



## THYROID CANCER

### Thyroid cancer size is related to growth of the cancer outside the thyroid and to recurrence of the cancer

#### WHAT IS THE STUDY ABOUT?

The majority of patients with thyroid cancer do well after the initial surgery and, frequently, radioactive iodine treatment. While overall death from thyroid cancer is rare, recurrence of the cancer is relatively common and usually occurs within the neck. Many factors are examined in thyroid cancer patients at the time of surgery to estimate the risk of recurrence of cancer and to help decide upon the need and type of further treatments. The factors that are considered important in predicting cancer recurrence are: cancer type, cancer size, degree of spread outside the thyroid (minimal or extensive) and presence of spread to surrounding removed lymph nodes. This study was done to examine these factors years after initial treatment in order to understand the future risk of recurrence of cancer from these initial features.

#### THE FULL ARTICLE TITLE:

Kramer JA et.al, Primary tumor size is a prognostic parameter in patients suffering from differentiated thyroid carcinoma with extrathyroidal growth: results of the MSDS trial. Eur J Endocrinology 2010;163:637-44.

#### WHAT WAS THE AIM OF THE STUDY?

The aim of the study was to calculate the future risk of recurrence of thyroid cancer from the initial type, size, degree of spread to surrounding tissues and presence of lymph nodes with cancer at the time of initial surgery.

#### WHO WAS STUDIED?

The Multicenter Study Differentiated Thyroid Cancer (MSDS) collective is a well-defined group of patients in Europe with thyroid cancers with extrathyroidal extension. The study group included 324 thyroid cancer patients in the MSDS group in Germany, Austria and Switzerland. There were 307 patients with minimal extrathyroidal growth of the cancer and 17 patients with more extensive extrathyroidal growth.

#### HOW WAS THE STUDY DONE?

All patients were treated with total thyroid removal (total thyroidectomy), lymph node removal and radioactive iodine treatment. Patients were monitored

by examination, neck ultrasound, Thyroglobulin measurement and other x-ray imaging tests for 6 years.

#### WHAT WERE THE RESULTS OF THE STUDY?

Most of the patients required more than one surgery to remove their thyroid cancer and 78% also had the central lymph nodes removed. Only 3 (0.9%) patients died of their thyroid cancer during the study period. The risk of recurrence began to increase with initial cancer size of 2 cm. For cancers less than 2 cm, the risk of recurrence was about 3.5% while recurrence was as high as 10% for cancers larger than 2 cm. A higher recurrence was seen when more extensive spread outside the thyroid margin was found and when lymph nodes were found to contain cancer at the time of surgery. Cancers smaller than 2 cm are less likely to demonstrate extensive spread outside the thyroid and therefore have a lower rate of recurrence.

#### HOW DOES THIS COMPARE WITH OTHER STUDIES?

Other studies support the estimate of about 5% risk of recurrence for cancers less than 1 cm in size and progressive risk for larger cancers. However several studies have suggested that the recurrence risk increased at cancers larger than 4 cm, while this study saw an increase risk beginning at cancers 2 cm in diameter.

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

Since the risk of recurrence is related to the initial size for the cancer, this study suggests that patients with cancers >2 cm should be treated more aggressively with surgery and radioactive iodine. These patients also should be followed more closely than patients with cancers <2 cm.

— Jerrold Stock, 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)

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## THYROID CANCER, continued

### ABBREVIATIONS & DEFINITIONS

**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).

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

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

**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.

**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.

**Thyroid hormone therapy** — patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to normal. Replacement therapy means the goal is a TSH in the normal range and is the usual therapy. Suppressive therapy means that the goal is a TSH below the normal range and is used in thyroid cancer patients to prevent growth of any remaining cancer cells.