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Miyamura K et al. Impact of minimal dose strategy before anti-thyroid drug discontinuation on relapse risk in Graves' disease. *J Clin Endocrinol Metab.* Epub 2025 Aug 1;dgaf433. doi: 10.1210/clinem/dgaf433. PMID: 40746193.

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Do statins affect the onset of thyroid eye disease in patients with Graves' disease?

Thyroid eye disease (TED) develops in 25 to 40% of patients with Graves' disease, particularly during the first 1 to 2 years following the onset of hyperthyroidism. Statins are widely prescribed drugs that lower cholesterol that also have anti-inflammatory effects and may be able to interfere with the immune response. This study aimed to determine whether starting statins early or whether the start is delayed affects the risk of developing TED in a large nationwide group.

Chou YT et al. Early statin use following diagnosis of Graves' disease is associated with a reduced risk of moderate-to-severe Graves' orbitopathy in middle-aged adults: evidence from a nationwide Taiwanese cohort. *Thyroid.* 2025;35(9):1052-1062;

HYPERTHYROIDISM7

Do patients need to have normal thyroid hormone levels before undergoing surgery for hyperthyroidism?

Ideally, patients with hyperthyroidism should have normal thyroid hormone levels before surgery to minimize risk of surgical complications and worsening of hyperthyroidism due to manipulation of the thyroid gland during surgery. However, in cases of severe hyperthyroidism needing urgent surgery or in cases where patients cannot take antithyroid medications due to allergy or side effects, surgery may need to be done when thyroid hormone levels are still high. The authors of this study evaluated the currently available studies comparing potential differences in surgical complications in patients with hyperthyroidism who had normal thyroid levels and those who still had high thyroid levels before thyroidectomy for hyperthyroidism.

Lincango EP et al. Safety of surgery for managing hyperthyroidism in patients with or without preoperative euthyroidism: a systematic review and meta-analysis. *Endocrine.* Epub 2025 Jul 14; doi: 10.1007/s12020-025-04340-6. PMID: 40658187.

THYROID CANCER.....9

Less thyroid hormone suppression may be safe for most people with thyroid cancer

Years ago, most thyroid cancer patients were treated with thyroid hormone suppression after surgery. Keeping TSH levels low may help prevent the cancer from coming back, but too much thyroid hormone can cause heart problems, bone loss, and other side effects. This study looked at whether stricter TSH suppression really lowers the chance of thyroid cancer coming back.

Cho YY et al. TSH cut-offs and recurrence risk in differentiated thyroid carcinomas: a systematic review and meta-analysis. *J Clin Endocrinol Metab.* 2025. Epub 2025 Aug 14;dgaf463; doi: 10.1210/clinem/dgaf463. PMID: 40811629.

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Does hypothyroidism in the mother during pregnancy affect the baby's growth?

Undiagnosed or under-treated hypothyroidism in the mother during pregnancy has been associated with impaired growth of the baby. Placental weight is a marker of placental function and is positively correlated with birth weight. This study was done to identify the relationship between hypothyroidism in the mother, birth weight and placental function, using placental weight as a marker of placental function.

Lundgaard MH et al. Birth weight and placental weight in children born to mothers with hypothyroidism. *Eur Thyroid J* 2025;14(4):e250111; doi: 10.1530/ETJ-25-0111. PMID: 40570047.

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Are all thyroid ultrasounds necessary?

A thyroid ultrasound is often the test ordered that identifies a suspicious thyroid nodule, which eventually leads to a thyroid cancer diagnosis. However, inappropriate thyroid ultrasounds, meaning those ordered without a valid reason, can lead to unnecessary biopsies and surgeries. The current study evaluates the frequency of and factors associated with, as well as the overall impact of, inappropriate thyroid ultrasounds.

Larios F, et al. Factors and outcomes of inappropriate thyroid ultrasonography. *JAMA Otolaryngol Head Neck Surg* 2025;151(9):843-852

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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 [@thyroidfriends](https://twitter.com/thyroidfriends) and on [Facebook](https://www.facebook.com/thyroidfriends). 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.

November is **Hyperthyroidism Awareness Month**.

In this issue, the studies ask the following questions:

- Does the final dose before stopping methimazole affect remission in Graves' disease?
- Do statins affect the onset of thyroid eye disease in patients with Graves' disease?
- Do patients need to have normal thyroid hormone levels before undergoing surgery for hyperthyroidism?
- Should all thyroid cancer patients be treated with thyroid hormone suppression after surgery?
- Does hypothyroidism in the mother during pregnancy affect the baby's growth?
- Are all thyroid ultrasounds necessary?

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



GRAVES' DISEASE

Does the final dose before stopping methimazole affect remission in Graves' disease?

BACKGROUND

Graves' disease is the most common cause of hyperthyroidism in the United States. Graves' disease is caused by the body making antibodies that attack the thyroid and turn it on, causing the thyroid gland to make too much thyroid hormone. There are three main treatment options for Graves' disease. Two of these, surgery and radioactive iodine therapy, are referred to as definitive therapy as they destroy the thyroid and permanently stop the overactive thyroid function. Antithyroid drugs, such as methimazole, control thyroid hormone production while keeping the thyroid gland functioning. The goal with antithyroid drug therapy is to have the Graves' disease go into remission. Most guidelines recommend treating with methimazole for at least 12 – 18 months before stopping and assessing for a remission. If thyroid function doesn't stay normal, patients often proceed to radioactive iodine therapy or surgery.

Past research has shown that relapse of Graves' disease is more likely in patients who are younger, smoke tobacco, have large thyroid glands, severe hyperthyroidism, or high levels of thyroid-stimulating antibodies. Some recent studies suggest that longer treatment with methimazole may be associated with longer-term remission, but it has been unclear whether the dose of methimazole at the time of stopping affects relapse risk. The goal of this study was to determine if the final dose of methimazole before stopping had any effect on the rate of remission of Graves' disease.

THE FULL ARTICLE TITLE

Miyamura K et al. Impact of minimal dose strategy before anti-thyroid drug discontinuation on relapse risk in Graves' disease. *J Clin Endocrinol Metab*. Epub 2025 Aug 1;dgaf433. doi: 10.1210/clinem/dgaf433. PMID: 40746193.

SUMMARY OF THE STUDY

This large study was done in Japan, where doctors often continue low-dose methimazole for several years. Japan also has 1.25 mg methimazole tablets, allowing for a more

gradual taper (the lowest available tablet strength elsewhere is typically 2.5 mg). Researchers reviewed records from more than 4000 people treated with methimazole for Graves' disease at a single institution between 2008 and 2024. They included patients who had reached a stable low dose of methimazole, 2.5 mg or less per day, for at least 3 months before stopping treatment, and who were followed for at least 6 months afterward. Patients whose thyroid was removed or who had radioactive iodine or pregnancy were excluded. Relapse was defined as a need to restart methimazole within 12 months after stopping it. Researchers also collected information on patient age, sex, smoking status, thyroid size, total duration of methimazole treatment, duration on minimal dose of methimazole, and thyroid stimulating antibody levels at treatment end.

They found 5081 patients who had started methimazole for Graves' disease between 2008 and 2024. In the final analysis, 4352 patients were eligible for the study, 82% were female, 67% were older than 40 years, and 16% were tobacco smokers. On average, patients were treated with methimazole for 2.7 years. Most patients (82%) were taking the least amount of methimazole they could take to keep the thyroid hormone levels normal for at least 6 months before stopping the medication. Patients who were taking lower final dose of methimazole had been on treatment longer – about 3.8-4.8 years for those on 1.25 mg/day or less, compared with 2.5 years for those on 2.5 mg/day. Thyroid stimulating antibody levels were undetectable in 49% of patients when they stopped the medication. One year after stopping methimazole, 13% of patients had relapsed. People whose antibodies became undetectable before stopping the medication were less likely to relapse. Those who maintained normal thyroid levels on smaller final doses also had lower relapse rates.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The researchers concluded that patients who had normal thyroid function on stable, very low doses of



GRAVES' DISEASE, continued

methimazole before stopping treatment may have a better chance of long-term remission, and that the maintenance dose may be considered when deciding to stop the medication. However, the study does not prove that lowering the dose itself or continuing treatment longer directly prevents relapse.

For some patients, especially those who want to delay or avoid radioactive iodine or surgery, continuing methimazole at a small daily dose for a longer time under medical supervision might be a good option.

Serious side effects are rare with low doses and usually happen earlier in treatment. Patients should discuss with their healthcare team whether this approach is right for them and how to balance benefits and risks. Having smaller-dose tablets available everywhere could also help physicians safely adjust treatment for each patient. In the meantime, future studies and new guidelines will help clarify whether the length of treatment, the final dose, or other factors matter most in keeping thyroid hormone levels normal after treatment.

— Ebru Sulanc, MD

ATA RESOURCES

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

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

ABBREVIATIONS & DEFINITIONS

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 Graves' disease causes it.

Thyroid stimulating antibodies: 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.



GRAVES' DISEASE

Do statins affect the onset of thyroid eye disease in patients with Graves' disease?

BACKGROUND

Graves' disease is the most common cause of hyperthyroidism in the United States. Graves' disease is caused by the body making antibodies that attack the thyroid and turn it on, causing the thyroid gland to make too much thyroid hormone. These antibodies can also affect the eyes, causing inflammation of the eyes, eye muscles and the surrounding tissues. Symptoms include dry eyes, red eyes, bulging of the eyes and double vision. This is known as thyroid eye disease (TED). TED develops in 25 to 40% of patients with Graves' disease, particularly during the first 1 to 2 years following the onset of the hyperthyroidism. Until recently, TED has been very difficult to treat, as usually anti-inflammatory medications were not that effective. Currently, there are several medications that can help remove the antibodies and markedly improve symptoms of TED.

Statins are widely prescribed drugs that lower cholesterol. Multiple studies have shown that statins have anti-inflammatory effects and may be able to interfere with the immune response. Because of these properties, prior studies have suggested that they may reduce the risk of developing TED. However, it is unknown whether the timing of starting statin drugs after the onset of Graves' disease affects this association. This study aimed to determine whether starting statins early or whether the start is delayed affects the risk of developing TED in a large nationwide group.

THE FULL ARTICLE TITLE

Chou YT et al. Early statin use following diagnosis of Graves' disease is associated with a reduced risk of moderate-to-severe Graves' orbitopathy in middle-aged adults: evidence from a nationwide Taiwanese cohort. *Thyroid*. 2025;35(9):1052-1062;

SUMMARY OF THE STUDY

This study used Taiwan's National Health Insurance Research Database (2009–2019). Adults over 40 years

newly diagnosed with Graves' disease were included, while patients with prior lipid-lowering therapy, preexisting TED, or insufficient follow-up were excluded. Statin users were defined as those prescribed statins ≥ 2 times over 6 months. A control group included nonusers of statins. Participants were stratified into three groups based on timing of starting the statin: within 1 year (group A), 1 to 2 years (group B), and 2–3 years (group C) after Graves' disease diagnosis. TED was classified as mild or moderate to severe based on treatment received.

The study included 47,424 Graves' disease patients (4649 statin users and 18,584 nonusers in group A, 3060 users and 12,349 nonusers in group B, and 1752 users and 7030 nonusers in group C). Over an average follow-up of 4 to 5 years, group A statin users had a 34% lower risk of total TED and a 61% lower risk of moderate-to-severe TED compared with nonusers. No significant reduction was observed for mild TED. Importantly, no protective effect was observed in group B or C, indicating that timing of beginning statin drugs was crucial. The benefit was most pronounced in middle-aged patients, nonsmokers, and those without prior radioiodine therapy or thyroidectomy. Statin type and dose did not significantly affect outcomes.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that beginning statin drugs early, preferably within 1 year after Graves' disease diagnosis, significantly reduces the risk of moderate-to-severe TED, whereas later initiation does not. Timing, rather than statin type or dose, appears critical. This data needs to be confirmed in additional studies, but do suggest that statins are effective in preventing the onset of TED in patients with Graves' disease.

— Alan P. Farwell, MD



GRAVES' DISEASE, continued

ATA RESOURCES

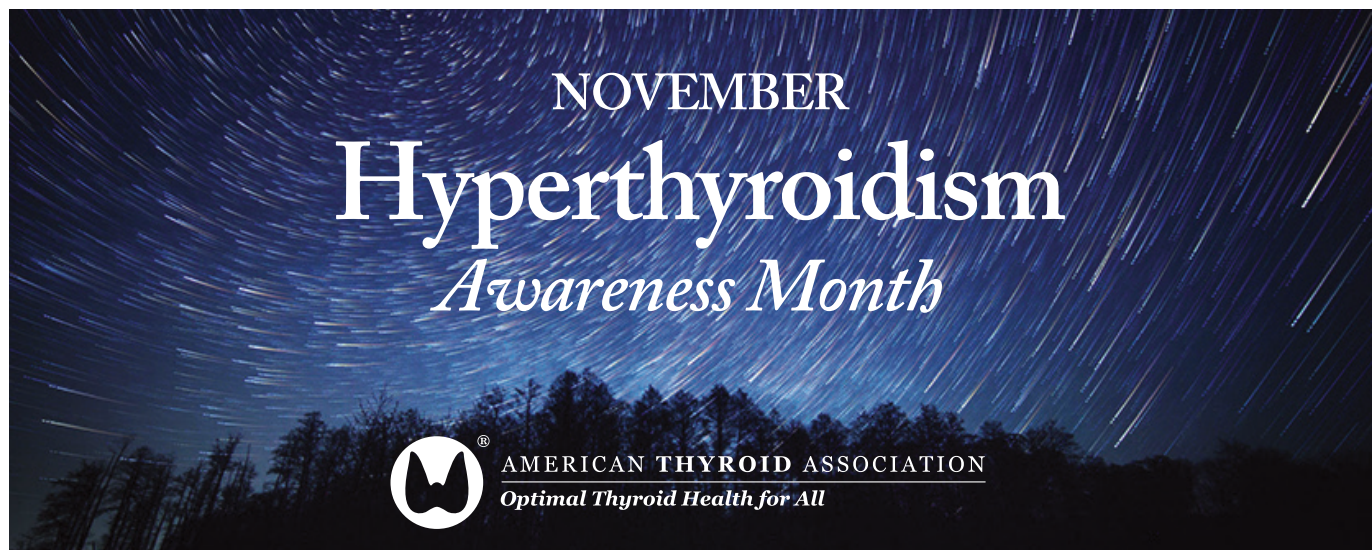
Thyroid Eye Disease: <https://www.thyroid.org/thyroid-eye-disease/>

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

ABBREVIATIONS & DEFINITIONS

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





HYPERTHYROIDISM

Do patients need to have normal thyroid hormone levels before undergoing surgery for hyperthyroidism?

BACKGROUND

Hyperthyroidism, where the thyroid gland makes too much thyroid hormone. The most common cause of hyperthyroidism is Graves' disease, an autoimmune condition where an antibody stimulating the thyroid gland leads to diffuse increase in thyroid hormone production. Other causes of hyperthyroidism include a toxic multinodular goiter or toxic adenoma, where one or more thyroid nodules become overactive. Symptoms of hyperthyroidism can vary depending on the severity of the disease. Severe hyperthyroidism can cause problems such as irregular heartbeat or heart failure. Rarely, it can lead to "thyroid storm" which is the most severe form of hyperthyroidism, and which requires management in an intensive care unit and can lead to death.

Thyroid surgery (thyroidectomy) is an effective treatment for hyperthyroidism, especially for toxic multinodular goiters or toxic adenomas, as these disorders do not go into remission and require long term antithyroid drug treatment. Surgery is less commonly recommended for treating Graves' disease, as this disorder can go into remission. Ideally, patients' thyroid hormone levels should be normal on antithyroid medications before surgery to minimize risk of surgical complications and worsening of hyperthyroidism due to manipulation of the thyroid gland during surgery. However, in cases of severe hyperthyroidism needing urgent surgery or in cases where patients cannot take antithyroid medications due to allergy or side effects, surgery may need to be done when thyroid hormone levels are still high.

The authors of this study evaluated the currently available studies comparing potential differences in surgical complications in patients with hyperthyroidism who had normal thyroid levels (euthyroid) and those who still had high thyroid levels (hyperthyroid) before thyroidectomy for hyperthyroidism.

THE FULL ARTICLE TITLE

Lincango EP et al Safety of surgery for managing hyperthyroidism in patients with or without preoperative euthyroidism: a systematic review and meta-analysis. Endocrine. Epub 2025 Jul 14; doi: 10.1007/s12020-025-04340-6. PMID: 40658187.

SUMMARY OF THE STUDY

The authors included 1336 patients from 6 studies to perform a meta-analysis, where the data from several studies were combined to better evaluate a common question. Thyroidectomy was performed because of inadequate control of hyperthyroidism with medication in most cases. About 1/3rd of patients did not have normal thyroid hormone levels at the time of thyroidectomy.

Surgical complications studied included hypocalcemia (low calcium levels that can occur due to damage to parathyroid glands), hematoma (collection of blood) that required surgical drainage, and recurrent laryngeal nerve injury (a nerve that passes next to the thyroid gland whose damage can lead to voice problems). There were no differences in the rates of surgical complications between euthyroid patients and hyperthyroid patients. There were also no significant differences in length of hospital stay or surgery time between the two groups. Thyroid storm occurred in only one hyperthyroid patient and none in euthyroid patients.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The authors concluded that not having normal thyroid hormone levels before thyroidectomy for hyperthyroidism did not lead to a clear increase in surgical complications. The findings of this study support the safety of thyroidectomy in emergency settings when achieving normal thyroid hormone levels may take too long or be difficult.



HYPERTHYROIDISM, continued

It should be noted that only two studies contributed most of the data and that none of the studies included patients who were not completely untreated, as they were just not fully controlled.

Having normal thyroid hormone levels prior to thyroidectomy appear to have benefit, such as decrease in bleeding, even though the rates were not different enough to reach the statistical significance. It is also important to keep in

mind that the safety of thyroid surgery is known to vary with surgical expertise. A high-volume thyroid surgeon who performs many thyroidectomies routinely would be able to handle potential complications would have fewer surgical complications than a low-volume thyroid surgeon. Therefore, it would be safest for patient to achieve normal thyroid hormone levels before surgery, but surgery may be performed safely in cases of emergency or urgent need.

— Sun Y. Lee, MD

ATA RESOURCES

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

Thyroid Surgery: <https://www.thyroid.org/thyroid-surgery/>

ABBREVIATIONS & DEFINITIONS

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.

Toxic nodular goiter: characterized by one or more nodules or lumps in the thyroid that may gradually grow and increase their activity so that the total output of thyroid hormone in the blood is greater than normal.

Euthyroid: a condition where the thyroid gland as working normally and producing normal levels of thyroid hormone.

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*.

Meta-analysis: a study that combines and analyzes the data from several other studies addressing the same research hypothesis.

Hypocalcemia: low calcium levels in the blood, a complication from thyroid surgery that is usually short-term and relatively easily treated with calcium pills. If left untreated, low calcium may be associated with muscle twitching or cramping and, if severe, can cause seizures and/or heart problems.



THYROID CANCER

Less thyroid hormone suppression may be safe for most people with thyroid cancer

BACKGROUND

Thyroid cancer is common. Fortunately, the prognosis is excellent as we have very effective treatments, including surgery, radioactive iodine therapy and thyroid hormone suppression. Years ago, most patients got all 3 of these treatments. However, as more studies have come out allowing better identification of patients that are at low risk of the thyroid cancer, these treatment options have changed. Now lobectomy (remove of the lobe that contains the cancer) is becoming more common as opposed to removal of entire thyroid (total thyroidectomy). Radioactive iodine therapy is now being reserved for patients at highest risk for thyroid cancer recurrence. This paper now addresses the need for thyroid hormone suppression after surgery.

Thyroid hormone suppression means adjusting the thyroid hormone dose to keep TSH levels very low. Keeping TSH levels low may help prevent the cancer from coming back, but too much thyroid hormone can cause heart problems, bone loss, and other side effects. Doctors have debated how low TSH should be for different risk levels of thyroid cancer. This study looked at whether stricter TSH suppression really lowers the chance of thyroid cancer coming back.

FULL ARTICLE TITLE:

Cho YY et al. TSH cut-offs and recurrence risk in differentiated thyroid carcinomas: a systematic review and meta-analysis. *J Clin Endocrinol Metab*. 2025. Epub 2025 Aug 14;dgaf463; doi: 10.1210/clinem/dgaf463. PMID: 40811629.

SUMMARY OF THE STUDY

Researchers looked at 9 studies with over 5,000 people who had thyroid cancer. They compared cancer recurrence

rates in patients who kept their TSH levels very low (<0.1), somewhat low ($0.1-0.5$), or closer to normal (up to 2.0). They also looked at whether patients were low-, medium-, or high-risk for the cancer returning, and whether they had cancer that had spread to other parts of the body (metastases).

In the primary analysis, cancer recurrence risk did not differ significantly at any TSH cutoff. When stratified by ATA risk, no significant differences were observed for low-risk or high-risk patients. Data for intermediate-risk patients were too limited for analysis, with only a single study available. Notably, patients with spread of the cancer outside of the neck had significantly higher recurrence risk when TSH was maintained at ≥ 0.1 mIU/L versus at <0.1 mIU/L.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The study supports new 2025 guidelines that say most people with thyroid cancer do not need very strong TSH suppression for life. Instead, doctors can adjust thyroid hormone doses based on how patients respond to treatment and how they are feeling. This approach may help prevent side effects while keeping the cancer from returning.

Keeping TSH extremely low is not necessary for most thyroid cancer survivors. Only people with cancer that has spread far from the thyroid might still need stronger suppression. Patients can feel reassured that their treatment can be personalized. Many people can take less thyroid hormone and still stay safe, reducing risks to their heart, bones, and quality of life.

— Maria Brito, MD, ECNU



THYROID CANCER, continued

ATA RESOURCES

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

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

ABBREVIATIONS & DEFINITIONS

TSH (Thyroid Stimulating Hormone): A hormone that controls how much thyroid hormone your body makes.

TSH suppression: Taking thyroid hormone medicine to keep TSH very low to prevent cancer growth.

Metastases: When cancer spreads to other parts of the body.

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*.

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*).



THYROID AND PREGNANCY

Does hypothyroidism in the mother during pregnancy affect the baby's growth?

BACKGROUND

Thyroid hormone is extremely important in the normal development of a baby during pregnancy. This is most important during the 1st trimester, as the baby gets their thyroid hormone from the mother as their thyroid is not yet developed. Once the baby's thyroid starts working, the thyroid hormone from the mother becomes less important. If the baby's thyroid does not develop normally (congenital hypothyroidism), the baby requires thyroid hormone from the mother throughout pregnancy.

Hypothyroidism is common, especially in women, which means that hypothyroidism in the mother during pregnancy is also common. Undiagnosed or under-treated hypothyroidism in the mother during pregnancy has been associated with impaired growth of the baby and both small- and large-for-gestational-age (SGA and LGA, respectively) in newborns. We also know that birth weight is an important predictor of both short- and long-term health of the baby and newborn, and both SGA and LGA have been associated with adverse pregnancy and newborn outcomes. There are multiple factors contributing to birth weight, including function. The placenta is the main connection between the mother and the baby. Placental weight is a marker of placental function and is positively correlated with birth weight.

This study was done to identify the relationship between hypothyroidism in the mother, birth weight and placental function, using placental weight as a marker of placental function.

THE FULL ARTICLE TITLE

Lundgaard MH et al. Birth weight and placental weight in children born to mothers with hypothyroidism. *Eur Thyroid J* 2025;14(4):e250111; doi: 10.1530/ETJ-25-0111. PMID: 40570047.

SUMMARY OF THE STUDY

This study was an analysis using large national registers in Denmark. All single live births from 2004 – 2015 were identified using the Danish Medical Birth Register and information on age, # of prior pregnancies, pre-pregnancy weight (body mass index, BMI), and smoking in pregnancy, the pregnancy outcome, last menstrual period, gestational age at birth, birth year, birth weight and sex of the child, and placental weight was obtained. This was correlated with hospital information to identify mothers with diagnosis of hypothyroidism before or during pregnancy and with prescription registries for information on redeemed medications during the same time frame. A total of 694,734 single live births were identified, of which 98% included information on placental weight. In addition, a subset of births from a northern region of Denmark had information on maternal TSH and free thyroxine at weeks 4-20 (average week 10).

When hypothyroidism was diagnosed during pregnancy, there was a slightly higher risk of SGA (12.1% vs 9.1% in pregnancies where hypothyroidism was known prior), and an increased risk of LGA. When hypothyroidism was known prior to pregnancy but went untreated (as defined by absence of prescriptions being refilled during that time frame), the risk of SGA was also higher than when hypothyroidism was treated (11.6% vs 8.6%). In the small subgroup with thyroid function levels available, higher maternal TSH and higher maternal FT4 were both associated with lower birth weights. However, there were no differences in placental weight in any of these groups.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

While this study confirmed the relationship of hypothyroidism with SGA births, it did not identify placental weight as a mediator between thyroid status and fetal growth. This suggests there are other factors affecting



THYROID AND PREGNANCY, continued

placental function independent of placental weight. Since there was not universal screening during the years of this study, we don't know if hypothyroidism was missed in the control patients, thus confounding the comparisons. In fact, the prevalence of hypothyroidism in this study (1.5%) was lower than that identified in other studies (4-6%). In addition, the differences in outcome when hypothyroidism was treated or not could be confounded by other socioeconomic factors such as nutrition, iodine status or access to prenatal care.

For patients, this study still confirms the importance of treating hypothyroidism during pregnancy. However, further studies are needed to definitively answer questions regarding treatment doses and timing and their relationship to pregnancy and fetal outcomes.

— Marjorie Safran, MD

ATA RESOURCES

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

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

ABBREVIATIONS & DEFINITIONS

Euthyroid: a condition where the thyroid gland is working normally and producing normal levels of thyroid hormone.

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

Placenta: A part of the uterus that supplies blood and nutrients to the developing baby during pregnancy. It forms both a barrier and a connection between the mother and the baby.



THYROID NODULES

Are all thyroid ultrasounds necessary?

BACKGROUND

Over the past 3 decades, the number of people diagnosed with thyroid cancer has tripled. Most of this increase is due to finding small, slow-growing, non-aggressive cancers, especially papillary thyroid carcinoma. A thyroid ultrasound is often the test ordered that identifies a suspicious thyroid nodule, which eventually leads to a thyroid cancer diagnosis. This raises an important question: who should actually get a thyroid ultrasound? In 1999, South Korea started a national cancer screening program providing neck ultrasounds even for people who had no symptoms. Over the next 12 years, the number of thyroid cancer cases in Korea increased 15-fold. However, most of these cancers were small and were not dangerous and likely didn't need to be detected or treated at all.

Consequently, many professional organizations, including the American Thyroid Association, advise against ordering a neck ultrasound for asymptomatic patients without physical exam findings of an abnormal thyroid gland. Instead, thyroid ultrasound should be performed when there is a clear medical indication — such as to evaluate a thyroid nodule that can be felt on physical exam. Inappropriate thyroid ultrasounds, meaning those ordered without a valid reason, can lead to unnecessary biopsies and surgeries. While detecting cancer might seem helpful, thyroid surgery itself carries risks. It can lead to permanent hypothyroidism, infections, hoarse voice, and damage to the parathyroid glands (hypoparathyroidism). In many cases, doing the ultrasound in the first place led to complications that could have been avoided.

The current study evaluates the frequency of and factors associated with, as well as the overall impact of, inappropriate thyroid ultrasounds.

THE FULL ARTICLE TITLE

Larios F, et al. Factors and outcomes of inappropriate thyroid ultrasonography. *JAMA Otolaryngol Head Neck Surg* 2025;151(9):843-852

SUMMARY OF THE STUDY

Researchers studied thyroid ultrasound results from 11,442 adult patients who had their first scan between January 1, 2017, and December 30, 2021, at 4 Mayo Clinic sites. They excluded anyone who had a known thyroid nodule or cancer, previous thyroid surgery, or a thyroid biopsy. Using artificial intelligence (AI), they reviewed the reasons for requesting the ultrasound and classified each as either appropriate or inappropriate. An ultrasound was considered inappropriate if it wasn't a) ordered to check a lump found during a physical exam, b) to investigate for symptoms likely to be caused by thyroid nodules (i.e., pain, hoarseness, trouble swallowing), c) ordered because the patient had a personal or family history of hereditary thyroid cancer, or d) to investigate hyperparathyroidism.

Out of all the ultrasounds, 866 (7.6%) were considered inappropriate. These were more likely to be ordered for younger patients (ages 18–54), those with hyperthyroidism, and when the doctor was not an endocrinologist, especially in family medicine or oncology/hematology. Inappropriate scans were also more common when patients requested them through an online health portal.

Patients who had thyroid ultrasounds for inappropriate reasons were less likely to have thyroid nodules found, need a biopsy, or be diagnosed with thyroid cancer. The few thyroid cancers that were discovered by an inappropriate ultrasound were usually small and unlikely to cause serious health problems. Thus, skipping unnecessary thyroid ultrasounds is safe and does not increase the risk of missing dangerous or fast-growing thyroid cancers.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study identifies situations where thyroid ultrasound is most often misused, i.e. in younger patients, in those with hyperthyroidism, when the test is requested by a doctor who isn't an endocrinologist, or when patients request



THYROID NODULES, continued

the scan themselves. Experts in quality improvement can use this information to design targeted interventions that reduce unnecessary testing. More importantly, avoiding inappropriate thyroid ultrasound does not harm patients.

Physicians can feel confident offering a thyroid ultrasound only when it's truly indicated, ensuring patients receive the proper care without unnecessary tests.

— Philip Segal, MD

ATA RESOURCES

Thyroid Nodules: <https://www.thyroid.org/thyroid-nodules/>

ABBREVIATIONS & DEFINITIONS

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.

Thyroid nodule: an abnormal growth of thyroid cells that forms a lump within the thyroid. While most thyroid nodules are non-cancerous (Benign), ~5% are cancerous.

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.

Hyperparathyroidism: A condition where the parathyroid glands produce too much parathyroid hormone, causing high calcium levels in the blood and potential problems with bones, kidneys, and overall health.



Clinical Thyroidology® for the Public

ATA® Alliance for Thyroid Patient Education

GOAL The goal of our organizations is to provide accurate and reliable information for patients about the diagnosis, evaluation and treatment of thyroid diseases. We look forward to future collaborations and continuing to work together toward the improvement of thyroid education and resources for patients.



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thyroid@thyroid.org

Bite Me Cancer

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info@bitemecancer.org

Graves' Disease and Thyroid Foundation

www.gdatf.org

(Toll-free): 877-643-3123

info@ngdf.org

Light of Life Foundation

www.checkyourneck.com

info@checkyourneck.com

MCT8 – AHDS Foundation

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Thyca: Thyroid Cancer Survivors' Association, Inc.

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Thyroid Federation International

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