

Thyroid Disease in Pregnancy

[Disclaimer](#)

Contents

| | |
|--|----------|
| Disclaimer..... | 1 |
| Red Flags..... | 2 |
| Background – About Thyroid Disease in Pregnancy | 2 |
| Assessment | 2 |
| Management | 3 |
| Hyperthyroidism | 3 |
| Hypothyroidism | 4 |
| Referral..... | 5 |
| Information..... | 5 |
| For health professionals..... | 5 |
| For patients..... | 5 |
| References..... | 5 |
| Disclaimer..... | 6 |

Red Flags

- History of Graves' disease
- Thyroid nodule or history of thyroid cancer

Background – About Thyroid Disease in Pregnancy

Transient mild hyperthyroidism occurs in 10 to 20% of normal pregnant women in the first trimester due to beta-hCG having a weak thyroid stimulating effect, and causing transient suppression of thyroid-stimulating hormone (TSH) levels. This effect is usually apparent after 6 weeks gestation, and peaks between 10 to 12 weeks.

Abnormal thyroid function can have serious consequences for pregnancy outcomes and fetal development. T4, thyroxine, and thyroid receptor antibodies cross the placenta; T3, TSH, and antithyroid antibodies do not. Overt hypothyroidism has risks including miscarriage, stillbirth, and childhood developmental delay.

There are differing views about about the management of subclinical hypothyroidism and outcomes in pregnancy:

- RANZCOG do not recommend screening for subclinical hypothyroidism or TPO antibodies, and subsequent treatment with thyroxine in pregnancy.¹
- Local endocrinologists agree that raised TSH should be treated at least for benefit on pregnancy, and possibly for benefit of the fetus. The TSH threshold is debated but generally agreed to be above the trimester-specific normal range of 4 mU/L. In Melbourne recommendation is based on the data from the usual assays being used, > 3.5 mU/L.

Assessment

1. Look for symptoms and signs of [hyperthyroidism](#) and [hypothyroidism](#). Consider appropriate **iodine supplementation**.

Iodine supplementation

- *Many Australian population studies in pregnancy have shown high rates of mild to moderate iodine deficiency.*
 - *It is appropriate that all pregnant women with normal thyroid function, or with overt or subclinical hypothyroidism, receive iodine supplementation.*
 - *The National Health and Medical Research Council (NHMRC) recommends a dosage of 150 micrograms per day, to achieve a recommended daily intake of 250 micrograms per day when dietary sources are included.*
 - *Most pregnancy multivitamins now contain the right dose of iodine.*
2. Routine pregnancy screening for thyroid dysfunction is not recommended. While there is a wide variation in screening practices with little evidence base, targeted screening with TSH is generally recommended for **these patients**.
Patients requiring screening
 - *A personal or strong family history of thyroid disease*
 - *Symptoms or signs of [hyperthyroidism](#) or [hypothyroidism](#)*
 - *Type 1 diabetes or other autoimmune condition*
 - *Known thyroid antibody (Ab) positivity*

- *Goitre*
 - *History of head and neck irradiation or prior thyroid surgery*
 - *Use of amiodarone, lithium, or recent administration of high iodine load e.g., iodinated radiocontrast agent.*
3. Check TSH results in pregnancy using the appropriate **reference ranges** for the trimesters.
- Reference ranges in pregnancy trimesters for TSH**
- *State gestation on pathology request forms.*
 - *Use population-specific and gestation-specific TSH reference ranges when available.*
 - *If a population-specific TSH reference range is not available, an upper reference limit for TSH of 4.0 mU/L is recommended.*
4. If TSH abnormal, arrange **testing for thyroid function** in pregnancy.
- Testing**
- *If TSH is:*
 - *high, order FT4.*
 - *low, order FT4, FT3, TSH receptor antibodies (TRAb).*
 - *Certain assays are affected by physiological changes in pregnancy and can give misleading results e.g., a falsely low FT4, so if there are any concerns consider discussing with laboratory and/or an [endocrinologist](#).*
5. Review results to make the **diagnosis**.
- Diagnosis**
- *Hyperthyroidism – if TSH is undetectable or below reference range (see above) but still detectable, review FT3, FT4, and TRAb.*
 - *Hypothyroidism – if TSH is ≥ 4.0 mIU/L, review FT4.*
6. If all results are normal, and patient does not have pre-existing thyroid disease, there is no need to repeat the tests unless there are symptoms or signs of hypo or hyperthyroidism later in pregnancy.

Management

Hyperthyroidism

1. If TSH undetectable, review FT3, FT4, and thyroid receptor antibody tests:
 - if elevated FT4 and/or FT3 and/or positive thyroid receptor antibody, refer promptly [for urgent or routine endocrinology assessment](#).
 - if normal FT4, FT3, and negative thyroid receptor antibody, then transient gestational hyperthyroidism is likely. Gestational hyperthyroidism is usually associated with mild biochemical hyperthyroidism, and rarely requires pharmacological treatment. Repeat tests TSH, FT4 and FT3 in 4 weeks. If repeated tests are abnormal, arrange [urgent or routine endocrinology referral](#).
2. If TSH below reference range but detectable and other tests are normal:
 - repeat FT4, FT3, and TSH in 4 weeks. Transient low TSH occurs in 10 to 20% of pregnancies.
 - if TSH becomes undetectable on re-testing, refer to [endocrinologist](#).

3. If past history of, or current, Graves' disease:
 - order FT4, FT3, and TRAb tests.
 - arrange [urgent or routine endocrinology referral](#), or notify patient's private obstetrician to determine:
 - risk of fetal hyperthyroidism.
 - need for monitoring or treatment.
 - risk of post-partum flare.

Hypothyroidism

Pre-existing hypothyroidism

1. Consider **thyroxine dose increase** once pregnancy is confirmed.
 - *Once pregnancy is confirmed, a dose increase of 20 to 50% may be required.*
 - *The usual advice is to increase thyroxine by 2 extra tablets (or daily doses) per week.*
 - *If unsure, discuss with an [endocrinologist](#).*
 - *Dose requirements stabilise by 20 weeks and then fall back to non-pregnant levels after delivery.*
2. Monitor TSH and FT4 every 4 to 6 weeks until TSH is stable, then 6 to 8 weekly with a final check at 28 to 32 weeks.
3. If TSH is ≥ 4.0 mIU/L and low FT4, or TSH > 10 mIU/L (regardless of FT4), this is termed overt hypothyroidism.
4. Aim for TSH within trimester-specific [reference ranges](#).
5. After delivery, reduce to pre-pregnancy dose.

New diagnosis with TSH ≥ 4.0 mIU/L and low FT4

1. Refer promptly for [urgent or routine endocrinology assessment](#).
2. Start thyroxine therapy if TSH (confirmed on repeat test) is ≥ 4.0 mIU/L. Starting dose is generally 50 micrograms per day.
3. Target TSH when on treatment with thyroxine is 0.1 mIU/L to 2.5 mIU/L.
4. Recheck FT4 and TSH 4 to 6 weeks after initiation of thyroxine, and 6 weekly thereafter to guide dose adjustment. If TSH is in target range at 30 weeks, testing is not required during the rest of the pregnancy.

Post-partum thyroxine management

If pre-existing hypothyroidism, reduce thyroxine back to the pre-pregnancy dose, after delivery. Check TSH 2 to 3 months post-partum to ensure adequate replacement. See [Hypothyroidism pathway](#) and [subclinical hypothyroidism](#).

Post-partum thyroid dysfunction

1. Postpartum thyroiditis can occur:
 - in approximately 30% of those with underlying Hashimoto's thyroiditis (TPOAb and/or TGAb positive), which can manifest as both transient hyper- and hypothyroidism, typically in that order. It is usually mild and does not require specific treatment. If thyroxine is needed due to symptoms and low T4, this is usually transient.
 - in 5 to 10% of women and in up to 25% of women with type 1 diabetes.
2. Monitor TSH, FT4, and FT3 every 4 to 6 weeks. Consider replacement therapy depending on degree of abnormality and presence of symptoms.
3. If concerned arrange [urgent or routine endocrinology referral](#).

Palpable thyroid nodule

1. Arrange TSH and thyroid ultrasound, with or without fine needle biopsy.
2. Arrange [urgent or routine endocrinology referral](#).

Referral

Include results of all thyroid function tests and details of pregnancy gestation in all referrals.

Arrange [urgent or routine endocrinology referral](#) if:

- palpable thyroid nodule or history of thyroid cancer.
- hyperthyroidism including:
 - history of, or current, Graves' disease.
 - newly identified or recurring hyperthyroidism.
 - advice on, or review of, management plan for stable hyperthyroidism.
- hypothyroidism including:
 - newly diagnosed overt hypothyroidism.
 - pre-existing hypothyroidism and not comfortable managing.
 - thyroid stimulating hormone level (TSH) > 10 mU/L with a history of Graves' disease or treatment with radioactive iodine.

Information

For health professionals

Further information

- Australian Government Department of Health – [Pregnancy Care Guidelines: 46 Thyroid Dysfunction](#)
- MJA – [Iodine Deficiency in Australia: Is Iodine Supplementation for Pregnant and Lactating Women Warranted?](#)
- RANZCOG – [Subclinical Hypothyroidism and Hypothyroidism in Pregnancy](#)

For patients

- Better Health Channel – [Iodine](#)
- Food Standards Australia New Zealand – [Iodine and Pregnancy](#)

References

1. [Subclinical hypothyroidism and hypothyroidism in pregnancy](#). Melbourne: The Royal Australian and New Zealand College of Obstetricians and Gynaecologists; 2018.
2. Gallego G, Goodall S, Eastman CJ. [Iodine deficiency in Australia: is iodine supplementation for pregnant and lactating women warranted?](#) Med. J. Aust. 2010 Apr 19;192(8):461-3.

Select bibliography

- Walsh JP. [Managing thyroid disease in general practice](#). Med. J. Aust. 2016 Aug 15;205(4):179-84.

[Disclaimer](#)

Last updated: September 2020