

TEST: T3, TOTAL

PRINCIPLE:

Triiodothyronine (T3) contributes to the maintenance of the euthyroid state.¹ A decrease in T3 concentration of up to 50% occurs in a variety of clinical situations, including acute and chronic disease. Although T3 results alone cannot be used to diagnose hypothyroidism, T3 concentration may be more sensitive than thyroxine (T4) for hyperthyroidism. Consequently, the total T3 assay can be used in conjunction with other assays to aid in the differential diagnosis of thyroid disease.

T3 is transported in serum primarily by thyroxine-binding globulin (TBG) and approximately 99.5% of circulating T3 is protein-bound. T3 concentrations may be altered in some conditions, such as pregnancy, that affect the capacity of the thyroid hormone-binding proteins. Under such conditions, Free T3 (VITROS Free T3 assay (FT3)) can provide the best estimate of the metabolically active hormone concentration. Alternatively, T3 uptake (VITROS T3 Uptake assay (T3U)), or T4 uptake can be used with the FT3I total T3 result to calculate the free T3 index (FT3I) and estimate the concentration of free T3.

SPECIMEN REQUIREMENTS:

2ml serum collected in a red top tube with no additive or in a serum separator tube (gel barrier). Store in the refrigerator at 2°-8° for up to 7 days. For long term storage, freeze at -20° C or below. Avoid thaw freeze cycles.

METHOD: Enhanced Chemiluminescence

REFERENCES:

1. Larsen PR. Triiodothyronine: Review of Recent Studies on its Physiology and Pathophysiology in Man. *Metabolism*. 21:1073–1092; 1972.
2. Evered DC. Diseases of the Thyroid Gland. *Clinics in Endocrinology and Metabolism*. 3:425–450; 1974.
3. Tunbridge WMG, Hall R. Thyroid Function in Pregnancy. *Clinics in Obstetrics and Gynecology*. 2:381–393; 1975.

Normal Range: 0.970-1.69 ng/ml

Turnaround Time: 1 day