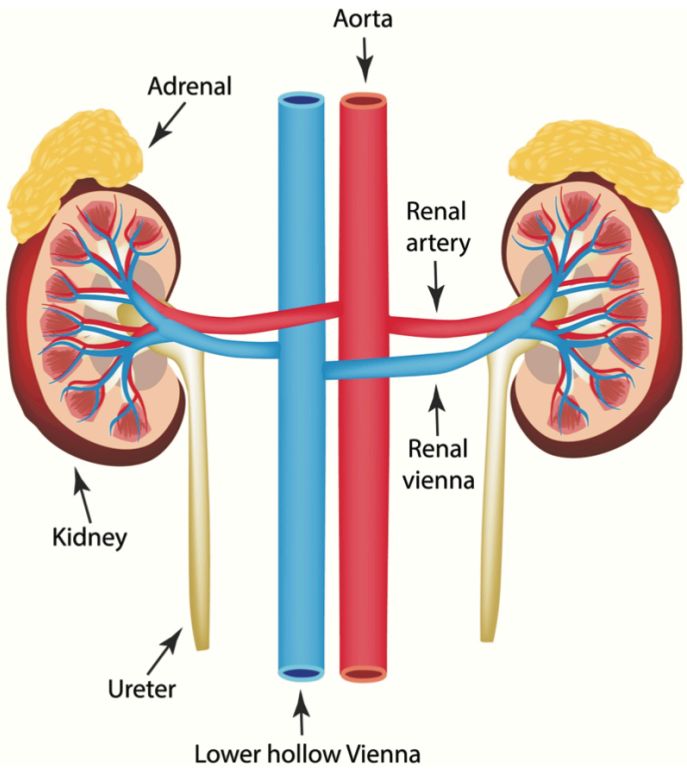
Adrenal Thyroid Hormone

HYPO VS HYPER THYROID

	Hypo	Hyper
Causes	Nonfunctional thyroid gland, Lack of iodine, Surgical removal of gland, Pituitary gland malfunction,	Thyroid tumor, Goiter, Grave's disease (autoimmune,) excessive thyroid hormone replacement
Symptoms	Fatigue and lethargy, Intolerance to cold, Weight gain, Dry, coarse skin and hair, Hair loss, Anemia,	Extreme nervousness, Hot, flushed skin, Weight loss with increased appetite, Sweating, Exophthalmos (bulging eyes,) Rapid heart rate
Treatments	Thyroid hormone replacement, Radioactive iodine to destroy thyroid gland, Thyroidectomy	Medications to reduce thyroid hormone production

ADRENAL GLANDS

- The adrenal glands are two glands that sit on top of the kidneys.
- The adrenal cortex or outer part of the gland—produces hormones that are vital to life, such as cortisol and aldosterone.
- The adrenal medulla or inner part of the gland produces adrenaline.



HYPO VS HYPER ADRENAL GLANDS

Disorder	Addison's	Cushing's	Conn's
	⇓	⇑	⇑
Symptoms	Fatigue, muscle weakness, loss of appetite, weight loss, abdominal pain, adrenal crisis	Fatty hump between the shoulders, rounded face, high B/P, bone loss	uncontrolled high B/P, electrolyte abnormalities, lack of muscle strength, frequent urination, headache
Treatment	replacement medication to maintain hormone levels	removal of gland	removal of gland

The Adrenal–Thyroid Connection

Let's get acquainted with the adrenal and thyroid glands.

The adrenal gland and thyroid together make up part of your endocrine system. Made up of glands that produce and secrete hormones, your endocrine system helps regulate the activity of your cells and organs.

The adrenal glands, located on top of your kidneys, are responsible for secreting the hormones that create our stress response. When you experience any type of stress, your brain activates your amygdala. Acting as your personal surveillance system, the amygdala will notify the hypothalamic-pituitary-adrenal (HPA) axis, if danger is detected.

Your adrenal glands then respond to the perceived danger. The adrenal glands secrete two key stress hormones – cortisol and epinephrine.

Our stress response and stress hormones are not always bad. Cortisol helps you get up in the morning, keeps you

energized during a workout, and maintains the glucose levels needed for everyday functions. Epinephrine, also known as adrenaline, raises your heart rate and sends blood to your muscles and brain when your body senses that you are in acute stress or danger.

Your thyroid is a butterfly-shaped gland at the front of your neck. The thyroid supports many essential functions including hormone balance, metabolism, and energy.

The adrenal glands and thyroid talk to each other all day long (aka the adrenal-thyroid connection). When you experience prolonged, or chronic stress, your adrenals tell your body to conserve energy. This primal function shifts energy away from metabolism, sex drive, and reproduction and towards fight-or-flight functions such as maintaining an adequate heart rate and pumping blood to your brain and muscles. The cortisol produced by your adrenal glands also diverts energy away from your thyroid, which over time can cause the thyroid gland to malfunction.

Prolonged or chronic stress can lead to HPA dysfunction. HPA dysfunction occurs when chronic stress breaks down the body's response system needed for a healthy stress response. Instead, your HPA axis tells your adrenals to maintain cortisol levels and near-constant stress response. HPA dysfunction is often referred to as "adrenal fatigue." While this is a common term, it does not accurately encompass the effects that chronic stress is having on the adrenal glands. We will be referring to the impacts of chronic stress as adrenal dysfunction.

The Impacts of Stress on Your Thyroid

If you have a pre-existing thyroid dysfunction and are exposed to chronic stress, your adrenal glands can either over or underproduce cortisol leading to adrenal dysfunction. When you suffer from adrenal dysfunction your body is constantly preparing to run from a bear. And by default is slowing the function of your thyroid.

A slow-acting thyroid can make you feel tired, sluggish, and depressed.

It can also lead to long-term health concerns including:

Weight gain
High cholesterol
Constipation and gut issues
Depression and anxiety
Fertility issues
Decreased libido
Decreased bone health and strength

Chronic stress can have both direct and indirect effects on your thyroid. Here are some of the most common impacts of stress on your thyroid.

Reduced Thyroid Function

When you are under stress, your endocrine system produces chemicals that signal your thyroid to slow the production of the key thyroid-related hormones – TSH, T3, and T4. In addition, your liver slows the conversion of T4 to T3, the active thyroid hormone. The body stockpiles it into reverse T3 (rT3) until the stress event has passed. Under chronic stress, your body does not easily come out of the stress response and can lead to

adrenal dysfunction and higher stockpiles of rT3, which can act as an “anti-thyroid” hormone.

Poor Gut Health

Chronic stress and a low functioning thyroid cause energy to be redirected away from vital gut functions like digestion of foods and absorption of nutrients. This can lead to reflux, gas and bloating, constipation, diarrhea, food sensitivities, abdominal cramps, and nutrient deficiencies. In addition, chronic stress produces chemicals that are harmful to the gut’s microbiome leading to low levels and diversity of beneficial bacteria and overgrowth of harmful gut bacteria.

Decreased Immunity

Your immunity and risk for developing chronic inflammation increase with chronic stress. When you are sick, your body experiences inflammation that triggers your body’s stress response. The more your stress response gets triggered the slower your thyroid becomes. This cyclical process can lead to weight gain, the body

breaking down muscle for fuel and storing extra fuel as cholesterol.

Hormone Imbalance

Increased cortisol production during times of chronic stress slows the liver's ability to clear out excess estrogen from the body. One of the many negative effects of increased estrogen in the body is increased thyroid binding globulin (TBG). TBG binds to thyroid hormones inhibiting them from circulating throughout the body to support normal functions. At first, your thyroid may be working appropriately and your TSH will show up as normal on blood work. But, your T3 and T4 may be low on your bloodwork, which is why I always run a full thyroid panel on women. Over time, if chronic stress continues, your TSH would become abnormally high.

Diagnosing Adrenal Dysfunction

If you have a pre-existing thyroid condition, like hypothyroidism or Hashimoto's Thyroiditis, and experience chronic physical or emotional stress, your

adrenals may be unable to produce enough cortisol which can lead to a state of adrenal dysfunction.

To assess the health of your adrenal glands and how stress is impacting your body, we evaluate your physical, mental, and emotional symptoms along with these lab tests.

1.Diurnal Cortisol Pattern Test

Cortisol, a hormone produced in the adrenals, varies throughout the day. It is highest shortly after you wake up in the morning, decreases throughout the day, and is ideally lowest before bedtime. By testing your cortisol levels throughout the day, we can map your cortisol pattern. This allows us to identify what time of day cortisol imbalances are occurring and pinpoint appropriate treatment. We test four samples of saliva or urine over a 24-hour period. One cortisol sample does not provide the trending data needed to identify where an imbalance may be occurring.

2.DHEA Test

DHEA is another hormone produced in the adrenals that gets converted to testosterone and eventually estrogen. DHEA levels vary by age and gender, but typically peak in your mid-20s. A DHEA test can help determine how well your adrenals are functioning. Increased or decreased levels of DHEA can be attributed to abnormal menstrual cycles, low sex drive, chronic fatigue, hair loss, brain fog, infertility, and more.

If interested in running functional medicine lab testing, then once you have completed this Mater Health Coach Course, pass the exam, get certified by A.A.D.P. , the next step is to register for the Practitioner Lab Course.

Providing access to the beneficial testing is a great resource to offer in your practice.

Healing Your Adrenal-Thyroid Connection

Chronic stress and associated anxiety is the number one thing many practitioners see in their practice that leads to thyroid dysfunction. Chronic stressors are unfortunately a huge part of our daily lives, but there are things you can do to help manage your stress, build resiliency and heal the adrenal-thyroid connection.

Identifying the underlying cause of the adrenal-thyroid dysfunction.

The root cause of adrenal-thyroid dysfunction is unique for each person and can show up with a wide variety of symptoms. These can include gut dysbiosis and lack of diversity within the gut microbiome and hidden infections such as the Epstein-Barr Virus (EBV). EBV has been found to be highly correlated to adrenal-thyroid imbalances. It is also important to identify and remediate any environmental toxins that are known endocrine disruptors, impacting the thyroid gland.

Nutrition for Thyroid and Adrenals

Our main goal with nutrition related to the thyroid and adrenal glands is to reduce any inflammation and regulate blood sugar.

To start, many practitioners recommend eating breakfast to support optimal cortisol and DHEA levels. If you are someone who isn't hungry right away in the morning, we recommend starting with warm lemon water. This will help get your digestive juices flowing so you can work up to eating breakfast. Also, eating regular meals throughout the day with lots of veggies, fruits, and fiber helps to maintain regular blood sugar and cortisol levels. Finally, foods high in vitamin C are particularly supportive of the adrenal glands - strawberries, peppers, goji berries, rose hips, kale, broccoli, black currants, lemons, persimmons, papayas. Yum!

Mindfulness

Building a mindfulness practice does not mean you have to sit and meditate for 30 minutes in silence. Mindfulness comes in all flavors. Find what works for you to start the

day off with some inward focus. Or, find a way to find calm at the end of the day. This may include a low-intensity yoga class or a gentle walk outside.

Movement

Find movement that feels good for your body each day...but not too much. Many women are exercising too much or going too hard. This further stresses the adrenal glands and exacerbates thyroid and adrenal dysfunction. If you are feeling tired after a workout or later in the day, then try reducing exercise intensity or time. Just try it out and monitor how you feel!

Herbs, Minerals, and Vitamins

Our body uses a lot of nutrients when it is stressed, so it is very important to replenish these adequately. Some favorites include vitamin C, magnesium, selenium, zinc, L-theanine, phosphatidylserine, medicinal mushrooms, adaptogenic herbs such as rhodiola, schisandra, holy basil, ashwagandha, eleutherococcus, and astragalus.

Always talk to your doctor before starting any new supplements or herbs.

In the world we live in today, stress isn't going anywhere. Whether it be physical or emotional stress that you are facing, nurturing your stress response will allow for optimal thyroid function. Adapting new ways to support your adrenal-thyroid connection can lead to increased energy, improved metabolism, and better overall health.