

Association between dietary sugars and risk factors of metabolic syndrome

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We conducted a systematic review and meta-analysis to clarify the association between dietary carbohydrate (especially fructose) and metabolic syndrome and related disorders such as diabetes and obesity in Japanese population. In this year, we have attempted to answer two questions; 1) which diseases are related to carbohydrate intake in Japanese population, and 2) whether sugar intake is associated with obesity.

We searched English- or Japanese-language articles on MEDLINE (National Library of Medicine) database from 1966 through October 2008 for cross-sectional, prospective cohort or experimental studies which were conducted in Japanese or Asian population to examine the association between sugar intake and diseases based on a guidance from the medical subheading (MeSH) terms data base.

The result indicated that there were many findings that showed the association between sugar intake and cancers, Crohn's disease, dementia of the Alzheimer type, obesity and others. By further search of the literature, 5 articles from 11,278 articles were selected according to the criteria that the studies dealt with Japanese or Asian population, and these were subjected to a meta-analysis. Medians, standard deviations, sample size were extracted from these articles and computed into a statistical database in StatDirect software. The overall estimate of the association between sugar or carbohydrate intake and BMI was significant with a fixed effect model. In this systematic review, findings from several studies indicated that sugar or carbohydrate intake is associated with BMI in Asian populations. Further studies are needed to gain more explicit evidence.