

# Clinical THYROIDOLOGY FOR PATIENTS



AMERICAN  
THYROID  
ASSOCIATION  
FOUNDED 1923

VOLUME 5 • ISSUE 7 • 2012

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Hypothyroidism in the mother during pregnancy has been associated with adverse effects on the baby and complications during pregnancy. This study is the latest of several studies that have examined the effects of screening all pregnant women for thyroid problems to determine if it is beneficial and worthwhile.

Lazarus JH et al. Antenatal thyroid screening and childhood cognitive function. *N Engl J Med* 2012;366:493-501.

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### **Testing for hypothyroidism during pregnancy**

Hypothyroidism in the mother during pregnancy is associated with adverse effects on the baby and complications during pregnancy. Because of this, many physicians advocate testing of pregnant women for thyroid problems early in pregnancy. The goal of this study was to determine how frequently pregnant women are tested for thyroid problems using a large national sample.

Blatt AJ et al. National status of testing for hypothyroidism during pregnancy and postpartum. *J. Clin. Endocrinol. Metab.* 97(3): 777-784. 2012.

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Some studies suggest that children whose mothers had hypothyroidism during the first trimester of pregnancy had both a lower IQ and defects in psychological development later in childhood as compared to children of mothers with normal thyroid function. The goal of the current study was to examine whether low levels of thyroid hormone in the mother during early pregnancy influences a child's brain development.

Momotani N et al. Neurodevelopment in children born to hypothyroid mothers restored to normal thyroxine ( $T_4$ ) concentration by late pregnancy in Japan: No apparent influence of maternal  $T_4$  deficiency. *J Clin Endocrinol Metab.* February 8, 2012 [Epub ahead of print].

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Too much iodine can cause either hyperthyroidism or hypothyroidism. This can occur in patients who receive large amounts of iodine from x-rays involving intravenous contrast dyes. This study was performed to estimate the risk of hyper- and hypothyroidism following exposure to iodine containing contrast dyes used in x-ray studies.

Rhee CM et al. Association between iodinated contrast media exposure and incident hyperthyroidism and hypothyroidism. *Arch Internal Medicine.* 2012; 172: 153-159.

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### **Microscopic extension of thyroid cancer does not change the risk of cancer recurrence**

An important predictive factor for thyroid cancer recurrence is when thyroid cancer extends beyond the edge of the thyroid. When that is seen after surgery, the decision to treat with radioactive iodine is frequently made. The authors of this study looked at the effect of microscopic extension on cancer recurrence in patients with small thyroid cancers.

Nixon IJ et al The impact of microscopic extrathyroid extension on outcome in patients with clinical T1 and T2 well-differentiated thyroid cancer. *Surgery* 2011;150:1242-49.

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### **Successful low dose radioactive iodine therapy in papillary microcarcinoma**

Recently, the use of radioactive iodine in low risk thyroid cancer patients has been questioned as it appears to provide very little benefit to these patients. When treated, smaller doses of radioactive iodine have been successfully used to destroy remaining thyroid tissue in these low risk patients with thyroid cancer. This study was done to find out if two small doses of radioactive iodine would be successful to destroy remaining thyroid tissue after the surgery in low risk thyroid cancer patients.

Clerc J e al Outpatient thyroid remnant ablation using repeated low  $^{131}$ -iodine activities (740 MBq/20 mCi x 2) in patients with low-risk differentiated thyroid cancer. *J Clin Endocrinol Metab.* January 11, 2012 [Epub ahead of print].

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#### Clinical Thyroidology for Patients

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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*.

Follow us on Twitter at [@thyroidfriends](https://twitter.com/thyroidfriends). Get the most up-to-date thyroid news fast and easy! Be the most informed thyroid patient in the waiting room. Please feel free to submit questions as well as suggestions as to how we can better serve thyroid patients.

The ATA has released a special report on the effects of radiation exposure to the thyroid from x-ray procedures entitled **Policy Statement on Thyroid Shielding During Diagnostic Medical and Dental Radiology**. This report is summarized in this issue on the [next page](#).

In this issue we shine the Spotlight On: **Graves' Disease and Thyroid Foundation** and an event in which a patient becomes "Greater Than Graves"!

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

- Should there be universal screening for detection of thyroid disease in pregnancy?
- How frequently are women tested for thyroid problems during pregnancy?
- Is the baby's brain development affected if the mother is diagnosed and treated for hypothyroidism during pregnancy?
- Are you at risk for thyroid problems if you are exposed to intravenous dye during an x-ray study?
- Is microscopic extension of thyroid cancer a risk factor for cancer recurrence?
- Can radioactive iodine be used instead of a repeat surgery after lobectomy in patients with 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



## SUMMARY

### Thyroid Shielding During Diagnostic Medical and Dental X-Ray Procedures

The American Thyroid Association has released a policy statement aiming to inform the public and healthcare practitioners about how to minimize risks to the thyroid gland associated with radiation exposure from diagnostic medical and dental x-ray procedures. Radiation exposure to the thyroid among both children and adults, such as occurs after radiation therapy for other cancers or exposure to radioactive fallout after nuclear reactor accidents (ie Chernobyl), is currently the strongest known risk factor for thyroid cancer. Until recently, the small amount of radiation exposure that occurs during routine x-ray procedures was discounted as a cause of thyroid cancer. This is indeed true when looking at a one-time exposure. However, repeated exposure to diagnostic x-rays may result in higher total doses to the thyroid.

With more than 56,000 cases of thyroid cancer likely to be diagnosed in the United States in 2012 alone, the incidence of thyroid cancer is increasing faster than any other cancer. Although it is unlikely that radiation exposure is the predominant contributor to this trend, an increase in the use of diagnostic x-rays, particularly computed tomography (CT), is widespread and necessitates the protection of the thyroid gland where possible to diminish thyroid cancer risk.

The first section of the ATA's policy statement is written for a general audience, while the second section reviews the medical literature supporting the policy. The chief conclusions and recommendations are as follows:

1. The risk of thyroid cancer arising from radiation exposure is very strongly dependent on age at exposure. Indeed, the thyroid cancer risk is very low for exposure after age 15.
2. The risks for thyroid cancer are reduced proportionately with reduction of the dose of radiation.
3. The necessity of all diagnostic x-rays should be evaluated before they are performed. This must include the potential risks as well as the potential benefits to the patient. This must also include a consideration of the alternative methods for obtaining the same or related clinical information.
4. Thyroid-protective collars **should be used** for all dental x-rays when they do not interfere with the examination.
5. Thyroid-protective collars are **not needed** for screening mammograms because the radiation dose to the thyroid during mammography is extremely low.
6. The patient or the patient's decision maker should be made aware of the potential risks and benefits of x-rays that result in radiation exposure.
7. Clinicians should be adequately informed about the potential risks of radiation exposure from x-rays, especially as they relate to children and to the thyroid.

To read the full report, click here: [Policy Statement on Thyroid Shielding During Diagnostic Medical and Dental Radiology](#).



## THYROID AND PREGNANCY

### Should there be universal screening for detection of thyroid disease in pregnancy?

#### BACKGROUND

Thyroid hormone is essential to normal brain development in the developing baby during pregnancy. The baby is completely dependent on getting thyroid hormone from the mother through the 1st trimester. Hypothyroidism in the mother during pregnancy has been associated with adverse effects on the baby and complications during pregnancy. Because of this, many physicians advocate testing all pregnant women for thyroid problems early in pregnancy, while others recommend testing for thyroid problems only in women that have certain risk factors for thyroid problems, such as a family history or an enlarged thyroid. This study is the latest of several studies that have examined the effects of screening all pregnant women for thyroid problems to determine if it is beneficial and worthwhile.

#### THE FULL ARTICLE TITLE:

Lazarus JH et al. Antenatal thyroid screening and childhood cognitive function. *N Engl J Med* 2012;366:493-501.

#### SUMMARY OF THE STUDY

Blood samples were obtained from 21,486 pregnant women who participated in this study. After blood samples were drawn, 10,924 women were randomly assigned to a group who were immediately tested for FT<sub>4</sub> and TSH and were treated with levothyroxine if the screening results showed evidence of hypothyroidism. The remaining 10,922 women served as a control group

whose blood samples were tested at a later date. Approximately 5% of the pregnant women tested had biochemical evidence of hypothyroidism. Despite the early treatment of hypothyroidism in the screened patients (beginning at a median of ~13 weeks of pregnancy), there were no significant differences between the screening and control groups with respect to gestational age at delivery, rates of preterm birth, birth weight or IQ and psychological assessments in the children.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that universal screening of all pregnant women is not beneficial. Further, this study provides support for current guidelines of screening for thyroid disease only in women with risk factors for thyroid problems. Since the present study resulted in starting therapy only at ~13 weeks of pregnancy, additional studies will be needed to determine if starting levothyroxine in women with hypothyroidism earlier in the first trimester of pregnancy will decrease the risk of pregnancy complications or adverse effect in the children.

— Frank Crantz, MD

#### ATA THYROID BROCHURE LINKS

Hypothyroidism: [http://thyroid.org/patients/patient\\_brochures/hypothyroidism.html](http://thyroid.org/patients/patient_brochures/hypothyroidism.html)

Thyroid and Pregnancy: [http://thyroid.org/patients/patient\\_brochures/pregnancy.html](http://thyroid.org/patients/patient_brochures/pregnancy.html)

#### ABBREVIATIONS & DEFINITIONS

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

**Levothyroxine:** the major hormone produced by the thyroid gland and available in pill form as Levoxyl™, Synthroid™, Levotheroid™ and generic preparations.

**Thyroxine (T<sub>4</sub>):** the major hormone secreted by the thyroid gland. Thyroxine is broken down to produce Triiodothyronine which causes most of the effects of the thyroid hormones.

**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.



## THYROID AND PREGNANCY

### Testing for hypothyroidism during pregnancy

#### BACKGROUND

Thyroid hormone plays an essential role in the development of a baby during pregnancy. Early in pregnancy the baby gets all of its thyroid hormone from the mother, so the mother's thyroid hormone status is very important. Hypothyroidism in the mother is associated with adverse health effects in the baby and complications during the pregnancy. Because of this, many physicians advocate testing all pregnant women for thyroid problems early in pregnancy, while others recommend testing for thyroid problems only in women that have certain risk factors for thyroid problems, such as a family history or an enlarged thyroid. The goal of this study was to determine how frequently pregnant women are tested for thyroid problems using a large national sample.

#### THE FULL ARTICLE TITLE:

Blatt AJ et al. National status of testing for hypothyroidism during pregnancy and postpartum. *J. Clin. Endocrinol. Metab.* 97(3): 777-784. 2012.

#### SUMMARY OF THE STUDY

This study examined thyroid function test results from pregnant women whose blood was sent to Quest Diagnostics laboratories for assessment between June 2005 and May 2008. Blood samples were available from a large number of pregnant women (502,036) and demonstrated that 23% of women ages 18-40 years had thyroid function tested during pregnancy. Of the women tested for thyroid dysfunction, 15.5 % (18,298 of 117,892) had an elevated TSH (based on pregnancy trimester normal ranges). Testing frequency increased with maternal age,

such that older pregnant women were more likely to have their thyroid function assessed and more likely (1.8 times) to have an elevated TSH compared to women aged 18-24 years. Thyroid testing showed some variability with ethnic background, with Asian women being tested at the highest rate and African American women at the lowest rate. The majority of women with an elevated TSH during pregnancy had normal T<sub>4</sub> values (97.6%), whereas only 2.4% had low T<sub>4</sub> levels.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that hypothyroidism during pregnancy is more common than generally expected and that testing rates during pregnancy are low. Currently, screening for thyroid disease during pregnancy is controversial. This study is important for the future care of patients, since it suggests that approximately 15.5% of pregnant women screened for thyroid problems will show some abnormality that may need to be addressed. Certainly, women who are at increased risk for thyroid disease or have concerns about thyroid problems should discuss these issues with their health care provider to determine whether thyroid testing is needed.

— Whitney Woodmansee, MD

#### ATA THYROID BROCHURE LINKS

Hypothyroidism: [http://thyroid.org/patients/patient\\_brochures/hypothyroidism.html](http://thyroid.org/patients/patient_brochures/hypothyroidism.html)

Thyroid and Pregnancy: [http://thyroid.org/patients/patient\\_brochures/pregnancy.html](http://thyroid.org/patients/patient_brochures/pregnancy.html)

#### ABBREVIATIONS & DEFINITIONS

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

**Thyroxine (T<sub>4</sub>):** the major hormone secreted by the thyroid gland. Thyroxine is broken down to produce

Triiodothyronine which causes most of the effects of the thyroid hormones.

**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.





## THYROID AND PREGNANCY

### Brain development may be entirely normal in children born to women with hypothyroidism who are treated during pregnancy

#### BACKGROUND

Thyroid hormone is essential for a baby's brain development even before birth. During early pregnancy the mother supplies thyroid hormone to the growing baby. Some studies suggest that children whose mothers had hypothyroidism during the first trimester of pregnancy had both a lower IQ and defects in psychological development later in childhood as compared to children of mothers with normal thyroid function. Still other studies show that these abnormalities are not seen when hypothyroidism in the mother is treated during pregnancy with thyroid hormone. The goal of the current study was to examine whether low levels of thyroid hormone in the mother during early pregnancy influences a child's brain development.

#### THE FULL ARTICLE TITLE:

Momotani N et al. Neurodevelopment in children born to hypothyroid mothers restored to normal thyroxine (T<sub>4</sub>) concentration by late pregnancy in Japan: No apparent influence of maternal T<sub>4</sub> deficiency. *J Clin Endocrinol Metab.* February 8, 2012 [Epub ahead of print].

#### SUMMARY OF THE STUDY

The authors studied the children of 5 women who had new-onset hypothyroidism diagnosed during early pregnancy and who began thyroid hormone replacement between the 6th and 16th week of pregnancy. With

treatment, 4 of the women were euthyroid by 20 weeks gestation, while the last remained mildly hypothyroid. Later, the psychological development of the children was measured between 25 months and 11 years of age using either the Tsumori-Inage Developmental Test or the Wechsler Intelligence Scale (IQ) for children. These scores were compared to those of siblings who were not exposed to hypothyroidism in their mother before birth. The authors found that there was no difference in developmental and IQ score between these two groups.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This was a very small study and it is difficult to draw conclusions; however, the results suggest that children whose mothers had hypothyroidism during early pregnancy do not develop brain deficits if their mothers are treated with thyroid hormone before the 20th week of pregnancy. These results are encouraging for expectant mothers suffering from hypothyroidism.

— Phillip Segal, MD

#### ATA THYROID BROCHURE LINKS

Hypothyroidism: [http://thyroid.org/patients/patient\\_brochures/hypothyroidism.html](http://thyroid.org/patients/patient_brochures/hypothyroidism.html)

Thyroid and Pregnancy: [http://thyroid.org/patients/patient\\_brochures/pregnancy.html](http://thyroid.org/patients/patient_brochures/pregnancy.html)

#### ABBREVIATIONS & DEFINITIONS

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

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

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



## HYPERTHYROIDISM

### Increased risk of hyperthyroidism within 2 years after exposure to intravenous contrast dye

#### BACKGROUND

Iodine is essential to the normal function of the thyroid gland. However, too much iodine can cause either hyperthyroidism or hypothyroidism. This can occur in patients who receive large amounts of iodine from x-rays involving intravenous contrast dyes. The exact risk of thyroid problems after intravenous contrast dye is unknown. This study was performed to estimate the risk of hyper- and hypothyroidism following exposure to iodine containing contrast dyes used in CT scans and heart catheterizations. The aim of the study was to determine the risk of changes in thyroid function, so patients and their doctors can be advised of these risks.

#### THE FULL ARTICLE TITLE:

Rhee CM et al. Association between iodinated contrast media exposure and incident hyperthyroidism and hypothyroidism. *Arch Internal Medicine*. 2012; 172: 153-159.

#### SUMMARY OF THE STUDY

A total of 4100 patients were identified who had a normal thyroid TSH level at one point and a second TSH for comparison within 2 weeks to 2 years after the first test. A low TSH developed in about 5% of the 4100 patients and the risk was almost double if the patient had received intravenous contrast dye. The risk was higher if the patient was female, had some kidney damage and was non-white. A high TSH level developed in about 6% of the 4100 patients, but there was no clear-cut risk over the 2 year time period that could be attributed to intravenous

contrast dye. A subset of patients did develop severe hypothyroidism within 6 months of the contrast dye.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that patients that receive iodine containing intravenous contrast dye are twice as likely to develop hyperthyroidism within 2 years as compared to patients that did not have these x-ray studies. Also, a subset of patients are at risk to develop severe hypothyroidism after receiving intravenous contrast dye. Since x-ray studies using intravenous contrast dye are very common, this study suggests that many patients that are at risk of developing thyroid problems after these studies. More studies are needed to determine if it is worthwhile to screen for thyroid problems before and after these tests. However, it is important for patients to realize that they should alert their doctor if they develop any symptoms that may be related to the thyroid after receiving intravenous contrast dye for any x-ray study.

— Jerrold Stock, MD

#### ATA THYROID BROCHURE LINKS

Hypothyroidism: [http://thyroid.org/patients/patient\\_brochures/hypothyroidism.html](http://thyroid.org/patients/patient_brochures/hypothyroidism.html)

Hyperthyroidism: [http://thyroid.org/patients/patient\\_brochures/hyperthyroidism.html](http://thyroid.org/patients/patient_brochures/hyperthyroidism.html)

Thyroid Function Tests: [http://thyroid.org/patients/patient\\_brochures/function\\_tests.html](http://thyroid.org/patients/patient_brochures/function_tests.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.

**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.

**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.

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



## THYROID CANCER

### Microscopic extension of thyroid cancer does not change the risk of cancer recurrence

#### BACKGROUND

Thyroid cancer is the fastest rising cancer in both women and men. Fortunately, the vast majority of patients do well and it is relatively rare to die of thyroid cancer. Indeed, in evaluating treatment options, cancer recurrence is the main clinical endpoint when discussing outcomes. An important predictive factor for thyroid cancer recurrence is when thyroid cancer extends beyond the edge of the thyroid. When that is seen after surgery, whether clearly visible or visible only under the microscope (microscopic extension), the decision to treat with radioactive iodine is frequently made. The authors of this study looked at the effect of microscopic extension on cancer recurrence in patients with small thyroid cancers.

#### THE FULL ARTICLE TITLE:

Nixon IJ et al The impact of microscopic extrathyroid extension on outcome in patients with clinical T1 and T2 well-differentiated thyroid cancer. Surgery 2011;150:1242-49.

#### SUMMARY OF THE STUDY

This study looked at 984 patients that had small thyroid cancers (<4 cm in size) that had not spread to the lymph nodes. A total of 115 patients (11.7%) had microscopic extension beyond the edge of the cancer. The remaining 869 patients (88.3%) had no evidence of extension of the

cancer. Patients with microscopic extension were more likely to have had a total thyroidectomy and received radioactive iodine treatment after surgery. All of the patients were followed for an average of 98 months (range 6 to 291), and there was no difference in cancer recurrence or survival between the groups. There were no thyroid cancer-related deaths in the group with microscopic spread of the cancer.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that microscopic extension does not affect thyroid cancer recurrence or survival in patients with small thyroid cancers that have not spread into the lymph nodes. These patients have an excellent chance of cure. In absence of other risk factors, it may be possible to avoid radioactive iodine treatment in these patients.

— Ronald Kuppersmith, MD

#### ATA THYROID BROCHURE LINKS

Thyroid cancer: [http://thyroid.org/patients/patient\\_brochures/cancer\\_of\\_thyroid.html](http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html)

Thyroid Surgery: [http://thyroid.org/patients/patient\\_brochures/surgery.html](http://thyroid.org/patients/patient_brochures/surgery.html)

Radioactive Iodine Therapy: [http://www.thyroid.org/patients/patient\\_brochures/radioactive\\_iodine.html](http://www.thyroid.org/patients/patient_brochures/radioactive_iodine.html)

#### ABBREVIATIONS & DEFINITIONS

**Thyroidectomy:** surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

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

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





## THYROID CANCER

### Successful low dose radioactive iodine therapy in papillary microcarcinoma

#### BACKGROUND

Thyroid cancer is the fastest rising cancer in women and papillary cancer is the most common type of thyroid cancer. Many of these patients have small papillary thyroid cancers <1cm in size, so called papillary microcarcinoma. In general these patients are at low risk for cancer recurrence and very few die of their cancer. Many thyroid cancer patients are treated with radioactive iodine after thyroid surgery to destroy any remaining cancerous thyroid tissue. Recently, the use of radioactive iodine in low risk patients has been questioned as it appears to provide very little benefit to these patients. When treated, smaller doses of radioactive iodine have been successfully used to destroy remaining thyroid tissue in these low risk patients with thyroid cancer. This study was done to find out if two small doses of radioactive iodine would be successful to destroy remaining thyroid tissue after the surgery in patients with papillary thyroid microcarcinoma.

#### THE FULL ARTICLE TITLE:

Clerc J et al Outpatient thyroid remnant ablation using repeated low <sup>131</sup>I-iodine activities (740 MBq/20 mCi x 2) in patients with low-risk differentiated thyroid cancer. J Clin Endocrinol Metab. January 11, 2012 [Epub ahead of print].

#### SUMMARY OF THE STUDY

A total of 160 patients with papillary microcarcinoma were treated with low doses (20 mCi) of radioactive iodine two weeks after thyroidectomy. After 6-18 months,

the low dose radioactive iodine therapy was repeated. All patients had serial ultrasound imaging and measurements of thyroglobulin to follow their thyroid cancer. The success rate for destroying all remaining thyroid tissue was 76% after one dose and 90% after the second dose. The most important predictor of a successful treatment with radioactive iodine was a thyroglobulin <10 after the surgery and before the first treatment.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In patients with papillary microcarcinoma, two low dose treatments of radioactive iodine are effective to destroy the remaining thyroid tissue after surgery. This study suggests that these low risk patients can benefit from radioactive iodine without being exposed to the potential risks of high dose radioactive iodine. Patients with papillary microcarcinoma usually do not need radioactive iodine therapy after the thyroid surgery. However, if the decision is made to treat with radioactive iodine, then low doses should be used.

— Jamshid Farahati, MD

#### ATA THYROID BROCHURE LINKS

Thyroid cancer: [http://thyroid.org/patients/patient\\_brochures/cancer\\_of\\_thyroid.html](http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html)

Radioactive Iodine Therapy: [http://www.thyroid.org/patients/patient\\_brochures/radioactive\\_iodine.html](http://www.thyroid.org/patients/patient_brochures/radioactive_iodine.html)

Thyroid Surgery: [http://thyroid.org/patients/patient\\_brochures/surgery.html](http://thyroid.org/patients/patient_brochures/surgery.html)

#### ABBREVIATIONS & DEFINITIONS

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

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

**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).

**mCi:** millicurie, the units used for I-131.

**Thyroidectomy:** surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed,

*continued on next page*



## **THYROID CANCER**, continued

such as in removal of a lobe, it is termed a partial thyroidectomy.

**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.

**Thyroglobulin:** a protein made only by thyroid cells, both normal and cancerous. When all normal thyroid tissue is destroyed after radioactive iodine therapy in patients with thyroid cancer, thyroglobulin can be used as a thyroid cancer marker in patients that do not have thyroglobulin antibodies.



## 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](http://www.thyroid.org)

ATA Patient Resources: <http://www.thyroid.org/patients/>

Find a Thyroid Specialist: [www.thyroid.org](http://www.thyroid.org)

Phone (toll-free): 1-800-THYROID

e-mail: [thyroid@thyroid.org](mailto: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](http://www.gdatf.org)

Phone (toll-free): 1-877-NGDF-123 or 643-3123

e-mail: [Gravesdiseasefd@gmail.com](mailto: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](http://www.checkyourneck.com)

email: [info@checkyourneck.com](mailto: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](http://www.thyca.org)

Phone (toll-free): 877 588-7904

e-mail: [thyca@thyca.org](mailto: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.





## SPOTLIGHT ON

### Graves' Disease and Thyroid Foundation

#### Becoming "Greater Than Graves"

Graves' disease took Michaela Cui on "the ride of her life" in 2011 — a 3,200-mile bicycle trek from Anchorage, AK to San Francisco, CA to become "Greater Than Graves" and raise funds and awareness for Graves' disease and other thyroid-related disorders. This year, a new team of riders is taking up the cause, setting out on a coast-to-coast journey from Boston, MA to San Francisco, CA.



#### Inaugural Trek

Ms. Cui was diagnosed with Graves' disease while studying aerospace engineering at the University of Colorado at Boulder. "I was having all these weird aches and pains, and my heart was going crazy," she recalls. Michaela also dropped down to 85 pounds, despite the fact that she was "eating bowls of ice cream and cereal and pop tarts." Family members were initially concerned that she was suffering from anorexia nervosa. A routine checkup finally led to a diagnosis of Graves' disease.

The idea for the trek began when Ms. Cui was in the early stages of treatment. "I began to feel alone and uncertain of my future," Ms. Cui recalls. "So I decided to do something about it and focus my energies on building awareness and understanding of this disease."

Michaela contacted the Graves' Disease and Thyroid Foundation who agreed to be her sponsoring organization. Funds raised by the ride support the patient education and support programs of the Foundation. Friends Chris Doudna and Ben Weerts signed on to support her efforts by participating. Brother Jeremy Cui designed a special logo for the journey, a silhouette of a biker with butterfly wings. Father Dan

Cui set up a "Greater Than Graves" web site, and mom Deb Cui agreed to drive a support vehicle.

The ride kicked off in Anchorage, AK. Fifty days and 3,200 miles later, Michaela and Chris crossed the

Golden Gate Bridge in San Francisco and hoisted their bikes above their heads for a final victory photo.

#### Continuing the Tradition

With Michaela moving on to a new job after her epic journey, the story might have ended there. But in late 2011, Elias McQuade of Manchester, NH and two friends – David Britton and Keating Tufts – had decided to undertake a cross-country bike trek to raise funds and awareness for Graves' disease.

"I drew the inspiration for the idea from my sister, who has had to deal with the challenges of Graves' disease," Mr. McQuade explained. "I decided on a cross country bike ride because I feel that the ride would challenge me physically and mentally and could give me insight into the daily problems that face those who have diseases that affect their lives."

The team came across Michaela's story and were surprised to find out that Michaela's family lived in New Hampshire, only about 30 miles away. With this new connection forged – and support from the Graves' Disease and Thyroid Foundation – plans for the 2012 ride rapidly unfolded.

With support driver David Casinghino rounding out the team, the 2012 adventure began at Christopher Columbus Waterfront Park in Boston, MA on May 26th. The riders kicked off the journey by dipping their bikes in the Atlantic Ocean – and plan to repeat

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*continued*, **SPOTLIGHT ON**  
**Graves' Disease and Thyroid Foundation —**  
**Becoming “Greater Than Graves”**

the ritual when they reach the Pacific Ocean on July 31st.

The team reached Ann Arbor, MI on June 8th, where the University of Michigan Kellogg Eye Center hosted a special patient education workshop and picnic in conjunction with the event. The “Greater Than Graves” team also made a special presentation at the event, sharing photos and stories from the road. Even though the ride had only been underway for two weeks, the team was surprised at how many people they had already connected with whose lives had been impacted by Graves' disease.

The next major stop scheduled after Ann Arbor is Chicago, IL, followed by Madison, WI and Minneapolis, MN. The team expects to reach San Francisco on July 31st. Another patient education workshop is planned at the conclusion of the ride, co-sponsored by the Graves' Disease and Thyroid Foundation and the Let's Face It Together Foundation, founded by Dr. Kimberly Cockerham, MD, FACS.

— **Kimberly K. Dorris**  
Graves' Disease & Thyroid Foundation  
Executive Director

**You can follow their ride on Twitter at @GTGrIde.**

**For more information, please visit:**

[www.lfitfoundation.org](http://www.lfitfoundation.org)

[www.greaterthangraves.com](http://www.greaterthangraves.com)

[www.gdatf.org](http://www.gdatf.org)

[www.kellogg.umich.edu](http://www.kellogg.umich.edu)





## **ATA Alliance for Thyroid Patient Education CALENDAR OF EVENTS**

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

### **ATA Conferences** [www.thyroid.org](http://www.thyroid.org)

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

### **Graves' Disease Conferences** [www.gdatf.org](http://www.gdatf.org)

July 22, 2012 — Orefield, PA — **Drewstock Unplugged**. Details at [www.gdatf.org](http://www.gdatf.org)

July 31, 2012 — San Francisco, CA

Celebrate the conclusion of the **Greater Than Graves' ride** by joining us at this **Patient Education Workshop** hosted by the Let's Face It Together Foundation. Details at [www.gdatf.org](http://www.gdatf.org)

August 18, 2012 — Fairfield, Ohio — **1st Annual Graves' Disease & Thyroid Awareness Motorcycle Ride and Party**. Charity Motorcycle Benefit & Ride to raise awareness for Graves Disease & other thyroid related disorders. Details at [www.gdatf.org](http://www.gdatf.org)

August 25, 2012 — Wind Gap, PA — **Drewstock**. All Ages Event Bring your own drinks, food will be onsite or bring your own. Details at [www.gdatf.org](http://www.gdatf.org)

October 26- 28, 2012 - San Diego, CA

**Patient & Family Conference** at the beautiful Kona Kai Resort & Spa. Details at [www.gdatf.org](http://www.gdatf.org)

### **Light of Life Foundation** [www.checkyourneck.com](http://www.checkyourneck.com)

Ongoing — [www.checkyourneck.com](http://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.

November 17, 2012 — New York, NY

**Annual Light of Life Foundation Patient Symposium**. Details at [www.checkyourneck.com](http://www.checkyourneck.com)

### **ThyCa Conferences** [www.thyca.org](http://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](http://www.thyca.org/sg/local)

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](http://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](http://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](http://www.thyca.org)