

Health risks linked to high iodine levels in dried algae

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Dried marine algae, which are eaten together with rice and vegetables, may contain very high levels of iodine. The Federal Institute for Risk Assessment (BfR) has evaluated the health risk from dried marine algae after finding 506 milligram per kilogram in one product. Consumption of a 10 gram helping already leads to excessive iodine intake that is 10 times higher than the upper tolerable iodine intake of 0.5 milligram per day deemed to be safe in Germany. Consequently, this can lead, in some cases, to serious health damage. BfR, therefore, believes that dried algae products with an iodine content of 20 milligram per kilogram and higher should not be placed on the market as they can harm health.

Iodine is an essential nutrient and important component in thyroid hormones that cannot be formed if a diet contains no iodine. These hormones are involved in steering growth, bone formation, metabolism and brain development. Iodine is mainly ingested from food, whereby the iodine content in food varies considerably from region to region. The recommended daily iodine intake depends on whether these are countries in which the population has a sufficient iodine supply like for instance Asia or the USA or whether these are iodine deficiency regions like Germany. A chronic iodine deficiency can lead, particularly in older people, to the formation of nodules in the thyroid gland. If they are suddenly activated by an iodine surplus, for instance from algae products with extremely high iodine levels, this can trigger an over-functioning (iodine-induced hyperthyreosis) of the thyroid gland with life-threatening effects on metabolism. In the case of a normally functioning thyroid gland, a persistent iodine surplus can inhibit the formation of thyroid hormones and the consequences may be under functioning (iodine-induced hypothyreosis) and the formation of a goitre. Therefore controlling iodine deficiency diseases in Germany by means of food fortified with iodine (like salt) and animal feed with high iodine levels is important. The targeted iodine fortification of food was able to successfully reduce the iodine deficiency amongst the population. On average, however, iodine intake is still one third less than the recommended amount.

The iodine levels in dried algae and kelp products are particularly high. They vary between 5 and 11,000 milligram per kilogram dry weight whereby the contents of individual types of algae fluctuate considerably. In order to protect consumers from marine algae products with high iodine levels, BfR recommends laying down uniform maximum levels in the European Union. Furthermore, the manufacturers and suppliers of algae products should provide mandatory information about the amount of algae used, their preparation, the iodine content and the maximum recommended daily portion which must be oriented towards the recommended daily iodine intake. This is the only way for consumers to be able to determine the amount of iodine actually ingested from a product of this kind.

The full version of the BfR Opinion in German is available on http://www.bfr.bund.de/cm/208/gesundheitsliche_risiken_durch_zu_hohen_jodgehalt_in_getrockneten_algen.pdf

* Updated on 12 June 2007