Since the first tests for TSH were introduced in the 1970s, the TSH reference range has been lowered 3 times. Is it time to lower it again?

Studies suggest that most normal individuals have TSH (thyroid stimulating hormone, thyrotropin) levels between 0.1 and 1.0 μu/L. According to the Thyroid Patient Advocacy UK’s website, patients with TSH levels higher than 1.0 who have FT4 and FT3 levels in the bottom 1/3 of the reference ranges often have classical symptoms of hypothyroidism. For instance this patient subset is likely to have elevated lipid levels, carpal tunnel syndrome, joint pain, depression and other manifestations of hypothyroidism.

TSH Suppression

The TSH level can be suppressed for several reasons besides hyperthyroidism, including corticosteroid and dexamethasone therapies. In patients with autoimmune thyroid disease, the primary cause of a falsely low TSH is TSH receptor antibodies. Studies by Brokken et al in 2001 demonstrated that pituitary cells have receptors for TSH. Therefore, pituitary cells recognize TSH receptor antibodies as if these antibodies were TSH. Thinking blood levels of TSH are adequate, the pituitary stops or slows down TSH production.

TSH is also suppressed in endogenous depression, adrenal fatigue, estrogen dominance, central hypothyroidism, in certain forms of thyroid hormone resistance, and in the euthyroid sick syndrome.

Why FT4 and FT3 Levels are Better Indicators

When the TSH test was introduced, laboratories mistakenly touted it as the gold standard for assessing thyroid function. In screening new patients for thyroid disease, the TSH test has great value. However, in patients with autoimmune thyroid disease, the TSH result can be misleading, especially if used to monitor therapy.

On the Thyroid Patient Advocacy UK website, Dr. Dommissee explains how levels of FT3 and FT4 are the best indicators of thyroid function. These levels measure available thyroid hormone. Free thyroid hormone, is able to react with cells throughout the body. In doing so, thyroid hormone is able to cause the effects it’s associated with.

Patient Dissatisfaction

Today many patients with classic symptoms of hypothyroidism are mistakenly told that their laboratory results are normal. Many laboratories use outdated reference ranges for TSH, often 0.5-4.5 μu/L, provided by manufacturers of the TSH assay kits. These ranges often haven’t been reviewed in a decade and no longer reflect the last two recommendations for lowering TSH. Laboratories justify this by saying the physicians should be aware of the new recommendations and that it’s too expensive to develop their own ranges.
The Consequences

Consequently, many patients with hypothyroidism aren’t properly diagnosed. Instead they’re treated for depression, arthritic pain, constipation, weight gain, anxiety, insomnia, and other symptoms resulting from hypothyroidism.

Broda Barnes's book 'Hypothyroidism: The Unsuspected Illness' (1976) is used by many naturopaths in the US. In his book, Dr. Barnes suggested that 64 diseases including lipid disorders, fibromyalgia, heart disease, and infection, are caused or aggravated by undiagnosed hypothyroidism.

It’s noteworthy that in 1976, while laboratories were celebrating their success in developing thyroid function tests, Barnes had already recognized that symptoms were much more important than test results. Recognizing the limitations of thyroid function tests, Barnes relied on a low basal body temperature to diagnose hypothyroidism.

Current studies suggest that about 15 percent of the population have hypothyroidism. Many experts recognize that the TSH test and its questionable range confuse diagnosis. This, in turn, prevents patients from receiving needed treatment.

Resources

Thyroid Patient Advocacy UK tpa-uk.org.uk/dommisse_article1.php, assessed August 24, 2008.