

April 2024

## UPDATED THYROID TEST RESULT COMMENTS

Ampath has extensively reviewed and updated the comments provided for thyroid function testing to include recommendations from the most recent international and local SEMDSA/ACE guidelines.<sup>1,2</sup> Interpretive comments have also been extended to children and neonates. The results of thyroid antibodies will be incorporated into our comments for primary overt and subclinical hypothyroidism and primary hyperthyroidism.

### HIGHLIGHTS OF CHANGES INCLUDE THE FOLLOWING

#### 1. Subclinical hypothyroidism<sup>1,2</sup>

- It is now well established that patients with TSH >10.0 mIU/L (with normal FT4 and FT3) should receive thyroid hormone replacement therapy due to an increased risk of coronary heart disease (CHD).
- Treatment for patients with a persistently increased TSH below 10.0 mIU/L should be based on clinical judgement in combination with the presence of:
  - Goitre
  - Cardiovascular disease (CVD) or CVD risk factors
  - Type 2 diabetes mellitus (DM)
  - Dyslipidaemia
  - Psychiatric illness
  - Clinical symptoms of hypothyroidism

Increased anti-TPO or anti-TG antibodies are associated with a 4.3% progression to overt hypothyroidism per year vs 2.6% if not increased.

If not treated, annual TSH determination is recommended.

- The TSH increases with age and may confer a physiological advantage. Therefore, in patients older than 65 years, TSH values up to 6.0 mIU/L may be regarded as normal in the presence of normal free hormones.

#### 2. Thyroid antibodies<sup>3</sup>

- Increased anti-TPO or anti-TG antibodies are mostly seen in autoimmune thyroid disorders (up to 95% of patients during the active phase of Hashimoto's disease), but the absolute level is not associated with disease severity.
- Graves' disease is characterised by the presence of TSH receptor antibodies (TSHRAb), but will also have increased thyroid antibodies in up to 80% of cases.
- Non-thyroid immune disorders, including pernicious anaemia, rheumatoid arthritis, type 1 DM, Addison's disease and celiac disease, show increased antibody levels in up to 40% of patients.
- Increased antibody levels may also be seen in 5 to 10% of a disease-free population.
- Increased antibodies with normal thyroid function indicate a higher risk for the development of future thyroid pathology, especially hypothyroidism.

#### 3. Thyroid hormone treatment targets

- Appropriate comments can only be provided if the relevant information on thyroid hormone treatment is provided on the request form.
- Treatment targets have been updated to reflect the newest available guidelines, incorporating the higher TSH target of 4.0 to 6.0 mIU/L in patients older than 65 years of age.
- FT3 may be low normal or decreased in athyreotic patients on Eltroxin treatment. The clinical relevance of this is still unknown. In patients on Tertroxin treatment, FT4 is expected to be low and should not be used as treatment target.

For more information, contact your local Ampath representative.

## REFERENCES

1. Dave JA, Klisiewicz A et al. 2015. SEMDSA/ACE-SA Guideline for the Management of Hypothyroidism in Adults. *Journal of Endocrinology, Metabolism and Diabetes of South Africa*; 20(2). <http://dx.doi.org/10.1080/16089677.2015.1056468>
2. Garber JR, Cobin RH et al. 2012. Clinical Practice Guidelines for Hypothyroidism in Adults: Cosponsored by the American Association of Clinical Endocrinologists and the American Thyroid Association. *THYROID*; 22(12): 1200–1235. DOI: 10.1089/thy.2012.0205.
3. Frohlich E, Wahl R. 2017. Thyroid Autoimmunity: Role of Anti-thyroid Antibodies in Thyroid and extra-Thyroidal Diseases. *Frontiers in Immunology*; May 2017, Volume 28, Article 521.