

Clinical Thyroidology[®] for the Public



AMERICAN THYROID ASSOCIATION
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Miyauchi A et al 2023 Long-term outcomes of active surveillance and immediate surgery for adult patients with low-risk papillary thyroid microcarcinoma: 30-year experience. *Thyroid*. Epub 2023 May 29. PMID: 37166389.

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Recent data shows that small cancers (<1 cm) are usually low risk for growing and spreading. Active surveillance, or following the nodule by ultrasound rather than moving to immediate surgery, is becoming an acceptable option in the management of small low-risk papillary thyroid cancer. This study was done to compare the quality of life over time of patients who chose active surveillance and those who chose immediate surgery for small, low risk papillary thyroid cancer.

Kazusaka H et al 2023 Patient-reported outcomes in patients with low-risk papillary thyroid carcinoma: Cross-sectional study to compare active surveillance and immediate surgery. *World J Surg* 47:1190–1198. PMID: 36282283

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How do we make better shared-decisions for thyroid cancer?

Over the years, there has been more involvement of the patient in discussions to determine the best treatment option, a process known as “shared-decision making”. To make this happen in the best possible way, we need to understand the factors that influence the decisions for both the patients and doctors. This study wanted to find out which are the most important of these factors and suggest ideas for better decision making tools for patients with low-risk thyroid cancer.

Yang W et al 2023 Challenges of shared decision-making by clinicians and patients with low-risk differentiated thyroid cancer: A systematic review and meta-ethnography. *JAMA Otolaryngol Head Neck Surg* 149:452–459. PMID: 36951823.

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Excellent survival in younger children compared to adolescents and young adults despite having more advanced papillary thyroid cancer

Papillary thyroid cancer often presents with more aggressive disease in children as compared to than in adults. Despite this more advanced presentation, survival rate in children is higher than in adults with similar disease. This study was done to further look at the relationship between papillary thyroid cancer recurrence vs age in the pediatric population and to compare this to a young adult population.

Thiesmeyer JW et al 2023 Prepubertal children with papillary thyroid carcinoma present with more invasive disease than adolescents and young adults. *Thyroid* 33:214–222. PMID: 36355601.

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The risk of thyroid cancer is higher than previously thought when thyroid biopsies show uncertain results

In about 10-20% of thyroid biopsies, a diagnosis cannot be made and the results are called indeterminate. There are three types of indeterminate biopsies, called Bethesda 3, Bethesda 4 and Bethesda 5, with the risk of cancer ranging from 12-52%. This study reviewed recent data to determine if these risks have changed.

Delman AM et al 2023 The national rate of malignancy among Bethesda III, IV, and V nodules is higher than expected: A NSQIP analysis. *Surgery* 173:645–652. PMID: 36229250.

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Thyroid Storm is the most severe form of hyperthyroidism and can be life-threatening. To learn more about this condition and how it affects different populations, this study was conducted using a large database of medical claims from Germany to estimate how often thyroid storm occurs and the likelihood of survival for those who experience it.

Thiyagarajan A et al Estimating Incidence and Case Fatality of Thyroid Storm in Germany Between 2007 and 2017: A Claims Data Analysis. *Thyroid*. 2022 Nov;32(11):1307-1315. doi: 10.1089/thy.2022.0096. Epub 2022 Sep 28. PMID: 36006371.

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Clinical Thyroidology® for the Public

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Editor's Comments

Welcome to another issue of *Clinical Thyroidology® for the Public!* In this journal, we will bring to you the most up-to-date, cutting edge thyroid research. We also provide even faster updates of late-breaking thyroid news through X (previously known as Twitter) at [@thyroidfriends](https://twitter.com/thyroidfriends) and on [Facebook](https://www.facebook.com/thyroidfriends). Our goal is to provide patients with the tools to be the most informed thyroid patient in the waiting room. Also check out our friends in the [Alliance for Thyroid Patient Education](#). The [Alliance](#) member groups consist of: the *American Thyroid Association®*, *Bite Me Cancer*, *the Graves' Disease and Thyroid Foundation*, *the Light of Life Foundation*, *MCT8 – AHDS Foundation*, *ThyCa: Thyroid Cancer Survivors' Association*, *Thyroid Cancer Canada*, *Thyroid Cancer Alliance* and *Thyroid Federation International*.

We invite all of you to join our [Friends of the ATA](#) community. It is for you that the American Thyroid Association® (ATA®) is dedicated to carrying out our mission of providing reliable thyroid information and resources, clinical practice guidelines for thyroid detection and treatments, resources for connecting you with other patients affected by thyroid conditions, and cutting edge thyroid research as we search for better diagnoses and treatment outcomes for thyroid disease and thyroid cancer. We thank all of the *Friends of the ATA* who support our mission and work throughout the year to support us. We invite you to help keep the ATA® mission strong by choosing to make a donation that suits you — it takes just one moment to give online at: www.thyroid.org/donate and all donations are put to good work. The ATA® is a 501(c)3 nonprofit organization and your gift is tax deductible.

September is [Thyroid Cancer Awareness Month](#).

In this issue, the studies ask the following questions:

- What are the drawbacks to active surveillance for low risk thyroid cancer?
- Does active surveillance make patients more or less anxious?
- How do we make better shared-decisions for thyroid cancer?
- Is thyroid cancer more or less severe in children?
- What is the risk of cancer in indeterminate thyroid biopsies?
- How common is thyroid storm and which groups have the highest rates of death from this condition?

We welcome your feedback and suggestions. Let us know what you want to see in this publication. I hope you find these summaries interesting and informative.

— Alan P. Farwell, MD



THYROID CANCER

Active surveillance vs surgery in adults with low risk thyroid cancer

BACKGROUND

Thyroid cancer has been one of the fastest rising cancers over the past few years. One of the causes of this increase has been the increase in detection of small, low risk cancers, most often papillary thyroid cancer. These cancers that are <1 cm are called papillary thyroid microcarcinomas. Most of the time, the next step after diagnosis of cancer is surgery to remove the thyroid. However, ~30 years ago, the concept of monitoring these small cancers with ultrasound instead of opting for immediate surgery, called active surveillance, was introduced in Japan. For those patients in active surveillance, if their cancer were to grow over time or spread to lymph nodes in the neck, surgery would be recommended. The option of active surveillance for small thyroid cancers was included in the American Thyroid Association's 2015 thyroid cancer management guidelines as an alternative to surgery. Research data on long-term outcomes, however, is scant. This study reports on the long-term experience with active surveillance for papillary thyroid microcarcinoma in Japan.

THE FULL ARTICLE TITLE

Miyauchi A et al 2023 Long-term outcomes of active surveillance and immediate surgery for adult patients with low-risk papillary thyroid microcarcinoma: 30-year experience. *Thyroid*. Epub 2023 May 29. PMID: 37166389.

SUMMARY OF THE STUDY

Data from the largest available database worldwide of patients with papillary thyroid microcarcinoma in Kuma Hospital in Japan was used to identify patients. A total of 5646 were enrolled in the study between October 1993 and December 2019 and offered the option of either active surveillance or immediate surgery. Of the 5646 patients with papillary thyroid microcarcinoma,

57.1% underwent active surveillance for a year or longer, while 42.9% underwent surgery within 1 year of their diagnosis. The average duration of active surveillance was 7.3 years, while the surgery group was followed for an average of 11.9 years after thyroid surgery. About 12.2% (394) patients that were in the active surveillance group eventually did have surgery for various reasons, mostly due to patient or physician preference. Less than 1/3 of these patients actually had a change of their cancer. The extent of surgery and lymph node removal were similar between the immediate surgery and the later surgery groups.

Very few patients under active surveillance had significant cancer growth, spread to the lymph nodes or new cancer nodules on their thyroid gland. Of all 5,646 patients, only 1 had spread of the cancer to the lungs in the active surveillance group and 1 in the immediate surgery group, both of whom are alive over 18 years after the initial diagnosis. Death from thyroid cancer was 0% in both groups.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In this review of nearly 30 years follow-up of a study on active surveillance in patients with papillary thyroid microcarcinoma, the cancer-related outcomes of patients followed by surveillance did not differ from those of patients who had surgery within 1 year after diagnosis. No patient died of thyroid cancer in either group. This study strongly supports that surveillance is a viable (and many times, better) initial management option for many patients with low-risk papillary thyroid microcarcinomas. This data suggests that physicians should consider offering active surveillance as a reasonable, safe strategy in appropriate patients with low-risk papillary thyroid microcarcinomas.

— Maria Brito, MD



THYROID CANCER, continued

ATA RESOURCES

Thyroid Cancer (Papillary and Follicular): <https://www.thyroid.org/thyroid-cancer/>

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

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer: the most common type of thyroid cancer. There are 4 variants of papillary thyroid cancer: classic, follicular, tall-cell and noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP).

Papillary microcarcinoma: a papillary thyroid cancer smaller than 1 cm in diameter.

Thyroid Ultrasound: a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

Active Surveillance: The option to follow patients with small, low risk thyroid cancers by ultrasound rather than immediate surgery.

Thyroidectomy: surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a *partial thyroidectomy*.

Lymph node: bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells.



THYROID CANCER

Patients electing active surveillance for low-risk papillary thyroid cancer have lower baseline anxiety

BACKGROUND

Most of the time, when a thyroid nodule biopsy reveals a nodule is a cancer, the next step is surgery to remove the thyroid. However, recent data shows that small cancers (<1 cm) are usually low risk for growing and spreading. This has led to the option of following the nodule by ultrasound rather than moving to immediate surgery. This is called active surveillance. Active surveillance is becoming an acceptable option in the management of small low-risk papillary thyroid cancer. For those patients in active surveillance, if their cancer were to grow over time or spread to lymph nodes in the neck, surgery would be recommended. Most patients who choose active surveillance do not experience cancer growth and do not require surgery. However, the quality of life of these patients, including anxiety or worries about a possible cancer growth has not been properly looked at in a long-term fashion. This study was done to compare the quality of life over time of patients who chose active surveillance and those who chose immediate surgery for small, low risk papillary thyroid cancer.

THE FULL ARTICLE

Kazusaka H et al 2023 Patient-reported outcomes in patients with low-risk papillary thyroid carcinoma: Cross-sectional study to compare active surveillance and immediate surgery. *World J Surg* 47:1190–1198. PMID: 36282283

SUMMARY OF THE STUDY

A total of 281 patients who were seen in a single hospital in Japan were included in the study. The majority (88%) were in the active surveillance group. Only 11% had immediate surgery. They were followed for more than 5 years. The patients were asked to complete three questionnaires that looked at the quality of life, anxiety (assessing their baseline personality trait and in relationship to their situation) and neck symptoms. The active surveillance group had better health and mental scores and lower baseline anxiety levels and as well as lower anxiety scores over time. The surgery group reported more neck symptoms, such as discomfort and difficulty swallowing.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study is important since it shows that overall measures of quality of life are better in patients opting for active surveillance for their low risk papillary thyroid cancers. It also appears that in general the anxiety level in patients who choose active surveillance is lower at baseline and does not increase over time while their cancer is being monitored. These results should encourage physicians to be less hesitant about recommending active surveillance for those patient with small thyroid cancers.

— Susana Ebner MD

ATA RESOURCES

Thyroid Cancer (Papillary and Follicular): <https://www.thyroid.org/thyroid-cancer/>

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer: the most common type of thyroid cancer. There are 4 variants of papillary thyroid cancer: classic, follicular, tall-cell and noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP).

Active Surveillance: the process of following low risk thyroid cancers by ultrasound rather than opting for immediate surgery.



THYROID CANCER

How do we make better shared-decisions for thyroid cancer?

BACKGROUND

Low-risk thyroid cancer is quite common and usually does not cause big problems for the patients. In the past, the usual treatment for all thyroid cancers was to remove the thyroid and sometimes use radioactive iodine treatment. But over time, it was noticed that people with this type of cancer rarely had serious problems. This raised a concern that treatments might be riskier than the cancer itself. So, the guidelines for treatment of low-risk thyroid cancer started to change. Now, there are many options, including just watching the cancer using ultrasound without doing anything else. Another change over the years has been more involvement of the patient in discussions to determine the best treatment option. This is often termed “shared-decision making”.

We do not have many studies yet where patients were randomly chosen to get different treatments in order to determine the best treatment. Thus doctors are less certain as to what is the “best treatment” to recommend to a patient. This uncertainty can confuse patients and make them unhappy when they try to decide about their treatment. More importantly, not much has been studied about what patients think of these treatments and how they affect the quality of their lives. In these cases, shared-decision making is important for both patients and doctors to decide on the treatments together. To make this happen in the best possible way, we need to understand the factors that influence the decisions for both the patients and doctors.

This study wanted to find out which are the most important of these factors and suggest ideas for better decision making tools for patients with low-risk thyroid cancer.

THE FULL ARTICLE TITLE

Yang W et al 2023 Challenges of shared decision-making by clinicians and patients with low-risk differentiated thyroid cancer: A systematic review and meta-ethnogra-

phy. JAMA Otolaryngol Head Neck Surg 149:452–459. PMID: 36951823.

SUMMARY OF THE STUDY

The authors of this study looked at many different research papers using a special reporting guideline called PRISMA. They looked for the papers in several large databases in November 2021 and again in May 2022. They only chose the papers that talked about what adult patients and their doctors think when deciding about treating low risk thyroid cancer. They did not use the papers that only had numbers. They also didn’t use papers that were not in English or ones that were reviews of other papers. The authors used special tools to check how good each study was and 2 people worked closely together for the review process to make sure the study quality was good. They used a special method to understand what the studies were saying. This method helped them to put similar things together and find the main ideas that came up in a lot of studies.

They found 1081 articles in total. After taking away the same ones and the ones that weren’t about the thoughts or beliefs of patients or doctors about thyroid cancer, they had 12 good articles left. These studies were all focused on how doctors and patients made treatment decisions based on information from interviews or focus groups. They found out important things: 1-many patients want aggressive treatment and think it is urgent while others worry about the side effects of treatment and delay or prefer nonsurgical treatment. 2- Doctors may also feel anxious about the cancer getting worse and might recommend more aggressive treatments despite the awareness that this type of cancer rarely spreads while carefully monitored. 3- Doctors often gave only one treatment option based on what they thought the patient wanted and they did not correctly understand patient concerns and preferences. 4- patients really liked having a good relationship with their doctors but doctors didn’t always know how much this mattered to patients.



THYROID CANCER, continued

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In conclusion, patients have 2 distinct preferences, some favor aggressive treatment, while others prioritize how they would feel after treatment and prefer a conservative approach. Doctors' own anxiety influence treatment decisions and they sometimes find it hard to understand what patients want. This study makes it clear that

doctors and patients need to talk more openly about treatment choices. This would help to avoid unnecessary treatment, reduce anxiety, and risk of side effects. When doctors understand and consider patient concerns, they can recommend better plans. When patients are actively involved in their health decisions, they feel more comfortable and follow through with their treatment plans.

— Ebru Sulanc, MD

ATA RESOURCES

Thyroid Cancer (Papillary and Follicular): <https://www.thyroid.org/thyroid-cancer/>

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

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer: the most common type of thyroid cancer. There are 4 variants of papillary thyroid cancer: classic, follicular, tall-cell and noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP).

Papillary microcarcinoma: a papillary thyroid cancer smaller than 1 cm in diameter.

Follicular thyroid cancer: the second most common type of thyroid cancer.

Thyroidectomy: surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a *total thyroidectomy*. When less is removed, such as in removal of a lobe, it is termed a *partial thyroidectomy*.

Radioactive iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (*Thyroid Scan*) or to take pictures of the whole body to look for thyroid cancer (*Whole Body Scan*).



THYROID CANCER

Excellent survival in younger children compared to adolescents and young adults despite having more advanced papillary thyroid cancer

BACKGROUND

While less common than adults, thyroid cancer can affect children. As with adults, papillary thyroid cancer is the most common thyroid cancer seen in children. In fact, papillary thyroid cancer often presents with more aggressive disease in children as compared to than in adults, including larger cancers and more frequent spread to lymph nodes and to areas outside of the neck. Despite this more advanced presentation, survival rate in children is higher than in adults with similar disease. Thus, treatment guidelines for childhood papillary thyroid cancer differ from those for adults.

However, there is variation even among children. Ionizing radiation, such as seen after the Chernobyl nuclear accident, causes an increase in papillary cancer in children. A previous study looking at children exposed to ionizing radiation after Chernobyl showed that younger age was associated with recurrent spread to the lymph nodes and spread to the lungs in cases of papillary thyroid cancer. Other studies looking at this have been small. This study was done to further look at the relationship between papillary thyroid cancer recurrence vs age in the pediatric population (very few exposed to ionizing radiation) and to compare this to a young adult population.

THE FULL ARTICLE TITLE

Thiesmeyer JW et al 2023 Prepubertal children with papillary thyroid carcinoma present with more invasive disease than adolescents and young adults. *Thyroid* 33:214–222. PMID: 36355601.

SUMMARY OF THE STUDY

This is a study using the National Cancer Database which captures 68% of childhood cancer. The patient sample included 4860 pediatric patients (274 prepubertal (before puberty) and 4586 adolescent) and 101,159 young adult patients. Data was collected including age, sex, ethnic background, cancer spread to the lymph nodes or outside of the thyroid, cancer stage and survival. The adolescent

and young adult group was 82% female, compared to 64% in the prepubertal group. The prepubertal group more commonly identified as Hispanic (21%) vs 15% of adolescent and 12% of young adult groups.

More aggressive papillary thyroid cancer was found in the prepubertal group vs the adolescent group including frequency of cancers greater than 4 cm (26% vs 13.5%), more spread to the lymph nodes (58% vs. 36%), more extension outside of the thyroid (47% vs. 25%), more spread to the lymph nodes in the neck (67% vs. 52%), and more spread outside of the neck (11.3% vs. 2.2%). Overall, prepubertal patients presented with more advanced disease than adolescents and young adults.

Almost all patients in all groups underwent total thyroidectomy: 90% of both pediatric groups and 87% of the young adult group. Dissection to remove lymph nodes in the neck were more frequent in young adults (50%) vs 30% of adolescents and 18% of prepubertal groups. Most pediatric patients received radioactive iodine therapy (63% of prepubertal and 59% of adolescents) as compared with 50% of the young adult group). Survival did not differ among the groups and continued to be excellent in both groups (99% at 5 years).

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study confirms that papillary thyroid cancer is more advanced at diagnosis in younger vs older children. Despite this difference, survival is excellent in all groups. Previous studies have demonstrated that recurrence is more common in younger patients. This can be important for patient care since cancer recurrence is anxiety provoking and may necessitate additional surgery. Overall, this study is reassuring that the prognosis of papillary thyroid cancer in the vast majority of patients, both young and old, continues to be excellent.

— Marjorie Safran, MD



THYROID CANCER, continued

ATA RESOURCES

Thyroid Cancer (Papillary and Follicular): <https://www.thyroid.org/thyroid-cancer/>

ABBREVIATIONS & DEFINITIONS


Papillary thyroid cancer: the most common type of thyroid cancer. There are 4 variants of papillary thyroid cancer: classic, follicular, tall-cell and noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP).

Thyroidectomy: surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a *total thyroidectomy*. When less is removed, such as in removal of a lobe, it is termed a *partial thyroidectomy*.

Cancer recurrence: this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point.

Pediatric population: includes individuals <18 years. This groups is further divided into children that have not yet gone through puberty (prepubertal) and those in their teens (adolescents).

SEPTEMBER
Thyroid Cancer
Awareness Month

 AMERICAN THYROID ASSOCIATION
 Optimal Thyroid Health for All

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THYROID NODULES

The risk of thyroid cancer is higher than previously thought when thyroid biopsies show uncertain results

BACKGROUND

Thyroid surgery is a safe and effective procedure to remove growths in the thyroid that are, or might be, cancerous (thyroid cancer). Thyroid growths, or nodules, are very common, although the vast majority of these do not turn out to be cancerous (such nodules are called benign). In order to determine if a thyroid nodule is cancerous, doctors perform a simple and safe procedure called a thyroid biopsy, during which a very thin needle is used to collect cells from the inside of a thyroid nodule. These cells are then evaluated by a pathologist, who determines if these cells are cancerous. If cancerous cells are identified, a thyroid surgeon will perform thyroid surgery to remove at least the cancerous part of the thyroid.

The pathologist will sometimes not be able to tell for sure if the cells that come from a thyroid biopsy are cancerous – the cells don't quite look like cancer but also don't quite look benign. This is called an indeterminate biopsy. There are three types of indeterminate biopsies, called Bethesda 3, Bethesda 4 and Bethesda 5. The Bethesda 3 biopsy type is the least likely to be cancerous (the biopsy cells look almost benign) while the Bethesda 5 biopsy type is the most likely to be cancerous (the biopsy cells look almost cancerous). The chances that a thyroid cancer is actually present for each of type of indeterminate biopsy have been estimated previously. The risk of cancer for Bethesda 3 biopsies was thought to be about 12% (about one out of ten people having this biopsy will have a thyroid cancer), for Bethesda 4 biopsies, about 25% (about one out of four people having this biopsy will have a thyroid cancer) and for Bethesda 5 biopsies, about 52% (about half of people having this biopsy will have a thyroid cancer). Unfortunately, the only certain way to determine if an indeterminate thyroid biopsy is actually cancer is to surgically remove at least the part of the thyroid that contains the nodule that was biopsied. This allows the pathologist to study the entire thyroid nodule directly for the presence of cancer.

The authors of the research described here were interested in learning how accurate the previously reported risk of cancer is for each type of indeterminate biopsy. This information is very important, as it helps people for whom a thyroid biopsy is indeterminate understand their chance of having a thyroid cancer, which then helps them work with their doctors to choose their best treatment option.

FULL ARTICLE TITLE

Delman AM et al 2023 The national rate of malignancy among Bethesda III, IV, and V nodules is higher than expected: A NSQIP analysis. *Surgery* 173:645–652. PMID: 36229250.

SUMMARY OF THE STUDY

The authors of this research used a large database that includes information from hospitals across the United States to study people who underwent thyroid surgery between 2016 and 2019. Using this information, the authors were able to determine how many people having a Bethesda 3, Bethesda 4 or Bethesda 5 thyroid biopsy actually had a thyroid cancer and then to compare this information to the previously reported cancer risk for each of these biopsy types. A total of 13,121 people were identified in the database. For each of these three biopsy categories, the authors found a higher risk of cancer than what was previously reported. For Bethesda 3 biopsies, the risk of cancer increased from 12% to 36.2%. For Bethesda 4 biopsies, the thyroid cancer risk increased from 25% to 36.6%. Last, for Bethesda 5 biopsies, the risk of thyroid cancer increased from 52.5% to 91.1%. The authors also found that younger people and men who have a Bethesda 3, Bethesda 4 or Bethesda 5 thyroid biopsy were more likely to have a thyroid cancer than were older people and women, respectively.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The ability to estimate the risk of thyroid cancer when a thyroid nodule is found is very important. If this risk



THYROID NODULES, continued

is low, a person might decide to monitor their thyroid nodule, choosing to defer thyroid surgery unless the thyroid nodule becomes more suspicious over time. On the other hand, if the risk of thyroid cancer is high, the thyroid is usually removed surgically, so as to prevent the chance that a thyroid cancer, if present, could grow and spread. The findings described by these researchers indicate that the risk of thyroid cancer for Bethesda 3, Bethesda 4 or Bethesda 5 biopsies is significantly higher

than previously thought. In light of this information, people who have one of these thyroid biopsy types might be more inclined to choose thyroid surgery over thyroid observation. Regardless, all people considering thyroid surgery should discuss the risks and benefits of surgery with their thyroid surgeon, so that they may make their own best possible treatment decisions.

— Syed Haider, MD, and Jason D Prescott, MD PhD

ATA RESOURCES:

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

Thyroid Nodules: <https://www.thyroid.org/thyroid-nodules/>

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

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.

Indeterminate thyroid biopsy: this happens a few atypical cells are seen but not enough to be abnormal

(atypia of unknown significance (AUS) or follicular lesion of unknown significance (FLUS) – Bethesda 3) or when the diagnosis is a follicular or hurthle cell lesion (Bethesda 4). Current analysis of thyroid biopsy results cannot differentiate between follicular or hurthle cell cancer from noncancerous adenomas. This occurs in 15-20% of biopsies and often results in the need for surgery to remove the nodule.

Suspicious thyroid biopsy: this happens when there are atypical cytological features suggestive of, but not diagnostic for malignancy (Bethesda 5). Surgical removal of the nodule is required for a definitive diagnosis.



HYPERTHYROIDISM

How common is thyroid storm and which groups have the highest rates of death from this condition?

BACKGROUND

Thyroid Storm is the most severe form of hyperthyroidism. It causes severe symptoms and potentially failure of kidneys, liver and other organs. It can be life-threatening, with a death rate between 8-25%. Thyroid Storm occurs mostly in people who already have a diagnosis of hyperthyroidism such Graves disease. It occurs usually when these individuals experience stress due to surgery, infections, injuries, or take medications containing iodine. Because these situations frequently occur in hospitals, it is crucial to identify and prepare for patients at high risk of developing thyroid storm. Moreover, treating thyroid storm is a difficult task even for experienced doctors. While several scoring systems measure the severity of thyroid storm have been developed to help diagnose thyroid storm, there is still no unanimous agreement on the criteria. So far, only 3 research studies have looked into the epidemiology of thyroid storm, and they estimate an incidence of 0.20 to 0.76 cases per 100,000 people per year. The condition seems to be more common in females and in individuals who are older than 40.

To learn more about this condition and how it affects different populations, this study was conducted using a large database of medical claims from Germany to estimate how often thyroid storm occurs and the likelihood of survival for those who experience it.

THE FULL ARTICLE TITLE

Thiyagarajan A et al Estimating Incidence and Case Fatality of Thyroid Storm in Germany Between 2007 and 2017: A Claims Data Analysis. *Thyroid*. 2022 Nov;32(11):1307-1315. doi: 10.1089/thy.2022.0096. Epub 2022 Sep 28. PMID: 36006371.

SUMMARY OF THE STUDY

The researchers examined a large database called the German Pharmacoepidemiological Research Database

(GePaRD) and identified 1690 patients who were diagnosed with thyroid storm between 2007 and 2017. They then calculated age-standardized rates of thyroid storm in both males and females. They also calculated the number of patients who died within 30 days after being diagnosed with a thyroid storm.

Out of all the patients with thyroid storm, 72% were female, and on average, they were 60 years old. The estimated occurrence of thyroid storm was 1.4 cases per 100,000 people per year in females and 0.7 cases per 100,000 people per year in males. Interestingly, the rate of thyroid storm was much higher in both females (2.7 cases per 100,000 per year) and males (1.7 cases per 100,000 per year) who were older than 60 years. Females and males less than 60 years had relatively low death rate from thyroid storm, only 1.4% and 1.0% respectively, whereas in those over 60 years, the situation was more serious. The death rate for females in this age group was 10.9%, and for males, it was even higher at 16.7%.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is the first study reporting population-based data on diagnosis and death rate of thyroid storm in Germany. The findings suggest that every year there was about one case of thyroid storm per 100,000 persons. However, the diagnosis rate strongly varies with age and sex since the rate of thyroid storm was two times higher in females than in males and it was 3 times higher in persons >60 years compared with younger individuals. While the death rate is lower than 1.5% in people ≤60 years of age, it is 17 times higher in males and 8 times higher in females over 60 years. Thus it is important that doctors become more aware and skilled at diagnosing thyroid storm, especially in a hospital setting. This way, they can start treatment as soon as possible.

— Philip Segal, MD



HYPERTHYROIDISM, continued

ATA RESOURCES

Hyperthyroidism in Pregnancy: <https://www.thyroid.org/hyperthyroidism-in-pregnancy/>

Graves' Disease: <https://www.thyroid.org/graves-disease/>

ABBREVIATIONS & DEFINITIONS

Hyperthyroidism: a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

Graves' disease: the most common cause of hyperthyroidism in the United States. It is caused by antibodies that attack the thyroid and turn it on.



Clinical Thyroidology® for the Public

ATA® Alliance for Thyroid Patient Education

GOAL The goal of our organizations is to provide accurate and reliable information for patients about the diagnosis, evaluation and treatment of thyroid diseases. We look forward to future collaborations and continuing to work together toward the improvement of thyroid education and resources for patients.



ThyCa: Thyroid Cancer Survivors' Association, Inc.™
www.thyca.org



MCT8 - AHDS Foundation

THYROID CANCER ALLIANCE



American Thyroid Association®

www.thyroid.org

ATA® Patient Resources:

www.thyroid.org/thyroid-information/

Find a Thyroid Specialist: www.thyroid.org

(Toll-free): 1-800-THYROID

thyroid@thyroid.org

Bite Me Cancer

www.bitemecancer.org

info@bitemecancer.org

Graves' Disease and Thyroid Foundation

www.gdatf.org

(Toll-free): 877-643-3123

info@ngdf.org

Light of Life Foundation

www.checkyourneck.com

info@checkyourneck.com

MCT8 – AHDS Foundation

mct8.info

Contact@mct8.info

Thyca: Thyroid Cancer Survivors' Association, Inc.

www.thyca.org

(Toll-free): 877-588-7904

thyca@thyca.org

Thyroid Cancer Alliance

www.thyroidcanceralliance.org

www.thyroidcancerpatientinfo.org

Rotterdam, The Netherlands

Thyroid Cancer Canada

www.thyroidcancerCanada.org

416-487-8267

info@thyroidcancerCanada.org

Thyroid Federation International

www.thyroid-fed.org

tfi@thyroid-fed.org

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