



► **Decision Support in Breast Diagnostics:
Harnessing the Power of AI**



LOGIQ E10 Series

EMPOWERING YOU TO MAKE THE DIFFERENCE IN BREAST CARE

CLINICAL CHALLENGE

The Breast Imaging Reporting and Data System (BI-RADS®) helped standardize the classification of breast lesions in ultrasound. Still, clinicians interpret up to one in three cases differently.¹ How can clinicians reduce variability in BI-RADS categorization to achieve greater consistency and confidence in the decision-making process?

GE HEALTHCARE SOLUTION

Breast Assistant, powered by Koios DS™, automatically provides an AI-based quantitative risk assessment that aligns to a BI-RADS ATLAS® category. Results are available in two seconds or less, providing decision support for the clinician, and helping to improve consistency across the department.

Assess the likelihood of malignancy with one button touch

Breast Assistant automatically provides a risk assessment that aligns to a BI-RADS ATLAS category and generates a color-coded confidence scale to assist in lesion classification. It uses machine learning and a proprietary algorithm – based on more than 400,000 clinical images – to generate a color-coded confidence scale. Accessible right from the LOGIQ™ E10 Series console, Breast Assistant is easy to integrate into an exam.



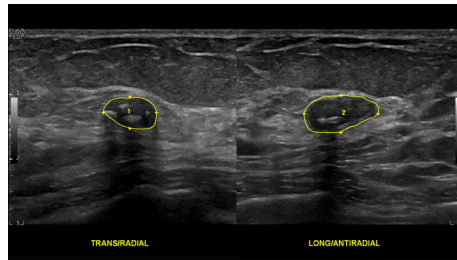
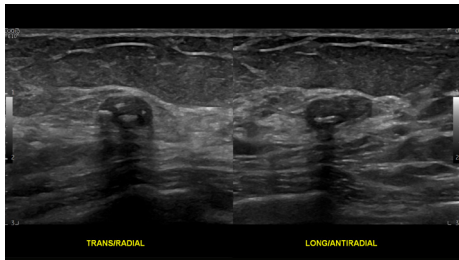
Using the one-touch Auto Contour button, the user segments and measures the lesion.



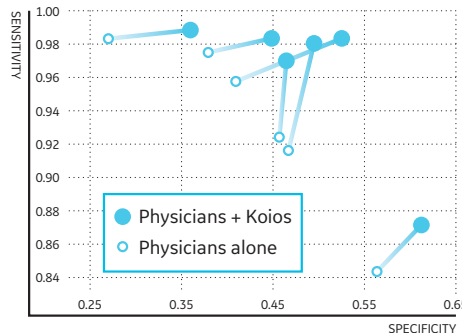
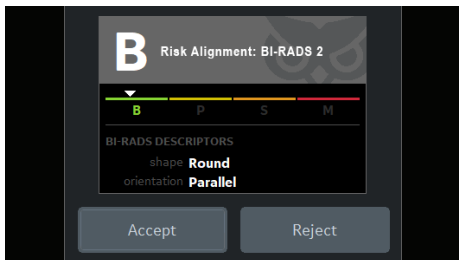
Select the Koios button to analyze the lesion. The BI-RADS ATLAS category and probability scale appear within two seconds.



The color sliding scale aligns to the likelihood of malignancy – valuable data to support radiologists' diagnostic decisions especially in more complex cases.



Benign Breast Mass with Multiple Calcifications, ML6-15-D



The science behind the solution

Breast Assistant powered by Koios DS uses AI and machine learning to recognize patterns in breast tissue, based on more than 400,000 images¹

In research published in the Journal of Digital Imaging and Signal Processing in Medicine and Biology Symposium^{2,3} Koios DS improved accuracy in breast cancer diagnosis for radiologists across all levels of experience:

- Sensitivity increased from 92 – 97% to 97 – 98%
- Specificity increased from 38 – 46% to 45 – 52%
- Benign biopsy rates were reduced 34 – 55% without a reduction in sensitivity

A study by Dr. Susan Love and Dr. Wendie Berg⁴ found a cancer identification rate of 100% with a 69% reduction in benign biopsies.

1. Koios Medical internal data. Available upon request.

2. Barinov, L., Jairaj, A., Becker, M. et al. Impact of Data Presentation on Physician Performance Utilizing Artificial Intelligence-Based Computer-Aided Diagnosis and Decision Support Systems. J Digit Imaging (2018). <https://doi.org/10.1007/s10278-018-0132-5>.

3. Barinov L, Jairaj A, Paster L, Hulbert W, Mammone R, Podilchuk C. Decision quality support in diagnostic breast ultrasound through artificial intelligence. IEEE Signal Processing in Medicine and Biology Symposium (SPMB), 2016.

4. Love SM, Berg WA, Podilchuk C, Hovanessian-Larsen LJ, Dauphine C, Jairaj A, Barinov L, Hulbert W, Cen S, Eshraghi L, Mammone R. Automated, low-cost palpable breast lump triage for economically-developing countries [abstract]. In: Proceedings of the 2016 San Antonio Breast Cancer Symposium; 2016 Dec 6-10; San Antonio, TX. Philadelphia (PA): AACR; Cancer Res 2017;77(4 Suppl):Abstract nr PD3-01.

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