

# Goitre

## ***What is goitre?***

Goitre means enlargement of the thyroid gland; it does not always indicate an abnormality or that the thyroid is not working correctly. Goitre can occur when the thyroid is overactive (hyperthyroidism), underactive (hypothyroidism) or working perfectly (euthyroidism).

## ***Causes***

The most common cause of goitre worldwide is dietary iodine deficiency where the thyroid enlarges to try to gather (trap) as much iodine as possible. Dietary deficiency is now rare in the West; the main dietary sources of iodine in the UK are dairy produce and seafood.

In the United Kingdom goitre is now mostly due to Hashimoto's thyroiditis - an autoimmune condition where the thyroid is destroyed by the body's own immune system. As the gland is progressively damaged it makes less and less thyroxine and the pituitary gland tries to compensate by making more thyroid stimulating hormone (TSH), this stimulation from TSH, together with the destruction, causes the thyroid to enlarge and goitre can occur.

In hyperthyroidism due to Graves' disease the thyroid is often diffusely enlarged because of direct stimulation of the gland by thyroid receptor antibodies (TRAb), in this case the level of thyroxine is high but the TSH is suppressed.

Nodules in the thyroid often cause goitre. If there are many nodules in the thyroid as they enlarge a multinodular goitre can occur. Sometimes there is a single nodule, or a single dominant nodule alongside many smaller nodules, which, if large can cause goitre.

## ***How is it diagnosed?***

Usually goitre is either noticed by the patient or found on physical examination, sometimes incidentally or when investigating hyper or hypothyroidism. The examination will usually determine if the goitre is multinodular or diffusely enlarged (as in Graves' disease), and whether the patient is hypothyroid, hyperthyroid or euthyroid; this will be supported by blood tests. Sometimes an ultrasound or radioiodine scan might be done and in large goitres even non-contrast CT may be necessary to completely show its size and position.

## ***Treatment***

Hyper or hypothyroidism will normally require specific treatment. In Graves' disease as the hyperthyroidism is treated (usually carbimazole or propylthiouracil) the goitre often resolves; in Hashimoto's the thyroid often does not get smaller, the destructive inflammation often causes too much scarring for the thyroid to resolve; as the thyroid is underactive thyroxine is usually prescribed. Euthyroid multinodular goitres tend to slowly enlarge over time and if the appearance is troublesome or the patient wants to prevent it getting worse then surgery or radioactive iodine are options. If the thyroid is very enlarged, particularly if low lying and partially behind the breastplate, it can compress the windpipe (trachea) and constrict the breathing – in this case it often needs surgical removal.

Every effort is made to ensure that this health and medication advice is accurate and up to date. It is for information only and supports your consultation it does not obviate the need for that consultation and should not replace a visit to your doctor or health care professional.

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