

Title : Role of Artificial Sweeteners in Development of Type 2 Diabetes Mellitus (DM): A Review

Abstract

A number of lifestyle factors are known to be important to the development of type 2 Diabetes mellitus (DM). These are physical inactivity, sedentary lifestyle, cigarette smoking, dietary habits and generous consumption of alcohol. Recently, it has been reported that 385 million people had diabetes and the number of people with type 2 DM is increasing in every year. Obesity has been found to contribute to approximately 55% of cases of type 2 DM. Consumption of sugar-sweetened beverages has been increasingly associated with obesity and type 2 DM. Hence, many people have turned to high-intensity sugar substitute sweeteners like aspartame, sucralose and saccharin as a way to reduce the risk of these consequences. However, accumulating evidence suggests that frequent consumers of these sugar substitutes may also be at increased risk of excessive weight gain, metabolic syndrome, type 2 diabetes and cardiovascular disease. A rise in the percent of the population who are obese coincides with an increase in the widespread use of noncaloric artificial sweeteners, such as aspartame (e.g., Diet Coke) and sucralose (e.g., Pepsi), in food products. This paper discusses these findings and considers the hypothesis that consuming sweet-tasting but noncaloric or reduced-calorie food and beverages interferes with learned responses that normally contribute to glucose and energy homeostasis. Because of this interference, frequent consumption of high-intensity sweeteners may have the counterintuitive effect of inducing metabolic derangements. This review is based on a search of articles published in PUBMED, Medline, the Cochrane Database of Systemic Reviews, and mainly focused on type 2 diabetes mellitus, current diagnosis, treatment and role artificial sweeteners in development of diabetes.

Keywords: Type 2 diabetes mellitus; Artificial Sweeteners; Obesity

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