

G. HYPERTHYROIDISM PRECONCEPTION, IN PREGNANCY, AND POSTPARTUM

Hyperthyroidism

- **Hyperthyroidism during the reproductive period requires individualized management to rapidly restore euthyroidism while minimizing maternal and fetal risks.**
- **Pregnancy-related physiological changes can mimic thyrotoxicosis, making diagnosis challenging. Management differs according to disease etiology, severity, gestational age, and treatment history.**
- **Careful interpretation of thyroid function tests is essential throughout preconception, pregnancy, and postpartum.**

Recommendations Table 13: Evaluation of Hyperthyroidism in Pregnancy	Strength*	Level #
Thyroid function testing should not be pursued in pregnant women with hyperemesis gravidarum if there are no other clinical signs of hyperthyroidism ^a .	Good Practice Statement	
Thyroid ultrasonography is not suggested as a method to distinguish GTT from Graves' disease in pregnant women.	Conditional	Low
Isotope scanning is contraindicated in pregnancy and should not be used in the diagnostic evaluation of hyperthyroidism.	Good Practice Statement	

^a Predominantly palpitations that persist after rehydration and antiemetics. If palpitations are caused by GTT, these can be treated symptomatically with propranolol.

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

GTT, gestational transient thyrotoxicosis

What is new in this guideline

- Urgent thyroid surgery can be performed during any trimester if necessary, although the second trimester remains the preferred timing.
- TRAb/TSI levels and the duration of antibody positivity are now emphasized when deciding whether antithyroid drugs (ATDs) can be safely discontinued before conception.
- Shared decision-making is recommended when planning pregnancy in women with Graves' disease.

Causes of Hyperthyroidism in Pregnancy

- The most common physiological cause is Gestational Transient Thyrotoxicosis (GTT) caused by high hCG levels.
- The most common pathological cause is Graves' disease.
- Less common causes include toxic multinodular goiter, toxic adenoma, thyroiditis, TSH-secreting pituitary adenoma, struma ovarii, thyroid hormone overtreatment, and thyroid cancer metastases.
- Differentiating GTT from Graves' disease is the first diagnostic step.
- Painless (silent) thyroiditis – rare in pregnancy, but should be differentiated from Graves' disease. Characterized by suppressed TSH, mildly elevated fT4, and negative TRAb/TSI antibodies. Antithyroid drugs are not indicated as the mechanism is destructive (not increased production).

Gestational Transient Thyrotoxicosis (GTT)

- **GTT results from hCG stimulation of the TSH receptor and usually presents with suppressed TSH and mildly elevated fT4 during early pregnancy.**
- **It occurs in <1–11% of pregnancies and in up to 66% of women with hyperemesis gravidarum.**
- **Most cases resolve spontaneously and are not associated with increased risks of preeclampsia, preterm birth, gestational hypertension, or fetal growth restriction.**

Graves' Disease in Pregnancy

- Graves' disease affects approximately 0.4% of women before conception and 0.2% during pregnancy.
- Untreated disease may cause significant maternal and fetal complications. Disease activity often improves during pregnancy because of immune tolerance but commonly relapses after delivery.
- Maternal TRAb antibodies can cross the placenta and stimulate the fetal thyroid.

Diagnostic Evaluation:

- Women with suppressed TSH should first undergo free T4 measurement. If fT4 is elevated, TRAb or TSI should be measured to distinguish Graves' disease from GTT.
- T3 measurement may be useful when fT4 is normal or when T3 thyrotoxicosis is suspected.
- Thyroid ultrasound cannot reliably distinguish Graves' disease from GTT during pregnancy.

Preconception management of hyperthyroidism (Graves' disease)

Recommendations Table 14: Graves' Disease Preconception	Strength*	Level #
The desire for conception should be assessed in women of childbearing age who have new or existing hyperthyroidism.	Good Practice Statement	
The risks and benefits of treatment options for hyperthyroidism, their impacts on a future pregnancy, and desired timeline to conception should be discussed in women with existing hyperthyroidism who are planning pregnancy.	Good Practice Statement	
Women taking methimazole (MMI) should be switched to propylthiouracil (PTU) if they are planning pregnancy. ^a	Strong	Moderate

^a If PTU is not available or if there are contraindications (allergy), we recommend that women continue MMI while trying to conceive, along with a discussion on the pros and cons of stopping MMI upon a positive pregnancy test and the option to pursue definitive therapy prior to pregnancy.

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

MMI, methimazole; PTU, propylthiouracil

Distinguishing Graves' Disease from GTT

- Features favoring Graves' disease include persistent hyperthyroidism beyond the first trimester, positive TRAb/TSI, thyroid eye disease, previous Graves' disease, and autoimmune family history.
- GTT is more likely in early pregnancy, multiple gestation, and hyperemesis gravidarum.
- Women with isolated hyperemesis generally do not require routine thyroid testing unless clinically indicated.

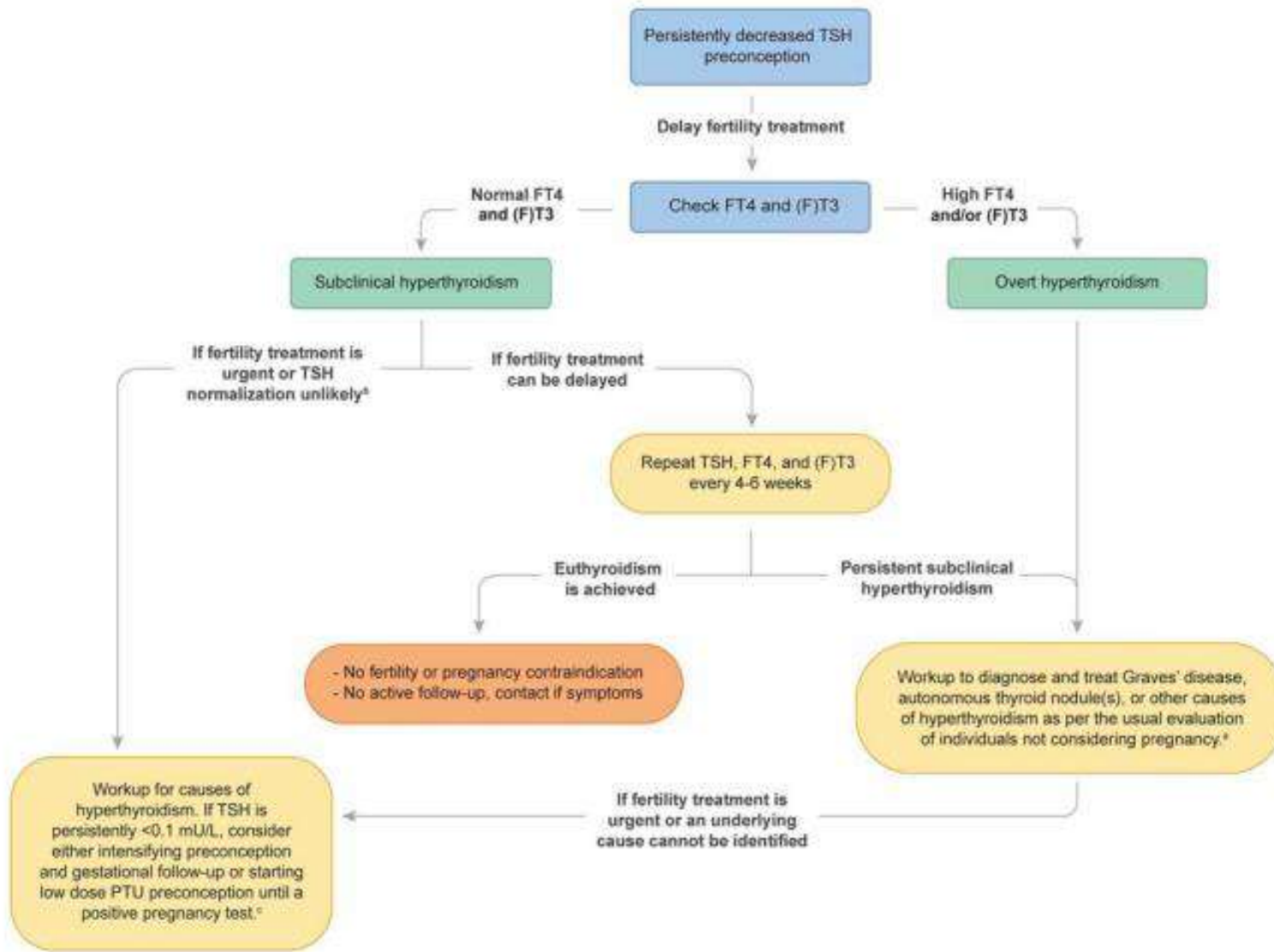
TABLE 2. DISTINGUISHING BETWEEN GESTATIONAL TRANSIENT THYROTOXICOSIS (GTT) AND GRAVES' DISEASE

Feature	GTT	Graves' Disease
Symptoms of thyrotoxicosis before pregnancy	None	Often
Symptoms of hyperemesis gravidarum (nausea/vomiting)	Often	Usually not present
Personal or family history of thyroid disease	Usually absent	Often present
Presence of goiter	None/low	May be present as diffuse goiter
Signs of thyroid eye disease	None	May be present
Serum FT3 concentration (Box 6)	Usually normal or mildly raised	Raised
Serum TRAb and/or TSI concentration	Normal	Raised
Serum TT3 (ng/dL)/TT4 (mcg/dL) ratio ³²⁹	Typically <20	Typically >20
Serum TSH concentration	Usually normalizes by the third trimester of pregnancy	Often suppressed throughout pregnancy

GTT, gestational transient thyrotoxicosis; FT3, free triiodothyronine; TRAb, TSH receptor antibodies; TSI, thyroid stimulating immunoglobulin; TT3, total triiodothyronine; TT4, total thyroxine; TSH, thyroid stimulating hormone

Hyperthyroidism Before Conception

- **Women planning pregnancy should achieve stable euthyroidism before conception.**
- **Normal thyroid function should be confirmed by two consecutive tests at least six weeks apart.**
- **Restoring euthyroidism improves menstrual regularity and fertility and reduces pregnancy complications.**



FLOWCHART 3. Approach to decreased TSH levels in preconception. Green boxes indicate a diagnosis, yellow boxes indicate an action, and orange boxes indicate recommended follow-up. Ideally, the treatment for the etiology of hyperthyroidism should be completed and euthyroidism restored (confirmed by two TSH concentrations in the reference range at least six weeks apart) before fertility treatment begins. For example, if the TSH has been persistently <0.1 mU/L. Refer to “Subclinical and Overt Hyperthyroidism in Infertility” in Section E.

Treatment Options Before Pregnancy

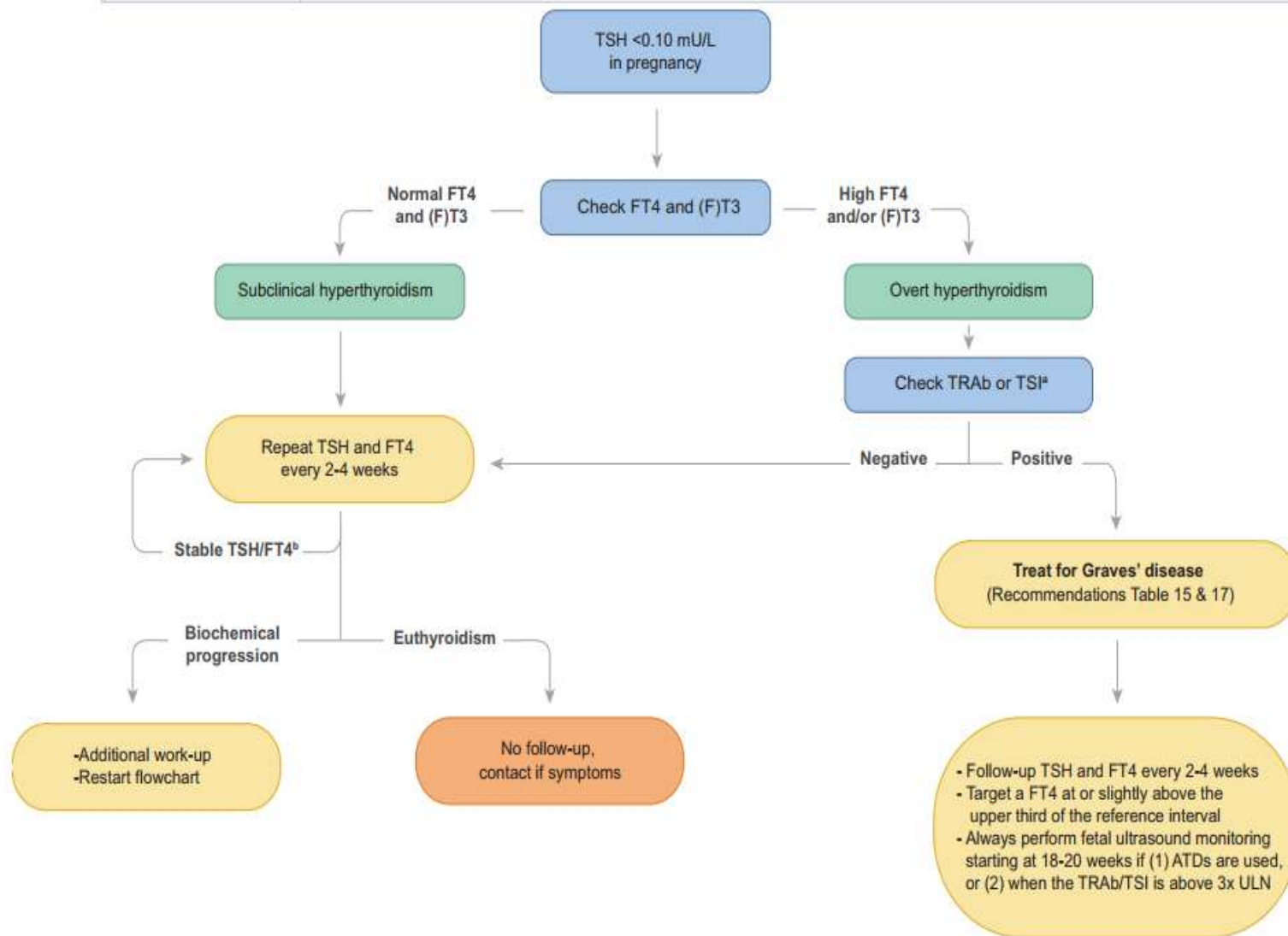
- **Management options for Graves' disease include:**

Antithyroid drugs (ATDs)

Radioactive iodine (^{131}I)

Total thyroidectomy

Treatment selection should consider future fertility, fetal safety, relapse risk, and patient preferences through shared decision-making.



FLOWCHART 4. Approach to decreased TSH levels in pregnancy. Green boxes indicate a diagnosis, yellow boxes indicate an action, and orange boxes indicate recommended follow-up. (f)T3 = serum free and/or total T3 (see Box 5 in these guidelines). „For women with a clear presentation of hCG-induced hyperthyroidism/gestational transient thyrotoxicosis (e.g., with a nonfully suppressed TSH, twin pregnancy, or hyperemesis gravidarum without extrathyroidal signs of Graves’ disease), it is reasonable to follow up with a TSH and fT4 in two to four weeks before checking TRAb and/ or TSI. „Assess for a palpable thyroid nodule. If present, then follow biochemical progression and consider ATDs depending on the severity of hyperthyroidism. For example, repeat TRAb and/or TSI, (f)T3 measurement, thyroid ultrasound, and postpartum diagnostic imaging. TSI, thyroid-stimulating immunoglobulin.

Antithyroid Drugs Before Pregnancy

- Women receiving methimazole (MMI) should switch to propylthiouracil (PTU) once actively trying to conceive whenever possible.
- If PTU is unavailable, the lowest effective MMI dose should be used.
- Women should immediately inform their physician if pregnancy occurs during ATD therapy.

Radioactive Iodine (RAI)

- RAI therapy may increase TRAb concentrations, increasing fetal and neonatal hyperthyroidism risk.
- Pregnancy should only be attempted after antibody levels have fallen below 3× the upper limit of normal.
- Stable thyroid function should also be confirmed before conception.

Discontinuing Antithyroid Drugs

Recommendation

Women with:

1. Low-dose ATD therapy
2. Stable thyroid function for >6 months
3. TSH >0.35 mU/L
4. Negative TRAb/TSI

may be considered for ATD withdrawal before pregnancy because relapse risk is lowest in this group.

Monitoring After ATD Withdrawal

- Recommendation

Following discontinuation:

Monitor TSH and fT4 every 1–2 weeks during the first trimester.

Continue testing every 2–4 weeks afterward.

Restart therapy if biochemical relapse develops.

ATDs During Pregnancy

- Both PTU and MMI cross the placenta and may cause congenital malformations.
- PTU is preferred during the first trimester because associated birth defects are generally less severe than those seen with MMI.
- *After 16 weeks, evidence is insufficient to recommend PTU over MMI.*

Congenital Malformation Risk

Compared with women not receiving ATDs:

1. PTU increased congenital malformations by 8.8 per 1000 births.
2. MMI increased malformations by 17.1 per 1000 births.
3. Higher cumulative MMI doses (>495 mg) were associated with greater risk.

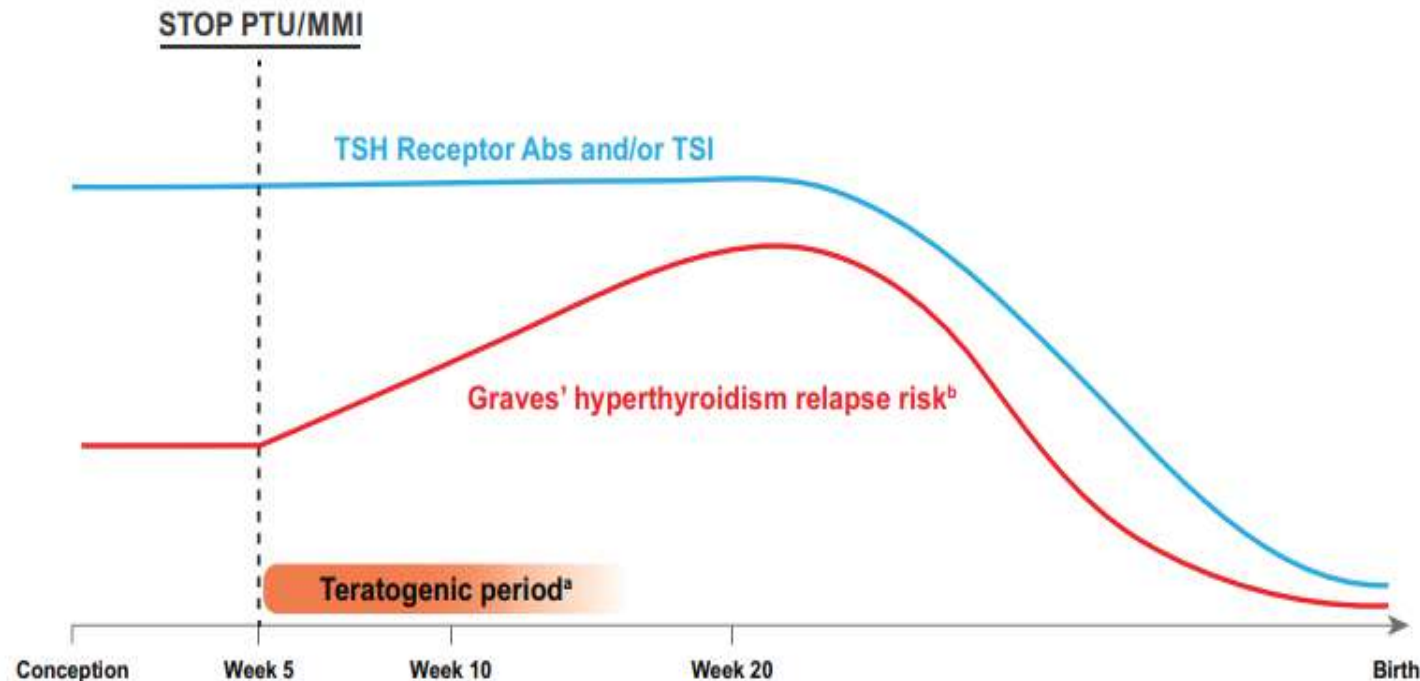
Recommendations Table 17: ATD Treatment of Graves' Disease Preconception and in Pregnancy	Strength*	Level #
Consider discontinuing ATD therapy for Graves' disease upon confirmed pregnancy if the woman is euthyroid on low dose ATD (MMI <5–10 mg/day or PTU <100–200 mg/day) taken for >6 months pre-pregnancy (Figure 4).	Conditional	Low
Following the discontinuation of ATD use in pregnancy, serum TSH, FT4 and clinical examination may be monitored every 1-2 weeks in the first trimester, then every 2-4 weeks in the second and third trimesters.	Conditional	Low
In pregnant women with a new diagnosis of Graves' hyperthyroidism or who have high risk of developing thyrotoxicosis if ATDs were to be discontinued, treatment with ATDs is advised as follows:		
Pregnant women with active Graves' disease managed with ATDs should have serum TSH, FT4, and TRAb and/or TSI concentrations measured as soon as pregnancy is confirmed and monitored with TSH and FT4 every 2-4 weeks thereafter.	Good Practice Statement	
PTU may be used if initiating ATD for the treatment of hyperthyroidism before 16 weeks of pregnancy.	Conditional	Low
If a woman is taking MMI during pregnancy, switching to PTU ^a may be considered until 16 weeks ^b depending on the time of presentation and MMI dose (see text).	Good Practice Statement	
If PTU is not available, MMI may be continued at the lowest effective dose for the shortest duration possible.	Conditional	Low
In case of thyrotoxicosis, propranolol may be used in routine dosages to ameliorate hyperthyroidism-related symptoms.	Good Practice Statement	

^a When switching from MMI to PTU, a dose ratio of approximately 1:20 should be used (e.g., MMI 5mg once daily = PTU 50mg twice daily).

^b If ATD therapy continues to be required after 16 weeks gestation, it remains unclear whether PTU should be continued or switched to MMI.

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

ATD, antithyroid drug; MMI, methimazole; PTU, propylthiouracil; TSH, thyroid stimulating hormone; FT4, free thyroxine; TRAb, TSH receptor antibodies; TSI, thyroid stimulating immunoglobulin



^a For MMI/CMZ, the teratogenic period ends at approximately 16 weeks for skin defects, while the risks for other congenital anomalies remain elevated generally throughout the first trimester.

^b The 1 year risk of Graves' disease relapse typically ranges between 30-70% following ATD discontinuation based on risk factors in the text.

ATD, antithyroid drug; TSHR-Ab, thyrotropin receptor antibody; TSI, thyroid stimulating immunoglobulin

FIG. 5. Strategy for ATD discontinuation upon pregnancy confirmation. Factors important for considering when maternal ATD may be successfully discontinued in pregnancy include the duration and dose of ATD use, maternal TSH concentration, signs of Graves' disease burden (i.e., thyroid eye disease, goiter), and the maternal TRAb and/or TSI concentration. The 1-year risk of Graves' disease relapse typically ranges between 30% and 70% following ATD discontinuation based on these risk factors

First Trimester ATD Exposure and Congenital Malformation Risks

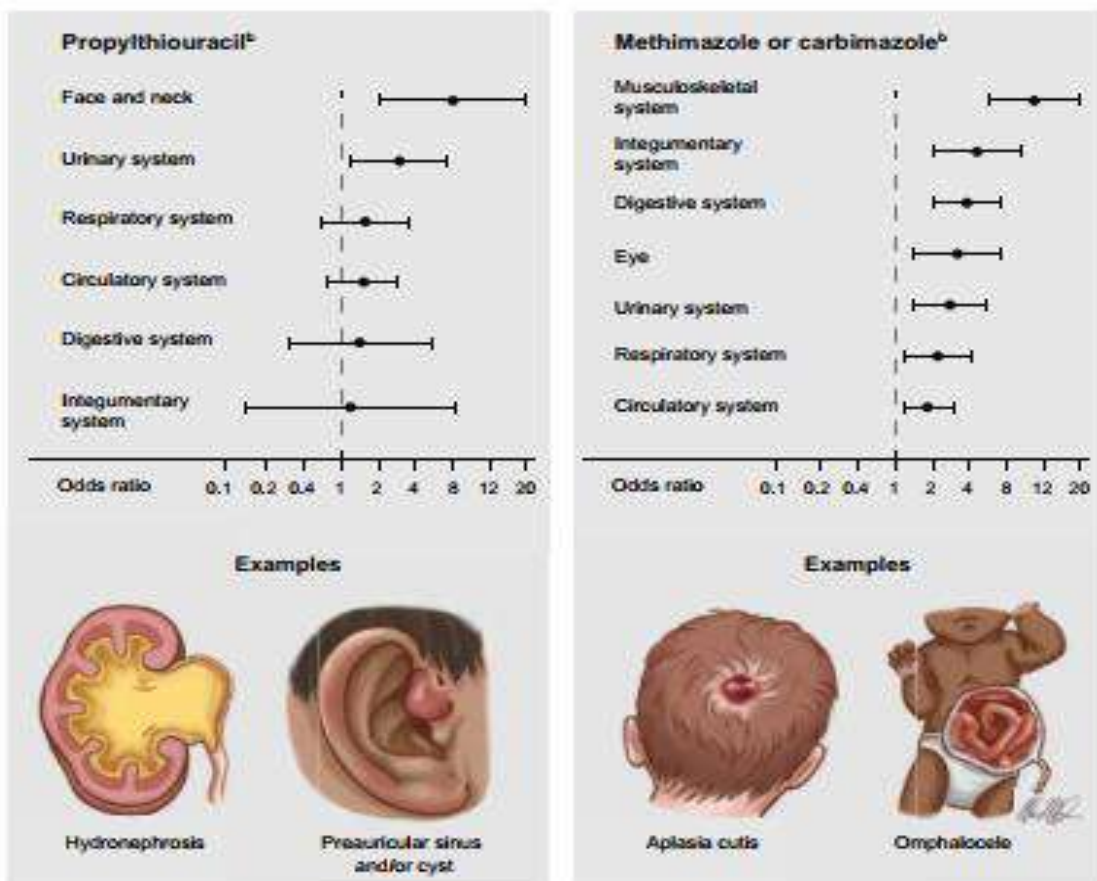


FIG. 6. Risks of antithyroid drugs during pregnancy. The relative and absolute risks, as well as examples of affected organ systems and severity of congenital malformations, associated with maternal antithyroid drug use during pregnancy are summarized from data reported in two large epidemiological studies. CMZ, carbimazole; MMI, methimazole

Prevalence of congenital malformations			
Unexposed ATD group	PTU use only	MM/CMZ use only	Both PTU and MM/CMZ
Within 1 year of birth ^a			
5.9% (N=170,716/2,872,109)	7.0% (N=699/9,930)	8.1% (N=91/1,120)	8.0% (N=147/1,841)
Within 2 years of birth ^a			
5.7% (N=45,982/811,730)	8.0% (N=45/564)	9.1% (N=100/1,097)	10.1% (N=16/159)

^a Seo GH, et al. *Ann Intern Med* 2013;158(5):405-413.

^b Andersen SL, et al. *J Clin Endocrinol Metab* 2010;104(12):5040-5048.

Switching from MMI to PTU

- Recommendation

Women who become pregnant while taking MMI should switch to PTU as early as possible during the first trimester if continued treatment is required.

- *An approximate conversion ratio is: MMI 5 mg/day $\approx$ PTU 50 mg twice daily.*

Monitoring During Pregnancy

- Recommendation

Women treated with ATDs should have:

1. TSH and fT4 measured at pregnancy confirmation.
2. Repeat thyroid function tests every 2–4 weeks.
3. TRAb/TSI measured during the first trimester.
4. The ATD dose should be reduced whenever possible while maintaining euthyroidism.

Recommendations Table 15: Subclinical and Overt Hyperthyroidism in Pregnancy	Strength ^a	Level [#]
Subclinical hyperthyroidism or GTT should not be treated with ATD therapy, but propranolol may be used to ameliorate hyperthyroidism-related palpitations.	Strong	Moderate
In pregnant women with subclinical hyperthyroidism whose TSH concentration is <0.1 mU/L, serum thyroid function should be monitored without treatment every 2-4 weeks.	Good Practice Statement	
Overt hyperthyroidism that is not due to GTT (i.e. Graves' disease, autonomous thyroid nodule) should be treated, to minimize the duration of uncontrolled thyrotoxicosis in pregnancy.	Good Practice Statement	
Overt hyperthyroidism not due to GTT (i.e. Graves' disease, autonomous thyroid nodule) may be treated with ATD therapy, targeting a FT4 concentration at or slightly above the upper third of the reference interval.*	Conditional	Moderate

* Because FT4 concentrations below this range are associated with a high risk of fetal hypothyroidism

^a Strength of Recommendation; [#] Level of Evidence; Good Practice Statement

GTT, gestational transient thyrotoxicosis; ATD, antithyroid drug; TSH, thyroid stimulating hormone; FT4, free thyroxine

Dissenting comments for Recommendations Table 15 from ATA members within the guidelines' writing group are reported in Supplementary Table 3.

Recommendations Table 16: Monitoring Graves' Disease in Pregnancy	Strength ^a	Level [#]
All pregnant women with a history of Graves' disease should have serum TSH, FT4, and TRAb and/or TSI measured in the first trimester.	Good Practice Statement	
For women with a history of Graves' disease who are not taking ATDs* and who have TRAb and/or TSI measured in the first trimester: A. If the TRAb and/or TSI concentration is >3 fold the upper limit of normal, TRAb and/or TSI measurements should be repeated at 18-22 and 30-34 weeks along with monitoring for signs of fetal hyperthyroidism (link to neonatal/fetal hyperthyroidism section). B. If the TRAb and/or TSI concentration at any time during pregnancy is <3 times the upper limit of normal and mother remains euthyroid, TRAb and/or TSI follow-up measurements and fetal hyperthyroidism monitoring should be stopped.	Strong	Moderate
Euthyroid women with a history of Graves' disease without prior definitive treatment and who have been in remission for >1 year should be monitored with thyroid function testing each trimester (Table 1), followed by maternal thyroid testing at 4-6 weeks and 4-6 months post-partum.	Good Practice Statement	

Thyroid Surgery During Pregnancy

- Thyroidectomy should only be considered for severe ATD intolerance or uncontrolled hyperthyroidism.
- If surgery is necessary, the second trimester is preferred.
- Surgery should be performed by experienced high-volume thyroid surgeons to minimize complications.

Graves' Disease Relapse

- Pregnancy suppresses autoimmune activity, making relapse uncommon during gestation.
- However, postpartum immune rebound results in a 25–55% relapse risk.
- Women in remission should continue thyroid function monitoring during each trimester and 3–6 months postpartum.

Recommendations Table 18: Thyroid Surgery for Graves' Disease in Pregnancy	Strength*	Level #
The definitive treatment for Graves' disease during pregnancy with a total thyroidectomy may be considered in exceptional circumstances. ^a	Conditional	Low

^a Including for example in the management of thyroid storm in pregnancy after failing medical management.

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

TABLE 5. MONITORING FETAL AND NEONATAL HYPERTHYROIDISM IN PREGNANT WOMEN WITH ACTIVE OR PAST HISTORY OF GRAVES' DISEASE

Group at risk	Recommended monitoring
Pregnant women with active or past Graves' disease (treated with I-131 or total thyroidectomy)	• Measure TRAb and/or TSI in the first trimester, and obtain a monthly fetal ultrasound after 18-20 weeks if the TRAb and/or TSI level remains >3x the upper limit of normal.^a • Continually assess for signs and symptoms of fetal hyperthyroidism by fetal ultrasound.

^a Even in hypothyroid women, high TRAb and/or TSI concentrations can necessitate maternal ATD treatment (as a vehicle to treat or prevent fetal hyperthyroidism) in combination with levothyroxine (to maintain maternal euthyroidism).

TRAb, TSH receptor antibodies; TSI, thyroid stimulating immunoglobulin

Recommendations Table 19: Fetal Hyperthyroidism	Strength*	Level #
Fetal hyperthyroidism may be treated with maternal ATD therapy. In women with underlying hypothyroidism from past I-131 or total thyroidectomy treatment of Graves' disease where maternal ATD therapy is required for the management or prevention of fetal hyperthyroidism, levothyroxine is continued for maintenance of maternal hypothyroidism, while ATD is added for management of fetal hyperthyroidism. Outside of this setting, block and replace therapy is not to be used in pregnancy.	Conditional	Low

* Strength of Recommendation; # Level of Evidence; Good Practice Statement
ATD, antithyroid drug

Fetal and Neonatal Hyperthyroidism

- **Maternal TRAb $>3\times$ upper limit of normal significantly increases fetal and neonatal hyperthyroidism risk.**
- **Monitoring should include serial fetal ultrasound and multidisciplinary care.**
- **Neonatal Graves' disease usually resolves by 20 weeks, and almost always by 48 weeks after birth.**

Autonomous Thyroid Nodules (ATNs)

- **Definitive treatment of ATNs should ideally occur before pregnancy.**
- **During pregnancy, thyroid scintigraphy is contraindicated; diagnosis relies on biochemical findings and clinical examination.**
- **Persistent hyperthyroidism may require ATDs, with fetal ultrasound performed monthly.**

TABLE 6. SIGNS AND SYMPTOMS OF FETAL AND NEONATAL HYPERTHYROIDISM (A) AND HYPOTHYROIDISM (B)

A

Fetus	Neonate
• Goiter or thyromegaly (thyroid volume >90-95th percentile), although this finding cannot distinguish between fetal hyperthyroidism and hypothyroidism • Growth restriction • Accelerated bone maturation (distal femoral ossification center visible at <31 weeks) • Craniosynostosis • Heart failure • Fetal hydrops • Cardiomegaly • Tachycardia (persistent heart rate >160-180 beats per minute) [relatively late sign] • Intrauterine demise	• Small for gestational age at birth • Hyperexcitability • Diarrhea • Failure to thrive • Vomiting • Ophthalmopathy • Heart failure and cardiac arrhythmias • Systemic and pulmonary hypertension • Hepatosplenomegaly • Jaundice • Hyperviscosity syndrome • Thrombocytopenia • Craniosynostosis • Small anterior fontanelle

B

Fetus	Neonate ^a
• Goiter, which may be accompanied by hyperextension of the neck and tracheal compression • Polyhydramnios • Delayed bone maturation	• Dull look • Puffy facial features • Thickened tongue • Poor feeding • Constipation • Short stature and/or failure to grow • Poor muscle tone

^a Only a minority of neonates are diagnosed with congenital hypothyroidism based on clinical findings, highlighting the importance of systematic neonatal screening.

Recommendations Table 20: Autonomous Thyroid Nodules		Strength ^a	Level [#]
<i>Preconception</i>			
Overt hyperthyroidism arising from autonomous thyroid nodules in women desiring pregnancy should be treated preconception, either surgically, with focal ablation, or with I-131. ^a		Good Practice Statement	
Pregnancy should be avoided for at least 6 months following I-131 treatment of autonomous thyroid nodules.		Good Practice Statement	
<i>During pregnancy</i>			
Women with overt hyperthyroidism arising from autonomous thyroid nodules during pregnancy should be treated with ATD therapy, targeting a FT4 concentration at or slightly above the upper third of the reference interval. For T3-predominant secreting thyroid nodules, the treatment target is a total or free T3 at or slightly above the upper limit of the reference interval.		Good Practice Statement	

a The decision regarding surgical or I-131 treatment can depend upon patient preferences including the timing of trying to conceive and risks of complications. Definitive treatment in the preconception phase is important in order to mitigate the risks associated with maternal hyperthyroidism and ATD exposure during pregnancy.

**** Strength of Recommendation; # Level of Evidence; Good Practice Statement***

TABLE 3. ADVANTAGES AND DISADVANTAGES OF TREATMENTS FOR PRECONCEPTION GRAVES' DISEASE

Graves' disease treatment option	Advantages related to pregnancy planning	Disadvantages related to pregnancy planning
ATDs continued in pregnancy	• Treatment is easy to take, discontinue or modify, and generally inexpensive • Usually the quickest option to achieve euthyroidism (achievable in majority of cases within 1-2 months) • Very low risk of permanent hypothyroidism • Relatively rapid decrease of TRAb and/or TSI concentrations	• Risk of congenital anomalies: +3% (PTU), +5% (MMI)²¹⁶⁻²¹⁷ • Overtreatment associated with fetal and neonatal hypothyroidism • Requires additional fetal ultrasounds during pregnancy • Risk of post-partum relapse (if stopped during pregnancy)
ATDs stopped upon pregnancy (Figure 5)	• Discontinuation can be considered if there is a low risk of relapse (>6 months of treatment with ATD, normal TSH requiring <10 mg methimazole or <200 mg PTU per day, and TRAb concentrations <3x upper limit).	• Risk of early pregnancy and post-partum relapse
I-131 therapy	• Non-invasive and definitive treatment option • Oral administration • Decreased goiter size usually seen	• Pregnancy contraindicated for at least 6 months • TRAb/TSI concentrations may increase transiently over the course of 1-3 years following I-131 administration, which may increase the risk of fetal and neonatal hyperthyroidism • Permanent maternal hypothyroidism is likely • Contraindicated in active moderate/severe thyroid eye disease • More than one dose may be needed
Total thyroidectomy	• Definitive treatment option • Euthyroidism usually easily achievable with thyroid hormone replacement within 1-2 months • Serum TRAb/TSI concentrations fall relatively quickly • Alleviates symptomatic goiter, if present	• Permanent hypothyroidism is guaranteed, requiring lifelong thyroid hormone replacement • Surgical risks, including recurrent laryngeal nerve injury (temporary ~7%, permanent <1%) and hypoparathyroidism (up to 6% permanent) • Recovery period

ATD, antithyroid drug; TRAb, TSH receptor antibodies; TSI, thyroid stimulating immunoglobulin; PTU, propylthiouracil; MMI, methimazole; TSH, thyroid stimulating hormone

TABLE 4. RISKS AND GUIDANCE FOR TREATING GRAVES' DISEASE DURING PREGNANCY

Graves' disease treatment option	Risks	Guidance
ATDs	Congenital anomalies (more severe with MMI than PTU)	- Discuss ATD risks in pregnancy through shared decision-making in preconception. - Confirm pregnancy promptly if suspected. - Consider discontinuing ATDs in pregnant women at low risk of disease relapse during the first trimester. - If PTU is available, consider switching from MMI to PTU as soon as pregnancy is confirmed, using a dosing ratio of 1:20 (MMI to PTU). - If ATD use continues to be needed during pregnancy, treat with PTU (if available) until 16 weeks gestation. The choice for a preferred ATD after 16 weeks gestation is unknown.
	Fetal goiter	- Monitor maternal thyroid function every 2-4 weeks, aiming for FT4 concentration at or slightly above the upper third of the reference interval. - Fetal ultrasound monitoring should be performed monthly starting at 18-20 weeks gestation if the mother uses ATDs during pregnancy; monitoring frequency can be reduced for low dose ATD on a case-by-case basis. - If ATDs can be discontinued in pregnancy, then the maternal TRAb and/or TSI concentration can be checked^a and subsequent fetal ultrasound follow-up can be continued if the result remains >3 times the upper limit of normal after approximately 18-20 weeks gestation.
	Fetal and neonatal thyroid dysfunction	- Same guidance as for "Fetal goiter" above. - Consider discontinuing ATD treatment by 30-34 weeks gestation if appropriate.
Total thyroidectomy	Fetal and neonatal hyperthyroidism	Measure serum TRAb and/or TSI at time of surgery, and plan to repeat at 18-20 weeks and 30-34 weeks gestation if the result is >3 times upper limit of normal.
	Maternal thyroid storm and complications from anesthesia	Aim to achieve euthyroidism preoperatively, which likely requires ATD use and other therapies (such as potassium iodide, glucocorticoids, cholestyramine, plasmapheresis) if appropriate.
	Maternal hypothyroidism	Higher doses of thyroid hormone replacement are required for pregnancy. Patient should be closely monitored with serum thyroid function testing postoperatively.
	Surgical complications (hypoparathyroidism, RLN damage)	Refer to a high-volume surgeon.

^a Serum TRAb and/or TSI should initially be measured in the first trimester, and if elevated to >3 times the upper limit of normal, the measurement should be repeated at 18-22 weeks and 30-34 weeks gestation to guide need for a fetal ultrasound if the elevated TRAb and/or TSI concentration is sustained.

MMI, methimazole; PTU, propylthiouracil; ATD, antithyroid drug; FT4, free thyroxine; TRAb, TSH receptor antibodies; TSI, thyroid stimulating immunoglobulin; RLN, recurrent laryngeal nerve

Box 6. Management of uncontrollable hyperthyroidism and thyroid storm in pregnancy

For the treatment of decompensated hyperthyroidism during pregnancy, the same principles would apply as for other emergencies during pregnancy. For any therapeutic decision with a complex fetal/maternal trade-off, the health of the mother should be prioritized to safeguard maternal health and to optimize fetal outcomes considering their interconnected health status. Clinicians should consult with or refer patients to centers experienced in managing thyroid storm during pregnancy and closely collaborate with obstetricians and neonatologists.

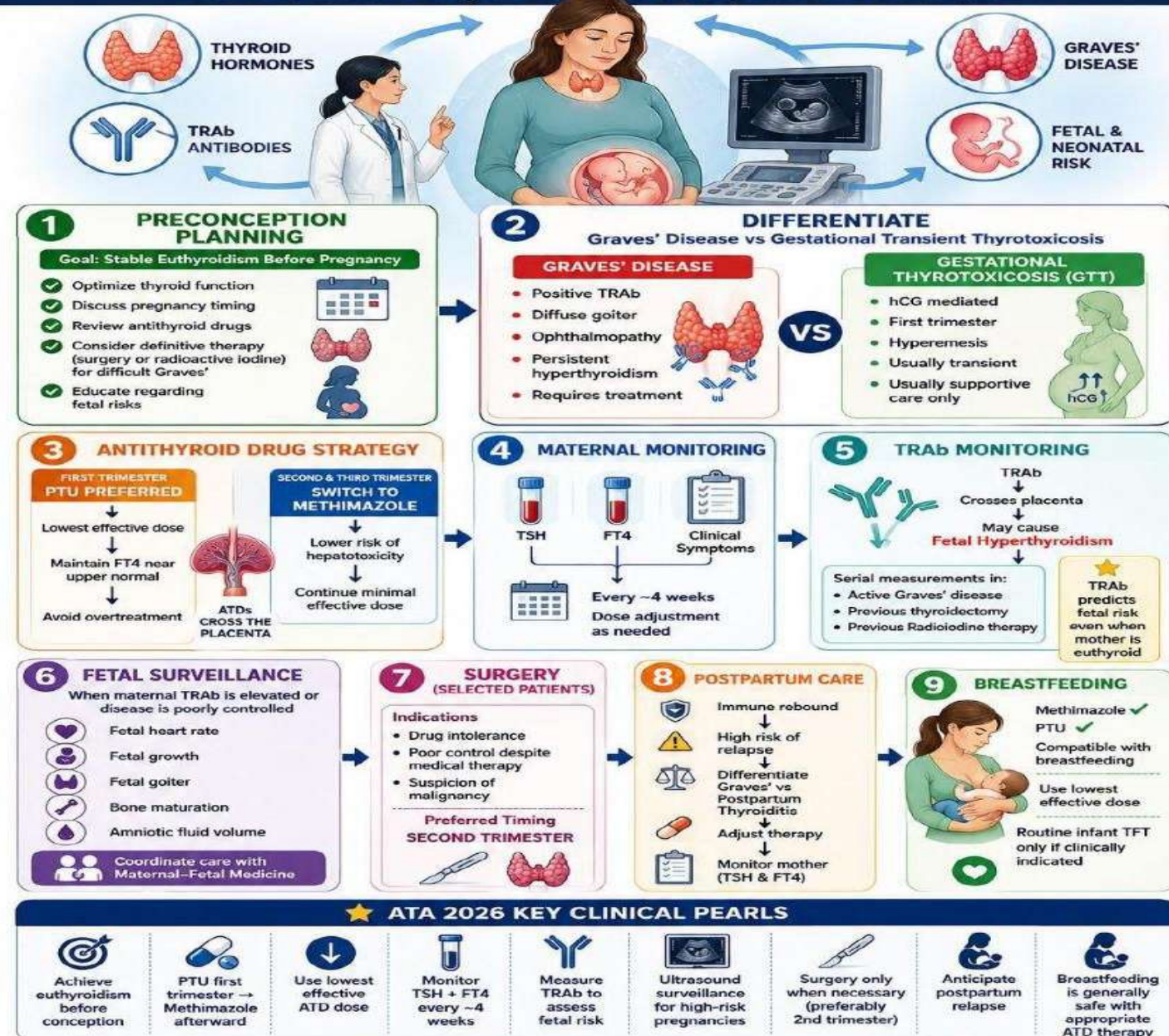
- Propranolol should be the first beta-blocker of choice to be used to control maternal hyperadrenergic symptoms of hyperthyroidism, while closely monitoring the fetal risks of maternal beta-blockade.^{222,223}
- Thyroid surgery may be needed for severe cases. Although there are no data regarding the safety of SSKI therapy for the preparation for thyroidectomy in pregnancy and excess iodine is generally avoided in pregnancy (as iodide crosses the placenta [Figure 2], increasing the risk of neonatal goiter), short-term preoperative use or in the treatment of thyroid storm is unlikely to cause harm to the fetus. From limited data, long-term potassium iodide has been described as an alternative option for the management of Graves' disease in iodine sufficient populations, particularly if there is a higher risk or contraindications (i.e. allergies) to the usual therapies.^{96,215}
- Measurement of thyroid function tests may be performed approximately every 2 days to ensure a favorable trajectory. While optimal serum TSH and thyroid hormones concentrations are not well defined in this circumstance, failure of thyroid hormones to decrease and worsening clinical status could be considered indications to increase treatment doses and/or consider additional treatment options.

SSKI, saturated solution of potassium iodide

GRAVES' DISEASE & HYPERTHYROIDISM IN PREGNANCY

2026 ATA CLINICAL PRACTICE GUIDELINE

Evidence-Based Management Across the Reproductive Continuum



H. THYROID NODULES AND CANCER PRECONCEPTION, IN PREGNANCY, AND POSTPARTUM

Thyroid Nodules & Cancer During Pregnancy: Overview

- Management of thyroid nodules and thyroid cancer during pregnancy requires balancing maternal and fetal safety.
- Decisions should consider whether diagnosis or treatment should be performed immediately or postponed until postpartum.
- Shared decision-making between clinicians and the patient is essential.
- Most recommendations are based on evidence from nonpregnant patients because pregnancy-specific data remain limited.
- Most thyroid cancers diagnosed during pregnancy are low-risk.

Epidemiology & Pregnancy Effects

- **Thyroid nodules are detected in 9–33% of pregnant women, but only about 6% are clinically significant.**
- **Older maternal age and higher parity increase the likelihood of thyroid nodules.**
Pregnancy may slightly enlarge thyroid tumors, but this rarely has clinical importance.
- **Pregnancy generally does not worsen differentiated thyroid cancer (DTC) prognosis, recurrence, or survival.**
- **Patients with metastatic or invasive disease require closer surveillance.**

Evaluation of Thyroid Nodules

- Neck ultrasound is the primary imaging method for thyroid nodules during pregnancy.
- Serum TSH should be measured to exclude autonomous thyroid function.
Thyroid scintigraphy is contraindicated during pregnancy.
- Evaluation of malignancy follows the same ultrasound risk criteria used outside pregnancy.
- FNA biopsy may be performed before or during pregnancy after shared decision-making.

Management of Benign Nodules & Differentiated Thyroid Cancer

- Benign symptomatic nodules should ideally be treated before pregnancy.

Most low-risk differentiated thyroid cancers can safely undergo surgery after delivery.

- Surgery during pregnancy is reserved for rapidly progressive or high-risk disease.

When surgery is necessary, the second trimester is generally preferred.

- Appropriate postoperative levothyroxine replacement is essential.

Recommendations Table 21: Differentiated Thyroid Cancer	Strength*	Level #
Preconception		
Patient-tailored preconception counseling about the effects of DTC treatment options on fertility and future pregnancy should be provided, including the potential risks of preconception I-131 administration on ovarian function.	Good Practice Statement	
In women who desire a future pregnancy, any required initial treatments of DTC should be completed preconception, while maintaining contraception.	Good Practice Statement	
The decision to administer postoperative I-131 treatment of DTC during preconception or to postpone until after pregnancy should be guided by DTC risk. ^a	Good Practice Statement	
Pregnancy should be avoided for at least 6 months following RAI treatment of DTC. In women who conceive within 6 months of receiving I-131, fetal monitoring for malformations should be considered.	Good Practice Statement	
The same DTC risk-based TSH suppression goals should be used for women planning pregnancy as for the general population, though not exceeding 2.5 mU/L.	Good Practice Statement	
Pregnancy		
Pregnant women with biopsy-suspicious thyroid nodules or biopsy-proven DTC, who do not have a high risk of thyroid cancer progression or impending tumor-related complications based on the anatomic location of the tumor, may be counseled to delay thyroid surgery until the postpartum period.	Conditional	Very Low
For DTC in pregnancy with a high risk of progression or immediate complications, the decision to undergo surgery may be based on oncologic indications, similar to if the patient was not pregnant.	Conditional	Very Low
Pregnant women with DTC may have the same TSH goal as was determined preconception, with TSH monitoring approximately every 4 weeks during the first half of pregnancy, at least once in the third trimester, and every 4-6 weeks after any dose adjustment.	Conditional	Low
Pregnant women with DTC may be followed using the same measures and frequency of cancer surveillance as was followed during preconception, with the exception of radioisotope imaging that is contraindicated.	Conditional	Very Low

^a For intermediate-risk DTCs, it may be reasonable to delay postoperative I-131 treatment if imminent pregnancy is desired in a woman near the end of her reproductive span or with suboptimal fertility, which should be discussed in shared decision-making with the patient. For high-risk DTCs, the decision to administer I-131 therapy in the short-term or delay until after pregnancy is complete is best determined in multidisciplinary discussion. I-131 treatment cannot be administered during pregnancy or lactation.

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

Radioiodine Therapy & TSH Suppression

- Radioactive iodine (^{131}I) is contraindicated during pregnancy.
- Pregnancy should be postponed for at least 6 months after radioactive iodine therapy.
- Long-term fertility is generally preserved after treatment.
- Women with previous thyroid cancer should continue levothyroxine during pregnancy.
- TSH targets should remain consistent with the patient's preconception cancer risk.

Monitoring During Pregnancy & Lactation

- Most women with DTC require the same surveillance used outside pregnancy.
- Disease progression during pregnancy is uncommon.
- Thyroid surgery during lactation is considered safe.
- Breastfeeding can usually resume once the mother has recovered from anesthesia.
- Data regarding thermal ablation and targeted therapies during lactation remain limited.

Recommendations Table 22: Thyroid Cancer in Lactation	Strength*	Level #
If thyroid cancer surgery is indicated during lactation, a patient-centered anesthesia plan as well as the risks and benefits of continued breastfeeding versus delaying surgery until lactation is completed should be discussed in a multidisciplinary fashion.	Good Practice Statement	
If postoperative I-131 ablation is indicated during lactation, a patient-centered plan considering the risks and benefits of delaying I-131 treatment in order to continue breastfeeding should be discussed in a multidisciplinary fashion.	Good Practice Statement	
The same DTC risk-based TSH suppression goals should be used for breastfeeding women as for the general population.	Good Practice Statement	
Lactating women who are recommended to receive targeted systemic DTC therapies should be counseled about the need to discontinue breastfeeding. ^a	Good Practice Statement	

^a If breastfeeding should be stopped, consider dopamine agonist therapy to reduce symptomatology related to abrupt breastfeeding cessation

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

DTC, differentiated thyroid cancer; TSH, thyroid stimulating hormone

Medullary & Advanced Thyroid Cancer

- Medullary thyroid carcinoma (MTC) should ideally be treated before pregnancy.
- Calcitonin testing is indicated only when hereditary MTC or MEN2 is suspected.
- Pregnancy may physiologically increase calcitonin levels.
- Carcinoembryonic antigen (CEA) is a more reliable tumor marker during pregnancy.
- Advanced thyroid cancers require multidisciplinary management.

Recommendations Table 23: Medullary and Advanced Thyroid Cancers	Strength*	Level #
<i>Medullary thyroid cancer and pregnancy</i>		
Women diagnosed with MTC should undergo initial management (including thyroid surgery) prior to pregnancy and maintain contraception until this is complete.	Good Practice Statement	
Women diagnosed with MTC should undergo genetic testing prior to pregnancy.	Good Practice Statement	
Routine surveillance of postoperative MTC in pregnancy is similar to the non-pregnant patient. However, due to a possible pregnancy and lactation-related increase of serum calcitonin concentrations, monitoring may also include serum CEA concentrations during pregnancy and postpartum until breastfeeding is complete.	Conditional	Very Low
<i>Advanced thyroid cancers in pregnancy</i>		
The same urgency should be applied to pursuing thyroid surgery, EBRT, and/or systemic therapy for poorly differentiated and anaplastic thyroid cancers in pregnant women as in non-pregnant individuals, with case-by-case considerations in a multidisciplinary discussion weighing the expected risks of delaying treatment versus the fetal/maternal risks.	Good Practice Statement	

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

MTC, medullary thyroid cancer; CEA, carcinoembryonic antigen; EBRT, external beam radiation therapy

Fertility, Surgery & Radioiodine Considerations

- Thyroid surgery before pregnancy is generally safe and does not adversely affect future pregnancy.
- Untreated postoperative hypothyroidism or permanent hypoparathyroidism may increase maternal and fetal complications.
- Radioactive iodine (^{131}I) should be avoided during pregnancy, and conception should be postponed for at least 6 months after treatment.
- Current evidence suggests no major long-term reduction in fertility, although temporary decreases in ovarian reserve have been reported in some studies.
- Women planning pregnancy should achieve stable thyroid function before conception.

Special Situations & Advanced Thyroid Cancer

- Medullary thyroid carcinoma should ideally be diagnosed and treated before pregnancy, with genetic evaluation when indicated (e.g., RET mutation/MEN2).
- Serum calcitonin may rise physiologically during pregnancy and lactation, while CEA remains a more reliable tumor marker.
- Poorly differentiated, anaplastic, metastatic thyroid cancers, or grossly invasive disease require individualized multidisciplinary management.
- Targeted therapies and immune checkpoint inhibitors are generally avoided during pregnancy because of limited human safety data and potential fetal risks.
- Treatment decisions should balance maternal survival with fetal safety and be individualized for each patient.

TABLE 7. GUIDANCE FOR THE MANAGEMENT OF DTC PRECONCEPTION

Therapy	Guidance
Thyroid surgery	Thyroid surgery for suspicious thyroid nodules and/or thyroid cancer should ideally be completed by a high-volume surgeon before conception. A patient-centered, multidisciplinary discussion can help determine optimal DTC management in the context of pregnancy planning.
Postoperative RAI treatment	Women should be advised to wait at least 6 months after I-131 treatment of DTC before conceiving, to avoid the potential adverse effects of radiopharmaceutical use on future pregnancy.
TSH suppression	Preconception serum TSH should be targeted to that recommended for the risk stratification of DTC though not exceeding 2.5 mU/L, as would be advised to patients not considering pregnancy.
DTC monitoring	- Women with a non-operated DTC should be counseled that the tumor size may increase slightly (though usually not in a clinically significant manner) during gestation. Patients with persistent or metastatic DTC desiring pregnancy should be managed in the context of a patient-centered, multidisciplinary approach and a desired pregnancy planned once disease is relatively stable. - Women who have received a total thyroidectomy for the treatment of DTC should be counseled that serum thyroglobulin concentrations may increase slightly during pregnancy,²⁸⁵ but are likely to return to their previous concentrations after delivery.
Treatment of advanced DTC	Data regarding fertility risks of targeted systemic therapies are extremely limited.

DTC, differentiated thyroid cancer; RAI, radioactive iodine; TSH, thyroid stimulating hormone

TABLE 8. GUIDANCE FOR THE MANAGEMENT OF DTC IN PREGNANCY

Therapy	Guidance
Thyroid surgery	- For most patients with DTC diagnosed during pregnancy, delaying treatment until postpartum does not impact thyroid cancer outcomes. - If thyroid surgery is recommended in pregnancy, a patient-centered plan that incorporates case timing and fetal safety should be discussed in a multidisciplinary setting.
Postoperative RAI treatment	Radiopharmaceutical use in pregnancy is absolutely contraindicated.
TSH suppression	- Postoperative TSH suppression requires a balance of maternal DTC treatment goals and risk of excessive levothyroxine exposure to the fetus. - Levothyroxine overtreatment in pregnancy increases the risk of pregnancy-induced hypertension, preeclampsia, preterm delivery, and fetal complications (e.g. low birth weight and adverse neurodevelopmental measures).^{34,35,171,173} - There is limited evidence regarding the optimal strategies for maintaining LT4 suppression therapy during pregnancy in women with DTC.
DTC monitoring	DTC monitoring in pregnant women should generally follow the same measures as in non-pregnant patients.
Ablative techniques	There are insufficient data to determine if RFA and other thermal ablation techniques for thyroid cancer therapy may affect pregnancy outcomes.
Treatment of advanced DTC	Most targeted therapies are contraindicated for use in pregnancy. Risks and benefits of treatment of advanced DTC during pregnancy should be discussed in a multidisciplinary environment weighing the risks of disease treatment with the safety of the mother and fetus.

DTC, differentiated thyroid cancer; RAI, radioactive iodine; TSH, thyroid stimulating hormone; LT4, levothyroxine; RFA, radiofrequency ablation

Key Recommendations

- **Most thyroid nodules and low-risk thyroid cancers can be managed conservatively until postpartum.**
- **Ultrasound and TSH testing remain the cornerstone of evaluation. FNA biopsy is safe when clinically indicated.**
- **Radioactive iodine must not be used during pregnancy.**
- **Management decisions should always balance maternal benefit and fetal safety through multidisciplinary shared decision-making.**

I. THYROID DYSFUNCTION POSTPARTUM

Postpartum Thyroid Dysfunction (Overview & PPT)

- Postpartum thyroiditis (PPT) is an autoimmune thyroid disorder occurring within 12 months after delivery or pregnancy loss.
- It typically follows three phases: transient thyrotoxicosis (1–6 months), hypothyroidism (4–8 months), and recovery to euthyroidism.
- Shared decision-making and patient education regarding symptoms and disease course are emphasized.
- Updated recommendations also clarify breastfeeding precautions during radiopharmaceutical use.

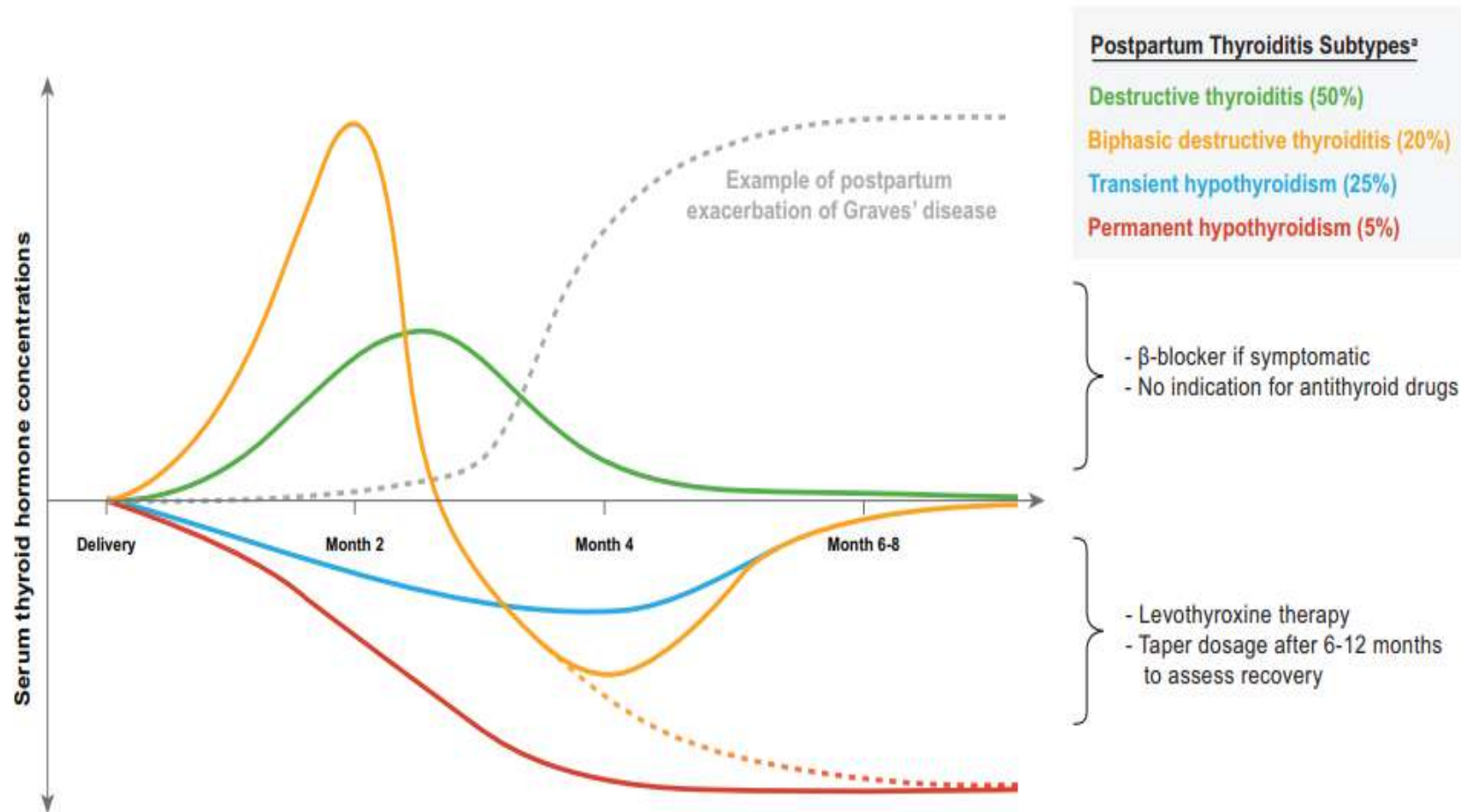
Epidemiology & Risk Factors

- PPT affects approximately 8% of postpartum women.
- Major risk factors include positive TPO antibodies, previous PPT, autoimmune disease, and family history of thyroid autoimmunity.
- Women with previous PPT have about a 70% recurrence risk in future pregnancies.
- 10–50% of women eventually develop permanent hypothyroidism.
- Routine levothyroxine or selenium supplementation is not recommended for PPT prevention.
- Postpartum thyroiditis can occur after any pregnancy, including pregnancy loss (miscarriage).• Women with a history of PPT have an approximately 70% risk of recurrence in a subsequent pregnancy.

Recommendations Table 24: Postpartum Thyroiditis	Strength*	Level #
TPOAb-positive women or those with a history of PPT may be educated about the high risk of PPT (recurrence) and symptoms that may warrant thyroid function testing.	Conditional	Low
During the thyrotoxic phase of PPT, women with hyperthyroidism-related symptoms should be treated with the lowest effective dose of a beta-blocker (propranolol or metoprolol may be used if lactating).	Strong	High
Levothyroxine may be considered during the hypothyroid phase of PPT if the woman is symptomatic, breastfeeding, or if pregnancy is planned within 6 months.	Conditional	Low
Upon normalization of thyroid function tests after PPT, thyroid function testing should be repeated after one year or upon the development of any hypothyroidism-related symptoms.	Good Practice Statement	

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

TPOAb, thyroperoxidase antibody; PPT, postpartum thyroiditis



^a Up to 50% of women who initially return to a euthyroid state will develop chronic hypothyroidism later in life.

FIG. 7. Trajectories of postpartum thyroiditis subtypes. The typical trends of serum thyroid hormone concentrations seen in various subtypes of postpartum thyroiditis are summarized. During the thyrotoxic phases of the destructive subtypes, antithyroid drugs are not indicated, as the underlying etiology is not increased thyroid hormone production (as compared with the postpartum recurrence or exacerbation of Graves' disease, shown in the gray dotted line). During the hypothyroid phase of thyroiditis, a short course of thyroid hormone replacement may be considered in women with profound symptoms of hypothyroidism, with the plan to taper or stop the dose after 6–12 months.

Diagnosis & Clinical Evaluation

- PPT should be differentiated from Graves' disease because management differs.

Graves' disease is suggested by positive TRAb/TSI, persistent thyrotoxicosis, and higher T3:T4 ratio.

- PPT usually presents earlier postpartum with milder and shorter thyrotoxicosis.

Thyroid uptake scan may be considered only when diagnosis remains uncertain,

- considering breastfeeding restrictions.
- Thyroid function testing is recommended in postpartum women with depressive symptoms.

TABLE 9. DISTINGUISHING BETWEEN THE THYROTOXIC PHASE OF POSTPARTUM THYROIDITIS (PPT) AND GRAVES' DISEASE

Feature	Thyrototoxic (destructive) phase of PPT	Graves' disease
Onset of thyrotoxicosis	1-6 months after delivery	3-12 months after delivery
TRAb and/or TSI concentration	Negative	Positive in most
Hyperthyroid symptoms	Usually mild	Can be severe
Eye symptoms	Absent	Can be present
Hyperthyroid signs	May be absent	May be present, along with specific signs of Graves' disease ^a
Duration of thyrotoxic phase	0-3 months	>3 months
TT3 (ng/dL) to TT4 (mcg/dL) ratio ³²⁹	Typically <20	Typically >20
Thyroid vascularity by ultrasound	Low	High
Radioactive iodine uptake ^b	Low or absent	High

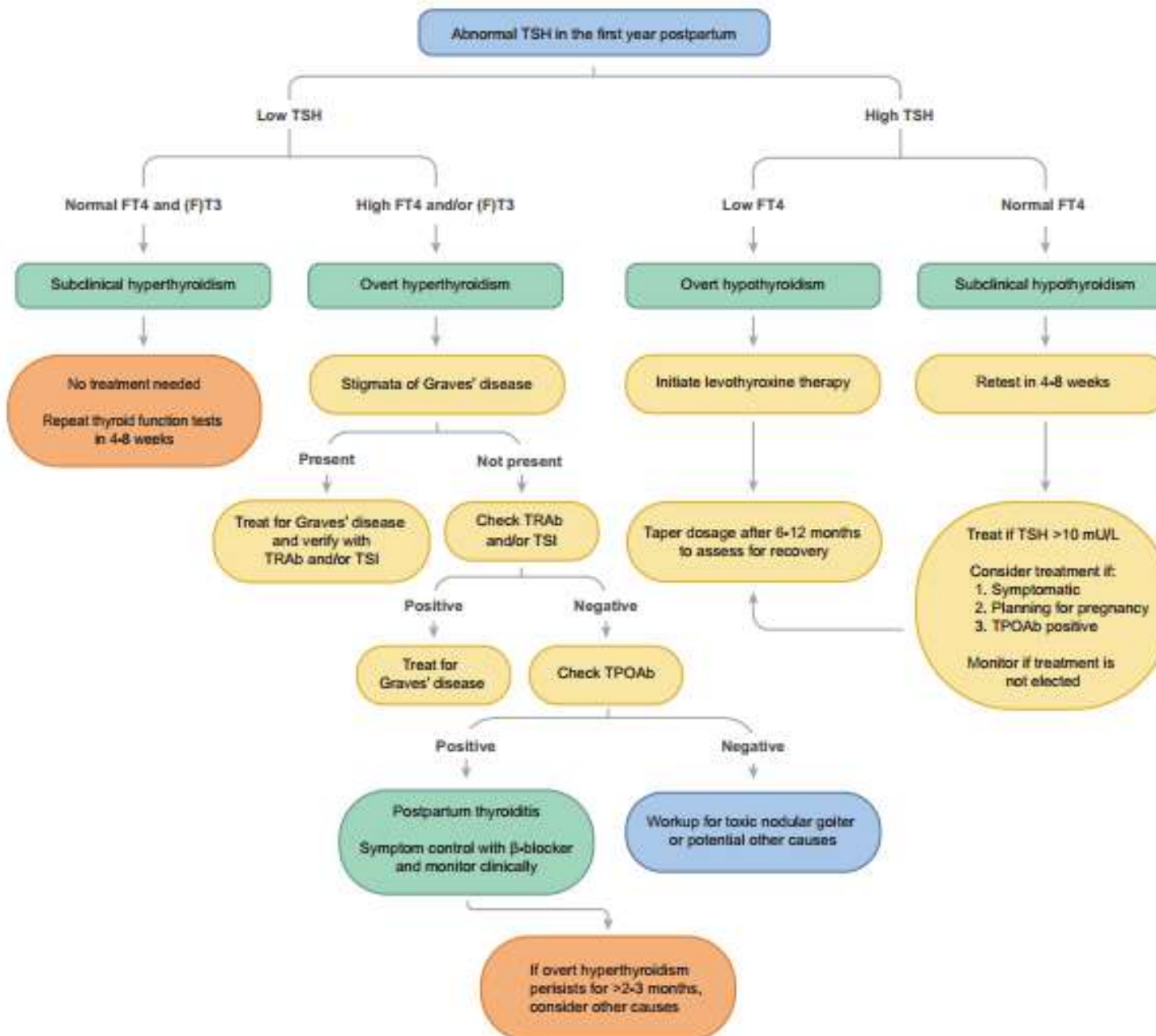
^a Diffuse goiter, thyroid bruit, pretibial myxedema, and/or thyroid eye disease

^b Contraindicated if the woman is lactating, thus temporary discontinuation of breastfeeding would be needed following administration of the radioisotope

PPT, postpartum thyroiditis; TRAb, TSH receptor antibodies; TSI, thyroid stimulating immunoglobulin; TT3, total triiodothyronine; TT4, total thyroxine

Management of Postpartum Thyroiditis

- During the thyrotoxic phase, symptomatic patients may receive beta-blockers (propranolol or metoprolol).
- Antithyroid drugs should not be used because hormone release is due to thyroid destruction rather than increased synthesis.
- Levothyroxine is indicated for symptomatic hypothyroidism, breastfeeding women, or those planning another pregnancy soon.
- Levothyroxine can often be tapered after 1 year if thyroid function recovers.
- Thyroid function should be reassessed every 4–8 weeks until stable.



FLOWCHART 5. Approach to abnormal TSH levels in postpartum. Green boxes indicate a diagnosis, yellow boxes indicate an action, and orange boxes indicate recommended follow-up.

Lactation & Radiopharmaceuticals

- Diagnostic radioisotopes should be used only when clearly indicated during breastfeeding.
- Breastfeeding should be interrupted for 3–4 days after I-123 and 36 hours after Tc-99m pertechnetate, with expressed milk discarded.
- Radioactive iodine (I-131) is contraindicated during lactation, and breastfeeding must not resume after treatment.
- If I-131 is required, treatment should ideally be delayed until at least 3 months after breastfeeding has stopped.
- Expressing milk helps reduce breast radiation and maintain milk production.

During the temporary interruption of breastfeeding, breast milk should be expressed and discarded using a pump. This practice:

- Increases biological elimination of the radiopharmaceutical from the breast, Reduces overall radiation exposure to breast tissue, Helps maintain milk production for resuming breastfeeding.

Hyperthyroidism & Hypothyroidism During Lactation

- Methimazole (≤ 20 mg/day), carbimazole (≤ 15 mg/day), and PTU are generally compatible with breastfeeding.
- Methimazole is preferred because of lower hepatotoxicity risk and easier dosing.
- Potassium iodide may be used in selected cases but requires infant thyroid monitoring.
- Women with preexisting hypothyroidism should usually return to their prepregnancy levothyroxine dose after delivery.
- Women started on LT4 only during pregnancy may be candidates for dose reduction or discontinuation with repeat TSH after 6 weeks.

Other postpartum thyroid dysfunction

Recommendations Table 25: Other Postpartum Thyroid Dysfunction	Strength*	Level #
<i>Management of postpartum hyperthyroidism unrelated to PPT</i>		
The lowest effective dose of ATD in lactation should be used. ^a	Strong	Moderate
Consider applying the same considerations for starting an ATD to women during lactation as those for the general non-pregnant population.	Conditional	Low
If scintigraphy is required during lactation for the diagnostic evaluation of hyperthyroidism, breastmilk should be pumped and discarded for 3-4 days after administering I-123 and 36 hours after administering Tc-99m, before breastfeeding is resumed.	Strong	Low
Do not offer I-131 treatment during lactation. Before I-131 therapy is administered, breastfeeding should be stopped for at least 3 months. A diagnostic I-123 uptake scan may be performed before therapy to assess for mammary iodine uptake, or off-label dopamine agonist therapy may be given to decrease mammary iodine uptake and radiation exposure to mammary tissue.	Conditional	Low
<i>Postpartum follow-up of levothyroxine treatment initiated in pregnancy</i>		
If levothyroxine was started for the treatment of subclinical or mild overt hypothyroidism in pregnancy, a cessation trial may be performed, the timing of which may be determined following shared decision-making. The follow-up frequency and decision to restart levothyroxine may be based on hypothyroid symptoms, thyroid function, TPOAb status, and/or if pregnancy is being planned imminently.	Conditional	Low

^a Doses of up to 20 mg/day of MMI, or 450 mg/day of PTU do not affect newborn thyroid function or neurodevelopment. If lower doses are ineffective, MMI up to 30 mg/day during lactation may be considered in select cases based on the low passage into breast milk.

* Strength of Recommendation; # Level of Evidence; Good Practice Statement

PPT, postpartum thyroiditis; ATD, antithyroid drug; TPOAb, thyroperoxidase antibody; MMI, methimazole; PTU, propylthiouracil

Dissenting comments for Recommendations Table 25 from ATA members within the guidelines' writing group are reported in Supplementary Table 3.

THYROID NODULES AND MALIGNANCY IN PREGNANCY

2026 ATA CLINICAL PRACTICE GUIDELINES

Appropriate Evaluation. Individualized Management. Optimal Outcomes for Mother and Baby.



- ✓ Pregnancy should NOT compromise appropriate evaluation of thyroid nodules or cancer.
- ✓ Most nodules are benign and many low-risk thyroid cancers can be managed safely until after delivery.
- ✓ Multidisciplinary, individualized care is essential.



1 EVALUATION OF THYROID NODULES

- Pregnancy does not alter the diagnostic approach.
- High-resolution neck ultrasound is the first-line imaging.
- Assess nodule size, ultrasound features, lymph nodes, symptoms, prior radiation exposure, and family history.



Pregnancy itself is NOT an indication to delay appropriate evaluation.

2 FINE-NEEDLE ASPIRATION (FNA)

- Ultrasound-guided FNA is safe in all trimesters.
- Perform FNA when results will impact management.

FNA is recommended for:

- ✓ Highly suspicious ultrasound findings
- ✓ Rapidly enlarging nodules
- ✓ Clinically suspicious lymph nodes
- ✓ Large nodules with worrisome features

i FNA of small, low-risk nodules that are unlikely to change management may be deferred until after delivery.

3 MANAGEMENT OF DIFFERENTIATED THYROID CANCER (DTC)

- Most papillary thyroid cancers diagnosed during pregnancy are indolent.
- For women with:

- ✓ Small intrathyroidal tumor
- ✓ No extrathyroidal extension
- ✓ No clinically significant lymph node metastasis
- ✓ No evidence of rapid progression



Active surveillance until postpartum is generally preferred over immediate surgery.

4 WHEN SHOULD SURGERY BE CONSIDERED?

Surgery during pregnancy is considered ONLY when there is:

- Significant tumor growth
- Aggressive histology
- Clinically important lymph node metastasis
- Compressive symptoms
- Concern regarding advanced disease

📅 If surgery is necessary, the **SECOND TRIMESTER** is the safest period.

⚠️ Avoid routine surgery in the 1st and 3rd trimesters whenever possible.



5 THYROID HORMONE THERAPY

- Continue levothyroxine during pregnancy.
- Requirements usually increase.
- Adjust dose based on thyroid function (TSH & FT4) throughout pregnancy.
- Maintain TSH goals according to cancer risk:

Oncologic Risk	TSH Target During Pregnancy
Low Risk	0.5 – 2.0 mIU/L
Intermediate Risk	0.1 – 0.5 mIU/L
High Risk	TSH Suppressed (<0.1 mIU/L)*

*Individualize; avoid overtreatment.

6 RADIOACTIVE IODINE (RAI)

- RAI is **ABSOLUTELY CONTRAINDICATED** during pregnancy.
- Crosses the placenta and can permanently damage the fetal thyroid.



RAI treatment (diagnostic or therapeutic) should be postponed until after delivery. Breastfeeding should be discontinued 2–6 weeks before RAI.

7 MEDULLARY AND ADVANCED THYROID CANCER

- Management should be individualized in specialized centers.
- Consider maternal prognosis, disease aggressiveness, and fetal well-being.
- Genetic counseling and RET status evaluation are important for hereditary MTC.



8 POSTPARTUM FOLLOW-UP

- Reassess thyroid status after delivery.
- Complete definitive management that was deferred.
- Postpartum management may include:



✓ Long-term oncologic surveillance according to risk and histology.

9 BREASTFEEDING AFTER THYROID CANCER

- Levothyroxine is safe during lactation.
- RAI requires interruption of breastfeeding (2–6 weeks before treatment).
- Surgery is compatible with breastfeeding.



- ✓ Discuss timing of RAI and breastfeeding with the patient.
- ✓ Support lactation when possible.

★ KEY CLINICAL PEARLS – ATA 2026



THANK YOU
