

Iodine as a Necessary Trace Element

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Over the next couple of articles I will be sharing with you some interesting information on iodine. As you come to understand the role that iodine plays in the body and what is in our diet that inhibits its availability, a light will shine that connects the potential of its deficiency to the rise in several disease processes. From an increase in hypothyroidism and H. Pylori infections to autoimmune disorders and breast cancer, the role that iodine deficiency plays is now being considered in their wake.

Iodine is an essential trace element. It was first discovered in 1811. Its rise to fame came in two waves. One was for its antiseptic qualities. When iodine is made soluble into dilute solutions it kills bacteria, viruses, fungi and protozoa. In a liquid form, iodine has been widely used as a disinfectant in hospitals as well as a wound tincture. A nice feature of iodine bactericide is that it has a broad range of action with few side effects and no development of bacterial resistance.

A second quality that iodine is recognized for is that it was the first element known for its ability to cure a disease. That disease was goiter, the swelling of the thyroid gland. As iodine's role in making thyroid hormones was more clearly understood, the deficiency of iodine was documented in the cause of cretinism (stunted growth). Furthermore, a lack of iodine during pregnancy was found to be the leading cause of intellectual development, leading to mental retardation. As more became known about iodine deficiency diseases, iodized salt was created in a campaign to supplement diets.

Iodine is found in many foods, but it is not present in all soils in adequate amounts. It is higher in sea plants and along coastal regions. It is theorized that seaweed was the first to start capturing iodine from the seawater through its membrane transport mechanism. Populations living further inland have less iodine in their food sources, hence the well known goiter epidemics of the middle states.

We tend to think of iodine as being needed only in trace amounts (150 mcg) and only as necessary to prevent the above mentioned conditions of goiter, cretinism and mental retardation. What is now being appreciated is how iodine is present in every cell and every fluid of the body. Radioactive tracing of iodine shows its uptake not only by the thyroid, but by the nasal secretions, gut, breast, cervical tissue, stomach, bone and in the extra-cellular fluids and connective tissues of almost all the organs.

Iodine's role has been expanded to include playing a part in detoxification, in deactivating chemical toxins, as having anti-septic activity in the stomach (hence protecting against H. Pylori infections) and as a trigger for the natural death of both normal and abnormal cells.

As it turns out, many organs in the body require iodine to function properly, especially breast tissue. There are a number of studies linking fibrocystic breast disease with a lack of iodine in a women's diet. Also seen is a rise in breast cancer rates since iodine was eliminated from bread some 20 years ago, replacing it instead with bromine.

In areas of Japan where the consumption of seaweed is at the highest, the intake of iodine is recorded as being between 50-80 mg. What is noted concurrently is the low rate of cancer. The cancer rates increase however as the Japanese women migrate to Northern America and adopt a more Westernized diet.

Two excellent resources I guide you to are *Breast Cancer and Iodine* by Dr. David Parry and *Iodine* by David Brownstein. In the next article I will share with you some at home tests you can do to check both thyroid function and the iodine saturation of your body.

PS: I will be giving a talk on Eating for Endurance at The Wilkinson Library on Tuesday, Feb 13th at 1:00 as part of Women's Week. If you are participating in the activities, I hope to see you there.