

We have been going over hormones and how what they do in the body. Last week I gave some insight into Thyroid function and this week we'll see how the Adrenal glands will help the Thyroid in regards to your metabolism along with a bunch of other things the Adrenals are responsible for.

The Adrenal glands are found on top of the kidneys (literally: “ad” = on top or over + “renal” = kidney) and have a very complex role in the body. There are two areas of the adrenal gland: the inner-“medulla” and the outer - “cortex” and each excretes different compound. The adrenal medulla releases part of our “stress” response- namely Epinephrine (Adrenalin) and Nor-Epinephrine (Nor-Adrenalin). These are responsible for our “fight or flight” response, pain response and increasing our body's ability to function in high physical stress situations (strenuous exercise). They also affect bodily functions that we identify as symptoms of disease which I'll talk to you about in a minute. When there is a stress, either mental/emotional or physical epi & nor-epi are released by the adrenal medulla. They are responsible for preparing our body to run away from or fight off an enemy. They increase heart rate, constrict the blood flow to the digestive organs, reproductive organs, hands and feet thereby raising the blood pressure to the brain, heart and major muscle groups, they increase sugar levels in the blood to feed the brain, heart and muscles, they open the bronchioles in the lungs and they dilate the pupils allowing more light and peripheral vision to the eyes. In a saber-tooth tiger attack these are all good things but they can be detrimental to everyday health if you are stimulating this response all the time by drinking coffee, soda, energy drinks, not getting enough quality sleep, not relaxing, stressing about life, etc. What this response turns into in a non-life threatening situation is cold hands and feet, poor digestion and indigestion (heartburn), sexual dysfunction (including poor libido, erectile dysfunction), poor circulation, High Blood Pressure, blood sugar regulation problems (hypoglycemia and diabetes), insomnia, hot flashes and night sweats just to name the major symptoms. In addition you will have short energy “spikes” then crash just like when you drink a few cups of coffee on an empty stomach.

This stress response is also connected to the adrenal cortex which will release the primary stress hormone called cortisol. Cortisol will be released when stress on the body is present such as: cold,

fasting, starvation/low blood sugar, low blood pressure, infections, pain and inflammation. The Hypothalamus tells the Pituitary to tell the Adrenals to release cortisol. In the short term cortisol is needed to help the body respond to the physical stresses but in the long term it can lead to potentially serious issues. Cortisol will cause the making of sugars in the liver which can lead to diabetes. Cortisol is a major anti-inflammatory in the body but in long term exposure it will weaken muscles, tendons, ligaments, bone and connective tissue leaving you susceptible to injury. Cortisol decreases your immune system leaving you more susceptible to chronic illness and will decrease the density of parts of your brain which affects cognitive function and memory. Cortisol is also supposed to follow a normal rhythm during the day. High in the morning and progressively lowering to nighttime when it should be at its low point between 10pm and midnight. This enables you to have energy during the day and sleep at night. When the cortisol cycle is disrupted it will cause fatigue and insomnia. By measuring the cycle at 8am, noon, 4pm and midnight we can find where the cortisol is high or low and correct it. I have had people who have been on sleep medications for years and still waking start sleeping through the night when we balance the cortisol cycle. One warning to heed is there are commercials saying you have to “lower your cortisol levels” to lose weight and get energy but there are many who have low cortisol since their adrenals finally give up who have the same symptoms as people with high cortisol. So if you take those products (many are weight loss products) and your cortisol is low instead of high you can really upset your body and compound your problems even more.

I'll finish the discussion of the Adrenals next week. Until then: it's your life. It's your health!

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Last week we covered the responses the Adrenal glands provide in high stress environments. The “fight or flight response” which prepares the body to fight an attacker or run away comes from the adrenal glands. This response which includes the release of epinephrine (adrenalin), nor-epinephrine (nor-adrenalin) and cortisol will constrict blood flow to the hands, feet and low priority organs, along with increasing sugar in the bloodstream to feed the heart, brain and muscles. In chronic cases of stress this serves to decrease digestion and reproductive function, raise blood pressure and pulse and cause poor sleep, hot flashes, poor immune function, weight gain and other things that people and conventional doctors view as symptoms to be medicated. These responses are not only from stress but can be caused or worsened by caffeinated beverages and foods. (Especially coffee, soda and energy drinks!)

The Thyroid and the Adrenals work together in supporting the body's metabolism. The adrenals, the thyroid and the ovaries (or testes in men) all work like a three legged stool. When one leg goes out of balance it throws the others out of balance too. The adrenals will not only “pick up the slack” for a low thyroid but will also help the conversion from T4 (less active) to T3 (more active) so poor adrenal function can cause low thyroid hormone function. In the conventional medical model there is no functional “middle ground” there are only two rare and serious adrenal disorders Cushing's and Addison's diseases. Cushing's is where there is an extremely high adrenal output or Addison's where there is no adrenal output. This approach greatly limits the benefit that can be gained by optimizing adrenal function. This is especially seen in sleep disorders, Chronic Fatigue, Fibromyalgia, chronic illness, chronic pain and in many symptoms of menopause. By optimizing and balancing the adrenal rhythm the core issues of the above problems can be decreased or eliminated along with the symptoms. Cortisol is supposed to be high in the morning and decrease to its lowest point just before midnight. If we do not test to allow for the differences in times during the day then an accurate picture of adrenal function is not possible and we will not be able to have an truly effective treatment.

The adrenals are often a factor in menopause since they are the site of male hormone production

(especially testosterone, androsteindione and DHEA) in women which improves libido, lean muscle development, a sense of well being, energy. Estrogen and progesterone is also produced in the adrenals after menopause. It is the imbalance in all these hormones along with cortisol and the thyroid that can create any or all of the classic symptoms of menopause including hot flashes, insomnia, weight gain, night sweats, fatigue, poor memory, brain fog, anxiety, depression, poor libido, etc. By just giving estrogen and progesterone to cover the symptoms the medical doctors are creating a situation in which you cannot get off of the HRT since the core condition of an imbalance of the adrenals and thyroid have not been addressed. It is only by supporting the function of these other glands that we can correct the issue and allow the body to work without long term medication OR supplement use. When the adrenals are corrected there is rarely a need to continue supplements to maintain them unless the person is in a high stress environment.

Over the next couple of weeks we'll finish the hormone discussion with the sex hormones and how they affect the body. It's your life. It's your health.

Dr. Visconti has an Alternative Medical Clinic near the Citrus Tower in Clermont. If you have any questions on this or any other topic please contact him on his website: www.docvisconti.com