

# Analysis of Current Thyroid Function Test Ordering Practices

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## Introduction

Thyroid stimulating hormone (TSH) alone is recommended by current guidelines as the best test to detect and monitor thyroid dysfunction, yet free thyroxine (FT4) is commonly ordered when not clinically indicated.

**Aim:** The aim of this study was to evaluate our clinicians' practice in ordering thyroid function tests.

## Methods

- A retrospective study during January 2024
- Two hundred (200) thyroid test requests
- Thyroid function tests (TFTs) of interest were: TSH and FT4
- The frequencies of each testing pattern were calculated
- These were categorized based on the presence or absence of hypothyroidism and hyperthyroidism and the ordering origins.

## Results

- TFTs represented 3% of all requests received by the laboratory in this period
- The half of TFTs' ordering were for suspected dysthyroidism
- Ordering TSH tests was frequent in the following departments : (Fig 1)

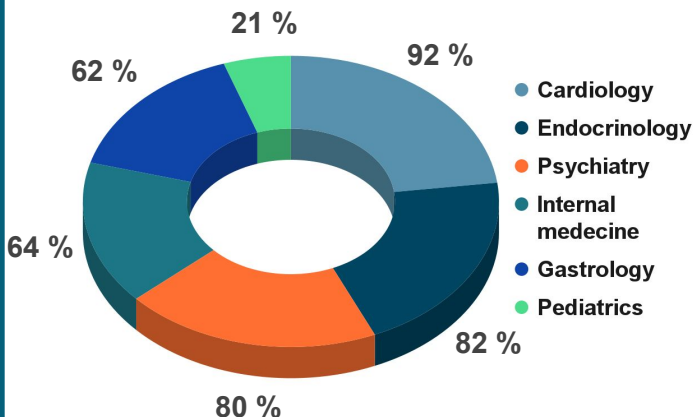


Fig 1: Percentage of ordering TSH in each department

⇒ The diagnosis of dysthyroidism was only retained in less than 30% in each department requests : (Fig 2)

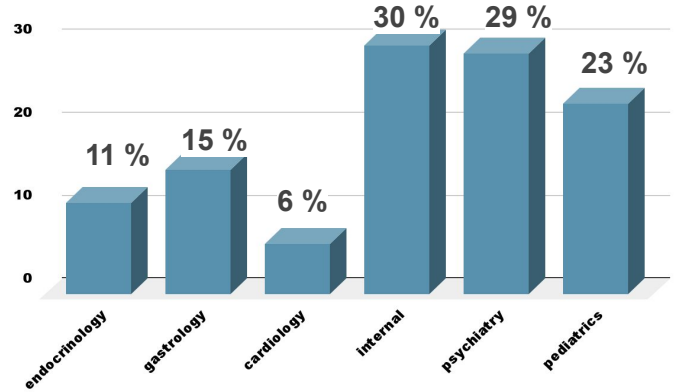


Fig 2: Percentage of positive results in each department

## Discussion

- Our analysis demonstrated that free thyroid hormone laboratory tests are ordered excessively.
- The TSH is very sensitive to even mild changes in serum FT4 and is known to develop abnormal levels before FT4 abnormalities are detectable. [1,2] The American Thyroid Association (ATA) has recommended that TSH alone is the optimal test for screening for thyroid dysfunction.[1,3]
- Despite guideline recommendations, our project finds that 81% of TFT laboratory requests are unnecessary.
- At our institute, the laboratory reflexively performs an FT4 analysis with any TSH that results outside the reference range. Reflex testing has long been used as a means to optimize the use of laboratory tests; automatic addition of FT4 reflexively for abnormal TSH laboratory results has been shown to be accurate and effective at reducing unnecessary testing.[1,4,5,6]

## Conclusion

Inappropriate ordering of TFTs is common. Further evaluation is needed to determine strategies that can reduce excessive thyroid hormone testing.

## Bibliography

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