Abstract

Title: Artificial sweeteners in beverage and their effect on hunger and energy intake

Author: Sofia Andersson and Sofia Jakobsson

Supervisor: Heléne Bertéus Forslund
Examiner: Anna Winkvist
Programme: Dietician study programme, 180/240 ECTS
Type of paper: Examination paper, 15 hp
Date: April 11, 2012

Background
In 2010 the total consumption of soft drinks in Sweden was estimated to 69 litres per person and 17 % of the domestic production was estimated to consist of soft drinks sweetened with artificial sweeteners. The effects of artificial sweeteners on hunger is not yet fully understood. It is speculated that they might increase hunger and hence increase energy intake.

Objective
The aim was to compile the evidence regarding the effects of an intake of a beverage sweetened with artificial sweeteners compared to sucrose on subsequent hunger and energy intake.

Search strategy
A systematic search for literature was performed in the databases PubMed and Scopus.

Selection criteria
The inclusion criteria were RCT, human studies, articles published in Swedish or English, studies on healthy adults and studies measuring hunger with a subjective scale or energy intake. The exclusion criteria were studies who measured energy intake under other forms than standardised or controlled, studies without a standardised dose of the beverage and articles needed to be ordered against payment.

Data collection and analysis
Four articles were selected and examined according to a template developed by SBU. The evidence for each outcome was weighed together and graded according to GRADE based on a summarised evidence form developed by the Sahlgrenska Academy.

Main results
All four articles measured subjectively rated hunger. No article showed a significant difference after a consumption of a beverage sweetened with artificial sweeteners compared to a beverage sweetened with sucrose. Two of the articles measured energy intake, of which one showed a significantly higher energy intake after an intake of sucrose. The other showed the same significant difference in women but not in men.

Conclusions
The hunger did not differ between an intake of a drink sweetened with artificial sweeteners compared to sucrose. The total energy intake was higher after an intake of a drink sweetened with sucrose compared to a drink sweetened with artificial sweeteners. The evidence for the both outcomes were estimated as low.