



Wellness Trading Post

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Clinical Herbal Therapy

Bach Flower Essences

Reflexology

Reiki

Energy Healing

Hypothyroid Notes

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HYPOTHYROID

MEDICAL MONOGRAPH

Description:

A condition characterized by low levels of circulating thyroid hormones (T_3 & T_4) or resistance to the hormone action, and resulting in reduced basal metabolism.

Myxedema is the term use for severe hypothyroidism.

Types:

Primary hypothyroidism:

1. Hashimoto's thyroiditis: there is inflammation, and then destruction and fibrosis of the thyroid gland. Histology studies reveal extensive infiltration of lymphocytes in the thyroid with lymphoid follicles
2. As a result of hyperthyroid treatment.
3. Drug induced hypothyroidism:
Lithium – like iodide, lithium inhibits the release of thyroid hormones.
Iodine – with prolonged use may cause goitrous hypothyroidism in patients with underlying autoimmune thyroiditis.
4. Iodine deficiency: dietary deficiency leading to decreased production of thyroid hormones. Hypothyroidism is usually accompanied by thyroid enlargement or goiter.
5. Subclinical hypothyroidism: describes symptomatic patients who are clinically euthyroid (low thyroid levels, and high TSH), and can be as a result of surgery for hyperthyroid.
6. Dyshormonogenesis – rare hereditary condition characterized by abnormal thyroid enzymes preventing adequate production or release of thyroid hormones

Secondary hypothyroidism: atrophy of thyroid gland caused by failure of TSH secretion due to hypothalamic or anterior pituitary disease.

Epidemiology:

- Affects 5 – 10 in 1000 of general population.
- Most common over 40 years of age.
- Female > male; 5-10:1 ratio.

Prognosis:

- With early treatment, return to normal state is expected.
- Relapses will occur if treatment is interrupted.
- If untreated, may progress to myxedema coma.

Causes:

- If goiter:
 - Autoimmune diseases such as Hashimoto's thyroiditis (most common cause).
 - Iodine deficiency
 - Drug-induced: lithium, aminosalicic acid, iodide containing drugs – *amiodarone* (heart medication) some epilepsy, and antidepressant drugs.
- As a result of hyperthyroid treatment (second most common caused).
- Radioactive iodine therapy
- Thyroid surgery.
- Deficiency in TSH hormone from pituitary.
- Deficiency of TRH hormone from hypothalamus.
- Hereditary – rare.
- Disorder of the hypothalamus or pituitary, including tumor (rare).
- Stress (chronic stress may lead to adrenal exhaustion, resulting in low cortisone, needed for the conversion of T_3 to T_4)
- Heavy-metal toxicity (lead, mercury) can inhibit entry of T_3 into cells for utilization.
- Deficiency of nutrients needed for production T_3/T_4 or conversion of T_3 to T_4 (Zn, Cu, Se, Vit's A, B's, C).
- Excess Iodine (inhibit T_4 synthesis and conversion of T_3 to T_4).
- Excess Fluoride (inhibit utilization of iodine).

Risk Factors:

- Aging.
- Autoimmune diseases.
- Stress
- Genetic susceptibility
- Use of certain drugs.
- Radiation treatment.

Differential Diagnosis:

- Depression
- Chronic nephritis, nephritic syndrome.
- Congested heart failure.

Diagnostic Tests:

- Blood test to measure levels of TSH, T_3 , T_4 .

Signs & symptoms:

General:

- Fatigue, lethargy.
- Weight gain
- Cold hands/feet.
- Low basal body temperature (of the body at rest), Normal: 97.6–98.2°F.
- Intolerance to cold temperatures.
- Decreased sweating
- Hoarse voice.
- Goiters, enlarged thyroid, small or atrophied.
- Coarsening of features

Neuromuscular:

- Mental apathy, mental confusion decreased memory & concentration.
- Depression.
- Muscle cramps.
- Carpal tunnel syndrome
- Slow tendon reflex, and slow reflex recovery.

Gastrointestinal:

- Constipation

Skin:

- Dry/coarse skin, and hair
- Brittle nails.
- Periorbital puffiness.
- Reduced body and scalp hair.
- Vitiligo.

Cardiovascular, blood:

- Anemia
- Bradycardia
- Decreased systolic & increased diastolic blood pressure
- Peripheral edema.
- Elevated cholesterol, Xanthelasma.
- Angina, cardiac failure.

Reproductive:

- Menstrual disturbances (e.g. heavier bleeding)
- Infertility
- Impotence.

Complications:

- Anemia
- Heart failure
- Myxedema coma.

Orthodox Treatment

Treatment:

- Patient education, reassurance and understanding of condition.
- Thyroid replacement therapy – often, synthetic T_4 thyroid hormone.
- High bulk diet to avoid constipation.
- Low fat diet if overweight.

Medications:

- Levothyroxine (Synthroid, levothroid) – to stimulate production/release of TSH.

HYPOTHYROID

NUTRITION

1. If weight is a problem, avoid weight-loss diets. The body needs the daily dose of nutrients. Instead work in developing a healthy diet that allows losing weight. Some general guidelines are described hereafter.
2. Eat nutrient dense food, preferably organic (to avoid pesticides and other chemicals that place additional stress on the body), including plenty of fruit and vegetables, cold water fish.
3. Avoid goitrogens food (esp. raw) – turnips, cabbages, mustard greens, radishes, horseradish, kale, cassava root, soybeans, peanuts, pine nuts, and millet, peaches, pear, spinach, and turnips. If eaten, make sure they are well cooked (goitrogens reduce thyroid activity by blocking iodine utilization when raw, and cooking inactivate this action).
4. Eat a lot of fresh fruit and vegetables – they are rich in nutrients, fibers, flavonoids (antioxidants, protect body from free radicals damage), and help cleanse body of toxins.
5. Although rare in North America, if iodine deficiency is suspected, include kelp, organic/unprocessed sea-salt on diet.
6. Avoid processed and refined foods, esp. sugar, white flour, and containing a lot of additives (food dyes, flavoring as MSG, food coloring, esp. artificial additives).
7. Include food such as whole grains, green vegetables, lean meat, brown rice that are rich in B vitamins. Some B vitamins (B₂, B₃, B₆) are needed for production/conversion of thyroid hormones, they also help build resistance to stress, participate in productions of energy, cell proliferation, and the metabolism of fats, proteins, and carbohydrates.

Lima beans, tomatoes and salmon are high in potassium and B5 Vit. Potassium can help alleviate symptoms of excess adrenaline (avoiding salt to support the sodium–potassium balance), and Vit. B5 (considered the anti-stress vitamin) helps with the functioning and production of the adrenal glands hormones.

8. If possible, buy organic products to reduce intake of pesticide residues and other chemicals, and hormones in animal-foods.

If stress is involved:

1. Avoid food that stresses the body such as:
 - Artificial sweeteners, sugar, and carbonated soft drinks
 - Fry food, and saturated animal fat
 - Fast-food (e.g. McDonald, KFC), processed food, food with a lot of preservatives or additives which are usually high in calories and low in nutrient.
 - Hot/spicy food.
2. Avoid coffee or caffeine, or reduce the intake to one cup a day – caffeine promotes nervousness and upsets sleep, can inhibit the absorption of nutrients, increases the acidity of the body, increases loss of calcium.
3. Avoid alcohol, tobacco/cigarettes (including second hand exposure) – although they seem to offer a temporary outlet for stress, they do not solve the problem and instead add stress to the body.

Alcohol stresses the liver and inhibits production of digestive enzymes, raises blood sugar level, promotes the elimination of nutrients through urine and dehydrates the body, and increases uric acid (associated with kidney stone and rheumatic conditions such as gout). In excess and long use, it damages liver, pancreas, nervous system, increases the risk of cancer (esp. mouth, throat and stomach cancers).

Tobacco/cigarettes are associated with a variety health conditions such as Alzheimer's disease, headaches, memory loss, anxiety, senility, vitamins and mineral deficiencies, hiatus hernia, heartburn, peptic ulcers, atherosclerosis, high blood pressure, coronary heart disease, peripheral vascular disease, myocardial infarction, stroke, low immune system, fatigue, allergies, increased risk of cancer (lung, mouth, tongue, throat, esophageal, bladder, pancreatic, kidney, cervical), sinusitis, respiratory infections, chronic bronchitis, emphysema, asthma, diabetes, cold hands/feet, infant mortality, low birth weight, burns, impotence, etc.

4. Do a body cleansing/detoxification for at least 3–7 days. This will help the body remove toxins, and offending substances that may have accumulated. Accumulation of toxins lead to irritability, mood swings, reduced concentration, headaches, “foggy” brain, allergies.
5. Vitamins and minerals are often depleted due to stress, such as zinc, selenium, calcium, magnesium, iron, potassium, Vit. B's, A, C and E. Some of these nutrients are needed for thyroid hormones production and function.
6. During stress, the body is consuming more carbohydrates, proteins, and fats. Thus, a high nutrient diet is important during time of stress.

HYPOTHYROID

| Nutrient | Dose | Description |
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| Acidophilus | As directed on label | To restore normal flora of the bowel; acts as immune enhancer, improves digestion and absorption of food. |
| <u>EFAs:</u> Flax seed oil Evening Primrose oil Fish oil | 1–2 tsp/day 500 mg 2–3 x/day 500-1000 mg/day | Essential Fatty Acids (EFAs) are critical nutrients to our body. They are needed for the normal growths of the body, and are used to make up the membrane of every cell of our body. EFAs are vital for a healthy brain and immune function. They are needed for the normal development of the brain; help with nerve transmission, cells & organs respiration, used in the lubrication of tissues (skin, joints), support adrenal, and thyroid activity. EFAs also aids digestion, and are used for the production of anti-inflammatory prostaglandins. Food source – cold water fish (tuna, salmon, mackerel), Flax seeds. |
| Vitamin A Beta-carotene, (Precursor to Vit. A) | 5000 – 10000 IU daily 20000 IU daily | An oil soluble vitamin. Antioxidant (protects body against damage by free-radicals), protects against colds/flu and infections of kidneys, bladder, lungs, and mucus membranes. Needed for the utilization of protein by the body, promotes health of eyes/vision, and skin. Beta-carotene is pro-vitamin A as is found in plants. It is converted to Vitamin A by the body, a process that ensures that Vitamin A levels do not become excessive. Therefore beta-carotene is generally considered non-toxic. Except for the Micellized form, Vit. A supplement is best taken with fatty foods (good fats containing foods), since vitamin A is a fat-soluble vitamin, helping its absorption. Vitamin E and Zinc participate in the metabolism of vitamin A. Thus, if using Vit. E and/or Zinc, taken them together. Cancer notes: It protects against throat and lung cancer, suppresses tumors, inhibits mutation of cells, and stimulates immune function. High doses of Vit. A can be administered via the water-soluble micellized form. Food sources: liver, fish liver oils, green and yellow fruit and vegetables such as papaya, mango, carrot, apricot, peach, asparagus, cantaloupe, garlic, kale, squash, yams, sweet potato. |
| Vit C with bioflavonoids | 1000 mg 2–3x/day or to bowel tolerance (increase dose daily by 500 mg until stool become loose, and then reduce until stool is normal again. Then, keep this dose). | A water-soluble vitamin. An antioxidant, supports the immune system, needed for tissue growth and repair and for adrenal glands function (esp. when overworked during chronic stress), and healthy gums. It helps with the production of anti-stress hormones, and enhances immune function. It helps protect against the effects of pollution, reduces risk of cancer, protect against infections. It is best taken with bioflavonoids (as quercetin) for better absorption; and works synergistically with Vit. E and beta-carotene, so it's best to take them together if taken these supplements. Cancer notes: protects against different types of cancers such as oral, larynx, esophagus, stomach, pancreas, colorectal, bladder, cervix, prostate, lungs, and leukemia. Protect skin and bone from the effects of radiation. It helps regenerate oxidized Vit E (damaged) in the body, protects cellular structures, including DNA from damage. Vit. C also inhibits conversion of nitrates into nitrosamines (carcinogenic substances). Food sources: kiwis, citrus fruit, berries, green vegetables, asparagus, avocados, black currants, mangos, cantaloupes, onions, kale, papayas, pineapples |
| Quercetin (Bioflavonoid) | 500 mg 3x/day | A flavonoid that helps stabilize the cell walls and inhibits release of histamine, increases immunity, scavenges free-radicals, inhibits irritation of intestinal smooth muscles, and reduces the damage caused by food allergens. Food sources (bioflavonoids in general): colorful fruit and vegetables such as peppers, buckwheat, black currant, apricots, blackberries, cherries, grapefruit, grapes, plums, prunes, rose-hips, hawthorn berries. |

HYPOTHYROID

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| <p>B-Complex</p> | <p>50–100 mg 2–3x/day</p> | <p>B-vitamins are water-soluble vitamins and work together synergistically, so it is best to take them together and a B-Complex offers that. They are needed for the health and proper functioning of the nervous system, eyes, skin, liver, and more. They are also needed for the production of energy, cell replication; and for the metabolism of fats, carbohydrates and protein.</p> <p>Vit. B₁ participates in the synthesis of the neurotransmitter acetylcholine, and linked to learning capabilities, and growth in children. Important for the muscle tone of the stomach, intestines, and heart.</p> <p>Vit. B₂ needed for normal cell growth, cell respiration. Helps with fatigue and lack of vitality.</p> <p>Vit. B₃ is essential for the production of energy; needed for synthesis of sex hormones (as estrogen), production of adrenal hormones. The niacinamide form has been shown to have antioxidant properties and to inhibit autoimmune in DM type-I (if used in high dose, then must be used short-term, since it can damage liver).</p> <p>Vit B₅ is considered “the anti-stress vitamin”; it is required for the manufacture of adrenal hormones; participates in the synthesis of the neurotransmitter acetylcholine.</p> <p>Vit-B₆ is needed for the manufacture of neurotransmitters such as serotonin, dopamine, adrenaline, noradrenaline, GABA. Participates in the synthesis and functioning of DNA & RNA, helps with the electrical functioning of the nerve and muscles. Protects against neuropathies, and improve immune function.</p> <p>Folic acid and B₁₂ are needed for DNA division of cells (deficiencies can lead to some types anemia, memory loss, irritability, depression). Vit. B₁₂ is essential for the metabolism of the nerve tissue, and the health of the nervous system.</p> <p>Inositol participates in the proper functioning of neurotransmitters in the brain including serotonin and acetylcholine.</p> <p>Biotin – a coenzyme; helps with the formation of DNA and RNA.</p> <p>Choline or Phosphatidyl choline is an integral part of the acetylcholine neurotransmitter. It is important for the health of the myelin sheath covering the nerves. Helps with liver and gallbladder functions.</p> <p>Cancer notes: Vit B₆ reduces cancer cell growth (esp. those with atypical growth). Reduces risk or protect against metastatic of melanoma. Best taken as P5P (pyridoxal-5-phosphate), 50-100 mg 1-2 x/day.</p> <p>Food sources depend on the type of vitamins. Food rich in various types of B vitamins are brown rice, egg yolk, fish, legumes, liver, poultry, beef, whole grains, oatmeal, nuts & seeds, dried fruit (raisin, figs, prunes), milk, yogurt, Brussels sprouts, dandelion greens, leafy green vegetables, brewer’s yeast, avocados, cheese.</p> |
| <p>Vit E</p> <p>Succinate ester (dried form)</p> | <p>400 - 800 IU a day.</p> <p>50 mg per day</p> | <p>Fat-soluble vitamin. Powerful antioxidant, enhances immune functions (esp. affected by long term stress), protects against cancer and cardio-vascular disease, improves circulation, needed for tissue repair, normal blood clotting and healing, participates in healthy nerves and muscles, strengthens capillary walls.</p> <p>This is a dried “esterized” form of Vitamin E.</p> <p>Vit. E supplement is best taken with fatty foods (good fats). Selenium and vitamin E works synergistically. Thus, if taken selenium supplement, then take it together with Vit. E.</p> <p>Cancer notes: Vit. E reduces the risk of prostate cancer, colon cancer. Topically, protects against Ultra Violet light. For cancer prevention or treatment, Vit. E should be taken with other antioxidants such as Vit. C, selenium, and zinc. Together with selenium protect from chemotherapy damage.</p> <p>Food sources: cold pressed vegetable oils (olive, soy, corn, canola, sunflower, safflower, sunflower, palm oils), nuts (almonds, peanuts, hazelnuts, pistachios, walnuts), seeds (corn, soy, lentils, barley, rice, wheat, oats), whole grains, dark green leafy vegetables, eggs, milk, and oatmeal.</p> |

HYPOTHYROID

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| Selenium | 100 – 200 mcg day | <p>Helps inhibit the oxidation of lipids. Antioxidant that works synergistically with Vit. E and together help in the production of antibodies and maintaining a healthy heart & liver. Protects the immune system by preventing the formation of free radicals. Helps regulate the effects of thyroid hormones on fat metabolism. Needed for pancreatic function and tissue elasticity. Together with Vit E and zinc help with enlarged prostate.</p> <p>Cancer notes: it has anti-tumor activity, helps protect against formation of tumors.</p> <p>Food sources: meat, grains, brazil nuts, brewer's yeast, broccoli, brown rice, dairy products, garlic, liver, blackstrap molasses, seafood, chicken.</p> |
| Calcium (Ca) & Magnesium (Mg) | 700 to 1000 mg/day 350 to 500 mg/day | <p>Ca & Mg are best taken together (2:1 is most commonly available). Ca and Mg help calm the nervous system, thus are beneficial for anxiety and insomnia. Ca is essential for the formation of bones & teeth, and maintenance of healthy gums. It is also needed for heartbeat regulation and nerve transmission, and muscular growth and contraction. It helps reduce cholesterol levels and the risk of cardiovascular disease.</p> <p>Mg participates in energy production, nerve transmission, muscle contraction, helps with calcium and potassium uptake, and the proper body's pH and temperatures. It helps prevent depression, dizziness, muscle cramp, muscle weakness, and symptoms of PMS.</p> <p>Food sources: Ca is found in milk, dairy products, seafood, dark green leafy vegetables, almonds, asparagus, blackstrap molasses, brewer's yeast, broccoli, nuts & seeds, dried fruit, oats, kale. Mg is found in most food especially dairy, fish, meat, and seafood; also, apples, apricots, avocados, bananas, blackstrap molasses, brown rice, brewer's yeast, garlic, nuts & seeds, whole grains, legumes.</p> |
| Iron (Fe) | 25 mg daily. | <p>Required for the production of hemoglobin (to transport the oxygen within of the red blood cells) and myoglobin (within muscle tissue). It is also needed for a healthy immune system and energy production.</p> <p>Food sources: eggs, fish, liver, meat, poultry, green leafy vegetables, whole grains, almonds, blackstrap molasses, brewer's yeast, dried fruit (as dates, figs, prunes, raisins), avocados, beans.</p> |
| Potassium (K ⁺) | 300 – 500 mg daily | <p>Needed for the health of the nervous system and heart rhythm. Helps with muscle contraction, helps maintain water balance (along with Sodium), regulates transfer of nutrients to the cells.</p> <p>Food sources: dairy products, fish, legumes, meat, poultry, whole grains, fruits and vegetables (apricots, potatoes, bananas, avocados, lima beans), dried fruit, nuts, brewer's yeast.</p> |
| Zinc (Zn) | 30 – 50 mg daily | <p>Needed for many body functions. It promotes wound healing by helping collagen formation, helps the skin oil gland function. It may help in the utilization of Vit. A (helping maintain healthy skin). Needed for the growth of the male sex organs and reproductive fluids (esp. the prostate glands). It supports immune function (improves antibody response, cell-mediated immunity, production of T lymphocytes), is a constituent of insulin, and participates in the acuity of taste and smell.</p> <p>As part of enzymes or a cofactor, it is involved in the clearance of alcohol in the liver, energy production, bone formation, protein digestion, synthesis of nucleic acid of DNA and RNA, antioxidant effects,</p> <p>Cancer notes: cancer patients often are low in zinc (esp. the elderly). It helps reduce some radiation effects (as decrease taste).</p> <p>Food sources: brewer's yeast, egg yolk, fish, kelp, nuts/seeds (esp. pumpkin seeds), lime beans, soybeans, whole grains, lamb, meat, liver, oysters, poultry.</p> |
| Iodine Tyrosine | 100 mcg day 500 mg 2x/day on empty stomach. | <p>The thyroid uses iodine and tyrosine to manufacture T₄. Low level of tyrosine has been associated with hypothyroidism.</p> <p>Do not exceed iodine intake since it can inhibit production of T₄ and conversion of T₃ to T₄. Iodine deficiency is rare in North America. Thus, use only if hypothyroidism is due to iodine deficiency.</p> |

HYPOTHYROID

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| Raw thyroid glandular | As prescribed by physician | Made from desiccated natural thyroid gland. It help restore thyroid hormones. |
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GENERAL

- Avoid iodine-containing drugs if possible.
- Avoid X-rays unless really necessary.
- Replace mercury dental filling with non-mercury kind.
- Check/rule out heavy metal toxicity (e.g. hair analysis).
- Exercise regularly (30 to 60 min). Exercise stimulates the thyroid gland secretion and increases tissue sensitivity to thyroid hormone (increases the metabolic rate). In addition, it relieves stress, helps clear the mind, tones muscles, promotes circulation, and supports the health of the body.
- Thyroid self test:
- Keep a thermometer by the bed at night. Upon awaking, and without rising from the bed, take the temperature under the arm (try to stay still and calm). Record temperature, and repeat for at least 5 consecutive days. If temperature is below 97.6 °F most of the time, it may indicate underactive thyroid.
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- Stress management if appropriate:
- Take time for fun and play – any activity that makes you relax or smile.
- Read books that dissipate work and worries from the mind, and lift the spirit.
- Deep breathing exercises to help relax the body and the mind, and promote circulation.
- Try making time and room for small changes in current lifestyle, and give your body and mind the time to accommodate/adapt to changes. Small changes are easier to implement than big ones and are less stressful to live through (for instance, eat one piece of fruit a day; walk 15 minutes after lunch or diner instead of trying to train for a marathon).
- Practice love and patience with yourself.
- Reduce or stop intake of alcohol, drugs, and smoking if applicable.
- Avoid the use of stimulants or medication to deal with symptoms associated with stress, such as caffeine to fight sleep, painkillers for headaches, antacids to help digestion, drugs to lower blood pressure, cholesterol, or for palpitations, etc. These merely mask the stress effects, they do not remove the stress response, and thus our body continues to struggle over a vicious circle stress response until exhaustion