

# Importance of Levothyroxine Absorption Test in identifying malabsorption as cause of inadequate substitution for hypothyroidism



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## ► Introduction

The most common cause for persistent elevation of TSH levels in hypothyroid patients treated with levothyroxine is poor compliance. **The Levothyroxine Absorption Test (LAT)** is usually confirmed this phenomenon called “pseudo-malabsorption”.

## ► Case report

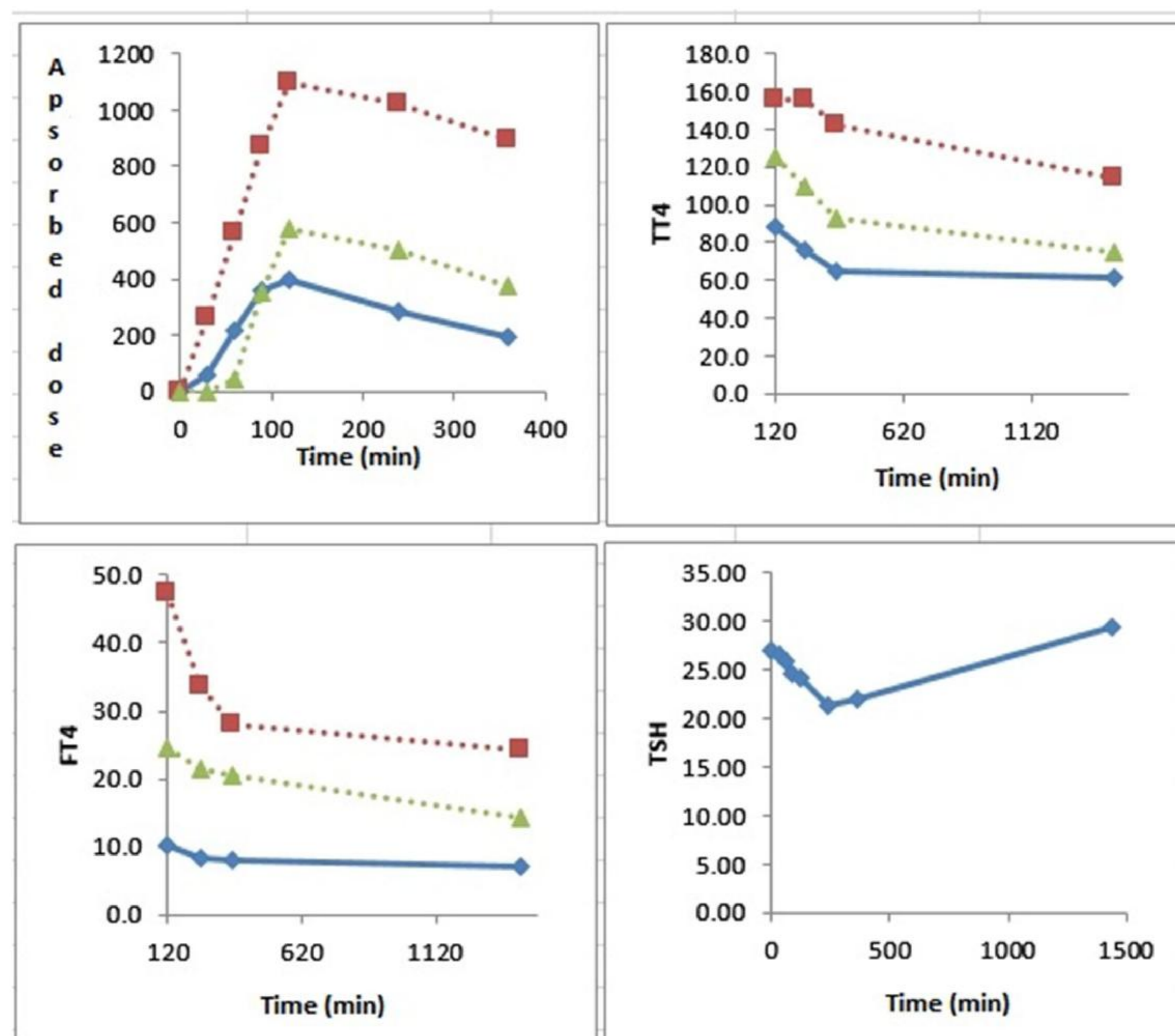
60-year-old female, W 60kg, BMI 24.3kg/m<sup>2</sup>, presented with sleepiness, tiredness, fatigue and forgetfulness. Her skin was very dry and flaky. She had low tolerance of effort, poor appetite with weight oscillation around 2kg, constipation and sometimes heartburn.

Hypothyroid for ten years after radioiodine treatment of Graves' disease. Her TSH levels were higher than normal, TSH 20-70mIU/L, in spite of efforts to adjust the dose (different LT4 preparations). In last two years her daily LT4 dose was 900µg (15µg/kg), 3x300mcg then 500+400mcg. She is also under treatment for depression, angina, hypertension, absolutely arrhythmias (with inadequate INR in last two months). Before testing TSH 33.6mIU/L, FT4 4.25pmol/L.

**Standard (1000µg) LAT** was performed under supervision. TSH, T4 and FT4 were measured 2h, 4h, 6h and 24h upon LT4 administration. Baseline values were TSH 26.92mIU/L; FT4 4.4pmol/L; T4 41.5pmol/L. Cmax T4 88.6pmol/L was in 120'. The end point values were TSH 29.37mIU/L; FT4 7.2pmol/L; T4 61.9pmol/L. The lack of TSH fall and slight increase in T4 and FT4, significantly below expected AUC, pointed an inadequate absorption.

## ► Conclusion

**LAT** is useful for identifying much rare malabsorption, so the adequate treatment could lead to proper substitution and avoidance of no rationale increase of levothyroxine dose.



After testing, it was started with 300µg LT4 oral suspension. The presence of fat in the stool and positive antiparietal antibodies increased suspicion to malabsorptiv syndrome. EGDS was performed and PH finding confirmed *H.pylori* positive chronic atrophic gastritis with micro focal intestinal metaplasia without morphological elements for GSE. Eradication treatment and IPP were introduced. After **four weeks** her thyroid hormones were **TSH 1.63mIU/L; FT4 26.6pmol/L, FT3 3.87pmol/L.**

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