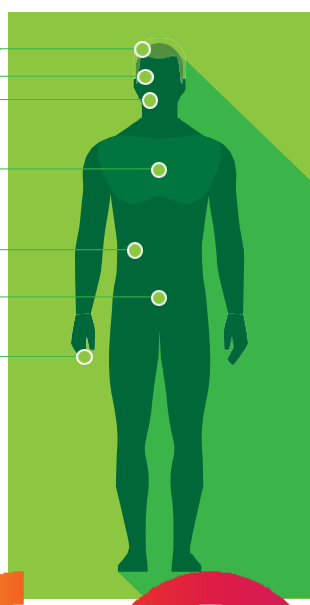


Hypothyroidism

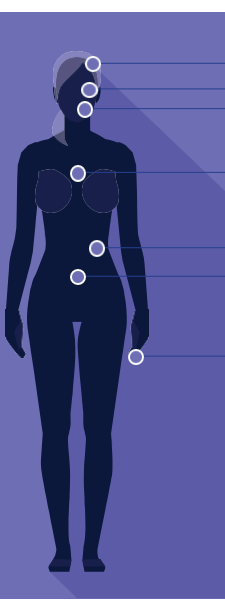
- Dry, Coarse Hair
- Thinning of Lateral Third of Eyebrow
- Puffiness in Face (especially on awakening)
- Slow Heart Rate
- Weight Gain
- Constipation
- Brittle Nails
- Low Body Temperature (<97.6F)
- Cold Intolerance (even in summer)
- Depression
- All Day Fatigue, Muscle Aches

SYMPTOMS



Hyperthyroidism

- Hair Loss
- Bulging Eyes
- Thin, Hollow Face
- Rapid Heart Rate
- Weight Loss
- Diarrhea
- Soft Nails
- High Body Temperature (<98.8F)
- Sweating, Heat Intolerance
- Irritability
- "Wired & Tired," Muscle Weakness



THYROID INFOGRAPHIC

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ETIOLOGY OF TREATMENT FAILURE

- Advanced Age
- Stress
- Chemotherapy or Radiation Exposure
- Extreme Exercise
- Low Iron
- Excess Goiterogen Activity
- Taking other meds at same time of thyroid meds
- Toxin Exposure
- Inflammation
- Low Testosterone

Test/Study

"Normal"

"Optimal"
ie - our goals

DIAGNOSIS

TSH	0.45-4.5 mIU/L	0.8-2.0 mIU/L
Free T3	2.3-4.2 pg/ml	3.8-4.2 pg/ml
Free T4	0.7-1.53 ng/dl	1.0-1.53 ng/dl
Reverse T3	< 14 pmol/L	< 14 pmol/L
Free T3/rT3 Ratio (fT3 x 100)/rT3	> 20	< 20
TPO	< 9 IU/ml	< 9 IU/ml
Antithyroglobulin Antibody	< 1 IU/ml	< 1 IU/ml
Vitamin B12	200-900 pg/ml	> 800 pg/ml
Ferritin	(M) 12-300 ng/ml; (F) 12-150 ng/ml	90-120 ng/ml
25 hydroxy Vitamin D	30-100 ng/ml	50-100 ng/ml

01

Gastrointestinal-Immune-Thyroid Connection

02

Heavy Metal-Toxin-Thyroid Connection

06

Autoimmune-Nutrient-Thyroid Connection

ROOT CAUSES OF THYROID DISEASE

03

Infectious Disease-Thyroid Connection

05

Autoimmune-Iodine-Thyroid Connection

04

Adrenal-Thyroid Connection

1. GASTROINTESTINAL-IMMUNE-THYROID CONNECTION

Etiology

Diet

- Gluten
- Sugar
- Industrial seed oils
- Nightshades - Potatoes, Tomatoes, Eggplant, Peppers (excluding Black Pepper)

Antibiotics

Drugs and Xenobiotics

Stress

Infections

Cytokines and Neurotransmitters

Enzymes

Physiologic Changes

- Intestinal Barrier Dysfunction
- Food Allergy and Intolerance
- Immune System Abnormalities
- Autoimmunity

Remedy

- Remove inflammatory foods
 - Gluten, dairy, corn, soy, eggs and sugar
 - Gastric irritants: alcohol, caffeine, drugs
 - Infections, even low grade infections
- Replace essential nutrients for proper utilization of foodstuff and proper digestion
 - Digestive enzymes
 - Hydrochloric acid
 - Bile salts
- Restore the normal GI flora
 - Probiotics containing bifidobacteria and lactobacillus (25-100 billion units/day)
 - Prebiotics
 - Fiber
- Repair the gastrointestinal lining
 - L-glutamine
 - Zinc
 - Omega-3 fish oil
 - Vitamins A, C, E
 - Slippery elm
 - Aloe vera

2. HEAVY METAL-TOXIN-THYROID CONNECTION

Etiology

- Roundup (glyphosate) - Endocrine system, GI bacteria balance, DNA damage, Cancer mutations
- PCBs - Brain impairment
- Triclosan - present in soap, toothpaste and bath towels, limb deformities
- Phthalates - Fragrances, thyroid abnormalities
- Perfluorooctanoic acid - Non-stick cookware, microwave popcorn bags
- Mercury - Sushi, cosmetics, vaccines, pesticides, dental fillings, coal-fired power plant residue
- Perchlorate - Fireworks, fertilizer, rocket fuel
- Nitrates - Fertilizer, processed or cured meats (hot dogs and bacon); spinach and celery naturally contain nitrates

Remedies

- Avoidance (nearly impossible)
- HEPA filters to clean the air
- Water filters
- Organic, grass-fed meats
- Fish with lower mercury levels (salmon vs. tuna)
- Avoiding processed and cured meats (or using nitrate-free cured products)
- Organic skin care products
- Dental amalgams removal
- Liver detoxification
 - Intravenous glutathione
 - N-Acetyl-Cysteine (glutathione precursor)
 - Milk thistle
 - Vitamin C

Etiology

- Constant unremitting stress hijacks normal hormonal responses, re-depleting the adrenals' resources to combat the "evil" of the moment.
- The other functions of the adrenal hormones, digestion, immune response, and thyroid hormone production, are temporarily put on hold or slowed until the stress has passed.
- In an ideal world the stress is resolved, or passes quickly, and the adrenals get on with their business.
- In our nonideal world, stresses not only linger and get worse, but newer stresses arise compounding the problem.
- This state of chronic stress puts the adrenals in overdrive. The body is flooded with cortisol driving the adrenals to make more.
- Eventually the adrenals can no longer keep up resulting in a "burn-out" type situation.
- High Cortisol signals brain to lower the production of stressor hormones. Unfortunately thyroid hormone is produced in the same pathway and it too, unwittingly, is lowered.
- Stress hormones affect enzymes that convert T4 to T3. Converts T4 into the inert unusable reverse T3.
- Thyroid Resistance
 - Elevated cortisol levels release inflammatory cells
 - Desensitizes thyroid receptors to thyroid hormone.
 - Like diabetics who don't respond to insulin
 - Have adequate thyroid hormone, but inadequate thyroid utilization.
- Estrogen
 - increases w increased cortisol
 - increases thyroid binding globulin tying up T3 and T4 lowering hormone levels to achieve the conversion to free T3.
- Elevated cortisol levels with its' inherent state of chronic inflammation can trigger "leaky gut syndrome."

5. AUTOIMMUNE-IODINE-THYROID CONNECTION

Etiology

- Iodine is necessary for the production of T4.
- Iodine must come from the diet
- Iodine resides in the ocean
- Seafood, esp. seaweed are good sources of iodine.
- Iodine is added to salt as a rule.
- Halogens:
 - Iodine
 - Fluoride
 - Chlorine
 - Bromine
- Halogens can mimic iodine, causing displacement and thyroid dysfunction.
- Halogens and Household Products

a. Fluoride/Flourine	Anesthetics	Soda
Toothpaste	SSRI inhibitors (Prozac, etc.)	Insecticide
Infant Formula	Wine	Antibiotics
Beer	Processed cereals	Antiviral medications
Tea (higher in decaf)		
b. Chlorine	Bath water	Unfiltered drinking water
Plastics	Pesticides	Splenda (sucralose)
Paper products		
c. Bromine/Bromide	Citrus flavored soft drinks	Chemical additive used in municipal water purification
Brominated flour products	Dyes	
Pesticides	Leaded fuel additive	
OTC antitussives (cough medicines)		

Remedies

Iodine Remedies

- Foods
 - Sea vegetables, saltwater fish
- Supplements
 - Iodine 225 micrograms (low dose)
 - "Homeopathic" dose to stimulate own iodine production
 - Higher doses, 12.5 milligrams can lead to hyper- and, if unchecked, hypo-thyroidism
- Water filter
- Fluoride-free toothpaste
- Avoid food dyes, gluten-containing breads
- Organic produce
- Use glass containers

3. INFECTIOUS DISEASE-THYROID CONNECTION

Etiology

Herpes simplex 1 and 2

- Causing oral and genital herpes

Epstein-Barr virus

- Mononucleosis, multiple sclerosis, lupus, chronic fatigue syndrome and fibromyalgia

Yersinia enterocolitica

- Food poisoning from uncooked pork, and contaminated meat and dairy

Hepatitis C

- Blood or body fluids of an infected person

H. pylori

- Bacteria that attacks stomach lining, creating ulcers

Diagnosis

- Blood cultures - Herpes, Epstein-Barr, Hepatitis, H. Pylori
- Stool cultures - Yersinia, H. Pylori

Remedies

- Viral infections (Herpes, Epstein-Barr, Hepatitis)
 - Humic Acid - Monolaurin
 - Free-radical scavenger and natural antioxidant
 - Binds positive and negatively-charged ions, boosting the immune system
 - Contains olive leaf, a known anti-viral, anti-bacterial and anti-fungal agent
- Bacterial infections (Yersinia and H. pylori)
 - Antibiotics
 - GI tract flora protection (Pro and prebiotics)
 - Chicken soup and a little Vitamin D wouldn't hurt

4. ADRENAL-THYROID CONNECTION

Diagnosis

- The Adrenal Stress Index Panel (DiagnosTech) - Saliva Test - Measures Cortisol levels on four occasions throughout a single day. Cortisol levels normally are high upon awakening and then quickly fall and flatten out by noon.

Remedies

Reducing stress (easier said than done at times)

- Proper diet
- Exercises
- Stress-reduction techniques
 - Yoga, Pilates, Qi Gong, Meditation, Massage, Infrared sauna
 - Lifestyle changes may be the only way to better health

Supplements

- Adaptogenic Herbs (Fatigue Fighter)
 - Rhodiola
 - Ginseng
 - Coaryceps
- DHEA (the "stagecoach stop") - All the other hormones work better
- 5 HTP (for sleep, wellbeing and mood regulation)
 - Adrenal Glandular
 - Balance cortisol
 - Replenish catecholamines (dopamine, norepinephrine, and epinephrine)
- Cortef (low dose cortisone as a last resort)

6. AUTOIMMUNE-SUPPLEMENT-THYROID CONNECTION

Selenium

- Converts T4 (the inactive form of thyroid hormone) to T3 (the active form)
- Protects body against hydrogen peroxide
- Reduces TPO (autoimmune) levels
 - Foods: Brazil nuts, meats, fish and shellfish
 - Dose: 200 mcg/day

Zinc

- Aids in conversion of T4 to T3
- Key nutrient for adequate production of TSH
 - Foods: Beef
 - Dose is 25-35 mcg/day

Protein - necessary to transport TSH to the tissues

Magnesium

- For production of TSH

Iodine

- Helps the body build T4

Vitamin C - helps deliver iodine into T4

Ashwagandha and Guggulipids - stimulate the production of T4 and T3

Forskolin - increases production of cAMP resulting in increased thyroid hormone function. Forskolin, touted as a weight reduction agent, increases circulating hormone resulting in a net loss of body fat

L-Tyrosine - creates thyroid molecules. It is useful in depressive states and in chronic fatigue syndrome. Do not use if you have hypertension