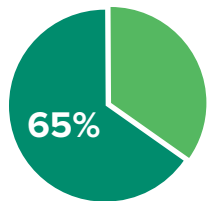


Thyroid nodules:

Prevalence, Risks and Treatment Options

PREVALENCE AND RISK



Up to **65%** of healthy people have thyroid nodules¹

95% of thyroid nodules are benign²

Up to **6%** have palpable thyroid nodules²



When they grow large and/or symptomatic, benign thyroid nodules can cause:



- Difficulty swallowing or breathing
- Hoarseness or voice changes
- Pain (neck, jaw, ear)
- Enlargement of the thyroid gland (goiter)



TREATMENT OPTIONS FOR SYMPTOMATIC NODULES

The primary treatments for symptomatic benign thyroid nodules are **TOTAL OR PARTIAL SURGICAL RESECTION.**

Major complications (3.3%)³:

- Voice changes
- Brachial plexus injury
- Tumor rupture

Additional complications (Up to 20%)^{4,5}:

- Tumor regrowth
- Hyperthyroidism
- Medication dependency
- Neuropsychiatric complications
- Nerve injury
- Tingling
- Difficulty swallowing
- Scarring

20%^{6,7} recurrence rate after partial thyroidectomy for recurrent goiter.



SURGICAL ALTERNATIVES

Two minimally invasive treatments are now available for benign thyroid nodules:

RADIOFREQUENCY ABLATION (RFA)

Minimally invasive, highly precise treatment to shrink and remove benign thyroid nodules.

THYROID ARTERY EMBOLIZATION

A minimally invasive procedure for patients with numerous nodules or large thyroid goiters, this approach places tiny particles into the blood vessels to block blood supply to the thyroid gland.

Compared with surgery, RFA and TAE have^{8,9}:

- A lower rate of complications
- A faster recovery
- The ability to preserve thyroid function
- No scarring
- A shorter procedure time
- A lower overall cost compared with surgery

“Radiofrequency ablation should be considered a first-line treatment for benign thyroid nodules.”⁸

1. Source: Yale Medicine Thyroid Nodule Fact Sheet
2. Ravi Kant, MD et al. Thyroid Nodules: Advances in Evaluation and Management. *Am Fam Physician*. 2020;102(5):298-304
3. Jung Hwan Baek et al. Complications Encountered in the Treatment of Benign Thyroid Nodules with US-guided Radiofrequency Ablation: A Multi-center Study. *Radiology* Vol. 262, No. 1 Jan 1, 2012.
4. Apoorva Kumar Pandey et al. Postoperative Complications of Thyroid Surgery: A Corroborative Study with an Overview of Evolution of Thyroid Surgery. *Int Journal of Head and Neck Surgery* 2017 10.5005/jp-journals – 10001-1245.
5. Henry Jenny, MD et al. Recurrence Following Surgery for Benign Thyroid Nodules. *Arch Surg*. 1966;92(4):525-529. doi:10.1001/arch-surg.1966.01320220081013
6. Reeve TS, Delbridge L, Brady P, Crummer P, Smyth C. Secondary thyroidectomy: a twenty-year experience. *World J. Surg*. 1988;12: 449-52.
7. Harach HR, Cabrera JA, Williams ED. Thyroid implants after surgery and blunt trauma. *Ann. Diagn. Pathol*. 2004; 8: 61-8.
8. Y Che et al. Treatment of Benign Thyroid Nodules: Comparison of Surgery with Radiofrequency Ablation *AJNR Am J Neuroradiol*. 2015 Jul;36(7):1321-1325.
9. Kai-Lun Cheng et al. Thyroid artery embolization of large solitary symptomatic benign thyroid nodules through transradial approach. *Quant Imaging Med Surg*. 2023 May 30;13(8):5355-5361

The physicians of North Star Vascular & Interventional are specialists who have been performing minimally invasive RFA and embolization procedures for many years and are among Minnesota’s leading experts on these procedures.

If you are interested in learning more about therapies for benign thyroid nodules or other diseases and conditions, please consult with one of our radiologists by calling 952-960-9399.



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