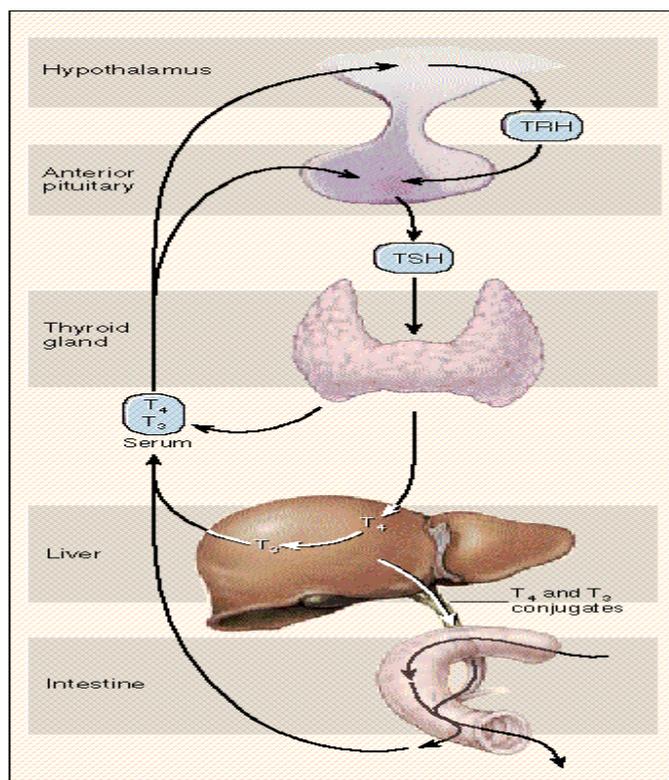


International Clinical Laboratories *Test Review*



The Ultra sensitive Thyroid Stimulating Hormone (hTSH II) Assay

The thyroid gland controls the metabolic rate of many organs and tissues. Under activity and over activity of thyroid function represent the commonest endocrine problems, have widespread manifestations, and often require long term treatment. Measurement of serum TSH is the best test of thyroid function, because of the sensitivity of TSH secretion to very small changes in serum T_4 and T_3 concentrations.



Earlier assays for serum TSH was originally used to diagnose or confirm primary hypothyroidism. The new ultra sensitive assay (hTSH) permits recognition of hyperthyroidism as well. Thus, it has altered diagnosis of thyroid testing strategies and become the best single thyroid test. hTSH not bound to carrier proteins, is not plagued with problems of estrogen administration, hepatic or renal disorders which characterize other important thyroid tests. The new highly sensitive TSH assay, among other roles, is used to screen for thyroid disease. The sensitive assay also helps to differentiate normal concentrations of thyroid stimulating hormone in euthyroid subjects from low concentrations (hypothyroidism secondary to pituitary insufficiency and sub clinical

hyperthyroidism). The assay is independent of changes in concentrations of thyroxine binding globulin, which occur during pregnancy and hormone replacement therapy. A result within the accepted reference range also provides strong evidence for euthyroidism (1, 2).

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Figure. The Hypothalamic–Pituitary–Thyroid Axis and
Extrathyroidal Pathways of Thyroid Hormone Metabolism

Thus, ICL is proud to present you with the new second generation ultra sensitive assay (hTSH) assay which discriminates between the hyperthyroid and euthyroid patients exhibit a $\leq 20\%$ CV at 0.1 uIU/ ml. Other available thyroid tests (FT₄, T₄, T-Uptake, and T₃) combined with ability to accurately measure low levels of hTSH improve the efficiency of thyroid diagnosis.

1. Nordyke RA, Gilbert FI Jr. Management of primary hypothyroidism. *Compr Ther.* 1990; 16:28–32.
2. Klee GG and Hay ID. Role of thyrotropin Measurements in the Diagnosis and Management of Thyroid Disease. *Clin Lab Med.* 1993. 13:673-82.

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