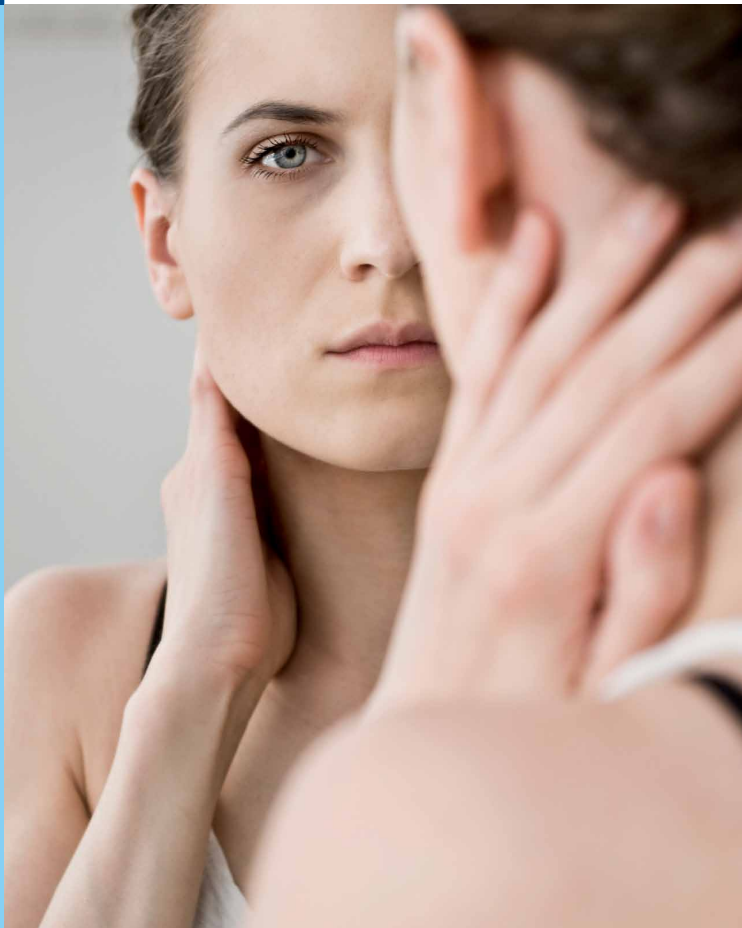


The formation of a **goiter**

what everyone should know
about an enlarged thyroid



The formation of a goiter:

what everyone should know about an enlarged thyroid

Did you know?

- The chronic shortage of iodine in the diet is the worldwide number one cause of enlarged thyroid (commonly referred to as “goiter”).¹
- A goiter can also occur when the thyroid is functioning normally.
- The goiter is not a disorder, which has only emerged in modern times. In China, even approx. 5,000 years ago, foods (such as sea grass), which contain iodine were applied to the treatment of goiter.²

How does a goiter form?

The chronic shortage of iodine in the diet is the worldwide most common cause for an enlarged thyroid. In fact, according to the United Nations World Food Program, an estimated one billion people worldwide are affected by an iodine deficiency.³

With iodine deficiency the thyroid attempts to compensate for this deficiency (and for the resulting shortage/stoppage in hormone production). The result: The thyroid – which is approximately the size of the top part of the thumb, gradually grows to an immense size.

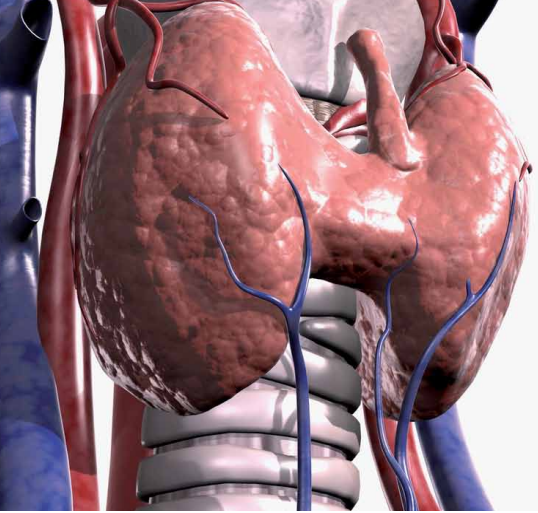
Who is affected by a goiter?

Those affected by iodine deficiency are most at risk for the formation of a goiter. Smoking⁴ and exposure to high levels of nitrate⁵ (for instance, via drinking water) can also help cause goiters. Further risk factors include:

- Familial predisposition⁶
- Hormonal changes during pregnancy, puberty or menopause⁷
- Thyroid inflammation (thyroiditis)⁸
- Hyperthyroidism (overactive thyroid)⁹
- Hypothyroidism (underactive thyroid)¹⁰
- Graves' disease, Hashimoto's thyroiditis (auto-immune disorders affecting the thyroid)^{11 12}
- Certain medications (e.g. thyreostatics, lithium)¹³

What are the potential consequences of untreated goiter?

The larger the thyroid, the greater the risk that also the surrounding organs will be affected. If the thyroid is immensely enlarged, then (for instance), the windpipe, cervical (neck) blood vessels and/or the oesophagus can be displaced or constricted.



If a goiter is thought to be present, a medical examination is always essential. Simple visual classification can be inaccurate – primarily due to the possible human error and one's individual anatomy (e.g. a particularly muscular neck which more readily conceals the enlarged thyroid) – and by no means serve as a substitute for a specific diagnosis by a doctor.

What should you look out for?

Initially, a goiter does not have to cause any symptoms, as long as the thyroid is functioning normally. If the goiter has already increased in size, its initial signs are cosmetic in nature. This is usually the point at which affected persons consult a doctor. A significantly-enlarged goiter which applies pressure to surrounding organs can become noticeable with onset of the following symptoms:¹⁶

The thyroid – know the facts^{14 15}

- The thyroid is a small, butterfly-shaped organ situated in the lower region of the neck in front of the windpipe.
- From iodine and other components, the thyroid produces (in the respectively necessary amounts) the hormones thyroxine (T4) and triiodothyronine (T3); these regulate all metabolic processes in the body.
- Hormone production in the thyroid is promoted by the thyroid-stimulant hormone (TSH) of the pituitary gland.
- If the thyroid lacks iodine, it partially or completely fails to produce the hormones T4 and T3 – this disrupts the sensitive metabolic cycles and in turn can lead to goiter or nodule formation in the thyroid tissue.



- A sensation of pressure (a “lump”) in the throat
- Difficulty swallowing/pain upon swallowing
- Hoarseness
- Chronic cough
- Laboured breathing with the head in a certain position
- Laboured breathing in stress situations
- Unpleasant sensation of constriction when wearing neckties, turtleneck sweaters etc.

If thyroid dysfunction has occurred in addition to the onset of the goiter, the resulting symptoms indicate possible hypo- or hyperthyroidism (under- or overactive thyroid).

There is help available

A goiter is not an inescapable fate — and only very rarely malignant.

If you notice a knob by feel or sight or a change in your thyroid, then you should consult your physician who can make a more precise diagnosis.

A physical examination (feeling the area) is the simplest way to verify the size and consistency of the mutated thyroid tissue.

The treatment of goiter and nodules is mostly effective and non-complicated.

Diagnosis of a goiter¹⁷

Your doctor will initially perform a simple physical examination. Then, a blood sample is taken which serves primarily to determine whether there is a sufficient amount of thyroid-stimulant hormone (TSH) in the bloodstream. Based on this value, it is possible to gain a “reading” as to whether the thyroid is functioning normally, or whether the goiter has formed due to hypothyroidism or to hyperthyroidism.

Another element of basic diagnostics in this context is ultrasonography (an ultrasound examination) which determines the precise size of the thyroid.





Treatment of a goiter¹⁸

In general, there are three different possible goiter therapies. The choice of therapy depends on each individual patient's diagnosis. The primary aim of treatment is the shrinkage of the goiter.

• Treatment with medication(s)

In some cases, treatment can be performed with iodine tablets, levothyroxine (a thyroid-hormone preparation) or a combination of both.

• Radioiodine therapy

Radioiodine is administered on a one-off basis, in the form of a capsule or as a liquid. It then enters the thyroid, via the bloodstream,

where it is stored – and prompts the shrinkage of the goiter due to the short-range radiation.

• Thyroid surgery

When the occurrence of a malignant growth in the thyroid is detected, the whole thyroid gland should be removed via surgery and if the goiter causes immense discomfort the thyroid gland can be partially/completely removed. Following such a procedure, treatment with substitution therapy (levothyroxine) is required to replace the lacking thyroid hormone production.

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For further information

If you would like to find out more detailed information on thyroid disorders, you can visit these websites:

www.thyroidweek.com www.thyroid-fed.org

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