



## Showing That a Persistently Hypothyroid Patient Has an Increase of Free T<sub>4</sub> Two Hours after Ingestion of 1 mg of Levothyroxine May Overcome Nonadherence

### ANALYSIS AND COMMENTARY ● ● ● ● ●

This study addresses an important problem, namely, nonadherence with L-T<sub>4</sub> therapy resulting in persistent hypothyroidism, a common occurrence and a very difficult issue to deal with. The authors emphasize a principle of treatment: “adherence to medication is the key link between process and outcome in medical care and without it, the likelihood of treatment failure is high.” The serum TSH provides a simple way to document nonadherence. Many years ago, my colleagues and I studied serum TSH levels in our endocrine clinic population and found that about 7% who previously had a normal TSH while taking a given dose of L-T<sub>4</sub> had an elevated TSH during long-term follow-up (1). When confronted with the possibility of nonadherence with the dose, less than half of the patients admitted to it. For the patients who frequently forget to take L-T<sub>4</sub> on a daily basis, a weekly dose can be given and is usually without side effects because of the long half-life of L-T<sub>4</sub> (2).

In the article reviewed here, the average patient in the study received 1030 µg of L-T<sub>4</sub> as the weekly dose.

The weekly doses may have borne some relationship to the prescribed doses that were presumably not ingested by the patients with any regularity, but the reasons for the variations in dose were not clearly stated. The failure to normalize serum TSH in a high proportion of the patients in this study is most likely due to the fact that it can take serum TSH as long as 6 weeks to normalize on a given optimal dose of L-T<sub>4</sub>; 4 weeks was too short a time for this to occur. In fact, 6 of the 23 patients had an even higher TSH at the end of the study, indicating that the estimated weekly dose was too low for these patients.

The main conclusion is that giving the nonadherent patient a 1 mg dose of L-T<sub>4</sub> in the office and measuring FT<sub>4</sub> at baseline and at 2 hours will show that the patient can absorb the dose. Whether the nonadherent patient will become adherent after demonstrating that she can absorb L-T<sub>4</sub> is another issue. The authors recommend a nonjudgmental discussion about adherence. In my experience, few patients admit to being nonadherent as the basis for their elevated serum TSH, but the absorption test could help if the patient agrees to do it.

### References

1. England ML, Hershman JM. Serum TSH concentration as an aid to monitoring compliance with thyroid hormone therapy in hypothyroidism. *Am J Med Sci* 1986;292:264-6.
2. Grebe SK, Cooke RR, Ford HC, Fagerström JN, Cordwell DP, Lever NA, Purdie GL, Feek CM. Treatment of hypothyroidism with once weekly thyroxine. *J Clin Endocrinol Metab* 1997;82:870-5.