Iodine and Selenium

Iodine

Like selenium, the amount of iodine available in a vegan diet varies geographically depending upon the content of the soil.

Why it’s important

Iodine is an essential component of thyroid hormones (triiodothyronine, or T3, and thyroxin or T4) which influence most of the organ systems in the body. Iodine is essential for energy metabolism; iodine deficiency can result in depressed metabolic function also known as hypothyroidism.

Research has shown iodine to be low in Swedish, German and British vegans, as well as in vegans in Boston, USA.

Iodine is provided by iodised salt in many countries, but for most people in Britain and Ireland the main source is dairy produce because iodine is routinely added to cattle feed and also used to treat udder infections in dairy cattle. Iodine can be readily obtained from kelp (about 15 grams spread over a year, or two kelp tablets a week, is about right). Low iodine intake can cause hypothyroidism leading to tiredness, skin problems, tingling sensations and elevated cholesterol.

Recommend intake for vegans

The adult RDA is 150 mcg of iodine per day. Excess iodine can be toxic; the tolerable upper intake level is set at 1,100 mcg of iodine per day (unless medically prescribed).

Vegan intake and thyroid status

An iodine intake of less than 20 micrograms (mcg) per day is considered severe deficiency, 20 -50mcg/day is considered moderate deficiency and 50-100mcg/day is considered mild deficiency.

Iodine is typically undesirably low (about 50 micrograms/day compared to a recommended level of about 150 micrograms per day) in UK vegan diets unless supplements such as VEG1, iodine rich seaweeds or foods containing such seaweeds (e.g. Vecon) are consumed. The low iodine levels in many plant foods reflects the low iodine levels in the UK soil, due in part to the recent ice-age. About half the iodine consumption in the UK comes from dairy products. In
the US iodised salt is widely used and some other foods are fortified with iodine. In Canada all table salt is iodized. The UK has no iodine fortification strategy for plant foods or salt.

**Selenium**

Selenium is found in many vegan foods; however, the body needs only minuscule amounts of selenium to maintain healthy levels.

**Why it’s important**

Selenium is used to build powerful antioxidant enzymes which protect cells from damage, reducing the risk of cancer and heart disease; however, this essential mineral is readily obtained from a balanced vegan diet. In fact, studies of vegans in the UK, Germany, United States, and New Zealand showed them to meet recommended selenium intakes\(^1\).

**Recommend intake for vegans**

Dietary advice to ensure adequate levels of selenium should be tailored to individual needs and circumstances. It is important to remember that selenium is toxic in excess. Avoid supplements at higher than recommended levels, and don’t eat more than 3 or 4 brazil nuts in a day, as intake can be conveniently assured by 100 grams of Brazil nuts per month.

**Vegan sources of selenium**

In addition to brazil nuts, seeds, soya beans, mushrooms, grains and bananas are all vegan sources of selenium; but the actual content will vary according to the selenium content of the soil in which these foods were grown.

**References**