The Best Source of Iodine to Avoid Deficiency Transcript

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Iodine Deficiency and Seaweed Origins

"The Best Source of Iodine to Avoid Deficiency" Iodine was first discovered in seaweed in the 1800s, but 3,000 years earlier the Chinese were using seaweed to treat goiter, the swelling of the thyroid gland in the front of the neck caused by iodine deficiency.

There is iodine in land plants, but how much depends on the iodine content of the soil, resulting in a hundred-fold difference in iodine content depending where the crop is grown.

In the United States, there was the goiter belt, a large swath of the country with iodine-deficient soils, which was only relieved when iodine started to be added to salt in the 1920s.

Salt, Dairy, and Plant Milk Iodine Sources

Of course, we shouldn't be eating salt, to help prevent diseases like high blood pressure, but if you do use salt, use iodized salt, not sea salt, not kosher salt, not rainbow-colored Himalayan salt.

It should explicitly say iodized on the packaging. And the salt added to processed foods almost never contains it. But again, we shouldn't use salt at all, so what foods have it naturally?

In the United States, the leading source by far is dairy. That's the case in many countries, though ironically, cow's milk doesn't naturally have much iodine, but can become a rich source if the cows are fed iodine or iodine-containing disinfectants are used during the milking process; in other words, cross-contamination through the use of iodine for the disinfection of the teats.

The practice of teat disinfection with iodine solution has been identified as a factor that increases the concentration of iodine in milk, both by direct contamination and by absorption by the epithelium (the skin) on the cow's teats, which are either dipped into the iodine solution, or it's sprayed on and kind of leaches into the milk.

Now this leads to a large variability of iodine content in retail milk, anywhere from about 30 to 250 micrograms a cup, with an average of 86, more than half the recommended dietary allowance of 150 a day.

Yes, variable, but check out the iodine in plant-based milks in the U. S. grocery stores. They aren't fortified, there are no almond teats, so they average only 3 micrograms.

You'd have to drink 50 cups a day! Why don't plant-based milk companies fortify their milks with iodine? Good question. And we see the same problem in other countries.

Okay, so what do we do?

Sea Vegetables as the Best Low-Salt Source

We don't want to eat salt, as it's the number one dietary risk factor for death on planet Earth. Dairy may be the number one source of iodine in the American diet, but it's also the number one source of cholesterol-raising saturated fat.

Iodine is also fed to egg-laying hens, but eggs are the number one source of dietary cholesterol by far, the intake of which should be as low as possible.

That leaves foods from the oceans, both plant and animal, but after looking at the evidence for contaminants in fish, shrimp, and other seafood, we're pretty much left with the bottom of the aquatic food chain with sea

vegetables.

The good news is that sea veggies are so high in iodine that even tiny doses a day can get us all the iodine we need, like one sheet of nori a day, or a half teaspoon of dulse flakes.

Don't overdo it, though. Kombu, which is a type of kelp, has so much iodine that even just an eighth of a teaspoon a day could put us well over the tolerable upper limit of daily intake.

But if we aren't eating salt, or dairy, or fish, or seaweed, we may be at risk of having inadequate iodine intake.

Testing Iodine Status and Vegan Intake

The most common way to test for average iodine intake in a population is to measure the amount in their urine, since we pee out more than 90% of it. Since that changes on a day-to-day basis, though, it isn't really a good test for an individual's iodine status.

Like, if you happened to have a bite of seaweed salad at lunch the day of the test, that could throw it off, but, on average, you can get a sense. Here are the cut-offs for the test, where under 20 could mean severe iodine deficiency, under 50, moderate deficiency, and over a hundred is considered normal.

In this study from Norway, another place where few plant-based milks are iodine enriched, vegans came in at 43, vegetarians at 67, and fish eaters at 96.

Now this did not appear to manifest as impaired thyroid function, which is what would happen if you were really iodine deficient. Similarly in Sweden and in Finland- normal thyroid function.

The same with vegans in the United States. If anything, they had lower risk of an underactive thyroid. Although a low iodine intake may not have an acute effect on thyroid function, it's possible over time it may increase the risk of thyroid disorders, thus individuals with low iodine intakes are recommended to consume dietary iodine supplements or consume iodine-rich plant foods like seaweed.

In fact, seaweed has so much iodine that it offgasses iodine into the air such that if you live by the beach, you can get iodine just breathing the air, bringing new meaning to the expression, "Sea air is good for you!" Inadequate maternal iodine intake during pregnancy, however, can be extremely serious.

Pregnancy, Supplementation, and Deficiency Cases

There doesn't appear to be a significant difference in iodine content in breast milk among the diet groups, but that's not saying much since the estimated prevalence of inadequate iodine intake for pregnant women across the board may be 23%.

The American Thyroid Association, the Endocrine Society, and the American Academy of Pediatrics all recommend that all pregnant and lactating women receive a daily supplement containing 150 micrograms of iodine, although only about 15% of lactating women in the United States adhere to this recommendation.

Given potentially restricted iodine intake of vegans, this recommendation is especially important for vegan women of childbearing age. Take, for example, this case report.

A 23-month-old boy diagnosed with iodine deficiency hypothyroidism. He was breastfed until 16 months of age, getting iodine from his prenatal vitamin-taking mom, but after weaning, the kid ate no fish, eggs, meat, cow's milk, or iodized salt, which is great, but there has to be a good alternative source of iodine.

Or this case. This is what a goiter looks like. A 6-year-old vegan girl in a family who used non-iodized salt. That is why consideration should be given to iodine fortification of foods commonly consumed by vegans, including plant-based milks.

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