

IODINE, AN IMPORTANT NUTRIENT TODAY

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One of the most important and overlooked minerals today is iodine. It is not read on the hair mineral analysis, so we are apt to overlook it. The reason it is not read by most laboratories is that it is hard to read accurately. Therefore, most labs prefer not to read it. However, it is a very important one.

Iodine, of course, is needed in the thyroid gland to produce T4 or triiodothyronine. However, iodine is also required for every tissue of the body.

IODINE AND OVERALL HEALTH

Every cell of the body utilizes iodine in some form. There are two major forms, iodide and iodine, required by various tissues, according to researchers. They claim the body cannot convert the forms one to another. I am not sure about this, but that is the research.

For instance, primarily iodide is needed by the skin and thyroid gland. The breasts, however, require iodine. Without it they can become fibrocystic or develop precancerous and cancerous lesions, it is believed.

Other body tissues, including the kidneys, spleen, liver, blood, salivary glands and intestines, can use either form, apparently.

RELATION BETWEEN IODINE AND SELENIUM

Iodine is regulated in many ways in the thyroid. However, the most important pathway is the conversion of iodide into iodine through an oxidation reaction.

This requires an enzyme called TPO or thyroperoxidase. It also requires hydrogen peroxide. If too much hydrogen peroxide is left in the thyroid, however, it leads to Hashimoto's disease, a common thyroid problem.

The mineral that helps control hydrogen peroxide is selenium. It is needed to make glutathione peroxidase, whose function, among many others, is to detoxify hydrogen peroxide after it has done its job in the thyroid gland.

Selenium is also required later in the metabolism of the thyroid hormone in the conversion of of the relatively inactive T4 to the active thyroid hormone T3. The enzyme primarily responsible for this conversion is iodothyronine deiodinase. This enzyme also requires selenium to function properly.

Any deficiency of selenium in the body will impair T3 production and thus cause hypothyroidism symptoms, even if the body is producing plenty of T4. This is sometimes called a conversion problem, as opposed to an iodine deficiency problem.

Thus selenium is critical for two phases of thyroid hormone production. It is thus considered a close relative to iodine in the correction of thyroid difficulties. For more information about selenium, see the article on this website entitled [Selenium, A New Mineral For Health and Healing](#).

IODINE DEFICIENCY WIDESPREAD

More and more research indicates that the entire American population today is deficient in iodine. This may be somewhat of an exaggeration because those who eat a lot of seafood get plenty of iodine. However, the rest of the population does not.

In addition, the entire population is exposed to iodine antagonists in an enormous way. Let us discuss this important aspect of iodine metabolism.

Iodine Antagonists. Iodine is a member of the halogen family of elements. They include, other than iodine, fluorine, bromine and chlorine among others. All of these elements compete with each other to some extent for absorption and even utilization in certain enzyme binding sites. This phenomenon is called the concept of preferred minerals. It is discussed in detail in several other article on this website, including [Toxic Metals](#) and [The Theory of Nutritional Balancing](#).

The main problem today in the developed nations of the world, and particularly in America, is the large exposure everyone has to bromine, fluorides and chlorine compounds that can and often do compete with iodine for absorption into our bodies.

Here are the common sources of these iodine antagonists:

Bromine and bromides. These toxic chemicals are used in baking, by law, of all the breads in America and many nations. Previously, iodine was used for bread-making. This was changed for fear that people were getting too much.

Little did they know that iodine is an essential element that most people need more of, even though the form used in bread-making is not a very absorbable form. In contrast, bromides are quite toxic in large amounts, far more toxic than iodine or iodides.

The widespread use of bromides in bread-making is causing most people to have heavy exposure to this somewhat toxic element. It also can interfere with iodine uptake and also iodine utilization.

Often, when iodine is supplemented, people start eliminating large quantities of bromine from the body. This can be measured in urine and hair, at times. These methods are not perfectly accurate, however, as this element may also be eliminated through other routes such as the feces, skin and elsewhere.

Other problems with bromides is that they replace iodine in foods. In other words, the widespread use of brominated compounds in bread-making and in other industries as well has caused them to find their way into the water and food supplies of America and other developed nations. It is thus hard to avoid this element in your food. It is one of the reasons I do not recommend eating any flour products or breads.

Chlorine and chlorinated compounds such as chloramines. This is another highly toxic element that interferes with iodine utilization in the body in an important way. Chlorine, of course, is added to most water supplies by law. It is also added to flour to whiten it, even though it forms toxic compounds when baked.

Chlorine is also widely used in industry as a bleaching agent, an anti-bacterial and anti-viral agent used to sterilize or sanitize many, many products such as papers,

rubber and plastics and many, many more. For all these reasons, chlorine is dominant in our world and its compounds find their way into all water supplies today.

The advantage is that they help kill germs in the water. The disadvantage is they replace iodine by competing with iodine for uptake and utilization to some degree.

Fluorides. The main source today is fluoridated water supplies. Not only is the water a problem in most major metropolitan areas but the water is then used to make many food products, from breads and other bakery goods to chips, dips, pickles, beverages and thousands of others.

In addition, the fluorides from the water have found their way into the water table and irrigations systems of most of the United States. Thus, the fluoride levels in all the crops grown in America are too high.

Foolish public health authorities keep adding toxic fluoride compounds to the water supplies, even though all the food products in the nation are now basically contaminated with this extremely toxic element. For more information about the abomination of water fluoridation, read [Water Fluoridation](#) on this website.

Soy and iodine. Soy products not only contain copper, which can interfere with iodine and thyroid activity. They also contain enzyme inhibitors that affect the thyroid at times. So soy is not generally good for the thyroid gland and iodine metabolism.

Tap water and iodine. This is also detrimental for thyroid activity, thanks to its chlorine and possibly fluoride mixed with the water. Spring or distilled water are far better for the thyroid and iodine metabolism.

SUPPLEMENTING WITH IODINE

The result of all the competitors with iodine is that most Americans are low in this vital mineral. It is one reason many forward-looking doctors are recommending iodine supplements for all their patients. Let us discuss these in more detail.

Iodoral or Lugol's solution. Some doctors like to give a pure iodine supplement such as Iodoral, potassium iodide, Lugol's solution or other. These are excellent iodine supplements and very similar to one another. Lugol's solution is a liquid, however, so it is harder to administer than Iodoral, which is in tablet form. Both, however, are inexpensive and effective to replenish iodine.

Many doctors recommend an iodine loading test or other test to determine iodine need. The 'patch test' in which one paints some iodine on the skin and observe how quickly it is absorbed is considered less accurate, but still an overall measure.

In my experience, everyone needs more iodine and it is quite a safe element. Therefore I do not feel the need to do testing on everyone.

Iodoral has certain properties that make it a problem, however. It contains only iodine, whereas kelp, for example, contains iodine and many other excellent minerals such as selenium, chromium, germanium, rubidium and others that are needed today by everyone.

This is the main reason I do not like the use of Iodoral or Lugol's solution.

Kelp. I prefer to recommend kelp, about three to six 500-600 mg capsules daily. It is an excellent source of iodine. Kelp has the following advantages over Iodoral:

- It contains many trace elements our bodies need. These include selenium, chromium, germanium and many others that are hard to obtain today.
- It is also a natural food, so it is adequately absorbed and the body can regulate how much it absorbs without any danger of toxicity. I have seen toxicity from Iodoral in a few cases.
- It is also less expensive than Iodoral, I believe, though this is not a major concern.
- It is also available without a prescription, which is convenient.

Kelp has the disadvantage of containing some amounts of toxic metals. However, this is offset to a large degree by its content of alginates and other materials that help absorb toxic metals in the intestines and prevent their uptake by the body.

The same is not true, by the way, of the other sea vegetables or seafood such as fish or shellfish. This is why I prefer using kelp as a source of iodine instead of more fish, seafood or other sea vegetables, although some fish or sea vegetables are fine in the diet once or twice weekly.

Fish and Seafood. These are also excellent sources of iodine in most cases. This has to do with iodine's affinity for salt water. However, all fish and more so shellfish are very high in mercury. In fact, mercury replaces iodine in the body. So fish should be limited in the diet in the following ways:

1. Eat small fish only. This means to avoid tunafish, mahi mahi, ahi, shark of all kinds and other large predator fish such as mackerel, halibut, swordfish and others.

2. Eat fish no more than twice a week. This is only necessary if the fish contain mercury. However, most fish contain mercury, even wild caught salmon and others. So it is a good overall recommendation. In Japan and other seafood eating nations, fish is eaten often, many times every day. These nations have higher levels of mercury in the people. This is okay at times, but leads to ADD and ADHD in the children and certain diseases in the adults as well. In general, we don't recommend it, but in these nations there is little else to eat in the way of protein.

The Japanese people have lived on seafood for generations and they handle it somewhat better than Americans as well. However, even in these nations such as Japan, the diets are changing as people realize that the mercury content of the fish, seafood and sea vegetables in general are harming them. The authorities are beginning to warn the people to reduce fish intake, sadly.

IODINE AND TOXIC METALS

Iodine supplementation has a wonderful effect on toxic metals in the body. This is for several reasons:

1. Iodine opposes or antagonizes the halogens. This has been discussed above. Taking iodine often leads to the elimination from the body of bromines, chlorine, fluorides and other metals as well.

2. Iodine is needed for thyroid activity. As thyroid activity recovers, the body is far more able to eliminate all the toxic metals. This is the main mechanism behind iodine's ability to reduce the toxic metal burden in the body.

IODINE HELPS REMOVE ALL TOXINS

Iodine also helps remove all toxic substances from the body for similar reasons. By enhancing thyroid activity, metabolism is stimulated or enhanced in a very healthful way. This dramatically improves the body's ability to remove toxic chemicals and other subtle toxins from the tissues.

The only problem with iodine supplementation is that it can cause overstimulation in a few cases. Just cut back the dosage if this occurs.

References

1. Brownstein, D., *Iodine, Why You Need It and Why You Can't Live Without It*, Medical Alternative Press, W. Bloomfield, MI, 2008.