Pathology Quick Guides for General Practices Thyroid Function Tests (TSH &T4)

There are many clinical scenarios which justify a TFT to exclude thyroid disease. The following guidance sets out the monitoring intervals for the various clinical situations.

Tests recommended through QOF as part of diagnosing and monitoring patients on disease registers are to be undertaken in line with QOF guidance.

	Clinical Situation	Recommendation	Source
1	Thyroid function testing in healthy person in absence of any clinical symptoms	There is no justification for testing in a health person.	South West London agreement
2	UK Thyroid guidelines	TFTs should be performed every 4-6 wks for at least 6 months following radioiodine treatment. Once fT4 remains in ref range then frequency of testing should be reduced to annually. Life-long annual follow up is required. Indefinite surveillance required following radioiodine or thyroidectomy for the development of hypothyroidism or recurrence of yperthyroidism. TFTs should be assessed 4-8 wks post treatment, then 3 monthly for up to one 1 year, then annually thereafter . TFTs should be performed every 4-6 wks after commencing thionamidides. Testing at 3 month intervals is recommended once maintenance dose achieved. In patients treated with 'block and replace', assess TSH and T4 at 4-6 wk intervals, then after a further 3 months once maintenance dose achieved, and then 6 monthly thereafter.	Association for Clinical Biochemistry and Laboratory Medicine, British Thyroid Association and British Thyroid Foundation (2006) UK guidelines for the use of thyroid function tests. Association for Clinical Biochemistry and Laboratory Medicine, British Thyroid Association, British Thyroid Foundation July 2006
3	Hypothyroidism - monitoring treatment	The minimum period to achieve stable concentrations after a change of dose of thyroxine is 2 months and TFTs should not normally be assessed before this period has elapsed. Patients stabilised on long-term thyroxine therapy should have serum TSH checked annually. An annual fT4 should be performed in all patients with secondary hypothyroidism stabilised on thyroxine therapy.	Association for Clinical Biochemistry & Laboratory Medicine, British Thyroid Association & British Thyroid Foundation (2006) UK guidelines for the use of thyroid function tests. Association for Clinical Biochemistry, British Thyroid Association, British Thyroid Foundation, July 2016.
4	Monitoring adult	Patients with subclinical hypothyroidism should have	Association for Clinical

	sub-clinical hypothyroidism.	the pattern confirmed within 3-6 months to exclude transient causes of elevated TSH. Subjects with subclinical hypothyroidism who are ATPOab positive should have TSH and fT4 checked annually. Subjects with subclinical hypothyroidism who are ATPOab neg should have TSH and fT4 checked every 3 years	Biochemistry, British Thyroid Association & British Thyroid Foundation (2006) UK uidelines for the use of thyroid function tests. Association for Clinical Biochemistry, British Thyroid Association, British Thyroid Foundation July 2006
5	Pregnant women monitoring thyroxine replacement therapy	Both TSH and fT4 (and fT3 if TSH below detection limit) should be measured to assess thyroid status and monitor thyroxine therapy in pregnancy. The thyroid status of hypothyroid patients should be checked with TSH and fT4 during each trimester. Measurement of T3 is not appropriate. The following TFT test sequence is recommended by the UK guidelines [ii]: • before conception • at time of diagnosis of pregnancy • at antenatal booking • at least once in second and third trimesters and again after delivery • newly diagnosed hypothyroid patient to be tested every 4-6 wks until stabilised.	Association for Clinical Biochemistry, British Thyroid Association & British Thyroid Foundation (2006) UK guidelines for the use of thyroid function tests. Association for Clinical biochemistry, British Thyroid Association, British Thyroid Foundation July 2006
6	Pregnancy subclinical hypothyroidism	Women with subclinical hypothyroidism who are not initially treated should be monitored for progression to overt hypothyroidism with serum fT4 and TSH every 4 weeks until 16-20 weeks gestation and at least once between 26-32 weeks. Euthyroid women (not receiving LT4) who are antithyroid antibody positive should be monitored during pregnancy with serum fT4 and TSH every 4 weeks until 16-20 weeks gestation and at least once between 26-32 weeks).	Stagnaro-Greenet et al. The American Thyroid Association Taskforce on Thyroid Disease During Pregnancy and Postpartum. Thyroid. 2011; 21:1081-1125
7	Hyperthyroid - monitoring of treatment in Graves' disease	Follow-up in first 1-2 months after radioactive iodine treatment for Graves' should include fT4 and fT3. If patient remains thyrotoxic then biochemical monitoring to continue at 4-6 wk intervals. Following thyroidectomy for Graves' disease (and commencement of levothyroxine), serum TSH to be measured 6-8 wks post-op	Bahn *et al*. Hyperthyroidism and other causes of thyrotoxicosis: management guidelines of the American Thyroid Association and American Association of Clinical

			Endocrinologists. Thyroid 2011, **21:**593-646
8	Hyperthyroid - monitoring of treatment in toxic multinodular goitre and toxic adenoma	Follow-up in first 1-2 months after radioactive iodine treatment for toxic multinodular goitre and toxic adenoma should include fT4, fT3 and TSH. Should be repeated at 1-2 month intervals until stable results, and then annually thereafter. Following surgery for toxic multinodular goitre and start of thyroxine therapy, TSH should be measured 1-2 monthly until stable and annually thereafter. Following surgery for toxic adenoma TSH and fT4 concentrations should be measured 4-6 weeks post op.	.Bahn *et al*. Hyperthyroidism and other causes of thyrotoxicosis: management guidelines of the American Thyroid Association and American Association of Clinical Endocrinologists. Thyroid 2011, **21:**593-646
9	Monitoring Adult sub-clinical hyperthyroidism	If a serum TSH below ref range but >0.1 mU/L is found, then the measurement should be repeated 1-2 months later along with T4 and T3 after excluding non-thyroidal illness and drug interferences. If treatment not undertaken then serum TSH should be measured in the long term every 6-12 months, with follow up with fT4 and fT3 and fT3 if serum TSH result is low	Association for Clinical Biochemistry, British Thyroid Association and British Thyroid Foundation (2006) UK guidelines for the use of thyroid function tests. Association for Clinical Biochemistry, British Thyroid Association, British Thyroid Foundation July 2006
10	Pregnant women - monitoring of thyrotoxicosis treatment. (UK)	In women taking anti-thyroid drugs TFTs should be performed prior to conception, at time of diagnosis of pregnancy or at antenatal booking. Newly diagnosed hyperthyroid patients require monthly testing during pregnancy until stabilised. Pregnant women receiving antithyroid drugs should be tested frequently (perhaps monthly).	Association for Clinical Biochemistry, British Thyroid Association and British Thyroid Foundation (2006) UK guidelines for the use of thyroid function tests.

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