GE HealthCare

LOGIQ™ Series

Ultrasound, the next level for thyroid

AI-assisted decision support for thyroid disease

Clinical challenge

Measuring and interpreting thyroid nodules are time and resource-consuming processes in ultrasound. Despite the ACR® Thyroid Imaging Reporting and Data System (TI-RADS™), characterization is often inconsistent from clinician to clinician and may lead to unnecessary biopsies and overtreatment with insignificant clinical outcome.

GE HealthCare solution

Thyroid Assistant, powered by Koios DS™, is a clinical decision support software that automatically populates all TI-RADS descriptors and offers an AI-based cancer risk assessment. This reduces variability in TI-RADS categorization and increases decision-making confidence and speed.

Classify the lesion, assess FNA need – at the touch of a button

Thyroid Assistant automatically populates the TI-RADS assessment and—within seconds—guides clinicians to the appropriate TI-RADS level. It also makes a recommendation on whether the patient has benign nodules or is a candidate for Fine Needle Aspiration (FNA) or follow-up monitoring.

Here's how it works

1. Using one-touch Auto Contour, the clinician segments and measures the lesion.

2. The clinician selects the Koios button.

   - The software automatically assigns points to the lesion based on five feature categories: Composition, Echogenicity, Shape, Margin, and Echogenic Foci.
   - The sum of the points is mapped to one of five TI-RADS levels: Benign, Not Suspicious, Mildly Suspicious, Moderately Suspicious, and Highly Suspicious.
   - Thyroid Assistant leverages deep learning using the optional Koios AI Adapter feature to derive a cancer risk assessment of the suspected nodules augment TI-RADS and enhance overall diagnostic performance.
   - That level, in combination with the lesion size, provides the basis for the FNA recommendation versus follow-up.

Improved detection and consistency— and potentially fewer unnecessary biopsies

Thyroid Assistant, powered by Koios DS uses AI and machine learning to recognize patterns in thyroid tissue, based on more than 350,000 images.[1]

In research studies,[2] the tool helped users across all levels of experience make more informed FNA decisions compared to their own interpretations alone:

- **Variability** from reader to reader was reduced by 41% – enabling more classification consistency across the department.
- **Specificity** for FNA recommendations improved by 37% – contributing to fewer unnecessary biopsy orders.
- **Sensitivity** for FNA recommendations increased by 14% – reflecting the ability to detect more true positives.
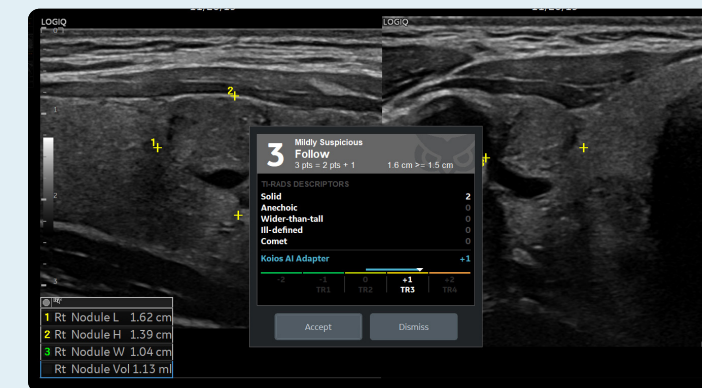
Plus, interpretation time fell by 24% compared to non-Koios-aided exams—enhancing the patient experience as well as department productivity.
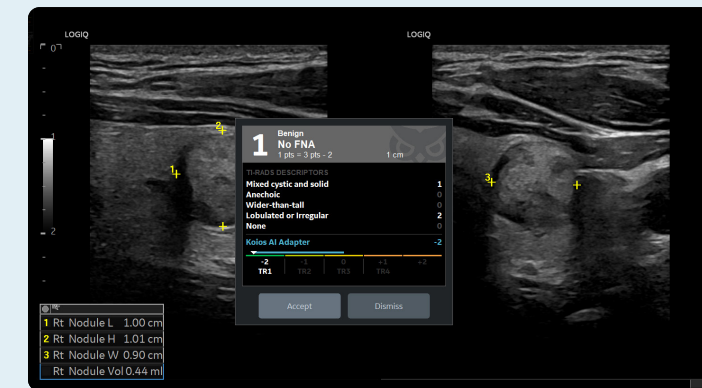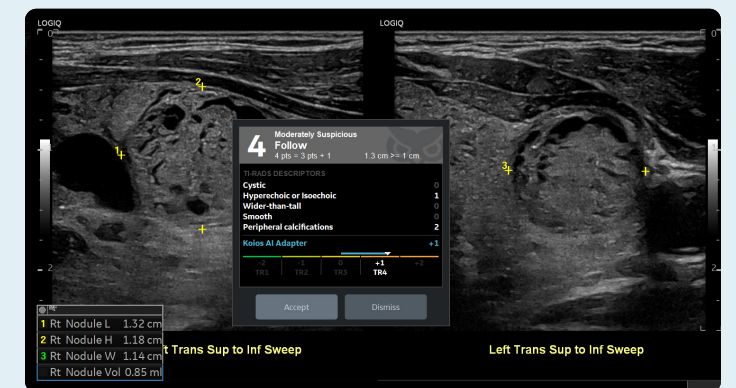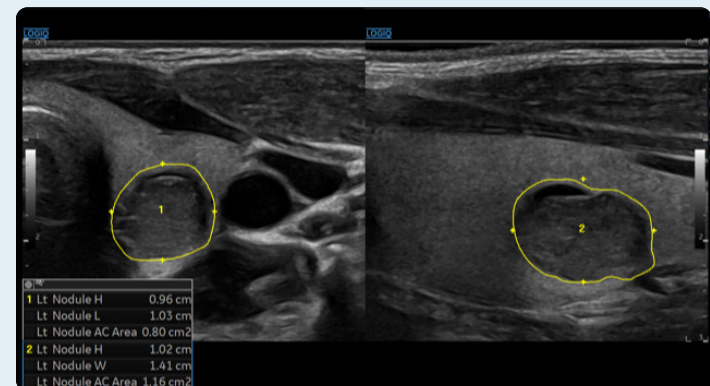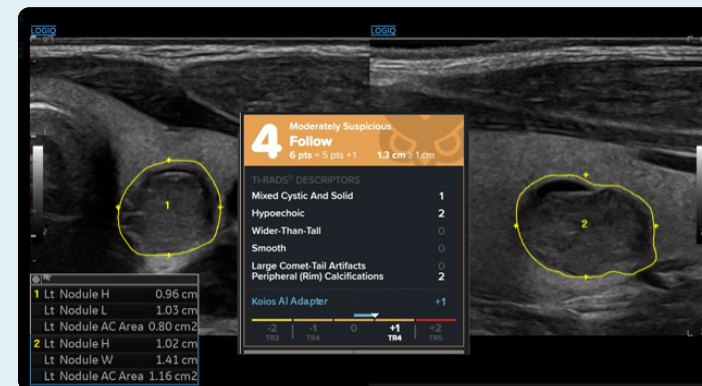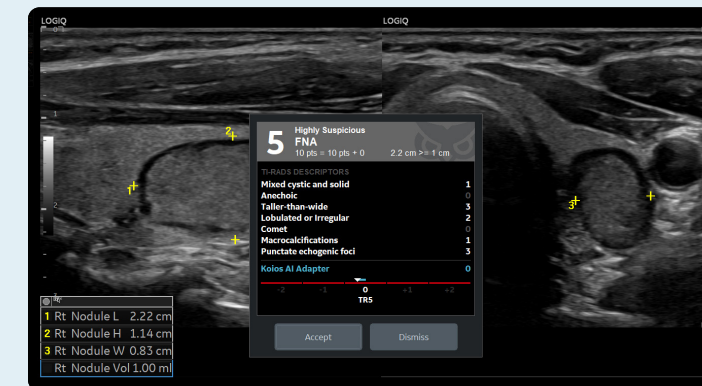

Benign
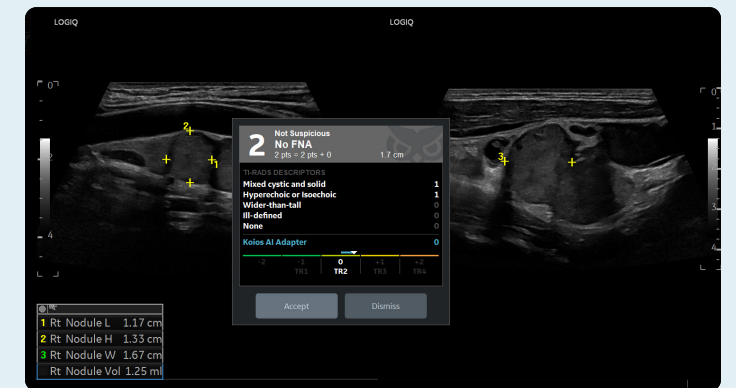
Not suspicious

Mildly suspicious

Moderately suspicious

Highly suspicious

Example result of Thyroid Productivity Package using Koios on thyroid

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You're focused on patients, and we're fully focused on you.

LOGIQ with Verisound™ digital and AI ultrasound solutions applies decades of ultrasound experience to minimize chaos, eliminate the mundane, and improve your day-to-day – because an efficient workflow means more focused time on patient care.

1. Koios Medical internal data. Available upon request.

2. Koios Medical internal data. Presented at Society for Imaging Informatics in Medicine annual meeting, 2021.

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