

1  **Thyroid by Van D. Merkle**  
**DC, DABCI, DCBCN**

2  **Thyroid Cancer**

- The American Cancer Society's estimates for thyroid cancer in the United States for 2014 are:
- About 44,280 new cases of thyroid cancer estimated for 2021
- About 1,890 deaths from thyroid cancer in 2014
- About 2,200 deaths projected for 2021 (GETTING WORSE)
- Thyroid cancer is commonly diagnosed at a younger age than most other adult cancers. Nearly 2 out of 3 cases are found in people younger than 55 years of age. About 2% of thyroid cancers occur in children and teens.
- The chance of being diagnosed with thyroid cancer has risen in recent years and it the most rapidly increasing cancer in the US. Most of this is the result of the increased use of thyroid ultrasound, which can detect small thyroid nodules that might not otherwise have been found in the past. Still, at least part of the increase is from finding more large tumors as well.
- The death rate from thyroid cancer has been stable for many years and remains very low compared with most other cancers.
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3  **Thyroid Cancer Prognosis**

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- Papillary thyroid cancer, Follicular thyroid cancer & Medullary thyroid cancer
  - Stage 1 and 2 have 5 years survival of nearly 100%
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- Anaplastic thyroid cancer- all are considered stage 4 and 7% survive 5 years
  - 1% of all thyroid cancers, mostly over 60 yr/old
  - Medical treatment to date does not extend life beyond 6 months
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4  **Papillary Thyroid Cancer**

- 80% of all thyroid cancers
- The survival rate for papillary thyroid cancer is excellent. More than 95% of adults with this cancer survive at least 10 years.
- The prognosis is better for patients who are younger than 40 and for those with smaller tumors
- These tests are not specific for papillary cancer of the thyroid:
- Higher-than-normal levels of thyroxine, triiodothyronine, and thyroid-stimulating hormone (TSH) may indicate thyroid cancer.
- Evaluated serum levels of thyroglobulin, calcium, and calcitonin and serum level of carcinoembryonic antigen (CEA)
- However, the implications of the presence of CEA are not specific because CEA levels are high in several cancers, and numerous healthy people may have small amounts of CEA, especially pregnant women and persons who are heavy smokers (for smokers- early sign of impending cancer.).

5  **Thyroid Nodules**

- 4-7% of U.S. Adult population

- Possible 50% in some studies
- Difficult to palpate
- Lab values usually clinical normal
- Late-stage Metastatic thyroid cancer: elevated Thyroglobulin (Tg)
- 3-6% are malignant
- When detected should have careful workup and referred for ultrasound and possible biopsy/excision

## 6 **Thyroid Nodules**

- Recommendations:
  - Blood testing of thyroid-TSH, T4, T4 Free, T3, T3 Total, TPO Ab, Tg Ab and Thyroglobulin (Tg)
  - Complete blood testing- inflammatory markers, protein, liver function, infection, vitamin D etc.
  - Do complete testing including hair- uranium, iodine, selenium other heavy metals.
  - Exercise will almost always help to reduce nodules or enlarged thyroid.

## 7 **Thyroid by Van Merkle**

- Nutritional experts do not agree with the natural treatment of any thyroid disease
- Hashimoto's disease natural treatment:
  - 19 different recommendations by 19 experts
- If you or other experts don't agree with my recommendations-
  - I'm Not Surprised but they work most of the time
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## 8 **Sources of info:**

- [www.Labcorp.com](http://www.Labcorp.com)
- David Brownstein, MD- books
- William Kleber DC- DABCI course instructor
- Datis Kharrazian DC
- Stealth Infections & Chronic Illness
  - DABCI/DACBN Joint Symposium May 2014
  - Nikolas R. Hedberg, D.C., D.A.B.C.I.
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## 9 **Thyroid thoughts by different experts**

- Use iodine and sometimes a lot of it.
- Never use iodine

## 10 **Medical thyroid treatment**

- Synthroid, Amour, Levothyroxine etc.
- Medical treatment will lead to lower natural thyroid function to removal or destruction of thyroid and permanent long-term use of Synthroid or other thyroid hormone replacement.
- The primary causes of thyroid problems are rarely addressed because it is just easier and quicker to use medication

## 11 **Synthroid**

- TSH and T4 are commonly what are tested to determine dose of Synthroid or medical treatment

## 12 **Synthroid**

- TSH should be low or very low with use of Synthroid or other thyroid meds

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- 13  **Synthroid and low Thyroid**
  - With use of Synthroid or other thyroid medication the TSH should be low...even very low.
  - ? What does it mean when TSH is high and the pt is on Synthroid?
  - Suppose Patient has symptoms of low thyroid-
    - TSH yellow or red high
    - T4 yellow or red high
    - T3 Uptake high
  - DOES patient have low thyroid? Do a T3 Total, T3 Free, TPO Ab, Tg Ab and Reverse T3.
    - Do a Barnes Temperature test
- 14  **Synthroid**
  - If thyroid has been removed or radiated then Synthroid, amour or similar will be needed for life.
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- 15  **Synthroid**
  - Has one of the lowest risk side effects compared to most all other drugs
  - The side effects are often minimal
- 16  **Synthroid- major problem**
  - If patient needs progressively higher doses, an intolerance to Synthroid is developing, which can lead to not being able to take any medications for the thyroid
  - This is very bad
  - Being able to properly lower the dose of Synthroid is always a good thing.
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- 17  **Helping thyroid patients**
  - Long term medicated thyroid patients will rarely be able to go off all thyroid medication
  - BUT- the patient can often get healthier such that will need less medication. The smaller the dose of medication needed is obviously good.
- 18  **Thyroid tests details**
  - [www.Labcorp.com](http://www.Labcorp.com)
  - Most of the information in the reports about the thyroid tests are at this site.
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- 19  **Factors That Affect Thyroid**
  - Low protein
  - Low iodine
  - High iodine
  - Low Vitamin D
  - Liver dysfunction/disease
  - Kidney dysfunction/disease
  - Poor digestion

- Poor quality food/fast food
- Caffeine
- High Fructose Corn Sugar
- GMO-gluten
- Infection
- 
- 
- Inflammation-autoimmune disease
- High Ferritin
- Low selenium
- High fluoride, bromide, chloride
- High Uranium
- High mercury, arsenic, lead etc.
- Lack of exercise
- Medications
- Xenobiotics/chemicals
- Soy
- Estrogens
- Stress

20  **Factors That Affect Thyroid Cont.**

- Medical treatment is directed only to the thyroid without considering or addressing the other factors.
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21  **Factors That Affect Thyroid Cont.**

- The SBN/Merkle way is to first identify and consider all these factors as primary insults to the thyroid and resolve them.
- Direct nutritional support of the thyroid is often secondary to long term resolution of thyroid problems
- Find the cause of the thyroid problem, don't just treat the 'Symptom' of thyroid disease.

22  **Real life case/example**

- Female 38y/o on Synthroid
- Medication not working, still signs of low thyroid.
- All nutrients failed to make a difference
- Patient relayed that she was following the diet
- All symptoms of low thyroid and need for Synthroid stopped after she quit all use of soy products: breakfast bars, meal replacement shakes, snacks all contained soy.
- And her hot flashes stopped, anxiety and sleep better.
- Her primary protein was soy
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23  **GI and thyroid**

- Optimal digestion and GI tract
  - Proper digestion of protein
  - A large percentage of the conversion of T4 into T3 occurs in the gut

24  **Liver and Thyroid**

- Liver-
  - protein and amino acid conversions
  - A notable percentage of T4 into T3 conversion occurs here
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25  **Kidney and Thyroid**

- Kidney
  - A significant amount of T4 to T3 conversion occurs here
  - Kidney disease will result in loss of protein

26  **Inflammation and/or Infection and Thyroid**

- Signs of Inflammation or infection of thyroid
  - High TSH
  - High T4, T4 Free
  - High T3 Total, T3 Free
  - High Thyroid Peroxidase Antibodies
  - High Thyroglobulin Antibodies
  - High Reverse T3

27  **Infection/Inflammation and Thyroid**

- Elevated TPO Ab and Tg Ab
  - Treat for infection based on CBC
  - If ESR/CRP is negative and no primary signs of infection, then use anti inflammatory nutrients
    - Bromelain, EPA/DHA
    - Turmeric, ginger, bioflavonoids, vit C
- 

28  **Halides and Thyroid- Bromide, Chloride and Fluoride**

- Testing for these is expensive and I rarely do it.
- Chloride: drinking water, swimming pools, hot tubs, industrial contamination
- Fluoride: drinking water, tooth paste and industrial contamination
- Bromide: baked food products

29  **Exercise and Thyroid**

- Very intense exercise will often jumpstart a low thyroid function and even help shrink thyroid nodules
- Exercise needs to be consistent and intense in the first few weeks

30  **The Two Main Hormones**

- Thyroxine T4 (93%) and triiodothyronine T3 (7%) which circulate in the blood stream
- T4 converts to T3 outside the thyroid in most all tissue with the liver and kidney doing the most conversion
- 80% of the most active T3 Free is produced outside the thyroid
- Free T3 is most responsible for increasing metabolic rate

31  **Is It Really the Thyroid?**

- Because 80% of T3 is produced outside the thyroid, what appears, clinically, to be low thyroid function could have nothing to do with the thyroid gland

- Many environmental factors, illnesses and drugs affect conversion of T4 to T3

### 32 **Thyroid Hormones and Protein**

- 99.95% of T4 and 99.5% of T3 are bound in reversible physicochemical equilibrium to several serum proteins
  - TBG: Thyroxine-binding globulin
  - Albumin
  - Lipoprotein

### 33 **Thyroid Hormone Effects**

- Virtually every tissue in the body is affected
- By stimulating or inhibiting the accumulation of messenger RNAs (mRNAs) that code for specific proteins
- Regulate production and activity of many enzymes, the production and metabolism of other hormones and the utilization of substrates, vitamins and minerals
- Stimulate oxygen consumption of skeletal and cardiac muscle, liver, gastrointestinal tissues and kidney
- Increases mitochondrial oxidative metabolism and ATP utilization
- Stimulates lipolysis in adipose tissue

### 34 **Thyroid Hormone Effects Cont.**

- Carbohydrate metabolism
- Protein synthesis
- Sympathetic activity
- Cardiovascular system
- Crucial role in the development and growth of the nervous system (do thyroid studies on children that are not well)

### 35 **Hypothyroidism**

- 20 million people are currently being treated (more women than men)
- 2 million are undiagnosed
- 40% of Americans today are affected by some degree of hypothyroidism
- 

### 36 **Thyroid Disorders**

- Family trait/bad genes
- Environmental
- Susceptibility rises with history of autoimmune disease
- Complete lack of thyroid hormone can lower the basal metabolic rate 40-50% (note: it still functions)
- Extreme excess can raise BMR 60-100%
- The basal body temperature is still considered the most accurate test for sub-clinical findings

### 37 **Measuring the Basal Body Temperature**

- Place electronic thermometer under the armpit first thing upon awakening in the morning and leave it undisturbed for 10 minutes. Remain immobile during this time (lying still with eyes closed is optimal. Do not get up or move around during the 10 minutes (even to go to the bathroom).
- Read and record the temperature after the 10 minutes.

- Repeat this procedure for a minimum of 3 consecutive mornings, ideally at the exact same time of day.

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#### 38 **Interpretation of Basal Body Temperature**

- Normal thyroid: 97.6 degrees F (36 degrees C) to 98.2 degrees F (34.5 degrees C)
- Basal body temperatures below this range can indicate hypothyroid
- Basal body temperature above this range may indicate hyperthyroid

#### 39 **Cancer and Thyroid**

- Researchers have found a strong link between low thyroid and higher risk of cancer
- Another good reason to test

40

#### 41 **Testing Tips for Thyroid**

- Reasons that could affect thyroid or conversion of T4 to T3.
  - Thyroid Peroxidase Antibodies
  - Thyroglobulin Antibodies
  - Reverse T3

#### 42 **Additional Thyroid Tests**

- Thyroid Peroxidase Antibodies
- Thyroglobulin Antibodies
- Reverse T3
- Thyroglobulin
- Thyroid Binding Globulin

#### 43 **Thyroid Peroxidase Antibodies**

- TSH stimulates the thyroid to produce more T4 and T3 and TSH also stimulates Thyroid Peroxidase (TPO). TPO helps with the conversion of T4 into the more active thyroid hormone T3.
- Anti-TPO antibodies target the TPO enzymes slowing or stopping this necessary activity resulting or causing lower thyroid function.
- Having anti-TPO antibodies does not necessarily mean one has thyroid disease. TPO antibodies are seen in nearly all patients with Hashimoto's thyroiditis and 70 percent of patients with Graves' disease.
- TPO antibodies can also indicate a chronic inflammatory disease, like rheumatoid arthritis, is present.
- People with Addison's disease (low adrenal gland hormones), celiac disease (gluten intolerance), primary biliary cirrhosis, pernicious anemia, Sjogren's, systemic lupus erythematosus, type 1 diabetes or alopecia areata (an autoimmune reaction which causes baldness) can also have anti-TPO antibodies.
- Sometimes the level of TPO Antibodies does not correlate with the severity of disease.

#### 44 **Thyroglobulin (Tg)**

- Thyroglobulin will indicate if there is active thyroid tissue
- Tg measurement is intended to aid in monitoring for the presence of metastatic thyroid tissues in patients who have had thyroid gland ablation (using thyroid surgery with or without radioactivity).
- Any Thyroglobulin is a bad sign if there has been removal of the thyroid due to cancer. (indicates

active thyroid tissue)

45  **Thyroglobulin Antibodies**

- Tg Antibodies affect the measurement of Tg, which is important for monitoring thyroid ca
- Quantitative TgAb concentrations can also serve as a surrogate tumor marker for Thyroid Cancer recurrence and for monitoring changes in tumor mass in certain patients.

46  **Thyroglobulin Antibodies**

- Thyroglobulin stimulates the production of T4 and T3 by the thyroid
- Thyroglobulin Antibodies halt or slow this process.
- Thyroglobulin Antibodies can be seen in both Grave's disease and Hashimoto's disease, however the level of Thyroglobulin Antibodies does not always correlate with the severity of disease.

47  **Thyroxine-Binding Globulin (TBG)**

Distinguish between high T4 levels due to hyperthyroidism and due to increased binding by TBG in euthyroid individuals who have normal levels of free hormones; document cases of hereditary deficiency or increase of TBG; work-up of thyroid disease. In patients with low T4, high T3 (uptake) or the reverse, who clinically seem eumetabolic and have normal FTI, measurement of TBG is only occasionally needed.

Some such patients may have hereditary anomalies of TBG.

TBG is increased by estrogens, tamoxifen, pregnancy, perphenazine, and in some cases of liver disease, including hepatitis.

Decreased TBG is found with some instances of chronic liver disease, nephrosis and systemic disease, and with large amounts of glucocorticoids, androgens/anabolic steroids, and acromegaly.

Although alterations of TBG are usually resolved by the thyroid profile, TBG must occasionally be directly measured.

48  **Euthyroid**

- Euthyroid: The state of having normal thyroid gland function. As opposed to hyperthyroid (overactive thyroid) or hypothyroid (underactive thyroid).
- Medication might be needed to attain or sustain Euthyroid

49  **Thyroid Tips- Go Slow**

- The Thyroid is said to produce only a couple of table spoons of juice a year.
- It doesn't take a lot of thyroid hormone to produce a big result

50  **Thyroid Tips- Don't Panic**

- Work to gradually improve thyroid function
- The TSH might temporarily go higher when first initiating treatment especially if the patient is lowering the dose of thyroid medication.
- The TSH might go higher temporarily if starting to use iodine
  - Do Panic

51  **Thyroid and Iodine**

- Iodine will often initially increase TSH and lower T4.
- Iodine will displace uranium and halides and during the initial use of iodine the thyroid gland will be stressed causing lower T4.



- 1-3 months will be needed for the thyroid to regulate.

52  **Thyroid and Iodine**

- Iodine is not used if iodine is high in the hair
- When iodine is low or very low in the hair then iodine will often be used if indicated by the thyroid blood tests.

53  **Thyroid and Iodine**

- Iodine can help low thyroid
- Iodine can help high thyroid
- Testing and retesting will determine treatment course

54  **Thyroid and Iodine**

- If the TSH doesn't go above 10-20 points higher just give it some time
- If it goes higher or is a concern, then lower the dose of iodine
- Sometimes stopping the iodine for a few weeks will allow iodine to be reintroduced with good effect.
- Testing the TSH frequently will be the easiest and most immediate to determine dose of iodine

55  **Thyroid and Iodine**

- We use Iodoral
- We will often use no more than 1 Iodoral/day often will use 1/2 tablet/day or maybe 1 or 2 tablets a week.
  - Using this low dose method will allow nice slow improvement of the thyroid without shocking the thyroid and causing the TSH to go too high.
  - Be patient, it will take time.

56  **Thyroid Support**

- Nearly all companies have thyroid support nutrients
  - We use ThyroAdvance for most low thyroid conditions based on:
    - T3 Free
    - T3 Total
    - T4 Free
    - T4
    - TSH

57  **Thyroid Case**

58  **Thyroid Case**

59  **Thyroid Support**

- Thyroid Support
  - Similar to other nutritional support: if patient is trying to reduce thyroid medication an increased level of thyroid support nutrients might be needed initially
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  - Natural thyroid support with ingredients like: Riboflavin 35mg, Niacin 30mg, Iodine (from kelp) 150mcg, Zinc (as Zinc Oxide) 10mg, Copper (chelate) 1.5mg, Chromium (as Chromium

polynicotinate) 100mcg, L-Tyrosine, 400mg, Liver 200mg, Proprietary Blend 100mg. Bacopa monnieri Extract (aerial parts),

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- Patient should not just stop any medication without talking with their prescribing doctor and have regular thyroid testing.

60  **Thyroid by Van D Merkle**  
**DC, DABCI, DCBCN**  
**7-15-2014**

61  **Thyroid**

- The major thyroid hormones are L- thyroxine ( $T_4$ ) and L-triiodothyronine ( $T_3$ ). The amounts of  $T_4$  and  $T_3$  released into the circulation from the normally functioning thyroid gland are regulated by the amount of thyrotropin (TSH) secreted from the anterior pituitary gland . TSH secretion is in turn regulated by the levels of circulating  $T_4$  and  $T_3$  and by secretion of thyrotropin releasing factor (TRH) from the hypothalamus . Recognition of this complex feedback system is important in the diagnosis and treatment of thyroid dysfunction
- The principal effect of exogenous thyroid hormone is to increase the metabolic rate of body tissues
  - The thyroid hormones are also concerned with growth and differentiation of tissues. In deficiency states in the young there is retardation of growth and failure of maturation of the skeletal and other body systems, especially in failure of ossification in the epiphyses and in the growth and development of the brain

62  **Thyroid cont.**

- The precise mechanism of action by which thyroid hormones affect thermogenesis and cellular growth and differentiation is not known. It is recognized that these physiologic effects are mediated at the cellular level primarily by  $T_3$ , a large part of which is derived from  $T_4$  by iodination in the peripheral tissues. Thyroxine ( $T_4$ ) is the major component of normal secretions of the thyroid gland and is thus the primary determinant of normal thyroid function
- Depending on other factors, absorption has varied from 48 to 79 percent of the administered dose . Fasting increases absorption . Malabsorption syndromes, as well as dietary factors, (children's soybean formula , concomitant use of anionic exchange resins such as cholestyramine) cause excessive fecal loss
- More than 99 percent of circulating hormones are bound to serum proteins, including thyroid - binding globulin (TBg), thyroid -binding prealbumin (TBPA), and albumin (TBa), whose capacities and affinities vary for the hormones. L- thyroxine displays greater binding affinity than L- triiodothyronine, both in the circulation and at the cellular level , which explains its longer duration of action . The half- life of  $T_4$  in normal plasma is 6-7 days while that of  $T_3$  is about 1 day. The plasma half-lives of  $T_4$  and  $T_3$  are decreased in hyperthyroidism and increased in hypothyroidism

63  **The Two Main Hormones**

- Thyroxine  $T_4$  (93%) and triiodothyronine  $T_3$  (7%) which circulate in the blood stream
- $T_4$  converts to  $T_3$  outside the thyroid in most all tissue with the liver and kidney doing the most conversion
- 80% of the most active  $T_3$  is produced outside the thyroid
- $T_3$  is most responsible for increasing metabolic rate

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  - T3 is most responsible for increasing metabolic rate
- 65  **Thyroid Hormones and Protein**
- 99.95% of T4 and 99.5% of T3 are bound in reversible physicochemical equilibrium to several serum proteins
    - TBG: thyroxine-binding globulin
    - TTR or TBPA: transthyretin
    - Albumin
    - Lipoprotein
- 66  **The Third Hormone**
- Thyrocalcitonin regulates calcium utilization and interacts with the four adjoining parathyroid glands responsible for controlling calcium levels.
- 67  **Thyroid Hormone Effects**
- Virtually every tissue in the body is affected
  - By stimulating or inhibiting the accumulation of messenger RNAs (mRNAs) that code for specific proteins
  - Regulate production and activity of many enzymes, the production and metabolism of other hormones and the utilization of substrates, vitamins and minerals
  - Stimulate oxygen consumption of skeletal and cardiac muscle, liver, gastrointestinal tissues and kidney
  - Increases mitochondrial oxidative metabolism and ATP utilization
  - Stimulates lipolysis in adipose tissue
- 68  **Thyroid Hormone Effects Cont.**
- Carbohydrate metabolism
  - Protein synthesis
  - Sympathetic activity
  - Cardiovascular system
  - Crucial role in the development and growth of the nervous system (do thyroid studies on children that are not well)
- 69  **Is It Really the Thyroid?**
- Because 80% of T3 is produced outside the thyroid, what appears, clinically, to be low thyroid function could actually have nothing to do with the thyroid gland
  - Many environmental factors, illnesses and drugs affect conversion of T4 to T3
- 70  **Primary Hypothyroidism**
- The thyroid gland is the primary problem
  - Commonly: T3 and T4 are decreased and TSH is elevated
  - Less common: T3 is normal and TSH is elevated. The TSH is pushing the failing thyroid and can result in preferential synthesis and secretion of the biologically active hormone T3.
- 71  **Secondary Hypothyroidism**
- Failure of the Hypothalamic-pituitary axis because of deficient TRH Secretion from the

hypothalamus or lack of TSH secretion from the pituitary.

72  **Thyroid Stimulating Hormone (TSH) is produced by the Pituitary**

- Low TSH-
  - normal thyroid function with optimal T3 and T4
  - overactive thyroid gland with high T3 and T4
  - Secondary Hypothyroidism with low T3 and T4 indicates pituitary gland dysfunction
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- High TSH-
  - Under-active thyroid gland with low or normal T3 and T4
  - Rare is pituitary gland tumor

73  **Pituitary tumor**

- Most typical occurrence is in early adulthood
- Signs visual field loss usually asymmetrical
- Hormones:
  - Anterior- TSH, ACTH, FSH, LH, GH and prolactin
    - Females- Amenorrhea, galactorrhea and infertility
    - Males- Hypogonadism, decreased libido and impotence
  - Posterior- vasopressin and oxytocin
- 

74  **TRH**

- TRH (Thyrotropin Releasing Hormone) is released by the hypothalamus that communicates with the pituitary gland and stimulates release of TSH
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75  **Euthyroid**

- Normal functioning thyroid

76  **Euthyroid Sick Syndrome**

- Euthyroid sick syndrome sometimes occurs with illness. When The body reacts by slowing down thyroid function, blunting thyroid conversion and slowing down your metabolism.
- Probably as a protective mechanism to help your body fight off infection or to help heal.
- Wide variety of nonthyroidal acute and chronic conditions such as:
  - Infection
  - Liver disease
  - Cancer
  - Starvation
  - Renal failure
  - Heart failure
  - Severe burns
  - Trauma
  - Surgery

77  **Hypothyroidism**

- 20 million people are currently being treated (more women than men)
- 2 million are undiagnosed
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- 

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- Family trait/bad genes
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80  **Interpretation of Basal Body Temperature**

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81  **Cancer and Thyroid**

- Researchers have found a strong link between low thyroid and higher risk of cancer
- Another good reason to test

82  **Case Study: Jim P.**

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84  **Hair Analysis**

85  **Supplement Recommendations**

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87  **Case Study: Janessa F.**

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97  **Case Study: Margie P.**

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101  **Case Study: Jessica W.**

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103  **Case Study: Jessica W**

- Jessica saw good improvement, more energy, better digestion, regular bowel movements, fissure is better, lightheadedness is better
- Eye bulge was a little better but still obvious
- Stopped the birth control pills
- Reduced the Synthroid in half

104  **Thyroid Function**

- 1 teaspoon/year of thyroid secretions are responsible for controlling all of the body's metabolic processes, the circulatory system, blood volume, muscle health, nerve sensitivity, brain function and thermoregulation

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105  **Common Factors that can cause Hypothyroid**

- Starvation
- Stress
- Acute illness/infection
- Diabetes mellitus
- Uremia
- Selenium deficiency
- Soy
- Chlorine, Fluoride, Mercury and Arsenic
- Drugs most notably
  - Aspirin
  - Estrogen
  - Propylthiouracil
  - Iopanoic acid
  - Amiodarone
  - Propranolol
  - Glucocorticoids: Cortisol/stress!
  - Beta adrenergic antagonist drugs

106  **Similar Symptoms... Fluoride/HypoThyroid**

- 1  ■ Abnormal sweating
  - Acne
  - ADHD/learning disorders
  - Allergies
  - Alopecia (hair loss)
  - Alzheimer's disease
  - Anaphylactic shock
  - Anemia
  - Apnea (cessation of breath)
  - Aorta calcification
  - Asthma
- 2  ■ Asthenia (weakness)
  - Atherosclerosis
  - Arthralgia
  - Arthritis
  - Ataxia
  - Autism
  - Back pain
  - Behavioral problems
  - Birth defects
  - Blind spots
  - Body temp/disturbances
  - Breast Cancer
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107  **Hypothyroid Symptoms**

- Lethargy
- Weakness,
- Slow speech
- Dry coarse skin
- Fatigue
- Cold intolerance
- Hoarseness
- Weight gain
- Accelerated aging
- Depression
- Sexual dysfunction
- Muscle cramps
- Thick tongue

108  **Myxedema**

- Advanced hypothyroidism- maybe a crises
- Hypothermia- below 90 degrees
- Areflexia, seizures, elevated CO2 and Respiratory depression.
- Contributing factors: cold exposure, illness, infection, trauma and drugs

109  **D.L. Bloodwork 7/9/2021 vs. 04/26/2021**

110  **Nonthyroid Hypothyroid Beneficial Factors**

- Glutathione: necessary for conversion of T4 to T3
- Iodine
- Selenium
- Zinc
- Cobalt
- Vitamin D
- Riboflavin

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112  **Persistent HypoThyroid**

- Treat foundational basics in the blood testing and hair testing
- Magnesium 1,200mg/day (reduce with diarrhea or use Magnesium Taurate/Taurine)
- Iodoral (Lugol solution in tablet form) Optimox Corporation 800-223-1601 [www.Optimox.com](http://www.Optimox.com)
  - Dosage 1 tablets (12.5 mg) to 4 tablets (50mg) /day for 120-150 pounds

113  **Hyperthyroidism**

- Subacute thyroiditis- viral infection
- Autonomous toxic thyroid adenomas (hyperfunctioning thyroid nodules)
- Jod-Basedow disease (iodine-induced usual cause is drugs or multiple radiographic contrast studies)
- Hypersecretion of TRH (thyroid-releasing hormone) by the tumor of the Hypothalamus
- Over medicated hypothyroid
- Excessive glandular consumption
- Hashimoto's thyroiditis- an auto immune disorder
- Grave's Disease- an auto immune disorder

114  **Hyperthyroidism**

- Grave's disease is most common
  - More prevalent in females
  - Average onset is 20-40 year of age
  - An auto immune disorder resulting in:
    - Thyroid enlargement
    - Hyperactivity
    - Serum antibodies to fractions of the thyroid gland

115  **Grave's Disease Case**

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- Note: Prior to becoming a patient with us, Lindsay had seen several Medical Doctors. She was diagnosed with "borderline prominent thyroid gland without focal abnormality" "compatible with a hyper-functioning gland such as Grave's disease" after a series of tests were run including a nuclear medicine thyroid uptake and scan. After the results from this test were back and she was diagnosed with Grave's disease, the recommendation for Lindsay was to begin Radioactive



Iodide-131 treatment. Her mother cancelled the therapy but was then threatened that child protective services would be called if Lindsay did not begin the I-131 treatment.

■

■ II. Current Medication

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■ III. Primary Symptoms:

Hyperthyroid, Headaches, Irregular Menstrual Cycle, Epstein Barr, Graves Disease

■ IV. Presenting Symptoms:

Chronic Fatigue; Epstein Barr; Excessive Thirst; Headaches; Hyperthyroid; Insomnia; Irregular Menstrual Cycle; Poor Concentration/Memory; Psoriasis; Underweight; Base of fingernails are pink; Fingernails are splitting; Fingernails peel; Hair loss; Rarely exercises; Thin hair; Difficulty concentrating; Easily angered; Often annoyed by people; Poor memory; Spells of rapid heart rate; Frequently feels hot; Gets lightheaded when standing quickly; Unusually tired most of the time; Far sighted; Excessive hunger; Feels shaky when hungry; 3 or less bowel movements per week; Tongue is coated; Bites nails; Frequent headaches; Frequent nose bleeds; Painful periods; Tremors/Shakes; Appendix; Tonsils and/or Adenoids; Abnormal cycle >29 days and/or <26 days.

116  **Grave's Disease Case cont.**

117  **Grave's Disease Case cont.**

118  **Grave's Disease Case**

119  **Autoimmune Thyroid Disease**

■ Grave's Disease

■ Thyroid-Stimulating Immunoglobulin (TSI) [this is the primary test for Grave's disease], Long Acting Thyroid Stimulator (LATS) and TSH-Binding Inhibiting Immunoglobulin (TBII)

■ Tests:

■ Thyroid Antimicrosomal Antibody

■ Thyroid Antithyroglobulin Antibody

■ Thyrotropin Receptor Antibody

■ Thyroid Stimulating Immunoglobulin

120  **Hashimoto's Thyroiditis**

■ An auto immune condition

■ Commonly will present as hyperthyroidism during the initial acute phase of the disease but tends to eventually result in a hypothyroid condition, due to destruction of the hormone producing thyroid tissue

■ Antithyroglobulin Antibody (ATA) in 70% of the cases and Antimicrosomal Antibodies or Thyroid Peroxidase (TPO) antibodies are found in 95% of the cases.

■

121  **Hashimoto's Thyroiditis Confusion- FACT Experts Speak:**

- Hashimoto's disease: FACT
- Q: 12 year old diagnosed with Hashimotos are there any alternative tests that should be done?? Interesting to note is that a major personality change started in late september...within weeks of a tetanus shot. Scott Close DC

122  **Hashimoto's Thyroiditis**

- A1: Dear Scott,
- In our practice, we do a version of NAET we call SRT, "Sensitivity Removal Technique." Tetanus is very first allergen we neutralize with EVERY patient. I learned this trick of the trade many years ago from a chiropractor friend of mine who is the best EAV-tester I have ever known. He said tetanus \*always\* shows up as an adverse allergen, even if you have only had one shot and it was 50 years ago. We have been using this vial in our program since 2000 and I can attest he is absolutely right.
- He thought the mechanism of action for tetanus toxoid is that is "locks up" intracellular fluidity and messaging. I believe this is correct. If you have access to this technique, purchase or make a DTaP vial and treat him with it. He could quickly become better. Also be sure he is on TONS of omega 3s, far beyond the "usual" dose. This helps cell fluidity.
- I believe that tetanus vaccine is most neurotoxic of ALL vaccines. Tetanus toxin (tetanospasmin) is made by deactivating it with formaldehyde and ammonium sulfate. It is filtered and adsorbed onto aluminum phosphate. Tetanospasmin is one of the strongest neurotoxins known to man.
- In a tetanus infection, tetanospasmin is released from a C.tetani when a spore germinates. The toxin spreads through tissue spaces into the lymphatic and vascular systems. It enters the nervous system at the neuromuscular junctions and nerve trunks, then passes into the CNS by retrograde axonal transport. It blocks the release of inhibitory neurotransmitters GABA at motor end plates, leading to the spasmodic disease we characteristically think of as "tetanus."
- But what if some of the toxin isn't completely inactivated in the vaccine? or some of the active toxin slips through the filter? (there is no assurances that every particle is inactive). GABA neurons in the brain provide the major inhibitory role of in regulating behavior. It is my understanding that if the GABA receptors are blocked or disrupted, anxiety disorders, epilepsy, schizophrenia and insomnia can result. He has lost his inhibitory pathways. You should write this up as a case report and be sure to report it to VAERS.
- So, yes, the tetanus shot can result in this behavior. NO vaccine is safe at any age, even if given alone.
- As for his Hashimotos, certainly the vaccine led to autoimmune disruption. Be sure he is on 100mcg/day of L-selenomethione. It is the form of selenium that has been shown in the literature to reduce thyroid antibodies by as much as 60% over 3-4 months (mechanism of action is that it acts like a "mop" to absorb excess H2O2 used in the coupling of iodine to tyrosine. Iodine supplementation should always coupled with selenium) Hope that helps, Dr Sherri Tenpenny Cleveland, Ohio [www.DrTenpenny.com](http://www.DrTenpenny.com)

123

- A2: Dear Scott,
- The reason for thyroid problems of your son might be mercury-containing thimerosal in the tetanus shot. Mercury affects thyroid gland and in our study from 1999, patients with Hashimoto disease showed increased inflammatory response to mercury. You can download the article from our website: [www.melisa.org](http://www.melisa.org) (Research literature) If your son has "silver" fillings (amalgam

containing mercury), you should contact an experienced dentist and consult possible replacement.

- If you are interested to find out if your son is sensitized to thimerosal and inorganic mercury, you can test him in MELISA test. Contact Dr Lana Foree in San Francisco, the contact is on our website.
- Best regards
- Vera
- Ps. The abstract of article regarding patients with autoimmune thyroiditis is given below.
- Mercury and nickel allergy: risk factors in fatigue and in autoimmunity Sterzl I et al. Neuroendocrinology Letters 1999; 20:221-228
- This study further explores the link between hypersensitivity to dental metals with chronic fatigue syndrome (CFS). It looks at 22 patients with autoimmune thyroiditis, 28 fatigued patients free from endocrinopathy and 22 fatigued professionals with no evidence of autoimmunity. All had their dental amalgams replaced with non-metallic materials. After six months, many patients reported disappearance of many symptoms previously encountered. Their MELISA response also fell considerably. We suggest that hypersensitivity to metal affects the hypothalamic-pituitary-adrenal axis (HPA axis) and indirectly triggers psychosomatic symptoms characterising CFS, fibromyalgia and other diseases of unknown etiology.
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124

- A3: check the tetanus shot for mercury containing agents as "conservatives" and do a lead and mercury and arsenic challenge test also a Iodine/Iodide (Iodoral 50mg) challenge test, if less than 45 mg(90%) Iodine comes out in the 24hr urine following the 50 mg load, he needs long term Iodoral replacement When detox and nutritional support has provided the best possible circumstances, thyroid live cell therapy injections can be considered to boost his own thyroid production and hopefully reduce the dosage of medication good luck R Trossel
- 

125

- A4: Hi Scott,
- It sure seems to be a correlation to the vaccine due to the dramatic change in his physical and emotional health near the time of its use. It may be that a homeopathic remedy would help here. Homeopathic Thuja is usually given for negative effects from a vaccine, but it does not necessarily fit the symptoms of the case. I would consider finding a great constitutional homeopath to work with him. I am not sure where you live but I bet there is someone in your area. I think Andre Saine in Canada will do phone consults???
- Anyway, what really hit me but does not seem to correlate to the timing of the vaccine is that people with Hashimotos are often very gluten sensitive and also gluten sensitive folks often have many mood disorders. Does he eat a lot of foods with gluten? Could you get him to do a totally strict gluten free diet for a month or two to see how he responds?
- Take care,
- Laura Schissell, ND, DC

126

- A5: Some Hashimotos are related to gluten sensitivity even with negative antibodies, may try gluten free diet, though time course certainly suggests possible reaction to tetanus. Look at DAN, defeat autism now web site, not that he has autism, but some of their detoxification

techniques may help, ie post vaccine.

- John Abell M.D.
- A6: This is a classic autoimmune reaction caused by corruption of the immune system due to the inoculation, as explained in the documents on my website. I have reversed many such cases with my Hippocrates protocol.
- Dr Carley
- 

127

- A7: Thyroid tests become unreliable in the face of significant antibody elevation. It could take weeks to significantly lower the TSH and many more weeks to improve symptoms completely. In fact symptom improvement may never happen with synthroid if your son has difficulty converting synthroid (synthetic T4) into T3. This is why Armour (or other more natural thyroids) which contain about 20% T3, is far preferable in my opinion. Selenium, 200 mcgs/day has been shown in recent studies to gradually lower thyroid peroxidase antibodies over 6-12 months. This of course, is about symptom relief, not addressing the underlying problems which have lead to the Hashimoto's.
- I'd focus, as is often emphasized by Gary, on the total body burden of pathogens. Do a provoked urine for heavy metals, viral screen, etc., but don't expect tests to show everything! Chelate, treat pathogens and support detox pathways in all the ways regularly discussed on this site. Best of luck.
- Rick Linchitz MD (Linchitz Medical Wellness, PLLC [LinchitzWellness.com](http://LinchitzWellness.com) 516-759-4200)

128

- A8: Doctor,
- You can help any autoimmune disease by supporting regulatory T cell function. Vit D 4-5,000IU QD), Glutathione (I use a high dose liposomal delivery; Oxicell from Apex Energetics) and EPA & DHA all support regulatory T cell function.
- You can also order a T&B lymphocyte & NK Cell panel(#505015), an IL-10(#826746) and a TNFa(#140673) from Laboratory Co-Op (1-866-999-4041). These tests will tell you if you are dealing with a TH1 or TH2 subset dominant autoimmunity. Knowing this will allow you to treat with the most appropriate herbs (of course, you can use drugs). You can call Apex Energetics and ask for Don Sing for help interpreting the test results. Don's not a doctor but he knows these panels well. I call on him for help whenever I need it.
- The big idea is that you will get the most impact out of treating the autoimmunity. Treating the thyroid itself has minimal impact in these cases.
- p.s. Iodine and/or L-tyrosine are popular supplements for thyroid patients. Hoshimoto's patients should not take these supplements however because they increase the attack and destruction of thyroid cells by the immune system.
- Steve Zaeske, DC DABCI
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129

- A9: Selenium lowers thyroid antibodies. I would also give fish oil and check vitamin D levels, both nutrients which relate strongly to auto-immunity. Intestinal yersinia has been found commonly in auto-immune thyroid conditions. Also consider gluten intolerance. A person with hashimoto's has 10 x higher likelihood of having gluten intolerance. Lastly remove amalgams if he has any and irrespective of this chelate for mercury. If possibly I would consider some thyroid glandulars

as well.

- Best regards,
- Blake Graham, B.Sc (Honours)
- Clinical Nutritionist

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130 □

- A10: My guess is that he was born when your wife was over 26 years old and/or she had at least relative hypothyroidism during the pregnancy with him (reduction in libido, post partum depression, inability to lose weight after pregnancy and changes in the menstrual cycle all indicate pregnancy related hypothyroidism). If the tetanus shot was toxic due to its intrinsic, we would see more reactions like your son's. However in an immune compromised person that is born to a hypothyroid mother, anything that weakens the immune system can facilitate overgrowth of opportunistic infections. Candida is a common one, but there are certainly others that pile on like MRSA, EBV, herpes etc.
- The histology of inflammation of Hashimoto's and Grave's is exactly the same. Biochemical production of mucin is the same in both diseases also. These links suggest a common etiologic agent. I treat both with antifungals with great results. Synthroid is rarely the best choice in thyroid replacement. However an endo who is not aware of this will not be convinced of it, especially not by a D.C. Get Mark Starr's Hypothyroidism Type 2 book. You must become the thyroid expert. Choose another doc for your son's best interest. Go to <[www.aboutthyroid.com](http://www.aboutthyroid.com)> to find a competent thyroid doctor in your area. The book Thyroid Solution by Baylor professor of endocrinology Ridha Arem M.D. will explain the psychiatric manifestations of hypothyroidism your son is experiencing. His condition is completely reversible.
- Roby Mitchell M.D.(Dr Fitt)
- drfitt@mac.com<[www.drfitt.com](http://www.drfitt.com)

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131 □

- A11: Scott~ The 1st thing I would do is get him off of synthroid. Armour is much better!!! But before I would put him on anything I would run the barnes test along with a saliva thyroid, (Diagnos-Tech's) is the lab I would recommend. Blood work is the least accurate test for thyroid activity. It doesn't matter the age I find 75-80% women & 65-70% males have weak thyroid. I do ALOT of Bio-Meridian testing & I can pick up thyroid cases off of that. I can't tell you the # of pt's. I've fixed with low thyroid & the results are amazing once you get the thyroid going on how it fixes stuck cases on the bio-meridian. What I have found works the BEST is Iodoral & thyrophin from standard process. With your sons size I would use 2-bid of Iodoral & 1-tid of thyrophin, if his thyroid shows weakness after barnes, saliva, & bio-meridian testing. Don't forget that the thyroid is connected to the pituitary, adrenals, & testes in his case & NEEDS to be supported also for results. Good luck~ Dr. Matejka Any further questions call or email me at drglen99@sbcglobal.net or 815-455-4500

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132 □

- A12: Scott, you may want to do urine and hair analysis for metals. If his growth rate is abnormal for the family, check for a pituitary tumor (prolactin).
- Depending upon the results, this is an autoimmune condition and often responds better to

treatment as such rather than a "thyroid" condition.

- There is evidence that iodine at this stage may make the condition worse (even though blood values improve). The symptoms you have listed can be related to his condition. I would certainly look at what changed in his environment before all this started. Full blood work is often ignored simply because practitioners are used to insurance. In addition to blood work for a pituitary tumor you may want (fasting) a CBC with diff, CMP, LH, CRP, HbA1c, lipids, iron, ferritin, ESR, t3,t4,t7,tsh,tpo all at once to see the relationships within the body. I have found a high correlation between Voll, AK and blood, but still like to see the diagnostic testing. Roy Horn DC

133

- A13: Sorry for your situation. 12 years old, 180 pounds and defiant must be difficult. Whatever the triggering event, he appears to have a cascading situation of abnormalities in both the immune system and neurohormonal systems. Though not likely a problem, I would drug test. The prognosis of lifetime synthroid is premature. The treatment of your son cannot be done from this one report but I would consider the following: thyroid –thyroid nutrients and iodine (any high quality manufacturer); immune -zinc, selenium, vit C, vit E, then I would consider a Myers followed by a glutathione IV then reassess.
- Neurohormone - Your son seems to have a clinical picture of early depression - (Chinese -Hot) Agitated, probable high dopamine, high cortisol, high glutamate. You can test for cortisol levels. Treatment on neurohormonal basis could include tier 2 nutrient therapy to lower cortisol, increase serotonin, decrease norepinephrine, increase GABA and decrease inflammation such as taurine, GABA, theanine, inositol, MG++, B6, glutathione, vit D3, NAC, 5HTP, B12, 5-MTHF,DHA. Next you could consider the next tier of treatments using herbs (I know endocrinologist said no but I would consider depending on how things go) sam-e, holy basil, curcumin, rehmania, rhodiola, ashwaganda. Food ideally would be no cow dairy, no gluten, no nightshades. Probably avoid high tyrosine foods too eg bananas, meats, google them.
- Hope this provides something for you to consider.
- Mark Laursen MD
- Sedona, Az
- 
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134

- A14: Dear Dr Close,
- Please inform yourself about iodine. Many of your son's symptoms including the Hashimoto's are signs of severe iodine deficiency. You may find a lot of information at the following sites [www.drbrownstein.com](http://www.drbrownstein.com) I recommend his book on Iodine, 3rd edition most highly, and the DVD; although the sound quality on the DVD isn't good, the message is of vital importance.
- [www.helpmythyroid.com/iodine.htm](http://www.helpmythyroid.com/iodine.htm) Here you will find a 24-hr urine test that will accurately measure his whole body iodine status. There are receptors for iodine on all cells in the body and I don't think they are there for decoration.
- [www.quackcenter.com/iodoral.html](http://www.quackcenter.com/iodoral.html) This is my site where I have collected a lot of information, update frequently, and have posted a lot of feedback and questions from customers.
- Standard Process makes a product called Prolamine Iodine. Some people love it, and my friend Dr. William Schlee swears by it, but it didn't do a thing for me.
- regards,
- Nancy Adams, LMT
-

135 □

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■ A15: Dr. Close: As a Mental Health Counselor and Biofeedback Clinician I have had to separate mood disorders from physical illness, frequently following extensive negative medical evaluation. As you know, teenage mood disorder of any variety is a serious thing and psychiatric antidepressants can sometimes trigger more problems in vulnerable individuals. Thus, while you search for a cause, as a priority find a like minded counselor so as to establish a grounding therapeutic relationship during treatment. This is especially needed if there is any family related mental illness such as Bipolar depression, etc. on either side (mother especially).

■ Charles G. Jacques III LPC, BCIA

■ A16: Dr. Close:

■ Can you provide some more information about your son please? I am wondering about the event that led to the tetanus toxoid injection. Was there an injury to the face or teeth? What dental work has your son had, and when? Also, have you spoken with a homeopath regarding the unusual behavior and sudden onset of symptoms? Interesting cross reference in B/T's Materia Medica w/Repertory.

■ Cecilia Castiglione

■ ccastig@aol.com

■  
■

136 □

■ A17: This sounds similar to a recent episode on the T.V. show "House". The young son and daughter were indirectly in contact with the father who was taking steroids for his maleness. The children were adversely affected by the steroids, changing their young libidos, emotional attitudes, and sexual characteristics. Keep looking; this may be a clue somehow...

■ Michael Frank, D.C.

■ A18: interesting set of problems. would add to the testing: free t3, free t4 and follow on the followup with the synthroid, would also get reverse t3. maybe it will be ok to consider l-carnitine and selenium and not bother the doctor since these are not herbs.

■ A19: Check iodine levels, Armour thyroid has both t3 and t4 which many times is more effective.

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137 □ **Hyperthyroid Symptoms**

- Cold intolerance
- Weight changes (usually weight loss)
- Sweating
- Fatigue
- Irritability
- Weakness
- Nervousness
- Menstrual irregularity
- Weakness (commonly upper extremity)

138 □ **Hyperthyroid Symptoms Cont.**

- Muscle atrophy

- Fasciculations (involuntary contractions/twitching of muscle fibers)
- Exaggerated deep tendon reflexes
- Babinski's sign?

139  **Hyperthyroid Symptoms Cont.**

- Dysphagia
- Hoarseness
- Respiratory weakness
- Upper eyelid not completely opens
- Weakness in chewing/tongue

140  **Hyperthyroid Testing**

- Low TSH
- Elevated:
  - T4
  - Free thyroxine index (FTI)
  - T7
  - T3 uptake
  - Total T3
  - Serum T3
  - Thyroid resin

141  **Hyperthyroid Testing Cont.**

- For autoimmune
  - ANA (anti-nuclear antibodies)
  - Serum thyroperoxidase
  - Thyroglobulin antibody titers
  - Antithyroglobulin autoantibodies
    - Positive in 85% of Hashimoto's disease and ~80% of Graves'disease
    - Hashimoto's thyroiditis is very unlikely cause of hypothyroidism in the absence of thyroglobulin and microsomal antibodies

142  **Hyperthyroid Findings**

- Alkaline phosphatase: increased
- Calcium: increased
- Anemia

143  **Thyroid Nodules**

- 4-7% of U.S. Adult population
- Possible 50% in some studies
- Difficult to palpate
- Lab values usually clinical normal
- Late stage Metastatic thyroid cancer: elevated thyroglobulin (Tg)
- 3-6% are malignant
- When detected should have careful workup and referred for ultrasound and possible



biopsy/excision

144  **Hyperthyroid Medical Treatment**

- Surgical resection/reduction or removal-then hormone replacement therapy for life
- Radioactive iodine: destroys thyroid tissue
- 

145  **Amy K. Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

An endocrinologist told this patient she was a candidate for malnutrition, starvation, hospitalization and death.

Amy –

“I was actually dying. I knew I was. Every night I would prepare everything that I could around the house, so that if I died during the night, my mother and sister would not be so devastated about a mess. You know it would be enough just to find me, it was that bad. The best I could hope for was disability.”

146  **Amy K. Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- Initial patient contact:
  - 07-03-03

■ Symptoms:

- Chronic Fatigue
- Fibromyalgia
- Difficulty walking
- Osteoporosis
- Allergies
- Hypothyroidism
- Low energy
- Sleeping 16 hours a day
- Dull, dark eyes
- Taking 10 meds

147  **Amy K Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

■ Initial Blood Test Results:

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- Under our care, after just three months, the patient's liver markers AST and ALT were within optimal ranges. The LDH also dropped 59 points indicating less cell breakdown and destruction. This is a very good first step. Her cholesterol also improved because the HDL rose 21 points and the LDL dropped 16 points. The Triglycerides which were low, also improved climbing to 80.
- The patient returned to work but is still struggling with the fibromyalgia and chronic fatigue. She didn't reach this point of poor health overnight and it won't be a quick fix, but with work she will continue to improve.

- 

151  **Amy K Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- 05-10-04 Patient Consultation:
- At the consultation that patient stated her fibromyalgia symptoms were 90% better. Her fatigue and sinusitis also greatly improved and she rarely took her allergy medications. She was down to just one Synthroid per week and rarely needed a sleep aide. She was very pleased at how well she felt. She decided she was ready to stop more of her medications and alerted me that she would be doing this soon. Five days later she was off all meds except Synthroid which she took .1 mg, twice weekly.
- We retested the hair but found few changes. She is still hording toxic elements in her body. Hopefully this will change as she continues to improve.

152  **Amy K Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- Taking a broad look at her blood test, we can see that she is doing quite well with a few areas that need improvement like digestion, (total protein, albumin and globulin). It's fantastic that she continues to make progress and nearly off all her meds and most importantly, the liver enzymes (AST and ALT) have stayed in the optimal zone for almost two years.

- 

153  **Amy K. Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- Letter from patient – 07-24-07

154  **Amy K Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- 02-29-08 – We retested the patient at periodic intervals over the past few years and she has had a few ups and downs in regard to her test results, however, her progress now seems to have plateaued. I suspect this may be due to toxic elements which are not being eliminated from her body.
- Her hair tests still show minimal amounts of toxin excretion so I suggested a urine toxic element challenge which will test the levels of things like lead, arsenic and mercury that her body is able to eliminate on its own (pre-challenge) and the levels disposed of with the help of a chelating agent (post-challenge).

155  **Amy K. Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- Her body was eliminating no lead and virtually no mercury on its own, but with the help of a chelating agent, those numbers skyrocketed. Lead and mercury will be expelled first because they are the heaviest and the chelating elements eliminate items based on their molecular

weight.

- We will use the chelators to help eliminate hidden toxins from her body and as stores of lead and mercury drop, I expect lighter toxins like nickel and aluminum to show higher levels.

■

156  **Amy K. Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- As I suspected, levels of other toxic elements rose in the next urinary challenge with nickel climbing a full 4 points. We will continue with chelation therapy and retest in a few months.

■

157  **Amy K. Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- An interesting thing happened with the next test, the levels of lead climbed back up to 21. This could be a sign of a recent exposure to lead but more likely it is caused by a healthier body that's better able to eliminate the stores of toxic elements which have been hidden in the body for years. This is good and means that we are on the right track.

158  **Amy K. Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- With high expulsion rates of toxic elements many blood tests like cholesterol or inflammatory markers will often get worse, however in a case like this, we see fairly steady progress over the past year. In fact her cholesterol markers improved with the total cholesterol dropping 25 points and the LDL cholesterol dropping 27 points. Her liver enzymes have continued to stay in healthy ranges for the past 5 years. We will retest this patient next year to keep an eye on her state of health.

159  **Amy K. Case Study – Chronic Fatigue, Fibromyalgia & Hypothyroidism**

- Current blood test results:

■

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160  **Medical Treatment**

- A query of the PDR (2001 edition) for accepted medical drug treatment of hyperthyroidism, grave's disease and gave zero results.

161  **Medical Treatment**

- Hashimoto's disease: the only treatment is Synthroid. Basically, nothing for the cause of the disease, only treatment of the symptoms or condition of low thyroid due to progression of the disease resulting in destruction of the thyroid gland.

162  **Thyroid and Uranium**

- Persistent and resistant thyroid problems should be accessed for possible heavy metal radiation contamination.
- Treat as if exposed to a 'Dirty Bomb'

■

163  **Hyperthyroidism and Radiation Poisoning**

- I feel you are correct on the importance of iodide in hypermetabolic thyroid. A problem exists with poor thyroid numbers in people who live in Golden, in the foothills. According to my indirect contact with the researchers at the Mines School in Golden, the local creek contains considerable uranium and thorium. Lots of resistant hyperlipidemia exists in people in and around the community
- Here are significant numbers in this doc who lives there. Since January, he consumes 65 mg of KI

per day. By the way, at my suggestion, he consumes primarily RO water

■ Brian Wilson DC, DABCI

164  **Hyperthyroidism and Radiation Poisoning**

Age 63, male

165  **HyperThyroid - Basic**

■ Graves' disease is another form of autoimmune thyroiditis, with symptoms of weight loss, insomnia, swelling of the thyroid gland, anxiety, palpitations, irritability, brittle or thinning hair, eyes that bulge out, weight loss, thinning skin, unusual fingernail growth, rapid heart rate usually over 100bpm, sweating, and nervousness and will bounce from increased to decreased energy. These findings could be due to poor response to thyroid or other medications. Regardless, the thyroid metabolism is high, and modification of medication might be considered. Steroids and hormone replacement therapy and other drugs can affect thyroid function. Inflammation of the thyroid can be associated with infection, inflammation, high Ferritin, low vitamin D, low minerals and high toxic heavy metals including uranium, arsenic chloride, fluoride and bromide. Gluten sensitivity has been known to be a primary factor with Graves' disease and hyperthyroid autoimmune conditions. Treatment considerations: gluten free diet, vitamin D based on testing and other vitamins will be consider including L-Carnitine 2-4 grams/day has been shown to have the ability to reverse hyperthyroid symptoms within a couple of weeks. Retesting is indicated within a couple of weeks.

■

166  **Hyperthyroidism and Radiation Poisoning**

■ Theorem, Uranium and other Radioactive elements displace cellular iodide, permitting the thyroid metabolism to go wild. This over stimulates production of liver fats and fatty acids, with major hyperlipidemia resulting. KI assists the thyroid to release isotopes and clear the system. The liver then goes into a much less hypermetabolic state. Contact with active isotopes probably cause radiation elements in the cells, even if only by skin contact. Therefore, KI can save lives, just as if it were used in a nuke plant blowup pollution or dirty bomb explosion

■

■

167  **Hyperthyroid Natural Alternatives**

- R/O food allergies
- R/O environmental toxins
- R/O heavy metal toxicity

168  **Hyperthyroid Natural Alternatives**

- Anti-inflammatory properties of
  - 
  - L-Carnitine 2-4 gms/day
  - Vit C
  - Bioflavonoids
  - Turmeric (Cercumin)
  - Ginger
  - Bromelain
  - GLA
  - Iodine sources:

- Iodoral
- Norwegian Sea Kelp
- Rad Block
- 

169  **Iodine Deficiency**

- One third of the world's population lives in areas of iodine deficiency which is the world's leading cause of intellectual deficiency
- *Journal of endocrinology and metabolism 1998*

170  **Iodine Deficiency**

- Results in goiter (enlarged thyroid) and hypothyroidism
- RDA is 150-300mcg/day
- RDA is to prevent goiter and hypothyroidism
  - This assumes the only role of iodine in health maintenance is in its essentiality for the synthesis of T4 and T3

171  **Optimum Iodine Levels**

- What is the ideal daily iodine intake that will result in the greatest levels of mental and physical well-being with a minimum of negative effects (Iodism)

172  **Iodine in Japan**

- Estimated daily intake in Japan is 5.3 mg (over 30 times the RDA)
- The intake is mostly due to eating seaweed

173  **T3**

**Clinical Range: 24-39%    Healthy Range: 35-40%**

- 1 ■ Increased in:
  - Hyperthyroidism
  - Thyrotoxicosis
  - Hypoproteinemia
  - Hepatitis
  - Nephrosis
  - Metastatic carcinoma
  - Pulmonary insufficiency
- 2 ■ Decreased in:
  - Hypothyroidism
  - Cretinism
  - Myxedema
  - Pregnancy
  - Simmonds disease
  - Anovulatory drugs

174  **T4**

**Clinical Range: 4.5-12mcg/dl**  
**Healthy Range: 7.1-9mcg/dl**

- 1 ■ Increased in:
  - Hyperthyroidism

- Thyrotoxicosis
- Early hepatitis
- Pregnancy
- Anovulatory drugs

- 2 ■ Decreased in:
- Cretinism
  - Myxedema
  - Hypothyroidism
  - Hypoproteinemia
  - Nephrosis
  - Simmonds disease

175 □ **With elevated T4 and T3 consider**

- L-Carnitine 2-4 grams
- Iodine
- Liver (check for elevated SGPT)
- Eat : rutabaga, cauliflower, brussel sprouts, cabbage, kale, sauerkraut

176 □ **With decreased T4, T3: consider**

- Raw thyroid
- Tyrosine
- Iodine
- Avoid:
  - Soybeans, rutabaga, cauliflower, brussel sprouts, cabbage, kale, sauerkraut

177 □ **Serum Reverse Triiodothyronine (Rt3)**

- Hormonally inactive isomer of T3.
- Largely replaced by newer tests.
- Usually increased in hyperthyroidism and increased serum thyroxine-binding globulin; Often-decreased in hypothyroidism but overlap with normal range.
- Has been suggested to distinguish 'sick thyroid' patients who are euthyroid. Thyroid-stimulating hormone is more reliable.
- 

178 □ **RT3**

- "RT3: Reflects the level of Reverse T3. The approximate value can be estimated from knowing T4 and T3 values since we know that T4 will become either T3 or RT3. For example, if the T4 is elevated and the T3 is low, we know that RT3 (what the rest of the T4 becomes) will be relatively elevated."

Dr. Rind

■

179 □ **TBG- Thyroxine Binding Globulin aka: T4 -binding Globulin**

- (Think: Thyroxine binding *proteins both albumin and most important globulin*)
- Abnormalities of TBG are not clinical diseases but indicate familial genetic traits

- Determine binding capacity for T4 to distinguish between hyperthyroidism causing high T4 and euthyroid individuals with increased binding by TBG who have increased T4 and normal levels of free hormones. Document cases of hereditary deficiency or increased of TBG. In work up of thyroid disease, in patients with low T4, high T3 uptake or the reverse, who clinically seem eumetabolic and have normal FTI, measurement of TBG is only occasionally needed. Some such patients may have hereditary anomalies of TBG
  -
- 180  **TBG- Thyroxine Binding Globulin aka: T4-binding Globulin**
  - Although alterations of TBG are usually resolved by the thyroid profile, TBG must occasionally be directly measured
    - Binds 70% of T4
    - Binds 97% of T3
- 181  **TBG- Thyroxine Binding Globulin aka: T4-binding Globulin**
  - Increased in:
    - Estrogens endogenous or exogenous
    - Late-stage HIV infection
    - Tamoxifen
    - Pregnancy
    - Perphenazine
    - Liver disease
    - Hepatitis
    - Heroin
    - Methadone treatment
    - Glucocorticoids
    - Acromegaly
- 182  **TBG- Thyroxine Binding Globulin aka: T4-binding Globulin**
  - Decreased in:
    - Androgens
    - Anabolic steroids
    - Nicotinic acid therapy
- 183  **T3 Uptake- Due to improved lab testing, this test is not needed.**
  - Measures unsaturated binding sites on the thyroid binding proteins
  - Does not measure T3
  - Should not be used alone
  - Used with T4 can provide a Free Thyroxine Index (T7, FT4I)
  - Used with T4 and T7 to diagnose hyperthyroid and hypothyroid conditions
  - If T3 uptake is low there is little FT4
- 184  **T4 Thyroxine**
  - The major secretory product of the thyroid gland
  - Carried through the blood bound to thyroxine binding globulin (TBG), and albumin
  - Should not be used alone
- 185  **TSH**
  - The high sensitivity thyroid stimulating hormone (sTSH or TSH) assay measures the concentration



of thyroid stimulating hormone in the serum.

- In normal individuals, this is usually between 0.3 and 5.0  $\mu\text{IU/ml}$ .
- TSH is under negative feed back control by the amount of free thyroid hormone (T4 and T3) in the circulation and positive control by the hypothalamic thyroid releasing hormone

186  **TSH Cont.**

- Thus in the case of thyroid hormone deficiency the TSH level should be elevated.
  - A value greater than 10  $\mu\text{IU/ml}$  is a good indicator of primary failure of the thyroid gland.
  - A value of between 5 and 10 is a borderline value which may require more careful evaluation.
- If the hypothyroid state is due to failure of the pituitary gland (TSH) or the hypothalamus (TRH), the values for TSH may be low, normal or occasionally in the borderline range.

187  **TSH Cont.**

- Thus a TSH above 10 is very good evidence for primary hypothyroidism and a value below 5 is very good evidence of possible primary hypothyroidism.
- The presence of hypothyroidism with a TSH of less than 10 strongly suggests a pituitary or hypothalamic etiology for the hypothyroidism (secondary hypothyroidism).

188  **TSH Cont.**

- The TSH alone cannot be used to screen for secondary hypothyroidism and usually requires a measurement of thyroid hormone levels to be adequately interpreted.
- Should not be used alone
- 

189  **T3 and RT3**

- The Thyroid Hormones: The thyroid gland makes a hormone called T4 (thyroxine). T4 will become T3 (triiodothyronine) which causes energy (in the form of ATP) to be made in each living cell, or Reverse T3 (RT3) which interferes with the energy production in the cell. Just as a car needs an accelerator and brakes for proper function, the same is true for the body. The body needs T3 (the accelerator) and RT3 (the brake) to manage its energy needs.
  - Dr. Rind

190  **Thyroglobulin and  
Thyroid cancer**

- The measurement of the protein Thyroglobulin (abbreviated Tg) in blood is an important laboratory test for checking whether a patient still has some thyroid present. The power of a serum Tg measurement lies in the fact that Tg can only be made by the thyroid gland (either the remaining normal part or the tumorous part). This means that when a patient has had their thyroid completely removed, the measurement of Tg in a blood sample can be used to check whether there is any tumor left behind.

191  **Thyroglobulin cont.**

- Detectable Tg Levels: When patients have had cancerous growths that make Tg, the absence of Tg in a blood sample is usually good news for a patient who has had thyroid surgery to remove their thyroid gland containing a cancerous growth. However, many patients still have measurable

levels of Tg in their blood after surgery. Often this Tg is coming from a small amount of normal thyroid left behind. This means that a measurable level of Tg does not necessarily indicate the presence of tumor. Often physicians will give a small dose of radioiodine to get rid of the last remaining part of the normal thyroid gland in order to make later Tg measurements a better marker for any tumor left behind.

192  **Thyroglobulin cont.**

TSH & Tg: Thyroid Stimulating Hormone (TSH) is the pituitary (master gland at the base of the brain) hormone that drives the thyroid gland to produce thyroid hormones and as a by-product, release Tg into the blood. TSH is believed to cause the growth of most thyroid tumors. This is why it is important to take thyroxine medicine (e.g.: synthroid, levoxyl, unithyroid) to keep TSH levels low. When TSH is high (before scanning) Tg is increased about ten times. You should not compare the Tg level measured while taking thyroxine medicine (when TSH is low) with the Tg level measured when TSH is high.

193  **Thyroglobulin Antibodies**

■ Tg Antibodies (TgAb): Approximately 15 to 20 percent of thyroid cancer patients have antibodies to Tg that circulate in their blood. These antibodies are abbreviated as TgAb on laboratory reports. Unfortunately, TgAb interferes with the measurement of Tg by most methods.

194  **Thyroid Synopsis and main things to test**

- TSH: Reflects the blood level of thyroid stimulating hormone.
- Total T4: Reflects the total amount of T4 present in the blood, i.e., the protein bound (unavailable) T4 and the Free T4. Note that high levels of estrogens (birth control pills or pregnancy) can increase the amount of the protein that binds T4; giving misleading elevated Total T4 values which can look like 'hyperthyroidism' when it is not.
- Total T3: Reflects the total amount of T3 present in the blood, i.e., the protein bound (unavailable) T3 as well as the Free T3. Again, high estrogen levels create the same effect as mentioned in relationship to T4 above.
- Free T4: Reflects the biologically active (free) form of T4. This T4 can be converted to T3 or RT3. In the presence of elevated estrogen levels, the Free T4 gives a more accurate assessment of thyroid function.
- Free T3: Reflects the biologically active (free) form of T3 that can generate production of energy (in the form of ATP). In the presence of elevated estrogen levels, the free T3 gives a more accurate assessment of thyroid function.
- 

195  **Drugs That Alter Thyroid Function**

- 1 ■ Dopamine
- Glucocorticoids
- Octreotide
- Lithium
- Iodide
- Amiodarone
- Aminoglutethimide
- Colestipol

- Cholestyramine
- Nicotinic acid
- Furosemide
- Fenclofenac
- Mefanamic acid
- Salicylates (salicylic acid: A common component of aspirin and a preservative)
- 2 ■ Aluminum hydroxide
  - Ferrous sulfate
  - Sucralfate
  - Estrogens
  - Testosterone
  - Tamoxifen
  - Heroin
  - Methadone
  - Mitotane
  - Fluorouracil
  - Androgens
  - Anabolic steroids
  - Corticosteroids
  - Phenobarbitol
  - Rifampin
  - Phenytoin
  - Tegretol

196  **Conditions Associated With Hypothyroidism**

- 1 ■ Mild anemia
  - Low selenium
  - Low copper
  - Low iodine
  - Low zinc
  - *High chloride*
  - *High fluoride*
  - *High Bromine*
- 2 ■ Low phosphorus
  - High calcium
  - High magnesium
  - Low potassium
  - Low globulin
  - Low protein

197  **Soy is Bad**

- Soy contains goitrogens - substances that depress thyroid function. In 1997, researchers from the FDA's National Center for Toxicological Research made the embarrassing discovery that the goitrogenic components of soy were the very same isoflavones. Divi, R.L. et al., "Anti-thyroid isoflavones from the soybean", *Biochemical Pharmacology* (1997) 54:1087-1096.

198  **Soy is Bad**

- In 1991, Japanese researchers reported that consumption of as little as 30 grams or two tablespoons of soybeans per day for only one month resulted in a significant increase in thyroid-stimulating hormone (TSH). Diffuse goiter and hypothyroidism appeared in some of the subjects and many complained of constipation, fatigue and lethargy, even though their intake of iodine was adequate.
- *If thyroid function is lowered by soy then the pituitary tries to stimulate more thyroid function hence, the elevated TSH. - Dr. Merkle*
- 

199  **Soy is Bad**

- An April 2000 study published in *Carcinogenesis* found that soy feeding stimulated the growth of a rat's thyroid even with iodine deficiency. This was partly through a pituitary-dependent pathway.

200  **Soy is Bad**

- 25 grams of soy protein isolate, the minimum amount claimed to have cholesterol-lowering effects, contains from 50 to 70 mg of isoflavones. It took only 45 mg of isoflavones in premenopausal women to exert significant biological effects, including a reduction in hormones needed for adequate thyroid function. These effects lingered for three months after soy consumption was discontinued. Cassidy, A. et al., "Biological Effects of a Diet of Soy Protein Rich in Isoflavones on the Menstrual Cycle of Premenopausal Women",
  - *American Journal of Clinical Nutrition* (1994) 60:333-340.

201  **Soy is Bad**

- High soy consumers and users of isoflavone supplements are at risk of thyroid disorders. The subtle effects of anti-thyroid agents such as soy on thyroid function would most likely be evidenced as subclinical, or even overt hypothyroidism.
  - *New Zealand Medical Journal* (Volume 113, Feb 11, 2000)

202  **42 Year Old Female**

- Early menopausal, headaches, hot flashes, mood swings, malaise, fatigue, and a long history of low thyroid, complete blood test and program for 6 months...minimal help
- Soy protein drink for breakfast and sometimes lunch, 2 protein bars a day (soy), and genestein from the health food store for her hormone problems
- 2 weeks after we took off all soy her symptoms disappeared

203  **Pass the Salt Please**

- More thyroid problems since the salt phobias in the last 20 years
- Iodized salt is a good source of iodine
- Iodine competes with fluorine and chlorine
- Is patient on a salt restricted diet
- Sometimes dramatic results in thyroid function with just adding salt
- 

204  **Foods That Block Iodine Utilization (Goitrogens)**

- Raw turnips
- Kale
- Brussels sprouts

- Cauliflower
- Spinach
- Turnips
- Cabbage
- Peanuts
- Cooking deactivates Goitrogens

205  **Adverse Effects of Iodine Supplementation**

- Iodine induced hyperthyroidism
- Iodine induced goiter
- Iodism: iodine poisoning marked by severe coryza (allergy symptoms) not limited to:
  - Acneiform eruption mostly seborrheic areas
  - Headache originating in the frontal sinuses
  - Sneezing
  - Weakness
  - Salivation
  - Foul breath (unpleasant brassy taste)

206  **Iodine Induced Hyperthyroidism**

- Is an iodine deficiency disorder
  - Iodine deficiency increases thyrocyte proliferation and mutation rates resulting in hyperfunctioning autonomous nodules in the thyroid...and hyperthyroidism after iodine supplementation
- Predisposing factors:
  - Treated graves' disease
  - Hashimoto's thyroiditis
  - Post-partum lymphocytic thyroiditis
  - Subacute painful thyroiditis
  - Lobectomy for benign nodules

207  **Iodine Properties Cont.**

- Iodine is an essential element for breast normality and for protection against fibrocystic disease of the breast and breast cancer
- ~7.5mg/day of iodine
  - *Breast cancer and iodine by Derry D*