

Thyroid Therapy

Signs & Symptoms Associated with Hypothyroidism

- Fatigue (morning)
- Weakness
- Constipation
- Weight gain
- Cold extremities, intolerance to cold
- Edema around ankles or below eyes
- Muscle aches, headaches
- Depression
- Poor concentration, memory loss
- Hoarseness
- Dry, rough skin, follicular hyperkeratosis
- Orange tint to palms and soles, pallor
- Dry, thinning hair
- Axillary Basal Body Temperature < 97.5
- TSH > 3.0 (1.0-2.5 optimal)

Conditions Associated with Hypothyroidism

Hypertension
Angina (chest pain), atherosclerosis
Elevated cholesterol levels
Elevated homocysteine
Irregular menstrual cycles, infertility
PMS, fibrocystic breast disease
Hypoglycemia
Psoriasis, urticaria
Allergies, asthma, rhinitis

The human thyroid gland makes a combination of T4, T3, and T2. Levothyroxine (T4) is converted to the more active form of thyroid, T3, in the peripheral tissues as the body needs it. However, some people lack an enzyme (deiodinase) and are unable to adequately convert T4 to T3.

Levothyroxine (Synthroid®) consists solely of T4. USP Thyroid (Armour) contains approximately 80% T4 and 20% T3. Most people who are treated with thyroid hormone do fine on *either* Levothyroxine (T4 alone) or USP Thyroid (T4, T3, and T2). Some patients feel worse on the combination. Because T3 is more active, it can cause symptoms of too much thyroid like a rapid heart beat or anxiety. Measuring levels of free T4 and free T3 may help to guide therapy. T3 is approximately four times more potent than T4.

Treatment

Levothyroxine (T4) or USP thyroid (T3, T4) may be prescribed if TSH is elevated. A half dose is taken on an **empty stomach** for 4 days, followed by the whole dose. Some patients are very sensitive to thyroid medication and may require lower doses of thyroid hormone. The dose must be *lowered* or therapy *discontinued* if the patient experiences the following side effects of **too much** thyroid hormone:

- Anxiety, nervousness, agitation, sweating
- Insomnia, headaches
- Rapid heart beat, palpitations, rapid pulse
- Pain or tightness in chest
- Fatigue
- Hair Loss

If symptoms of thyroid deficiency have not been relieved on the initial dose, an increase in the dose may be considered after follow up blood levels are obtained. Thyroid hormone is best absorbed on an **empty stomach**. Follow up thyroid blood levels are tested 2-3 months following the initiation of thyroid therapy or a change in dosage. Follow up blood levels (TSH) are drawn in the morning PRIOR to taking thyroid medication. Synthroid (levothyroxine) is identical to T4.

Conversion: 60 mg. (1 grain) of USP thyroid (**Armour**) = 100 mcg (.1mg) of Levothyroxine (**Synthroid**, Levoxyl, L-thyroxine)

USP thyroid *is* standardized: 60 mg. (1 grain) tablet contains Levothyroxine (T4) 38 mcg. and Liothyronine (T3) 9 mcg.

Thyrolar (liotrix) 75% T4 / 25% non slow release (SR) T3.

Cytomel (non SR T3) 5ug and 25 ug doses