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# **THYROID NODULE**

# Can the rate of thyroid nodules that are non-diagnostic after a biopsy be reduced?

#### **BACKGROUND**

Thyroid nodules are very common, occurring in up to 50% of patients. The concern about a thyroid nodule is whether this represents a thyroid cancer, which occurs in 5-6% of thyroid nodules. Depending upon the size and appearance of the nodule on ultrasound, the next step to evaluate a nodule is a thyroid biopsy. In general, there are two separate techniques of doing the procedure. Both require placement of a needle into the nodule but the method of collecting the sample differs. In the aspiration technique the sample is obtained by suction into a syringe whereas in the non-aspiration technique the sample is collected in a needle (called capillary action).

In up to 10% of biopsies, a diagnosis cannot be made since there are too few cells and the result is called nondiagnostic. In some cases, such as aspiration of a cyst where few cells would be present, this is expected. In other nodules, a non-diagnostic results usually requires a repeat biopsy. This study reviewed 24 published studies to compare the rate of non-diagnostic biopsy between the aspiration technique and the capillary action technique.

## THE FULL ARTICLE TITLE

Moss WJ et al 2018 Needle biopsy of routine thyroid nodules should be performed using a capillary action

technique with 24- to 27-gauge needles: a systematic review and meta-analysis. Thyroid 28:857-863. Epub 2018 Jun 5. PMID: 29742978.

## **SUMMARY OF THE STUDY**

This study reviewed 24 studies, with a total of 4428 thyroid nodules; 20 of these compared biopsies using capillary action and aspiration, while 6 evaluated the size of the needles. The results of the study indicate that the rate of non-diagnostic samples were significantly lower in patients undergoing biopsy through capillary action as opposed to suction /aspiration. Smaller needles were also better as compared to larger gauge needles.

# WHAT ARE THE IMPLICATIONS **OF THIS STUDY?**

This study suggests that biopsies done by capillary action rather than on aspiration leads to a significant reduction in the rate of non-diagnostic results. This is important for patients, as per current practice guidelines most of these nodules would require a repeat biopsy. This often leads to a delay in diagnosis and contributes to a patient's concerns and anxiety.

— Vibhavasu Sharma, MD, FACE

#### ATA THYROID BROCHURE LINKS

Fine Needle Aspiration Biopsy of Thyroid Nodules: <a href="https://www.thyroid.org/fna-thyroid-nodules/">https://www.thyroid.org/fna-thyroid-nodules/</a> Thyroid Nodules: <a href="https://www.thyroid.org/thyroid-nodules/">https://www.thyroid.org/thyroid-nodules/</a>









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# THYROID NODULE, continued

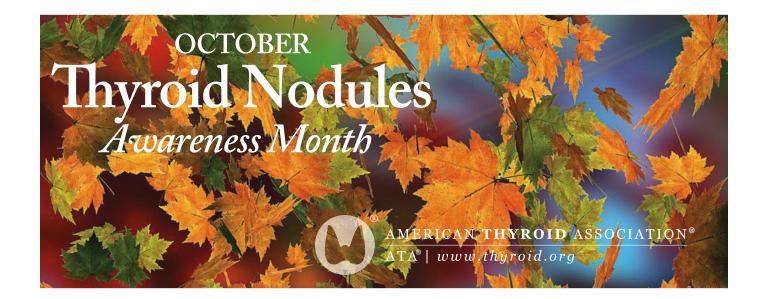
#### ABBREVIATIONS & DEFINITIONS

Thyroid nodule: an abnormal growth of thyroid cells that forms a lump within the thyroid. While most thyroid nodules are non-cancerous (Benign), ~5% are cancerous.

Thyroid fine needle aspiration biopsy (FNAB): a simple procedure that is done in the doctor's office to determine if a thyroid nodule is benign (non-cancerous) or cancer. The doctor uses a very thin needle to withdraw cells from the thyroid nodule. Patients usually return home or to work after the biopsy without any ill effects.

Inadequate/Insufficient biopsy: this happens with not enough cells are obtained during the biopsy to provide a diagnosis. This occurs in 5-10% of biopsies. This often results in the need to repeat the biopsy.

Non-diagnostic thyroid biopsy: this happens when some atypical cells are found but not enough to provide a diagnosis. This occurs in 5–10% of biopsies. This often results in the need to repeat the biopsy.



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Page 6