AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

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Clinical Thyroidology® for the Public

HYPOTHYROIDISM

How often is thyroid hormone needed after a lobectomy?

BACKGROUND

Surgery to remove all or part of part or all of the thyroid gland is commonly needed to treat both benign (noncancerous) and cancerous thyroid disease. The normal job of the thyroid gland is to produce thyroid hormone, which helps control the body's metabolism (how the body uses energy). This is a very important job - people who have no source of thyroid hormone will eventually become very sick, or even die. For this reason, people who undergo surgery to remove the entire thyroid gland will need to take a thyroid hormone pill after surgery (usually once a day, every day, for the rest of their lives).

Removal of half of the thyroid gland has become an increasingly acceptable treatment option for thyroid disease, including some thyroid cancers. One advantage of removing only part of the thyroid (usually one half of the thyroid gland, called a thyroid lobectomy), is that the half of the thyroid left behind will continue to produce thyroid hormone. If this is enough thyroid hormone to meet the body's normal needs, a thyroid hormone pill will not be needed following thyroid surgery. Unfortunately, it can be challenging to predict which patients who have a thyroid lobectomy will still make enough thyroid hormone to avoid needing to take a thyroid hormone pill after surgery.

The study described here tries to shed light on this question by looking at the medical records of people who previously underwent a thyroid lobectomy. By evaluating these records, including information from blood testing and imaging studies done before thyroid surgery, the study team hoped to learn how to predict which people having a thyroid lobectomy would need to take a thyroid hormone pill after surgery. This is important information, since a person needing thyroid surgery might choose to have the whole thyroid removed if they would still need to take a thyroid hormone pill after removing only half of the thyroid gland.

FULL ARTICLE TITLE

Wilson M et al 2020 Postoperative thyroid hormone supplementation rates following thyroid lobectomy. Am J Surg. Epub 2020 Jul 1. PMID: 32684294.

SUMMARY OF THE STUDY

The study authors reviewed the medical records of 100 patients who underwent thyroid lobectomy surgery at their institution during a one-year period (between 2016 and 2017). Serum TSH levels were measured prior to surgery and at 6 weeks, 6 months, 12 months, and annually thereafter following thyroid lobectomy. The goal was a TSH in the normal range if the surgery was for benign disease and <2 of the surgery was for a thyroid cancer. The average age was 50.5 years, 74% were women and 84% were Caucasian. The average preoperative serum TSH was 1.50 mIU/L.

The study found that almost half of the people having a thyroid lobectomy (47%) needed a thyroid hormone pill after surgery and that this medicine was needed within six weeks of surgery in most cases. In addition, the investigators found that people having a thyroid lobectomy for treatment of thyroid cancer were more likely to need a thyroid hormone pill after surgery (73% of patients) compared to those undergoing this surgery for benign thyroid disease. This is not surprising, as people diagnosed with thyroid cancer generally need higher thyroid hormone levels after surgery than do patients with benign thyroid disease. In addition, people with low, but still normal, thyroid hormone levels before surgery were more likely need thyroid hormone, as were people found to have a small thyroid gland or evidence of thyroid inflammation prior to thyroid lobectomy. Patient age at the time of thyroid lobectomy, gender, race and size of thyroid cancer/benign overgrowth (nodule) did not predict need for a thyroid hormone pill after thyroid lobectomy.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study showed that the need for thyroid hormone supplementation is associated with a higher preoperative serum TSH level, a smaller thyroid gland to

HYPOTHYROIDISM, continued

begin and either thyroiditis or thyroid cancer. The majority of patients with benign thyroid disease after a lobectomy did not require thyroid hormone replacement therapy. The results of this study are important because most people who need thyroid surgery would like to avoid having to take this medicine after surgery. This information might help some patients choose between having all or just half of their thyroid gland removed. For example, if a person needing thyroid surgery knew before surgery that they would need to take a thyroid hormone pill regardless of whether all or only half of their thyroid was removed, they might choose to have their whole thyroid removed (which would eliminate any chance of needing additional thyroid monitoring or surgery in the future). Thus, this study provides information that can help a person who needs thyroid surgery choose which surgery would be best for them.

— Jason D. Prescott, MD PhD

ATA THYROID BROCHURE LINKS

Hypothyroidism (Underactive): https://www.thyroid.org/hypothyroidism/

Thyroid Hormone Treatment: https://www.thyroid.org/thyroid-hormone-treatment/

Thyroid Surgery: https://www.thyroid.org/thyroid-surgery/

ABBREVIATIONS & DEFINITIONS

Hypothyroidism: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

Lobectomy: surgery to remove one lobe of the thyroid.

Completion thyroidectomy: surgery to remove the remaining thyroid lobe in thyroid cancer patients who initially had a lobectomy.

Total thyroidectomy: surgery to remove the entire thyroid gland.

Thyroid hormone therapy: patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to normal. Replacement therapy means the goal is a TSH in the normal range and is the usual therapy. *Suppressive therapy* means that the goal is a TSH below the normal range and is used in thyroid cancer patients to prevent growth of any remaining cancer cells.

TSH: thyroid stimulating hormone — produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.