

# THYROID CARCINOMA

## What is thyroid cancer?

The thyroid gland is located in the lower front of the neck, above the collarbones and below the voice box (larynx). Thyroid cancer (carcinoma) usually appears as a painless lump in this area. In most cases, the lump is only on one side, and the results of thyroid function tests (blood tests) are usually normal.

There are four main types of thyroid cancer (papillary, follicular, medullary and anaplastic). Since the vast majority are either papillary or follicular, and these are the only two types treatable with radioiodine, we will focus on these two types.

## What are the features of thyroid cancer?

Many patients with thyroid cancer have no symptoms whatsoever and are found by chance to have a lump in the thyroid gland on a routine physical exam or an imaging study of the neck done for unrelated reasons (CT or MRI scan of spine or chest, carotid ultrasound, etc.). Some patients with thyroid cancer become aware of a gradually enlarging lump in the front portion of the neck, which usually moves with swallowing. Occasionally, the lump may cause a feeling of pressure. Obviously, finding a lump in the neck should be brought to the attention of your physician, even in the absence of symptoms.

## What are the causes of thyroid cancer?

As with many types of cancer, the specific reason for developing thyroid cancer remains a mystery in the vast majority of patients. Some major risk factors are:

- A history of radiation to the head or neck, especially during childhood
- Genetic predisposition (the influence of heredity), particularly for the medullary type of thyroid cancer

## How is thyroid cancer diagnosed?

(NOTE: See Thyroid Nodule handout)

First, your physician takes a detailed history and performs a careful physical examination, especially of the thyroid gland. The best diagnostic approach for a specific patient will be determined by your physician after careful consideration of all the facts. The tests available to your physician for evaluation of the thyroid lump include, but are not limited to, the following:

- Fine-needle aspiration biopsy: This is usually done first and, if positive, significantly reduces the need for more elaborate and expensive testing
- Ultrasonography: This may be required for guidance of the fine needle biopsy if the nodule is difficult to feel

- Thyroid scan: this can be done to see if the mass is capable of concentrating radioiodine, particularly in those patients with low TSH levels
- Blood studies

## How is thyroid cancer treated?

Fortunately, most types of thyroid cancer can be diagnosed early and cured completely, but a thoughtful and comprehensive investigation is necessary. If thyroid cancer is suspected after review of all the information, referral to an experienced thyroid surgeon is recommended.

If the diagnosis of thyroid cancer is certain or highly likely, the usual approach is to remove both sides of the thyroid gland. If the diagnosis of thyroid cancer is much less certain or cannot be made during surgery, only the side of the thyroid containing the lump may be removed. If cancer is subsequently confirmed, further consultation with the endocrinologist is appropriate. Additional surgery may be required to remove the remaining tissue in order to reduce the risk of recurrence of cancer. In cases when the risk of recurrence is significant, radioactive iodine treatment may be recommended in order to destroy any remaining malignant thyroid cells.

Radioactive iodine treatment should never be given to a pregnant or nursing woman! Small amounts of radioactive iodine will also be excreted in breast milk. Since radioiodine could permanently damage the infant's thyroid, breastfeeding is not allowed. If radioiodine is inadvertently administered to a woman who is subsequently discovered to be pregnant, the advisability of terminating the pregnancy should be discussed with the patient's obstetrician and endocrinologist. Therefore, prior to administering diagnostic or therapeutic radioiodine treatment, pregnancy testing is mandatory whenever pregnancy is possible. After radioiodine therapy, thyroid medication (levothyroxine) should be started and dosed to replace the function of the thyroid and to decrease the likelihood of cancer recurrence. Periodic monitoring is supervised by the endocrinologist, and may include ultrasound examinations, radioiodine body scans, and periodic testing of a blood protein called thyroglobulin, which is found in normal thyroid cells but can also be produced by thyroid cancer cells.

The optimal frequency of further monitoring studies to be certain that the cancer has not recurred will be determined by your physician. Fortunately, most types of thyroid cancer have a very good prognosis when diagnosed early and treated by a physician who is familiar with their management.

