S.H.I.N.E. Handout Packet
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Adrenal Assessment Scorecard

Adrenal Assessment

Name	

Based upon your health profile for **the past 30 days**, please select the appropriate number, from '0 - 3' on all questions (0 as least/never/no and 3 as most/always/yes). Check the number you feel best applies, then add the number of checks in each column to create your score.

Point Scale:
0 = **Never** or almost never have the experience/effect.
1 = **Mild** experiences/effects
2 = **Moderate** experiences/effects
3 = **Severe/chronic** experiences/effects
For all **yes/no** questions, 0 = no and 3 = yes

Adrenal Symptom Question	0	1	2	3
Are there nights when you cannot stay asleep?				
Do you experience afternoon headache(s)?				
Do you crave salt?				
Are you a slow starter in the morning?				
Do you experience afternoon fatigue?				
Do you experience dizziness when standing up quickly?				
Do you experience headache(s) with exertion or stress?				
Do you tend to be a "night person"?				
Do you have difficulty falling asleep?				
Do you tend to be keyed up, and/or have trouble calming down?				
Is your blood pressure above 120/80?				
Do you experience headache(s) after exercising?				
Do you feel wired or jittery after drinking coffee?				
Do you clench or grind your teeth?				
Are you calm on the outside, but troubled on the inside?				
Do you have chronic low back pain that worsens with fatigue?				
Do you have difficulty maintaining manipulative correction?				
Do you experience pain after manipulative correction?				
Do you have arthritic tendencies?				

Adrenal Symptom Question	0	1	2	3
Do you crave salty foods?				
Do you salt foods before tasting?				
Do you perspire easily?				
Do you have chronic fatigue and/or get drowsy often?				
Do you have bouts of afternoon yawning?				
Do you have asthma, wheezing, and/or difficulty breathing?				
Do you experience pain on the medial or inner side of the knee?				
Do you have a tendency to sprain ankles or experience "shin splints"?				
Do you have a tendency to need sunglasses?				
Do you have allergies and/or hives?				
Do you ever suffer from weakness and/or dizziness?				
Total for Each Column (number of checkmarks x value)				
Grand Total /90				

0-10% - Overall good adrenal balance. Sound nutrition and healthy habits will maintain good balance.

11-20% - Your adrenals are In need of a tune up to restore balance before serious illness sets in. Diet and lifestyle improvements should shift to normal.

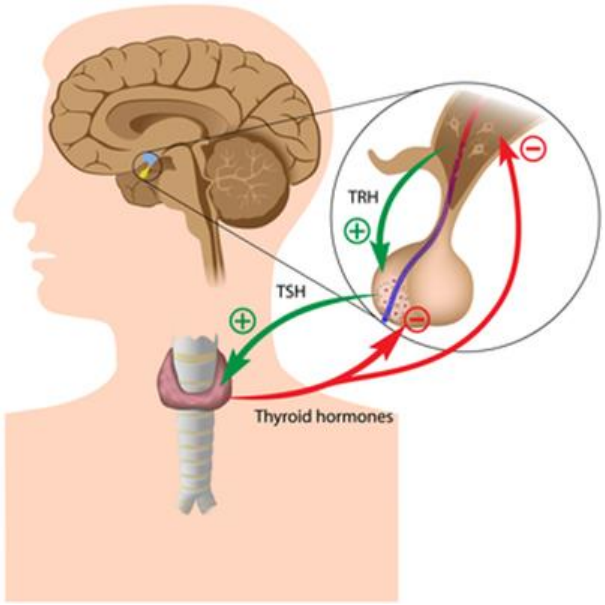
21-35% - Your adrenals are out of balance and need attention.

36-50% - Your adrenals are very compromised and this is likely to significantly affect your state of health, well-being and energy level.

51-100% - Your adrenals are severely compromised and require immediate attention.

Adrenal Fatigue vs. Low Thyroid Function Differentiation via Major Symptoms and Details Chart

Sign or Symptom	Hypothyroid Tendency	Hypoadrenal Tendency
Body temperature	Low and consistent	Low and fluctuates
Energy pattern	Generally sluggish	“Wired and tired”
Body type	Difficulty losing fat	Difficulty gaining muscle
Blood pressure	Normal to high	Low to normal
Total cholesterol	High	Low
Facial color	Reddish	Pale
Sweating	Scanty or none	Profuse
Bowels	Sluggish / constipated	Irritable or hyper functioning



Adrenal Fatigue vs. Low Thyroid Function Details

Key:
-generally absent; +possibly present; ++often present; +++always or almost always present

Signs and Symptoms	Adrenal	Mixed	Thyroid
Body Type	Mild: Gains weight easily; Moderate: Can't lose weight; Severe: Thin, can't gain weight	Gains easily, goes to tummy/hips first, very hard to lose	Weight gain, generalized or global, extremely hard to lose
Face Shape	Eyes, cheeks sunken when severe	Normal	Full, puffy around eyes
Eyebrows	Tend to be full	Normal to sparse	Very sparse outer 1/3 to 1/2
Tissue Around Eyes	Sunken appearance, may have dark circles	Normal or some "bags" under the eyes	Puffy around the eyes, often bags under the eyes
Facial Coloring	Tendency to pallor, especially around mouth. In dark skin, it darkens around mouth, forehead, sides of face	Pallor around mouth (more visible with light skin)	Ruddy or rosy complexion, including around the mouth
Hair Quality	Thin and wispy. May become straw-like or straighter. Dry. Falls out easily. Sparse on forearms or lower legs.	Tendency to become sparse	Tends to be coarse, sparse, may become wavy or curly (rare) or change color. If severe enough, hair loss is common.
Nails	Thin, brittle	Break easily	May be thick

Adrenal Fatigue vs. Low Thyroid Function Details

Key:
-generally absent; +possibly present; ++often present; +++always or almost always present

Signs and Symptoms	Adrenal	Mixed	Thyroid
Skin Quality	Dry, thin, finger-prints often "smoothed out" or flat/shiny and may have longitudinal wrinkles over finger pads (probable cause is low collagen level)	May be thin, dry, bruise easily, poor healing.	May be oily or moist. Poor healing, May bruise easily. Skin thickness is normal (not thin). Typically good quality finger prints.
Fluids/Secretions	Dry skin, little secretions. Can't hold onto water.	Mixed, e.g. dry body and oily face	Good secretions. Skin may be oily. Tendency to fluid retention.
Connective Tissue Quality (ligaments, tendons, skin, hair, and nails)	Lax ligaments or flexible (e.g. flat feet, double jointed). Joint strains/sprains are common.	Mixed	Poor flexibility.
Pigment Distribution	Vitiligo (white spots or patches) in late stage. May tan too easily. In dark skin, darker on forehead, sides of face, around mouth and chin/jaw.	Milder version of vitiligo (small patches or tiny white spots on arms and/or legs) and dark patches if dark skin.	In pure hypothyroidism, vitiligo and hyperpigmentation are very rare.
Fluids/Secretions	Dry skin, little secretions. Can't hold on to water.	Mixed, e.g. and dry body and oily face	Good secretions. Skin may be oily. Tendency to fluid retention.
Light Sensitivity or Night Blindness	++	+	-

Adrenal Fatigue vs. Low Thyroid Function Details

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Signs and Symptoms	Adrenal	Mixed	Thyroid
After Image (e.g. seeing the image of a flash bulb or bright light moving by longer than others)	++	+	+/-
Typical Pains	Headaches, migraines, muscles, carpal tunnel	Muscles, carpal tunnel	Occasionally joints, muscles, feet/lower legs
Temperature Pattern	Thermal chameleon (hot when it's warm and cold when it's cool). Poor thermoregulation. Tends to low body temperature around 97.8 or lower. Fluctuating pattern.	Fluctuating pattern, usually averaging 97.8 but can be lower	Stable, non-fluctuating pattern, average can be from low 90's to a little below 98.6
Cold Intolerance	+++	++	+/-
Heat Intolerance	+	++	+++
Cold Hands / Feet	+++	Happens often	-
Warm Hands / Feet (in spite of low body temperature)	-	Happens occasionally	++
Sweating	May be excessive in early phase. Poor sweating in late phase.	May appear normal	Normal to increased, more oily than 'wet'

Adrenal Fatigue vs. Low Thyroid Function Details

Key:
-generally absent; +possibly present; ++often present; +++always or almost always present

Signs and Symptoms	Adrenal	Mixed	Thyroid
General Reactivity: emotional, physiological, immune, etc.	Hyper-reactive (over)	Moderate	Hypo-reactive (under)
Immune Function	Tendency to over-react results in allergies, sensitivities, autoimmune problems	Mixed	Tendency to under-respond results in infections (sinus, bladder, bowel, skin, etc.)
History of EBV or Mononucleosis	+++	++	+/-
Sensitivity to Medications, Supplements etc. (needs small doses)	++	+	-
Intuitive. Picks up other people's feelings (e.g. at malls, parties).	++	+	+/-
Personality Tendency: Humor	+/-	+	++
Personality Tendency: Serious	++/+++	++	+/-
Depression	+	++	+++

Adrenal Fatigue vs. Low Thyroid Function Details

Key:
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Signs and Symptoms	Adrenal	Mixed	Thyroid
Anxiety (panic attacks, worry, Fear, insecurity, feelings of impending doom --any combination. "I thought I was dying..."	+++	++	+
Obsessive Compulsive Tendency	++	+	+/-
Startle Easily	++	+	-
Tolerance to Change/Stress	Poor	Poor/Moderate to good	Moderate
Sleep Patterns	Tendency to one or more: Insomnia, light sleeper, waking up at 2-4 AM, unrefreshing sleep	May or may not have sleep disturbance	Tendency to one or more: Sleepiness, narcolepsy, sleep apnea, unrefreshing sleep
Mental Abilities	Poor focus, clarity, concentration, short-term memory. 'Brain fog'	Poor focus, clarity, concentration, short-term memory.	Poor focus, clarity, concentration, short-term memory. ‘Slow thinking’
Energy Pattern	Complains of fatigue or exhaustion, "wired and tired", can't persevere, low motivation	Variable energy that can be good or poor.	Complains of being tired, sluggish, low motivation

Adrenal Fatigue vs. Low Thyroid Function Details

Key:
-generally absent; +possibly present; ++often present; +++always or almost always present

Signs and Symptoms	Adrenal	Mixed	Thyroid
Exercise Tolerance	Causes fatigue. Can't persevere. If severe, body temperature drops after exercise.	Mixed	Can't exercise much. Tires easily.
Edema (swelling), Non-pitting in Lower Legs	-	+/-	+
Standing Still is Difficult or Causes Discomfort. Walking is Easier	+	+/-	-
Fibromyalgia / Chronic Fatigue	++	++	++
Orthostatic Hypotension (light-headed when getting up to stand from laying or sometimes, even sitting)	++	+/-	-
Blood Pressure	Tends to run low, e.g., from 80/50 at the low end to 110/70 at the high end	Can be low, normal or high	Ranges from normal to very high and poorly controlled by medications

Adrenal Fatigue vs. Low Thyroid Function Details

Key:
-generally absent; +possibly present; ++often present; +++always or almost always present

Signs and Symptoms	Adrenal	Mixed	Thyroid
Heart Palpitations ("feels like my heart was about to jump out of my chest").	++	+/-	-
Mitral Valve Murmur. Prolapse	++	+	+/-
Dietary Habits	Often lean toward being vegetarian or avoids certain foods	Tends to have fewer dietary restrictions than the pure adrenal type	Tends to eat everything
Digestion	Often has difficulty digesting meat, or other proteins. Some foods troublesome	May be normal or difficulty with some foods.	Poor but they often think it's good.
Bowel Function	Tendency to be irritable, or hyperactive, transit time may be too fast (food exits stomach too fast causing poor [enzymatic] digestion)	Poor/mixed	Tendency to constipation, hypoactive, slow transit time (food leaves stomach too slowly) and poor mechanical digestion.
Malabsorption	+++	++	+
Cravings	Sweets, carbohydrates, salt (any combination), black licorice	Mixed	Fats

Adrenal Fatigue vs. Low Thyroid Function Details

Key:
-generally absent; +possibly present; ++often present; +++always or almost always present

Signs and Symptoms	Adrenal	Mixed	Thyroid
Blood Sugar (Hypoglycemia = low blood sugar Hyperglycemia = elevated blood sugar)	Tendency to hypoglycemia. May need many small meals or "crash"	Can range from mild hypoglycemia to hyperglycemia	Normal to hyperglycemia
Problems With Menses and /or Fertility (females)	++	+	+/-

From Metabolic Scorecard at
http://www.drrind.com/therapies/metabolic-symptoms-matrix#5

Adrenal Restoration:
Herbs for Adrenal Reboot According to Stage

Always start slowly, with one new herb at a time and only small amounts to give the body a chance to adapt. I've included the Chinese medicine properties of taste and energy to help you choose. Some herbs are cooling and may not work well for a cold person, whereas some are heating and would overheat a hot person. Read the descriptions and compare to symptoms to determine the best match.

Herbs Suitable for Stage 1 Adrenal Fatigue

☑	Name and Dosage	Taste/ Energy	Who needs it and what it can do
	Ashwaganda **Powder:** ½-1 teaspoon in elixir, 1-2x/day **Tincture:** 30-40 drops 2-3x/day **Capsule:** 400-500 mg, 2x/day	Bitter, warm and dry; good for cold, damp conditions	For weakness, exhaustion, emaciation, memory loss, muscle weakness, overwork, anxiety and insomnia. May also be helpful for tired eyes, joint pain, skin breakouts, cough, anemia, infertility, immune system problems, blood sugar imbalance and low thyroid function. Can reduce vitamin C loss and normalize cortisol levels.
	Chamomile **Tea:** 1-2 teaspoons in 8 oz. water, steep 30-40 min, 3 cups/day **Tincture:** 60-90 drops 3-4x/day	Sweet, pleasant	Relaxing, calming. Good for ADHD, irritability, teething pain, gas, PMS anxiety, stress induced gut symptoms.

Herbs Suitable for Stage 1 Adrenal Fatigue

☑	Name and Dosage	Taste/ Energy	Who needs it and what it can do
	Hops **Tea:** 1-2 teaspoons in 8 oz. water, steep 10-15 min, take 2-3 cups/day **Tincture** 80-100 drops 3-4x/day	Bitter, warm	A sedative and mild nervine, hops is good for nervousness, anxiety, nervous stomach, and insomnia and muscle spasms. It's also a digestive stimulant.
	Lemon Balm **Tea:** 1-2 teaspoons in 8 oz. water, steep 10-15 min, 2-3 cups/day **Tincture:** 80-100 drops 3-4x/day	Sweet, cooling	Mood elevating, calming, helpful for mild to moderate memory loss, insomnia, stress headaches. It's also helpful for ADHD, stomach upset. Large amounts can inhibit thyroid function.
	Magnolia **Tincture:** 12-20 drops 2-3x/day **Capsule:** 200-400 mg, 2-3x/day	Bitter, warm	Lowers cortisol, decreases anxiety 5 times more powerfully than valium, and improves acetylcholine levels in the brain, which means it's helpful for short term memory and may decrease risk of Alzheimer's. Magnolia bark has been used to treat menstrual cramps, abdominal pain, abdominal bloating and gas, nausea, indigestion, coughs and asthma. Research shows that "honokiol" and "magnolol", two chemicals found in Magnolia Bark are up to 1000 times more potent than Vitamin E in antioxidant activity. Found as a capsule (Swanson) and as part of formulas – Integrative Therapeutics Cortisol Manager

Herbs Suitable for Stage 1 Adrenal Fatigue

☑	Name and Dosage	Taste/ Energy	Who needs it and what it can do
	Milky Oat **Tincture:** 80-100 drops 3-4x/day **Glycerite:** 120-140 drops, 3-4x/day	Sweet	Calms nerves, relieves emotional instability, helps restore peace and tranquility to overstressed, angry and chronically upset people. Good for anxiety, withdrawal from cigarettes and coffee, amphetamines and sleep medications. Best for people who are emotionally frazzled.
	Passionflower **Tea:** 1-2 teaspoons in 8 oz. water, steep 20-30 min, take 4 oz., 4x/day **Tincture** 60-80 drops 3-4x/day	N/A	Nervine, sedative, antispasmodic. It's good for anxiety, insomnia caused by a racing mind, stress induced headaches, teeth grinding, still neck, and withdrawal symptoms.
	Rhodiola Rosea **Decoction:** 1-2 teaspoons in 8-10 oz. water 15 minutes - 1-3 cups daily **Tincture:** 40-60 drops 3x/day **Capsule:** 2-4 per day	Sweet, slightly bitter, spicy, cool, dry	Increases the body's resistance against mental and physical stress. Enhances energy, good for depression, frequently good for anxiety, supports immune function, enhances long-term memory, keeps heart rhythms steady, enhances lung function, non-stimulating, enhances alertness, balances blood sugar, assists in reproductive hormone imbalances, enhances memory.

Herbs Suitable for Stage 2 Adrenal Fatigue

☑	Name and Dosage (Take 1-3 hours before low cortisol measurements)	Taste/ Energy	Who needs it and what it can do
	American Ginseng (Panax) **Powder:** 1-2 teaspoons powdered root or extract in elixir or tea, 1-2x/day **Tincture:** 60-100 drops 3x/day **Capsule:** 1000 mg 2x/day	Sweet, bitter, slightly cool, moist	Extracts of ginseng containing eleuthorosides were found to have specific binding affinity to adrenal receptor sites, including glucocorticoid, mineralocorticoid and progestin receptors, which may be part of the mechanism of the balancing adrenal effects. Effective for nervous indigestion, mental and other forms of nervous exhaustion from overwork, heart and blood circulation, diabetes, depression, neurasthenia, neurosis.
	Eleuthero (Siberian Ginseng) **Powder:** 1-2 teaspoons powdered root or extract in elixir or tea, 1-2x/day **Tincture:** 60-100 drops 3-4x/day **Capsule:** 100-200 mg extract or 2-4 grams whole herb/day	Sweet, slightly bitter, slightly warm	Particularly useful to treat adrenal exhaustion. Acts on the pituitary to stimulate the adrenal gland, thus increasing the ability for people to handle stress and to improve mental fatigue and physical endurance. Also supports immune function, improves visual acuity, promotes physical and mental endurance, and supports faster healing after surgery. Also good for athletes who have high demand for physical strength and endurance.
	Licorice Root*** **Tea – Decoct:** ½ teaspoon per 8 oz. water,15 min, 1x/day **Powder:** ½ - 1 teaspoon per day in elixir **Tincture:** 10-20 drops, 3x/day **Tablets:** in the form of DGL used for gut healing, 200-300 mg before meals	Sweet, slightly bitter, moist, warm	Helps with adrenal insufficiency (exhaustion), including Addison's disease. It is anti-inflammatory, demulcent, expectorant, mild laxative, pancreatic tonic, immune stimulant with anti-viral properties. It increases cortisol levels and raises blood pressure. Improves the body's ability to retain sodium and magnesium, thus helps with frequent urination. It helps heal the gastrointestinal mucous membrane, heals ulcers, soothes lungs, and helps dry coughs. Used topically for herpes lesions, eczema, and psoriasis.

Herbs Suitable for Stage 2 Adrenal Fatigue

☑	Name and Dosage (Take 1-3 hours before low cortisol measurements)	Taste/ Energy	Who needs it and what it can do
	Rehmannia **Pieces:** 1-2/ day eaten whole or in elixir or smoothie **Tincture:** 30-50 drops 3x/day **Capsule:** 400-500 mg 3x/day	Bitter, cooling	Studies haves shown it to support the cells of the pituitary gland and adrenal cortex during times of stress. Studies have also shown its potential to help autoimmune conditions of the thyroid and adrenal glands.

***Caution in people with high blood pressure.

Herbs Suitable for Stage 3 Adrenal Fatigue

☑	Name and Dosage (Take 1-3 hours before low cortisol measurements)	Taste/ Energy	Who needs it and what it can do
	American Ginseng (Panax) **Powder:** 1-2 teaspoons powdered root or extract in elixir or tea, 1-2x/day **Tincture:** 60-100 drops 3x/day **Capsule:** 1000 mg 2x/day	Sweet, bitter, slightly cool, moist	Extracts of ginseng containing eleuthorosides were found to have specific binding affinity to adrenal receptor sites, including glucocorticoid, mineralocorticoid and progestin receptors, which may be part of the mechanism of the balancing adrenal effects. Effective for nervous indigestion, mental and other forms of nervous exhaustion from overwork, heart and blood circulation, diabetes, depression, neurasthenia, neurosis.

Herbs Suitable for Stage 3 Adrenal Fatigue

☑	Name and Dosage (Take 1-3 hours before low cortisol measurements)	Taste/ Energy	Who needs it and what it can do
	Eleuthero (Siberian Ginseng) **Powder:** 1-2 teaspoons powdered root or extract in elixir or tea, 1-2x/day **Tincture:** 60-100 drops 3-4x/day **Capsule:** 100-200 mg extract or 2-4 grams whole herb/day	Sweet, slightly bitter, slightly warm	Particularly useful to treat adrenal exhaustion. Acts on the pituitary to stimulate the adrenal gland, thus increasing the ability for people to handle stress and to improve mental fatigue and physical endurance. Also supports immune function, improves visual acuity, promotes physical and mental endurance, and supports faster healing after surgery. Also good for athletes who have high demand for physical strength and endurance.
	Licorice Root*** **Tea – Decoct:** ½ teaspoon per 8 oz. water,15 min, 1x/day **Powder:** ½ - 1 teaspoon per day in elixir **Tincture:** 10-20 drops, 3x/day **Tablets:** in the form of DGL used for gut healing, 200-300 mg before meals	Sweet, slightly bitter, moist, warm	Helps with adrenal insufficiency (exhaustion), including Addison's disease. It is anti-inflammatory, demulcent, expectorant, mild laxative, pancreatic tonic, immune stimulant with anti-viral properties. It increases cortisol levels and raises blood pressure. Improves the body's ability to retain sodium and magnesium, thus helps with frequent urination. It helps heal the gastrointestinal mucous membrane, heals ulcers, soothes lungs, and helps dry coughs. Used topically for herpes lesions, eczema, and psoriasis.
	Rehmannia **Pieces:** 1-2/ day eaten whole or in elixir or smoothie **Tincture:** 30-50 drops 3x/day **Capsule:** 400-500 mg 3x/day	Bitter, cooling	Studies haves shown it to support the cells of the pituitary gland and adrenal cortex during times of stress. Studies have also shown its potential to help autoimmune conditions of the thyroid and adrenal glands

***Caution in people with high blood pressure.

Adrenal Restoration:
Notes on Taking Bioidentical Adrenal Hormones

I use Biomatrix with excellent results in most people. Here are some notes and precautions, taken from their website clinician's document:

BioMatrix® sublingual hormone products contain alcohol, making them true sublinguals. A small amount of alcohol is required to keep the active ingredients suspended in solution. Alcohol also rapidly transfers the ingredients into the bloodstream attaining 99% absorption. This delivery method bypasses possible malabsorption in the digestive process and minimizes oxidative damage to the ingredients. The alcohol is NOT absorbed.

Advantages of Sublingual Hormone Delivery

- Mimics body's own delivery system
- 99% absorption
- Accuracy of timing of delivery
- Avoidance of malabsorption due to GI problems
- Minimizes oxidative damage to ingredients

Methods for decreasing burning sensation caused by alcohol (if applicable):

- Place a couple drops of vitamin A or E mycelized oil under your tongue just before taking sublingual hormones. This helps to decrease the irritation experienced by some people. If you are sensitive to the alcohol in sublinguals it's often as a result of mucosal tissue sensitivity, often due to vitamin A deficiency.
- Dilute the hormone drops with a teaspoon of water and hold the solution in your mouth for two minutes or longer before swallowing.
- Place the sublinguals on the top of your tongue. This also helps to decrease the sensitivity to alcohol. Hold in your mouth as long as possible before swallowing.
- Sublingual drops may be mixed with water and taken orally. Since this reduces the absorption, double the recommended number of drops, put them in water and drink the solution. Either with or without food is okay.

(continued…)

- Sublingual drops may be taken 10 to 15 minutes before or after meals (rinse away food particles in mouth first).
- Always shake bottle before use.
- Hold drops under your tongue for 2 minutes before swallowing.
- You can use a mirror to count drops if you are not sure.

For all follow-up salivary hormone testing while still on hormones, double the number of drops, mix them in a small glass of water and drink, starting 4-5 days before salivary hormone testing, or stop all sublinguals 4-5 days prior to testing. The first method tests how you are doing on the hormones, and the second tests how you're doing off the hormones.

Adrenal Restoration: Nutrition and Lifestyle Recommendations Checklists

☑	Adrenal Supportive Diet and Lifestyle
	Adhere to an alkaline diet
	Avoid gluten
	Balance estrogen levels: High estrogen increases thyroid binding globulin
	Drink purified water: Avoid halides, fluoride, chlorine, bromine
	Eat coconut
	Eat garlic and onions
	Eat lots of fresh fruits and vegetables: Minerals, vitamins, and antioxidants improve thyroid function
	Eat lots of green leafy vegetables: For minerals and alkalizing effects
	Eat low-glycemic fruits
	Eat omega-3 rich foods: Hemp seeds, chia seeds, flax seeds, algae, and deep ocean fish
	Eat probiotic and prebiotic rich foods: Kefir, rejuvelac, sauerkraut, coconut yogurt, seed yogurt, Jerusalem artichoke, chicory -- improves T3 production
	Eat sea vegetables regularly: For minerals, especially iodine kelp, bladderwrack, dulse, nori, and more
	Eliminate dietary stressors: Caffeine, alcohol, sugar, refined foods
	Exercise: Rebounder, T-Tapp
	Grow your own vegetables: Fertilize with seaweeds or grow in sea water

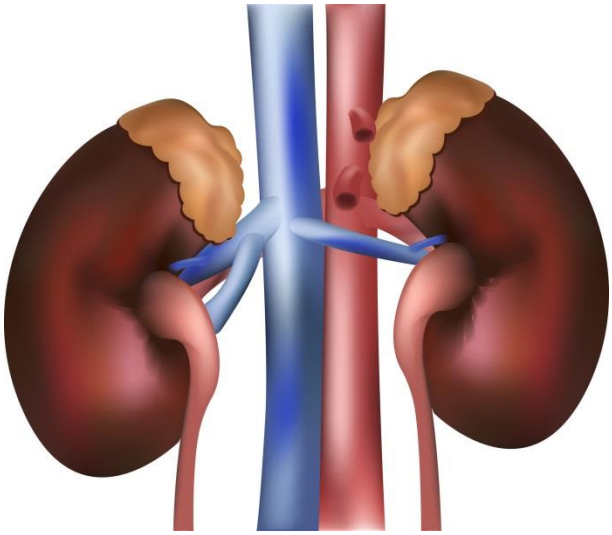
Adrenal Restoration: Protocols

The plan consists of adrenal rebuilding actions in 5 categories: **lifestyle activities, food, nutrients, herbs, and hormones**. Retest after 3-4 months and follow the same process for interpretation as outlined in the ***Adrenal Saliva Test Interpretation and Example*** document to determine stage again; modify regime accordingly.

If you have not done the ASI test and are not seeing significantly improvement after 30 days, consider testing and adjusting the plan according to the outcome of the test.

Lifestyle Activities for Adrenal Reboot, All Stages

- Stress management/transformation activities -- crucial!
- 5 minutes of sunshine first thing in the morning – even if it's a cloudy day to reset circadian rhythm.
- 30 minutes a day of self-care time and at least 5 minutes a day of FUN.
- Moderate physical activities to protect from the negative effects of stressful situations. Walking, running up and down stairs, squats at workstation, and T-Tapp Hoe Down exercises are easy to incorporate. (http://www.drritamarie.com/go/TTappHoeDowns)
- 8 or more hours of sleep each night helps restore the adrenals.
- Appreciation breaks throughout the day restores balance and keeps cortisol from spiking.



Food for Adrenal Reboot, All Stages

Adrenal Nourishing Breakfast Choices

Start the day with greens and omega-3 fats for a low-carb, moderate-protein, and moderate-fat breakfast that keeps hormones and energy steady throughout the day. It's important to get enough protein and fat for breakfast, and that doesn't mean bacon and eggs.

Starting the day with carbohydrates can throw hormones and blood sugar off for the rest of the day and cause leptin levels to peak too early in the day, resulting in hunger and craving sugar after dinner.

Choose as many of the following breakfast selections as you need or will leave you feeling energized and satiated. Of course, avoid any selections that don't agree with your body.

- Chia porridge
- Green drink
    - Green smoothie
    - Green juice
    - Green powder
    - Green powder with protein powder
- Hemp milk shake
- Dehydrated grain-free bread containing omega-3 rich nuts and/or seeds with flax/coconut butter
- Adrenal support elixir, choosing herbs according to your test results and/or your energy pattern. Relaxing herbs are used to calm over-production of cortisol and nourishing and energizing herbs for low cortisol (low energy) pattern. See the herb chart later in this document to help you choose.
- Adrenal support herbal tea: licorice, ginseng, lemon balm -- No caffeine

Adrenal Nourishing Lunch and Dinner Choices

Choose as many as needed to keep satisfied for at least 4 hours until dinner:

- Large veggie salad with omega-3 rich salad dressing and seed toppings.
- Green blender soups
- Cut up vegetables with dips made with healthy fats – coconut, avocado, omega-3 rich seeds, raw nuts, soaked and sprouted.
- Wraps using green leaves and nori sea vegetable and filled with greens, sprouts, sauerkraut and topped with an omega-3 rich dressing or spread.

- Steamed or stir-fried vegetables
- "Big Bowl" – filled with steamed and/or raw veggies and a blended vegetable sauce, made from the steam water, vegetables and a fat to thicken: chia seed, avocado, tahini, nut butter, coconut or raw nuts or seeds.
- Adrenal support elixir, choosing herbs according to test results and/or energy pattern. Relaxing herbs are used to calm over-production of cortisol and nourishing and energizing herbs for low cortisol (low energy) pattern. See the herb chart later in this document.
- Add chia seeds to meals if needed to satiate you until dinner. The gel can be added to dips, dressings or spreads, drunk as a chia beverage or added elixirs.
- **Optional:** small serving of lean, clean animal protein if metabolism seems to need it. Be sure it's from organically raised, pastured animals.

Goal is no food within 3 hour of bedtime. If craving something sweet after dinner, it's likely that either the meal is too high in carbohydrates for blood sugar management hormones to handle or carbohydrates have been eaten too early in the day and leptin levels are not rising as they should at night to signal satiety.

If hunger is strong at bedtime, fortify your dinner with additional avocado, chia seeds, or other dinner foods to hold you over.

If bedtime snack can't be avoided, choose low carbohydrate easy to digest food like raw or cooked vegetables, chia gel, seeds, nuts, avocado, or protein powder. See ***Snack Attack Strategy*** for ideas.

Adrenal Nourishing Snack Attack Strategy

It's best not to snack between meals. It keeps insulin levels high, growth hormone low, and the digestive tract working overtime. All of these conditions increase stress and make the adrenals work overtime.

For those times when snacking is inevitable, here's a strategy to teach clients to minimize the stress.

Step 1: Tune into the sensation.

Where is it coming from? Does it start in the stomach? The throat? The brain? Is it a physical sensation or emotional? If emotional, use an Emotional Eating Strategy to get back on track.

Step 2: Differentiate hunger from thirst.

If it's a physical sensation, it's time to differentiate hunger from thirst. The best way to do that is to drink one or two 16 ounce glasses of water. Add essential oils, flavor extracts or lemon juice to flavor the water if desired. Wait 30 minutes after drinking to determine if the sensation of hunger goes away.

Step 3: Satisfy hunger.

If still feeling hungry and the sensation is now stronger, it's probably true hunger and there are ways to satisfy the need for fuel without stressing blood sugar handling mechanisms.

Snack Attack Foods, in preferred order for hormone and blood sugar balance:

- Green water
- Green juice without fruit (lemon or lime are okay).
- Water with 1 tablespoon green powder (plain or flavored with any combination of your choice of herbs, spices, flavor extracts, essential oils, and stevia)
- Water with 1 tablespoon green powder and 1 serving protein powder
- *Chia Energy Drink*
- Vegetable sticks by themselves or with a raw food dip (dairy-free, gluten-free, whole food, recipes are preferable)
- An ounce of raw nuts or seeds
- Snacks that are blood sugar friendly - i.e. raw crackers made from vegetables along with nuts and seeds

Nutrient Support for 30-Day Adrenal Reboot, All Stages

While I am a big fan of getting as many nutrients as possible from food, I recognize that when depleted, it's helpful to support the body's recovery by providing the nutrients it's lacking, at least temporarily, while at the same time providing nutrient dense foods to replenish and rebuild. The following supplements are important for most people with adrenal fatigue, regardless of stage.

The dosages are provided as guidelines only and more or less might be indicated depending on weight, age, and degree of adrenal fatigue, as well as sensitivity to supplementation.

It's a good idea to start only one supplement or herb on any given day and gradually increase from a low dose to a higher dose over the course of several days, to tolerance, then introduce the next product. This allows you to identify a problem with any one product and back off the dosage, while continuing on those that are well tolerated.

Nutrients to Support Adrenal Function		
☑	**Supplement**	**Function/Action**
	Vitamin C	Necessary for cortisol and other adrenal hormone production and as an antioxidant that protects the adrenals from damage. Because cortisol is produced under stress, more vitamin C is used. Supplementation during recovery from adrenal fatigue is indicated. **Dose:** 1000 mg 2x/day or to bowel tolerance
	Pantothenic Acid (Vitamin B-5)	Part of the energy producing pathways, B-5 is necessary in high quantities in the adrenal glands because a great deal of energy is necessary in the production of adrenal hormones. Critical for conversion of glucose into energy. **Dose:** 500 mg 3x/day
	Pyridoxal-5-Phosphate (Vitamin B-6)	A co-factor in the enzymatic production of adrenal hormones. **Dose:** 25-50 mg /day
	B-Complex	General support for stress and energy. Preferably liquid, i.e. Premier Research Labs Max B – ND: **Dose:** 1/2 teaspoon 2x/day or Pure Encapsulations 1 capsule 2x/day **Note:** ***Take B vitamins in morning and at lunch time.* ***Never take later than 4:00 pm***

Nutrients to Support Adrenal Function

☑	Supplement	Function/Action
	Vitamin D3 and K2	Lab test needed to determine need. Ideal range on lab is 80-100 ng/ml. Mycelized Vitamin D is best absorbed. **Dose (Vitamin D3):** 500-20,000 IU/day, depending on lab test results **Dose (Vitamin K2):** 100-225 mg/day
	Zinc	An important nutrient for regulating cortisol levels and insulin levels. **Dose:** 30-60 mg/day, preferably liquid
	Magnesium	Necessary for cellular energy production, adrenal function, restful sleep, and is often depleted in patients on diuretics or who suffer from frequent urination. **Dose:** 400-600 mg/day; best taken after 8:00 pm to promote sleep
	Calcium	Both calcium and magnesium help to settle the nervous system and improve stress-handling capabilities. Helpful in preventing osteoporosis associated with a chronic resistance phase (high cortisol) lifestyle. **Dose:** 750-1000 mg/day
	Trace Minerals	Zinc, manganese, selenium, molybdenum, chromium, copper, and iodine are all trace minerals that are necessary for overall health and specifically to calm an overexcited nervous system that can lead to adrenal gland maladaptation. Trace Minerals Research, Body Bio, and Sun Warrior have high quality liquid minerals. **Dose:** Depends on brand and needs
	Essential Fatty Acids	Omega-3 and omega-6 fatty acids contribute to a balanced nervous system, increased focus, ability to handle stress, and adrenal gland health and recovery. EPA and DHA. Opti3 is an algae oil brand. Omnivores may choose Krill oil or a high quality fish oil, like Nordic Naturals. **Dose (EPA):** 200-1000 mg **Dose (DHA):** 300-600 mg
	Potassium	Can be supplemented to counter the mineralocorticoid excess of the resistance phase and promote healthy blood pressure. **Dose:** 2-5 g/day intake from all sources
	Chromium	Helps to regulate blood sugar by improving tendency to insulin resistance and reduces cravings for simple carbohydrates. **Dose:** 200 mcg 1-4x/day

Nutrients to Support Adrenal Function		
☑	**Supplement**	**Function/Action**
	Vitamin E	Essential to enzymatic reactions in the adrenal gland that neutralize free radicals produced during the manufacture of adrenal hormones. **Dose:** 400-800 IU mixed tocopherols or tocotrienols
	Tyrosine	As a precursor to catecholamine neurotransmitters, it is helpful to treat depression and to promote healthy thyroid function. **Dose**: 500 mg 2-3x/day

Adrenal Restoration: Support for Adrenal Fatigue

Once you've determined the stage of adrenal fatigue, use the following chart to help you decide the starting protocol. Retesting and monitoring symptoms and energy level is critical to success.

Substances for Adrenal Fatigue Based on Stage

Substance	Dosages and Instructions	Alarm Stage	Fatigue Stage 1	Fatigue Stage 2	Fatigue Stage 3
Licorice Root	5-10 drops prior to low cortisol readings. Do not take later than 4:00 pm. Avoid if you have high blood pressure and monitor blood pressure to avoid overdose. An alternative for some is Bezwecken Isocort (not vegan)		1-2 hours before times of low cortisol, if any	1-2 hours before times of low cortisol, if any	✓
Phosphorylated Serine	1 or 2 caps 2-3 hours before high cortisol reading	✓	2-3 hours before times of high cortisol, if any	2-3 hours before times of high cortisol, if any	
Pregnenolone	(each drop is 1.2 mg, from http://biomatrixone.com/)	N/A	6-8 drops 3x/day	9-12 drops 3x/day	12-15 drops 3x/day
DHEA	(each drop is 1.2 mg, from http://biomatrixone.com/)	N/A	4 drops 3x/day	3 drops 3x/day	2 drops 3x/day
Adaptogens	See Herb Chart to determine which ones for each stage.	✓	✓	✓	✓

Note: It's recommended to only use hormone drops if the Adrenal Saliva test or blood test indicates that DHEA is low, or the stage is really clear from symptoms. DHEA is contraindicated with high estrogen, high testosterone, or high DHEA. DHEA and Pregnenolone are both contraindicated with hyperthyroidism. Pregnenolone after 6:00 pm can be an antagonist to GABA and can affect sleep.

Adrenal Saliva Test Interpretation and Example

Understanding Stages of Adrenal Fatigue

There's a progression in the stages of adrenal exhaustion that are common to most who suffer from adrenal fatigue and burnout. The stress can start **as early as your childhood** – abuse, bullying, family financial stress, fighting between your parents, divorce, feeling unsafe – all contribute. For a lot of people, adrenal burnout stems back from when they were very little.

Stage Progression

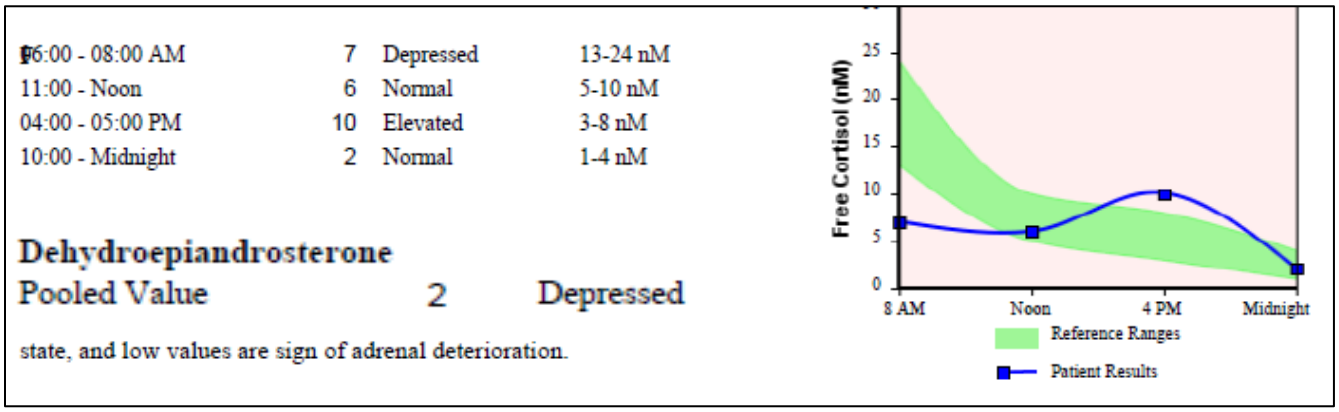
- Generally, you're born in the **"Normal" Stage**, although not always depending on your mom's health and stress during pregnancy and how easy or difficult your birth was.
- First stop along the way to adrenal fatigue is what's called the **Alarm Stage**, and that's where your adrenals are really overactive, cortisol levels are high, but it's not causing you damage…yet.
- Next is **Stage 1** of adrenal exhaustion, hallmarked by very high cortisol levels, just like the alarm stage. The difference is that DHEA, considered a growth and repair hormone and an anti-aging hormone is decreased in Stage 1 as a result of chronically elevated cortisol levels.
- **Stage 2** is where the total cortisol starts to fall back into the normal range, because your adrenals are getting too tired to handle the load. It's easy to confuse this stage with normal stage if you don't test DHEA, which decreases as a result of chronically high cortisol. An Adrenal Stress Index Salivary test done in Stage 2 will often show peaks and valleys of cortisol and lower than optimal DHEA.
- In **Stage 3**, total cortisol is low and DHEA is low. Long periods of stress precede Stage 3. Sometimes in Stage 3 there's a temporary rise in DHEA as one last heroic attempt to restore balance.
- After Stage 3 is **Adrenal Failure**. At this point it's hard to even get up off the couch and it's often referred to as "chronic fatigue syndrome".

The stage of adrenal health/fatigue determines the most appropriate diet, herb, lifestyle, and supplement protocol. It generally takes at least 3-4 months to restore adrenal function with the right plan in place. It can take an even longer if the depletion has existed for an extended period of time.

Interpreting the Adrenal Stress Index Salivary Hormone Test

In order to be classified as being in one of the three stages of adrenal fatigue, the following guidelines apply when interpreting your **Adrenal Stress Index** Test:

- **Stage 1:** Ideal **total cortisol** is 38; low normal DHEA is 6 or 7, ideal is 8 or above. If total cortisol is high, at least one cortisol reading is elevated and DHEA is borderline low or low, it's most likely stage 1, the initial stage of adrenal fatigue.
- **Stage 2:** If **total cortisol** is normal and morning, noon, and/or afternoon cortisols are low or borderline low and DHEA is borderline low or low, (below 7) it's likely stage 2, the intermediate stage of adrenal fatigue.
- **Stage 3:** If both **total cortisol** and DHEA are low, and most cortisols are low or borderline low, it's likely stage 3, the advanced state of adrenal fatigue.



06:00 - 08:00 AM	7	Depressed	13-24 nM
11:00 - Noon	6	Normal	5-10 nM
04:00 - 05:00 PM	10	Elevated	3-8 nM
10:00 - Midnight	2	Normal	1-4 nM

Dehydroepiandrosterone

Pooled Value 2 **Depressed**

state, and low values are sign of adrenal deterioration.

While it's really quite a bit more complicated than this, it's a great starting point and will give you good direction for beginning to correct the problem. If cortisol level is high and DHEA is high normal, it's what's called the **"alarm state"** in the model of Hans Selye, a Nobel Prize winning scientist who first classified adrenal fatigue. From this state, the adrenals will eventually burn out, resulting in lower cortisol and DHEA production.

Under times of stress, the body will divert to cortisol the hormone **pregnenolone**, the precursor, also called the "mother" (or "grandmother") of all steroid hormones. When pregnenolone gets diverted to cortisol, it's at the expense of DHEA and sex hormones and the result includes accelerated aging and decreased libido. One of DHEA's functions is to lower cortisol, so when cortisol is low, be very careful about supplementing DHEA. It's better to supplement with more pregnenolone and only tiny amounts of DHEA, if any. Nutrient support via whole foods, herbs, and nutritional supplements is important in all stages.

If DHEA is high normal or high and cortisol is low, it could be a very advanced stage of adrenal fatigue in which the body is making a last ditch attempt to recover. Usually, if this is the case, there are low levels of SIgA and/or 17-OH progesterone.

Chart 1: Adrenal Salivary Testing Interpretation

*Use **Chart 1** to determine the stage of Adrenal Fatigue based on Adrenal Salivary Testing.*

		Normal	Alarm State	Stage 1	Stage 2	Stage 3
ASI Results	**Total Cortisol**	normal	high	high	normal	low
	DHEA	normal	normal	low	low	low
	SIgA	normal	normal	normal or low	normal or low	low
	17-OH-Progesterone	normal	normal	normal or low	normal or low	low

Chart 2: Adrenal Fatigue Staging Based on Signs and Symptoms

*Use **Chart 2** to determine roughly the stage of adrenal fatigue without the salivary testing.*

		Normal	Alarm State	Stage 1	Stage 2	Stage 3
Signs and Symptoms	**Blood Pressure**	normal	high or normal	high or normal	normal or low	low
	Energy	normal	wired	Wired and tired – mid-day slump and awake at bedtime	Tired, possibly with spikes of energy	Very tired
	Immune system	normal	normal	Possibly impaired	Probably impaired	Likely impaired
	Libido	normal	normal	Possibly low	Probably low	Likely low
	Salt Cravings	no	no	no	yes	strong
	Perspiration	normal	normal	excessive	variable	minimal
	Memory	normal	normal	intermittent	failing	poor

Basal Body Temperature Test

Your body temperature reflects your metabolism, which is largely determined by the hormones secreted by your thyroid and to a lesser degree your adrenal glands.

There is considerable evidence that the currently available tests for the diagnosis of hypothyroidism (low thyroid function) are less accurate than desired accuracy. The function of your thyroid gland can be observed by measuring your body temperature. All that is needed are a thermometer and the diligence to record temperatures at regular intervals for 7 days.

Procedure

1. Ideally, use a glass, mercury-filled thermometer that has been shaken down below 96.0°F the night before and put beside the bed. A good-quality digital thermometer will suffice if the old fashioned kind isn't available. Ear and tape thermometers are too inconsistent and inaccurate for this purpose. A special basal body thermometer is best. They are sold in drug stores in kits for fertility assessment.
2. Upon awakening, place the bulb part of the thermometer into the deepest part of your armpit (for 10 minutes) and record a temperature each morning for two days. Do this before you have gotten out of bed, had any physical activity, or had anything to eat or drink. Record the temperature to 1/10 of a degree as the **Arising Temperature** in the **Under Arm Reading** row of the *Temperature Tracking Chart*.
3. Next, shake the thermometer down and immediately take an oral temperature for 3 minutes. Record this temperature as the **Arising Temperature** in the **Mouth Reading** row. Repeat either the oral or armpit temperature first thing in the morning for 7 days.
4. Repeat the oral temperature at three-hour intervals for 7 days.
5. Record the time when meals are consumed and what foods are eaten.
6. Note any activity or exercise time as movement or exertion can have an effect on your core temperature.

Note for menstruating women: Take temperatures starting with day 3 of your cycle to avoid confusion with normal monthly temperature cycling.

Temperature Tracking Chart

Name		Age	

Date		*Date of LMP			
	Arising Temp.	3 Hours Temp.	6 Hours Temp.	9 Hours Temp.
Under Arm Reading				
Mouth Reading				
	Meal 1	Meal 2	Meal 3	Snacks (if any)
Meal Time				
Foods				
Exercise / Activity Time(s)				

Date		*Date of LMP			
	Arising Temp.	3 Hours Temp.	6 Hours Temp.	9 Hours Temp.
Under Arm Reading				
Mouth Reading				
	Meal 1	Meal 2	Meal 3	Snacks (if any)
Meal Time				
Foods				
Exercise / Activity Time(s)				

Comprehensive Insulin Resistance Reversal: Step-By-Step Plan

- ❑ **Assess Your Client to Determine Where They Are at the Start**
  - ❑ Insulin resistance assessment
  - ❑ Short lifestyle assessments
  - ❑ Lab testing
  - ❑ Measurements
  - ❑ Glucose testing and tracking

- ❑ **Suggest Supplements and Foods to Increase Sensitivity of Insulin Receptors**
  - ❑ Supplements – basics
  - ❑ Beverages
  - ❑ Food list
  - ❑ Herbs
  - ❑ Supplements – advanced

- ❑ **Offer Tools to Address Attitude and Stress**
  - ❑ Power of appreciation / mini-vacations
  - ❑ Visions and goals

- ❑ **Counsel on Insulin Sensitizing Movement Bursts**
  - ❑ Bursts
  - ❑ Walking and aerobics
  - ❑ Stretching

- ❑ **Empower Incorporation of Timing Guidelines**
  - ❑ Stop eating at least 3 hours before bedtime
  - ❑ Allow 12 hours between dinner (supper) and breakfast
  - ❑ Eat within an hour of getting up, a low-carbohydrate, moderate-protein meal
  - ❑ Space your meals 5 – 6 hours apart with no snacking

- ❑ **Improve Quality and Quantity of Sleep**
  - ❑ Go to bed by 11 p.m. or earlier most nights
  - ❑ Sleep at least 8 hours most nights.
  - ❑ Turn down the activity intensity starting a couple of hours before bedtime:
    - Turn off the TV
    - Dim the lights
    - Get away from the computer
    - Take a warm bath
    - Listen to soft music
  - ❑ Take herbs to calm the nervous system and reduce cortisol

- ❑ **Coach Through the Phasing out of Foods**
  - ❑ Low-glycemic
  - ❑ Low-allergenic
  - ❑ Anti-inflammatory
  - ❑ Nutrient dense

- ❑ **Guide Through a 30-Day Metabolic Reset:** Strict adherence to all guidelines for 30 days, ideally while monitoring glucose throughout the day.

- ❑ **Transition Period:** Gradually test and phase out supplements no longer needed and phase in foods that had been removed, as tolerated.

- ❑ **Maintenance:** Guide your clients to determine what's required to maintain optimal glucose, insulin, and hemoglobin A1C levels; stable weight energy; and mental clarity.

Factors That Negatively Affect Thyroid

☑	Lifestyle and Environment Factors: Check any that apply to you
	Adrenal fatigue
	Eat foods containing artificial colors and flavors
	Blood sugar imbalances
	Deficiency in Iodine: lack of sea vegetables
	Deficiency in Riboflavin: processed foods, alcohol, and sugar deplete
	Deficiency in Selenium: likely unless taking a supplement or eating Brazil nuts, on average 2-4 per day. Most foods contain insignificant levels.
	Deficiency in Vitamin A: insufficient dietary source. Many people have a genetic tendency to poor conversion of beta carotene from plant sources
	Deficiency in Vitamin B12: vegetarian diet, low stomach acid, autoimmune disease
	Deficiency in Vitamin D3: lack of sunlight or supplementation
	Deficiency in Zinc: most people need extra – it's depleted by lots of factors, low stomach acid, and prenatal deficiency.
	Exposure to Bisphenol A: in plastics and dental amalgams
	Exposure to Bromine: in processed baked goods, some hard plastics, citrus flavored sodas, swimming pools and spas,
	Exposure to Chlorine: drinking water, spas, swimming pools, showers, baths
	Exposure to Fluoride: in toothpastes, urban drinking water
	Exposure to radiation: X-rays, mammograms, CT scans
	Exposure to Radioactive Iodine: from nuclear fallout and contrast imaging
	Exposure to second hand smoke

☑	Lifestyle and Environment Factors: Check any that apply to you	
	Exposure to Triclosan: in antibacterial hand wash and soaps	
	GMOs	
	High levels of stress	
	Irradiated food	
	Pesticide exposure at home or on the job: ○ Aldrin, DDT, and lindane: 1.2 times risk ○ Fungus killers: 1.4 times risk ○ Chlordane (organochlorine): 1.3 times risk	○ Benomyl and maneb/mancozeb: tripled and doubled risk ○ Herb killer paraquat: nearly doubled the risk
	Pesticides	
	Poor sleep	
	Preservatives	
	Smoking	
	Tap water: chlorine, fluoride, medication residues, chemicals	
☑	**Medications That Interfere with Thyroid Hormone**	
	Adderall	
	Amphetamines	
	Antacids	
	Anti-nausea medications	
	Anti-addiction drugs	
	Antibiotics	
	Anti-depressants	
	Anti-inflammatory	

☑	Medications That Interfere with Thyroid Hormone
	Arrhythmia medications
	Cholesterol lowering medications
	Diabetic medication
	Diuretics
	Growth hormone modulators
	Hormone replacement
	Hypertensive medication
	Pain medication
	Psychoactive medications, i.e. lithium, thorazine
	Steroids and androgens

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CHANGING LIVES WITH ROOT CAUSE HEALTH CARE

HPAT: At-Home and In-Office Tests

Digestion

- ❑ HCl Challenge

Acid-Alkaline Balance

- ❑ pH Assessment – Urine and Saliva
- ❑ pH Acid Challenge

Blood Sugar

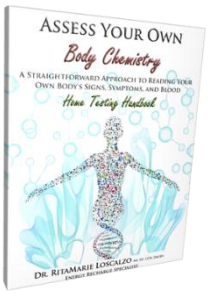
- ❑ Blood Sugar Monitoring
- ❑ Basal Body Temperature

Adrenals

- ❑ Konisburg Adrenal Fatigue
- ❑ Postural Blood Pressure
- ❑ Pupillary Constriction
- ❑ Raglan's

Vitamins, Minerals and Antioxidants

- ❑ Minerals
  - ❑ Zinc Assay
  - ❑ Iodine Skin Test
  - ❑ Neuro-Lingual Mineral Testing
- ❑ Oxidata
- ❑ Vitamin C Urine



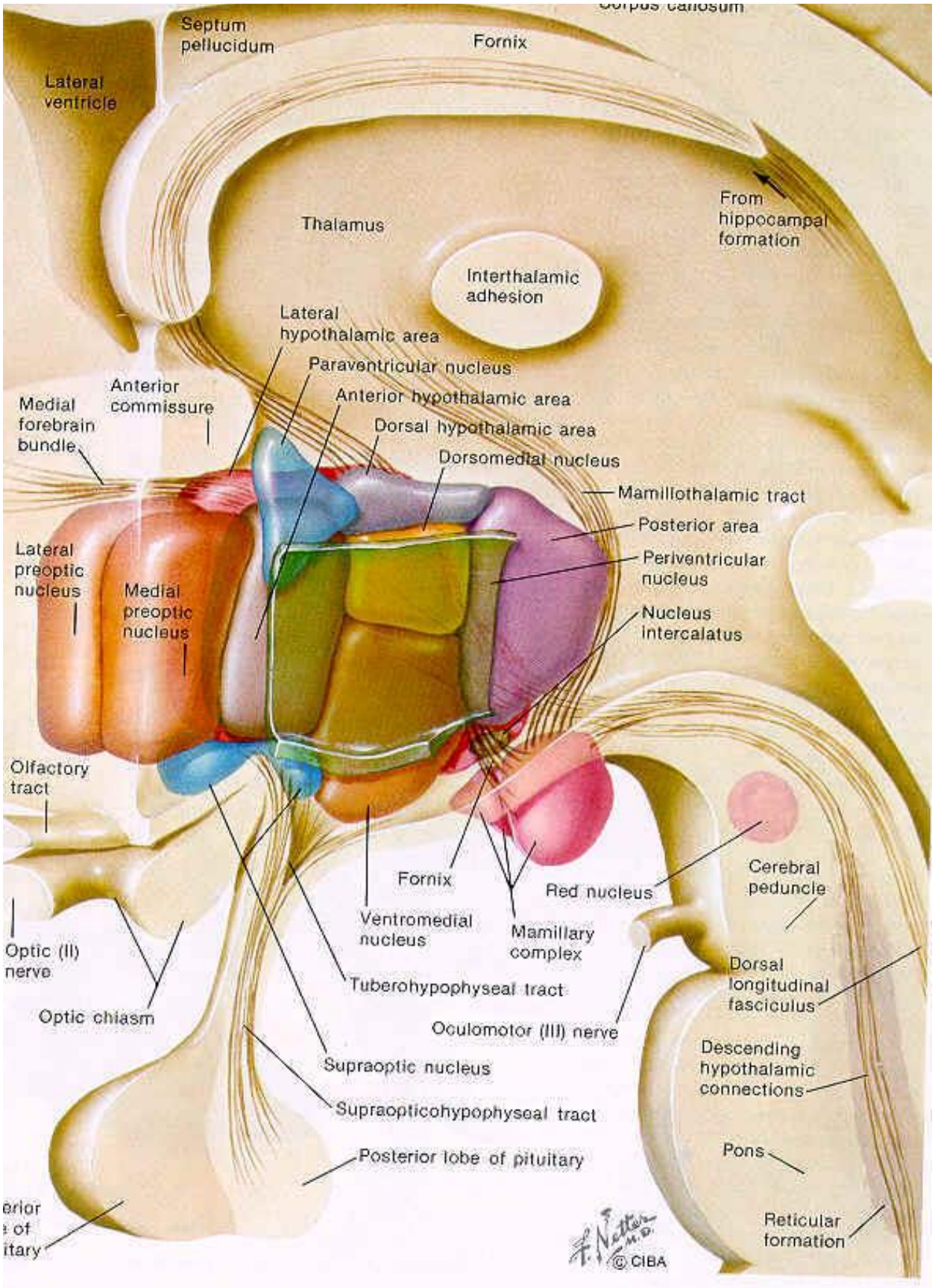
Assess Your Own Body Chemistry: Home Testing Handbook

http://www.drritamarie.com/go/HomeTestingHandbook

Hypothalamus Parts

Nucleus	Function/Hormone Released
Medial preoptic nucleus	• GnRH
Supraoptic nucleus	• Vasopressin
Paraventricular nucleus	• Thyrotropin-releasing hormone (TRH) • Corticotropin-releasing hormone (CRH) • Oxytocin • Somatostatin
Anterior hypothalamic nucleus	• Thermoregulation • Panting • Sweating • Thyrotropin inhibition
Suprachiasmatic nucleus	• Circadian rhythms
Lateral nucleus	• Thirst and hunger
Dorsomedial hypothalamic nucleus	• Blood Pressure • Heart Rate • GI stimulation
Ventromedial nucleus	• Satiety • Neuroendocrine control
Arcuate nucleus	• Growth hormone-releasing hormone (GHRH) • Appetite and glucose regulation (triggered by leptin, insulin and glucose) • Dopamine
Lateral nucleus	• Thirst and hunger
Mammillary nuclei (part of mammillary bodies)	• Memory
Posterior nucleus	• Increase blood pressure • Pupillary dilation • Shivering • Vasopressin (ADH)

Secreted Hormone	Abbreviation	Produced by	Effect
Thyrotropin-releasing hormone	TRH	Parvocellular neurosecretory cells of the paraventricular nucleus	Stimulate thyroid-stimulating hormone (TSH) release from anterior pituitary (primarily)
Prolactin-releasing hormone	PRH	Parvocellular neurosecretory cells of the paraventricular nucleus	Stimulate prolactin release from anterior pituitary
Corticotropin-releasing hormone	CRH	Parvocellular neurosecretory cells of the paraventricular nucleus	Stimulate adrenocorticotropic hormone (ACTH) release from anterior pituitary
Dopamine (Prolactin-inhibiting hormone)	DA or PIH	Dopamine neurons of the arcuate nucleus	Inhibit prolactin release from anterior pituitary
Growth hormone-releasing hormone	GHRH	Neuroendocrine neurons of the Arcuate nucleus	Stimulate Growth hormone (GH) release from anterior pituitary
Gonadotropin-releasing hormone	GnRH	Neuroendocrine cells of the Preoptic area	Stimulate follicle-stimulating hormone (FSH) release from anterior pituitary Stimulate luteinizing hormone (LH) release from anterior pituitary
Somatostatin **(growth hormone-inhibiting hormone)**	GHIH	Neuroendocrine cells of the Periventricular nucleus	Inhibit Growth hormone (GH) release from anterior pituitary Inhibit (moderately) thyroid-stimulating hormone (TSH) release from anterior pituitary


Septum pellucidum
Fornix
Lateral ventricle
From hippocampal formation
Thalamus
Interthalamic adhesion
Lateral hypothalamic area
Paraventricular nucleus
Anterior commissure
Anterior hypothalamic area
Medial forebrain bundle
Dorsal hypothalamic area
Dorsomedial nucleus
Mamillothalamic tract
Posterior area
Lateral preoptic nucleus
Periventricular nucleus
Medial preoptic nucleus
Nucleus intercalatus
Olfactory tract
Fornix
Red nucleus
Cerebral peduncle
Ventromedial nucleus
Mamillary complex
Optic (II) nerve
Tuberohypophyseal tract
Dorsal longitudinal fasciculus
Optic chiasm
Oculomotor (III) nerve
Descending hypothalamic connections
Supraoptic nucleus
Supraopticohypophyseal tract
Pons
Posterior lobe of pituitary
Reticular formation
© CIBA

Iodine Patch Test (Controversial)

Iodine is a very common deficiency because our soils are depleted and the only reliable source of iodine is the sea. Since most people don't eat sea vegetables on a regular basis, it's difficult to consume enough iodine unless you use iodized salt. Another factor that increases your need for iodine is the presence of radioactive iodine in the environment via the widespread consumption of the iodine antagonists:

- fluoride and chlorine (added to public water supplies)
- bromine (used as a dough conditioner in most commercially available bread)

These chemicals will quickly deplete iodine from the body and interfere with iodine metabolism leading to a number of problems including hypothyroidism, lowered vitality, cognitive dysfunction, lowered immunity, and obesity. Iodine is essential for the proper synthesis of thyroid hormone, so it is very important to maintain healthy iodine levels.

The *Iodine Patch Test* is a test that's used by many functional medicine doctors to assess for iodine deficiency. It's an easy test that can be performed at home. Although it's somewhat controversial as a valid indicator for iodine deficiency, there appear to be as many opponents as proponents. One of the reasons it's controversial is that there are many factors that can affect the appearance of the iodine patch, including evaporation, perspiration, showering or getting the arm wet from doing dishes or hand washing and skin pigmentation.

The theory behind the test is that the iodine will take about 24 hours to fully penetrate the skin if the body is ***sufficient*** in iodine.

If deficient, the iodine will be absorbed more quickly. I've observed people who had their "iodine patch" disappear within 8-12 hours, then supplement with topical iodine such that as soon as it disappeared, they would reapply.

With repeated application, the patch began to last longer until after a couple of weeks, the iodine patch lasted over 24 hours. By this time, the patient was feeling more energetic and had fewer low thyroid indicators.

Materials

A bottle of liquid iodine

Procedure

1. Paint the skin of the inside of the forearm or the abdomen with a 2-inch square patch of 2% iodine solution, being careful not to get the solution on clothes as it will stain.
2. Note the time the iodine is applied to the skin on the *Iodine Patch Test Tracking Chart*.
3. Let the iodine patch air dry before putting on clothes.
4. Avoid soaking in hot tubs or baths for 24 hours as the chlorine or bromine in the water will cause the iodine to patch to fade.

Note the time it takes for the patch to disappear on the tracking chart.

Iodine Patch Test Result Interpretation		
Overall, the faster the body draws in the iodine, the greater the iodine need is likely to be.		
Patch Disappears	**Iodine Deficiency**	**Action**
< 12 hours	Severe	Supplement with topical iodine. Reapply as soon as it disappears. Alternatively, take ***Ioderal*** (available on Amazon) or other oral iodine supplement: 12.5 mg three times a day. Repeat test in 2 weeks and adjust dose.
12 - 18 hours	Moderate	As per above except oral dose 12.5 mg twice a day.
18 - 24 hours	Mild	As per above except oral dose 12.5 mg once a day.
> 24 hours	None	Nothing. Continue to eat and supplement as before to continue to support Iodine sufficiency.

Iodine Patch Test Tracking Chart			
Name			
Date	**Time Iodine Applied**	**Time Color Disappears**	**# Hours to Completely Disappear**

Lab Resource List

For Licensed Practitioners:

If you are a licensed practitioner, you can set up an account with any of the following labs to run functional lab tests.

- **DiagnosTechs:** Adrenal Stress Index saliva panels, male, female premenopausal cyclic, post-menopausal; my favorite lab for Adrenal Testing. My preference is to use a panel that includes 4 cortisols (or 6 for people with sleep problems), 2 DHEAs, usually averaged, Secretory IgA and progesterone. http://www.diagnostechs.com
- **Genova/Metametrix:** 24-hour Comprehensive Urine Steroid panel, saliva, digestive tests, amino acids, organic acids, heavy metals, minerals testing, allergy testing and more. http://www.gdx.net
- **Meridian Valley Lab:** 24-hour Comprehensive Urine Steroid panel, saliva hormone panels, allergy testing. http://meridianvalleylab.com
- **BioHealth:** They have adrenal and other steroid hormone saliva tests. I usually use their stool test for microbes as I find it to be the most reliable for H. pylori. http://biohealthlab.com
- **Doctor's Data:** Offer hair, stool and urine, heavy metals, amino acid panels, and more. http://www.doctorsdata.com
- **Cyrex:** Cyrex is a Clinical Immunology Laboratory Specializing in Functional Immunology and Autoimmunity. Cyrex offers multi-tissue antibody testing for the early detection and monitoring of complex autoimmune conditions. https://www.cyrexlabs.com/
- **ALCAT:** The Alcat Test is a lab based immune stimulation test in which a patient's WBC's are challenged with various substances including foods, additives, colorings, chemicals, medicinal herbs, functional foods, molds, and pharmaceutical compounds. The patient's unique set of responses help to identify substances that may trigger potentially harmful immune system reactions. https://www.alcat.com/

For Unlicensed Practitioners:

If you are not licensed, you can order tests through the following:

- **Dr Ritamarie's Website:** If you are a member of a coaching program, you have access to this page via the membership portal. This is for your personal use only. Please do not send your clients here. Instead send them to one of the sites below. We are not set up to handle a large number of test orders. http://www.drritamarie.com/labtesting
- **Direct Labs:** Blood tests and many of the functional tests from labs like Genova, Doctor's Data, and others. http://www.DirectLabs.com/drritamarie
- **Canary Club:** Uses a lab called ZRT -- includes a number of salivary hormone profiles. http://www.canaryclub.org
- **Accessa Labs:** Has access to several of the labs above. Compare prices and availability before ordering. http://www.accesalabs.com
- **True Health Labs:** Offers a number of blood and functional tests, including ALCAT allergy tests. They did at one time offer Cyrex gluten related panels, but no longer appear to do so. http://www.truehealthlabs.com
- **Hakala Labs:** For Iodine Loading Test. http://www.hakalalabs.com
- **23andMe:** 23andMe provides ancestry-related genetic reports and uninterpreted raw genetic data. https://www.23andme.com/
- **My Labs for Life:** My Labs for Life provides confidential clinical laboratory services promoting wellness, prevention, and early detection of disease. My Labs for Life labs are collected at designated draw sites, which uphold all CLIA, HIPAA and OSHA regulations with the highest standards in phlebotomy collections and laboratory processing. http://www.mylabsforlife.com/
- **Great Plains Lab:** Great Plains Lab offers a variety of metabolic tests such as immune deficiency evaluations, amino acid tests, comprehensive fatty acid tests, organic acids testing, metal toxicity and food allergies tests. http://www.greatplainslaboratory.com/home/eng/home.asp

Simple At-Home or In-Office Assessments

- pH Challenge Test
- Minerals
- Blood Sugar

Salivary pH Challenge

The **Salivary pH Challenge** test is a dynamic measurement of your body's alkaline mineral reserves. These reserves are one of the systems your body uses to correct acid and alkaline imbalances.

During this test you will challenge your body with acid in the form of lemon juice to determine whether your body has the reserves to appropriately respond to an acid challenge. In an ideal situation, the initial acidity of the lemon juice will cause your saliva to become more alkaline in order to buffer the acidity of the lemon juice over the course of a few minutes. Your body does this by mobilizing the necessary alkaline minerals. This test also allows us to see how stress and sympathetic dominance impact minerals reserves in your body. Increasing levels of stress can cause the loss of your primary mineral reserves.

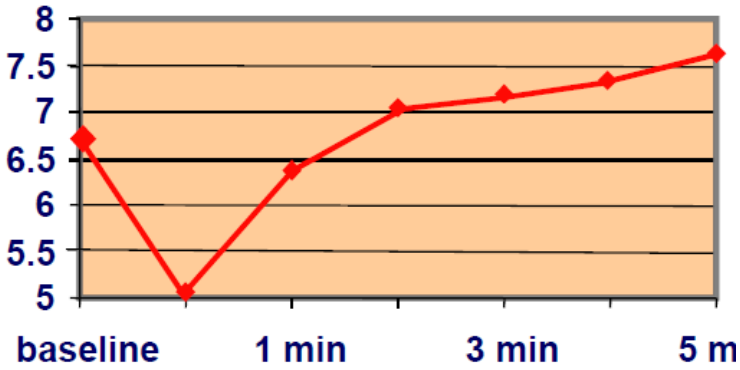
Materials

Fresh lemon juice, pH paper

Procedure

1. Cut seven 2-inch strips of pH paper and lay them out on paper towel.
2. Prepare your lemon juice drink: 1 tablespoon of fresh lemon juice and 1 tablespoon of water.
3. To take a saliva pH reading, make a pool of saliva in your mouth and dip half of the pH strip into this pool of saliva, remove, and compare the color of the dipped pH strip to the test indicator chart that comes with the pH paper. Do not put the whole strip in your mouth or hold it in for too long.
4. Record this first reading as a baseline on the *Saliva pH Challenge Tracking Chart*.
5. Drink the lemon drink, check your saliva pH again, and start timing.
6. Test and record your saliva pH every minute for 5 minutes.
7. Record all your results on the *Saliva pH Challenge Tracking Chart*.

Normal Result for Salivary pH Challenge



Salivary pH Challenge Tracking Chart						
Name						
Date	**Baseline**	**After 1 Minute**	**After 2 Minutes**	**After 3 Minutes**	**After 4 Minutes**	**After 5 Minutes**

Body Bio Mineral Testing Process

Mineral deficiencies are almost epidemic in today's world. Soil is depleted, food processing removes vital minerals, and stress depletes your reserves.

The test kit form ***Body Bio***, www.BodyBio.com, uses a taste testing process to determine if you have a deficiency or excess of any of the 8 minerals listed below.

- Potassium
- Zinc
- Magnesium
- Copper
- Chromium
- Manganese
- Molybdenum
- Selenium

Pour a small amount of the mineral solution from the test bottle in a glass or cup and sip. Record the number that best fits how that mineral tastes.

RATING	BOTTLE	MINERAL
	1	Potassium
	2	Zinc
	3	Magnesium
	4	Copper
	5	Chromium
	6	Manganese
	7	Molybdenum
	8	Selenium

④ *is the goal. Your body is telling you that you are getting adequate amounts of this mineral.*

RATING

1) Sweet
2) Pleasant
3) No Taste

4) Hmmm…Taste Something

5) So...So
6) Don't Like
7) Pretty Bad

Measuring Blood Glucose

Knowing how your body responds to a particular food, meal, activity or even thought can be one of the most valuable skills you'll ever learn. Measuring your blood glucose will give you this feedback, and it's really easy to learn and do.

Getting a Testing Kit

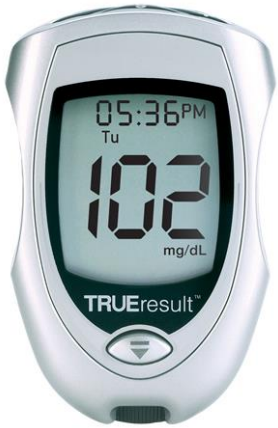
All you need is an inexpensive glucose meter (approximately $10 - $20 at most US discount pharmacy chains).

The replacement strips can be pricey, so before you decide which meter to buy, check out the price of the strips. The meters I personally use for myself require the *TrueTest* brand strips.

If you purchase them locally, the cost is about $48 for 50 strips. Online you can find them for $23 for 100 strips.

Here's info on the ones we use:

- **TrueResults** – my desktop model
  http://www.drritamarie.com/go/TrueResultStarterKit
- **True2Go** – portable
  http://www.drritamarie.com/go/True2GoPortableKit
- **TrueTest Test Strips** – use for both Glucose Meters
  http://www.drritamarie.com/go/TRUEtestTestStrips50 or
  http://www.drritamarie.com/go/TRUEtestTestStrips100



Directions for Measuring Blood Sugar

(Estimated time, start to finish: About 2 minutes)

1. **Wash hands.** Invisible debris on fingers can result in erroneous readings. Avoid using alcohol hand cleaners/sanitizers, especially if checking regularly. It can dry your fingers and cause calluses.
2. **Rinse fingers under warm water** to increase blood flow.
3. **Prepare supplies.**
   a. Spring loaded device with sterile lancet for sticking finger
   b. Glucometer
   c. Test strips
   d. Tissue paper or cotton ball for blotting blood
4. **Choose a location** to get a blood sample. Rotate areas to prevent calluses.
   a. Back of hand
   b. Fingers near nails
   c. Between the first and second joints of any finger
   d. Fleshy pads of fingertips

5. **Collect blood sample.**
   a. Cock the spring loaded device and prick any finger. Follow the specific instructions provided by the manufacturer.
   b. Gently squeeze finger. Avoid using a pumping action.
   c. Touch the blood to the test strip.
6. **Obtain the glucose reading.**
   a. The Glucometer will blink or count down once the blood has been absorbed by the test strip.
   b. Record the number from the Glucometer on your form.
7. **Clean up.**
   a. Discard used lancet.
   b. Discard any blood soaked tissues or cotton balls by flushing down the toilet to prevent contaminating any others with your blood.

Other At-Home or In-Office Tests Described in the *Home Testing Handbook*

- HCL Challenge
- Bowel Transit Time
- Diet/Pulse Record
- Elimination-Provocation Tracking Chart
- Urinary Indican Test for Intestinal Malabsorption
- Konisburg Adrenal Fatigue Test
- Vitamin C Flush
- Zinc Taste Test and Zinc Challenge
- Iodine Patch Test
- OXIDATA™ Anti-Oxidant Test

Thyroid Assessment Scorecard

Thyroid Assessment

Name	

Based upon your health profile for **the past 30 days**, please select the appropriate number, from '0 - 3' on all questions (0 as least/never/no and 3 as most/always/yes). Check the number you feel best applies, then add the number of checks in each column to create your score.

Point Scale:
0 = **Never** or almost never have the experience/effect.
1 = **Mild** experiences/effects
2 = **Moderate** experiences/effects
3 = **Severe/chronic** experiences/effects
For all **yes/no** questions, 0 = no and 3 = yes

Low Thyroid (Hypo) Symptom Question	0	1	2	3
Do you have difficulty losing weight?				
Are you mentally sluggish or notice a reduced initiative?				
Are you easily fatigued and/or sleepy during the day?				
Are you sensitive to cold and/or have cold hands and feet?				
Do you have chronic constipation?				
Have you experienced excessive hair loss and/or coarse hair?				
Do you have morning headaches that wear off during the day?				
Do you have a loss of lateral eyebrow hair (about 1/3 of the brow line)?				
Do you experience seasonal sadness?				
Are you tired, sluggish?				
Do you require excessive amounts of sleep to function properly?				
Do you struggle with increase in weight gain even with low-calorie diet?				
Do you ever experience depression, lack of motivation?				
Is there thinning or falling out of hair on your scalp, face, or genitals				
Do you have dryness of skin and/or scalp?				
Do you notice mental sluggishness?				
Total for Each Column (number of checkmarks x value)				
Low Thyroid Total /48				

Excess Thyroid (Hyper) Symptom Question	0	1	2	3
Are you sensitive/allergic to iodine?				
Do you have difficulty gaining weight, even with a large appetite?				
Are you nervous, emotional, can't work under pressure?				
Do you experience inward trembling?				
Do you flush easily?				
Do you have an intolerance to high temperatures?				
Do you experience heart palpitations?				
Do you ever experience increased pulse, even at rest?				
Do you suffer from insomnia?				
Do you experience night sweats?				
Total for Each Column (number of checkmarks x value)				
Excess Thyroid Total /30				
Grand Total /78				

0-10% - Overall good balance. Sound nutrition and healthy habits will maintain good balance.

11-20% - In need of a tune up to restore balance before serious illness sets in. Diet and lifestyle improvements should shift to normal.

21-35% - Things are out of balance and need attention.

36-50% - Very compromised and likely to significantly affect your state of health, well-being and energy level.

51-100% - Severely compromised and requires immediate attention.

Thyroid Resources and References

Resources and References:

- Wilson's Temperature Syndrome Website - Dr. Denis Wilson
  http://www.drritamarie.com/go/WilsonsSyndrome
- Dr. Wilson's Practitioner Page and Resources
  http://www.drritamarie.com/go/WilsonsSyndromeDoctors
- Simplified Wilson's T3 Protocol
  http://www.drritamarie.com/go/WilsonsSyndromeSimplifiedT3
- Wilson's Basic T3 Protocol Guidelines
  http://www.drritamarie.com/go/WilsonsSyndromeBasicT3
- Dr. Rind's Thyroid and Adrenal Information
  http://www.drritamarie.com/go/DrRindThyroidAdrenalInfo
- Dr. Rind's Adrenal and Thyroid Comparison Chart
  http://www.drritamarie.com/go/DrRindAdrenalThyroidComparisonChart
- Dr. Kharrazian Thyroid Information - Website and Video
  http://www.drritamarie.com/go/ThyroidBookWebsite
  http://www.drritamarie.com/go/ThyroidBook (book on Amazon)
- Diet and Lifestyle Interventions for Thyroid:
  A detailed paper that appears to have been written as a student thesis. Lots of good information, some conventional and some controversial.
  http://www.drritamarie.com/go/HypoThyroidismProtocolsSPAJournal
- Free T3/rT3 Ratio Calculator
  http://www.drritamarie.com/go/Rt3RatioCalculator

Thyroid Videos:

- How Thyroid Hormones Are Made
  http://www.drritamarie.com/go/YouTubeHowThyroidHormonesAreMade
- Hypothalamus-Pituitary Stimulation of Thyroid
  http://www.drritamarie.com/go/YouTubeHPStimulationOfThyroid
- Thyroid Hormone Feedback Mechanism
  http://www.drritamarie.com/go/YouTubeThyroidHormoneFeedback
- Thyroid Hormone Production
  http://www.drritamarie.com/go/YouTubeThyroidHormoneProduction
- Thyroid Examination
  http://www.drritamarie.com/go/YouTubeThyroidExamination

Adrenal Videos:

- Adrenal Overview
  http://www.drritamarie.com/go/YouTubeAdrenalOverview
- How Adrenals Work - Part 1
  http://www.drritamarie.com/go/YouTubeHowAdrenalsWorkPart1
- How Adrenals Work - Part 2
  http://www.drritamarie.com/go/YouTubeHowAdrenalsWorkPart2
- Fight/Flight Physiology
  http://www.drritamarie.com/go/YouTubeFightFlightPhysiology

INE INSTITUTE OF NUTRITIONAL ENDOCRINOLOGY — CHANGING LIVES WITH ROOT CAUSE HEALTH CARE

Thyroid Scale Diagram

(Type your findings for each lab value, TSH, FT4 and FT3 in the box above the range where it most closely aligns)

Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH																					
	0.10 0.17	0.18 0.25	0.26 0.33	0.34 0.41	0.42 0.49	0.50 0.65	0.66 0.81	0.82 0.97	0.98 1.13	1.14 1.29	1.30 1.80	1.81 2.20	2.21 2.60	2.61 3.00	3.01 4.00	4.01 5.00	5.01 6.00	6.01 8.00	8.01 10.0	10.0 15.0	15.0 99.0
FT4																					
	0.30 0.34	0.35 0.39	0.40 0.49	0.50 0.59	0.60 0.69	0.70 0.79	0.80 0.89	0.90 0.99	1.00 1.09	1.10 1.19	1.20 1.30	1.31 1.40	1.41 1.50	1.51 1.60	1.61 1.70	1.71 1.80	1.81 1.90	1.91 2.00	2.01 2.10	2.11 2.20	2.21 4.00
FT3																					
	140 157	158 175	176 193	194 211	212 229	230 247	248 265	266 283	284 301	302 319	320 330	331 348	349 366	367 384	385 402	403 420	421 438	439 456	457 474	475 492	493 600

Adapted from Dr. Bruce Rind: http://www.drrind.com/therapies/thyroid-scale

Thyroid Scale Diagram

(Type your findings for each lab value, TSH, FT4 and FT3 in the box above the range where it most closely aligns)

Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH																					
	0.10 0.17	0.18 0.25	0.26 0.33	0.34 0.41	0.42 0.49	0.50 0.65	0.66 0.81	0.82 0.97	0.98 1.13	1.14 1.29	1.30 1.80	1.81 2.20	2.21 2.60	2.61 3.00	3.01 4.00	4.01 5.00	5.01 6.00	6.01 8.00	8.01 10.0	10.0 15.0	15.0 99.0
FT4																					
	0.30 0.34	0.35 0.39	0.40 0.49	0.50 0.59	0.60 0.69	0.70 0.79	0.80 0.89	0.90 0.99	1.00 1.09	1.10 1.19	1.20 1.30	1.31 1.40	1.41 1.50	1.51 1.60	1.61 1.70	1.71 1.80	1.81 1.90	1.91 2.00	2.01 2.10	2.11 2.20	2.21 4.00
FT3																					
	140 157	158 175	176 193	194 211	212 229	230 247	248 265	266 283	284 301	302 319	320 330	331 348	349 366	367 384	385 402	403 420	421 438	439 456	457 474	475 492	493 600

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(Type your findings for each lab value, TSH, FT4 and FT3 in the box above the range where it most closely aligns)

Labs	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
TSH																					
	0.10 0.17	0.18 0.25	0.26 0.33	0.34 0.41	0.42 0.49	0.50 0.65	0.66 0.81	0.82 0.97	0.98 1.13	1.14 1.29	1.30 1.80	1.81 2.20	2.21 2.60	2.61 3.00	3.01 4.00	4.01 5.00	5.01 6.00	6.01 8.00	8.01 10.0	10.0 15.0	15.0 99.0
FT4																					
	0.30 0.34	0.35 0.39	0.40 0.49	0.50 0.59	0.60 0.69	0.70 0.79	0.80 0.89	0.90 0.99	1.00 1.09	1.10 1.19	1.20 1.30	1.31 1.40	1.41 1.50	1.51 1.60	1.61 1.70	1.71 1.80	1.81 1.90	1.91 2.00	2.01 2.10	2.11 2.20	2.21 4.00
FT3																					
	140 157	158 175	176 193	194 211	212 229	230 247	248 265	266 283	284 301	302 319	320 330	331 348	349 366	367 384	385 402	403 420	421 438	439 456	457 474	475 492	493 600

Adapted from Dr. Bruce Rind: http://www.drrind.com/therapies/thyroid-scale

Thyroid Testing and Balancing Protocols

Thyroid Lab Testing

Order through Direct Labs at http://www.directlabs.com/DrRitamarie or have clients order through their Primary Care Physician (PCP)

Important thyroid lab markers to order and indications for ordering

- **TSH:** Produced by pituitary to stimulate the thyroid to produce thyroid hormones. A high TSH level indicates that the thyroid gland is failing because of a problem that is directly affecting the thyroid (primary hypothyroidism). When TSH is low, it usually indicates that the person has an overactive thyroid that is producing too much thyroid hormone or an abnormality in the pituitary gland, which prevents it from making enough TSH to stimulate the thyroid. Always include in thyroid screening.
- **Total T-4 (Thyroxin):** Measures the total T4 made by your thyroid. T4 is the storage form of thyroid hormone and is the main hormone produced by the thyroid. It's meant to be converted to T3, the more active form. It's always a good idea to run this test to determine the thyroid gland's overall ability to produce.
- **Total T-3 (Triiodothyronine):** The total T3 produced by the thyroid. Only 20% of gland output is T3. This is important when looking at thyroid conversions.
- **Free T-4:** An intermediate that is good to see for a complete picture, but not as important as Total T4 and free T3 except in cases of thyroid conversion issues. Free T-4 is a good idea to investigate suspicion of binding globulin problems, or when conventional test results seem inconsistent with clinical observations.
- **Free T-3:** The primary thyroid hormone component that stimulates metabolic rate at the cellular level. It's important to run in all conditions related to low thyroid function or to monitor the effects of medication.
- **Thyroid Antibodies:** These indicate whether or not your body is producing antibodies that are attacking your thyroid gland. Anyone suffering from low energy, difficulty maintaining proper weight, or any other unexplained health challenges should order these. Often overlooked by conventional medical practitioners, these are extremely important to measure.

- **Thyroid Antibodies (continued):**
  - **Thyroid Peroxidase Antibodies:** Measures antibodies that attack the thyroid peroxidase enzyme, which assists the chemical reaction that adds iodine to a protein called thyroglobulin, a critical step in generating thyroid hormones.
  - **Antithyroglobulin Antibodies:** Measures antibodies that attack a protein called thyroglobulin, which is used to make thyroid hormones T3 and T4. Autoantibodies to thyroglobulin can lead to the destruction of the thyroid gland.
- **Reverse T3:** Under normal circumstances most of the free T4 is converted to free T3; about 20% is converted to Reverse T3. Certain conditions, including being under a lot of stress for a long time or adrenal fatigue, cause more T4 to convert to reverse T3, resulting in decreased metabolic rate and low thyroid symptoms as a result of low free T3. Order this test if free T3 is low or free T4 is high, or in people who have been highly stressed or are suffering from adrenal fatigue, or have a long history of thyroid problems that are not responding to interventions.

Thyroid Test Panels

The following special thyroid panels have been set up with Direct Labs for ease of ordering and cost savings. To order go to www.DirectLabs.com/DrRitamarie. Click on order tests, choose **Thyroid** from the drop down menu, then choose the tests/panels from list to order.

- **Dr. Ritamarie's Basic plus Thyroid:** Includes all the thyroid tests above except Reverse T3, plus the Comprehensive wellness profile and Vitamin D
- **Dr. Ritamarie's Complete Thyroid:** Contains all the thyroid tests above except Reverse T3
- **Dr. Ritamarie's Complete Thyroid plus Vitamin D:** Contains all the thyroid tests above except Reverse T3 plus Vitamin D
- **Complete Thyroid Panel:** Includes all above tests EXCEPT the antibodies
- **Thyroid Antibodies Panel:** Contains both TPO and antithyroglubulin antibodies

*** Vitamin D** levels need to be closely monitored in thyroid assessment.

****CWP** is the comprehensive wellness panel and contains tests for most body systems including liver, kidney, cholesterol panel, anemia markers, immune system markers and more. It's a good general screen and can be ordered with the thyroid panel if you haven't done one in a while.

Determining Imbalance

Now that you've done the thyroid assessments you will need to determine what pattern of thyroid imbalance your client appears to display, then apply the appropriate diet, herb, lifestyle, and supplement protocol.

While 22 patterns of thyroid imbalance can occur, we'll focus on 9. The entire list of 22 is towards the end of this document. This should be adequate for guiding you to create the appropriate protocol. While it's really quite a bit more complicated than this, it's a great starting point and will give you good direction for beginning to correct the problem.

The 9 Patterns of Thyroid Imbalance:

1. Primary Hypothyroid
2. Pituitary Hypothyroidism
3. Autoimmune Hypothyroidism
4. Autoimmune Hyperthyroidism
5. Thyroid Under Conversion
6. Thyroid Over Conversion
7. Increased Thyroid Binding Globulin
8. Decreased Thyroid Binding Globulin
9. Thyroid Receptor Resistance

Step 1: Use the chart on the following page to record the results of lab tests. Circle or highlight: **L** for Low, **H** for High, **N** for Normal.

Step 2: Based on where most of the circles or highlights fall, determine the pattern or patterns your client is most exhibiting. It's possible to have a combination of patterns**.**

Step 3: Find their pattern on the nutrition chart on page 3.

Step 4: Guide them to make appropriate changes to diet and lifestyle and begin with a few of the major herbs and supplements that support their thyroid pattern.

Step 5: Reevaluate based on symptom survey within a month to 6 weeks and if no changes are noticed, consider using additional supplements.

Step 6: Rerun labs in 3-6 months and adjust plan as indicated.

Determining Thyroid Pattern

	Units	Ideal Low	Ideal High	Primary Hypo Thyroid	Pituitary Hypo Thyroid	Auto Immune Hypo Thyroid	Auto Immune Hyper Thyroid	Under Conversion T4 to T3	Over Conversion T4 to T3	High Thyroid Binding Globulin	Low Thyroid Binding Globulin	Thyroid Resistance
TSH		1.8	3.0	H	L	N or H	L	N	N	N	N	N
Total T4	ug/d	6.0	12.0	N or L	N or L	N or L	N or H	N or H	N or L	N	N	N
Free T4	ng/dL	1.0	1.5	N or L	N or L	N or L	N or H	N or H	N or L	L	H	N
T3 Uptake	md/dl	28.0	38.0	N or L	N	N or L	N	L	HN or H	L	H	N
Free T3	pg/mL	300.0	450.0	N or L	N or L	N or L	N or H	L	HN or H	L	H	N
Reverse T3 (rT3)	pg/ml	90.0	350.0	N	N	N	N	L	N	N	N	N
Thyroid Antibodies		0	2	N	N	H	H	N or H	N	N	N	N
PLUS												
Cholesterol	mg/dl	0	200	N or H			N or L					
Triglycerides	mg/dL	35	160	H			L					
Calcium	mg/dL	8.7	10.5	N or H			N or L					
Possible Causes				defi-ciency of iodine or cofactors such as Se, Mg, Cu, niacin, riboflavin, B6 and zinc	serotonin or dopamine deficiency, excess cytokines (inflam-mation), excess cortisol (stress) excess prolactin	antibodies to thyroid peroxi-dase, thyroglo-bulin (binding protein), TSH, T3 or T4	antibo-dies to TSH, or viral	deficiency of cofactors, serotonin, dopamine, gut dysbiosis, inflammation (increased cytokines), excess cortisol (stress),	excess testosterone	excess estrogen	excess testosterone	inflammation (elevated cytokines), excess cortisol (stress), deficiency of Vitamin A, elevated homo cysteine

Pattern Specific Thyroid Nutrition

Nutrients	Primary Hypo Thyroid	Pituitary Hypo Thyroid	Auto Immune Hypo Thyroid	Auto Immune Hyper Thyroid	Under Conversion T4 to T3	Over Conversion T4 to T3	High Thyroid Binding Globulin	Low Thyroid Binding Globulin	Thyroid resistance
Antioxidants: Glutathione, SOD and precursors: NAC, Protadim, Oxicell	√	√	√	√	√	√	√	√	√
Ashwaganda	√								
Beet							√		
Betaine HCl							√		
Bugleweed				√					
Cabbage juice				√					
Choline							√		
Dandelion							√		
Enzymes: bromelain, protease 250 - 500 mg 3x/day between meals			√	√					
Essential fatty acids	√	√	√	√	√				√
Gamma orazinol (rice bran)		√							
Goto kola							√		
Guggulu	√				√	√		√	
Iodine	√								
Iron	√								
L-arginine		√							
Lemon balm				√					
Magnesium		√							
Manganese		√							
Milk thistle							√		
Molybdenum							√		

Pattern Specific Thyroid Nutrition

Nutrients	Primary Hypo Thyroid	Pituitary Hypo Thyroid	Auto Immune Hypo Thyroid	Auto Immune Hyper Thyroid	Under Conversion T4 to T3	Over Conversion T4 to T3	High Thyroid Binding Globulin	Low Thyroid Binding Globulin	Thyroid resistance
Mother wort				√					
MSM, Tri methyl Glycine							√		
Panax ginseng							√		
Phosphatidyl choline 2000mg/day							√		
Phosphatidyl serine		√			√	√		√	
Sage leaf		√							
Sea vegetables: laminaria digitata kelp, bladderwrack	√								
Selenium	√				√	√			√
Taurine							√		
Turmeric and ginger			√	√					
Tyrosine/phenylalanine	√								
Vitamin A	√								
Vitamin B Complex	√	√		√					√
Vitamin B6		√							
Vitamin C 1,000 mg per day			√	√			√		
Vitamin D	√	√	√						
Zinc	√	√			√				
Adrenal Support		√	√	√					√
Balance Blood Sugar			√		√		√		
Leaky Gut Repair			√	√					
Liver Detoxification						√	√	√	
Support T-regulatory cells: TH1 and TH2 -- See details below			√	√					

Dr. Kharrazian's 22 Patterns of Hypothyroid

1-5 hallmarked by low TSH (<1.8) with low to normal T4

1. Hypothalamus paraventricular defect- low serotonin
2. Hypothalamus paraventricular defect- low dopamine
3. Hypothalamus paraventricular defect- promoted by cytokines
4. Hypothalamus paraventricular defect- promoted by elevated prolactin
5. Pituitary suppression from cortisol
6. Autoimmune related to thyroid peroxidase antibodies (TPO)
7. Autoimmune related to thyroglobulin antibodies
8. Down-regulated TPO due to progesterone deficiency
9. Down-regulated TPO due to a deficiency of cofactors
10. Depressed T4 to T3 conversion due to deficiency of cofactors (5-dodinase activity)
11. Depressed T4 to T3 conversion due to gut dysbiosis
12. Depressed T4 to T3 conversion due to elevated cytokines
13. Depressed T4 to T3 conversion due to elevated cortisol
14. Depressed T4 to T3 conversion due to peripheral serotonin deficiency
15. Depressed T4 to T3 conversion due to peripheral dopamine deficiency
16. Increased T4 to T3 conversion due to elevated testosterone
17. Increased thyroid binding globulin activity leading to decreased free T3 and T4 due to elevated estrogen
18. Depressed thyroid binding globulin activity leading to increased free T3 and T4 and subsequent thyroid resistance due to insulin resistance, elevated estrogen or elevated testosterone
19. Thyroid receptor resistance due to elevation of cytokines
20. Thyroid receptor resistance due to elevation of cortisol
21. Thyroid receptor resistance due to deficiency of Vitamin A
22. Thyroid receptor resistance due to elevation of homocysteine

Autoimmune Hypothyroid: T Cell Regulation

Common Th1 Dominance Disorders

- Multiple sclerosis
- IBD/Crohn's disease
- Type 1 diabetes
- Hashimoto's disease (thyroiditis)
- Graves' disease (thyroiditis)
- Psoriasis
- Rheumatoid arthritis
- Heliobacter pylori induced peptic ulcer

Common Th2 Dominance Disorders

- Allergies
- Asthma
- Chronic sinusitis
- Many cancers
- Hepatitis B and C (mixed Th1 and Th2)
- Ulcerative colitis
- Viral infections
- Systemic lupus erythematosus
- Helminth infections

T Helper 1 (TH1) Stimulating: Cell Killers

- Astragalus
- Echinacea
- Mushroom (Maitake, Reishi, Shiitake)
- Licorice
- Lemon balm
- Beta-sitosterol
- Ashwaganda
- Panax ginseng
- Chlorella
- Grape seed extract

T Helper 2 (TH2) Stimulating: Antibodies

- Caffeine
- Green tea extract
- Grape seed
- Pine bark
- White willow bark
- Lycopene
- Resveretrol
- Pycnogenol
- Resveratrol
- Genistein
- Quercetin

Both TH1 and TH2:

- Probiotics
- Vitamin A
- Vitamin E
- Boswelia
- Enzymes
- Turmeric

Wilson's Temperature Syndrome

- Deficient peripheral conversion of T4 to T3 (low free T3 – usually but not always)
- Excessive peripheral conversion of T4 to reverse T3. Elevated rT3 – usually but not always rT3 is the inactive form of T3. Normally 20-40% of T4 is converted to rT3. In times of stress and nutrient deficiencies, this number can go up to 60%
- Low body temperature (below 98.6º)
- Low BMR
- Symptoms of low thyroid function
- Normal TSH (usually)

Usual Treatment of Wilson's Temperature Syndrome:

- Eliminating as much physical and emotional stress as possible
- Moderate exercise for 12-15 minutes, 2-4 times/day (especially about 30 minutes after meals)
- Low carbohydrate meals
- Avoiding wheat and refined sugar products.
- Getting plenty of rest
- T3 only, USUALLY sustained release
- Increasing doses to a maximum, then taper back down
- Once ideal temperature is reached, stay at that dose for several weeks, then taper down.
    - Usually more than one "cycle" of treatment is needed to fully correct the problem.
    - Within 3 months, about 70% of patients successfully finish the treatment.
    - 90% finish within six months.
    - One year is the maximum treatment time for the remaining 10%.
    - About 20% of patients feel worse before they felt better.
    - 90% of patients are cured of most of their complaints. At times certain symptoms may persist after the treatment.