

Sweeteners are safe: but when are they useful?

The strong focus on sugars as a source of (unnecessary) calories, increasing the risk of overconsumption especially from sweetened drinks, has increased the number of products containing intense sweeteners. With this increase questions considering the safety of these substances have been raised.

The sweeteners approved at present in the European Union are reviewed by *Alicja Mortensen*, with a focus on the thorough safety evaluations preceding any approval. The overall conclusion is that approved sweeteners are safe and that foods containing sweeteners have to be consumed in unrealistically large amounts to exceed the acceptable daily intakes which, in turn, are far (usually 100 times) below intakes causing observable side-

effects. Many basic foods, e.g. potatoes, would hardly pass these rigorous safety evaluations required for a novel food or additive introduced today. So, sweeteners are safe, but are they desirable? As stressed in a previous report (1), low-energy sweet foods may be useful alternatives, for example for children in weight-loss programmes and to reduce the risk of dental caries. However, there may be disadvantages in consumers, especially children, becoming used to foods that taste too sweet, and more research is needed to clarify possible effects on eating behaviour. Furthermore, the need for alternatively sweetened products in diabetes has decreased since the currently recommended diet may contain up to 10% of the energy as added sugars, i.e. the same recommendation as for the general population.

Scientific substantiation of functional foods, for example cholesterol-lowering effect

The scientific substantiation of health claims for (functional) foods is in focus, not least in view of forthcoming European regulation. Two of the original articles in this issue concern documentation of serum cholesterol-lowering effects, which is of special interest as serum cholesterol is a well-established disease risk factor, and effects of foods and diets can be demonstrated within reasonable test periods of 3–6 weeks. One of these papers, by *Christina Jonsson* and *Lars Ellegård*, reports a study on grapefruit juice. In agreement with an earlier open study, their trial showed a 6% decrease in low-density lipoprotein-cholesterol, but there was no significant difference compared with decreases during the apple juice control or washout periods. Thus, a possible hypocholesterolaemic effect of grapefruit juice could not be differentiated from the general time effect during the study. This illustrates the need for careful placebo-controlled intervention studies to substantiate the usually rather modest effects of individual foods.

The study by *Hanna Lagström*, *Hans Helenius* and *Pia Salo* addresses whether stanol esters incorporated in gelatin capsules are as efficient as plant sterol incorporated in fat-containing foods. Similar

effects were indeed obtained. However, this study raises another issue: neither consumers nor legislators would perceive gelatin capsules as food, and it is an open question whether plant sterols will be regarded as food supplements in future European legislation. The current development of small, single-portion foods (“shots”) containing bioactive substances, such as probiotic microorganisms, sterols/stanols and hypotensive peptides, also raises the question of delimitation between foods and drugs. If considered as foods, the nutritional profile has to be taken into account in spite of the small portion sizes, since a number of “shots” taken every day together may provide an appreciable number of calories.

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Reference

1. Nowicka P, Bryngelsson S. Sugars or sweeteners: towards guidelines for their use in practice – report from an expert consultation. *Scand J Food Nutr* 2006; 50: 89–96.