KRESSER INSTITUTE
FOR FUNCTIONAL AND EVOLUTIONARY MEDICINE

Nutrition: Thyroid Disorders – Part 3

Improving gut health is really critical for all forms of thyroid disease. Thyroid hormones strongly affect tight junctions and immune functions of the small intestine and stomach; T3 and T4 have been shown to protect the gut lining against stress-induced ulcers, and TSH influences the development of gut-associated lymphoid tissue. On the other hand, the gut bacteria play an important role in converting T4 to T3, and that impaired gut function can be one of the causes of decreased conversion of T4 to T3. Lipopolysaccharide, which is an endotoxin from the cell walls of pathogenic bacteria, can escape the gut and trigger an autoimmune reaction and inflammation, which can lead to a decrease in thyroid hormone production, a decrease in conversion of T4 to T3, and a reduction in thyroid hormone receptor activity.

Adequate intake of non-starchy vegetables, autoimmune protocol-approved starches, and fermented foods will improve gut health and reduce constipation, which can be common in hypothyroidism. So we'd recommend sweet potatoes, cooked of course because they're goitrogenic when they're eaten raw, and I don't know many people who eat them raw anyway, but yams, plantains, taro, yuca, and dense winter squashes are really good choices. Then a wide variety of non-starchy vegetables could make up about 50 percent of the plate on an autoimmune protocol diet, and fermented veggies are encouraged at condiment levels on a daily basis; you don't want to eat too many of these, again, because they can be goitrogenic in high amounts.

The question of whether a patient with thyroid disease should take iodine is somewhat controversial. So I mentioned before that there's some evidence that suggests that most hypothyroidism is autoimmune in origin; there's also some evidence that iodine can exacerbate or trigger autoimmune hypothyroidism. Iodine deficiency is the most common cause of hypothyroidism worldwide, but in the US and most of the developed world, autoimmunity is a bigger cause. However, in the studies that showed that iodine triggered Hashimoto's and autoimmune hypothyroidism, the people in those studies were also selenium deficient, and later studies found that when populations have adequate selenium intake, supplementing with or increasing their iodine intake does not have that same effect of triggering or exacerbating Hashimoto's. What we recommend is a very slow increase in iodine intake for those who are deficient, and making sure that they have either adequate selenium intake in the diet or they're also supplementing with a little bit of selenium while they're taking iodine. And what I've seen is that most patients with Hashimoto's are able to tolerate iodine if it's done in that fashion. However, there are still some patients who are extremely sensitive even to the smallest amount of iodine and even when they're getting adequate amounts of selenium, so in those patients we don't use iodine and we find other ways of addressing the problem.

As I mentioned on the last slide, adequate selenium protects against the effects of iodine toxicity; selenium deficiency is more common in people with impaired digestion or serious inflammation. Supplementation has been shown to reduce TPO antibodies and inflammatory activity in autoimmune thyroid disease, and selenium's also essential for the conversion of T4 to T3. I

mentioned on the previous slide, though, you need to be careful with the long-term supplementation of selenium; like most nutrients, it's got a U-shaped curve, which means it's not good to have too little of it and it's not good to have too much of it. I would never suggest supplementing above 400 micrograms per day; 200 micrograms per day is a more appropriate dose, or even less, and you want to make sure to check all sources of selenium in the patient's supplement routine. For example, if they're taking a multi, it will often have selenium in it, and other supplements can often contain small doses of selenium, particularly thyroid support formulas. So you'd want to make sure you're totaling all the different doses of selenium. And then if they're going to be on selenium for more than a few months, you want to monitor their selenium levels.

Best option for most people, though, is just to eat a selenium-rich diet; so we talked about ocean fish and Brazil nuts, but there's also cremini or shiitake mushrooms, red meat, poultry, and eggs, and beef and lamb organ meats contain some selenium. But for many, one to two Brazil nuts a day, especially if they're not eating fish, would be the easiest way to maintain their selenium status.

As is consistent with the functional medicine approach in general, with autoimmune thyroid disease we want to make sure that we are addressing the root cause of the condition, and in this case, it's immune dysregulation. So, you want to identify and address all of the potential immune triggers that we'll be talking about and are talking about elsewhere in the course, and then there are specific things that you can do to balance and regulate the immune system, so we talked about removing dietary triggers with the autoimmune Paleo protocol, then we talked about managing gut health, which is another major trigger of autoimmunity, particularly intestinal permeability and leaky gut. But then you want to do things like make sure the patient's vitamin D levels are adequate, because vitamin D has a regulatory effect on the immune system. You want to make sure that the patient is getting adequate amounts of long-chain omega-3 fats like EPA and DHA, which are anti-inflammatory. And then you'd want to make sure the patient's getting enough fermentable fiber in their diet, which produces short-chain fatty acids that play an immunoregulatory role.

So here's an overview of the dietary recommendations for autoimmune thyroid disease. You put your patient on a 60-day autoimmune Paleo diet that removes all the foods that are typically removed from Paleo, but in addition to that, dairy, eggs, nuts and seeds, and nightshades. You would reintroduce eliminated foods one at a time with a minimum of three days between the reintroduction, so you can clearly see how the patient is responding. You would include a variety of autoimmune Paleo-approved starchy and non-starchy plant foods including fermented veggies. So, the starches, like sweet potatoes, yams, plantains, taro, yuca, and dense winter squashes. And then non-starchy vegetables should comprise about 50 percent of each meal. You would include fermented vegetables daily in small doses, as they're tolerated by the patient. And you would make sure they're getting enough selenium in the form of ocean fish and possibly Brazil nuts and also iodine in the form of sea vegetables and certain species of fish or fish head soup is a great source of iodine, and then you would optimize their vitamin D status. Vitamin D can be obtained through extra-virgin cod liver oil, and also just eating cold-water fatty fish, and then of course sun exposure, and make sure they're getting enough EPA and DHA by eating cold-water fatty fish.