Perspective Article

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Effective weight management in periparturient women through optimizing eating timing: a novel global science

Abstract

This article establishes and describes an innovative global approach to help optimize periparturient women weight management through optimizing timing of intake. Gestational obesity, diabetes and related metabolic issues continue to increasingly challenge the healthy women life style. Figuring out when during the 24hr period to take which nutrient is of utmost importance in determining the fate of nutrients taken and their impacts on cell physiology and overall health. This is basically because as in a diurnal circadian animal, human physiology functions on a circadian phase the rhythm of which must accord with those of the surrounding environment.

Keywords: pregnancy, metabolism, eating timing, weight management, obesity

Volume 2 Issue 3 - 2015

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Received: April 07, 2015 | **Published:** April 25, 2015

Innovations and discussion

In light of the recent discoveries on the importance of circadian time of eating on nutrient efficiency, fate, waste and partitioning in fuelling basal and production metabolism in farm animals, interest has been growing in optimizing time of eating for humans.[1–5] Such profound and specialized knowledge for various nutrients of mainly energy-producing substrates will help optimize nutrient utilization while minimizing risks from obesity, diabetes, high blood pressure, cardiovascular complexities, coronary arteries issues and inferior life quality.

The topic is of high importance in pregnant women when the intermediary metabolism and endocrinology are prepared to shift the body towards energy deposition in form of visceral and peripheral fats. As a result, risks of obesity, pregnancy diabetes and ongoing metabolic issues postpartum increase.[6–8] Thus, it is crucial to search for global feasible approaches and public programs to help prevent weight mismanagement during pregnancy and indeed avoid expedited uncontrolled weight loss after parturition. Such strategies will greatly facilitate liver functions in managing intermediary metabolism and will minimize hepatic steatosis towards well-managed fat oxidation and milk synthesis.

On a circadian basis, human is considered a diurnal animal with a metabolism that functions mainly and properly during day or active times of the 24hr period.[9] This is what evolution has taught human. Accordingly cell physiology has evolved to better tolerate nutrient overload during day especially in form of glucose, amino acids and fatty acids. That is absolutely why human cells develop glucose intolerance as evening and night begin,[9,10] simply because cells have in nature, not evolved to receive high amount of nutrients when rest and later on sleep prevail. As such, large single evening and night meals impose serious challenges to optimal body metabolism.[2,6] The challenge gets likely exacerbated in pregnancy and lactation when extra metabolism occurs in women.[9,11] Since gestational adiposity and obesity increase the risk of excessive lactation weight loss, optimizing timing of eating should enable the already highly pressured body to better cope with such metabolic shifts.

Implication

Future large and rather longitudinal population studies are required before global guidelines on optimal times of intake for various nutrients during different periods of pregnancy and lactation can be developed. Currently, timing of eating provides a feasible global theme to help effectively prepare the periparturient physiology and metabolism for optimal weight management and control and thus quality life.

Acknowledgements

None.

Conflict of interest

The author declares no conflict of interest.

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Citation: Nikkhah A. Effective weight management in periparturient women through optimizing eating timing: a novel global science. *Adv Obes Weight Manag Control.* 2015;2(3):52–53. DOI: 10.15406/aowmc.2015.02.00018