Pro Iodized Salt, Contra Iodization of Other Food Stuff

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Iodine deficiency is the most important cause of preventable endemic goiter and mental retardation in new-born babies. The World Health Organization (WHO), the United Nations Children´s Fund (UNICEF) and the International Council for Control of Iodine Deficiency Disorders (ICCIDD) estimated in the early nineties, that at least 1572 million people world-wide and 60 millions in Europe were at risk of iodine deficiency disorders (IDD). This includes 43 million of people suffering from some degree of mental retardation and 11 million from overt cretinism. Therefore, elimination of iodine deficiency is one of the most important tasks in the near future for all those countries, where IDD is still present. The WHO has recommended a Universal Salt Iodization (USI) which strongly recommends the use of iodized salt for all industrial, agricultural, catering and household food preparations. Since the daily mean intake of salt is about 10-12 g salt and if the iodine content is about 20 µg of iodine per g of salt, the daily 200-250 µg of iodine recommended by WHO and shown to eliminate IDD is achieved.

In Germany, there is still moderate iodine deficiency, because the use of iodized salt in food industry and households is still voluntary and has no USI program. Because of the now for nearly 20 years ongoing efforts of the scientific national council (Arbeitskreis Jodmangel), about 70% of households are using currently iodized salt and about 35% of industrial food is prepared by iodized salt. To estimate the daily iodine intake in the German population we conducted a nation-wide survey in 1996 (Jodmonitoring 96). The mean iodine intake has substantially improved over the last 20 years but was with 119 µg iodine per day in young adults too low and reflects even nowadays mild to moderate iodine deficiency. More concerning was the fact, that in 48% of new-born babies the iodine excretion in the urine revealed grade II iodine deficiency. Only those babies had normal iodine excretion, whose mother took iodine tablets during pregnancy. This low iodine intake indicates the too low voluntary use of iodized salt in the industry and agriculture. The single use of iodized salt in households only contributes minor to the daily iodine intake. We had this shown in another study, where the iodine excretion of 700 students, using iodized salt in the household was compared with those (n=200) who did not. The difference of iodine excretion was significant but only 6 µg/g creatinine (72 µg/g versus 66 µg/g). These data support strongly the WHO recommendation of USI also for Germany.

Only the universal iodization of salt is able to control iodine intake in the population. Iodization of other food like milk, butter, eggs or other food staff would lead to an unequal distribution of iodine intake of the population and is strongly dependent on individual eating behaviour. In countries with mild to moderate iodine deficiency this would lead to iodine induced hyperthyroidism in some people, because up to 20% of the elderly will have functionally autonomous thyroid nodules which can not regulate iodine uptake like normal thyroid tissue. The production and secretion of thyroid hormones in those nodules is dependent only on iodine supplementation. It has been shown that 200 µg of iodine per day do not induce severe thyrotoxicosis in those patients, but higher amounts of iodine can be deleterious. Therefore, uncontrolled iodine intake in countries with ongoing iodine deficiency can not be recommended. Severe thyrotoxicosis has also been shown in developing countries, where instead of iodized salt iodized oil was administered in young adults. There is no argument for iodization of food in developed countries, because USI is cheap, convenient and would not lead to over-supplementation of some people, because the daily salt intake in humans is physiologically controlled. Variations in salt intake normally do not exceed more than 10% and therefore a constant physiological iodine intake is achieved without the danger of iodine induced deleterious thyroid disorders, but the prevention of IDD.