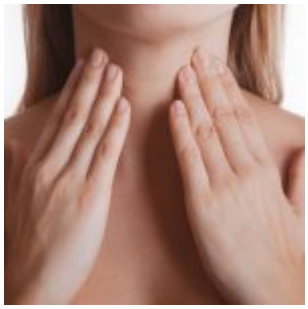
MAKING THE CONNECTION: PCOS, HORMONES, THYROID & IODINE



Guest Post by Dr. Margarita Ochoa-Maya, Functional Endocrinology and Woman's Health

FEELING TIRED?

SLOW METABOLISM?

DO YOU HAVE PCOS?

TAKE A CLOSER LOOK AT YOUR THYROID AND IODINE….

In the setting of hormonal imbalance, PCOS, fatigue, weight gain, and breast pain, iodine deficiency is particularly important and should be considered. It is also very important to identify iodine deficiency in the setting of an enlarged or underactive thyroid especially when the laboratory tests are not conclusive.

When a woman has PCOS, iodine is a topic of interest and should be part of the conversation as it is well known that the ovaries have the second highest concentration of iodine in the body. This has been confirmed by research. The contents of follicular fluid in the ovarian follicles are rich in thyroid hormone (T3) and iodine.

Traditionally, iodine has been discussed in the setting of thyroid disease. It is well known that iodine is necessary for thyroid hormone balance and production. With newer research, iodine is now important since having low levels of iodine in the body can be linked to breast and ovarian dysfunction and PCOS as well as thyroid imbalance and underactivity.

Iodine deficiency is claimed to be rare, particularly in the United States, but compelling data was recently reported by the Centers for Disease Control suggesting that some **2.2 million women nationwide could have low iodine and more than a third of women of childbearing age have measured insufficient iodine levels**. Now that awareness is setting in, more testing is being done and iodine deficiency is becoming more common. This may be due to the fact that iodine is decreasing in the average American diet.

Iodine is an essential component of the thyroid hormones, thyroxine (T4) and tri-iodothyrnine (T3). Thyroid hormones are important as they regulate biochemical functions such as the production of complex proteins, the activity of enzymes and in general metabolism energy and weight.

What is Iodine and Where Does It Come From?

Iodine is a chemical element found in some foods naturally, and in some foods it has been added. It is also available as a dietary supplement. Iodine in small amounts in the human body is obtained primarily through the diet from the soil. Unfortunately, the soil in certain areas is deficient, primarily in high mountainous regions such as the Himalayas, the European Alps, and the Andes where the iodine has been washed away due to glaciation and flooding. Vegetables and food that come from these areas are usually low in iodine. In areas where iodine is low in the soil and iodine is not added to the water supply, the primary source of dietary iodine are saltwater fish, seaweed, and trace amounts in grains.

In the United States, iodine has been voluntarily supplemented in ‘iodized’ table salt (70 mcg/g). It was thought that salt would be the perfect medium since it is used across the board and in every diet type and cultures as well as in different socioeconomic levels. It is also very inexpensive to supplement iodine in the salt; it costs an average of $0.04 per person. Keep in mind that this supplementation is voluntary, and as production costs are cut, so is voluntary supplementation. Other food supplements that include iodine may have it due to indirect supplementation. For example, eggs and chicken have iodine due to the supplementation of the feed. Cows and cattle, in general, also get supplemental dietary iodine to prevent hoof rot and to increase fertility; therefore, milk and other milk products may be another source of iodine. Yet if this supplementation does not happen, a decrease in the iodine content of the food will be a consequence.

POSSIBLE CAUSES OF IODINE DEFICIENCY

1. Low iodine content in food in areas low in iodine
2. Low iodine content in food due to over farming and the industrialization of the food industry
3. A decreased consumption of iodine-rich products for health reasons
4. Decreased iodized salt consumption due to hypertension
5. Decreased consumption of eggs due to elevated cholesterol
6. Decreased consumption of fish due to cost and availability