Volume 19 | Issue 8 | August 2026

Clinical Thyroidology® for the Public

AMERICAN THYROID ASSOCIATION®
Optimal Thyroid Health for All

Researchers have long observed that thyroid blood test results, particularly TSH and free T4 (FT4), may change with age. However, it remains unclear the magnitude of this change and, more importantly, how much of it reflects normal aging and how much represents true thyroid disease. This study aims to understand how thyroid levels change with aging and whether these changes are associated with true thyroid disease and/or adverse health outcomes.

Xu Y, et al. Thyroid Studies Collaboration. Natural history of thyroid function in ageing: an individual participant data analysis of 137 488 participants from 31 prospective cohort studies. Lancet Diabetes Endocrinol 2026;14(6):485-497

Subclinical hypothyroidism affects about 15–20% of people over age 60 and is frequently treated with levothyroxine. Studies have found that levothyroxine often does not improve common symptoms such as tiredness or high cholesterol in these patients. This study looked at whether older adults could safely reduce or stop taking levothyroxine if done so in a planned and closely monitored way.

Ravensberg J et al. Discontinuation of levothyroxine in adults aged 60 years or older. JAMA. Epub 2026 Apr 6:e262864; doi: 10.1001/jama.2026.2864. PMID: 41941226.

Immune checkpoint inhibitors (ICIs) are very effective in certain cancer treatment. However, ICIs have also been associated thyroid hormones abnormalities occurring in up to 20% of patients receiving treatment. The current study was conducted to evaluate the potential relationship between history of Graves' disease and development of thyroid problems among patients treated with ICIs.

Suzuki K, et al. Increased risk of hyperthyroidism induced by immune checkpoint inhibitors in patients with existing or prior Graves' disease: a nested prospective cohort study with propensity score matching. Front Endocrinol (Lausanne) 2025;16:1701500; doi: 10.3389/fendo.2025.1701500. PMID: 41404503

Antithyroid drugs (ATDs) are commonly used in patients with Graves' disease. TRAb levels are related to the risk of recurrence once ATD has been stopped. The goal of this study is to look into recurrence risk of Graves' disease in 10 year span and determine potential risk factors for relapse.

Tun NNZ, et al. Ten year outcome of anti-thyroid drug treatment for first episode Graves' thyrotoxicosis: the predictive importance of TRAb. Clin Endocrinol (Oxf) 2025;103(5):612-618; doi: 10.1111/cen.70003.

Several options to treat Graves' disease exist, including long term treatment with anti-thyroid medications, surgery to remove the thyroid and radioactive iodine therapy to destroy the thyroid. Recently, a technique known as radiofrequency ablation (RFA) has been used to treat hyperthyroidism in recurrent Graves' disease. In this study, the researchers evaluated the quality of life of Graves' disease patients after treatment with surgery, radioactive iodine therapy or RFA.

Fung MHM, et al. Comparing the health-related quality of life at two years after successful treatment of relapsed Graves' disease with radiofrequency ablation, surgery, or radioiodine. World J Surg 49(11), 3142-3151; doi: 10.1002/wjs.70035. PMID: 40874814

Radiofrequency ablation (RFA) is a non-surgical option to treat benign nodules, including toxic nodules. Often, multiple RFA treatments are needed to shrink and destroy the nodule. This study looks at the short-term and long-term results after one RFA treatment in patients with thyroid nodules.

Dobnig H, Amrein K. Mid- to long-term outcomes after single radiofrequency ablation of nontoxic and toxic thyroid nodules. J Clin Endocrinol Metab 2026;111(5):1397–1407; doi: 10.1210/clinem/dgaf611. PMID: 41192411.

AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 19 | Issue 8 | August 2026

Clinical Thyroidology® for the Public

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 and on Facebook. 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.

August is Thyroid Disease and Pregnancy Awareness Month.

In this issue, the studies ask the following questions:

- Do TSH levels in older adults change with age?
- Can I stop my levothyroxine?
- Can my cancer treatment cause my Graves' disease to relapse?
- Can TRAb levels predict long-term relapse risk after anti-thyroid drug therapy for Graves' disease?
- Can RFA cure my Graves' disease?
- Can my thyroid nodule be destroyed by only 1 RFA treatment?

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

AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 19 | Issue 8 | August 2026

Clinical Thyroidology® for the Public

THYROID FUNCTION AND AGING

Do TSH levels in older adults change with age?

BACKGROUND

Thyroid-stimulating hormone (TSH) is produced by the pituitary, a small gland at the base of the brain that helps regulate many of the body's hormone systems. TSH regulates the thyroid gland, stimulating it to grow and produce the thyroid hormones T4 (thyroxine) and T3 (triiodothyronine). An abnormal TSH blood level is often the first sign of a thyroid problem. A high TSH level usually indicates that the thyroid is not producing enough thyroid hormone, a condition known as hypothyroidism. In contrast, a low TSH level usually indicates that the thyroid is producing too much thyroid hormone, a condition known as hyperthyroidism.

Researchers have long observed that thyroid blood test results, particularly TSH and free T4 (FT4), may change with age. For example, TSH levels often rise modestly in older adults. However, it remains unclear the magnitude of this change and, more importantly, how much of it reflects normal aging and how much represents true thyroid disease. This uncertainty can make treatment decisions challenging. For example, clinicians may be unsure whether an older adult with a mildly elevated TSH level should be treated with thyroid hormone replacement for hypothyroidism.

This study aims to understand how thyroid levels change with aging and whether these changes are associated with true thyroid disease and/or adverse health outcomes.

THE FULL ARTICLE TITLE

Xu Y, et al. Thyroid Studies Collaboration. Natural history of thyroid function in ageing: an individual participant data analysis of 137 488 participants from 31 prospective cohort studies. Lancet Diabetes Endocrinol 2026;14(6):485-497

SUMMARY OF THE STUDY

Researchers evaulated results from 137,488 adults across 31 population-based groups in Europe and the United States that included repeated measurements of TSH and free T4 (FT4). Individuals with known thyroid disease, those taking thyroid medications, and pregnant individuals were excluded. The investigators examined both data comparing people of different ages at a single point in time and data tracking changes within the same individuals over time. They also studied the relationship between changes in thyroid function and death.

Overall, thyroid function remained stable with aging. Most individuals showed little change in their TSH or FT4 levels over time. Although TSH levels tended to rise with age, particularly after age 65, the increase was small. Across an entire lifetime, average TSH levels increased by less than 1 mIU/L—about 0.6 to 1.0 mIU/L depending on sex and iodine intake—numbers that represent only minor changes. In other words, aging was associated with only subtle shifts in thyroid function, not major changes. Lifestyle factors were also important – on average, smokers had lower TSH levels, while individuals with obesity had higher TSH levels.

Importantly, any meaningful change in an individual's TSH or FT4 over time was associated with a higher risk of death from any cause compared with people whose thyroid hormone levels remained stable.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that most adults maintain stable thyroid function as they age, and average changes in TSH are small. The findings suggest that, while small increases in TSH may be normal, significant individual changes in thyroid hormone levels over time may signal an increased risk of adverse health outcomes. A mildly elevated TSH level should neither automatically trigger treatment nor be dismissed as a normal consequence of aging. Instead, clinicians should interpret thyroid test results in the context of the individual patient and follow thyroid hormone levels over time. Monitoring trends and looking for meaningful changes from a person's usual pattern is often more helpful than relying on a single test result when distinguishing normal aging from true thyroid dysfunction.

— Phillip Segal, MD

THYROID FUNCTION AND AGING, continued

ATA THYROID BROCHURE LINKS

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

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

Older Patients and Thyroid Disease: https://www.thyroid.org/thyroid-disease-older-patient/

ABBREVIATIONS & DEFINITIONS

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.

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

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

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.

AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 19 | Issue 8 | August 2026

Clinical Thyroidology® for the Public

HYPOTHYROIDISM

Can some older adults safely stop taking levothyroxine?

BACKGROUND

Hypothyroidism is common and is diagnosed by thyroid blood tests. Overt hypothyroidism occurs when the TSH is high and the FT4 levels is low. Subclinical hypothyroidism happens when the TSH is high and the FT4 level is still normal. This condition affects about 4–10% of adults. It is more common in older adults, affecting about 15–20% of people over age 60. Hypothyroidism is treated by thyroid hormone replacement, most often with levothyroxine.

Levothyroxine remains one of the most frequently prescribed medications in the United States. Much of this increase in levothyroxine treatment likely is driven by treatment of subclinical hypothyroidism. However, research shows that many mild TSH increases in older adults are temporary and return to normal without treatment. Studies have also found that levothyroxine often does not improve common symptoms such as tiredness or high cholesterol in these patients. As a result, some people may be taking thyroid medicine without getting much benefit. Taking too much thyroid hormone can also increase the risk of atrial fibrillation (an abnormal heart rhythm) and bone loss.

This study looked at whether older adults could safely reduce or stop taking levothyroxine if done so in a planned and closely monitored way.

THE FULL ARTICLE TITLE

Ravensberg J et al. Discontinuation of levothyroxine in adults aged 60 years or older. JAMA. Epub 2026 Apr 6:e262864; doi: 10.1001/jama.2026.2864. PMID: 41941226.

SUMMARY OF THE STUDY

The study included adults age 60 and older from 58 primary care practices in the Netherlands. Participants had been taking only levothyroxine at a stable dose of 150 mcg (µg) per day or less for at least one year. Their starting TSH level had to be below 10 mIU/L. People were not included if they had previously had their thyroid removed, received radioactive iodine treatment, had radiation to the neck, or were taking medicines that affect thyroid function.

Levothyroxine doses were lowered by 12.5 to 50 mcg at least every six weeks. Before each dose reduction, blood tests checked thyroid function. The dose was lowered only if the TSH stayed below 10 mIU/L and the FT4 level remained normal. Participants also had to agree before each dose change. The goal was to see how many people could completely stop levothyroxine while keeping normal thyroid function. The study included 370 people with an average age of 70.5 years, and 80% were women.

After one year:

- About one in four participants (95 people) stopped levothyroxine completely and still had normal thyroid function.
- About one in three reduced their dose by at least 50%.
- Nearly two-thirds of people taking 50 mcg per day or less were able to successfully reduce or stop their medication.

People who lowered or stopped their medication did not report worse thyroid symptoms, more fatigue, or a lower quality of life compared with the start of the study.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The results suggest that many older adults taking levothyroxine may be able to lower their dose or stop the medication without causing harm. This may reduce the risk of side effects from taking too much thyroid hormone, such as abnormal heart rhythms and bone loss.

HYPOTHYROIDISM, continued

People taking lower doses of levothyroxine were the most likely to stop the medication completely. Even people taking higher doses were often able to safely reduce their dose.

Anyone thinking about lowering or stopping levothyroxine should work closely with their healthcare provider. The dose should be reduced slowly, with regular blood tests and monitoring for symptoms.

The study followed participants for one year. Longer studies are still needed, but the results suggest that many older adults may continue to do well after reducing or stopping levothyroxine.

— Marjorie Safran, MD

ATA THYROID BROCHURE LINKS

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

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

ABBREVIATIONS & DEFINITIONS

Overt Hypothyroidism: clear hypothyroidism an increased TSH and a decreased T4 level. All patients with overt hypothyroidism are usually treated with thyroid hormone pills.

Subclinical Hypothyroidism: a mild form of hypothyroidism where the only abnormal hormone level is an increased TSH. There is controversy as to whether this should be treated or not.

Levothyroxine (T4): the major hormone produced by the thyroid gland and available in pill form as Synthroid™, Levoxyl™, Tyrosint™ and generic preparations.

Thyroid hormone therapy: patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to normal.

AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 19 | Issue 8 | August 2026

Clinical Thyroidology® for the Public

GRAVES' DISEASE

How can immune checkpoint inhibitor therapy for cancer affect thyroid function in patients with history of Graves' disease?

BACKGROUND

Immune checkpoint inhibitors (ICIs) are a class of drugs that are very effective and increasingly used in certain cancer treatment, such as melanoma, lung cancer, kidney cancer, lymphoma, or bladder cancer. These medications work by enhancing a person's own immunity against cancer cells by blocking "off switches" on immune cells and using the patient's immune system to destroy the cancer. Development of these drugs has greatly improved cancer treatment. However, ICIs have also been associated with allowing the immune system to attack endocrine glands. The thyroid is the most common target, with thyroid hormones abnormalities occurring in up to 20% of patients receiving treatment.

The most common types of thyroid problems from ICIs are hypothyroidism (low thyroid hormone levels) and thyrotoxicosis (high thyroid hormone levels) from destructive thyroiditis (inflammation of thyroid gland leading to release of thyroid hormone). Development of hyperthyroidism (overproduction of thyroid hormone from the thyroid gland) from ICIs is rare. Risk factors for developing hypothyroidism due to Graves' disease after ICI treatment are unclear.

The current study was conducted to evaluate potential relationship between history of Graves' disease and development of thyroid problem among patients treated with ICIs.

THE FULL ARTICLE TITLE

Suzuki K, et al. Increased risk of hyperthyroidism induced by immune checkpoint inhibitors in patients with existing or prior Graves' disease: a nested prospective cohort study with propensity score matching. Front Endocrinol (Lausanne) 2025;16:1701500; doi: 10.3389/fendo.2025.1701500. PMID: 41404503

SUMMARY OF THE STUDY

A group of 19 patients with preexisting Graves' disease receiving ICI treatment between 2015 and 2024 in Japan were included in GD-ICI group. Patients in the GD-ICI group were compared with 95 patients without history of Graves' disease and receiving ICI treatment (Control 1 group) and 269 patients with Graves' disease but not receiving ICI treatment (Control 2 group). Patients in the Control 1 group had same age, sex, baseline thyroid antibody status, and the type of ICI treatment received as the patients in the GD-ICI group. Patients in Control 2 group had similar history of Graves' disease as patients in GD-ICI group. Thyroid hormone levels and thyrotropin receptor antibody (TRAb, thyroid receptor antibody that is elevated in Graves' disease) levels were monitored during ICI treatment in GD-ICI and Control 1 group. Information on Control 2 group was obtained from medical records.

Among the 19 GD-ICI patients, 13 patients had Graves' disease in remission (not taking anti-thyroid drugs) and 6 patients were taking low-dose anti-thyroid drugs. Overall, the number of patients with development of thyroid problems was similar between GD-ICI group and Control 1 group (26.3% vs 29.5%). However, TRAb-positivity was more frequent in GD-ICI group than Control 1 group (15.8% vs 0%). On the other hand, rates of destructive thyroiditis and hypothyroidism were not significantly different between GD-ICI and Control 1 groups. In GD-ICI group, only 40% of thyrotoxicosis was due to destructive thyroiditis, while 100% of thyrotoxicosis in Control 1 group were due to destructive thyroiditis. When assessing potential impact of ICI treatment on development of hyperthyroidism, patients in GD-ICI group had significantly higher rate of hyperthyroidism than Control 2 group (15.8% vs 3.7%).

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The authors of this study concluded that patients with current or prior Graves' disease have an increased risk of developing hyperthyroidism after treatment with ICIs. These data suggests that these patients may need

GRAVES' DISEASE, continued

to be carefully monitored and evaluated to determine the cause of elevated thyroid hormone levels during ICI treatment. Graves' disease may require anti-thyroid drugs while destructive thyroiditis is generally treated only for symptoms such as palpitations. Destructive thyroiditis also resolves on its own in several months. Therefore, establishing the correct cause of thyrotoxicosis is important to provide appropriate treatment. The current National Comprehensive Cancer Network guidelines recommend monitoring thyroid function tests every 4-6 weeks while patient is receiving ICI treatment. If thyrotoxicosis develops, the guidelines recommend treating palpitations and consider evaluation for Graves' disease if thyrotoxicosis persists for another 4-6 weeks. This would be a reasonable approach with referral to endocrinologists for management of hyperthyroidism if thyrotoxicosis persists on repeat testing. Particular attention can be paid to patients with preexisting autoimmune thyroid disease, as they are at a higher risk of exacerbation of their underlying autoimmunity while receiving ICI treatment.

— Sun Y. Lee, MD

ATA THYROID BROCHURE LINKS

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

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

Thyroiditis: https://www.thyroid.org/thyroiditis/

ABBREVIATIONS & DEFINITIONS

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).

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

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.

Thyroiditis: inflammation of the thyroid, most commonly cause by antibodies that attack the thyroid as seen in Hashimoto's thyroiditis and post-partum thyroiditis. It can also result from an infection in the thyroid.

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.

Antibodies: proteins that are produced by the body's immune cells that attack and destroy bacteria and viruses that cause infections. Occasionally the antibodies get confused and attack the body's own tissues, causing autoimmune disease.

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.

AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 19 | Issue 8 | August 2026

Clinical Thyroidology® for the Public

GRAVES' DISEASE

Can TRAb levels predict long-term relapse risk after anti-thyroid drug therapy for Graves' disease?

BACKGROUND

Graves' disease is an autoimmune condition in which the body produces antibodies (thyroid hormone receptor antibodies, TRAb) that mimic TSH, attacking the thyroid and causing it to secrete high levels of thyroid hormone to produce hyperthyroidism. Graves' disease is the most common type of hyperthyroidism in the United States. Several options to treat Graves' disease exist, including anti-thyroid medications, surgery and radioactive iodine therapy. Antithyroid drugs (ATDs) are commonly used in patients with Graves' disease. The goal of ATD treatment is the patient eventually going into remission and discontinuing the ATDs. However, relapse of Graves' disease after stopping ATDs, can happen in 50-80% of cases.

TRAb levels are diagnostic for patients with Graves' disease. They are also related to the risk of recurrence once ATD has been stopped. Other risk factors for relapse include younger age, very large thyroid gland, male gender, having thyroid eye disease, and active smoking history. However, most of the current data on risk factors is limited to recurrent of Graves' disease within one to two years of stopping ATDs. The goal of this study is to look into recurrence risk of Graves' disease in 10-year span and determine potential risk factors for relapse.

THE FULL ARTICLE TITLE

Tun NNZ, et al. Ten year outcome of anti-thyroid drug treatment for first episode Graves' thyrotoxicosis: the predictive importance of TRAb. Clin Endocrinol (Oxf) 2025;103(5):612-618; doi: 10.1111/cen.70003.

SUMMARY OF THE STUDY

The study was conducted by analyzing previous records at Edinburgh. It included 290 patients diagnosed with Graves' disease who had an initial TRAb levels done and completed ATD therapy between 2006 and 2011. Subsequent serial thyroid function was monitored for at least ten years after stopping the ATDs after 18 months of treatment. TRAb level was measured at diagnosis in all patients and before stopping ATD. Recurrence was described by the first date of high thyroid function tests.

Of the 290 patients, 191 completed the 10-year follow-up study. Recurrence happened in 103 of 191 (54%) patients within the ten-year span. Of note, more than half (54%) of recurrences occurred in the first year, 72% in the first two years, and 93% within five years. The study observed some characteristics of those with recurrence: younger age, higher TRAb level at diagnosis and at stopping the ATD, and longer time needed to normalize thyroid function levels.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study addressed the likelihood of recurrence in patients with Graves' disease after ATD therapy. The study concluded that high TRAb levels at the time of diagnosis and upon stopping ATD, and age, may predict recurrence risk. The study also noted most recurrence cases occurred within 1-2 years after diagnosis. This is important, since long-term ATD therapy is becoming increasingly common in the treatment of Graves' disease.

— Joanna Miragaya, MD

ATA THYROID BROCHURE LINKS

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

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

GRAVES' DISEASE, continued

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.

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.

AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 19 | Issue 8 | August 2026

Clinical Thyroidology® for the Public

GRAVES' DISEASE

Quality of life after treatment for Graves' disease

BACKGROUND

Graves' disease is an autoimmune condition in which the body produces antibodies that mimic TSH, attacking the thyroid and causing it to secrete high levels of thyroid hormone to produce hyperthyroidism. Graves' disease is the most common type of hyperthyroidism in the United States. Several options to treat Graves' disease exist, including long term treatment with anti-thyroid medications, surgery to remove the thyroid and radioactive iodine therapy to destroy the thyroid. Recently, a technique known as radiofrequency ablation (RFA) has been used to treat hyperthyroidism in recurrent Graves' disease. RFA uses ultrasound to insert a very thin needle into a thyroid nodule then uses heat to destroy the nodule. RFA avoids both the risks and scarring associated with surgery and permanent hypothyroidism following both surgery and radioactive iodine treatment. Some studies suggest that RFA treatment may be associated with a better quality of life.

In this study, the researchers evaluated the quality of life of Graves' disease patients after treatment with surgery, radioactive iodine therapy or RFA.

THE FULL ARTICLE TITLE:

Fung MHM, et al. Comparing the health-related quality of life at two years after successful treatment of relapsed Graves' disease with radiofrequency ablation, surgery, or radioiodine. World J Surg 49(11), 3142-3151; doi: 10.1002/wjs.70035. PMID: 40874814

SUMMARY OF THE STUDY:

The study recruited patients from a single endocrine surgical unit in China from 2020 to 2022 who had persistent or recurrent Graves' disease and were treated with RFA, surgery, or radioactive iodine therapy. Patients were not included in the study if they had moderate to severe Graves' eye disease. All patients were given a series of health-related quality of life (HRQOL) questionnaires to complete at 2 years following their treatment. A total of 85 patients participated by completing these questionnaires. They completed both thyroid specific and general HRQOL questionnaires. Questionnaire results from a subset of patients (45, 15 per group) matched for gender, age, thyroid function and other medical problems were analyzed.

The average age was 34 years, and the majority of patients were female (91%). All patients that were treated with surgery and radioactive iodine therapy became hypothyroid and required thyroid hormone replacement. However, thyroid hormone replacement was only required in 13% of RFA patients. Results demonstrated that patients in the RFA group had significantly better scores for depression symptoms on the thyroid specific HRQOL survey compared to patients who received either surgery or radioactive iodine therapy. The RFA group also demonstrated a trend toward better scores for anxiety, hypothyroid symptoms, and fatigue on the thyroid specific HRQOL questionnaire. There were no significant differences between the treatment options on any of the general HRQOL questionnaires.

WHAT ARE THE IMPLICATIONS OF THE STUDY?

RFA is a viable alternative method for treatment of recurrent Graves' disease when compared to surgery or radioactive iodine therapy. Overall, at 2 years, most quality-of-life measurements were comparable between therapies except for less depression symptoms noted in patients who received RFA. Ongoing research is desired to confirm and extend these findings to a larger population.

— Whitney W. Woodmansee MD

GRAVES' DISEASE, continued

ATA THYROID BROCHURE AND WEBSITE LINKS

Graves' Disease: https://www.thyroid.org/graves-disease/
Hyperthyroidism (Overactive): https://www.thyroid.org/hyperthyroidism/
Radioactive Iodine Therapy: https://www.thyroid.org/radioactive-iodine/
Thyroid Surgery: https://www.thyroid.org/thyroid-surgery/

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).

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.

Radiofrequency ablation (RFA): a procedure where a very thin needle is inserted into a thyroid nodule then uses heat to destroy the nodule.

Thyroid hormone therapy: patients with hypothyroidism are most often treated with Levothyroxine to return their thyroid hormone levels to normal.

AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 19 | Issue 8 | August 2026

Clinical Thyroidology® for the Public

THYROID NODULES

Effect of a single RFA treatment on benign thyroid nodules

BACKGROUND

Thyroid nodules are common, found in up to 50% individuals. Nodules that are found to be cancerous (~5% of nodules) are usually treated with surgery. Benign nodules do not have to be removed unless they are large, cause symptoms or are overactive. If the nodule is overactive (toxic nodules), the nodule can be destroyed by radioactive iodine therapy or removed by surgery. If the nodule is not overactive (the majority of benign nodules), surgery was the only option to remove the nodule until recently.

Radiofrequency ablation (RFA) is a non-surgical option to treat benign nodules, including toxic nodules. RFA uses ultrasound to insert a very thin needle into a thyroid nodule then uses heat to destroy the nodule. It is typically recommended for patients who wish to avoid surgery for nodules that are overactive, cause neck symptoms or cosmetic concerns. Often, multiple RFA treatments are needed to shrink and destroy the nodule. There are not many studies that show how well RFA works over a long time for people with toxic nodules and fewer evaluating the effects on a single RFA treatment. This study looks at the short-term and long-term results after one RFA treatment in patients with thyroid nodules.

THE FULL ARTICLE TITLE

Dobnig H, Amrein K. Mid- to long-term outcomes after single radiofrequency ablation of nontoxic and toxic thyroid nodules. J Clin Endocrinol Metab 2026;111(5):1397–1407; doi: 10.1210/clinem/dgaf611. PMID: 41192411.

SUMMARY OF THE STUDY

The researchers studied patients who were treated at a hospital in Austria between 2014 and 2024. All patients had thyroid nodules that were not cancer, confirmed by a biopsy. There were 896 patients in the study. Of these, 765 had normal-functioning (non-toxic) nodules and 131 had toxic nodules. Each patient had one session of RFA with local anesthesia to numb the skin. The doctors checked on the patients after 3 months, 1 year and then once a year every year. At each visit, they measured the size of the thyroid nodules and checked thyroid hormone levels in the blood. If the nodule grew back to more than half of its previous size it was called a regrowth. If the blood test showed a low TSH level (less than 0.4 mIU/L), it meant that the overactive thyroid nodule had come back.

After 1, 3 and 5 years, the nontoxic nodules became 79%, 82% and 86% smaller. The toxic nodules became 84%, 88% and 89% smaller. After 5 years, the nodules stayed about the same size. About 7% of patients with nontoxic nodules had their nodules grow back. About 11% of patients with toxic nodules had their overactive thyroid problem return. Bigger nodules, especially those larger than 10 ml were more likely to grow back. Older patients were less likely to have their nodule grow back. The treatment was very safe. Only about 4% of patients had complications, and only 0.3% had serious complications.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

RFA worked well for both short- and long-term treatment. It was successful in 83% of patients with nontoxic nodules and 78% of patients with toxic nodules. The treatment was also safe. People who had smaller thyroid nodules and were older had a better chance of getting good results. These findings can help doctors explain the treatment to patients and choose the people who are most likely to benefit from RFA.

— Susana Ebner MD

THYROID NODULES, continued

ATA THYROID BROCHURE LINK

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

ABBREVIATIONS & DEFINITIONS

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.

Toxic nodule: a nodule that is overactive, secreting too much thyroid hormone, making the patient hyperthyroid

Non-toxic nodule: a nodule that secretes normal amounts of thyroid hormone

Radiofrequency ablation (RFA): a procedure where a very thin needle is inserted into a thyroid nodule then uses heat to destroy the nodule.

AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Volume 19 | Issue 8 | August 2026

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.

ATA®
Optimal Thyroid Health for All

GRAVES' DISEASE & THYROID FOUNDATION

ThyCa: Thyroid Cancer Survivors' Association, Inc.
www.thyca.org

Light of Life Foundation
checkyourneck.com

MCT8 - AHDS Foundation

BITE ME CANCER!

Thyroid Federation International

American Thyroid Association®
www.thyroid.org
ATA® Patient Resources:
www.thyroid.org/thyroid-information/
Find a Thyroid Specialist: www.thyroid.org
(Toll-free): 1-800-THYROID
thyroid@thyroid.org

Bite Me Cancer
www.bitemecancer.org
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
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
tfi@thyroid-federation.org

AMERICAN THYROID ASSOCIATION
ATA | *Founded 1923*

Friends of the ATA

FOUNDED 2005

Get the latest thyroid health information. You'll be among the first to know the latest cutting-edge thyroid research that is important to you and your family.

Become a Friend of the ATA!
Subscribe to *Friends of the ATA e-news*

By subscribing to *Friends of the ATA Newsletter*, you will receive:

- ✔ *Friends of the ATA e-news*, providing up-to-date information on thyroid issues, summaries of recently published articles from the medical literature that covers the broad spectrum of thyroid disorders, and invitations to upcoming patient events
- ✔ Updates on the latest patient resources through the ATA® website and elsewhere on the world wide web
- ✔ Special e-mail alerts about thyroid topics of special interest to you and your family

We will use your email address to send you *Friends of the ATA e-news* and occasional email updates. We won't share your email address with anyone, and you can unsubscribe at any time.

www.thyroid.org