



## THYROID FUNCTION TESTS

### The value of thyroid testing in hospitalized children is low

#### BACKGROUND

Routine thyroid testing often occurs in hospitalized patients with nonspecific symptoms during the evaluation of the cause of the illness that brought the patient into the hospital. Certain diagnoses in adults lead to thyroid testing, such as new onset atrial fibrillation or an acute presentation of a psychiatric illness. However, many studies have shown that routine thyroid testing in adults without a high likelihood for thyroid problems causing the acute reasons for hospitalization is rarely helpful.

For many reasons, routine thyroid testing in hospitalized children is at least as common as in adults. One reason for testing in children is in those who are at increased risk for thyroid disease or dysfunction, such as patients with new-onset type 1 diabetes or with the use of certain medications. The goal of this study is to evaluate how often thyroid testing is done in children who are hospitalized, how often the results are abnormal, and the impact of thyroid testing on patient care.

#### THE FULL ARTICLE TITLE

Torky A et al Low Value of Thyroid Testing in Pediatric Inpatient Setting. *Hosp Pediatr* 9:24-29. PMID: 30559318.

#### SUMMARY OF THE STUDY

This study examined hospital admissions at Children’s National Medical Center between July 2015 and June 2016. Medical charts of hospitalized pediatric patients

who underwent thyroid testing during this time period were reviewed. Thyroid testing was done in 5.7% of admitted patients. The majority (79.3%) had combined thyroid function tests (TFTs) with thyroid-stimulating hormone (TSH) and free thyroxine (FT<sub>4</sub>). The psychiatry service ordered 41.6% of TFTs, followed by the endocrinology service (14.9%). A total of 205 tests (17.1% of patients) ordered were abnormal. The most common abnormalities included a normal FT<sub>4</sub> with an increased TSH, a normal FT<sub>4</sub> with a decreased TSH, and a high FT<sub>4</sub> with a normal TSH. Approximately 20% of children with new-onset type 1 diabetes had abnormal TFTs, but all abnormalities normalized when retested at outpatient follow up. Despite these abnormal results, only eight patients (0.66%) received treatment aimed at their thyroid and all of these were started on levothyroxine.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Thyroid testing is commonly performed in hospitalized children but rarely correlates to the cause of the hospitalization or impacts the immediate treatment. While abnormal thyroid results are common, they generally normalize without intervention. The authors encourage educating inpatient providers to only order thyroid testing based on strong clinical suspicion, as testing can be delayed in some patients until they are in the outpatient setting.

— Priya Mahajan, MD

#### ATA THYROID BROCHURE LINKS

Thyroid Function Tests: <https://www.thyroid.org/thyroid-function-tests/>





## THYROID FUNCTION TESTS, continued

### ABBREVIATIONS & DEFINITIONS

**Thyroid stimulating hormone (TSH):** produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

**Thyroxine (T4):** the major hormone produced by the thyroid gland. T<sub>4</sub> gets converted to the active hormone T<sub>3</sub> in various tissues in the body.

**Levothyroxine (T4):** the major hormone produced by the thyroid gland

