Graves' and Hashimoto's Disease

Dr. John Bergman

What is Grave's Disease?

"Graves' disease is an **immune system disorder** that results in the overproduction of thyroid hormones (hyperthyroidism).

Although a number of disorders may result in hyperthyroidism, **Graves' disease is a common cause.**"

Mayo Clinic

What are the Symptoms of Grave's Disease?

- Anxiety and irritability
- A fine tremor of your hands or fingers
- Heat sensitivity and an increase in perspiration or warm, moist skin
- Weight loss, despite normal eating habits
- Enlargement of your thyroid gland (goiter)
- Change in menstrual cycles
- Erectile dysfunction or reduced libido
- Frequent bowel movements
- Bulging eyes (Graves' ophthalmopathy)
- Thick, red skin usually on the shins or tops of the feet (Graves' dermopathy)
- Rapid or irregular heartbeat (palpitations)

Grave's Ophthalmopathy

-About **30% of people with Grave's disease have Grave's Ophthalmopathy**:

- Bulging eyes (exophthalmos)
- Gritty sensation in the eyes
- Pressure or pain in the eyes
- Puffy or retracted eyelids
- Reddened or inflamed eyes
- Light sensitivity
- Double vision
- Vision loss

What is Hashimoto's Disease?

"Hashimoto's disease is a **condition in which your immune system attacks your thyroid**...

Inflammation from Hashimoto's disease, also known as **chronic lymphocytic thyroiditis**, often leads to an underactive thyroid gland (hypothyroidism).

Hashimoto's disease is the most common cause of hypothyroidism in the United States."

Mayo Clinic

What are the symptoms of Hashimoto's disease?

- Fatigue and sluggishness
- Increased sensitivity to cold
- Constipation
- Pale, dry skin
- A puffy face
- Brittle nails
- Hair loss
- Enlargement of the tongue
- Unexplained weight gain
- Muscle aches, tenderness and stiffness
- Joint pain and stiffness
- Muscle weakness
- Excessive or prolonged menstrual bleeding (menorrhagia)
- Depression
- Memory lapses

What causes these autoimmune disorders?

Graves' Disease

"Graves' disease is caused by a malfunction in the body's disease-fighting **immune system**, although the exact reason why this happens is still **unknown**."

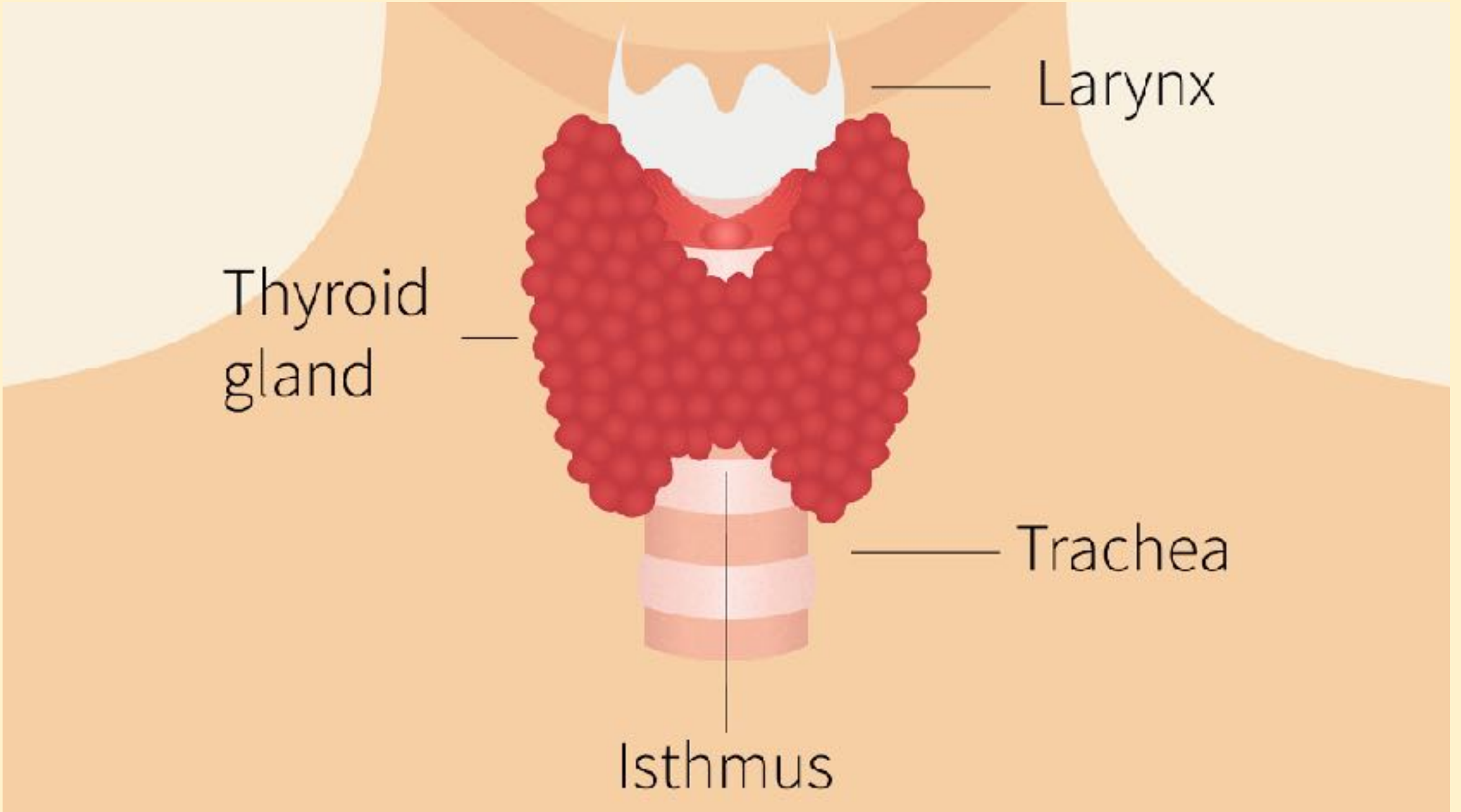
Hashimoto's Disease

"Hashimoto's disease is an **autoimmune disorder** in which your immune system creates antibodies that damage your thyroid gland.

Doctors don't know what causes your immune system to attack your thyroid gland."

Mayo Clinic

What is the Thyroid?



What does the Thyroid do?

Your thyroid is responsible for producing hormones that affect **every function in your body**

It produces three types of hormones:

- Triiodothyronine (T3)
- Thyroxine (T4)
- Diiodothyronine (T2)

What do Thyroid Hormones do?

- Thyroid hormones **regulate metabolism and body weight** by controlling the burning of fat for energy and heat.
- Thyroid hormones are also **required for growth and development** in children.

They signal the production of virtually **all growth factors** in your body, including:

- Somatomedins (skeletal tissue growth)
- Erythropoietin (involved in the development of red blood cells)
- Nerve growth factor
- Epidermal growth factor

What do Thyroid Hormones do?

In pregnant women:

- Thyroid hormone is involved in the **production of prolactin**, a hormone responsible for milk production.

Hormones secreted by the thyroid **interact with all your other hormones** including:

- Insulin
- Cortisol
- Sex hormones like estrogen, progesterone, and testosterone

Physiology of Thyroid Hormones

- Almost **90 percent** of the hormone produced by your thyroid is in the form of **T4, the inactive form**
- Your liver then converts the T4 into T3, the active form, with the help of an enzyme.
- Ideally, you will make what you need and have the correct amounts of T3 and T4, which control the metabolism of every cell in your body.
- **If your T3 is inadequate**, either by scarce production or not converting properly from T4, **your entire body will experience symptoms**

Thyroid Testing

- Thyroid Stimulating Hormone (TSH) Test
- T4
- T3
- Thyroid Antibody Tests
- Thyroglobulin

Thyroid Stimulating Hormone (TSH) Test

- TSH is produced by the pituitary gland

- A high TSH level indicates hypothyroidism (**Underactive thyroid**)

- A low TSH level indicates hyperthyroidism (**Overactive thyroid**)

- Sometimes the pituitary isn't making enough TSH **(Secondary Hypothyroidism)**

T4 Testing

- Elevated T4 = <u>hyperthyroidism</u>
- Low Level of T4 = <u>hypothyroidism</u>
- Combining this with the TSH test is usually how people are diagnosed

<u>TSH and T4 Testing</u>

- Elevated TSH and low T4 = **Primary Hypothyroidism** (due to a problem with the thyroid)
- Low TSH and Low T4 = **Secondary Hypothyroidism** (Due to a problem with the pituitary)

Thyroid Antibody Tests

- A positive anti-thyroid peroxidase and/or anti-thyroglobulin antibodies in a patient with hypothyroidism =

Hashimoto's Disease

- Antibodies present in hyperthyroid patient =

Graves' Disease

The Problems with Testing

- The **TSH test has become the gold standard for determining the activity level of the thyroid**
- The TSH test misrepresents what is happening with the thyroid and pituitary

"The key thing is ... doctors are always told that TSH is the test that gives us a yes or no answer. And, in fact, I think that's fundamentally wrong. The pituitary TSH is controlled not just by how much T4 and T3 is in circulation, but T4 is getting converted to T3 at the pituitary level. Excess T3 generated at the pituitary level can falsely suppress TSH."

Kenneth Blanchard, M.D.

Doctors aren’t looking at Toxic Exposure

"It's very well-known that lead and cadmium interfere with testosterone production.

What's not so well-known is that **reverse T3 is stimulated by toxic metals**, so up it goes. In effect, we can have levels that are so high, they way outnumber the regular T3. You're functionally hypothyroid even if your TSHs and free T3s happen to be normal."

Dr. Jonathan Wright

Doctors aren't Seeing the Big Picture!

"In order to detect a thyroid problem, **a TSH test must assume that hormonal signaling in the rest of the system is functioning normally.**

Because endocrine disrupting chemicals may disrupt many points along the signaling system and not just the thyroid, it can be difficult to identify an imbalance with a TSH test alone…this is a big reason why the conventional blood tests and reference ranges used to detect a thyroid abnormality can overlook real problems.

Epoch Times

Doctors aren’t looking at Toxic Exposure

"Toxins don't have to reach high levels in order to affect a delicate system that's very, very vulnerable to toxicity. Especially the thyroid which I think is the most vulnerable component of the endocrine system."

Dr. Raphael Kellman

Thyroid Disorders Specialist

Thyroid Tests are often Inaccurate

"Many people may be suffering from minute imbalances that have not yet resulted in abnormal blood tests. If we included people with low-grade hypothyroidism whose blood tests are normal, the frequency of hypothyroidism would no doubt exceed 10 percent of the population.

What is of special concern, though, is that many people whose test results are dismissed as normal could continue to have symptoms of an under active thyroid. Their moods, emotions, and overall well-being are affected by this imbalance… Even if the TSH level is in the lower segment of normal range, a person may still be suffering from low-grade hypothyroidism."

Ridha Arem, M.D.

Author of the book, "The Thyroid Solution"

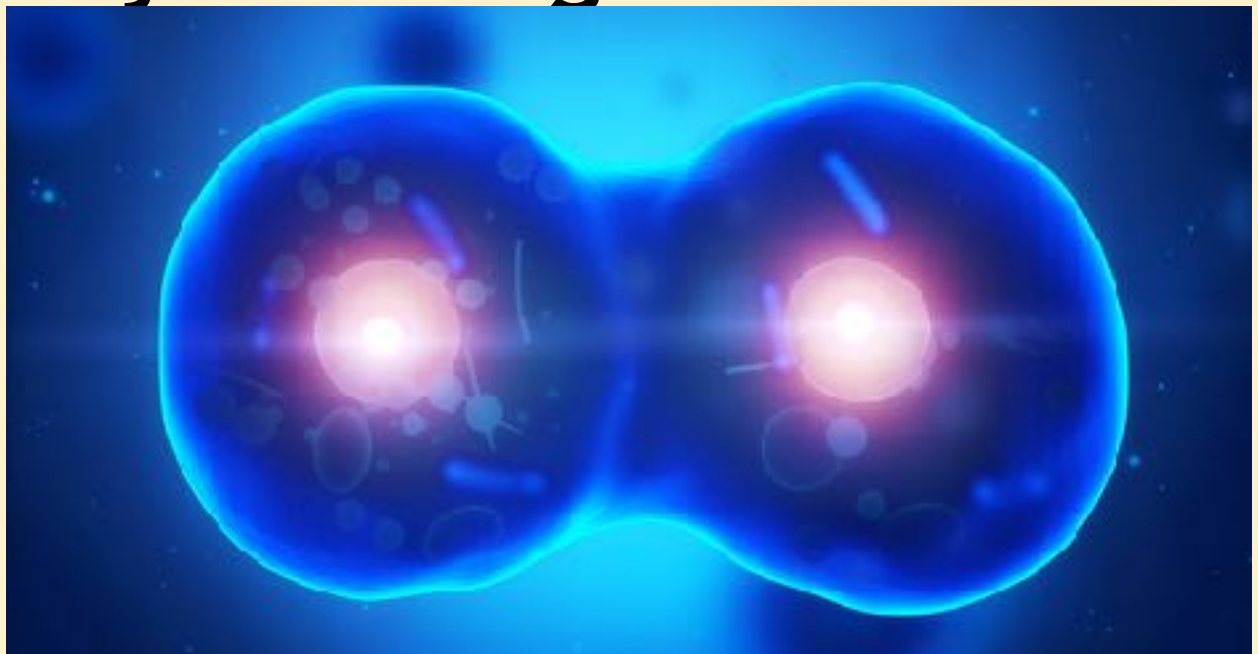
What is an accurate test for Thyroid function?

Basal Body Temperature

- Take your body temperature for four mornings in a row before you get out of bed
- Place a glass thermometer by your bed before you go to sleep
- Upon waking, place the thermometer in your armpit for a full ten minutes
- Don’t move, remain as still as possible with your eyes closed
- After ten minutes, record the temperature and date
- **People with a normal functioning thyroid have a basal body temperature between 97.6 and 98.2**

What about Thyroid Antibody Testing?

- We all make antibodies against cell tissue
- The presence of some antibodies is healthy and normal
- As old tissue cells die to be replaced by new ones, **the immune system tags these dead cells with antibodies**



Problems with Antibody Testing

- The immune system is constantly **“waxing and waning”**
- The antibody tests don’t take into account the **toxic exposure, deficiency of nutrients, and diets high in unhealthy fats, refined sugars, and refined grains**
- A **weakened immune system** can cause an imbalance between TH-1 and TH-2 responses
- Vaccinations have caused a **TH-2 immune system response** which causes production of antibodies

Immune Response to Vaccinations

Th1 immunity

- Is responsible for normal reactions to anything in your environment, from pollen to animal dandruff, dust mites, chemicals, food.
- Th1 is **kept robust and healthy by your gut flora.**
- TH1- cell mediated response from **mucus membranes**
- If your gut flora is abnormal, your Th1 become increasingly disabled

Th2 immunity

- TH2-vaccines (puncture wound so the body needs an immediate response this is why there is **no lifetime immunity** from vaccinations, because the proper immune system cells are not built)
- **inflammatory reaction = inflammatory cytokines**
- **Causes allergies and intolerances**

The Hepatitis B Vaccination

The Journal of Autoimmunity

"During the 1980s, genetically engineered hepatitis B vaccines (HBVs) were introduced in the United States. **A large-series of serious autoimmune conditions have been reported** following HBVs.."

Vaccines and Autoimmune disorders

"…the case reports and series that describe various autoimmune diseases post-vaccination strongly suggest that **vaccinations can trigger autoimmunity.**"

Clinical and Experimental Rheumatology

Aluminum adjuvants and Autoimmune Disorders

"Experimental research…clearly shows that **aluminum adjuvants have a potential to induce serious immunological disorders in humans.**

In particular, aluminum in adjuvant form carries a risk for autoimmunity, long-term brain inflammation and associated neurological complications and thus may have profound and widespread adverse health consequences."

Current Medicinal Chemistry

The Mechanism

"The mechanism (or mechanisms) of autoimmune reactions following immunization has not yet been elucidated. One of the possibilities is **molecular mimicry**; when a structural similarity exists between some viral antigen (or other component of the vaccine) and a self-antigen. This similarity may be the trigger to the autoimmune reaction.

Even though the data regarding the relation between vaccination and autoimmune disease is conflicting, it seems that some autoimmune phenomena are clearly related to immunization.

Journal of Autoimmunity

Why aren't Doctors looking at Thyroid disruptors?

- Chronic Stress: Chemical, Physical, Emotional
- Medications
- Environmental Toxins: Fluoride, Chlorine
- Toxic, Processed Food
- A Sedentary Lifestyle
- Heavy Metal Exposure

Chronic Stress

The Normal Stress Response

1. Chemical, Physical, Emotional Stress
2. Activation of the **Sympathetic Nervous System**
3. Stress response is initiated by the **Hypothalamus** and **pituitary** and regulated by the **adrenal glands**
4. Hypothalamus raises heart rate and decrease blood supply to the digestive system
5. Hypothalamus signals pituitary to secrete cortisol from adrenal glands
6. **Thyroid is stimulated to breakdown glucose for energy**
7. Energy and resources are redirected away from the reproductive organs, directing it to the organs required for survival
8. **Cortisol and Insulin levels are increased and remained increased until the stress is eliminated or until the adrenals and pancreas have been depleted**

Functions of Cortisol

- Mobilizes and increases **amino acids**
  - the building blocks of protein, in the blood and liver
- Stimulates the liver to **convert amino acids to glucose**
  - the primary fuel for energy production
- Stimulates **increased glycogen** in the liver
  - Glycogen is the stored form of glucose
- Mobilizes and increases **fatty acids** in the blood (from fat cells)
  - to be used as fuel for energy production

- Counteracts **inflammation and allergies**
- Prevents the loss of **sodium** in urine
  - helps maintain blood volume and blood pressure
- Maintains **resistance to stress**
  - (e.g. infections, physical trauma, temperature extremes, emotional trauma, etc.)
- Maintains **mood and emotional stability**

Adaptation to Chronic Stress

- The body can adapt to a state of hyper-stimulation =

Sympathetic Dominance

- The Digestive system, Reproductive system and Endocrine system organs begin to break down from **lack of nutrients and blood flow**
- **Adrenals become exhausted and cortisol levels drop**

- **Adrenals** are usually the first in the order of endocrine function **Breakdown**, followed by the insulin-producing portion of the **pancreas**, **thyroid, ovaries, parathyroid, pineal, pituitary** and finally the link to the autonomic Nervous system the **Hypothalamus**.

Effects of Chronically Elevated Cortisol

- Diminishes cellular utilization of glucose
- Increases **blood sugar levels**
- Decreases **protein synthesis**
- Increases protein breakdown that can lead to **muscle wasting**
- Causes demineralization of bone that can lead to **osteoporosis**
- Interferes with **skin regeneration** and healing
- Causes shrinking of **lymphatic tissue**
- Diminishes **lymphocyte** numbers and functions

- Lessens SIgA (secretory antibody productions) which leads to increased susceptibility to **allergies, infections, and degenerative disease**

Stress and the Adrenals: Adrenal Fatigue

If the Adrenals are depleted from chronic stress these are the consequences:

- Low body temperature
- Nervousness
- Depression
- Hypoglycemia
- Memory loss
- Osteoporosis
- **Weak Immune system**
- **Inflammatory conditions**
- **Vertigo and dizziness**
- Dry and thin skin
- **Weakness**
- **Chronic fatigue**

- Difficulty gaining weight
- Difficulty building muscle
- Irritability
- **Confusion and Cognitive Impairment**
- **Autoimmune hepatitis**
- Palpitations
- Low blood pressure
- PMS
- Headaches
- Unexplained hair loss
- Excessive hunger
- Indigestion
- Alternating diarrhea and constipation
- **Autoimmune diseases**
- Insomnia

Stress and the Thyroid

- 20 million Americans have hypothyroidism
- 10-40% of Americans have suboptimal thyroid function
- **The thyroid is at the mercy of cortisol**

Stress and the Thyroid

- Depression
- Heart disease
- **Chronic fatigue**
- **Fibromyalgia**
- PMS (premenstrual syndrome)
- Menopausal symptoms
- **Muscle and joint pains**
- Irritable bowel syndrome
- **Autoimmune disease**
- High cholesterol
- Irregular Menstruation

- Low Libido
- Infertility
- Gum Disease
- Fluid retention
- Skin conditions such as acne and eczema
- **Memory problems**
- Poor stamina
- Weight gain
- **Lethargy**
- Poor quality hair and nails
- Hair loss
- Cold hands and feet
- Constipation

Stress and The Pancreas

Consequences of a overstimulated Pancreas due to stress:

- Diabetes
- Heart disease
- Heart attack
- Stroke
- Glaucoma
- Cataracts
- Retinopathy
- Blindness
- Bacterial infections
- Fungal infections
- Itchy skin
- Digital sclerosis
- Neuropathy
- Kidney disease
- High Blood pressure
- Foot ulcers
- Gastroparesis
- Hearing loss
- Alzheimer’s disease

Other Effects of Chronic Stress

- **4 times less blood flow to your digestive system**
- Decreased metabolism
- Decreased enzymatic output in your gut – as much as **20,000-fold**!
- Decreased nutrient absorption
- Decreased oxygenation to your g
- **Elevated cholesterol**
- Elevated triglycerides
- Decreased gut flora populations
- **Increased food sensitivity**

The Perfect Recipe for Disaster

- **Chronic Stress: Chemical, Physical, Emotional**
- Adrenal Fatigue
- Thyroid hyper-stimulation
- Pancreatic overload
- Hormonal Imbalances
- Nutrient Deficient Diet
- A Sedentary Lifestyle
- Toxic environment
- Toxic, processed Food
- Antibiotics
- Medications
- Surgery that removes vital organs

The Cause of All Thyroid Problems

Toxicity + Deficiency = Dis-Ease

- Hypothyroidism
- Hyperthyroidism
- Graves' Disease
- Hashimoto's Disease
- Autoimmune Disorder
- Cancer

Why aren't Doctors looking at Thyroid disruptors?

Estrogen Dominance:

Chronically elevated estrogen levels can occur from exposure to estrogenic food or from taking birth control pills.

Medications

Medications like steroids, barbiturates, cholesterol lowering drugs, and beta blockers can disrupt thyroid function

Endocrine-disrupting Chemicals

Mercury, lead, phthalates, and bisphenol-A (BPA) have all been linked to thyroid problems

Why aren't Doctors looking at Thyroid disruptors?

Bromine Exposure

- Bromine, chlorine, and fluoride can all disrupt thyroid function if someone is deficient in iodine.
- Competing Halogens which mimic iodine (bromine, fluorine, and chlorine)
- **Bromine and fluorine can't be broken down** so they build up in your tissues
- They also grab onto your iodine receptors and **block the action of iodide** and thyroid hormones

Sources of Bromine

- Pesticides (methyl bromide) used mainly on **strawberries** in California
- Plastics: used to make computers
- Bakery goods and flours often contain a "dough conditioner" called **potassium bromate**
- Soft drinks: including Mountain Dew, Gatorade, Sun Drop, Squirt, Fresca, and other citrus-flavored sodas – in the form of **brominated vegetable oils (BVOs)**
- Medications such as Atrovent inhaler, Atrovent Nasal Spray, Pro-Banthine (for ulcers), and anesthesia agents
- Fire retardants: used in fabrics, carpets, upholstery, and mattresses

Why aren't Doctors looking at Thyroid disruptors?

Fluoride

- Fluoride is still added to most water supplies around the world
- It alters function of the thyroid, parathyroid, adrenal glands, pancreas, pituitary gland and pineal glands
- **It mimics thyroid-stimulating hormone, damages cells of the thyroid gland**
- **Disrupts conversion of T4 to T3**

Why aren't Doctors looking at Thyroid disruptors?

Heavy Metals

- In addition to vaccines, heavy metals like mercury are in large fish and amalgam fillings
- **Mercury displaces the trace mineral selenium which is involved in the conversion of thyroid hormones T4 to T3**

First Step: Limit Your Exposure to Toxins

- Stop any further vaccinations
- **Filter your water** to remove fluoride and chlorine (drinking and showering)
- Buy toothpaste that is fluoride free
- Get mercury **amalgam fillings** removed from your mouth
- Choose **small coldwater fish** which don't contain high levels of mercury

Filter your Water

- You need both shower and drinking water filters
- **Make sure they remove Fluoride and Chlorine**
- My favorite water filters:

  Doulton USA and Berkey

Vegetable Oils can Disrupt the Thyroid

- Long-chain fatty acids in **vegetable oils oxidize quickly and become rancid** (Oxidative Stress)
- This is why manufacturers highly refine their oils which appears on the package as (**Hydrogenated or partially hydrogenated**)
- These are **very damaging to cell tissue and can disrupt thyroid function by preventing the conversion of T4 to T3**

Avoid Unhealthy Fats

“Their [polyunsaturated oils] best understood effect is their interference with the function of the thyroid gland.

Unsaturated oils block thyroid hormone secretion, its movement in the circulatory system, and the response of tissues to the hormone. When the thyroid hormone is deficient, the body is generally exposed to increased levels of estrogen. **The thyroid hormone is essential for making the ‘protective hormones’** progesterone and pregnenolone, so these hormones are lowered when anything interferes with the function of the thyroid. **The thyroid hormone is required for using and eliminating cholesterol, so cholesterol is likely to be raised by anything that blocks the thyroid function.”**

Ray Peat Ph.D.

Soy has become a huge problem

- It’s nearly impossible to find packaged or restaurant food that doesn’t contain soy
- **Soy contains phytoestrogens which disrupts thyroid function**
- When soy was introduced into infant formulas in the 1960’s they **caused goiters in babies**
- **Soy Formula has been linked to autoimmune thyroid disease** in teenage children
- Soy has been **linked to goiter development and elevations in Thyroid Stimulating Hormone** (TSH)

Avoid Goitrogens

- These are foods that can block iodine from being absorbed
- These are in almost all packaged food products
- Turnips, cabbage, mustard, cassava root, pine nuts, millet, peanuts, and soybeans

- Goitrogenic compounds in vegetables are often deactivated by heating so don't eat broccoli, cabbage or other cruciferous vegetables raw.
- The goitrogenic effects of soy are lessened if the soy is fermented -- in products such as miso and tempeh

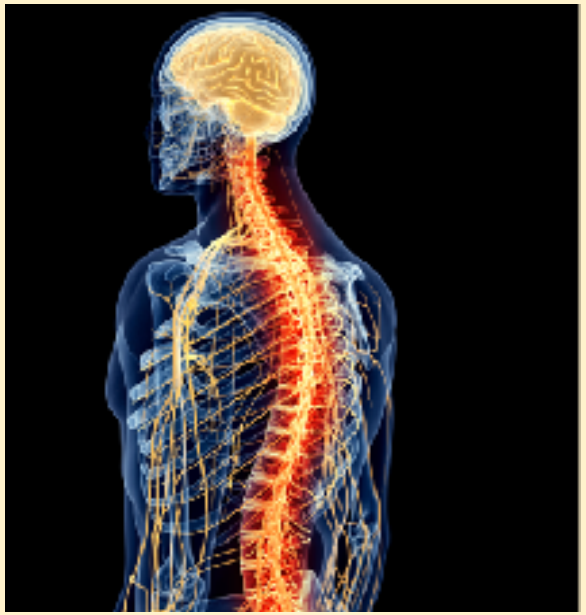
Avoid All Refined Grains and Sugar

- **These are taxing on the thyroid**

- **Avoid** white and wheat bread, rolls, biscuits, pancakes, pizza dough, pasta, and buns
- Avoid all grains until your thyroid function has been restored, then only consume sprouted grains

- **Avoid** granulated sugar, brown sugar, corn syrup, maple syrup, honey, molasses, fructose, and brown rice syrup.
- Use stevia as a sweetener

The 5 Keys to Health and Healing



Proper nerve supply

Regular Exercise

Proper Nutrition

Sufficient Rest

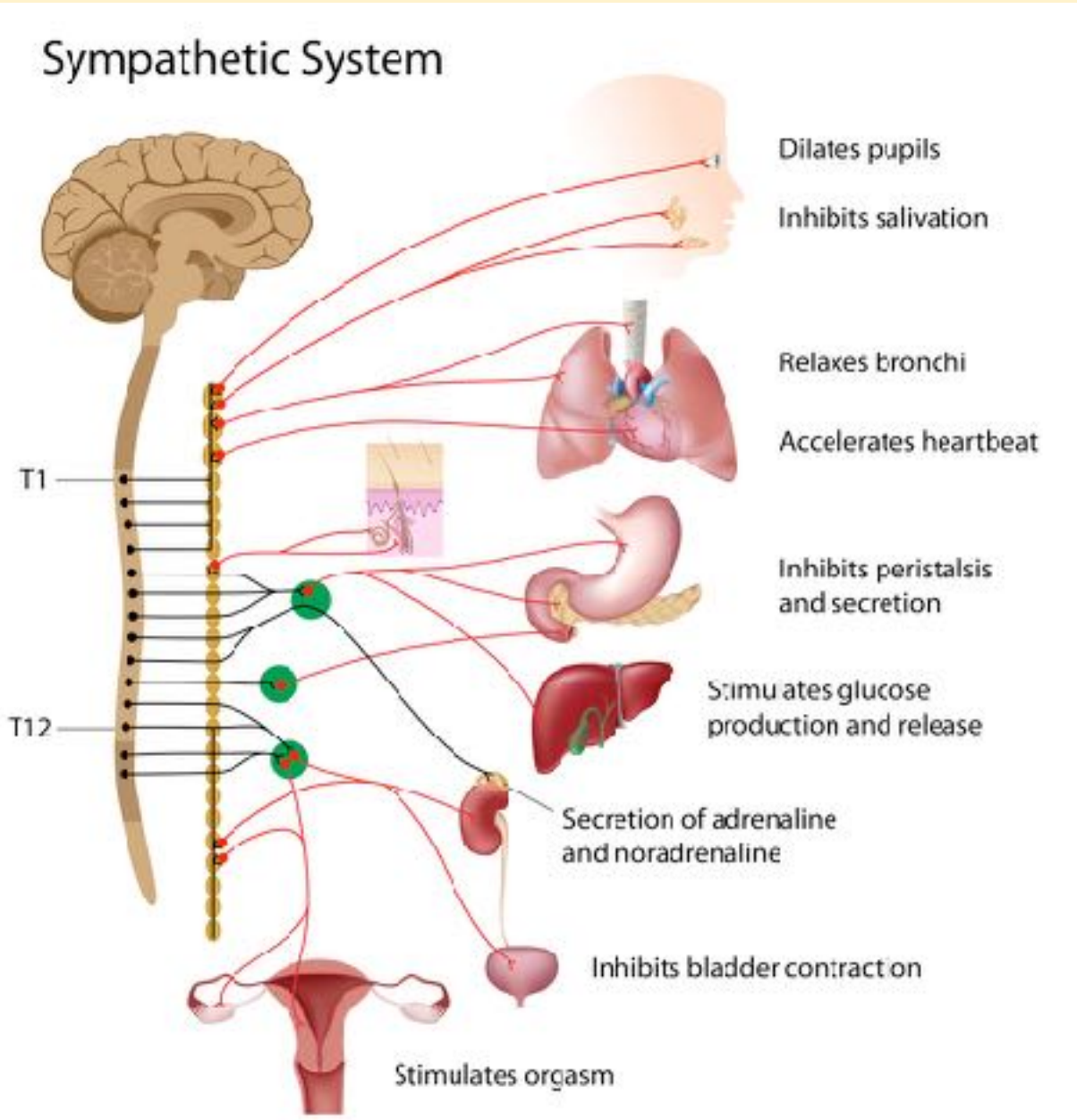
Prayer and Meditation

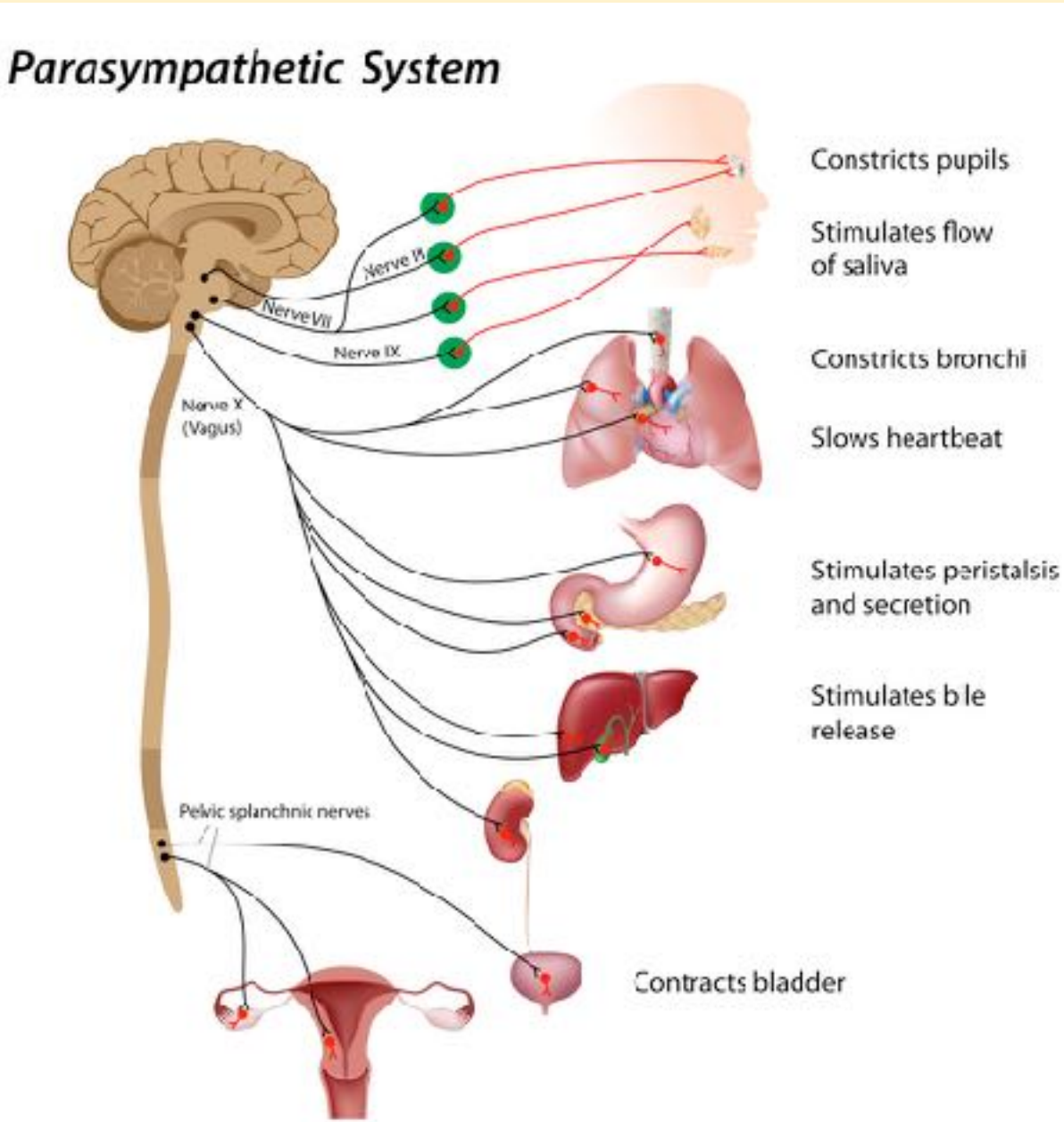
Nerve Supply: The Hypothalamus

- **Is the body's CEO, the Endocrine commander**
- Has sensors throughout the Central Nervous System
- Communicates with the Autonomic Nervous System

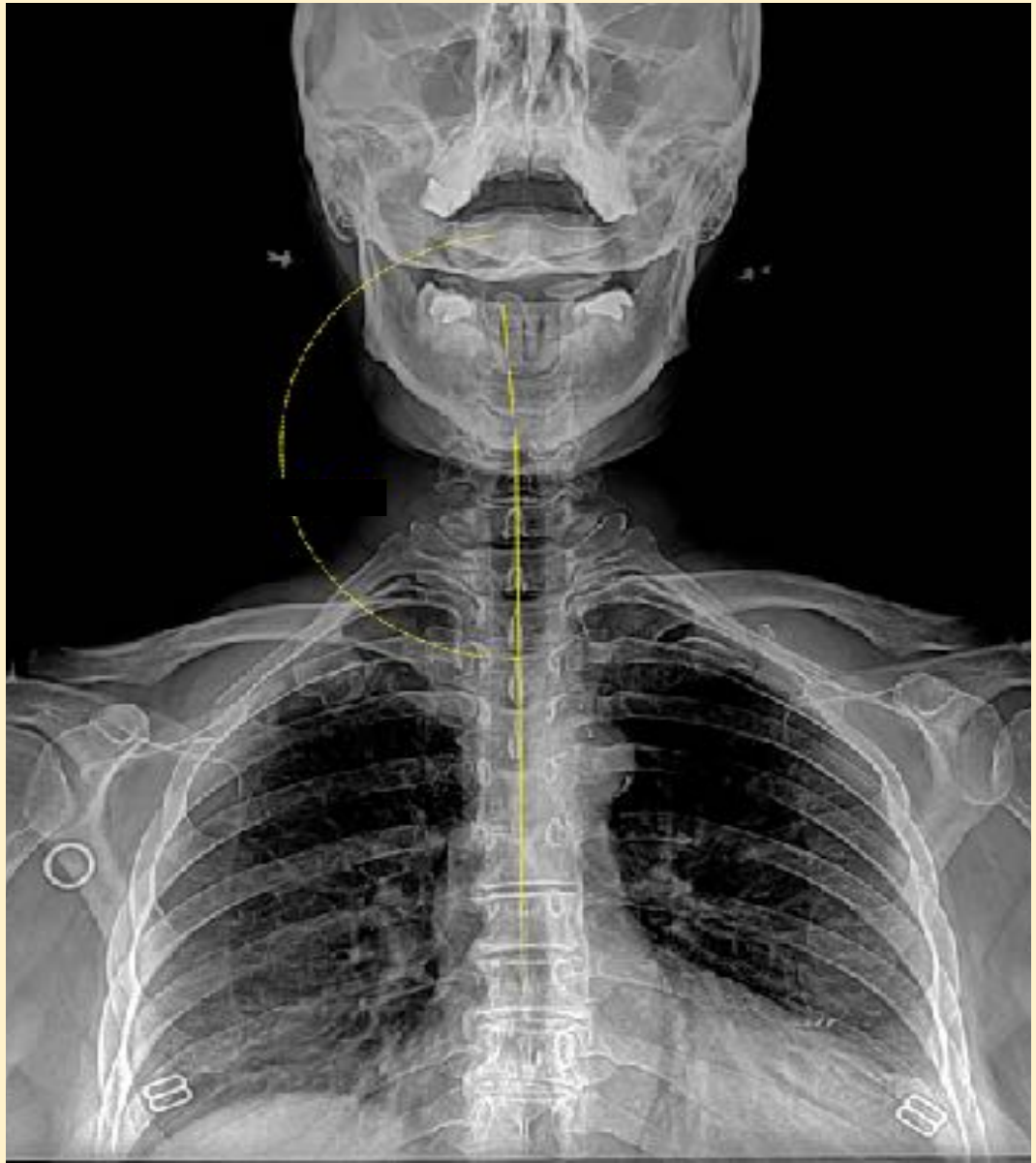
- Responsible for orchestrating the events of the endocrine system
- Controls autonomic reflexes (heart and smooth muscles)
- Houses the body's "thermostat" and biological clock
- Maintains the body's circadian rhythm
- Initiates part of the adrenal stress response

The Autonomic Nervous System





Altered structure causes Altered Function



Chiropractic Care and the Autonomic Nervous System

"Recent neuroscience research supports a neurophysiologic rationale for the concept that aberrant stimulation of spinal or paraspinal structures may lead to segmentally organized reflex responses of the autonomic nervous system, which in turn may alter visceral function."

Journal of Manipulative and Physiological Therapeutics

"High-velocity and low-amplitude manipulation of the thoracic spine appears to be able to influence autonomic output to the heart"

Journal of Manipulative and Physiological Therapeutics

Proper Exercise

Regular Exercise helps you:

- Get high-quality sleep
- Lose, gain, or maintain weight
- Improve your resistance to infection
- Improve your brain function
- Prevent and relieve chronic pain
- Improve your Emotional health
- Lower your risk of cancer, heart disease, and diabetes
- **Exercise stimulates thyroid gland secretion and increases tissue sensitivity to thyroid hormones**

Iodine for a Healthy Thyroid

- The **Key to a healthy thyroid and efficient metabolism**, and comprises a large part of the thyroid hormone molecule
- T4 has four attached iodine molecules
- T3 (the biologically active form of the hormone) has three
- **Iodine deficiency is one of the three most common nutrit s, along nd vitam**

Solution For Iodine Deficiency

- **Iodine supplementation or adding sea vegetables to your diet.**

How Much Iodine is Needed Daily?

- **In Japan** the daily dose of iodine obtained from diet averages **2,000 to 3,000 micrograms (mcg)** or 2 to 3 milligrams (mg)
- **The US recommended daily allowance (RDA) is 150 mcg**
- Some doctors like Dr. David Brownstein, author of the book "Iodine: Why You Need It. Why You Can't Live Without It" recommends **12.5 milligrams** on a regular basis.

So How Much Iodine?

- **Get as much of your iodine through natural sources**
- High dose supplementation can be beneficial for a short period of time but there are potential risks to taking too much iodine
- **Daily supplementation** of a few milligrams (mg) is enough for most people

Important Note:

- Tyrosine, selenium, vitamins A and D, zinc, B vitamins, and omega-3 fats are all needed in order to utilize iodine properly

Consume Iodine Rich Food

Sea vegetables

- **Kombu** added to soups or bean dishes
- **Black seaweed** on salads or added to soup
- Season foods with **dulse or kelp powder** instead of salt

Eat More Fish

- **Smaller coldwater fish: Wild Salmon, mackerel, anchovies**
- Avoid farm-raised fish
- Avoid larger fish: tuna and swordfish (high in mercury)

Vitamins and Minerals for Thyroid Health

- Zinc
- Selenium
- B vitamins
- Vitamin C
- Vitamin E
- Vitamin A

Juicing for Thyroid Health

Radishes and radish juice

- A sulphur compound in radishes is a **regulator of thyroxine and calcitonin**
- With this sulphur compound in the bloodstream, the thyroid is less likely to over- or under-produce hormones

The Thyroid Tonic

- Carrots, cucumber, celery, radishes and lemon
- Add some powdered kelp or dulse for iodine

The Cranberry Tonic

- Cranberries that are grown near the sea **contain iodine**
- Cranberries, low sugar apple (Pippin or Granny Smith), squeeze of lemon

Coconut Oil for Thyroid Health

- Is a **medium-chain triglyceride**
- One of the most stable oils which makes it great for cooking because it will not easily turn to trans fatty acids when heated
- Has a shelf life of 3-5 years at room temperature
- **Doesn't need to be broken down by enzyme dependent processes like Long-chain fatty acids**
- Reduces body fat and improves insulin sensitivity and glucose tolerance
- Increases energy expenditure and decreases adiposity
- Results in faster satiety and facilitates weight control

But I have an Autoimmune Disorder …right?

Omega 3 and Autoimmune Diseases

Excessive amounts of omega-6 polyunsaturated fatty acids (PUFA) and a very high omega-6/omega-3 ratio, as is found in today's Western diets, promote the pathogenesis of many diseases, including cardiovascular disease, cancer, and **inflammatory and autoimmune diseases**, whereas increased levels of omega-3 PUFA (a low omega-6/omega-3 ratio) exert suppressive effects."

(Journal of Biomedicine and Pharmacotherapy)

Vitamin D and Autoimmune Diseases

"Vitamin D plays key roles as a natural immune modulator and has been implicated in the pathophysiology of autoimmune diseases."

"Vitamin D exerts important regulatory functions on cells from the innate as well as from the adaptive immune response. Indeed, **accumulating evidence has shown that insufficient vitamin D levels may lead to dysregulation of immune responses, and thus contribute to autoimmune diseases.**"

Frontiers in Immunology

Vitamin D

Vitamin D Deficiency is linked to:

- Digestive disorders
- Skeletal disorders including osteoporosis
- Depression, mental disorders
- Neurodevelopmental disorders (Autism)
- Brain Dysfunction, dementia and Alzheime
- Chronic infections
- Cardiovascular disease
- All types of Cancer
- **Autoimmune Diseases**
- Premature Aging

Optimize Your Vitamin D levels

- **UVB exposure** from the Sun is the best way to optimize your vitamin D levels
  - At least 20 minutes of **sun exposure daily** during mid day
  - Your shadow shouldn't be longer than your height

- Most regions of the planet don't get proper sunlight for **6 months** out of the year
- Vitamin D3 supplementation during the winte
- Adults required about **8,000 IUs per day**

Vitamin D and Vitamin K2

- Vitamin K2 is essential for proper utilization of vitamin D

Sources of Vitamin K2

- Grass-fed organic animal products (eggs, butter, dairy)
- Fermented foods
- Certain cheeses (Brie, Gouda)

Vitamin E and Autoimmune Disease

"The present study suggests that **vitamin E** can suppress autoantibody production via a mechanism independent of antioxidant activity."

Natural Product Research Journal

Vitamin E and Autoimmune Disease

Since vitamin E is a physiologic stabilizer of cellular and lysosomal membranes, we suggest that a relative **deficiency of vitamin E damages lysosomal membranes, thus initiating the autoimmune process**."

Cutis Journal

Natural Sources of Vitamin E

- Almonds
- Spinach
- Sweet Potato
- Avocado
- Wheat germ
- Sunflower seeds
- Palm oil
- Butternut squash
- Trout
- Olive Oil

The Cause of All Thyroid Problems

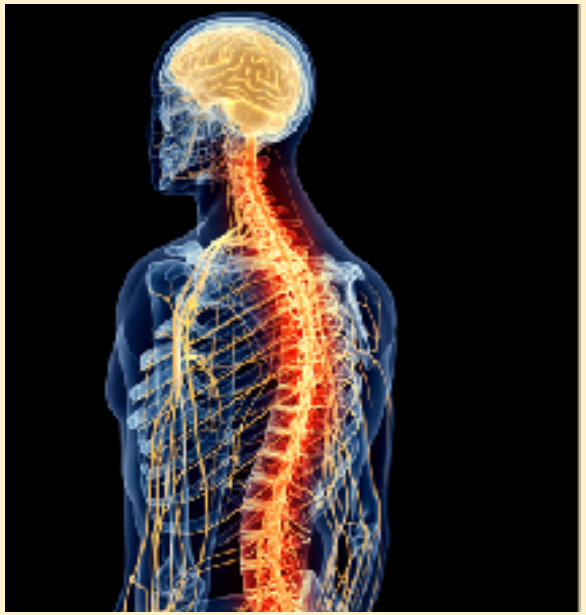
Toxicity + Deficiency = Dis-Ease

- Hypothyroidism
- Hyperthyroidism
- Graves' Disease
- Hashimoto's Disease
- Autoimmune Disorder
- Cancer

The Solution for All Thyroid Problems

Purity + Sufficiency = Optimal Health

The 5 Keys to Health and Healing



Proper nerve supply

Regular Exercise

Proper Nutrition

Sufficient Rest

Prayer and Meditation

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