

Clinical THYROIDOLOGY FOR PATIENTS



AMERICAN
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Hyperthyroidism increases the risk of death compared to the population without hyperthyroidism

Hyperthyroidism causes many disabling symptoms including muscle weakness, heart palpitations and irregular rhythms and shortness of breath. Some studies suggest that patients with hyperthyroidism have an increased risk of death as compared to individuals without hyperthyroidism. This study reviewed the major studies on mortality in hyperthyroidism to determine if an increased death rate was present in hyperthyroid patients.

Brandt F et al. Is the association between overt hyperthyroidism and mortality causal? Critical review and meta-analysis. Eur J Endocrinology. July 1, 2011.

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De Souza MV et al. Atrial fibrillation & hyperthyroidism: relation between transesophageal markers of a thrombogenic milieu and clinical risk factors for thromboembolism. Clin Endocrinol. September 26, 2011 [Epub ahead of print]. doi: 10.1111/j.1365-2265.2011.04232.x.

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Appropriate dietary iodine intake during pregnancy and breastfeeding is important for both the mother and the baby

Dietary iodine is very important to maintain normal thyroid function. The iodine requirements of the mother increase during pregnancy and during breastfeeding. Iodine deficiency in pregnant and breastfeeding women can have significant consequences in the developing baby, newborns and infants. The aim of this study was to examine the pattern of urinary iodine levels in mothers throughout pregnancy and to assess the influence of iodine status on thyroid function in the mother and the baby in an iodine-sufficient region.

Fuse Y et al. Iodine status of pregnant and postpartum Japanese women: Effect of iodine Intake on maternal

and neonatal thyroid function in an iodine-sufficient area. J Clin Endocrinol Metab. September 28, 2011 [Epub ahead of print].

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Inexperience, cystic nodules and macrocalcifications often result in inadequate thyroid biopsy specimens

Thyroid nodules are very common and many require evaluation with a biopsy. While the thyroid biopsy is very accurate, occasionally not enough cells are obtained during the biopsy to make a diagnosis – this is termed an inadequate biopsy. The purpose of this study was to evaluate the ultrasound features and clinical factors that contribute to inadequate biopsies.

Choi SH et al. Factors affecting inadequate sampling of ultrasound-guided fine-needle aspiration biopsy of thyroid nodules. Clin Endocrinol (Oxf) 2011;74:776-82.

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All forms of thyroid nodule calcification seen on computed tomography (CT) are associated with thyroid cancer.

Calcium deposits in thyroid nodules have been associated with both cancerous and noncancerous nodules. If the calcium deposits are within the nodule and small (microcalcifications), this indicates that the nodule highly likely to be a cancer. In this study, the authors examined the patterns of calcium deposits in nodules as identified in CT scans and the association of these deposits with thyroid cancer.

Wu CW et al. Calcifications in thyroid nodules identified on preoperative computed tomography: Patterns and clinical significance. Surgery 2011. September 10, 2011 [Epub ahead of print]. doi:10.1016/j.surg.2011.07.032.

THYROID CANCER..... 10

Low levels of circulating adiponectin are an independent risk factor for papillary thyroid cancer

Obesity has been shown to be a risk factor for some types of cancer. Adiponectin is a protein produced in fat cells that is secreted and circulates in the blood. Low levels have been reported to be a risk factor for several cancers. This study evaluated adiponectin levels as a risk factor for papillary thyroid cancer.

Mitsiades N et al. Circulating Adiponectin Is Inversely Associated with Risk of Thyroid Cancer: In Vivo and in vitro Studies. J Clin Endocrinol Metab. September 21, 2011 [Epub ahead of print]. doi: 10.1210/jc.2010-1908.

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CLINICAL THYROIDOLOGY **FOR PATIENTS**

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EDITOR'S COMMENTS

Welcome to **Clinical Thyroidology for Patients**, bringing to you, the patients, the most up-to-date, cutting edge thyroid research. What you read here as research studies will likely become the accepted practice in the future. *Clinical Thyroidology for Patients* is published on a monthly basis and includes summaries of research studies that were discussed in a recent issue of *Clinical Thyroidology*, a publication of the American Thyroid Association for physicians. This means that you, the patients, are getting the latest information on thyroid research and treatment almost as soon as your physicians.

The **Calendar of Events** highlights educational forums and support groups that are organized around the country by members of 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* and *ThyCa: Thyroid Cancer Survivors Association*.

In this issue, the studies ask the following questions:

- Do hyperthyroid patients have an increased risk of death?
- Can we predict which hyperthyroid patients with atrial fibrillation are at risk for clots?
- What is the appropriate dietary iodine intake during pregnancy?
- Can we predict which nodules are likely to have inadequate biopsies?
- What types of nodule calcification are associated with thyroid cancer?
- Is the fat cell protein adiponectin a risk factor for 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

HOW TO NAVIGATE THIS DOCUMENT: The Table of Contents and the Bookmarks are linked to the articles. To navigate, move your cursor over the article title you wish to see (either in the Contents or in the Bookmarks panel) and the hand will show a pointing finger, indicating a link. Left-click the title and the article will instantly appear. To return to the Contents, move the cursor to the bottom of the page and left-click **Back to Table of Contents**.

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HYPERTHYROIDISM

Hyperthyroidism increases the risk of death compared to the population without hyperthyroidism

BACKGROUND

Hyperthyroidism is caused by the thyroid gland becoming overactive and producing high levels of thyroid hormone. Common causes of hyperthyroidism are Graves' disease and toxic nodular goiter. Hyperthyroidism causes many disabling symptoms including muscle weakness, heart palpitations and irregular rhythms and shortness of breath. In severe cases hyperthyroidism can cause heart failure and stroke. Some studies suggest that patients with hyperthyroidism have an increased risk of death as compared to individuals without hyperthyroidism. This study reviewed the major studies on mortality in hyperthyroidism to determine if an increased death rate was present in hyperthyroid patients.

THE FULL ARTICLE TITLE

Brandt F et al Is the association between overt hyperthyroidism and mortality causal? Critical review and meta-analysis. Eur J Endocrinology. July 1, 2011.

SUMMARY OF THE STUDY

This study is a review of seven published articles in medical journals. Taken together, over 31,000 hyperthyroid patients have been studied and compared to individuals who had never been hyperthyroid. The results were that the risk of death in hyperthyroid patients is 20% greater than individuals without hyperthyroidism. Unfortunately, specific patient risk factors other than hyperthyroidism, choices for treatment of the hyperthyroidism and duration of hyperthyroidism could not be proven to be associated with this increased death rate. Furthermore, it could not be determined if the risk of death was only while the patient was hyperthyroid or if it changed once the hyperthyroidism was corrected.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that patients with hyperthyroidism are at an increased risk of death. Future studies are needed to determine if this increased mortality is due to hyperthyroidism itself or due to other more common factors such as heart disease and smoking. In any event, physicians need to work closely together with patients to diagnose hyperthyroidism early and to treat the hyperthyroidism as quickly and safely as possible.

— Jerrold Stock, MD

ATA THYROID BROCHURE LINKS

Hyperthyroidism: <http://thyroid.org/patients/patient-brochures/hyperthyroidism.html>

Graves' disease: <http://thyroid.org/patients/patient-brochures/graves.html>

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.



HYPERTHYROIDISM

Transesophageal echocardiograms (TES) can predict risk of blood clots in the heart in hyperthyroid patients with atrial fibrillation

BACKGROUND

Hyperthyroidism is a risk factor for the development of atrial fibrillation, a common rhythm disturbance of the heart. Atrial fibrillation may result in blood clots forming in the upper chambers of the heart, and these clots may travel from the heart (embolization) to other organs such as the brain, where the clots may cause a stroke. Often patients with atrial fibrillation will be placed on blood thinner medications (anticoagulants) to reduce the risk of strokes, but the anticoagulants may increase the risk of major bleeding episodes. Therefore, a method that can detect the blood clots in the heart before they embolize would allow anticoagulants to be used more selectively in patients with atrial fibrillation. Transesophageal echocardiography (TES), in which an ultrasound probe is threaded through the mouth into the esophagus where it passes next to the heart, is a sensitive method for detecting blood clots in the heart. The goal of this study was to see if TES correlated with clinical risk factors for clot embolization and could better determine which patients would benefit from anticoagulation.

THE FULL ARTICLE TITLE

De Souza MV et al. Atrial fibrillation & hyperthyroidism: relation between transesophageal markers of a thrombogenic milieu and clinical risk factors for thromboembolism. Clin Endocrinol. September 26, 2011 [Epub ahead of print]. doi: 10.1111/j.1365-2265.2011.04232.x.

SUMMARY OF THE STUDY

A total of 31 patients, aged 18-65 years, with severe hyperthyroidism and atrial fibrillation were studied. About half of the patients had atrial fibrillation for 6 or more months. High blood pressure and a history of congestive heart failure, both independent risk factors for atrial

fibrillation, were present in 68% and 58% of the patients, respectively. Clinical risk for blood clots independent of the hyperthyroidism was based on a scoring system called CHADS2 (Congestive heart failure, Hypertension, Age >75 years, Diabetes, previous Strokes). Based on this score, 23% of the patients were in a low risk group for blood clots, 19% moderate risk and 58% were at high risk. The scores in the individual patients were compared to the results of the TES. Using strict criteria for who should be treated with anticoagulants to reduce the risk of embolization of blood clots, 45% of the patients required anticoagulants. There was no correlation between the CHADS2 score and the risks determined by TES. There was a strong correlation with the duration of atrial fibrillation, as the risk for embolization increased the longer the patient had atrial fibrillation.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

TES is a sensitive technique for determining the risk for clot embolization in patients with hyperthyroidism and atrial fibrillation. The use of TES may be helpful in this regard, but it is expensive and there are potential risks to the procedure. Also, TES only looks at the heart at one point in time and a blood clot may develop at a later time. Therefore, it is unlikely that this procedure will become the standard of care in the decision as to whether anticoagulants should or should not be used in a patient with atrial fibrillation associated with hyperthyroidism.

— Glenn Braunstein, MD

ATA THYROID BROCHURE LINKS

Hyperthyroidism: http://thyroid.org/patients/patient_brochures/hyperthyroidism.html

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HYPERTHYROIDISM, continued

ABBREVIATIONS & DEFINITIONS

Atrial fibrillation: an irregular heart rhythm due to abnormal electrical impulses passing from the upper chamber of the heart (atria) to the lower chamber (ventricles). It is one of the most common arrhythmias that occur in patients with hyperthyroidism.

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

Transesophageal echocardiography (TES): a procedure in which a small ultrasound probe is put down the

esophagus in order to visualize the chambers of the heart, especially the left atrium where blood clots can form.

Embolization: when a clot forms in a vein, there is a risk of a piece of the clot breaking off and ending up blocking off another blood vessel. This is called embolization and is most concerning with it happens in the brain, causing a stroke.

Anticoagulants: blood thinning drugs that help to avoid clots. The most common oral anticoagulant is Coumadin.

**THYROID AND PREGNANCY****Appropriate dietary iodine intake during pregnancy and breastfeeding is important for both the mother and the baby****BACKGROUND**

Dietary iodine is very important to maintain normal thyroid function. The thyroid takes up iodine from the blood and incorporates it into thyroid hormone. The iodine requirements of the mother increase during pregnancy and during breastfeeding. This is because of increased iodine loss in the urine in early pregnancy, increased need of the baby for iodine, passage of iodine from the mother to the baby in late pregnancy and passage of iodine into the breast milk during breastfeeding. Iodine deficiency in pregnant and breastfeeding women can have significant consequences in the developing baby, newborns and infants. There has been concern that pregnant and breastfeeding women do not get enough iodine in their diet even in iodine-sufficient areas, such as the United States and Japan. Therefore, the American Thyroid Association and The Endocrine Society currently recommend iodine supplementation during pregnancy and breastfeeding. Too much iodine intake may also cause thyroid problems in babies and infants. The best test for enough iodine in the diet is by measuring urinary iodine. The aim of this study was to examine the pattern of urinary iodine levels in mothers throughout pregnancy and to assess the influence of iodine status on thyroid function in the mother and the baby in an iodine-sufficient region.

THE FULL ARTICLE TITLE

Fuse Y et al Iodine status of pregnant and postpartum Japanese women: Effect of iodine Intake on maternal and neonatal thyroid function in an iodine-sufficient area. J Clin Endocrinol Metab. September 28, 2011 [Epub ahead of print].

SUMMARY OF THE STUDY

A total of 701 pregnant and 545 postpartum women without previous history of thyroid disease in Japan were studied between November 2005 and January 2007. A total of 722 newborns were also studied. The overall average urinary iodine concentration during pregnancy was 219 µg/L, higher than that in postpartum women

(135.0 µg/L). Overall 16.1% of pregnant women had a low urinary iodine concentration (<100 µg/L) while 22.2% had a high urinary iodine concentration (>500 µg/L). The mother's urinary iodine concentration increased from 220.0 µg/L in the first trimester to 258.0 µg/L in the second trimester and decreased to 137.0 µg/L after delivery. There were no significant correlations of the mother's UIC with thyroid levels in either the mother or baby during the pregnancy or postpartum period.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study showed that there is adequate dietary iodine supply during pregnancy in iodine-sufficient areas and this has a beneficial effect on the maternal and neonatal thyroid function. A decrease in urinary iodine following delivery was noted in this study, therefore, there is the need to continue iodine supplementation in the postpartum period in breastfeeding women.

— Alina Gavrilă, MD

ATA THYROID BROCHURE LINKS:

Thyroid and Pregnancy: http://thyroid.org/patients/patient_brochures/pregnancy.html

Iodine Deficiency: http://thyroid.org/patients/patient_brochures/iodine_deficiency.html

ABBREVIATIONS & DEFINITIONS:

Iodine: an element found naturally in various foods that is important for making thyroid hormones and for normal thyroid function. Common foods high in iodine include iodized salt, dairy products, seafood and some breads.

Postpartum: occurring in the period immediate after childbirth.

Infant: child between the ages of 1 month and 12 months.



THYROID NODULES

Inexperience, cystic nodules and macrocalcifications often result in inadequate thyroid biopsy specimens

BACKGROUND

Thyroid nodules are very common. Most patients with thyroid nodules over 1 cm should have a biopsy to determine whether the nodule(s) is benign or cancerous. While the thyroid biopsy is very accurate, occasionally not enough cells are obtained during the biopsy to make a diagnosis – this is termed an inadequate biopsy. Inadequate biopsies are reported in 1% to 20% of thyroid fine-needle aspiration biopsies and can be caused by several factors including the characteristics of the nodule, the method of guidance to perform the biopsy, the technique used to perform the biopsy and the level of skill and experience of the person performing the biopsy. Nodules that are largely cystic and nodules with a lot of blood in them are frequently associated with few cells and inadequate specimens. The purpose of this study was to evaluate the ultrasound features and clinical factors that contribute to inadequate biopsies.

THE FULL ARTICLE TITLE

Choi SH et al. Factors affecting inadequate sampling of ultrasound-guided fine-needle aspiration biopsy of thyroid nodules. Clin Endocrinol (Oxf) 2011;74:776-82.

SUMMARY OF THE STUDY

The medical records of 3,767 patients who underwent a total of 4,077 Ultrasound guided- fine-needle aspiration biopsies were reviewed. Of 4,077 biopsies performed between April 2008 and December 2008, a total of 654 (16.1%) were classified as inadequate. Nodules smaller

than 5 mm, those with a large cystic component and those with large calcium deposits (macrocalcifications) were more likely to return inadequate specimens. Also, the rate of inadequate biopsies was lower when the person performing the biopsy was experienced, as defined as performing >300 biopsies annually.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Getting a report that the biopsy was inadequate is frustrating for both the patient and the physician who does the biopsy. The American Thyroid Association guidelines recommend that a repeat biopsy be performed when the result is inadequate. However, some nodules may continue to yield inadequate results and surgery should be considered. If the nodules are small with no concerning features on ultrasound they can be watched. Another option to avoid surgery is to perform a positron-emission tomography-computed tomography (PET/CT) scan if the nodule is >1.5 cm. If the PET/CT scan is negative, the risk of cancer is very small. Although this test is expensive for diagnosis, it is still cheaper than surgery.

— M. Regina Castro, MD

ATA THYROID BROCHURE LINKS

Thyroid Nodules: http://thyroid.org/patients/patient_brochures/nodules.html

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THYROID NODULES, continued

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 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 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.

Inadequate/Insufficient Biopsy: this happens with not enough cells are obtained during the biopsy to provide a diagnosis. This occurs in 5-10% of biopsies. This often results in the need to repeat the biopsy.

Macrocalcifications: large flecks of calcium that can be seen either inside a thyroid nodule or in the periphery (so called egg-shell/rim calcifications), usually seen as large bright spots on ultrasonography.

Positron-Emission-Tomography (PET) Scans: a nuclear medicine imaging test that uses a small amount of radiolabeled glucose to identify cancer. Since cancer cells are more active than normal cells, the cancer cells take up more of the radiolabeled glucose and show up on the PET scan. PET scans are frequently combined with CT scans to accurately identify where the cancer is located.



THYROID CANCER

All forms of thyroid nodule calcification seen on computed tomography (CT) are associated with thyroid cancer

BACKGROUND

While ultrasound imaging has become the most common tool for evaluating patients with thyroid nodules, computed tomography (CT) scans are often used as well. This is especially common in patients that are going to surgery. The gold standard for determining if a nodule is cancerous is still a biopsy. However, many studies have attempted to identify findings that are specifically associated with either cancer or noncancerous (benign) nodules. Calcium deposits in nodules have been associated with both conditions. If the calcium deposits are within the nodule and small (microcalcifications), this indicates that the nodule is highly likely to be a cancer. In this study, the authors examined the patterns of calcium deposits in nodules as identified in CT scans and the association of these deposits with thyroid cancer.

THE FULL ARTICLE TITLE

Wu CW et al. Calcifications in thyroid nodules identified on preoperative computed tomography: Patterns and clinical significance. *Surgery* 2011. September 10, 2011 [Epub ahead of print]. doi:10.1016/j.surg.2011.07.032.

SUMMARY OF THE STUDY

The authors reviewed the records of 383 patients seen at their medical center who had a thyroidectomy for either a large goiter or presumed diagnosis of thyroid cancer. They reviewed the images of the neck CT scan obtained prior to surgery looking for calcifications in the thyroid nodules. They then connected the presence and pattern of the calcifications seen in those thyroid lumps to the surgical pathology results.

Calcium deposits were seen in 1/3 of thyroid lumps detected by CT. They were more likely found in cancerous nodules than benign nodules (54 % versus 22%). If a patient had only one thyroid nodule that also contained microcalcifications, the risk of thyroid cancer was 96%.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Patients with calcium deposits within thyroid nodules by CT, especially if they have only one nodule, likely have thyroid cancer and need to be referred for biopsy and/or surgery.

— Mona Sabra, MD

ATA THYROID BROCHURE LINKS

Thyroid Nodules: http://thyroid.org/patients/patient_brochures/nodules.html

Thyroid cancer: http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html

ABBREVIATIONS & DEFINITIONS

Computed Tomography (CT): an imaging test that is used to examine structure of organs within the body. CT uses x-rays to create a picture of a cross-section of the body.

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 CANCER

Low levels of circulating adiponectin are an independent risk factor for papillary thyroid cancer

BACKGROUND

Obesity has been shown to be a risk factor for some types of cancer. Adiponectin is a protein produced in fat cells that is secreted and circulates in the blood. Low circulating levels of adiponectin has been associated with an increased risk of certain types of cancer while high levels seem to decrease the risk for cancer. This study evaluated adiponectin levels as a risk factor for papillary thyroid cancer.

TITLE

Mitsiades N et al. Circulating Adiponectin Is Inversely Associated with Risk of Thyroid Cancer: In Vivo and in vitro Studies. *J Clin Endocrinol Metab*. September 21, 2011 [Epub ahead of print]. doi: 10.1210/jc.2010-1908.

SUMMARY OF THE STUDY

Adiponectin levels were measured in 175 patients with thyroid cancer and compared to those of 107 individuals

without thyroid cancer. Thyroid cancer patients had significantly lower circulating adiponectin levels than those without cancer. Those individuals with the highest circulating adiponectin levels had a significantly lower risk of developing any type of thyroid cancer.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that lower levels of circulating adiponectin are associated with an increased risk of developing thyroid cancer and identifies low levels of adiponectin as a possible marker for increased risk of thyroid cancer.

— Frank Cranz, MD

ATA THYROID BROCHURE LINKS

Thyroid Cancer: http://thyroid.org/patients/patients_brochures/cancer_of_thyroid.html

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer: the most common type of thyroid cancer.

Adiponectin: a protein that is produced by fat cells and secreted into the circulation

Thyroidectomy: surgery to remove the 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.



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.

WHO WE ARE

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 Patients*. 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.

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.





ATA Alliance for Thyroid Patient Education CALENDAR OF EVENTS

Educational forums, patient support groups and other patient-oriented meetings

ATA Conferences www.thyroid.org

Nothing is scheduled at this time. Please visit the website for updates.

Graves' Disease Conferences www.gdatf.org

Nothing is scheduled at this time. Please visit the website for updates.

Light of Life Foundation www.checkyourneck.com

Ongoing — www.checkyourneck.com

Thyroid Cancer Awareness campaign with Cindy Crawford and Brooke Shields

June 12, 2010 — a previous symposium available online at:

<http://www.checkyourneck.com/About-Thyroid-Cancer/Thyroid-Cancer-Symposium-Presentations>

Thyroid Cancer Symposium Presentations: What's New in Thyroid Cancer? A Day for Patients and Their Families

Please visit the Light of Life Foundation website to view the Patient Educational Symposium which took place in NYC in 2010. As part of the Patient Educational Program these online presentations provide valuable information in hopes that patients everywhere can gain further information and support about their disease.

ThyCa Conferences www.thyca.org

Every Month

ThyCa Support Group Meetings around the United States and in Canada, Costa Rica, and Philippines.

Complete list of groups, meetings, and contacts at www.thyca.org/sg/local

November 19, 2011 — 10:00 to 11:30 AM — Seattle, Washington

Free Seminar: Thyroid Cancer Surgery, with physician speaker

Hosted by ThyCa Seattle Support Group. Details at www.thyca.org/sg/wa_seattle

April 21, 2012 — 8 AM to 4:15 PM. — Lake Regional Hospital, Osage Beach, Missouri

Free Workshop: 8th Annual Midwest Thyroid Cancer Survivors' Workshop with physician speakers

Details at www.thyca.org/conferences

September 2012 — **Thyroid Cancer Awareness Month**

Worldwide observance sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc., with many partnering organizations. Details at www.thyca.org

October 19–21, 2012 — Chicago, Illinois.

The 15th International Thyroid Cancer Survivors' Conference

Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Details at www.thyca.org

October 20, 2012 — Chicago, Illinois

The 10th Annual Dinner/Auction Fundraiser for Thyroid Cancer Research, in conjunction with the 15th International Thyroid Cancer Survivors' Conference

Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Details at www.thyca.org