

Letter to the Editor

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Use of thyroid function tests in urine: a position statement of the Belgian Thyroid Club

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To the Editor,

Thyroid hormones play a crucial role in regulating various body functions, including metabolism, heart rate, and body temperature. Therefore, the accurate measurement of thyroid hormone levels is essential for the diagnosis and management of thyroid disorders [1, 2]. Assessment of thyroid function is performed in blood and includes several thyroid function tests (TFT) such as thyroid-stimulating hormone (TSH), (free) thyroxine (T4), (free) triiodothyronine (T3) and auto-antibodies. The reliability and accuracy of these tests have been extensively demonstrated, and their performances is monitored by

international bodies such as International Federation of Clinical Chemistry and Laboratory Medicine (IFCC), Center of Disease Control (CDC), and American Thyroid Association (ATA) which also stimulate manufacturers to engage in harmonization and standardization efforts [3–5]. Important progresses in standardization of thyroid function tests (TFT) have been made with definition of reference methods and materials [5, 6]. However, pitfalls remain, and multidisciplinary exchanges are important for the most optimal use of TFT [4].

Despite current evidence and recommendations, evaluation of thyroid function in urine is proposed by some clinical laboratories and/or requested by some physicians.

To our opinion, the measurement of thyroid hormones in urine should not be performed for the following reasons:

- First, urine testing for thyroid hormones has several limitations and is not considered a reliable method for the diagnosis and management of thyroid disorders [7]. One of the major limitations of urine testing includes its lack of sensitivity and specificity, as well as its susceptibility to interference from various factors, such as medications and dietary supplements. Furthermore, the levels of thyroid hormones in urine can also be affected by urinary volume, pH, and renal function.
- Second, more and more best practice policies are encouraging a rational prescription of TFT to optimize the use of healthcare resources without compromising diagnosis and treatment [8]. Testing in urine does not fit into rational test prescription policies and as this type of TFT is usually not covered by government reimbursement, representing a financial burden for patients.
- Third, there is no reference method, clear reference ranges or decision limits for testing in urine samples, in contrast to testing in blood samples where standardization efforts are ongoing [2, 5].
- Lastly, and in contrast to testing in blood samples, use of TFT in urine is not endorsed nor recommended by any guidelines or positions of several international scientific and medical societies (ATA, European Thyroid Association (ETA), European Federation of Laboratory Medicine (EFLM), and IFCC nor Superior Health Council of France (HAS)) [1, 5, 9].

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In conclusion, the guidelines of several international scientific societies do not consider the use of TFT in urine as an aid in diagnosis or management of thyroid disorders. This is explained by several limitations such as the lack of sensitivity and specificity, susceptibility to interference, and lack of standardized assays and reference ranges. Therefore, the Belgian Thyroid Club (BTC) stands against TFT in urine and recommends blood testing for thyroid hormones as the only evidence-based method for the diagnosis and management of thyroid diseases.

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