutrients can improve metabolism and overall health. Evening and night are usually not the optimal times to consume much energy since human endocrinology has not evolved to optimally assimilate energy overnight. Evening physical activity could improve glucose tolerance and insulin sensitivity and reduce obesity and diabetes risks. More research is required to deepen the current insights and perspectives.

**Keywords** Timing, Food intake; Exercise; Metabolism; Health

### Innovations and Discussion

Human brain efficiency depends highly on lifestyle properties [1]. Timing of food intake has been an innovative subject for recent research and practice [2-6]. Large evening meals are not recommended for those seeking optimal metabolism and health in the new times [7]. From an evolutionary perspective, human endocrinology has evolved to assimilate and metabolize glucose and other energy precursors preferably in morning and day-time when the body is prepared to work actively and metabolize intensely. However, evening is the time when the body prepares to rest and relax towards overnight sleep, thus being a rather inactive metabolic phase [8,9]. As such, glucose tolerance and insulin efficiency decrease as evening and night begins [10]. This evolutionary principle leads to formulating a public nutritional program that is based on frequent small energizing meals during morning and day and very few even smaller fruity low-energy meals during evening and night [11,12].

Scheduling exercise for evening times has the capacity to improve cellular energetic and human endocrinology. This helps the body to at least in part maintain its high efficiency in insulin function. But, such an evening exercise must not be followed by large high-starch high-fat food meals that could harm the body even more than when no evening exercise is scheduled [13-15].

The evening exercise is required to have an adequately intense nature to cause prolonged sweating and increased heart rate. This resembles to when human used to live in nature [15]. In addition, evening exercise should preferably be conducted at least 3-4 hours before the time going to sleep in order to not interfere with normal resting behaviour. Thus, evening exercise should be exercised truly in evening and not later overnight. Such a timely and early evening physical activity would help the body better prepare for a deep sleep and has the potential to reduce sleep disorders and abnormalities. The gut health and body weight management could also be optimized better under such eating-exercise programs [16,17]. Effective and persistent public education will continue to be highly significant in establishing a robust foundation for any exercise related public science [18-20].

### Implication

This perspective public health article innovatively introduced the timing of circadian eating and exercise as a healthy science to be practiced by all for optimal metabolism and health. This program is amongst today's necessities for the modern man towards healthier postmodern lifestyles. While high-energy and appetizing foods intake must be reduced in evening and overnight, adequate evening exercise could improve human endocrinology and metabolic health. These can certainly contribute to reducing obesity and diabetes risks.

### Acknowledgment

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

### References

1. Nikkhah A (2015) Pragmatic Science Edification: The Evolving Biodiverse Brain of Society. *J. Biodivers. Biopros. Dev.* 2:e109.
2. Nikkhah A (2015) Effective Weight Management in Periparturient Women through Optimizing Eating Timing: A Novel Global Approach. *Adv. Weight Manag. Obesity Control.* 2:00018.
3. Nikkhah A (2015) Circadian Timing of Hunger to Avert Obesity: An Environmental Evolutionary Science. *J J Environ Sci.* 1: 005.
4. Nikkhah A (2015) Discovering the Right Time to Take Food to Smash Diabetes. *J. Diabetes Res. Ther.* Volume 1.1.
5. Nikkhah A (2015) Safety against Diabetes via Optimizing Circadian Intake Patterns: Science Evolution Cropped. *Adv. Crop Sci. Technol.* S1: e001. doi:10.4172/2329-8863.S1-e001.
6. Nikkhah A (2015) Establishing Regular Patterns of Cellular Mechanics to Minimize Oncogenesis: Animal Sciences Inspire. *Aust. J. Vet. Anim. Husb.* 2:1010.
7. Nikkhah A (2015) Circadian Fitting of Exercise and Eating Patterns: The Secret of Healthy Life. *J. Bioprocess. Biotech.* 5: e129.
8. Nikkhah A (2015) Timing of Physical Training to Optimize Metabolism: Founding a Workable Public Health Program. *J Food Nutr.* In Press.
9. Nikkhah A (2015) Towards a Global Anti-Diabetes Exercise Program. *J. Bioprocess. Biotechniq.* 5: e135.

10. Nikkhah A (2015) Standardizing Appetite through Timing of Food Intake to Minimize Metabolic Disorders: A Veterinary Revelation. J. Veterinar Sci Technol. 6: e116.
11. Nikkhah A (2015) Lifestyle Bioengineering via Scheduled Intake: Bridging Animal Agriculture to Human Medicine. Aust. J. Biotechnol. Bioeng. 2: 1045.
12. Nikkhah A (2015) Demolishing Obesity via a Circadian Cutting-Edge Public Science. J. Obesity. 2015. 1: 008.
13. Nikkhah A (2015) Circadian Timing and Regularity of Physical Activity: A Novel Bioprocess to Prevent Devastating Modern Diseases. J. Bioprocess. Biotechniq. 5:e131.
14. Nikkhah A (2015) Running as a Postmodern Probiotic to Optimize Gut Physiology and Health. J Prob Health 2015, 3:1.
15. Nikkhah A (2015) Nature as an Ideal Rhythm Model for Optimal Cardiovascular physiology and Health. Int J Diabetol Vasc Dis Res. 3; 1-2.
16. Nikkhah A (2015) Living Gut Health Improvement through Time-Managing Nutrient Assimilation: An Evolutionary Probiotic. J Prob Health 2015, 3:1.
17. Nikkhah A (2015) Secure Weight Management via Fitting Circadian Patterns of Physical Activity, Resting and Eating. Adv. Weigh. Manag. Obes. Cont. 2: 23.
18. Nikkhah A (2015) Leading Edges of Economy-Building Science Education. J Glob Econ 3: e109.
19. Nikkhah A (2015) A Time-Efficient Exercise Formula for Normalizing Obese Body Mass Index. Adv. Obesity Weight Manag. Cont. In Press.
20. Nikkhah A (2015) Lifestyle Optimization: Today's Foremost Probiotic. J. Probiotics Health. 3: e119.