Reviewer's report

Title: Diagnostic accuracy of basal TSH determinations based on the intravenous TRH stimulation test. A retrospective evaluation of 2570 tests and comparison with the literature.

Version: 2 **Date:** 28 October 2006

Reviewer: Beat Muller

Reviewer's report:

General
This study evaluates basal and TRH stimulated TSH levels in a cohort of 2570 women and compares the normal reference range for TSH levels with levels reported in the literature. The authors find that a reference range for basal TSH of 0.5-3.5 mU/L can be recommended and that a lower upper reference limit will misclassify around 8% of euthyroid patients.

The study is clearly written and the results are interesting, especially in view of the controversies with regard to the upper normal reference limit of basal TSH levels.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
- The reader needs to know in more detail how the patients were included. Was it a retrospective analysis or a prospective study? Were the patients consecutively included? For what reasons did the patients attend the out-patients unit for reproductive endocrinology? A table with the patient's characteristics would be helpful for the reader.
- Although, as the authors state in the discussion, this is a purely diagnostic study, some clinical details would be interesting. What percentage of these women had symptoms of hypothyroidism? Specifically, how were symptoms in the 7.7% of the women who were misclassified with an upper reference value of 2.5mU/L compared to women with lower (or higher) TSH levels? I guess that potential symptoms were unspecific and thus equally distributed when looking for example at the different quartiles of TSH levels, however, this would be an interesting point especially when concluding that either a clinical and laboratory control or a TRH test can be recommended in patients with basal TSH levels lying between 3.0-3.5 mU/L in order to rule out latent hypothyroidism.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
- Abbreviations should be explained (e.g. TH for thyroid hormone).

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests