# Clinical THYROIDOLOGY FOR THE PUBLIC

AMERICAN THYROID ASSOCIATION
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The goal with antithyroid drug treatment of Graves' disease is to induce a remission of the disease. This occurs only ~25% of the time in the US. This study was done to assess the stability of remission of Graves' disease after antithyroid drugs in the Swedish population.

Mohlin E et al 2013 Long-term prognosis after medical treatment of Graves' disease in a northern Swedish population 2000-2010. Eur J Endocrinol 2014;170:419-27.

It is unclear if subclinical thyroid disease has a significant negative impact on health and quality of life. Sleep disturbances are common, especially in the elderly. The present study was done to see if subclinical thyroid disease impacts sleep quality in older men.

Akatsu H et al. Association between thyroid function and objective and subjective sleep quality in older men: the Osteoporotic Fractures in Men (MrOs) study. Endocr Pract. January 21, 2014:1-34 [Epub ahead of print].

High thyroid hormone doses can lead to irregular heart rhythms and osteoporosis. It is controversial whether high thyroid hormone doses can affect mood and cognitive function. The aim of this study is to examine the health status and the cognitive function of patients taking suppressive thyroid hormone treatment.

Samuels MH The effects of levothyroxine replacement or suppressive therapy on health status, mood and cognition. J Clin Endocrinol Metab 2014 Jan 13:jc20133686 [Epub ahead of print] .

The Afirma gene expression classifier test uses thyroid cells obtained at the time of biopsy to screen for molecular markers (genes) that are associated with thyroid cancer. The hope is that this test will prevent unnecessary thyroid surgeries. This study details the results of the use of the Afirma GEC in five medical centers.

Alexander EK et al Multicenter clinical experience with the afirma gene expression classifier. J Clin Endocrinol Metab 2014;99:119-25. Epub December 20, 2013; doi: 10.1210/jc.2013-2482.

It is estimated that nearly 18 million Americans may have papillary microcancer. It is unclear that these microcancers are as concerning as larger cancers The present study examines the role of age with disease progression in patients with papillary microcancer and whether a longer follow-up allows for more accurate data to make decisions.

Ito Y et al. Patient age is significantly related to the progression of papillary microcarcinoma of the thyroid under observation. Thyroid 2014; 24:27-34. Epub November 14, 2013.

Most patients with thyroid cancer do well and the prognosis is very good. However, some patients don't do well. The authors of this study tried to determine if TSH levels and the presence of thyroid antibodies at the time of thyroid cancer diagnosis could be related to cancer prognosis.

McLeod DSA and the National Thyroid Cancer Treatment Cooperative Study Group. Prognosis of differentiated thyroid cancer in relation to serum thyrotropin and thyroglobulin antibody status at time of diagnosis. Thyroid 2014;24 35-42. Epub September 4, 2013; doi:10.1089/thy.2013.0062.

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# EDITOR'S COMMENTS

Welcome to *Clinical Thyroidology for the Public*. In this journal, we will bring to you the most up-to-date, cutting edge thyroid research. We will be providing summaries of research studies that were discussed in a recent issue of *Clinical Thyroidology*, a publication of the American Thyroid Association for physicians. These summaries are present in lay language to allow the rapid dissemination of thyroid research to the widest possible audience. This means that you are getting the latest information on thyroid research and treatment almost as soon as your physicians. As always, we are happy to entertain any suggestions to improve *Clinical Thyroidology for the Public* so let us know what you want to see.

We also provide even faster updates of late-breaking thyroid news through 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*, the *Graves' Disease and Thyroid Foundation*, the *Light of Life Foundation*, *ThyCa: Thyroid Cancer Survivors Association*, *Thyroid Cancer Canada and Thyroid Federation International*.

**In this issue, the studies ask the following questions:**

1. What is the best treatment option for Graves' disease?
2. Does subclinical thyroid disease cause sleep problems?
3. Does suppressive levothyroxine therapy affect cognitive function?
4. Does the Affirma gene test on thyroid biopsies affect the decision for thyroid surgery?
5. Are there risk factors for cancer progression in patients with papillary microcancer?
6. Is the pre-op TSH associated with prognosis of thyroid cancer?

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

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## HYPERTHYROIDISM

# Antithyroid drugs remain the first choice for treatment in uncomplicated Graves' disease

### BACKGROUND

Graves' disease is the most common cause of hyperthyroidism in the US and is caused by an antibody that turns on the thyroid. There are three different options for the treatment of Grave's hyperthyroidism: antithyroid drug treatment, radioactive iodine therapy and surgery. The goal with antithyroid drug treatment is to decrease the thyroid antibodies and induce a remission of the disease. This occurs only ~25% of the time in the US. Radioactive iodine therapy and surgery are definitive therapy that destroys the thyroid and usually results in hypothyroidism. In Europe and Japan antithyroid drug therapy is the most common treatment option, whereas in the US radioactive iodine is favored. This study was done to assess the stability of remission of Graves' disease after antithyroid drugs in the Swedish population.

### THE FULL ARTICLE TITLE

Mohlin E et al 2013 Long-term prognosis after medical treatment of Graves' disease in a northern Swedish population 2000-2010. Eur J Endocrinol 2014;170:419-27.

### SUMMARY OF THE STUDY

This study followed patients from 2000-2011 in northern Sweden. A total of 442 patients with Graves' disease were included in this study. Methimazole was the antithyroid drug used. The average treatment period was 6-18 months and only 219 patients were treated for >6 months. A total of 51% of the patients had goiters and 26% had Graves' eye disease. The average follow-up was 2.1 years and the maximum 10 years. The highest relapse rate was observed within the first 6 months after stopping treatment. Surprisingly, 58% were in remission 3 to 5 years later and 56% after 10 years. Prior smokers had much better remission rates than current smokers.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Antithyroid drugs are used frequently in Sweden and this study shows a higher remission rate than previously thought. A lower remission rate was associated with increased goiter size and current smokers. This is a good study because it reminds us that the use of antithyroid drugs is an important option in treating patients with Grave's hyperthyroidism and the remission rate may be higher now than previously thought.

— Heather Hofflich, DO

### ATA THYROID BROCHURE LINKS

Graves' disease: http://www.thyroid.org/what-is-graves-disease

Goiter: http://www.thyroid.org/what-is-a-goiter

Radioactive Iodine Therapy: http://www.thyroid.org/radioactive-iodine

### 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.

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.

Goiter: a thyroid gland that is enlarged for any reason is called a goiter. A goiter can be seen when the thyroid is overactive, underactive or functioning normally. If there are nodules in the goiter it is called a nodular goiter; if there is more than one nodule it is called a multinodular goiter.

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.

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## SUBCLINICAL THYROID DISEASE

# Subclinical thyroid disease is not associated with altered sleep quality in older men

### BACKGROUND

Overt thyroid disease indicates that both the TSH is and the $T_4$ levels are abnormal. Subclinical thyroid disease indicates that only the TSH is abnormal – $T_4$ and $T_3$ levels are normal. While overt thyroid disease has clear cut adverse effects on health and requires treatment, the effect of subclinical thyroid disease on health is much less clear. Multiple studies have been done to try to determine if subclinical thyroid disease has a significant negative impact on health and quality of life. Sleep disturbances are common, especially in the elderly. The present study was done to see if subclinical thyroid disease impacts sleep quality in older men.

### THE FULL ARTICLE TITLE

Akatsu H et al. Association between thyroid function and objective and subjective sleep quality in older men: the Osteoporotic Fractures in Men (MrOs) study. Endocr Pract. January 21, 2014:1-34 [Epub ahead of print].

### SUMMARY OF THE STUDY

A total of 682 men 65 years and older were included in this study. Each participant had thyroid function studies and an assessment of sleep quality. Anyone taking thyroid hormone replacement or with abnormal levels of free $T_4$ was excluded from the study. For study purposes, subclinical hyperthyroidism was defined as a serum TSH less than 0.55 mIU/L and subclinical hypothyroidism as a serum TSH greater than 4.78 mIU/L. A total of 38 subjects (6%) had subclinical hypothyroidism and 15 (2%) had subclinical hyperthyroidism. Individuals with subclinical hypothyroidism had a slightly shorter, mean duration of waking after initially getting to sleep. There were no other differences in sleep quality. Subjects with subclinical hyperthyroidism reported sleeping 44 fewer minutes per night than euthyroid men. It was concluded that subclinical thyroid disease was not associated with any significant alterations in sleep quality in older men.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The present study provides data that sleep quality is not significantly worsened in those with mild thyroid dysfunction in older men. This is important due to the high frequency of sleep disorders in the elderly. Thus, abnormal sleep is not a reason to consider treating subclinical thyroid disease.

— Frank Crantz, MD

### ATA BROCHURE LINKS

Hypothyroidism: http://www.thyroid.org/what-is-hypothyroidism

Hyperthyroidism: http://www.thyroid.org/what-is-hyperthyroidism

### ABBREVIATIONS & DEFINITIONS

Overt Hypothyroidism: clear hypothyroidism an increased TSH and a decreased $T_4$ level. All patients with overt hypothyroidism are usually treated with thyroid hormone pills.

Overt 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.

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.

Subclinical Hyperthyroidism: a mild form of hyperthyroidism where the only abnormal hormone level is a decreased TSH.

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## SUBCLINICAL THYROID DISEASE, continued

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 ($T_4$): the major hormone produced by the thyroid gland. $T_4$ gets converted to the active hormone $T_3$ in various tissues in the body.

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

# Thyroid Awareness Monthly Campaigns Announced in Cooperation with PuraVida

The ATA will be highlighting a distinct thyroid disorder each month and a portion of the sales for PuraVida bracelets will be donated to the ATA. The month of May is **International Thyroid Awareness Month** and a bracelet is available through the **ATA Marketplace** to support thyroid cancer awareness and education related to thyroid disease.

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## THYROID HORMONE TREATMENT

# Suppressive therapy with levothyroxine does not impair cognitive function

### BACKGROUND

Hypothyroid patients need to take thyroid hormone replacement treatment with levothyroxine. The goal of therapy is to obtain a TSH in the normal range. Thyroid hormone suppressive treatment, where the goal is to produce a TSH below the normal range, has been prescribed to prevent thyroid cancer recurrence and sometimes to prevent the growth of thyroid nodules. High thyroid hormone doses taken for a prolonged period of time can lead to irregular heart rhythms and bone loss and osteoporosis. It is controversial whether high thyroid hormone doses can affect the health status in general and brain function in particular, especially the mood and cognitive function. The aim of this study is to compare the health status and the cognitive function of patients taking suppressive thyroid hormone treatment with patients receiving replacement thyroid hormone treatment as well as with healthy patients.

### THE FULL ARTICLE TITLE:

Samuels MH The effects of levothyroxine replacement or suppressive therapy on health status, mood and cognition. J Clin Endocrinol Metab 2014 Jan 13:jc20133686 [Epub ahead of print].

### SUMMARY OF THE STUDY

Three groups of women participated in this study. Group 1 included 24 women receiving suppressive thyroid hormone treatment with 16 thyroid cancer patients and 8 patients inadvertently treated with excessive thyroid hormone doses for hypothyroidism. Group 2 included 35 women taking adequate amount of thyroid hormone for hypothyroidism. Group 3 included 20 healthy women with normal thyroid function. There was no difference in the tests of cognitive function among the three groups. Women taking suppressive or replacement thyroid hormone treatment had a slight decrease in their health status and mood compared to healthy women. The mood alterations did not impair the cognitive function of women on suppressive or replacement thyroid hormone treatment.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests suppressive thyroid hormone treatment does not appear to impair the cognitive function in women. These findings should be also confirmed in men. There does appear that patients taking suppressive or replacement TH treatment have a lower quality of life compared to patients with normal thyroid function and this should be further investigated.

— Alina Gavrila, MD, MMSC

### ATA THYROID BROCHURE LINKS

Hypothyroidism: http://www.thyroid.org/what-is-hypothyroidism

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

Thyroid cancer: http://www.thyroid.org/cancer-of-the-thyroid-gland

Thyroid Nodules: http://www.thyroid.org/what-are-thyroid-nodules

### ABBREVIATIONS & DEFINITIONS

Thyroid hormone treatment: 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. Suppressive therapy means that the goal is a TSH below the normal range and is used in thyroid cancer patients to prevent growth of any remaining cancer cells and sometimes in patients with thyroid nodules to prevent nodule growth.

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## THYROID HORMONE TREATMENT, continued

Levothyroxine ($T_4$): the major hormone produced by the thyroid gland and available in pill form as Synthroid™, Levoxyl™, Tyrosint™ and generic preparations. $T_4$ gets converted to the active hormone $T_3$ 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: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

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

Osteoporosis: a decrease in bone mineral density in which the individual is at a significantly increased risk for fractures with little or no trauma or force. This occurs with a bone mineral density T score of >-2.5. The areas at highest risk for osteoporotic fractures are the wrist, spine and hip.

Cognitive Function: a function of the brain that perceives, understands, processes, and remembers information.

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## THYROID NODULE

# Utility of genetic testing in thyroid nodule biopsies

### BACKGROUND

Thyroid nodules are very common and are seen in up to 50% of adults. Biopsy of a thyroid nodule is commonly done to rule out thyroid cancer. The decision to treat with thyroid surgery is straightforward if the biopsy results are positive for thyroid cancer. Similarly, surgery is usually avoided if the biopsy results are benign. However, in 10-20% of cases, the cytology is indeterminate making the decision to refer to surgery more difficult. The risk of thyroid cancer in nodules with indeterminate biopsy results varies from 10-75%.

The Afirma gene expression classifier (GEC) test uses thyroid cells obtained at the time of biopsy to screen for molecular markers (genes) that are associated with thyroid cancer. Its manufacturers claim that that the test can predict which of the indeterminate nodules are likely to be benign (with a 95 % certainty), and therefore do not require surgery, from those that are likely cancerous (with a 50% certainty) and need to be referred to surgery. The hope is that this test will prevent unnecessary thyroid surgeries. This study details the results of the use of the Afirma GEC in five medical centers.

### THE FULL ARTICLE TITLE

Alexander EK et al Multicenter clinical experience with the afirma gene expression classifier. J Clin Endocrinol Metab 2014;99:119-25. Epub December 20, 2013; doi: 10.1210/jc.2013-2482.

### SUMMARY OF THE STUDY

The authors collected data on 339 nodules with indeterminate biopsy results and were tested by Afirma GEC from five medical centers. A total of 174 patients had a benign GEC as compared with 141 patients with suspicious GEC. Only 2% of patients with benign GEC were recommended to have surgery compared to 44% of patients in the GEC suspicious group.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The authors concluded that the clinical experience of the five medical centers support the usefulness of the Afirma GEC in preventing unnecessary thyroid surgeries in the subset of patients with indeterminate nodules who have a benign GEC result. The major criticism to this study is that patients with indeterminate nodules and benign GEC who did not have surgery were not followed long enough to truly rule out thyroid cancer. Long term studies are needed to validate the results of this study.

— Mona Sabra, MD

### ATA THYROID BROCHURE LINKS

Thyroid cancer: http://www.thyroid.org/cancer-of-the-thyroid-gland

Thyroid Nodules: http://www.thyroid.org/what-are-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.

Thyroid fine needle aspiration biopsy (FNAB): a simple procedure that is done in the doctor's office to determine if a thyroid nodule is benign (non-cancerous) or cancer. The doctor uses a very thin needle to withdraw cells from the thyroid nodule. Patients usually return home or to work after the biopsy without any ill effects.

Genes: a molecular unit of heredity of a living organism. Living beings depend on genes, as they code for all proteins and RNA chains that have functions in a cell. Genes hold the information to build and maintain an organism's cells and pass genetic traits to offspring.

Molecular markers: genes and microRNAs that are expressed in benign or cancerous cells. Molecular markers can be used in thyroid biopsy specimens to either to diagnose cancer or to determine that the nodule is benign.

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## THYROID CANCER

# Younger patients with small papillary cancers are more likely to progress to clinical disease than older patients

### BACKGROUND

Thyroid cancer is the fastest rising cancer diagnosed in women. Papillary thyroid cancer is the most common type of thyroid cancer. Screening and autopsy studies suggest than nearly 3.5-5% (18 million) Americans may have small papillary thyroid cancers (cancers less than 1 cm), also known as papillary microcancers. Surgery to remove a part or the entire thyroid gland (total or partial thyroidectomy) is often recommended for these patients. However, the true clinical course for these patients with papillary microcancer is not known. Some studies suggest that observation may be a reasonable option for most patients with papillary microcancer rather than immediate surgery. Other studies suggest an association of younger age with cancer progression. The present study examines the role of age with disease progression in patients with papillary microcancer to see if there is an association of younger age with progression of disease.

### THE FULL ARTICLE TITLE

Ito Y et al. Patient age is significantly related to the progression of papillary microcarcinoma of the thyroid under observation. Thyroid 2014; 24:27-34. Epub November 14, 2013.

### SUMMARY OF THE STUDY

A total of 1235 patients with thyroid nodules <1 cm and biopsy-proven papillary cancer were observed rather than undergoing immediate surgery. These patients were followed every 6-12 months by ultrasound for evaluation of cancer progression, for an average of 75 months. A total of 191 patients did undergo surgery for various reasons after observation. Only 1 of these patients had a recurrence of their cancer and none of these patients died of their thyroid cancer after surgery. A total of 58 patients had an increase in the size for the cancerous nodule, 19 patients had spread of the cancer to the lymph nodes and 43 patients progressed to clinically apparent disease. A total of 51 patients (4%) received TSH suppressive therapy and none of these patients had progression of their cancer. The authors divided patients in to three groups based on age: young (<40), middle-aged (40-59) and old (>60). An age of <40 years was found to be an independent predictor of progression of clinical disease, predicting increased growth and development of spread to the lymph nodes.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that patients with papillary microcancer may safely choose to be managed by observation with serial ultrasounds rather than undergo immediate surgery. Older patients with low-risk papillary microcancer are the best candidates for observation, as their risk of progression is approximately 2.5% over 10 years. Younger patients have a ten-fold higher risk of progression over 10 years, so caution should be taken when recommending observation alone in these patients. This study adds to the potential ability of patients to undergo watchful waiting with serial ultrasounds for their papillary microcancer rather than undergo immediate surgery. The role of TSH suppression in these patients remains unclear.

— Jennifer Rosen, MD

### ATA THYROID BROCHURE LINKS

Thyroid cancer: http://www.thyroid.org/cancer-of-the-thyroid-gland

Thyroid Surgery: http://thyroid.org/patients/patient_brochures/surgery.html

### 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.

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## **THYROID CANCER,** continued

Papillary microcarcinoma: a papillary thyroid cancer smaller than 1 cm in diameter.

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.

Lymph node: bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells.

Cancer recurrence: this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point.

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## THYROID CANCER

# Preoperative TSH is associated with prognosis in thyroid cancer

### BACKGROUND

Most patients with thyroid cancer do well and the prognosis is very good. However, some patients don't do well and physicians would like to have tools for predicting the outcome of more-aggressive thyroid cancers prior to treatment. Serum TSH levels have been linked to the risk of thyroid cancer. The most common cause of abnormal TSH levels is antibodies directed against the thyroid. It is not known if thyroid antibodies are related to thyroid cancer. The authors of this study tried to determine if TSH levels and the presence of thyroid antibodies at the time of thyroid cancer diagnosis could be related to cancer prognosis.

### THE FULL ARTICLE TITLE:

McLeod DSA and the National Thyroid Cancer Treatment Cooperative Study Group. Prognosis of differentiated thyroid cancer in relation to serum thyrotropin and thyroglobulin antibody status at time of diagnosis. Thyroid 2014;24 35-42. Epub September 4, 2013; doi:10.1089/thy.2013.0062.

### SUMMARY OF THE STUDY

This study reviewed data from a large thyroid cancer registry that included 11 centers in North America. Patients with papillary, follicular, and Hürthle-cell cancer were included. The authors identified 617 patients with preoperative TSH data. They also identified 1701 patients with thyroid antibodies in the perioperative period (either before surgery or within 3 months after surgery). The relationship between TSH and thyroid antibodies and stage, cancer size, cancer invasion and cancer spread outside the thyroid was examined.

The serum TSH was higher in patients with high-risk thyroid cancer than in those with low-risk thyroid cancer. The TSH level was also associated with spread of the cancer outside of the thyroid and spread to the lymph nodes. Neither cancer size nor the presence of spread of the cancer outside the neck was associated with serum TSH level. At a median follow-up time of 5.5 years, no relationship was found between TSH and disease-free survival or overall survival. Thyroid antibody status was not associated with serum TSH and there was no association between thyroid antibodies and stage of disease, disease-free survival or overall survival.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The study confirms the findings that TSH is associated with more aggressive thyroid cancer features (i.e., higher stage and spread outside the thyroid and into the lymph nodes). Larger studies are necessary to determine the true impact of TSH and TSH suppression on the development and growth of thyroid cancer. Data from this study suggest that the TSH level at the time of detection of thyroid cancer may help guide surgical therapy by predicting which patients are at higher risk for more aggressive cancer.

— Ronald B. Kuppersmith, MD, FACS

### ATA THYROID BROCHURE LINKS

Thyroid cancer: http://www.thyroid.org/cancer-of-the-thyroid-gland

Thyroid Surgery: http://thyroid.org/patients/patient_brochures/surgery.html

### 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).

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.

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## **THYROID CANCER,** continued

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.

Lymph node: bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells.

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# 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 towards the improvement of thyroid education and resources for patients.

## WHO WE ARE (in alphabetical order)

### AMERICAN THYROID ASSOCIATION

**www.thyroid.org**
ATA Patient Resources: http://www.thyroid.org/patients/
Find a Thyroid Specialist: www.thyroid.org
Phone (toll-free): 1-800-THYROID
e-mail: thyroid@thyroid.org

**ATA Mission:** The ATA leads in promoting thyroid health and understanding thyroid biology.
**ATA Vision:** The ATA is the leading organization focused on thyroid biology and the prevention and treatment of thyroid disorders through excellence and innovation in research, clinical care, education, and public health.
**ATA Values:** The ATA values scientific inquiry, clinical excellence, public service, education, collaboration, and collegiality.

To further our mission, vision and values the ATA sponsors "Friends of the ATA" online to advance the information provided to patients and the public such as this publication, *Clinical Thyroidology for the Public*. We welcome your support.

### GRAVES' DISEASE AND THYROID FOUNDATION

**www.gdatf.org**
Phone (toll-free): 1-877-NGDF-123 or 643-3123
e-mail: Gravesdiseasefd@gmail.com

Founded in 1990, the Graves' Disease Foundation offers support and resources to Graves' disease patients, their families, and health care professionals. Their mission is to find the cause of and the cure for Graves' thyroid disease through research, to improve the quality of life for persons with Graves' disease and their caregivers and to educate persons with Graves' disease, their caregivers, healthcare professionals, and the general public about Graves' disease and its treatment. The web site features a monitored bulletin board.

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

GRAVES' DISEASE & THYROID FOUNDATION

Thyroid Cancer Canada
Cancer de la thyroïde Canada

Light of Life Foundation
checkyourneck.com

Thyroid Federation International

# ATA Alliance for Thyroid Patient Education

**Continued...**

### LIGHT OF LIFE FOUNDATION
**www.checkyourneck.com**
email: info@checkyourneck.com

The Light of Life Foundation, founded in 1997, is a nonprofit organization that strives to improve the quality of life for thyroid cancer patients, educate the public and professionals about thyroid cancer, and promote research and development to improve thyroid cancer care.

### THYCA: THYROID CANCER SURVIVORS' ASSOCIATION, INC.
**www.thyca.org**
Phone (toll-free): 877 588-7904
e-mail: thyca@thyca.org

ThyCa: Thyroid Cancer Survivors' Association, Inc., founded in 1995, is an international nonprofit organization, guided by a medical advisory council of renowned thyroid cancer specialists, offering support and information to thyroid cancer survivors, families, and health care professionals worldwide.

### THYROID CANCER CANADA
**www.thyroidcancercanada.org**
Phone: 416-487-8267
Fax: 416-487-0601
e-mail: info@thyroidcancercanada.org

Thyroid Cancer Canada is a non-profit organization founded in 2000. The organization works towards creating an environment in which people who are dealing with thyroid cancer, especially the newly diagnosed, are met with support and information. Their goals & objectives include facilitating communication among thyroid cancer patients, providing credible information about the disease, providing emotional support, and assisting thyroid cancer patients with voicing their needs to health care professionals and those who are responsible for health care policy.

### THYROID FEDERATION INTERNATIONAL
**http://www.thyroid-fed.org/**
e-mail: tfi@thyroid-fed.org

Thyroid Federation International (TFI) was established in Toronto in 1995. Thyroid Federation International aims to work for the benefit of those affected by thyroid disorders throughout the world by providing a network of patient support organizations.

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May 25th
Thyroid Day

# American Thyroid Association Supports *World Thyroid Day*

## May 25, 2014

The American Thyroid Association (ATA) supports and celebrates the 7th Annual **World Thyroid Day, May 25, 2014.**

The American Thyroid Association, in cooperation with sister international thyroid societies, the European Thyroid Association (www.eurothyroid.com), the Asia & Oceania Thyroid Association (www.aothyroid.org), and the Latin American Thyroid Society (www.lats.org) , recognizes the 7th Annual World Thyroid Day, May 25, 2014. Established in 2008, World Thyroid Day highlights five major goals to:

- Increase awareness of thyroid health,
- Promote understanding of advances made in treating thyroid diseases,
- Emphasize the prevalence of thyroid diseases,
- Focus on the urgent need for education and prevention programs, and
- Expand awareness of new treatment modalities.

The thyroid gland, butterfly-shaped and located in the middle of the lower neck, produces hormones that influence every cell, tissue and organ in the body. The thyroid hormones regulate the body's metabolism—the rate at which the body produces energy from nutrients and oxygen—and affects critical body functions, such as energy level and heart rate.

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