

Module 5, Lesson 3 Handout:

Hypothyroidism & Hyperthyroidism: Symptoms & Interventions

Let's start by reviewing a few thyroid basics. The thyroid gland is a butterfly shaped organ that sits in the base of the neck. It's part of the endocrine system and is responsible for making, storing and releasing hormones, mainly T4 and T3 (discussed in another handout). These hormones regulate everything from metabolism to heart rate, so keeping them in balance is a pretty big deal for health. Hyperthyroidism and hypothyroidism are conditions where your thyroid isn't producing hormones the way it's supposed to.

Hyperthyroidism

Hyperthyroidism is essentially an over active thyroid where the thyroid is producing too much thyroid hormone. Just over one percent of the population in the United States has hyperthyroid. It can be caused by a few different conditions (such as Graves' disease and thyroiditis), from eating too much iodine rich foods (like salt and kelp), from medications (such as amiodarone, a common heart medication that is rich in iodine) or it can be genetic.

Symptoms of hyperthyroid can include:

- Nervousness or irritability
- Fatigue or muscle weakness
- Trouble tolerating heat
- Trouble sleeping
- Shaky hands
- Rapid and irregular heartbeat
- Frequent bowel movement or diarrhea
- Weight loss
- Mood swings
- Goiter

Hyperthyroid is well managed with surgery, radioiodine and other medications. If left untreated, serious reactions can happen, like:

- Irregular heartbeat, stroke, heart failure and serious cardiac issues

- Grave's ophthalmopathy, which is an eye condition that can cause double vision, pain, loss of vision and sensitivity
- Osteoporosis of the bones, leading to fractures and breaks in bones

As for dietary recommendations, start by assessing iodine in the diet to see if there are places to cut back, such as switching to non-iodized salt or cutting back on seafood. Clients who are undergoing radioiodine therapy will often be prescribed a low iodine diet. These clients will need to avoid restaurant foods, dairy, seafood, many grains and some animal protein. Clients should receive guidance from a dietitian who specializes in this field.

Calcium is another nutrient to focus on because hyperthyroidism can increase calcium excretion, reduce bone mineral density and increase risk of osteoporosis. Focus on non-dairy sources of calcium such as leafy greens, almonds and figs. A vitamin D supplement may be considered to help support bone health, especially if clients are avoiding seafood, one of the few food sources of vitamin D.

Hypothyroidism

Exactly at the opposite end of the spectrum is hypothyroid, which is caused by an underactive thyroid. In this case, the thyroid does not produce enough thyroid hormones, and that causes its own set of problems. Hypothyroid affects almost 5% of the population over age 12 in the United States. The most common cause is the autoimmune disorder Hashimoto's. Hypothyroidism may also result in reaction to medications, after thyroid surgery or from radiation therapy.

Since the thyroid isn't working up to speed in hypothyroidism, and not enough thyroid hormones are being produced, systems in the body slow down. Common symptoms and side effects include:

- Exhaustion
- Weight gain
- Bloating or puffiness in the face
- Cold intolerance
- High cholesterol
- Joint and muscle pain
- Constipation
- Dry skin and hair
- Decreased sweating
- Heavy or irregular menstrual periods

- Fertility problems
- Depression
- Slowed heart rate
- Goiter

Once someone is diagnosed with hypothyroidism, the typical treatment is taking synthetic thyroid hormone levothyroxine (such Levo-T and Synthroid) daily to restore hormone levels back to normal. This medication may have side effects including increased appetite and insomnia, so work with these clients to come up with a strong lifestyle plan. Also note that levothyroxine has several nutrient interactions and absorption of the medication may be decreased by foods including soy, walnuts, fiber and calcium rich foods.

A few other dietary interventions may be helpful too. First, assess the iodine content in the diet to see if there is a deficiency. If iodine is lacking, recommend switching to iodized salt and bumping up intake of seafood. Promote foods with vitamin D, as research has found a connection between vitamin D deficiency and Hashimoto's. In one study, more than 90% of Hashimoto's patients studied were vitamin D deficient. Selenium has been found to be beneficial in the treatment of Hashimoto's, so recommend selenium rich foods like Brazil nuts, the absolute best source of the mineral. Also look for any goitrogens in the diet. As a refresher, goitrogens are foods that release a compound called goitrin when they're digested, and goitrin interferes with the production of thyroid hormones. Common goitrogens a client may need to limit or avoid include cruciferous vegetables, soy and millet.

Treatment of both hypothyroidism and hyperthyroidism requires a team effort between the endocrinologist, the client and you. Work with these clients to find strategies to manage their symptoms through diet and lifestyle changes, addressing that these are challenging and uncomfortable conditions to face. Medications and traditional treatment will play a big role here, but the diet and lifestyle changes make a real difference too.