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Perspective

Chrono-Nutrition, Obesity, and Cancer: A Novel Pattern

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Abstract

This perspective article describes a novel association between eating timing, obesity, and cancer risk. Human metabolism possesses circadian rhythms that should be synchronized with eating patterns. What to eat and how much to eat have been under extensive research. When to eat, however, has not been well researched while it is of growing importance for improving human health and well-being. A novel scheme is being developed to associate eating timing (chrono-nutrition) to cancer risk. Large and highly dense evening meals are proposed to increase cancer risk. Thus, it is recommended to avoid large evening starchy and fatty meals and instead consume fruits and vegetables.

Keywords: *Eating Timing; Evening Meal; Cancer; Lifestyle; Rhythm*

Philosophy

The objective of this perspective article was to describe a novel association between altered eating timing (chrono-nutrition) and cancer risk. Human metabolism works on the basis of circadian rhythms. Glucose metabolism, for instance, possesses circadian rhythmicity [1]. This means that glucose tolerance diminishes as day ends and evening and night begin [1-3]. Based on recent research, high carbohydrate and sugar loads in daily food meals are associated with increased cancer risk [4]. Therefore, it can be inferred that any factor that increases nutrient and sugar loads when glucose tolerance decreases can increase diabetes and obesity risk. The increased diabetes and obesity can in turn directly or indirectly raise cancer risk.

Recently, evening exercise has been recommended as a daily strategy to reduce evening metabolite load to prevent and reduce diabetes and obesity risk [5,6] Large evening meals should be avoided to enable the human body to experience restful metabolic state overnight. Because of the reduced glucose tolerance and impaired insulin action in the evening, limited capacity for metabolite oxidation exists overnight. As a result of obesity and increased blood sugar concentrations, tumor and cancer cells are more likely to develop. Cancer cells divide relentlessly, forming tumors or flooding the blood with abnormal cells. It is suggested that normal cells become cancerous when sugar and metabolite supply increases overly. The increased sugar load would exacerbate the situation further.

Conclusion

This perspective article proposed a novel association between eating patterns, obesity, and cancer risk. Large and dense evening meals should be avoided to reduce diabetes, obesity, and indeed cancer risk. In other words, eating patterns should be synchronized with circadian physiology of human metabolism to help prevent normal cells from becoming cancerous.

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