Understanding our Thyroid

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Opening, part one of two

We have a number of organs in our bodies. One that we tend not to really understand is our thyroids and the multiple roles it plays.

In today's presentation, we will get an understanding of how important our thyroids are and the multiple roles it plays.

Hopefully, all of us will learn how important it is to respect our thyroids.

A variety of symptoms can occur, in both women and men. It can also occur in children. It can be seen in "lazy" children. They may have low thyroid issues. Generally, it is more common in women but men can also have thyroid issues. As many as 27 million Americans can be affected and 200 million people world wide may be affected with a thyroid condition.

Opening, part two of two

We have three different sources that address this issue.

- One is the late Dr. Broda O. Barnes, MD who brought out the need to understand why our thyroids are so important to our health. He came up with the basal temperature technique that people can do when they first wake up in the morning.
- Two, is Marianne Teitelbaum, DC, an ayurveda practitioner who provides an interesting perspective on thyroid health and related organs part of the endocrine system. (The thyroid is part of the endocrine system.)
- Three, is Dr. Amy Myers, MD, who actually dealt with a thyroid condition herself while in medical school and offers a wholistic perspective including environmental medicine in treating thyroid conditions. She also addresses two types of thyroid conditions. One is the hypothyroid, a thyroid that underperforms and is the most common condition. The second one is hyperthyroid, a thyroid that overperforms and it too can cause problems.

Overview

Thyroid Basics

How our Thyroids work

Symptoms of Thyroid Issues (Barnes, MD)

Symptoms of Thyroid Issues in Children, (Barnes, MD)

Symptoms of Thyroid Weakness (Teitelbaum, DC)

Symptoms of Hypothyroid (Myers, MD)

Symptoms of Hyperthyroid (Myers, MD)

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Thyroid Basics

As much as 12% of the U.S. population will develop a thyroid condition.

- Note #1: It can be much higher, as much as 40%, according to Dr. Barnes, MD.
- Note #2: It becomes more common in women after pregnancy and as they get older.

The thyroid is a master gland with a role every cell in the body. It also acts like a thermostat.

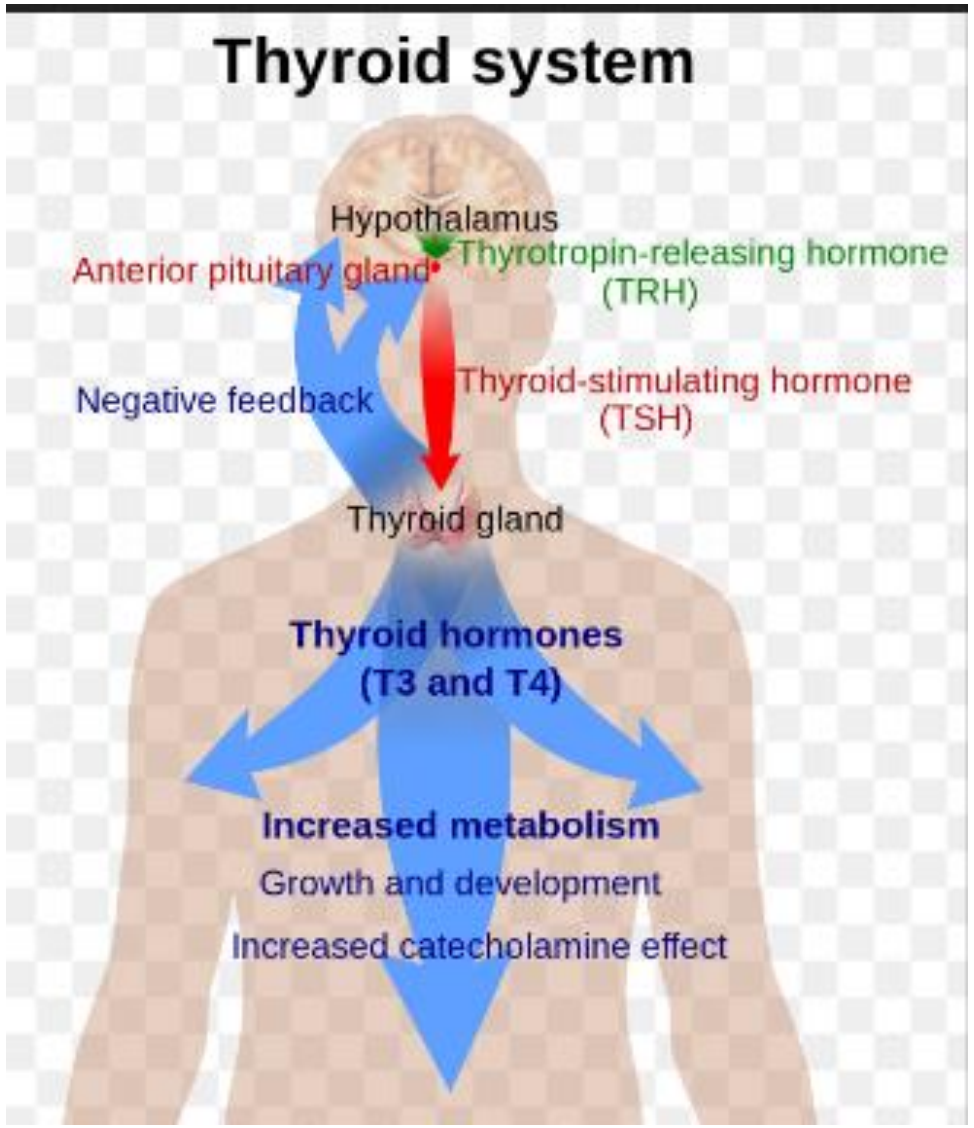
Thyroid is sensitive to:

- Radiation
- Chemicals
- Infections

Thyroid is sensitive to stress:

- Emotional
- Mental
- Physical

Source: Teitelbaum, pg 1



How our Thyroids work

Hypothalamus (located in the brain) – Releases TRH. The hypothalamus monitors the levels of thyroid hormones in the body. Next step is the Pituitary gland

Pituitary (located in the brain) – Releases the TSH, next step is the thyroid gland

Thyroid gland – releases T1, T2, T3, and T4. T4 the inactive form can become T3 active form.

Three other thyroid hormones are: FT4, FT3, and RT3. They go to our cells.

Note: There is a signaling process that goes on with the thyroid hormones. It can malfunction. Keep in mind that our thyroids are part of the endocrine system. Decisions are made to determine which areas need thyroid hormones.

Source: Myers, pg 64

Symptoms of Thyroid Issues by Dr. Broda Barnes, MD

Cholesterol issues

Chronic, recurring infection of one kind

Constipation

Colds, repeated

Decreased sweating

Feet swelling

Hearing disturbances

Heart enlargement

Heart problems (Increased incidence of heart attacks may be associated with rising incidence of hypothyroidism)

Headaches

Hypertension

Impaired memory

Infertility

Lethargy

Loss of hair

Migraines (and other headaches)

Menstruation issues

Muscle aches and weakness

Pallor of skin

Poor equilibrium

Sensation of cold

Skin issues (dry, coarse, cold)

Tongue, thick

Weakness

Note: This is one of the earlier books written addressing thyroid issues. The more common ones are listed. Symptoms are listed in alphabetical order. Children can have thyroid issues, too. It can also affect other health issues. If there are thyroid issues and it is treated, other conditions improve. Barnes, pgs 23-4.

Symptoms of Thyroid Issues in Children by Dr. Broda Barnes, MD

Crying without reason

Flit from one activity to another

Infections, including respiratory infections

“Lazy” children

More quiet

Slow starter in the morning

Some are nervous, hyperactive, and aggressive

Temper tantrums (due to fatigue)

Note #1: Other symptoms are mentioned.
Note #2: When these children were treated for their thyroid conditions, their academic performance improved.

Source: Barnes, pgs 25-6

Symptoms of Thyroid Weakness – Teitelbaum, DC

Acid Reflux

Bone weakness

- T3 provides the bone building cells (called osteoblasts) with the fuel that they need to manufacture bone. T3 also stimulates production of alkaline phosphatase, and enzyme produced in the liver that is crucial to bone mineralization. Without enough T3, the process of breaking down the bones occur more rapidly than the bones can be built up. This results in decreased bone density and osteopenia or osteoporosis. There can be other reasons for bone breaking down. (Teitelbaum, pg 80)

Fatigue

High blood sugar – Hyperthyroidism, creates excessive thyroid hormones, causes increased glucose production in the liver, rapid absorption of glucose from the intestines, and raising the blood sugar, and increased insulin resistance.

High cholesterol and triglyceride levels. - Hypothyroidism makes the liver and gallbladder sluggish, so fat is not easily metabolized and cleared from the body. This allows the cholesterol and triglycerides to accumulate in the blood.

Source: Teitelbaum, pg 81

Symptoms of Thyroid Weakness – Teitelbaum, DC continued

Insomnia, anxiety, heartbeat arrhymia, depression, memory loss, coldness in the body, poor circulation, and inability to concentrate

Loss of hair, dry or brittle hair, and brittle nails

Miscarriage

Poor Digestive function

Poor glucose metabolism – an issue in that glucose can't get into cells

Problems with male fertility (and in women)

Source: Teitelbaum, pg 81

Symptoms of Thyroid Weakness – Teitelbaum,DC continued

Problems with high estrogen and low progesterone – the liver is not able to remove estrogen from the body. This can cause:

- Breast cancer
- Cystic breasts
- Fibroids
- Menstrual issues
- Ovarian cysts
- Thyroid modules

Restless Legs Syndrome

Slow metabolism – It makes it harder for the body to burn fat

Stunted growth in children (more common in girls)

Swelling in the legs, ankles, and feet

Symptoms of Hypothyroidism – Myers, MD

Brain fog, memory issues, concentration issues

Constipation

Depression or mood swings

Fatigue

Feeling cold

Gain weight or cannot lose weight

Goiter/neck swelling

Hair falls out

High cholesterol

Hormone irregularities

Infertility/miscarriages

Listlessness and unmotivated

Not feeling like yourself

Skin is dry and listless

Sleep more than usual

Slow heartbeat

Source: Myers, pgs 20-21

Symptoms of Hyperthyroidism, Myers, MD

Anxiety, wired, mood swings

Chronic urticaria or hives

Eyes bulging out of sockets

Feel warm or increased perspiration

Hair falling out

Insomnia

Irregular periods or infertility

Lose weight without trying

Loose stools or diarrhea

Muscle weakness

Neck swelling or goiter

Palpitations and Heart racing

Panic attacks

Rash or thickening of skin on front of shins

Tremors

Note: According to Dr. Myers, symptoms can overlap for both the hypothyroid and hyperthyroid. A complete panel of blood testing is needed to determine more accurately what is going on. TSH levels are generally low.

Source: Myers, pg 21

Types of Thyroid Hormones, part one of two

Thyroid produces:

- Calcitonin which reduces calcium when they rise above a certain level (pg. 35)
- Triiodothyronine (T3)
- Thyroxine (T4)

T3 and T4 regulate the body's metabolic rate:

- Bone maintenance
- Brain development
- Digestive function
- Growth
- Heart beat rate and rhythm
- Muscle Control
- Reproductive system
- Temperature

Types of Thyroid Hormones, part two of two

Thyroid hormones are made by attaching iodine molecules to tyrosine, an amino acid. The numbers 1-4 designate the number of iodine molecules attached to tyrosine molecule.

- T1
- T2
- T3- T3 is the active form.
- T4 – T4 is the inactive form. It get converted to T3, an active form usable by the body's cells.
  - 80% of the conversion of T4 to T3 is in the liver
  - 20% of the conversion of T4 to T3 is in the digestive system

Thyroid-binding globulins (TBG) – Their role is to transport thyroid hormones throughout the body. Once dropped off, they are known as free T3 or free T4. Too much free T3 or T4 creates hypothyroidism or overactive thyroid function. It shows up in a number of other health conditions including insulin resistance, diabetes, depression, bipolar disorder, (pg. 42)

Reverse T3 Formation (RT3) – It is a biologically inactive form of T3. It is a mirror molecule of the normal T3. However, it blocks the receptor sites on cells. Elevated RT3 levels can be triggered by chronic stress, adrenal fatigue, low ferritin levels, restrictive diets, acute injury or illness, and chronic disease. (pg. 43). Holistic doctors see that elevated levels of RT3 as a problem.

Source: Teitelbaum, pgs 40-43

Nutrients Needed for Converting T4 to T3 and a healthy thyroid

Essential fatty acids

Iodine

Iron – Needed for conversion of T4 to T3

Magnesium- Helps the thyroid produce T4, convert T4 to T3. Prevents overproduction of thyroid hormones can result in hyperthyroidism. Low levels of magnesium make it more difficult to absorb iodine

Selenium-Needed for conversion of T4 to T3

Tyrosine

Zinc-If low, can result in hypothyroidism

Vitamin A- Needed to activate thyroid hormone receptors

Vitamin B12-Low in about 40% of the patients (and other B vitamins)

Vitamin D

Source: Teitelbaum, pg 54-5 and Myers, pg 110

Fluoride issues on the Thyroid

The industrial waste from the aluminum industry called fluoride (see note below) is contributing to the current epidemic of hypothyroidism

- Fluoride displaces the iodine in the thyroid gland
- Decreases the production of thyroid hormones
- 50% of the fluoride accumulates in the fat cells. When this occurs, it disrupts the normal biochemical reactions in the body. Causes abnormal changes to the body's proteins, causing the body to produce antibodies to destroy these abnormal proteins.
- Damage the thyroid gland cells
- Disrupts the conversion of T4 to T3
- Mimic TSH
- Prevent the uptake (absorption) of thyroid hormones into the cells
- Prevent the production of TSH from the Pituitary gland
- Increase in neonatal hypothyroidism
- Areas that add fluoride (industrial waste) to their water systems, have a double rate of hypothyroidism. (Source: Myers)

Note #1: The chemicals – fluorosilicic acid, sodium silicofluoride, and sodium fluoride – used to fluoridate drinking water are industrial waste products from the phosphate fertilizer industry. Of these chemicals, fluorosilicic acid (FSA) is the most widely used. FSA is a corrosive acid which has been linked to higher blood lead levels in children.

Source: Teitelbaum, pg 69

Heavy Metals (Mercury's) Effect on the Thyroid

Mercury is very damaging to the thyroid

Mercury is similar in structure to the iodine

Thyroid can make the mistake of absorbing mercury instead of iodine

Mercury is quite toxic

Mercury can pierce all seven tissues

Mercury can settle in the bone marrow, disruption it's function

Source: Teitelbaum, pg 69

Role of the Liver

The liver breaks down fat soluble toxins. It is dumped into the bile. When the gallbladder is activated, these toxins get moved into the large intestines, and eventually out via the anus. When this doesn't work properly, these toxins can be reabsorbed and deposited into our tissues and brain.

If the liver cannot break down the cholesterol, the bile becomes supersaturated with it. It becomes harder for bile to flow out of the gallbladder. Bile is also a major route for the elimination of cholesterol.

Liver produces a quart of bile a day.

The liver manages blood sugar.

The liver makes proteins for blood clotting. (pg. 60)

The liver regulates our digestion (pg. 60)

The liver regulates our hormones (pg. 60)

The liver manufactures blood from the food we eat. (pg. 60)

Stores and releases glucose for energy when your blood sugar gets too low

Source: Teitelbaum, pg 141, pg 100

More on the Liver

At any time, 15% of your blood is being filtered by the liver

Breaks down excess estrogen, escorts it out of the body, so that you don't form cystic breasts, ovaries, or fibroids

Detoxification occurs in the liver

The liver has the ability to regenerate

- The liver works with immune system cells

Pharmaceuticals drugs are hard on the liver and a source of chronic inflammation.

- Thyroid function improves when liver inflammation is addressed/reduced

Note: For women, levels of estrogen and progesterone need to be balanced.

Miscellaneous Organs

Gonads – these glands produce sex hormones. In females, it is the ovaries and in males, it is the testes.

Hypothalamus sends hormones to the pituitary gland to signal to either release or inhibit hormones to other endocrine glands (pg. 34)

Kidneys – It produces the hormone renin which helps control blood pressure. It also produces the hormone erythropoietin which produces the bone marrow to produce more red blood cells

Pancreas – it excretes enzymes to break down proteins, fats, carbohydrates and nucleic acids in food

Skin – Is able to produce vitamin D with sun exposure

Thymus – It produces T cells (part of the immune system)

Note: The appendix covers some additional organs that are part of the endocrine system.

Source: Teitelbaum, pgs 37-8

High Cholesterol

90% of the people with high cholesterol have issues with:

- Their thyroid (clinical or subclinical hypothyroidism)
- Their gallbladder is not functioning optimally

When the thyroid gland malfunctions, the gallbladder has trouble releasing bile

Bile contains detergent type compounds, reducing fat molecules into smaller droplets

Source: Teitelbaum, pg 130, pg 156

pH Issues

When the bile doesn't flow, the pH levels of the digestive juices remains acidic.

When the blood has acidic pH levels, this causes calcium to be leached out of the bones to maintain the body's pH levels. This leads to osteopenia and/or osteoporosis.

Source: Teitelbaum, pg 131

Toxins

FOUR TYPES ACCORDING TO AYURVEDA

AMA – Improper food digestion

AMA Visha – Fermenting

Gara Visha – Environmental xenobiotics

Indra Vajra Bhi yanya – Electromagnetic Radiation (EMR)

Our thyroid is sensitive to all of these toxins

Source: Teitelbaum, pg. 60

SUBSTANCES THAT ARE TOXIC TO THE THYROID – MYERS, MD

Pernicious perchlorate

Fluorine

Chlorine

Bromine

Nitrates

(And Mercury)

Source: Myers, pgs 175-6

Importance of Fiber in Diet

Fiber combines with toxins

Lack of fiber can combine to high cholesterol

Source: Teitelbaum, pgs 140-3

Food for Thyroid - Myers

Free range organic pasture raised poultry

Grass fed lamb

Organic fruit

Organic grass fed beef or bison

Organic pork or bacon

Organic vegetables

- (Note: The cruciferous vegetables can be potential goitrogens, foods that disrupt thyroid function. It is better that it is cooked. If raw, eat in small amounts.)
- Note: Kale and broccoli are best eaten cooked.

Wild caught fresh fish

Note: Dr. Myers recommends removal of gluten, dairy, and legumes. Pgs 240-1

Food for Thyroid – Teitelbaum

Meat-chicken, turkey, fish, lamb, and rabbit

Grains-white basmati rice

Vegetables – cooked, include cruciferous vegetables

Fruits – all except bananas

Oils-use ghee, olive oil (ghee is beneficial)

Sweeteners-blackstrap molasses, brown rice syrup, coconut sugar, date sugar, evaporated cane sugar, maple syrup, raw honey, stevia, sucanat, and natural brown and raw sugar

Appendix (Source: Teitelbaum, DC)

Adrenal Glands - Role

Adrenal Glands - Disease Stage

Adrenal Glands – Symptoms of Exhausted Adrenals

Gallbladder – Role

Gallbladder – Gallbladder Sludge

Gallbladder – Gallbladder Issues

Gallbladder - Recommendations

Appendix – Adrenal Glands

Appendix: Adrenal Glands - Role

Adrenal glands produces

- Glucocorticoids – It is predominantly cortisol. It helps with the body's use of fats, proteins, and carbohydrates. It suppresses inflammation, regulates blood pressure, increases blood sugar, and can decrease bone formation. It is released during times of stress.
- Mineralcorticoids- One of them is aldosterone. It helps control blood pressure by signaling the kidneys to allow sodium to reabsorb in the blood stream and release potassium into the urine, thus regulating electrolytes and blood pH.
- Androgens from adrenal cortex produces:
  - Dehydroepiandrosterone (DHEA). In females, it becomes estrogen. In males, it becomes male hormones.
- From adrenal medulla, it produces epinephrine and norepinephrine.

Source: Teitelbaum, pg 36

Appendix: Adrenal Glands - Role continued

Prolonged adrenal stress results in:

- Cortisol flushes magnesium out of the body, which is used for T4 conversion to T3. As magnesium levels drop, you become more anxious and hyper, further weakening both the thyroid and adrenal glands
- Decreases the liver's ability to clear out excess estrogen from the blood. Excess estrogen increases the levels of thyroid binding globulin, the hormone that can reduce the conversion of T4 to T3
- High levels of cortisol inhibits the conversion of T4 to T3, and increases the conversion of T4 to reverse T3
- Increases levels of thyroid binding globulin
- Once the adrenal glands are exhausted, and the cortisol levels are very low, the cell receptors do not respond to T3.
- Reduces the conversion of T4 (inactive form) to T3 (active form)

Source: Teitelbaum, pgs 79-80

Appendix: Adrenal Glands - Role continued

Immune system cells release cytokines (such as c-reactive protein, interleukin-6, tumor necrosis factor alpha, These cytokines are known to cause hypothyroidism. (Teitelbaum, pg 80)

Inflammation can decrease serotonin, which inhibits the formation of TSH. When inflammation is present, the body uses serotonin to make inflammatory proteins, thus depleting it. Serotonin helps us to feel happy and helps us to focus.

Inflammation can disrupt thyroid function

Inflammation can interfere with the proper transportation of iodine into the thyroid gland.

Inflammation resulting from adrenal exhaustion depresses thyroid receptor site sensitivity. (Note: The blood work can look normal, but the cells are not able to receive thyroid hormones.)

Low adrenal function causes inflammation

Source: Teitelbaum, pg 80

Appendix: Adrenal Glands - Disease Stage

Adrenal glands weakness undergoes three stages:

- Stage one: Alarm
- Stage two: Resistance
- Stage three: Exhaustion

Source: Teitelbaum, pg 84

Appendix: Adrenal Glands - Symptoms of Exhausted Adrenals

Belly fat accumulation

Brain fog

Decreased immunity

Depression/anxiety

Exhaustion

Feeling cold often

Hypoglycemia

Infertility

Low blood pressure

Overwhelmed

PMS

Salt cravings

Sensitivity to light

Slowed metabolism

Appendix: Gallbladder

Appendix: Gallbladder - Role

Bile contains lecithin, which dissolves fat molecules into small droplets.

Bile is also a major route for the elimination of cholesterol.

Gallbladder issues common with thyroid issues.

Gallbladder releases bile. Bile reduces the size of fat molecules.

It breaks down fat soluble vitamins as well.

Pancreatic enzymes surround these droplets and processes them into particles that are small enough to pass through the intestinal wall.

Sluggish gallbladder can lead to decreased absorption and assimilation of vitamin D.

When the thyroid gland malfunctions, the gallbladder has trouble releasing bile. It can increase cholesterol levels. (Teitelbaum, pg 156)

Appendix: Gallbladder Sludge

Decreased thyroid function prevents bile from emptying out of your gallbladder and is a leading cause of gallbladder sludge.

Ice cold beverages and foods causes fat to congeal. It is better to drink room temperature beverages and/or cooked foods.

Important to keep your bile flowing.

Lack of thyroid hormones decreases the liver's metabolism of cholesterol.

Symptoms of bile sludge:

- Constipation
- Thick poop

When more fat gets into the bile, more than what the bile can handle, instead of the fat being broken down into smaller particles, the bile and fat bind together to create a gelatinous, gluey sludge that gets thicker and stickier. It eventually clogs up the gallbladder and ducts.

Note: Gallbladder sludge can be detected with an ultrasound.

Source: Teitelbaum, pgs 125, 128

Appendix: Gallbladder Issues

Gallbladder weakness common with thyroid issues

Symptoms:

- Acid Reflux
- Arrhymias
- Constipation
- Depression
- Fatigue
- Glandular Growths
- High cholesterol
- Weight gain

When the bile doesn't flow, there is reabsorption of toxins and hormones, and it can be a factor with autoimmune disease. There can be a problem with estrogen. Reabsorption of estrogen can lead to ovarian, breast or uterine cancer.

Source: Teitelbaum, pgs 128, 130

Appendix: GallbladderRecommendations

Avoid heavy, hard to digest foods

Eat cooked foods

Herbs and foods to release the bile

- Apples
- Artichokes, cooked
- Beets, cooked
- Carrots

Need enough magnesium for gallbladder contractions

Source: Teitelbaum, pgs 132-135

Appendix

Ayurveda Nine Stages of Disease

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Constipation

Glossary

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More Information on Hyperthyroidism

Overview of the Endocrine System

Parathyroid Glands

Pituitary Gland

Role of Bone Marrow

Thyroid Testing with Basal Temperature by Dr. Barnes, MD

Thyroid Tests

Thyroid Testing Issues

Treatment

Appendix: Ayurveda Nine Stages of Disease

Stage 1: Accumulation or Sanchaya

Stage 2: Aggravation or Prakopa

Stage 3: Spread or Presara

Stage 4: Deposition or Localization of Toxins or Sthana Samshraya

Stage 5: Manifestation or Vyakti

Stage 6: Differentiation of Disease or Bheda

Stage 7-9: Deformity, Final Disease Symptoms, and Disease Complications, or Virupaka, Rogalakshana and Paribhaashaa, and Kledu

Source: Teitelbaum, pg 14

Appendix: Bibliography

The Complete Thyroid book, 2nd ed. (2011) by Kenneth Ain, MD and M. Sara Rosenthal, PH.D. (Publisher: McGraw Hill Publisher) Note: It focuses more on the various aspects of thyroid disorders.

The Essential Thyroid Cookbook: over 100 nourishing recipes for thriving with hypothyroidism and Hashimotos (2017) by Lisa Markley, MS RDN and Jill Grunewald, HNC. (Publisher: Blue Wheel Press) Note: Besides recipes, it includes an excellent overview of nutrients needed by our bodies and thyroids with input from some of the leading nutrition oriented physicians.

Healing the thyroid with Ayurveda (2019) by Marianne Teitelbaum, DC. (Publisher: Healing Arts Press)

Hypothyroidism: the unsuspected illness (1976) by Broda O. Barnes, MD and Lawrence Galton. (Publisher: Harper and Row)

The thyroid connection: why you feel tired, brain fogged, and overweight : how to get your life back (2016) by Amy Myers, MD. (Publisher: Little, Brown, and Company) Note: She focuses on the nutritional point of view as well as environmental health when it comes to thyroid health. She specifies a 30 day treatment plan with recipes.

Appendix: Bibliography continued (Internet)

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Appendix: Constipation
Foods that help with Constipation

Beets

Blueberries

Cooked cabbage

Cooked prunes

Mangoes

Okra

Sweet juicy pears

Appendix: Glossary

Hashimotos's Thyroiditis – High levels of thyroid antibodies

Iodine – Iodine deficiency common in people with thyroid issues (96%)

Molecular mimicry – When a foreign substance looks like a biological substance and the organs cannot tell them apart. That is when we have serious problems.

SNP status (single-nucleotide polymorphism) – They are genetic mutations that affect your ability to absorb certain vitamins. It affects the detoxification process. Two common ones are MTHFR and GSTM1 gene. Testing can be done (23andMe.com).

Appendix: Glossary continued

Substances that can displace iodine:

- Fluoride
- Fluorine, chlorine, and bromine
- Pesticides
- Herbicides
- Rat poison
- Other (Source: Dr. A. Jones, MD)

TSH (thyroid stimulating hormone) – It is a hormone released by the pituitary to stimulate the thyroid to produce thyroid hormones.

Appendix: Glossary continued

T4 – a storage form of the thyroid hormone

T3 – the active form of thyroid hormone. It is converted from T4. Low levels of T3 means hypothyroidism. High levels of T3 means hyperthyroidism.

FreeT3 – an active form of thyroid that is left free and is not bound

TBG (thyroxine binding globulin) – a protein that binds to the thyroid hormone so that the hormone can move through your blood stream. Too little TBG means hyperthyroidism and too high levels of TBG mean hypothyroidism.

Reverse T3 – a type of thyroid hormone that prevents free T3 from attaching to your cells, thereby preventing blunting or preventing its effects

Source: Myers, page 66, 190-1

Appendix: Glossary continued

Thyroid resistance – a disorder where your cells have difficulty receiving free T3. So even if or when the blood levels of T3 are optimal, not all of the hormone is able to enter your cells. It is similar to insulin resistance.

Thyroid antibodies –They are produced by the immune system and attack the thyroid. There are two kinds of thyroid antibodies.

- Thyroid peroxidase (TPOab)
- Thyroglobulin antibody

Appendix: Health Issues Related to Thyroid Issues in Pregnancy

Increased risk for hypothyroidism in pregnant women

Their boys had a lower level of IQ scores

Hypothyroidism is a known cause of brain-based disorders in children

Hypothyroidism in women can cause:

- Fatigue
- Weight gain
- Depression

Pregnancy places more demands on the thyroid

Those with iodine insufficiency had higher levels of hypothyroidism

After two pregnancies, a mom's iodine reserves can be depleted, resulting in hypothyroidism and weight gain.

Breast tissues contain a considerable amount of iodine. (Note: Iodine deficiency can cause fibrocystic breast disease.)

Nutrition is important for a healthy and functioning thyroid.

Source: Fluoride Action Network, Effect of Fluoride in water in Pregnancy, a study by Meaghan Hall, et. Al, 2023, Scientists from Toronto's York University, in the journal, Science of the Total Environment

Appendix: History on the Importance of Healthy Thyroids

The late Dr. Broda O. Barnes, MD did extensive research on why our thyroids are so important and the impact it has on our health.

He came up with a very simple test that can identify health issues with the thyroid called the basal temperature test. When waking up in the morning, you take your temperature. It needs to be between 97.8 to 98.2. If lower or higher than this range, then further investigation is warranted. (Note: It is covered in more detail in a later slide.)

Appendix: Important Nutrients - Iodine

Iodine is essential for a healthy thyroid, especially during pregnancy.

There are a number of chemicals from the halides family that can displace iodine or the body is not be able to tell them apart from iodine. They will not function like iodine. They are:

- Fluoride (Fluorine)
- Chlorine
- Bromine

Fluoride and chlorine can be in municipal water systems. One way to protect yourself is to install a shower filter. These chemicals can be absorbed through the skin.

Source: http://www.alternativehealthreports.org/articles.php? (Title: Reversing Hypthyroidism Naturally by Dr. A. Jones, written 03/05/2014.)

Appendix: Other Important Nutrients

B Vitamins – There is a whole range of B vitamins.

Calcium – it makes the heart contract. Recommends bioavailable forms of calcium such as red coral, white coral, type of pearls, and baby snail shells.

Glutathione – is a master antioxidant. If it is low, toxins can build up in the liver. It comes from an amino acid called cysteine. It influences the conversion of T4 to T3. Use transdermally as glutathione cream.

Iodine – Essential for a healthy and functioning thyroid. (Note: More information is covered in the previous slide.)

Source: Teitelbaum, pgs 115-9

Appendix: More Information on Hyperthyroidism

ADDITIONAL SYMPTOMS

Anxiety

Enlargement of thyroid gland (goiter)

Excessive thirst

Fatigue

Heart palpitations

Heat intolerance

Increased heart rate

Poor sleep

Sweating

Tremor in hands or extremities

Weight loss

NUTRITIONAL AND HERBAL SUPPLEMENTS

L-Carnitine

CoenzymeQ10

Calcium Citrate and Vitamin D

Herbals for Hyperthyroidism:

- Bugleweed (*Lycopus virginicus*) – decreases levels of TSH and T4
- Motherwort (*Leonurus cardiaca*) – helps with symptoms
- Lemon Balm (*Melissa officinalis*)- blocks certain hormone receptors, preventing TSH from binding to your thyroid tissue
- Glucomannan – decreases circulating thyroid hormones in the blood

Source: Hyperthyroidism Facts and Statistics by Cory Martin, Supplements source: Myers, pgs 135-7

Appendix: Overview of the Endocrine System

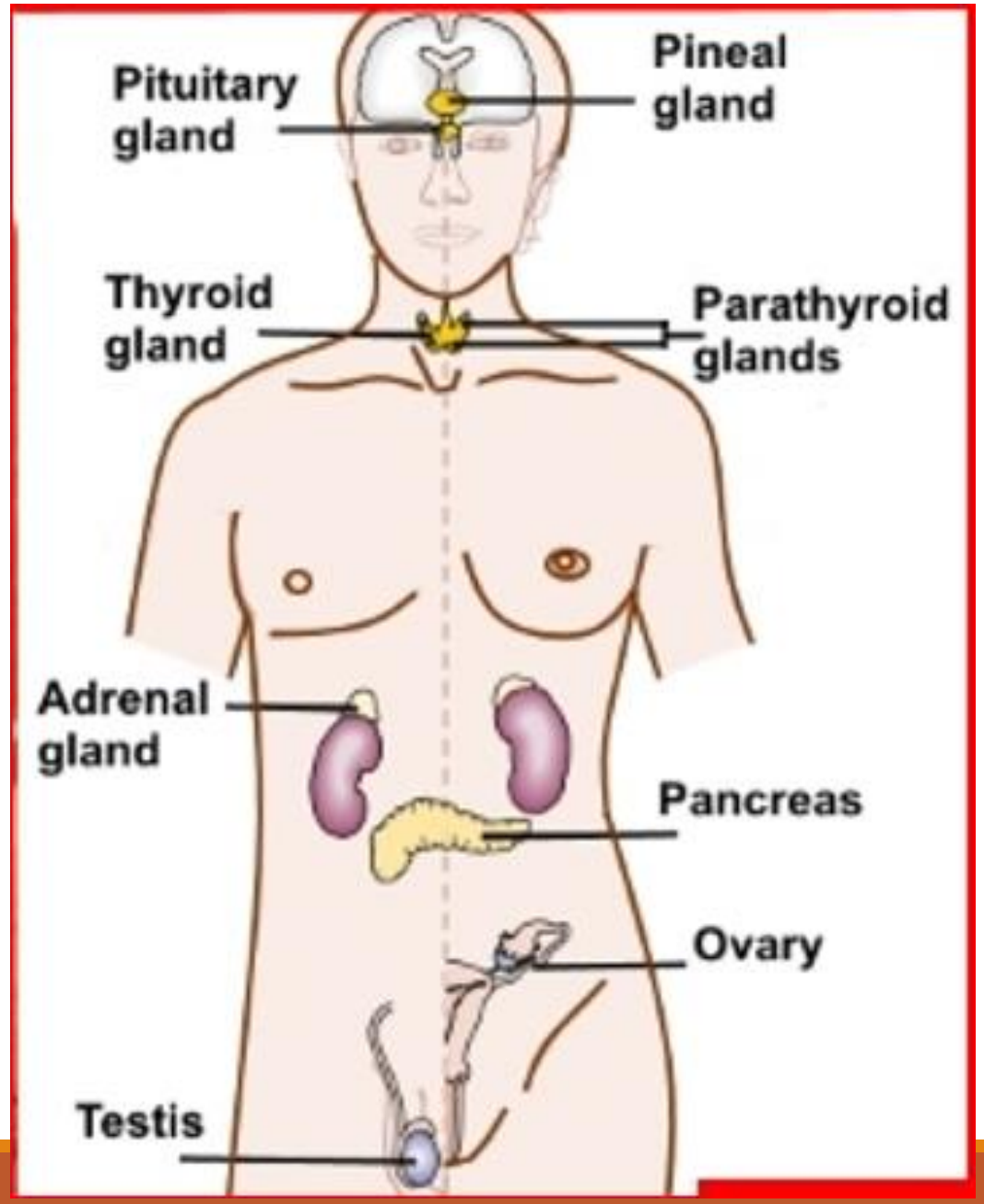
As the thyroid is part of the endocrine system, there are a number of other players in the endocrine system.

Hypothalamus:

- Sends hormones to the pituitary gland to signal it to either:
  - Release hormones to other endocrine glands
  - Inhibit hormones to other endocrine glands
- When thyroid hormones become too low, the hypothalamus will release thyrotropin-releasing hormone (TRH) to stimulate the pituitary gland to released the thyroid stimulating hormone (TSH) to ramp up the production of thyroid hormones
- The hypothalamus does the same with gonads releasing:
  - Gonadotropin-releasing hormone (GnRH)
  - Releasing corticotropin-releasing hormone (CRH) with the adrenals
- The hypothalamus also releases:
  - Growth hormone-releasing hormone
  - Growth hormone-inhibiting hormone
  - Oxytocin – triggers uterine contractions
  - Antidiuretic hormone – prevents water loss in the body

Pineal Gland: Is the source of melatonin

(Source: pg 34, Teitelbaum)



Graphic displaying the major organs as part of the Endocrine system that regulate hormones. The male chart is on the left and female chart is on the right.

Note: The thymus is not shown. Three other organs play a role in our hormonal health. They are: the hypothalamus, the gut, and the liver.

Source: https://www.healthyandnaturalworld.com/signs-of-hormonal-imbalance/ and https://greensmoothiegirl.com/endocrine-disruptors

Appendix: Parathyroid Glands

The parathyroid gland produces the following hormone: parathyroid hormone.

The role of this hormone is when the calcium levels falls too low, in the blood, this hormone stimulates osteoclasts to breakdown calcium and release it into the blood stream.

Appendix: Pituitary Gland

Pituitary Gland manufactures six hormones:

- Non-Sex Hormones
  - Thyroid-Stimulating hormone tell the thyroid gland to produce its hormones
  - Adrenocorticotrophic hormone (ACTH) stimulates the adrenal cortex to produce its hormones
  - Human growth hormone affects the growth, repair, and reproduction of many of the cells in the body
- Sex Hormones
  - Follicle-stimulating hormone that stimulates the gonads to
    - Produce eggs in females
    - Produce sperm in males
  - Prolactin (PRL) stimulates the mammary glands in the breast to produce milk
  - Luteinizing hormone (LH) stimulates the gonads to:
    - Produce estrogen in females
    - Produce testosterone in males

Source: Teitelbaum, page 35

Appendix: Role of Bone Marrow

New blood cells are produced in the bone marrow. Two types are:

- Homopoietic (produces blood cells, including white and red blood cells, and platelets)
- Stroma (produces fat, cartilage, and bone)

Toxins that end up in our bone marrow causes problems, specifically autoimmune disease or cancer

- Sources of exposure include heavy metals, pesticides, chemicals in our food, even pharmaceuticals
- Need to keep our bone marrow clean

Source: Teitelbaum, pg 102

Addendum: Thyroid Conditions

Types of Thyroid Conditions

- Hashimoto's
- Hyperthyroidism (high)
- Hypothyroidism (low)
- Neonatal Hypothyroidism (Note: The incidence of neonatal hypothyroidism is rising.)
- Primary Hypothyroidism
- Secondary Hypothyroidism
- Tertiary Hypothyroidism
- Drug (or Toxicity) Induced Hypothyroidism
- Surgically Removed Thyroid

Source: Reversing Hypothyroidism Naturally by Dr. A. Jones, MD (03/05/2014)

Appendix: Thyroid Tests

TESTS	RECOMMENDED RANGE (ACCORDING TO MYERS)
TSH	TSH 1.0 to 2µ IU/mL (higher for pregnant women)
Free T4	FT4>1.1 ng/dL
Free T3	FT3>3.2 pg/mL
RT3	RT3 <than a 10:1 ration of RT 3 to FT3
Thyroid peroxidase (TPO)	Thyroid peroxidase antibodies < 9 IU/mL or negative
Thyrogobulin antibody (TgAB)	Thyroglobulin antibodies <4 IU/ml or negative

Source: Teitelbaum, pg 77, Myers, pg 52, 119

Appendix: Thyroid Testing with Basal Temperature by Dr. Barnes, MD

Check temperature under the arm (auxillary) before getting out of bed in the morning.

A normal temperature range is 97.8 to 98.2 degrees Fahrenheit

A temperature below 97.8 degrees Fahrenheit indicates hypothyroidism

A temperature above 98.2 degrees Fahrenheit indicates hyperthyroidism

Source: Barnes, pg 46. It may not uncover all of the thyroid issues, but it is a simple test that can be done and uncover hypothyroidism or hyperthyroidism.

Appendix: Thyroid Testing Issues

There are a number of reasons why thyroid conditions are under-reported in the United States.

One, no blood testing is done.

Two, test only TSH.

Three, test total T4 but not your free T4

Four, test T4 but not free T3. Low free T3 levels might mean that you aren't converting enough free T4 into free T3

Five, test total T3 but not free T3.

Six, test T3 uptake but not free T3

Seven, test free T3 but not free T3

Eight, thyroid antibodies are not tested

Nine, nutrients needed for optimal thyroid health are not tested.

Ten, even with testing, what the labs report as a safe range are not narrow enough to illustrate healthy thyroid function

Source: Myers, pgs 103, 117; Note: Dr. Myers lists optimal ranges on page 119.

Appendix: Treatment

AYURVEDA

One, treat and heal the gut

Two, cool down the heat in the liver

Three, clean up the bone marrow

DR. MYERS

Address leaky gut issues

Avoid using plastics

Clean up diet

Use clean personal care products

Clean up environment (HEPA air filter, water filters)

Test both thyroid levels (complete panel) and nutritional levels

Treat any underlying infections

Source: Teitelbaum: pgs.104-5

Conclusion

The thyroid has a role in every single cell. If you are experiencing a range of health issues, it is a good idea to have your thyroid completely tested with a full blood panel on thyroid hormones.

Marianne Teitelbaum, DC makes this observation regarding thyroid issues.

- One, it can be the underlaying disturbances (environmental factors) that is affecting our thyroid
- Two, it can be the thyroid itself.

A major shortcoming of western medicine or conventional medicine is that many of the treatment protocols suppress symptoms. They do not address the underlying causes. Specialization of specialties does not help in looking at the wholistic point of view when it comes to our health.

When the health insurance companies control what testing physicians can authorize, and limits what physicians can do to try to find out the underlying cause, this results in needless suffering and disability. Tests can say it is “normal” and ignore clinical issues.

Acknowledgements

To the late Dr. Broda Barnes, MD, he discussed health patterns pertaining to our thyroids. He also addressed the importance of how studies can lead to misleading conclusions.

To Dr. Marianne Teitelbaum, DC, she did an excellent job of how our thyroids interact with other organs and systems in our bodies (including their roles).

To Dr. Amy Myers, MD, she covers the importance of our the toxins in our environment can have an impact on our thyroids, a clean diet, underlying infections, the proper reading of tests along with listening to your patients, and strategies to address the problems our thyroids encounter.

Our appreciation to all of you.