

# The Patient Centered Multimedia Radiology Report

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# Disclosures

- None for all three authors



- Current radiology reports are primarily targeted at the referring provider
- Direct patient access to reports is becoming increasingly common
- There is a need to optimize radiology reports to help patients better understand the results of their imaging exams



## Radiology Report

Department of Radiology and Medical Imaging  
Charlottesville, Virginia

Patient Name:  
MRN:

Ref. Physician:  
Exam Reason:

Date Of Birth:

Exam  
Date/Time:

Gender:

Accession:

Exam: US THYROID

Indication: go with thyroid mass suspicious/diagnostic of thyroid cancer. Please evaluate thyroid and specifically evaluate for adenopathy including in the lateral neck.

Comparison: None.

Findings:

Right lobe measures 5.2 x 1.7 x 2.0 cm. Left lobe measures 5.3 x 2.1 x 2.0 cm. Isthmus measures 0.3 cm.

Sub centimeter cystic nodule is seen the left thyroid lobe. There is a 1.0 x 0.9 x 0.8 cm hypoechoic nodule in the right isthmus with spiculated margins and punctate echogenic foci that may represent microcalcifications (see key images). There appears to be disruption of the thyroid capsule anteriorly (see key images).

Morphologically normal-appearing, non-enlarged lymph nodes in the neck bilaterally.

Impression:

Right isthmus thyroid nodule demonstrates imaging features suspicious for papillary thyroid carcinoma, recommend fine-needle aspiration.

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# Application for thyroid nodule imaging

- Thyroid nodules are a commonly encountered clinical problem often worked up with imaging
- As the volume of literature regarding the diagnosis and management of thyroid cancer increases, it is imperative that evidence-based care is pursued to minimize over diagnosis and over treatment in patients at low risk for disease-specific morbidity and mortality
- Opportunities exist for shared decision-making in the diagnosis and management of thyroid cancer, which can empower patients as stakeholders by improving their understanding of the disease and decisions being made in their care

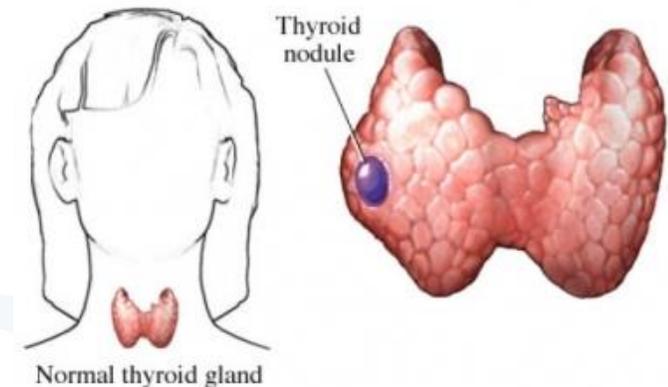


TABLE 6. SONOGRAPHIC PATTERNS, ESTIMATED RISK OF MALIGNANCY, AND FINE-NEEDLE ASPIRATION GUIDANCE FOR THYROID NODULES

<i>Sonographic pattern</i>	<i>US features</i>	<i>Estimated risk of malignancy, %</i>	<i>FNA size cutoff (largest dimension)</i>
High suspicion	Solid hypoechoic nodule or solid hypoechoic component of a partially cystic nodule <b>with</b> one or more of the following features: irregular margins (infiltrative, microlobulated), microcalcifications, taller than wide shape, rim calcifications with small extrusive soft tissue component, evidence of ETE	>70–90 <sup>a</sup>	Recommend FNA at ≥1 cm
Intermediate suspicion	Hypoechoic solid nodule with smooth margins <b>without</b> microcalcifications, ETE, or taller than wide shape	10–20	Recommend FNA at ≥1 cm
Low suspicion	Isoechoic or hyperechoic solid nodule, or partially cystic nodule with eccentric solid areas, <b>without</b> microcalcification, irregular margin or ETE, or taller than wide shape.	5–10	Recommend FNA at ≥1.5 cm
Very low suspicion	Spongiform or partially cystic nodules <b>without</b> any of the sonographic features described in low, intermediate, or high suspicion patterns	<3	Consider FNA at ≥2 cm Observation without FNA is also a reasonable option
Benign	Purely cystic nodules (no solid component)	<1	No biopsy <sup>b</sup>

US-guided FNA is recommended for cervical lymph nodes that are sonographically suspicious for thyroid cancer (see Table 7).

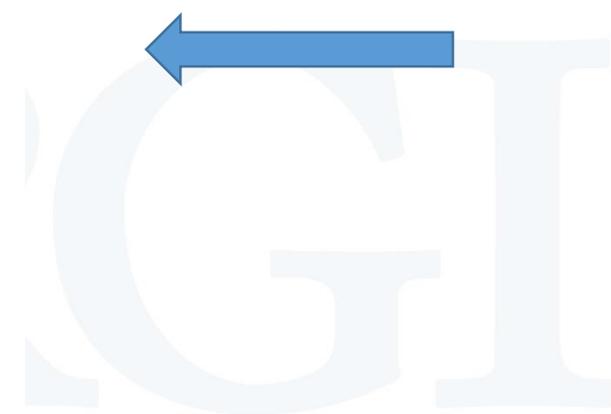
<sup>a</sup>The estimate is derived from high volume centers, the overall risk of malignancy may be lower given the interobserver variability in sonography.

<sup>b</sup>Aspiration of the cyst may be considered for symptomatic or cosmetic drainage.

ETE, extrathyroidal extension.

Current radiology reports incorporate the ultrasound features and recommendation for FNA

The patient-centered report also incorporates the estimated risk of malignancy based on the American Thyroid Association guidelines



# Approach

We used stakeholder feedback to redesign the radiology report to:

- Help health care decision makers (patients and physicians) make well-informed decisions about the need to biopsy thyroid nodules
- Identify available alternatives and choose one that aligns with the patient's values
- Promote shared decision-making
- Improve the efficiency of physician practices

# Key points from patient experience groups

- Use language understandable by the patient and basic design principles (e.g. word count, sentence length, width of text blocks)
- Include URLs and QR codes to access additional information (e.g. [radiologyinfo.org](http://radiologyinfo.org) and American Thyroid Association websites)
- Patient experience group was not concerned with radiology reports detailing the risk or presence of malignancy because patients and their physician should have a discussion about the possibility of malignancy prior to imaging
- Make final reports available immediately (e.g. no embargo)



# Current radiology report



## Radiology Report

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Patient Name: MRN:	Ref. Physician: Exam Reason:
Date Of Birth:	Exam Date/Time:
Gender:	Accession:

Exam: US THYROID

Indication: yo with thyroid mass suspicious/diagnostic of thyroid cancer. Please evaluate thyroid and specifically evaluate for adenopathy including in the lateral neck.

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Right isthmus thyroid nodule demonstrates imaging features suspicious for papillary thyroid carcinoma, recommend fine-needle aspiration.

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# Patient-centered radiology report

## Thyroid Ultrasound

UVA Department of Radiology  
1215 Lee Street,  
Charlottesville, Virginia 22908



Patient info

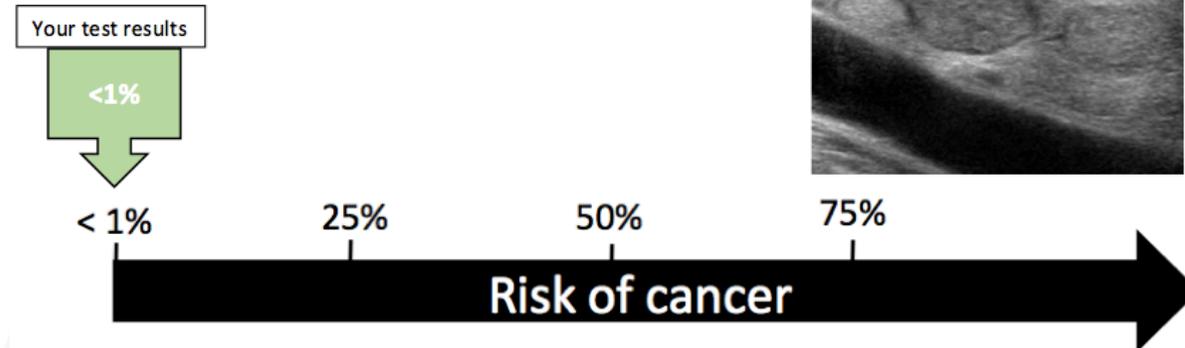
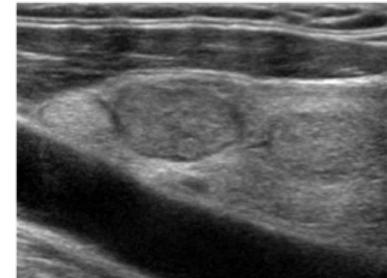
### 1 About the thyroid ultrasound exam

This imaging exam uses sound waves to produce pictures of the thyroid gland within the neck. It does not use ionizing radiation and is commonly used to evaluate lumps or nodules found during a routine physical or other imaging exam. Thyroid nodules are common and the majority are benign, particularly small nodules. The size, shape, border, brightness, and blood flow can help predict whether a nodule is benign or malignant.

### 2 What do your results mean?

Thyroid ultrasound is an effective test to evaluate for risk of thyroid cancer. There are imaging features that increase the chances that a nodule is cancer. The most common problem with this test is false alarms – there are imaging features of cancer but there's no cancer. The scale below is a general estimate of cancer risk that may be different for you based on age and other risk factors.

There are no thyroid nodules identified on today's exam that have imaging features concerning for cancer. One of your nodules is shown to the right.



### 3 What now?

Talk to your physician about whether you should undergo repeat ultrasound.

For questions or to discuss the results of your thyroid ultrasound exam with the radiologist who interpreted the exam, contact the University of Virginia Department of Radiology at 434-982-6089.

# Low risk of malignancy report

## Thyroid Ultrasound

UVA Department of Radiology  
1215 Lee Street,  
Charlottesville, Virginia 22908



Patient info

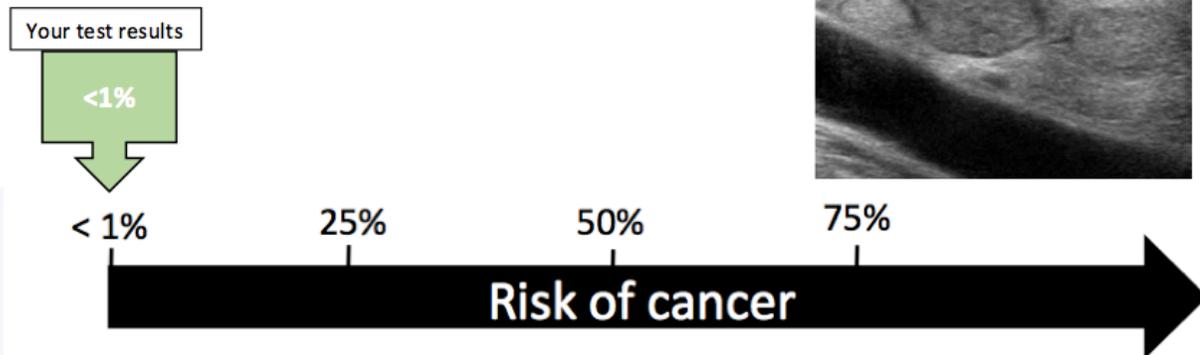
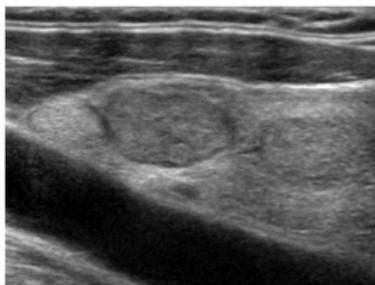
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### 3 What now?

Talk to your physician about whether you should undergo repeat ultrasound.

For questions or to discuss the results of your thyroid ultrasound exam with the radiologist who interpreted the exam, contact the University of Virginia Department of Radiology at 434-982-6089.

# High risk of malignancy report

## Thyroid Ultrasound

UVA Department of Radiology  
1215 Lee Street,  
Charlottesville, Virginia 22908



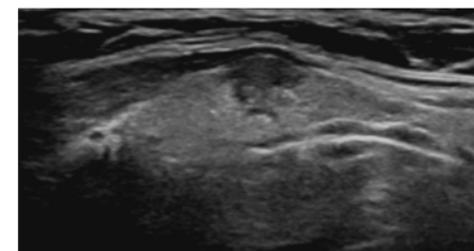
Patient info

### 1 About the thyroid ultrasound exam

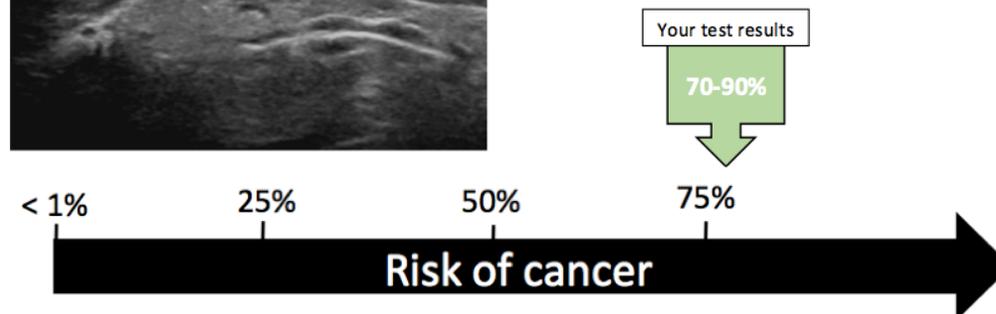
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### 2 What do your results mean?

Thyroid ultrasound is an effective test to evaluate for risk of thyroid cancer. There are imaging features that increase the chances that a nodule is cancer. The most common problem with this test is false alarms – there are imaging features of cancer but there's no cancer. The scale below is a general estimate of cancer risk that may be different for you based on age and other risk factors.



You have at least one nodule (shown to the left) that has imaging features concerning for cancer, including irregular borders and microcalcifications.



### 3 What now?

Talk to your physician about repeat ultrasound or performing a fine-needle aspiration test to determine if this nodule is thyroid cancer. Fine-needle aspiration tests are used selectively because results can be unclear and lead to unnecessary surgery for benign nodules. More information and a video about this test can be found at: <http://www.radiologyinfo.org/en/info.cfm?pg=thyroidbiopsy>

There are several treatment options for patients with thyroid cancer. Information about thyroid cancer can be found at <http://www.cancer.org/cancer/thyroidcancer/>

For questions or to discuss the results of your thyroid ultrasound exam with the radiologist who interpreted the exam, contact the University of Virginia Department of Radiology at 434-982-6089.

# Barriers and Next steps

- Software platform separate from PACS/VR to add representative images to 1 of 7 standardized templates to form the patient-centered multimedia radiology report
- Ability to upload report to Epic and make available via MyChart
- Medicolegal issues surrounding 2 radiology reports for the same exam
- Evaluating the impact on patients and referring physicians in terms of satisfaction and shared decision-making

# Thank you!

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