

## What is the best approach to goiter for euthyroid patients?

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### Evidence-based answer

A detailed history and exam, confirmation of euthyroid status, and imaging when appropriate is the best approach to euthyroid patients with thyroid enlargement in regions where goiters are not endemic. Ultrasound imaging is recommended in any case of diagnostic uncertainty. Evaluate dominant or suspicious nodules further, while diffuse goiters without symptoms require no further evaluation

and can be followed clinically (strength of recommendation [SOR]: **C**, expert opinion).

Suppressive therapy with levothyroxine can be used to decrease thyroid size for cosmetic reasons or in the case of mild local symptoms, although response is variable (SOR: **B**, based on small placebo-controlled trials). Patients with severe local symptoms should receive further evaluation and possible surgical management.

### Clinical commentary

#### A patient with a euthyroid goiter; an opportunity to do no harm

One of my patients is a 95-year-old woman who has spent most of the last 95 years taking very good care of herself. She has a small, slightly asymmetrical goiter that is probably only noticeable to her and to me (when she regularly calls my attention to it). One of the precepts of medicine is to “first do no harm,” and care of the patient with goiter is an excellent opportunity to practice this approach.

An initial ultrasound can give you good reassurance that the goiter is benign.

Treatment of a goiter with thyroxine has questionable positive value and puts the patient at considerable risk for the problems of hyperthyroidism such as cardiac dysrhythmias and especially osteoporosis. So I keep tabs on her thyroid with a periodic thyroid-stimulating hormone (TSH) test and regular exams, and we spend a few moments at nearly every visit talking about how the best treatment can often be no treatment at all.

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### FAST TRACK

**Start with a history, physical exam, and thyroid ultrasound; patients with a reassuring workup can be followed clinically**

### Evidence summary

#### Prevalence and types

In areas where iodine supplementation is routine, the prevalence of goiter is estimated to be 4% to 7%; however, autopsy studies show a 50% prevalence of nodules, most of which are multinodular goiter.<sup>1</sup> Multinodular goiter is diagnosed

in up to 5% of the general population and can be classified as euthyroid (“nontoxic”), hypothyroid, or hyperthyroid (“toxic”).<sup>1</sup> Multinodular goiter is the most common diagnosis in cases of euthyroid goiter, but other conditions such as diffuse goiter (often idiopathic), thyroiditis, and neoplasms can also present in a euthyroid state.

CONTINUED

Abnormal left lobe of the thyroid gland

**FAST TRACK**

**Benign goiters can be left untreated; suppressive therapy with thyroxine is controversial**

**Diagnosis: Exam and imaging**

Studies show variable correlation between physical exam findings and findings on imaging studies. In a retrospective chart review, ultrasound findings differed from clinical exam findings in 63% of cases.<sup>2</sup> Thyroid ultrasound is less expensive and less invasive than other imaging modalities, provides excellent visualization of thyroid structure and the nature of cysts and nodules, and allows for estimation of thyroid size.

Computed tomography and magnetic resonance imaging perform better for visualization of extension of thyroid tissue substernally and are also preferred for evaluation of the neck in cases of severe local complications of goiter, such as compressive symptoms.<sup>3</sup>

The malignant potential in multinodular goiter (2%–4%) is similar to that of solitary nodules (4%–6%).<sup>3</sup> Therefore, any dominant nodule in a multinodular goiter should be evaluated the same way one would evaluate a solitary nodule.

**Treatment and follow-up**

Patients with a reassuring initial workup can be followed clinically and should be assessed with serial clinical evaluations. No evidence could be found regarding optimal intervals for examination and testing; yearly exams and TSH testing are considered adequate by some experts.<sup>4</sup>

Because a few non-benign conditions such as thyroiditis and neoplasm can sometimes present in a euthyroid state, the clinician should be alert for any physical exam or laboratory changes. If any changes occur, then further workup is indicated.

Suppressive therapy with thyroxine is an option for decreasing thyroid size in euthyroid goiter, but this therapy remains controversial. One placebo-controlled trial of thyroid suppression in nontoxic multinodular goiter showed regression of thyroid size with suppressive therapy (58% reduction in size in

treatment group vs 5% reduction in control group). However, not all goiters responded to this therapy, and the thyroid size returned to pretreatment size within 9 months of discontinuation of suppressive therapy.<sup>5</sup>

Many experts argue against the use of suppressive therapy in long-standing goiters, citing less response from these patients, along with concern about side effects and possible oversuppression, but the evidence in this area is limited. Patients who are treated with thyroxine should be followed for possible side effects of the medication, including arrhythmia and osteopenia, particularly in elderly patients and those who take the medication for long periods.

**Recommendations of others**

Guidelines from the American Association of Clinical Endocrinology's Task Force on Thyroid Nodules, released in 2006, recommends ultrasound be used routinely in the case of multinodular goiter to assist with diagnosis, detect suspicious nodules that may require biopsy, and to serve as an objective baseline measure. This group recommends against use of suppression therapy in long-standing goiters.<sup>6</sup> ■

**References**

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