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Clinical THYROIDOLOGY FOR THE PUBLIC

VOLUME 7 • ISSUE 8 • 2014

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Ryödi E et al Cardiovascular morbidity and mortality in surgically treated hyperthyroidism—a nation-wide cohort study with a long-term follow-up. Clin Endocrinol (Oxf) 2014;80:743-50.

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Hypothyroidism during pregnancy and infancy can impair brain development. Hypothyroidism in adults is frequently associated with cognitive issues but has not been associated with structural brain defects. The current study uses MRI to examine the effect of hypothyroidism on the adult brain.

Cooke GE et al. Hippocampal volume is decreased in adults with hypothyroidism Thyroid 2014;24:433-40

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Removing all the lymph nodes in the central neck during the initial surgery for papillary thyroid cancer is controversial, with most surgeons preferring removal only the abnormal lymph nodes. However, some studies suggest that it may be difficult or impossible for a surgeon to determine the extent of lymph node involvement at the time of surgery. This study examined whether the experience of the surgeon played a role in identifying lymph nodes involved in cancer during the initial thyroid surgery.

Scherl S et al, The effect of surgeon experience on the detection of metastatic lymph nodes in the central compartment and the pathologic features of clinically unapparent metastatic lymph nodes: what are we missing when we don't perform a prophylactic dissection of central compartment nodes in papillary thyroid cancer? Thyroid. April 30, 2014.

THYROID CANCER10

Patients with poorly differentiated thyroid cancer die from distant spread of the tumor

Unlike most patients with thyroid cancer, patients with poorly differentiated thyroid cancer (PDTC) have a poor outcome. However, some patients with PDTC do well. In this study, the cancer characteristics of patients who died from PDTC were compared to those of patients with PDTC but remained alive.

Ibrahimasic T et al Outcomes in patients with poorly differentiated thyroid carcinoma. J Clin Endocrinol Metab 2014;99:1245-52

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Clinical Thyroidology for the Public

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CLINICAL THYROIDOLOGY FOR THE PUBLIC

A publication of the American Thyroid Association

VOLUME 7 • ISSUE 8 • 2014

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](https://twitter.com/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*, *ThyCa: Thyroid Cancer Survivors Association*, *Thyroid Cancer Canada* and *Thyroid Federation International*.

In this issue, the studies ask the following questions:

1. Is there an association between selenium levels and Graves' eye disease?
2. Is there a risk of heart disease in patients with hyperthyroidism years after treatment?
3. Does hypothyroidism in adults affect parts of the brain that controls memory?
4. How well can a surgeon identify metastatic lymph nodes during thyroid cancer surgery?
5. What are the poor prognostic factors for poorly differentiated 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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GRAVES' DISEASE

Selenium deficiency and Graves' eye disease

BACKGROUND

Graves' disease, the most a common cause of hyperthyroidism, can be occasionally associated with eye abnormalities. Known as thyroid eye disease (TED), this may include protrusion of the eyeball, swelling of the soft tissues around the eye and, less often, double vision. While subtle signs of TED can be seen in up to 80% of patients if sensitive imaging studies are used, <10% have clinically significant symptoms. Selenium, an essential trace element present in many foods and that is essential in making thyroid hormones, has been suggested in prior studies to improve symptoms of TED. It has long been known that smoking is associated with a higher incidence of TED. The present study suggests that a relative deficiency in selenium may also be a risk factor for TED and may provide a reason why selenium may be helpful in treating the disease.

THE FULL ARTICLE TITLE

Khong JJ et al. Serum selenium status in Graves' disease with and without orbitopathy: a case-control study. *Clin Endocrinol (Oxf)* 2014;80:905-910. Epub January 30, 2014.

SUMMARY OF THE STUDY

A total of 198 patients with Graves' disease were recruited from multiple clinics to participate in this study. Of these patients, 101 patients had moderate to severe TED and 97 patients had had Graves' disease for more than 2 years with no evidence of TED. Patients with TED were older (54.1 vs. 47.4 years) and had a longer duration of Graves'

disease (8 years vs. 3 years). More patients with TED were current or former cigarette smokers and more were residents of suburban areas. Also, more patients in the TED group required radioactive iodine or thyroidectomy as treatment for their hyperthyroidism while more of those without TED were managed with antithyroid drugs alone. At the time of the study, the patients with TED had higher TSH levels and lower T3 levels than those without TED. The average selenium levels were significantly lower in the TED group (86.6 mcg/L vs. 93.7 mcg/L).

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that is a small but significant difference in selenium levels in Graves' disease patients with TED compared with patients who do not have TED. Therefore, relative selenium deficiency may be an independent risk factor for TED in patients with Graves' disease. This suggests a reason why selenium supplementation may be helpful in treating patients with TED. Further studies are needed to determine whether selenium supplementation is beneficial in patients diagnosed with Graves' disease to prevent development of TED.

— Frank Crantz, MD

ATA THYROID BROCHURE LINKS

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

Radioactive iodine therapy: <http://thyroid.org/radioactive-iodine>

ABBREVIATIONS AND 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.

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

Radioactive iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken



GRAVES' DISEASE, continued

up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).

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.

In Memoriam

E. Chester Ridgway, MD

January 18, 1942 – July 31, 2014

It is with tremendous sadness and great sense of loss that we have to inform you about the passing of our leader, mentor and friend, Chip Ridgway. Chip was at home with his family. He passed away in peace.

This is a tremendous loss for our field, the ATA, and each of us as individuals who knew Chip.

Thyroid Awareness Monthly Campaigns

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





HYPERTHYROIDISM

Hyperthyroidism is associated with hypertension, coronary artery disease and heart failure, even 20 years after treatment with thyroid surgery

BACKGROUND

Hyperthyroidism (an overactive thyroid gland) is a condition in which excess thyroid hormone is produced. Patients with hyperthyroidism have increased risks of various cardiovascular problems, such as atrial fibrillation (an irregular heart rhythm), hypertension, coronary artery disease, stroke and heart failure. Although some studies have shown that treatment of hyperthyroidism with either antithyroid medications or radioactive iodine decreases these risks, the risks are still higher than average when compared to a person without hyperthyroidism. The aim of this study was to evaluate if these cardiovascular risks are also similarly elevated in patients who undergo thyroid surgery for the treatment of hyperthyroidism when compared to healthy individuals.

THE FULL ARTICLE TITLE

Ryödi E et al Cardiovascular morbidity and mortality in surgically treated hyperthyroidism—a nation-wide cohort study with a long-term follow-up. *Clin Endocrinol (Oxf)* 2014;80:743-50.

SUMMARY OF THE STUDY

This was a study that evaluated all the total thyroidectomies (removal of the entire thyroid) that were done for hyperthyroidism in Finland between 1986-2007. Each patient who had a total thyroidectomy for hyperthyroidism was compared to 3 healthy patients of similar age and gender who were living in the country at the same time. The researchers assessed the two groups for how frequently patients were hospitalized for various cardiovascular events and death.

Over 4,000 hyperthyroid patients who underwent thyroid surgery were studied. Most of them were women with an

average age of 46 years old and almost half of the patients had hyperthyroidism due to Graves' disease. The researchers found that hyperthyroid patients were 15% more likely to have a cardiovascular condition, compared to healthy individuals, with the risk most high in the five years before thyroid surgery was done. The most common cardiovascular conditions among the hyperthyroid group were hypertension, atrial fibrillation, and heart failure. However, the risks of coronary artery disease, stroke and death were the same between hyperthyroid patients and healthy individuals.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that patients with hyperthyroidism have increased risks of certain cardiovascular conditions despite treatment with thyroid surgery, similar to the risks of those who get treated with antithyroid medications or radioactive iodine and that the risks remain high even 20 years after thyroid surgery. This information is important to patients with hyperthyroidism and the doctors who manage them, since attention toward decreasing other risk factors for cardiovascular conditions is even more important in these patients. The goal of achieving a heart-healthy lifestyle in hyperthyroid patients is essential, even in those with a history of treated hyperthyroidism, regardless of the specific type of hyperthyroidism.

—Angela M. Leung MD MSc

ATA THYROID BROCHURE LINKS

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

Thyroid Surgery: <http://thyroid.org/patients/patient-brochures/surgery.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, continued

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.



HYPOTHYROIDISM

Hypothyroidism reduces the volume of the hippocampus, a critical site for memory

BACKGROUND

It is well known that hypothyroidism during pregnancy and infancy can impair brain development. In fact, congenital hypothyroidism is the most common preventable cause of mental retardation. Because of this, all newborns are screened at birth in order to detect congenital hypothyroidism as early as possible and initiate treatment to prevent impaired brain development. Hypothyroidism is common in adults and is frequently associated with cognitive issues, such as increased forgetfulness, mental slowing and “brain fog”. However, unlike in congenital hypothyroidism, there is limited data on whether hypothyroidism in adults results in structural brain defects. The current study examines the effect of hypothyroidism on the adult brain, in particular the hippocampus which is an area of the brain that plays a critical role in short and long term memory.

THE FULL ARTICLE TITLE

Cooke GE et al. Hippocampal volume is decreased in adults with hypothyroidism *Thyroid* 2014;24:433-40.

SUMMARY OF THE STUDY

The authors studied 11 patients between the age of 27–55 years (mean age 42 + years) who had been experiencing the classic symptoms and biochemical findings of hypothyroidism. Each participant had a brain MRI scan and the volume of the both the right and left hippocampus

was calculated and compared to a control group of 9 healthy subjects of similar age and education (mean age 38.6 + 4.0 years). The serum TSH of the patients with hypothyroidism was 61.8 mU/L, as compared with 1.6 in the controls, and free thyroxine levels in the patients was less than 1/3 that in the controls which confirms that the study group had significant biochemical hypothyroidism at the time of their MRI scan. The authors found that the average size of the right hippocampus was 12% smaller in those with hypothyroidism as compared with controls.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

While the number of subjects in the study was small, and while the authors did not repeat brain measurements after patients were treated with thyroid hormone to determine if the hippocampus volume normalized, these results do provide preliminary evidence that hypothyroidism in adults causes significant reduction in the volume of the right hippocampus. This could explain some of the memory deficits that have been observed in those with hypothyroidism.

— Phillip Segal, MD FRCPC

ATA THYROID BROCHURE LINKS

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

Thyroid Function Tests: <http://www.thyroid.org/blood-test-for-thyroid>

ABBREVIATIONS & DEFINITIONS

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

Hippocampus: Part of the limbic system of the brain which plays an important role in short and long term memory. Humans have two hippocampi, one in each side of the brain.

MRI (Magnetic Resonance Imaging): a medical imaging technique used to investigate the anatomy and function of the. MRI scanners use strong magnetic fields and radiowaves to form images of the body. The technique

is widely used in hospitals for medical diagnosis, staging of disease and for follow-up without exposure to ionizing radiation.

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.



THYROID CANCER

The intraoperative detection of nodal metastases from papillary thyroid cancer is poor and is not impacted by a surgeon's level of training

BACKGROUND

Papillary thyroid cancer is the most common type of thyroid cancer and generally has a good prognosis. However, if papillary thyroid cancer spreads to lymph nodes in the neck or extends beyond the capsule of a lymph node, there is a higher risk in cancer recurrence after the initial therapy. Removing all the lymph nodes in the central neck during the initial surgery (prophylactic surgery) is controversial, with most surgeons preferring removal only the abnormal lymph nodes. However, some studies suggest that it may be difficult or impossible for a surgeon to determine the extent of lymph node involvement at the time of surgery. This study examined whether the experience of the surgeon played a role in identifying lymph nodes involved in cancer during the initial thyroid surgery.

THE FULL ARTICLE TITLE:

Scherl S et al, The effect of surgeon experience on the detection of metastatic lymph nodes in the central compartment and the pathologic features of clinically unapparent metastatic lymph nodes: what are we missing when we don't perform a prophylactic dissection of central compartment nodes in papillary thyroid cancer? *Thyroid*. April 30, 2014.

SUMMARY OF THE STUDY

A total of 47 patients with papillary thyroid carcinoma and no preoperative ultrasonographic evidence of central neck nodal metastases were included in the study. All patients were operated on by one of two surgeons at a single tertiary care hospital. Through sense of touch and visual inspection, patients were assessed intraoperatively for clinically apparent lymph node involvement. Assessments of the central compartment were performed intraoperatively but before thyroidectomy by experienced attending surgeons and by less-experienced trainees. Intraoperative findings were compared with pathologic findings after central neck dissection.

One or more involved lymph nodes were found in 62% of patients. More than half of these (36%) had lymph nodes that were identified by the surgeons during the operation. Over one fourth of all patients (26%) were found to have microscopic nodal metastases. The largest normal appearing lymph node that had cancer in it was 1.3 cm. More than one third of patients had at least five positive nodes. Over one fourth of patients had cancer that extended beyond the limits of a lymph node. Based on the surgeon's impressions, lymph node spread was missed 36% of the time. Results were stratified by the surgeon's level of experience. Surgeon experience did not impact the likelihood of detecting lymph node involvement in the central neck.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Regardless of surgical experience, determining the involvement of lymph nodes at the time of surgery is difficult, especially in lymph nodes that are small. According to this study, having more experience does not improve a surgeon's ability to detect lymph node involvement and there is a substantial risk of missing involved lymph nodes when relying on the surgeon's judgment alone. What remains unknown is if these lymph nodes are left in place, instead of removed at the time of surgery, would they eventually cause recurrence or negatively impact survival? While this study suggests that prophylactic surgery may be a better option, routinely performing prophylactic central neck dissection remains controversial and should be discussed with the treating physicians.

— 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



THYROID CANCER, continued

ABBREVIATIONS & DEFINITIONS

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

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

Cancer metastasis: spread of the cancer from the initial organ where it developed to other organs, such as lymph nodes, the lungs and bone.

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

Central neck compartment: the central portion of the neck between the hyoid bone above, and the sternum and collar bones below and laterally limited by the carotid arteries.

Prophylactic central neck dissection: careful removal of all lymphoid tissue in the central compartment of the neck, even if no obvious cancer is apparent in these lymph nodes.



THYROID CANCER

Patients with poorly differentiated thyroid cancer die from distant spread of the tumor

BACKGROUND

Most types of thyroid cancer are associated with a relatively good prognosis. An exception to this is poorly differentiated thyroid cancer (PDTC), a rare form of thyroid cancer that is often aggressive. PDTC is associated with high risk of cancer recurrence, spread to lung and/or bones and increased risk of death. Patients are often treated with a combination of surgery, radioactive iodine and/or radiation therapy and possibly newer, molecular targeted therapies. However, younger patients with PDTC that is confined to the gland without cancer invasion in the blood vessels often have a good prognosis. In this study, the cancer characteristics of patients who died from PDTC were compared to those of patients with PDTC but remained alive.

THE FULL ARTICLE TITLE

Ibrahimspasic T et al Outcomes in patients with poorly differentiated thyroid carcinoma. *J Clin Endocrinol Metab* 2014;99:1245-52.

SUMMARY OF THE STUDY

Between 1986 and 2009, 91 patients (2.6% of all thyroid cancer patients) were operated at Memorial Sloan Kettering Cancer Center in New York and found to have PDTC based on the pathological definition used at the center. They were followed for an average of 50 months. All the patients received surgery, radioactive iodine therapy and/or radiation therapy. A total of 2/3rd

of the patients were alive at 5 years, most (81%) without recurrence of the cancer in the neck but a third of those developed distant metastasis. The remaining 1/3 of patients died from their disease.

Patients who died were more likely to be older, with larger cancers (> 4 cm), with extrathyroidal spread of their cancer to local neck structures, with higher cancer stage and with distant metastasis at diagnosis. In fact, PDTC patients with distant metastasis (lungs and/or bone) were three times more likely to die than those without distant metastasis.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Unlike most patients with thyroid cancer, patients with PDTC have a poor outcome. Initial therapy can achieve a good local disease control without recurrent disease in the neck. However, once patients develop distant spread of their cancer, they are likely to die of their cancer. These patients should be treated aggressively with consideration of clinical trials with new molecular-targeted cancer drugs.

— Mona Sabra, MD

ATA THYROID BROCHURE LINKS

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

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

ABBREVIATIONS & DEFINITIONS

PDTC: poorly differentiated thyroid cancer — a rare form of thyroid cancer with a markedly worse prognosis.

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

pictures of the whole body to look for thyroid cancer (Whole Body Scan).

Clinical trials: when a new drug is developed, it must undergo an extensive series of steps, called phases, to prove that it is more effective in patients than the drugs that are currently available to treat the condition. A Phase I trial tests a new drug or treatment in a small group of people for the first time to evaluate its safety, determine a safe dosage range and identify side effects. A Phase II trial gives the drug to a larger group of



THYROID CANCER, continued

people to see if it is effective and to further evaluate its safety. A Phase III trial gives the drug to large groups of people to confirm its effectiveness, monitor side effects, compare it to commonly used treatments

and collect information that will allow the drug or treatment to be used safely.



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**
- **Bite Me Cancer**
- **Graves' Disease and Thyroid Foundation**
- **Light of Life Foundation**
- **ThyCa: Thyroid Cancer Survivors' Association, Inc.**
- **Thyroid Cancer Canada**
- **Thyroid Federation International**

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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.

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





ATA Alliance for Thyroid Patient Education

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BITE ME CANCER

<http://www.bitemecancer.org>

Bite Me Cancer was formed as a nonprofit foundation in September, 2010, by Nikki Ferraro, who was 17-years old at the time. Nikki was diagnosed with a rare form of thyroid cancer in April 2010 when she was a junior at Chantilly HS in Virginia. Nikki was determined to lead a Relay for Life team just two weeks after her diagnosis. She named the team Bite Me Cancer and experienced immediate success. When Nikki decided to create a foundation a few months later, she wanted to continue the legacy of her team name and thus her foundation became the Bite Me Cancer Foundation.

e-mail: info@bitemecancer.org

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.

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ThyCa: Thyroid Cancer
Survivors' Association, Inc.SM
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Continued...

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





ATA Alliance for Thyroid Patient Education

CALENDAR

“DANCING WITH THE CEOS”

Saturday, September 13, 2014

"Dancing with the CEOs" is a new event and the brainchild of Joey Darley. Bite Me Cancer will be one of the five nonprofits chosen to receive donations from this event. Dancing with the CEOs will be a fun, unique gala event featuring 12 of Metropolitan Washington D.C. area's top executives and 12 young professionals in a dance competition benefitting five local non-profits that work with childhood illness.

Go to dancing-4acause.com for more information.

“BITE ME CANCER FOR A LIFETIME!”

Sunday, August 3, 2014

"Bite Me Cancer for a Lifetime!" Our 3rd annual summer fundraiser will be held at a new location, the Reston Lifetime, 1757 Business Center Drive, Reston, VA 20190. 571-512-3500. Please join us and enjoy the outdoor Olympic size pool along with a variety of free opportunities to try out some fitness activities such as yoga, spin and insanity.

[Click here](https://www.lifetimefitness.com/en/clubs/reston-va/your-lt.html) for more information about the Reston Lifetime (<https://www.lifetimefitness.com/en/clubs/reston-va/your-lt.html>).

[Click here](http://www.bitemecancer.org/lifetime.asp) to learn more about the event and to purchase sponsorships and individual tickets (<http://www.bitemecancer.org/lifetime.asp>).