

# Thyroiditis

## WHAT IS THE THYROID GLAND?

The thyroid gland is a butterfly-shaped endocrine gland that is normally located in the lower front of the neck. The thyroid's job is to make thyroid hormones, which are secreted into the blood and then carried to every tissue in the body. Thyroid hormone helps the body use energy, stay warm and keep the brain, heart, muscles, and other organs working as they should.

## WHAT IS THYROIDITIS?

Thyroiditis is a general term that refers to "inflammation of the thyroid gland". Thyroiditis includes a group of individual disorders causing thyroidal inflammation but presenting in different ways. For example, Hashimoto's thyroiditis is the most common cause of hypothyroidism in the United States. Postpartum thyroiditis, which causes temporary thyrotoxicosis (high thyroid hormone levels in the blood) followed by temporary hypothyroidism, is a common cause of thyroid problems after the delivery of a baby. Subacute thyroiditis is the major cause of pain in the thyroid. Thyroiditis can also be seen in patients taking the drugs interferon and amiodarone.

## WHAT ARE THE CLINICAL SYMPTOMS OF THYROIDITIS?

There are no symptoms unique to thyroiditis. If the thyroiditis causes slow and chronic thyroid cell damage and destruction, leading to a fall in thyroid hormone levels in the blood, patients experience the symptoms of hypothyroidism (see *Hypothyroidism brochure*). Typical hypothyroid symptoms include fatigue, weight gain, constipation, dry skin, depression and poor exercise tolerance. This would be the case in patients with Hashimoto's thyroiditis. If the thyroiditis causes rapid thyroid cell damage and destruction, the thyroid hormone that is stored in the gland leaks out, increasing thyroid hormone levels in the blood. These patients will experience the symptoms of thyrotoxicosis, which are similar to hyperthyroidism (see *Hyperthyroidism brochure*). These symptoms often include anxiety, insomnia, palpitations (fast heart rate), fatigue, weight loss, and irritability. This is seen in patients with the toxic phase of subacute, painless and post-partum thyroiditis. The symptoms of thyrotoxicosis and hyperthyroidism are both caused by elevated levels of thyroid hormone in the blood, but in thyrotoxicosis, the gland is not truly overactive.

In subacute, painless and post-partum thyroiditis, the thyroid gland often becomes depleted of thyroid hormone as the course of inflammation continues leading to a fall in thyroid hormone levels in the blood and symptoms of hypothyroidism. Pain in the thyroid can be seen in patients with subacute thyroiditis

## WHAT CAUSES THYROIDITIS?

Thyroiditis is caused by an attack on the thyroid, causing inflammation and damage to the thyroid cells. Antibodies that attack the thyroid cause most types of thyroiditis. As such, thyroiditis is often an autoimmune disease, like juvenile diabetes and rheumatoid arthritis. No one knows why certain people make thyroid antibodies, although this tends to run in families. Thyroiditis can also be caused by an infection, such as a virus or bacteria, which works in the same way as antibodies to cause inflammation in the gland. Finally, drugs such as interferon and amiodarone, can also damage thyroid cells and cause thyroiditis.

## WHAT IS THE CLINICAL COURSE OF THYROIDITIS?

The course of thyroiditis depends on the type of thyroiditis.

**HASHIMOTO'S THYROIDITIS** – Patients usually present with hypothyroidism, which is usually permanent.

**PAINLESS AND POST-PARTUM THYROIDITIS** – These disorders are similar and follow the same general clinical course of thyrotoxicosis followed by hypothyroidism. The only real difference between them is that post-partum thyroiditis occurs after the delivery of a baby while painless thyroiditis occurs in men and in women not related to a pregnancy. Not all patients demonstrate evidence of going through both phases; approximately 1/3 of patients will manifest both phases, while 1/3 of patients will have only a thyrotoxic or hypothyroid phase. The thyrotoxic phase lasts for 1-3 months and is associated with symptoms including anxiety, insomnia, palpitations (fast heart rate), fatigue, weight loss, and irritability. The hypothyroid phase typically occurs 1-3 months after the thyrotoxic phase and may last up to 9 – 12 months. Typical symptoms include fatigue, weight gain, constipation, dry skin, depression and poor exercise tolerance. Most patients (~80%) will have return of their thyroid function to normal within 12-18 months after the onset of symptoms.

# Thyroiditis

**WHAT ARE THE TYPES OF THYROIDITIS?** THERE ARE MANY TYPES OF THYROIDITIS, WHICH ARE SUMMARIZED IN THE TABLE BELOW:

TYPE	CAUSE	CLINICAL FEATURES	DIAGNOSIS <small>(NOT ALL TESTS MAY BE NEEDED)</small>	DURATION & RESOLUTION
Hashimoto's thyroiditis	Anti-thyroid antibodies, autoimmune disease	Hypothyroidism, rare cases of transient thyrotoxicosis	Thyroid function tests, thyroid antibody tests	Hypothyroidism is usually permanent
Subacute thyroiditis (de Quervain's thyroiditis)	Possible viral cause	Painful thyroid, thyrotoxicosis followed by hypothyroidism	Thyroid function tests, sedimentation rate, radioactive iodine uptake	Resolves to normal thyroid function within 12-18 months, 5% possibility of permanent hypothyroidism.
Silent thyroiditis, Painless thyroiditis	Anti-thyroid antibodies, autoimmune disease	Thyrotoxicosis followed by hypothyroidism.	Thyroid function tests, thyroid antibody tests, radioactive iodine uptake	Resolves to normal thyroid function within 12-18 months, 20% possibility of permanent hypothyroidism.
Post partum thyroiditis	Anti-thyroid antibodies, autoimmune disease	Thyrotoxicosis followed by hypothyroidism.	Thyroid function tests, thyroid antibody tests, radioactive iodine uptake ( <u>contraindicated</u> if the women is breast-feeding)	Resolves to normal thyroid function within 12-18 months, 20% possibility of permanent hypothyroidism
Drug induced	Drugs include: amiodarone, lithium, interferons, cytokines	Either thyrotoxicosis or hypothyroidism.	Thyroid function tests, thyroid antibody tests	Often continues as long as the drug is taken
Radiation induced	Follows treatment with radioactive iodine for hyperthyroidism or external beam radiation therapy for certain cancers.	Occasionally thyrotoxicosis, more frequently hypothyroidism.	Thyroid function tests	Thyrotoxicosis is transient, hypothyroidism is usually permanent
Acute thyroiditis, Suppurative thyroiditis	Bacteria mainly, but any infectious organism	Occasionally painful thyroid, generalized illness, occasional mild hypothyroidism	Thyroid function tests, radioactive iodine uptake, fine needle aspiration biopsy	Resolves after treatment of infectious cause, may cause severe illness

**SUBACUTE THYROIDITIS** – Subacute thyroiditis follows the same clinical course as painless and post-partum thyroiditis, but is often accompanied by thyroidal pain. The thyroidal pain in patients with subacute thyroiditis usually follows the same time-frame of the thyrotoxic phase (1-3 months). However, not all patients with thyroidal pain necessarily have thyrotoxicosis. As noted with painless and post-partum thyroiditis, resolution

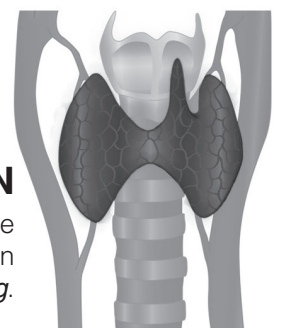
of all thyroidal abnormalities after 12-18 months is seen in most patients (~95%). Recurrence of subacute thyroiditis is rare.

**DRUG-INDUCED AND RADIATION THYROIDITIS** – Both thyrotoxicosis and hypothyroidism may be seen in these disorders. The thyrotoxicosis is usually short-lived. Drug-induced hypothyroidism often resolves with the cessation of the drug, while the hypothyroidism related to radiation thyroiditis is usually permanent.

**ACUTE/INFECTIOUS THYROIDITIS** – Symptoms may include thyroidal pain, systemic illness, painless enlargement of the thyroid and hypothyroidism. The symptoms usually resolve once the infection resolves.

## FURTHER INFORMATION

Further details on this and other thyroid-related topics are available in the patient information section on the American Thyroid Association® website at [www.thyroid.org](http://www.thyroid.org).



# Thyroiditis

## HOW IS THYROIDITIS TREATED?

Treatment depends on the type of thyroiditis and the clinical presentation.

- **Thyrotoxicosis** – Beta blockers to decrease palpitations and reduce shakes and tremors may be helpful. As symptoms improve, the medication is tapered off since the thyrotoxic phase is temporary. Antithyroid medications (see *Hyperthyroid brochure*) are not used for the thyrotoxic phase of thyroiditis of any kind since the thyroid is not overactive.
- **Hypothyroidism** – Treatment is initiated with thyroid hormone replacement for hypothyroidism due to Hashimoto's thyroiditis (see *Thyroid Hormone Treatment brochure*). In patients who are symptomatic with the hypothyroid phase of subacute, painless and post-partum thyroiditis, thyroid hormone therapy is also indicated. If the hypothyroidism in these latter disorders is mild and the patient has few, if any, symptoms, then no therapy may be necessary. If thyroid hormone therapy is begun in patients with subacute, painless and post-partum thyroiditis, the treatment should be continued for approximately 6-12 months and then tapered to see if it is required permanently.
- **Thyroidal pain** – The pain associated with subacute thyroiditis usually can be managed with mild anti-inflammatory medications such as aspirin or ibuprofen. Occasionally, the pain can be severe and require steroid therapy with prednisone.



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