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Ringel MD et al. 2025 American Thyroid Association management guidelines for adult patients with differentiated thyroid cancer. *Thyroid* 2025;35(8):841-985.

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Smoking and clinical outcomes in Graves' disease

It is well known that smoking can make thyroid eye disease worse. However, several studies have suggested that smoking is also associated with worse outcomes of Graves' disease, including decreased remission and relapse rates. This study sought to further clarify the effects of smoking on clinical outcomes in patients with Graves' disease.

Forbes S et al. Cigarette smoking exposure and clinical outcomes in Graves' disease. *J Clin Endocrinol Metab* 2026;111(7): e1805–e1812.

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Effect of Tepezza™ (Teprotumumab) on thyroid eye disease

Thyroid eye disease (TED) occurs in about half of the people who have Graves' disease. A major breakthrough in treating TED is a newer medication called Tepezza™ (Teprotumumab). Even though this medication can improve TED, it is not clear that the benefits last over time. This study looked at whether Teprotumumab can provide long-term benefits in people with TED.

Rosenblatt TR et al. Extended long-term follow-up of proptosis regression after teprotumumab treatment for thyroid eye disease. *Ophthalmic Plast Reconstr Surg*. Epub 2026 Feb 16.

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Can we safely shorten antithyroid drug therapy in some patients with Graves' disease?

Graves' disease is treated with antithyroid medications, usually for 12–18 months before stopping the medication to determine if the Graves' disease is in remission. Studies have suggested that level of TRAb at the diagnosis of Graves' disease can help predict the likelihood of remission or recurrence, with lower levels of TRAb increasing the likelihood of remission. This study evaluated whether less than 12 months of treatment could be as effective as standard-duration therapy in patients with low levels of TRAb in patients with Graves' disease.

Razvi S, et al. Shorter versus standard antithyroid drug therapy in Graves' disease with lower baseline thyrotropin receptor antibody (TRAb) levels: relapse outcomes from a propensity-weighted analysis. *Thyroid* 2026;36(9):961–969.

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Does exposure to chemicals from personal care products affect thyroid function in pregnant women?

Many personal care products used in skin care and cosmetics contain chemical ingredients commonly referred as endocrine-disrupting chemicals (EDCs). These EDCs have been linked to abnormal thyroid function. This study used data from 84 previous studies on the impact of EDCs as a base for more specific assessment of impact of EDCs from personal care products on thyroid function in pregnancy.

Sultan M., et al. Association of exposure to personal care product chemicals with maternal thyroid health: a prospective cohort study integrated with targeted risk assessment for environmental chemicals strategy. *Environ Int*. 2026;208:110121.

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Keeping thyroid levels in target may help prevent heart failure

Thyroid hormone plays a critical role in heart health. Both too much and too little thyroid hormone, even when mild, can adversely affect heart function. Given the important effects of thyroid hormone on the cardiovascular system, the authors sought to determine whether patients with high or low TSH levels were at increased risk of heart failure.

Evron J, et al. Association between over- and under-replacement with thyroid hormone and incident heart failure. *J Clin Endocrinol Metab* 2026;111(6):e1634–e1642.

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Editor's Comments

Welcome to another issue of *Clinical Thyroidology for the Public*! In this journal, we will bring to you the most up-to-date, cutting edge thyroid research. We also provide even faster updates of late-breaking thyroid news through X (previously known as Twitter) at [@amthyroidassn](https://twitter.com/amthyroidassn) and on [Facebook](https://www.facebook.com/amthyroidassn). Our goal is to provide patients with the tools to be the most informed thyroid patient in the waiting room. Also check out our friends in the [Alliance for Thyroid Patient Education](#). The [Alliance](#) member groups consist of: the *American Thyroid Association*®, *Bite Me Cancer*, *the Graves' Disease and Thyroid Foundation*, *the Light of Life Foundation*, *MCT8 – AHDS Foundation*, *ThyCa: Thyroid Cancer Survivors' Association*, and *Thyroid Federation International*.

We invite all of you to join our [Friends of the ATA](#) community. It is for you that the American Thyroid Association® (ATA®) is dedicated to carrying out our mission of providing reliable thyroid information and resources, clinical practice guidelines for thyroid detection and treatments, resources for connecting you with other patients affected by thyroid conditions, and cutting edge thyroid research as we search for better diagnoses and treatment outcomes for thyroid disease and thyroid cancer. We thank all of the *Friends of the ATA* who support our mission and work throughout the year to support us. We invite you to help keep the ATA® mission strong by choosing to make a donation that suits you — it takes just one moment to give online at: www.thyroid.org/donate and all donations are put to good work. The ATA® is a 501(c)3 nonprofit organization and your gift is tax deductible.

October is [Thyroid Nodule Awareness Month](#).

In this issue, the studies ask the following questions:

- When can I be considered in complete remission of my thyroid cancer?
- Does smoking make my thyroid eye disease worse?
- Can Tepezza™ really improve my TED symptoms?
- How long do I have to take my antithyroid medication?
- Can my personal care products affect my baby during pregnancy?
- Can undertreatment of hypothyroidism increase my risk of heart failure?

We welcome your feedback and suggestions. Let us know what you want to see in this publication. I hope you find these summaries interesting and informative.

— Alan P. Farwell, MD



THYROID CANCER

2025 ATA Differentiated Thyroid Cancer Guidelines: De-escalating therapy and monitoring

BACKGROUND

The majority of patients with thyroid cancer do very well. Indeed, almost 40% of thyroid cancers are less than 1 cm and have an excellent prognosis. Despite the excellent prognosis, many patients with thyroid cancer are treated with thyroid hormone doses aimed at achieving a low TSH (TSH suppression) and are monitored frequently for cancer recurrence with neck ultrasound studies and lab tests (thyroglobulin, Tg). Prior ATA guidelines introduced the idea of risk assessment of cancer recurrence after initial treatment as well as alternative treatment options for lower-risk cancers, including cutting back on thyroid hormone dosing to keep the TSH normal.

To further assist clinicians with the rational targeting of treatment and monitoring, the 2025 ATA guidelines introduce the “DATA Framework” (Diagnosis, Assessment, Treatment, Assessment). The concept recommends continuing risk assessment after each treatment decision and subsequent action to reassess the risk of cancer recurrence. The appropriate future monitoring and treatment is therefore based on the new risk assessment, rather than the initial risk assessment driven largely by the initial diagnosis and cancer staging data. Thus, treatment and monitoring can be “de-escalated,” or cut back, in patients with a low risk of thyroid cancer recurrence.

THE FULL ARTICLE TITLE

Ringel MD et al. 2025 American Thyroid Association management guidelines for adult patients with differentiated thyroid cancer. *Thyroid* 2025;35(8):841–985.

SUMMARY OF THE STUDY

The 2025 ATA thyroid cancer guidelines refer to patients with differentiated thyroid cancer, almost all of which are papillary thyroid carcinoma.

TSH Suppression: A key set of recommendations to be “de-escalated” in the new guidelines pertain to the use of TSH suppressive therapy, or thyroid hormone dosing to

achieve a low or suppressed TSH. The rationale in the past was that the low TSH levels would avoid any TSH-stimulation to any remaining thyroid cancer cells. However, the guidelines note that data are quite mixed as to benefit, especially for lower risk thyroid cancer and tended to support equal benefits for moderate suppression (TSH, 0.1–0.5 mIU/L) as for lower TSH levels. The guidelines therefore recommend that TSH suppression should be used mainly for high-risk patients with persistent thyroid cancer.

Thyroglobulin (Tg) measurement: With Tg as a cancer marker, monitoring patients with thyroid cancer has a major advantage in the early detection of recurrence compared to many other cancers. However, the ability to monitor Tg means that aggressive initial treatment decisions to drive Tg levels to undetectable still dominate decision-making. The new guidelines support a de-escalation in this case by providing guidance on monitoring Tg in total thyroidectomy patients who have not undergone radioactive iodine therapy. In this patient group, initial Tg levels <2.5 ng/ml did not appear to be associated with increased recurrence risk. These guidelines also note that Tg levels should not be monitored after lobectomy, although a one-time measure may be helpful to ensure that there is not an overlooked major elevation that might signal a wider problem.

Length of monitoring: Entirely new to these guidelines is a discussion of whether and when monitoring can be discontinued. The guidelines introduce idea of “complete remission,” which means no evidence of cancer in response to therapy. Although this does not mean that all such patients are cured and will not have a recurrence, this determination can provide significant psychological and financial benefits to patients. Therefore, in low-risk patients, monitoring with a neck ultrasound every 1 to 3 years can be discontinued after 5 to 8 years in the setting of a continued excellent response to therapy. In total thyroidectomy patients, Tg monitoring can be discontinued after 10–15 years.



THYROID CANCER, continued

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The 2025 ATA thyroid cancer guidelines now recommend changes to long-term management in the setting of an excellent response to therapy, particularly in patients who are low-risk for thyroid cancer recurrence. In these low-risk patients, treatment and monitoring can be de-escalated by adjusting the levothyroxine dose to achieve normal TSH, neck ultrasounds can be discontinued after

5–8 years, and Tg monitoring can be discontinued after 10–15 years. Further, patients with a low risk of thyroid cancer recurrence can be considered to be in complete remission, a term that has not been previously been used in thyroid cancer patients. As always, these decisions should result from a shared-decision making discussion with the patient and their doctor.

— Alan P. Farwell, MD

ATA RESOURCES

Thyroid Cancer (Papillary and Follicular): <https://www.thyroid.org/thyroid-cancer/>

Thyroid Hormone Treatment: <https://www.thyroid.org/thyroid-hormone-treatment/>

Thyroid Function Tests: <https://www.thyroid.org/thyroid-function-tests/>

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer: the most common type of differentiated thyroid cancer. There are 4 variants of papillary thyroid cancer: classic, follicular, tall-cell and noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP).

Follicular thyroid cancer: the second most common type of differentiated thyroid cancer.

Thyroidectomy: surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a *total thyroidectomy*. When less is removed, such as in removal of a lobe, it is termed a *partial thyroidectomy*.

Thyroid Ultrasound: a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

TSH: thyroid stimulating hormone — produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

Thyroglobulin: a protein made only by thyroid cells, both normal and cancerous. When all normal thyroid tissue is destroyed after radioactive iodine therapy in patients with thyroid cancer, thyroglobulin can be used as a thyroid cancer marker in patients that do not have thyroglobulin antibodies.

Radioactive iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).



GRAVES' DISEASE

Smoking and clinical outcomes in Graves' disease

BACKGROUND

Graves' disease is the most common cause of hyperthyroidism in the United States. Graves' disease is an autoimmune condition in which the body produces antibodies that attack and turn on the thyroid, causing the gland to become hyperthyroid. Symptoms of Graves' disease include weight loss, heat intolerance, insomnia, increased frequency of bowel movements, palpitations and tremors. Graves disease is treated with antithyroid medications, mainly methimazole. The goal of treatment with methimazole is for Graves' disease to go into remission.

Graves' disease is also associated with thyroid eye disease (TED) which can cause eye bulging, irritation, and double vision. It is well known that smoking can make TED worse. However, several studies have suggested that smoking is also associated with worse outcomes of Graves' disease, including decreased remission and relapse rates. This study sought to further clarify the effects of smoking on clinical outcomes in patients with Graves' disease.

THE FULL ARTICLE TITLE:

Forbes S et al. Cigarette smoking exposure and clinical outcomes in Graves' disease. *J Clin Endocrinol Metab* 2026;111(7): e1805–e1812. doi: 10.1210/clinem/dgag061. PMID: 41676894.

SUMMARY OF THE STUDY:

This study conducted in the United Kingdom enrolled 991 patients with newly diagnosed Graves' disease who were treated with antithyroid medications. They performed evaluations at study entry, 1 year and long

term. Graves' disease was diagnosed by a suppressed TSH, elevated thyroid hormones, and positive thyrotropin receptor antibody (TRAb) or diffusely increased uptake on nuclear thyroid scan. The main outcome measures were baseline TRAb levels, TED activity and recurrence of active Graves' disease at 1 year and long term after discontinuation of antithyroid medications.

Patients were separated by smoking status: non-smokers, ex-smokers and current smokers. Current smokers had higher TRAb levels at diagnosis, increased risk of developing TED and increased relapse of Graves' disease 12 months after stopping antithyroid medications. Each 10 cigarettes smoked per day was associated with a 34 % higher risk of TED and 60% higher risk of relapse at 1 year suggesting a dose dependent effect. Ex-smokers and nonsmokers had comparable outcomes.

WHAT ARE THE IMPLICATIONS OF THE STUDY?

This study indicates that smoking is associated with worse health outcomes in patients with Graves' disease, including increasing the risk of developing or worsening of TED and increasing the relapse rates of Graves' disease after stopping antithyroid drugs. Further, this study suggests stopping smoking returns these outcomes to the same as patients that have never smoked. There are many general health reasons to stop smoking. Adding to this is the recommendation that stopping smoking in patients with Graves' disease improves clinical outcomes. All patients with Graves' disease should be encouraged to quit smoking.

—Whitney Woodmansee MD

ATA RESOURCES

Graves' Disease: <https://www.thyroid.org/graves-disease/>

Hyperthyroidism (Overactive): <https://www.thyroid.org/hyperthyroidism/>



GRAVES' DISEASE, continued

ABBREVIATIONS & DEFINITIONS: FROM ACTIVE LIST

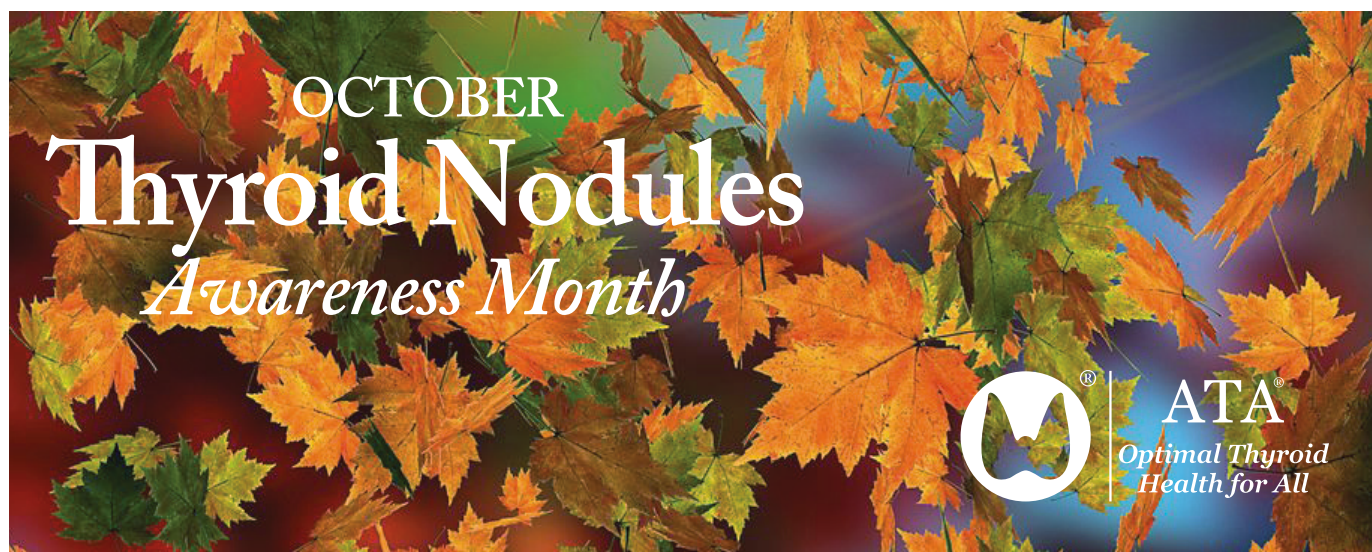
Graves' disease: the most common cause of hyperthyroidism in the United States. It is caused by antibodies that attack the thyroid and turn it on.

Hyperthyroidism: a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

Autoimmune thyroid disease: a group of disorders that are caused by antibodies that get confused and attack the thyroid. These antibodies can either turn on the thyroid (Graves' disease, hyperthyroidism) or turn it off (Hashimoto's thyroiditis, hypothyroidism).

Thyroid eye disease (TED): also known as Graves ophthalmopathy. TED is most often seen in patients with Graves' disease but also can be seen with Hashimoto's thyroiditis. TED includes inflammation of the eyes, eye muscles and the surrounding tissues. Symptoms include dry eyes, red eyes, bulging of the eyes and double vision.

TRAb: antibodies often present in the serum of patients with Graves disease that are directed against the TSH receptor, often causing stimulation of this receptor with resulting hyperthyroidism.





THYROID EYE DISEASE

Effect of Tepezza™ (Teprotumumab) on thyroid eye disease

BACKGROUND

Thyroid eye disease (TED) occurs in about half of the people who have Graves' disease. TED includes inflammation of the eyes, eye muscles and the surrounding tissues. Symptoms include dry eyes, red eyes, bulging of the eyes and double vision. In serious cases, TED can cause a person to lose their eyesight.

A major breakthrough in treating TED is a newer medication called Tepezza™ (Teprotumumab). Teprotumumab is a monoclonal antibody that works by blocking a key molecule responsible for causing TED. Even though this medication can improve TED, it is not clear that the benefits last over time. This study looked at whether Teprotumumab can provide long-term benefits in people with TED.

THE FULL ARTICLE TITLE

Rosenblatt TR et al. Extended long-term follow-up of proptosis regression after teprotumumab treatment for thyroid eye disease. *Ophthalmic Plast Reconstr Surg*. Epub 2026 Feb 16.

SUMMARY OF THE STUDY

The researchers studied 113 patients with Graves' disease and TED at a medical center in Boston, MA. The patients completed the 8 infusions of teprotumumab

between 2020 and 2022. The researchers measured the bulging in each eye before treatment, right after treatment and over time.

About 20 months after treatment, 83 patients and ~ 2/3 of the eyes had less eye bulging than they had right after treatment. When compared to the bulging observed before treatment, 77 patients or ~60% of the eyes retain some improvement 20 months after treatment. However, 43 patients or ~31% of the eyes eventually had worse bulging at their follow up than they did before treatment. The researchers also found that the eyes became inflamed, or flared up, in 54% of the patients.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that the initial benefits after teprotumumab treatment in TED may not last over time. Most patients kept some of the improvement, but about 1/3rd of patients had worse TED than they had before treatment. Patients who are treated with teprotumumab should be cautioned about what to expect from the treatment and that the initial results may change over time. They should also have regular check-ups for a longer period to see if their TED stays stable and to see if other treatments are need.

— Susana Ebner MD

ATA RESOURCES

Graves' Disease: <https://www.thyroid.org/graves-disease/>

Thyroid Eye Disease: <https://www.thyroid.org/thyroid-eye-disease/>



THYROID EYE DISEASE, continued

ABBREVIATIONS & DEFINITIONS

Graves' disease: the most common cause of hyperthyroidism in the United States. It is caused by antibodies that attack the thyroid and turn it on.

Thyroid eye disease (TED): also known as Graves ophthalmopathy. TED is most often seen in patients

with Graves' disease but also can be seen with Hashimoto's thyroiditis. TED includes inflammation of the eyes, eye muscles and the surrounding tissues. Symptoms include dry eyes, red eyes, bulging of the eyes and double vision.



GRAVES DISEASE

Can we safely shorten antithyroid drug therapy in some patients with Graves' disease?

BACKGROUND

Graves' disease is the most common cause of hyperthyroidism in the United States. Graves' disease is caused by antibodies to the TSH receptor (TRAb) that attack and turn on the thyroid, causing the gland to become hyperthyroid. Symptoms of Graves' disease include weight loss, heat intolerance, insomnia, increased frequency of bowel movements, palpitations and tremors. Graves' disease is treated with antithyroid medications, mainly methimazole. The goal of treatment with methimazole is for Graves' disease to have the antibodies to go away and for the disease to go into remission. Patients are usually treated for 12–18 months before stopping the antithyroid medication to determine if the Graves' disease is in remission. However, response to antithyroid medications is variable. Some patients will likely achieve remission within the first 6–12 months; some will never achieve remission. Thus, not all patients will need to be treated for the same period of time.

Studies have suggested that level of TRAb at the diagnosis of Graves' disease can help predict the likelihood of remission or recurrence, with lower levels of TRAb increasing the likelihood of remission. This study evaluated whether less than 12 months of treatment could be as effective as standard-duration therapy in patients with low levels of TRAb in patients with Graves' disease.

THE FULL ARTICLE TITLE

Razvi S, et al. Shorter versus standard antithyroid drug therapy in Graves' disease with lower baseline thyrotropin receptor antibody (TRAb) levels: relapse outcomes from a propensity-weighted analysis. *Thyroid* 2026;36(9):961–969; doi: 10.1177/10507256261470303. PMID: 42478510.

SUMMARY OF THE STUDY

This was a study of 369 adults with newly diagnosed Graves' disease and lower baseline thyrotropin receptor antibody (TRAb) levels. All patients were treated with antithyroid medications. Patients were divided by total antithyroid medications treatment duration: a short-duration group (<12 months; 134 patients) and a standard-duration group (12–18 months; 235 patients). The average of patients was 46 years, 82% were female and the average follow-up was 58 months.

The authors noted a relapse rate of 17.2% for those with less than 12-month use of antithyroid medication versus 20.4% relapse rate in those receiving the 12–18 months course of antithyroid medication. However, after adjusting for differences, both groups were nearly identical for the relapse risk, but favorable for the group with a shorter course of antithyroid medication.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that patients with Graves' disease who have lower baseline TRAb levels will likely benefit from a shorter antithyroid drug course. The results suggest that antithyroid drug therapy treatment could decrease from an average of 18 months to <12 months in these patients with lower TRAb levels. Thus, the authors noted the importance of individualizing Graves' disease management and advocate for more research on early antibody markers and their role in remission and relapse rates.

— Joanna Miragaya, MD



GRAVES DISEASE, continued

ATA RESOURCES

Graves' Disease: <https://www.thyroid.org/graves-disease/>

Hyperthyroidism (Overactive): <https://www.thyroid.org/hyperthyroidism/>

ABBREVIATIONS & DEFINITIONS

TRAb: antibodies often present in the serum of patients with Graves disease that are directed against the TSH receptor, often causing stimulation of this receptor with resulting hyperthyroidism.

Hyperthyroidism: a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

Graves' disease: the most common cause of hyperthyroidism in the United States. It is caused by antibodies that attack the thyroid and turn it on.

Methimazole: an antithyroid medication that blocks the thyroid from making thyroid hormone. Methimazole is used to treat hyperthyroidism, especially when it is caused by Graves' disease.

Propylthiouracil (PTU): an antithyroid medication that blocks the thyroid from making thyroid hormone. Propylthiouracil is used to treat hyperthyroidism, especially in women during pregnancy.



THYROID AND PREGNANCY

Does exposure to chemicals from personal care products affect thyroid function in pregnant women?

BACKGROUND

Thyroid hormone plays an important role in normal pregnancy and normal development of the baby. Abnormal thyroid hormone levels in mothers during pregnancy can lead to pregnancy complications and may affect baby's development, especially brain development. Many personal care products used in skin care and cosmetics contain chemical ingredients such as phthalates, bisphenols, and per- and polyfluoroalkyl substance (PFAS), commonly referred as endocrine-disrupting chemicals (EDCs). These EDCs have been linked to abnormal thyroid function. Since personal care products are frequently used by women of childbearing age, exposure to these chemicals through personal care products may have negative effect on thyroid function in young women and in pregnancy.

Previous studies on potential impact of EDCs on thyroid function have limitations. Many previous studies looked at impact of several different hormones at the same time, which makes it harder to pick out impact on thyroid hormones. This study used data from 84 previous studies on the impact of EDCs as a base for more specific assessment of impact of EDCs from personal care products on thyroid function in pregnancy.

THE FULL ARTICLE TITLE

Sultan M., et al. Association of exposure to personal care product chemicals with maternal thyroid health: a prospective cohort study integrated with targeted risk assessment for environmental chemicals strategy. *Environ Int.* 2026;208:110121; doi: 10.1016/j.envint.2026.110121. PMID: 41650877.

SUMMARY OF THE STUDY

Blood samples from 803 pregnant women in Nanjing, China, were analyzed. A total of 21 chemicals in personal care products were measured from blood samples collected in the second trimester, including two bisphenols, eight

phthalates and their metabolites, and eleven PFASs. Thyroid hormone and thyroid antibody levels were measured from blood samples collected in the second and third trimesters. The researchers combined data from 84 previous studies (including studies in humans, animals, and at the cellular level) to assess a specific risk for abnormal thyroid function for each chemical. The researchers also noted the quality of data from each study. Using this strategy, they generated a score indicating impact of all chemicals on thyroid function together, a score indicating impact of each class of chemicals on thyroid function, and a score indicating impact of each individual chemical on thyroid function. Scores were on 0–10 scale with score of 0–4.0 indicating low risk, score of 4.1–8.0 indicating medium risk, and score of 8.1–10.0 indicating high risk.

EDCs were detectable in 70–80% of blood samples of participants. All the chemicals scored as a medium risk. Medium risk chemicals are thought to have moderate risk to cause abnormal thyroid function and would require active monitoring and further research. For each class of EDCs, phthalates scored highest at 5.47, followed by PFASs at 4.85, and then bisphenols at 4.12. Several individual chemicals in all three categories showed significant associations with thyroid hormone levels, although they had variable effects on different measures of thyroid function tests: some chemicals were associated with low thyroid hormone levels while others were associated with high thyroid hormone levels. Exposure to higher amount of the mixture of all the chemicals was associated with lower level of TSH level in the second trimester, which may indicate elevated thyroid hormone levels, but it was not associated with changes in free T4 level or thyroid antibody levels.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study using a targeted score system derived from previous study data reported that exposure to EDCs



THYROID AND PREGNANCY, continued

contained in personal care products in pregnancy pose a medium risk of thyroid problems. The findings highlight need for further research regarding impact of EDCs exposure on pregnancy outcomes and potential need to decrease exposure to personal care products during the vulnerable periods of pregnancy when possible.

In their analyses, the researchers found that the evidence from human studies was the least reliable compared to

cell or animal studies. This suggests that the evidence regarding potential impact of these EDCs on thyroid function in humans is still weak. Therefore, more data is needed to inform decisions for regulations and clinical guidelines. Further studies are also needed to evaluate potential impact of small changes in thyroid function seen in this study on adverse pregnancy outcomes and impact on baby's development.

— Sun Lee, MD

ATA RESOURCES

Thyroid Disease in Pregnancy: <https://www.thyroid.org/thyroid-disease-pregnancy/>

Thyroid Function Tests: <https://www.thyroid.org/thyroid-function-tests/>

ABBREVIATIONS & DEFINITIONS

Endocrine Disrupting Chemicals (EDCs): chemical pollutants in the environment that can affect the action of endocrine glands. Examples include bisphenol A (BPA), polychlorinated biphenols (PCBs), perfluoroalkyl substances (PFAs) and organochlorines (OCs).

Thyroxine (T4): the major hormone produced by the thyroid gland. T4 gets converted to the active hormone T3 in various tissues in the body.

TSH: thyroid stimulating hormone — produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.



HYPOTHYROIDISM

Keeping thyroid levels in target may help prevent heart failure

BACKGROUND

Hypothyroidism is a common condition in which the thyroid gland does not produce enough thyroid hormone. It is treated with thyroid hormone replacement, called levothyroxine, to replace the hormone the body can no longer produce. Doctors monitor thyroid-stimulating hormone (TSH) levels to determine whether a patient is receiving the appropriate dose of thyroid hormone. A high TSH level generally indicates too low a dose of levothyroxine, whereas a low TSH level suggests the levothyroxine dose may be too high. Because hypothyroidism is usually a lifelong condition, most patients require regular TSH monitoring and periodic adjustments to their medication.

Maintaining TSH within the recommended range is important for several reasons. Appropriate thyroid hormone replacement helps relieve hypothyroid symptoms, including fatigue, weight gain, and constipation. Thyroid hormone also plays a critical role in heart health by affecting heart rate, blood pressure, and the heart's ability to beat effectively. When that happens, it can cause heart failure. As a result, the body may not receive enough blood and oxygen, leading to symptoms such as shortness of breath, fatigue, and fluid retention. Both too much and too little thyroid hormone, even when mild, can adversely affect heart function.

Studies have shown that many patients taking levothyroxine have TSH levels outside the recommended target range, indicating that both too much and too little levothyroxine remains common in clinical practice. Given the important effects of thyroid hormone on the cardiovascular system, the authors sought to determine whether patients with high or low TSH levels were at increased risk of heart failure.

THE FULL ARTICLE TITLE

Evron J, et al. Association between over- and under-replacement with thyroid hormone and incident heart failure. *J Clin Endocrinol Metab* 2026;111(6):e1634–e1642.

SUMMARY OF THE STUDY

The authors reviewed the medical records of 641,504 adults in the U.S. Veterans Health Administration who started thyroid hormone treatment between 2004 and 2017. Patients with thyroid cancer and those taking medications known to affect thyroid function (lithium or amiodarone) were excluded, as were patients with a prior diagnosis of heart failure. During follow-up, 12.7% of patients developed heart failure. Patients whose thyroid hormone replacement kept their TSH level within the normal range had the lowest risk. In contrast, patients who were undertreated (high TSH levels) or overtreated (very low TSH levels) had a higher risk of developing heart failure, even after accounting for other important risk factors such as age, sex, and smoking.

The strongest association occurred in patients with elevated TSH levels, suggesting undertreated hypothyroidism. Heart failure risk rose progressively as TSH increased above the normal range. Compared with patients whose TSH remained within the target range, those with TSH levels above 5.5 mIU/L were nearly six times more likely to develop heart failure over the next five years. Very low TSH levels due to overtreatment were also associated with increased heart failure risk, although the increase was smaller than with undertreatment.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that some patients with hypothyroidism who are overtreated (TSH too low) or undertreated (TSH too high) appear to have an increasing risk of heart failure. This reinforces the need to ensure TSH levels stay in the normal range during treatment of hypothyroidism. Once treatment for hypothyroidism begins, regular blood tests and appropriate dose adjustments are important to keep TSH levels within the target range.

— Philip Segal, MD



HYPOTHYROIDISM, continued

ATA RESOURCES

Thyroid Hormone Treatment: <https://www.thyroid.org/thyroid-hormone-treatment/>

Hypothyroidism (Underactive): <https://www.thyroid.org/hypothyroidism/>

ABBREVIATIONS & DEFINITIONS

Hypothyroidism: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

Thyroid hormone therapy: patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to normal. Replacement therapy means the goal is a TSH in the normal range and is the usual therapy.

Heart failure: a serious condition caused by damage to the heart muscle that impairs the heart's ability to fill with or pump blood effectively. As a result, the body may not receive enough blood and oxygen, leading to symptoms such as shortness of breath, fatigue, and fluid retention.



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www.gdatf.org

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info@ngdf.org

Light of Life Foundation

www.checkyourneck.com

info@checkyourneck.com

MCT8 – AHDS Foundation

mct8.info

Contact@mct8.info

Thyca: Thyroid Cancer Survivors' Association, Inc.

www.thyca.org

(Toll-free): 877-588-7904

thyca@thyca.org

Thyroid Federation International

www.thyroid-federation.org

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