TARGET POPULATION

Adults and children with suspected or confirmed primary thyroid dysfunction

EXCLUSIONS

Neonatal patients

Asymptomatic, seemingly healthy individuals having a periodic exam

RECOMMENDATIONS

- ✓ Order TSH as the single best initial test to diagnose primary hyperthyroidism and hypothyroidism when symptoms are present (See Table 1, and for at-risk see Table 2)

Symptoms of Hypothyroidism	Symptoms of Hyperthyroidism
• Weight gain • Lethargy • Cold intolerance • Menstrual irregularities • Depression • Constipation • Dry skin	• Palpitations/ tachycardia/atrial fibrillation • Widened pulse pressure • Nervousness and tremor • Heat intolerance • Weight loss • Muscular weakness • Usually goiter is present

Table 1: Symptoms of Hypothyroidism & Hyperthyroidism

Patients at Increased Risk for Thyroid Disease
• Women over 45* • Postpartum women • Patients receiving drug therapies such as lithium and amiodarone (Category 5A & 5B) • Patients with other autoimmune diseases such as Type I diabetes • Patients with a strong family history of thyroid disease *Note: *There is evidence to suggest increased risk for thyroid disease in patients over the age of 60*

Table 2: Patients at Increased Risk for Thyroid Disease

- ✓ Follow Category 1 for patients having suspected primary thyroid disease
- ✓ Follow Category 2 when patients are taking thyroid hormone replacement and dosage needs monitoring
- ✓ Follow Category 3 when patients are receiving thyroxine therapy for thyroid cancer
- ✓ Follow Category 4 when patients are pregnant and receiving thyroid hormone replacement
- ✓ Follow Category 5A or 5B when patients are receiving lithium or amiodarone
- X DO NOT order TSH for suspected pituitary disease. FT4 is recommended
- X DO NOT use TSH as an indicator of thyroid status in patients with severe non-thyroidal illness (e.g., CCU, IC, acute severe psychiatric illness)

CATEGORY 2: TSH USE IN THYROXINE THERAPY FOR TREATMENT OF HYPOTHYROIDISM

- ✓ Use L-Thyroxine for thyroid replacement. DO NOT use T3, T3/T4 combinations, or desiccated thyroid
- ✓ Target TSH in euthyroid range*
- ✓ Wait for TSH equilibration – TSH equilibration requires eight to 12 weeks after any thyroxine dosage change

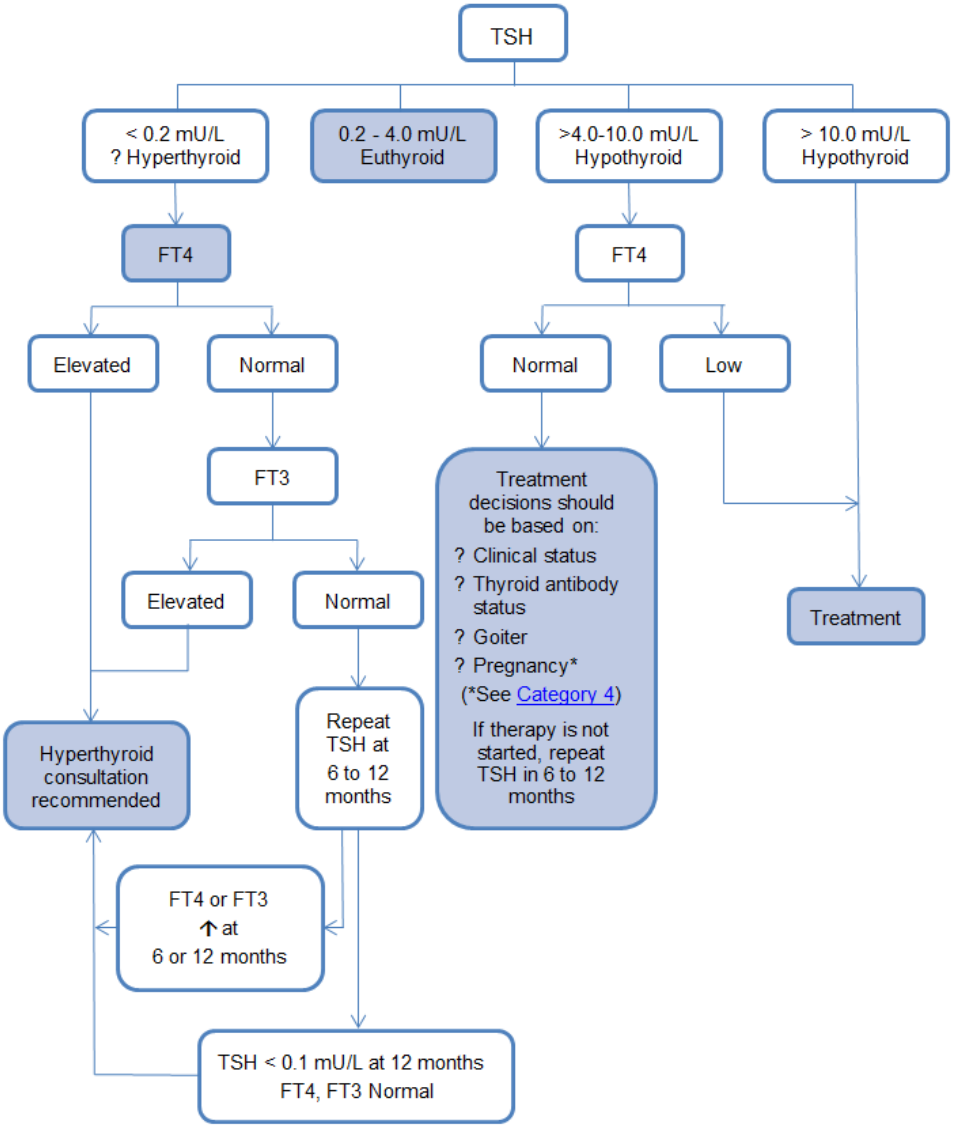
- ✓ Order a yearly TSH once a stable dose is achieved – yearly TSH is sufficient

*Patients on thyroxine therapy with TSH < 0.2 mU/L may have increased health risk

*CATEGORY 1: SUSPECTED HYPER OR HYPOTHYROIDISM** *(SEE ALGORITHM BELOW)*

*For patients receiving thyroid hormone therapy follow Category 2

- Patients with thyrotoxicosis usually have a TSH value < 0.1 mU/L
- Thyroid antibodies are indicated in cases of hypothyroidism (TSH > 4mU/L) due to suspected autoimmune thyroid disease. Serum antibody (anti TOP) testing should only be performed once for the diagnosis. Serial testing has no clinical utility.



CATEGORY 3: TSH USE IN MONITORING THYROXINE THERAPY IN THYROID CANCER

- ✓ Target: Achieve suppressed TSH (< 0.1 mU/L) in moderate to high risk patients, and TSH 0.1 – 0.5 mU/L in low risk patients, to prevent re-growth of cancer

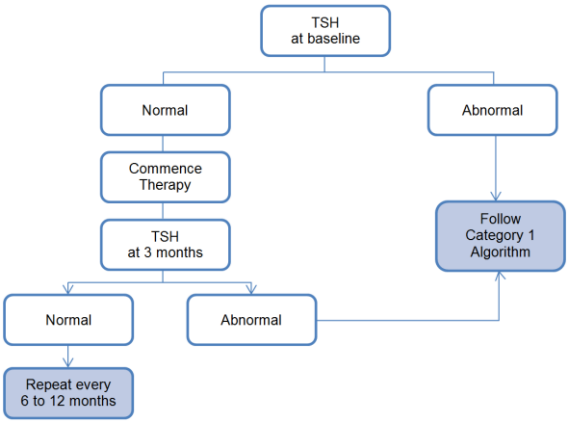
CATEGORY 4: PREGNANCY

PRACTICE POINT

Subclinical hypothyroidism in the mother may lead to cognitive impairment in the infant. Achieving euthyroidism prior to pregnancy is ideal.

- ✓ For patients receiving thyroxine replacement:
  - Order TSH when pregnancy is confirmed and repeat every four to six weeks (due to increased demand for thyroxine during pregnancy)
  - Thyroxine dose can be adjusted as required every six weeks based on TSH levels
  - Target: TSH 0.2 – 2.5 mU/L in the first trimester, and 0.2 – 3.5 mU/L after 20 weeks gestation (Category 2)
- ✓ Recommend a TSH receptor antibody (TRAB) level for patients with a history of Grave's disease
- ✓ Consult endocrinology if TRAB ≥ 5 x normal

CATEGORY 5A: PATIENTS RECEIVING LITHIUM



CATEGORY 5B: PATIENTS RECEIVING AMIODARONE

Amiodarone may cause elevated FT4 in the presence of normal TSH (drug effect to inhibit T4 conversion)

- ✓ Recommend pre-treatment TSH and three month post treatment TSH, FT4 and FT3