

FUNCTIONAL THYROID TESTING

How do I have my thyroid tested and what ranges am I looking for?

1. TSH - Thyroid Stimulating Hormone. TSH is sent out by the pituitary gland. This is the most common test done. TSH decreases when T4 rises, and TSH increases when T4 drops.

Functional range - 1.8–3.0 mU/L

Conventional range - 0.5–5.5 mU/L

2. TT4 - Total Thyroxine. Measures bound and unbound T4 levels.

Functional range - 6–12 ug/d

Conventional range - 5.4–11.5 ug/d

3. FTI - Free Thyroxine Index. This index considers total T4 and T3 together to measure the activity of free T4. This is found by multiplying TT4 levels by the T3 uptake and shows how much active T4 is available.

Functional range - 1.2–4.9 mg/dl

Conventional range - 4.6–10.9 mg/dl

4. FT4 - Free Thyroxine. This test measures the level of free (active) T4 in the blood. Free T4 is high in hyperthyroidism and low in hypothyroidism.

Functional range - 1.0–1.5 ng/dl

Conventional range - 0.7–1.53 ng/dl

5. Resin T3 Uptake - This test measures the number of sites where active T3 can bind with proteins. Things like elevated testosterone can lower the number of binding sites, while elevated estrogen can raise the number of binding sites. These would affect the patterns of total T4 and T3 uptake.

Functional range - 28–38 md/dl

Conventional range - 24–39 md/dl

6. FT3 - Free Triiodothyroxine. This test measures free T3 hormone. This is the optimal marker for measuring active thyroid hormones. Generally ordered when a person has hyperthyroid symptoms with normal FT4 levels.

Functional range - 300–450 pg/ml

Conventional range - 260–480 pg/ml

7. rT3 - Reverse T3. This test measures the reverse T3, which is typically produced under situations of duress, like severe stress, surgery, or trauma.

Functional range - 90–350 pg/dl

Conventional range - 90–350 pg/dl

8. TBG - Thyroid Binding Globulin. This test measures the thyroid hormone “transport system,” the proteins that carry it around for delivery in the bloodstream. Both elevated and low levels can cause symptoms of hypothyroidism.

Functional range - 18–27 ug/dl

Conventional range - 15–30 ug/dl

9. Thyroid Antibodies - There are several thyroid antibodies that can be tested. Typically a TPO Ab (thyroid peroxidase antibodies) is a priority, which tests for antibodies unique to Hashimoto's. Other possible tests are the TGB Ab (thyroglobulin antibodies) and TSH Ab (thyroid stimulating hormone antibodies or TSI (thyroid stimulating immunoglobulin) which is used to test for hyperthyroidism or Grave's Disease. This is a positive or negative test. A positive test is an indicator of an autoimmune condition.

It's important to point out that the immune system cycles, and therefore antibody testing may merit retesting if it comes up negative but symptoms are still present.