



TEST: T4, Free

**PRINCIPLE:**

The free fraction of the circulating thyroxine (T<sub>4</sub>) is considered to exert the main influence on metabolic control. Consequently, the FT<sub>4</sub> concentration is believed to be the most direct indicator of an individual's thyroid status. FT<sub>4</sub> concentrations are generally depressed in hypothyroidism and raised in hyperthyroidism. Measurement of FT<sub>4</sub> thus provides an aid to the differential diagnosis of thyroid disease.

FT<sub>4</sub> concentrations are independent of the concentration of thyroid hormone binding proteins and may therefore be measured in patients with elevated or reduced binding protein concentrations without the need for additional tests of binding capacity.

**SPECIMEN REQUIREMENTS:**

2 ml serum from blood collected in red top tube without additive or in a serum separator tube with gel barrier. Separate the serum from the clot to avoid hemolysis: red top tube – transfer serum into plastic transport vial, gel tube – spin. Transport to the lab at room temperature. Store at room temperature for up to 8h, refrigerate for up to 48h. Store frozen at -20°C or below for up to 30 days. Avoid repeated freeze-thaw cycles.

**METHOD:**

Enhanced Chemiluminescence.

**REFERENCES:**

1. J, Rall JE. Interaction of thyroid hormones and protein in biological fluid. Recent Prog Horm Res 13:161-202; 1957.
2. Robbins J, Rall JE. The iodine containing hormone. In Grady CH & Bacharach AL (eds), Hormones in Blood vol. 1. London: London Academic Press: 383-490; 1967.
3. Avruskin TW et al. Measurements of free and total serum T<sub>3</sub> and T<sub>4</sub> in pregnant subjects and neonates. Am J Med Sci. 271:309-315; 1976.
4. Lewis M. In Ekins R et al (eds), Measurement of free thyroid hormones in health and disease. International Symposium on Free Thyroid Hormones, Venice. Excerpta Medica: 167-180; 1979.

**Normal Range:** 0.61–1.12 ng/dl

**Turnaround Time:** 3 days