

Reducing Salt Consumption:

Reducing the salt content in processed foods

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The present study was realised on behalf of and with financial support of the
Federal Office of Public Health (FOPH) (number of contract: 08.005730 / 404.0001 / -2).

The complete study report is available on the website of the FOPH (www.bag.admin.ch)
and of the SHL (www.shl.bfh.ch).

Zollikofen, 20 May 2011 (revised version: 14 November 2011)

Synopsis

With an average of 9.35 g per day per person, the salt intake of the Swiss population is significantly higher than the 6 g commonly recommended by nutrition guidelines and also higher than the 5 g recommended by the World Health Organization (WHO). Close to 75 percent of the consumed salt is taken in with processed foods.

The 2008–2012 salt consumption strategy published by the Federal Office of Public Health (FOPH) contains objectives and measures aimed at lowering the population's salt consumption. The processed-food and restaurant industries are jointly aiming at reducing salt consumption by 16 percent within 4 years. This measure is geared towards lowering the average daily intake to 8 g.

The FOPH commissioned the Swiss College of Agriculture (SHL) with the evaluation (within the framework of a research project) of options to reduce salt consumption while conserving the quality and safety of processed foods. The goal of the project was to develop the necessary basics in cooperation with economic partners and to use the outcomes to derive target values for desirable salt content as well as recommendations for their implementation for select foods which are considered significant salt intake contributors.

The project was divided into four sub-projects:

1. Evaluation of the food categories and foods relevant for the reduction of salt based on consumption and nutritional value information, as well as selection of product groups and specific foods to be evaluated within the framework of the project
2. Recruitment of project and economic partners
3. Conduct of experimental analyses of low-salt foods with respect to technological feasibility, food safety and sensory acceptance as well as collection of data pertaining to respective salt content and salt reduction in collaboration with the project partners
4. Derivation of target values for the salt content of selected foods and product groups as well as development of implementation recommendations based on the outcome of the evaluations and on data gathered from the literature.

Based on the evaluation conducted in the first step of the project, bread and baked goods, meat products, ready-to-serve meals and meal components as well as cheese and cheese products were identified as the four most important food categories. Except for cheese and cheese products, at least 3 products per category were selected for evaluation in the experimental part of the project. This means that a total of 14 foods considered significant contributors to salt intake were examined.

The economic partners required for developing the basics were recruited by means of two electronic circulars. Twenty companies in all registered for a collaboration, and 13 ultimately contributed to the project work. Seven economic partners manufactured standard and low-salt products for the consumer

tests, while 6 other companies (mainly food manufacturers) as well as 3 institutions and industry associations supplied data.

Based on the manufactured low-salt foods, the experimental analyses assessed technological feasibility, food safety and sensory acceptance. The consumer tests included a popularity/acceptance test, for which a hedonic 9-point scale was used, as well as a preference test. Moreover, the test subjects were asked to explain why they preferred the selected samples; this provided insights into the consumers' relevant evaluation criteria.

The target values for the desirable salt content were derived from the outcomes of the consumer tests and the information provided by the involved manufacturers. Data found in the literature was also considered, as was manufacturer information regarding products currently on the market.

The outcomes of the consumer tests showed that the popularity of most analysed products tends to drop commensurate with the reduced salt content. Nevertheless, all tested low-salt products were accepted by the test subjects, and many products were evaluated positively overall by at least 50 percent of test subjects. In fact, the low-salt version of some of the sampled foods was preferred over the standard product.

Furthermore, the evaluation of the reasons provided by the test subjects for their selection of the preferred products revealed that saltiness is not the only decision criterion. Such aspects as appearance (especially the colour), odour and texture play an equally important role for sensory acceptance. Therefore, it is essential to maintain the usual and characteristic product properties as much as possible for products with reduced salt content. This may require an extensive optimisation of the recipe as well as adjustments in the manufacturing process of certain products.

No difficulties are expected within the concentration range of the proposed target values from a technological point of view, given that the technological limits are significantly lower. Nor is a reduction of food safety to be expected, although a product-specific review will be required in any case for certain foods (mainly meat products).

The proposed salt content target values for the product groups of the analysed foods are listed in Table 1. The target values apply to the mentioned product groups and are practicable for all food manufacturers, irrespective of whether they are a commercial or industrial operation. Since some products on the market today already meet or even fall below the target value, achievability is mainly a question of time. And the time needed for implementation is primarily dependent on how far from the target value the salt content of the product in question is and whether the content needs to be reduced gradually or can be lowered in a single step. The use of salt substitutes is not required within the concentration range of the proposed target values, nor would it be desirable from the consumer's point of view.

Table 1 Target values for desirable salt content

Food category	Analysed product	Target value ¹⁾	Area of application
bread and baked goods	semi-white bread brown bread whole wheat crackers	max. 20 g of salt per kg of flour	all types of bread and baked goods
meat products	bologna sausage cervelas	max. 17 g of salt per kg of sausage meat	all boiled sausage products
	ham	max. 17 g of salt per kg of meat	ham, shoulder and pressed ham as well as similar products
cheese and cheese products	-	no target values: see procedures	all types of cheese and cheese products
ready-to-serve meals and meal components	sausage-and-cheese salad	max. 1.5%	ready-to-eat salads with high-salt ingredients (meat products, cheese and cheese products, etc.)
	potato salad	max. 1.0%	all other ready-to-eat salads (excluding aforementioned)
	duchesse potatoes	max. 1.0%	potato products such as potato croquettes and similar products
	ready-to-eat rösti	max. 0.8%	all ready-to-eat types of rösti and derived specialties (e.g. rösti croquettes, rösti galettes)
	egg spätzle egg ravioli pasta carbonara	max. 1.0%	all ready-to-eat types of pasta (with and without sauce, stuffed and unstuffed)
	tomato risotto	max. 0.8%	all ready-to-eat types of risotto
	²⁾	max. 0.9%	all ready-to-eat soups

¹⁾ The target value for ready-to-eat meals and meal components refers to the finished product

²⁾ No consumer tests were conducted. The target value was derived from information provided by the manufacturers.

For the food categories bread and baked goods as well as for meat products, the target value was defined as amount of salt in grams per kilogram of flour or meat/sausage meat, respectively, since these reference values turn out to be more convenient for implementation. For the food category cheese and cheese products, it was decided for a number of reasons that the definition of target values for individual types of cheese was not useful at the present time. Alternatively, measures were proposed which aimed at reducing, in a first step, the existing major differences in the salt content of comparable types of cheese, which are due partly to producers' different framework conditions.

Accompanying measures were proposed in addition to the product-specific target values and recommendations. They concern education within the industries, establishment of the topic in continuing and

further education and comprehensive transparency regarding salt content for consumers as well as food sector companies. The compilation and publication of resources aimed at helping food manufacturers with implementation also is recommended.

The lack of sufficient data (mainly the lack of consumption statistics) renders an estimation of the effectiveness of the proposed measures impossible. A comparison with the success rates of salt reduction programmes abroad indicates that the salt intake reduction from currently 9.35 g to 8.0 g per day per person aimed for in Switzerland will without a doubt take significantly longer than the 4-year period proposed in the FOPH's salt reduction strategy.

With the voluntary co-operation of economic partners, the present project was able to establish the basics for 11 product groups. However, considerable differences in terms of the salt content of similar products can generally be observed throughout the entire range of foods, indicating a reduction potential that should be fully exploited. This, in turn, requires a comprehensive, industry-coordinated implementation. Salt content optimisation should be an ongoing commitment for food sector companies.

A sustainable reduction of salt consumption will be achievable only if all relevant stakeholders, including consumers, accept their share of the responsibility and contribute to reducing salt to the best of their abilities.