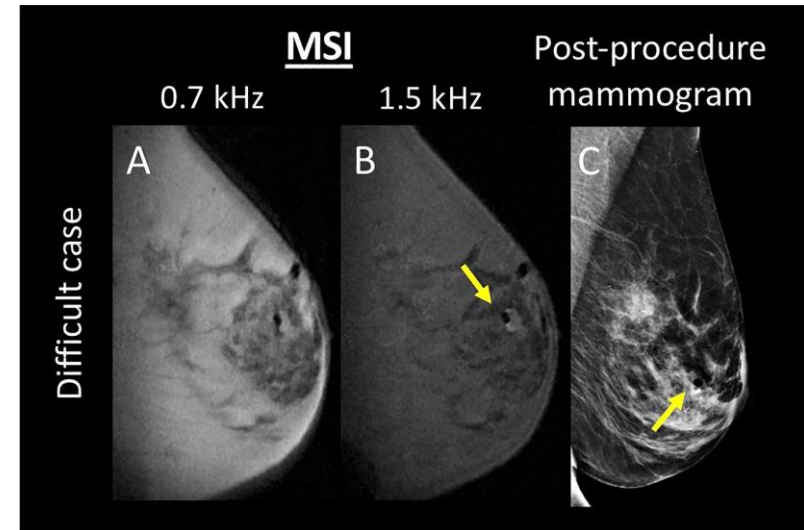
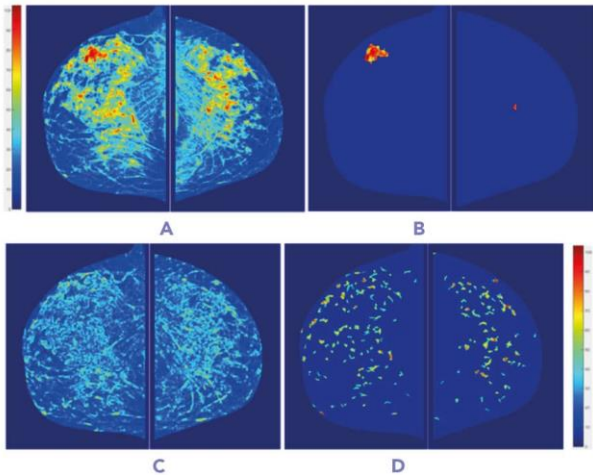


New Tools, Better Outcomes: The Next Era of Breast Imaging



Anne Hixon Hixon B.Ed. (Adult), MRT(R)

Senior Product Manager, Clinical Education and Medical Relations, Women's Health



ASPIRE *Cristalle*

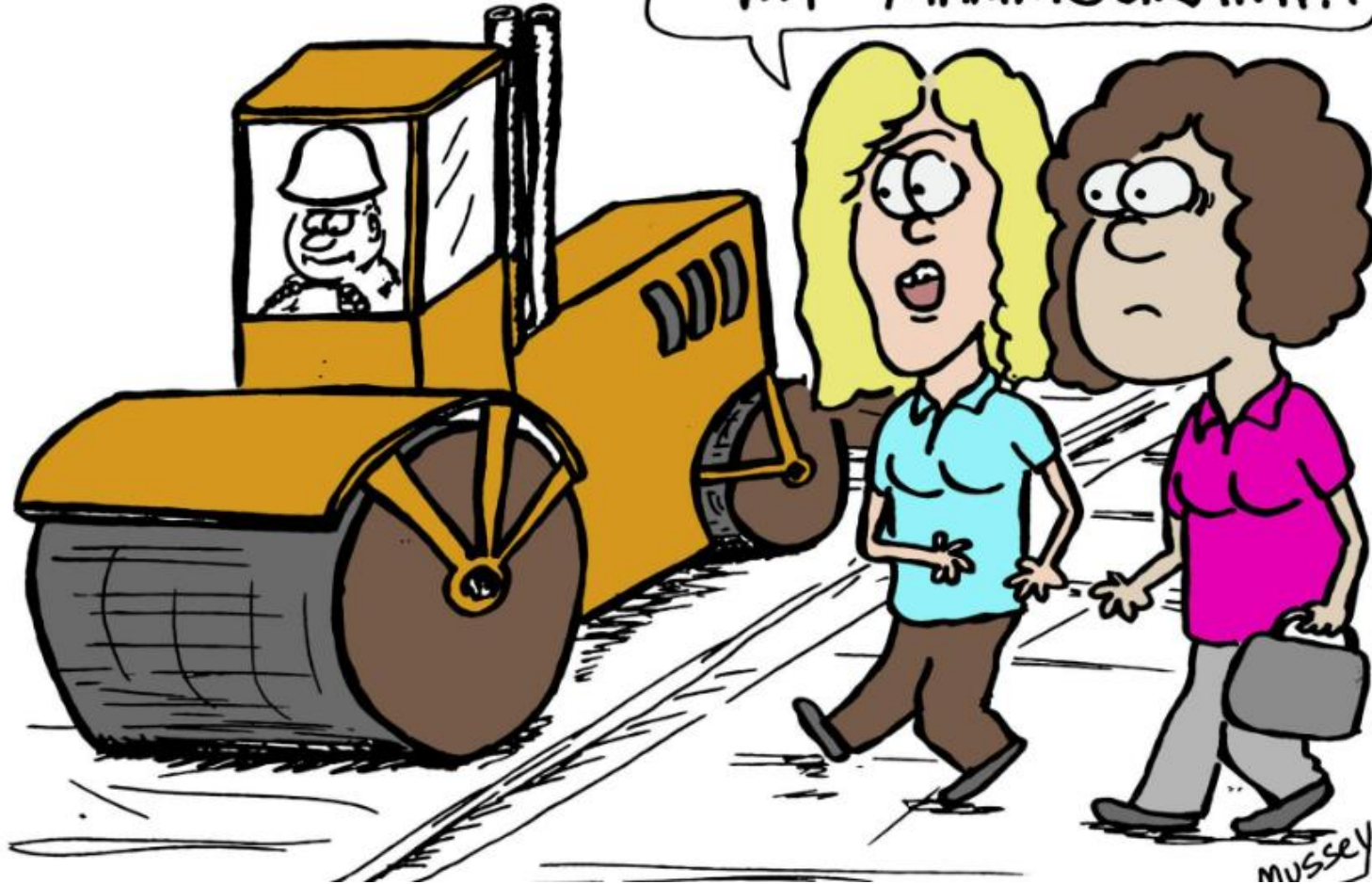
Women's Health

The fight against
breast cancer **is not**
one-dimensional

Precision Screening: ***An individualized approach to breast screening***

Personalized Care

... THAT REMINDS ME...
... I NEED TO GET
MY MAMMOGRAM...



Mammography





AI

\$

Home icon

Camera icon

Medical monitor icon

Laptop icon

Smartphone icon

Power transmission tower icon

Solar panel icon

Wind turbine icon

Factory icon

Robot arm icon

Road icon

Car icon

Bridge icon

Security camera icon

Building icon

Shopping cart icon

Automation at every step

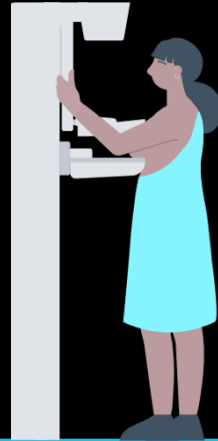
Risk Assessment

Quickly & easily identify those at elevated risk using the EHR to speed data collection in any setting and enable care coordination.



Quality Analytics

Objective quality insights at the technologist's fingertips to help reduce technical recalls and assist with ACR and MQSA audit prep.



AI evaluates every mammogram for:

- Positioning
- Compression
- Dose
- Quality

See individual or team performance trends.

View embedded training videos to upskill staff.

Cancer Detection AI

AI supports radiologists by highlighting suspicious areas that may be difficult for the human eye to detect.

Abnormality score helps guide care recommendations for earlier detection and reduced interval cancers.



Breast Density Assessment

Volumetric breast density objectively and consistently identifies patients with dense breast tissue who should be offered ultrasound or MRI for a better chance at early detection.



Mammo Reporting

Automate workflows and streamline patient reporting, tracking, and communications.





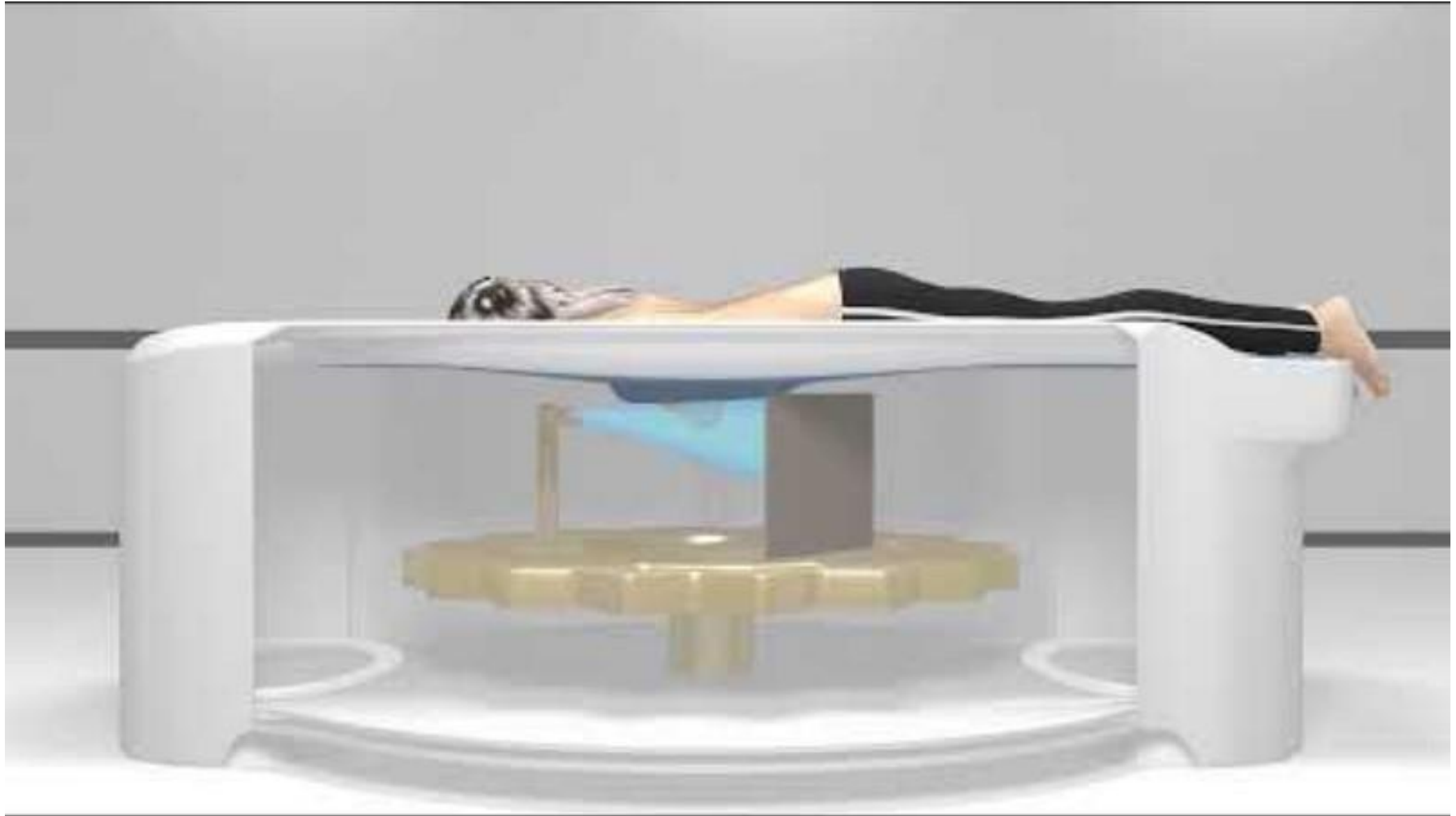
Clairity Breast



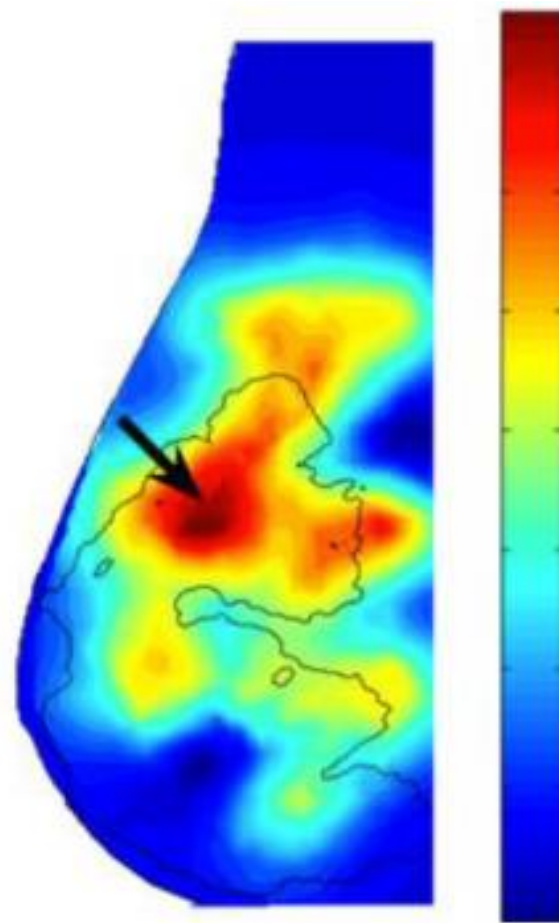
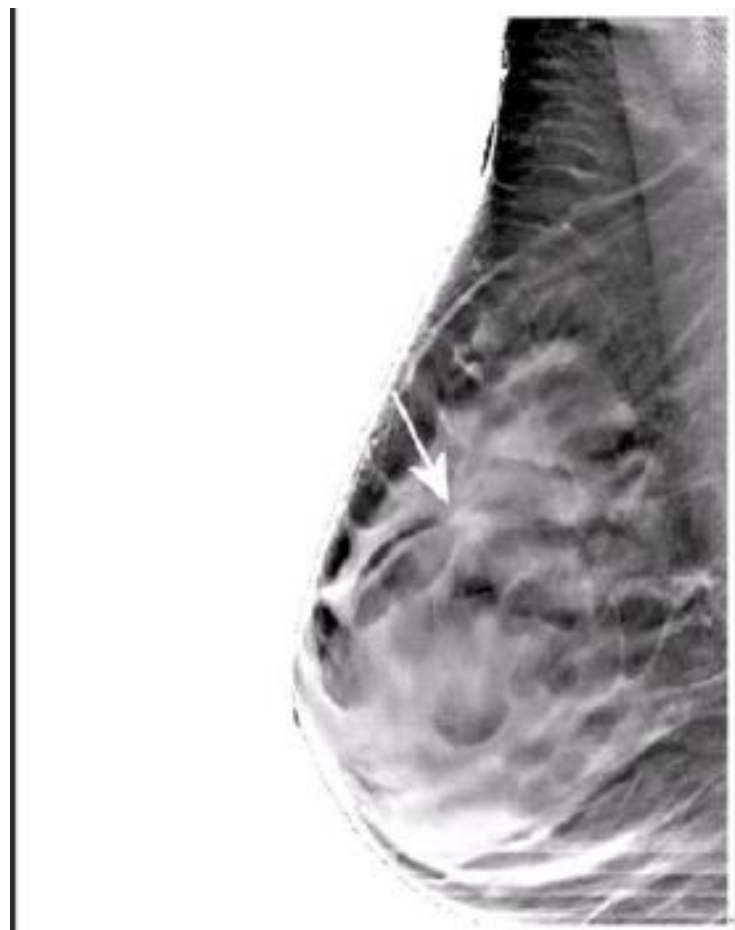
Table D.2-1: Dose Analysis

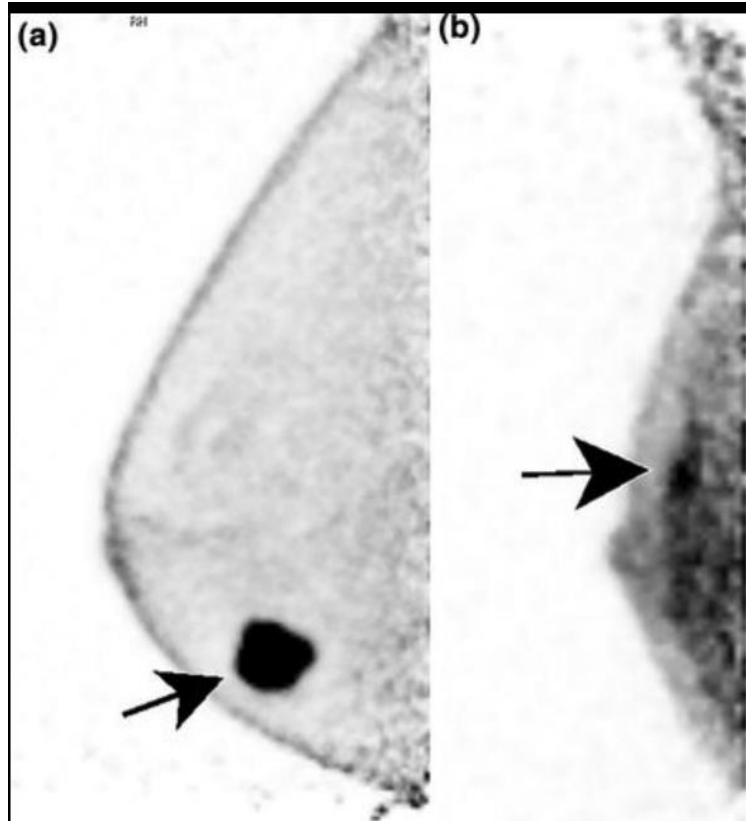
Statistic	KBCT	Diagnostic Mammography
N	220	220
Mean (mGy)	10.60	9.57
Std (mGy)	3.89	5.16
Median (mGy)	9.85	8.67
Minimum (mGy)	3.28	1.61
Maximum (mGy)	21.62	39.99

Coned Beam Breast Computed Tomography



Functional Imaging

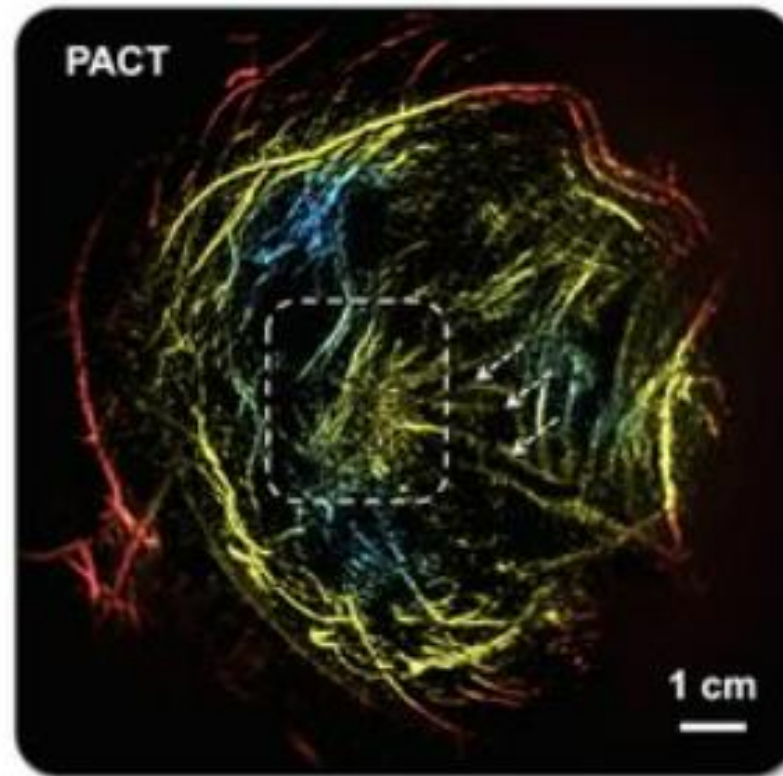
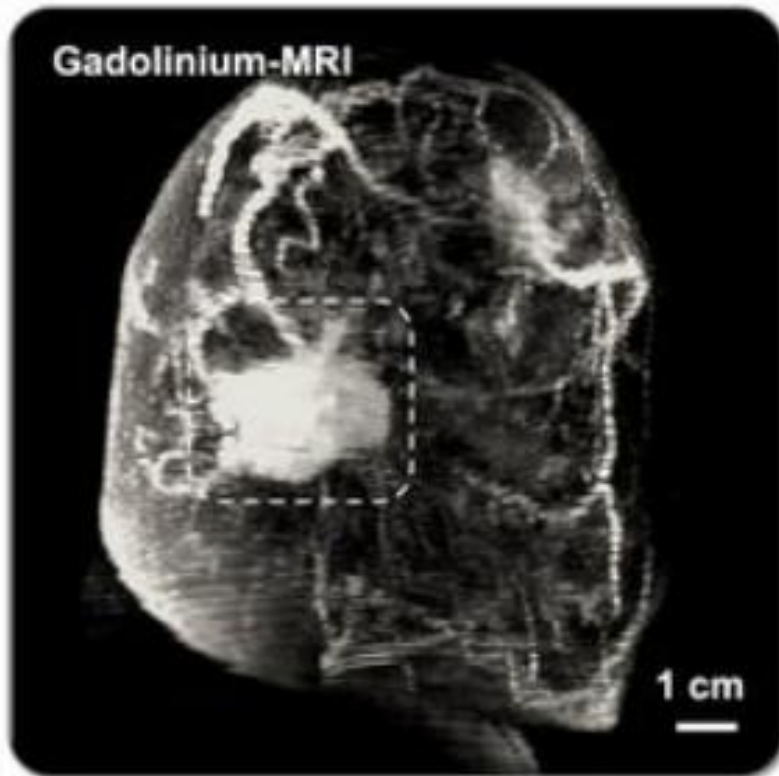




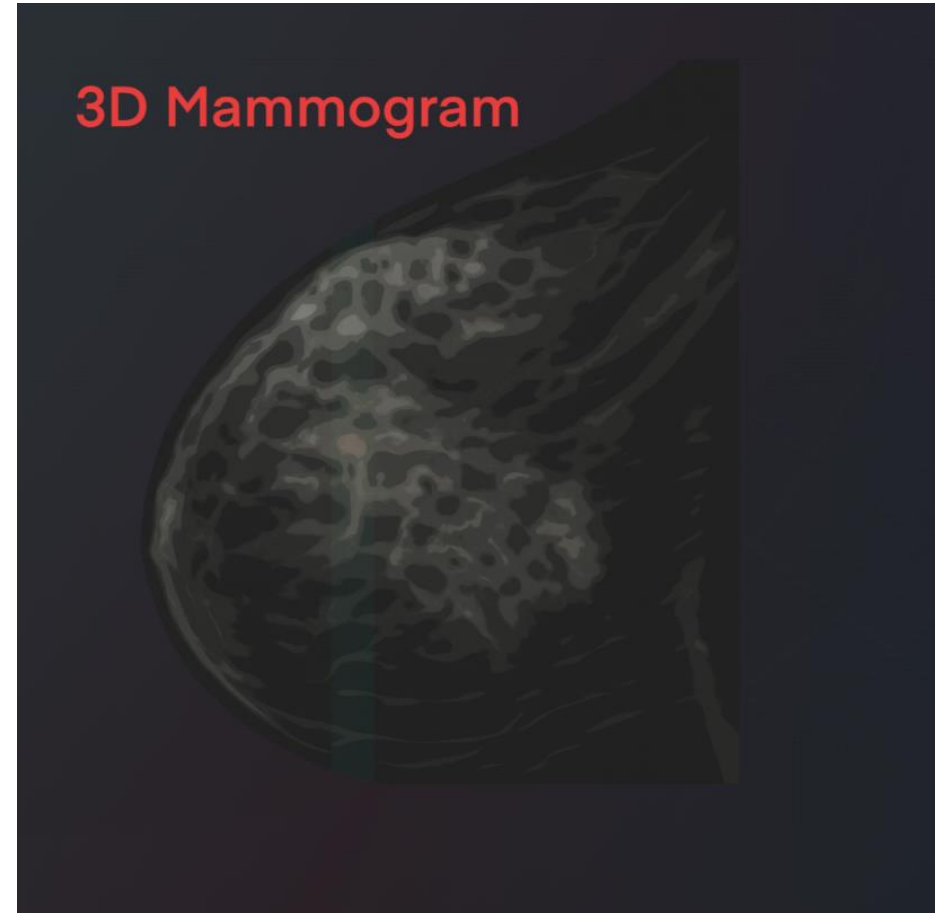
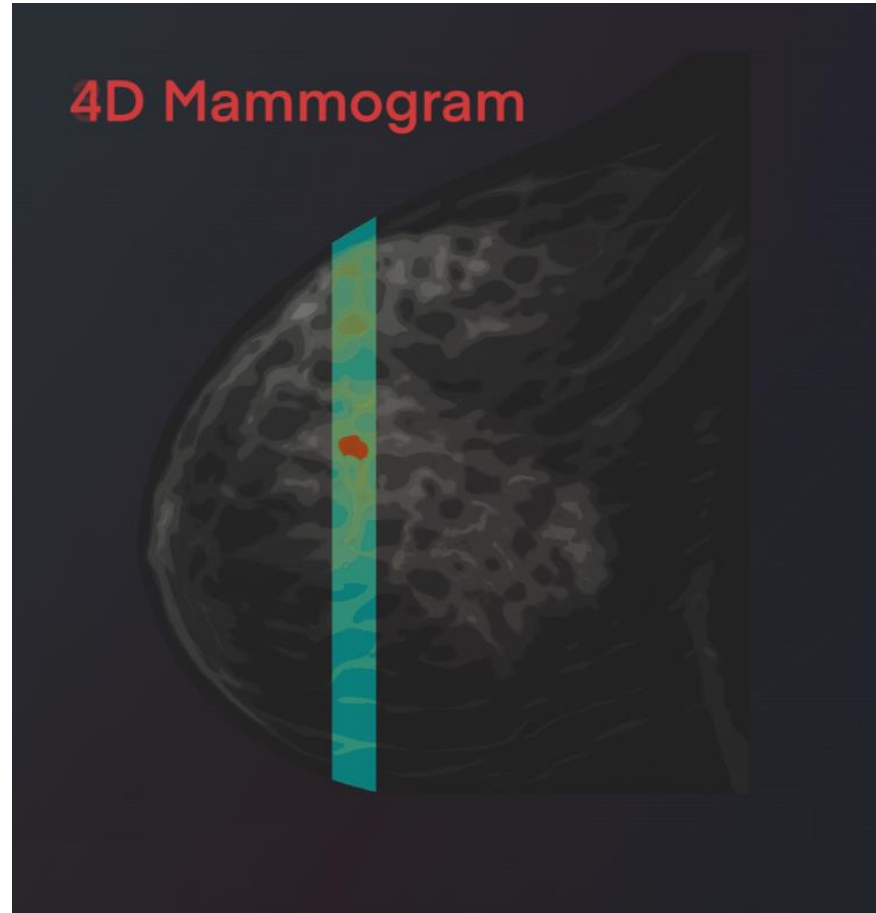
Positive Emission Mammography PEM

Photoacoustic Computed Tomography

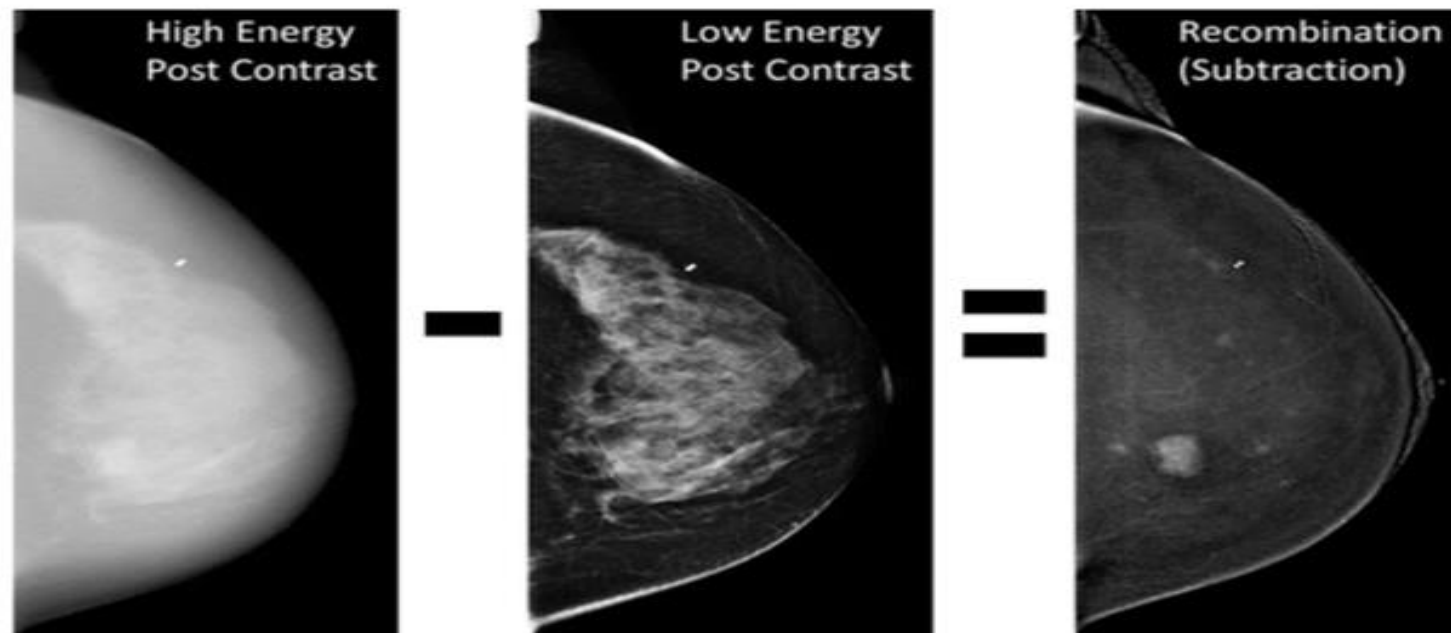
PACT



4D MAMMOGRAPHY



CEM- Contrast Enhanced Mammography



Benefits and Clinical Indications of CEM

- Alternative to breast MRI
- Evaluating patients contraindicated for MRI
- More cost effective than breast MRI
- Faster procedure
- Monitor the effectiveness of drug therapies
- Identify potential undetected malignancies

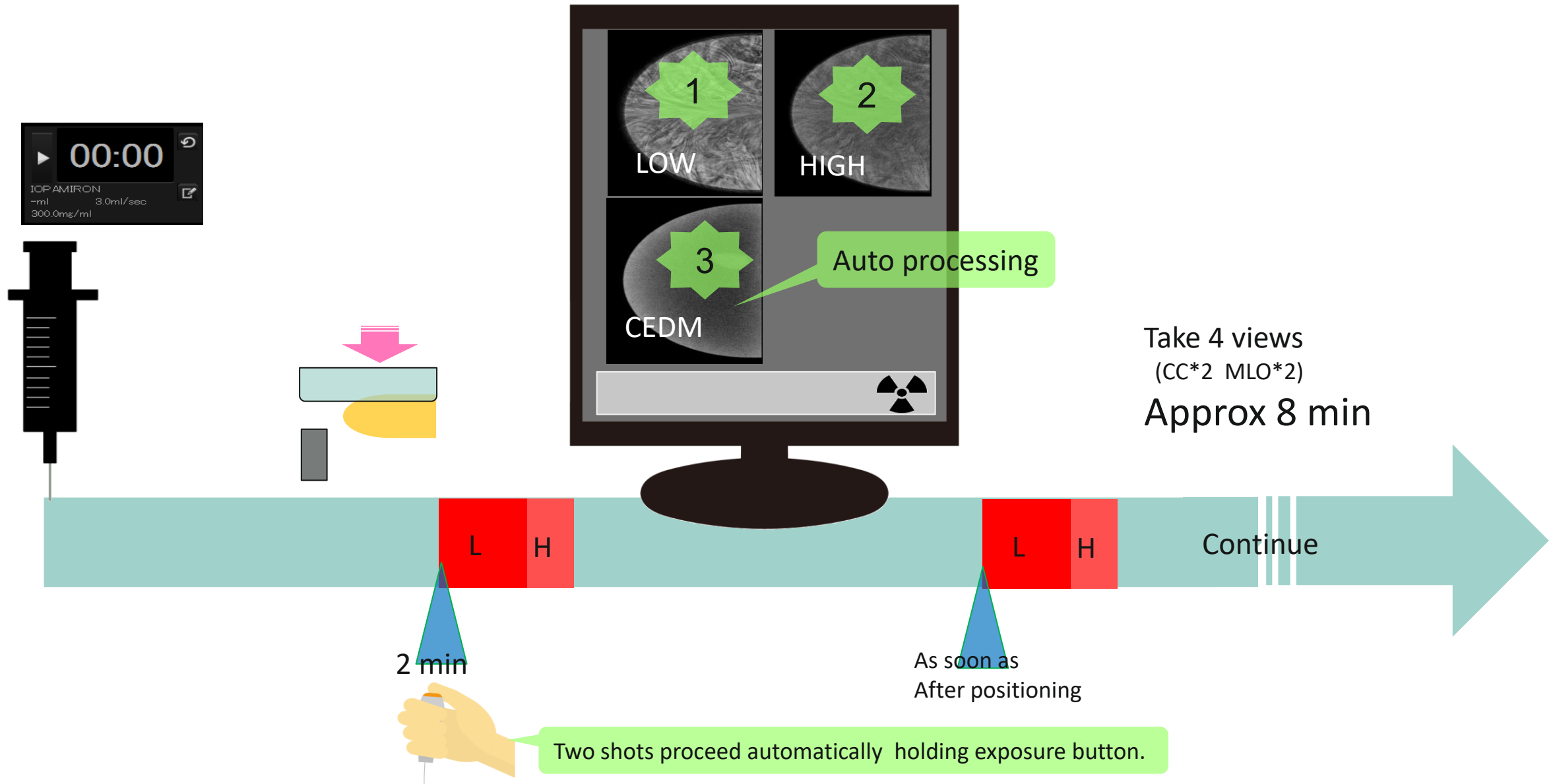
Adoption

CEM reflects steady growth, driven by its **demonstrated effectiveness in improving breast cancer detection and diagnosis**. As technological improvements continue and CEM becomes more accessible, its role in breast imaging is expected to expand further, **potentially becoming a routine part of breast cancer care in combination with other imaging modalities**.

Future Outlook

As the demand for more accurate breast cancer detection methods grows, Contrast-Enhanced Mammography (CEM) is expected to gain wider adoption, **particularly in centers where MRI is inaccessible**. Ongoing improvements in contrast agents and image-processing technologies will likely enhance its diagnostic capabilities. **CEM may also see more use as part of personalized breast cancer screening strategies tailored to individual risk factors and breast density**

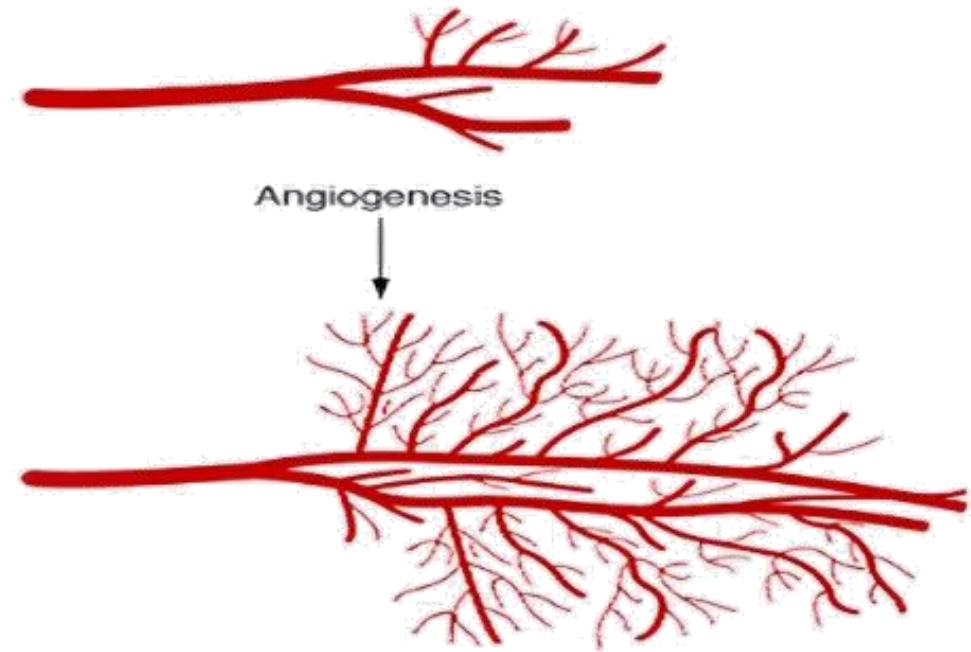
Examination flow



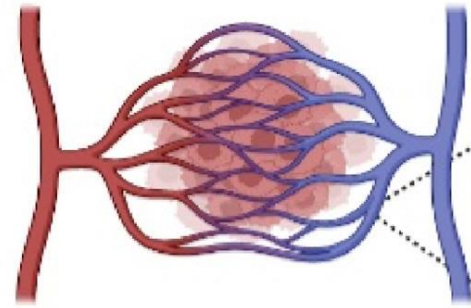
hypervascular CEM (hv/CEM)

5th generation 2D CEM technology
with the potential to improve lesion conspicuity

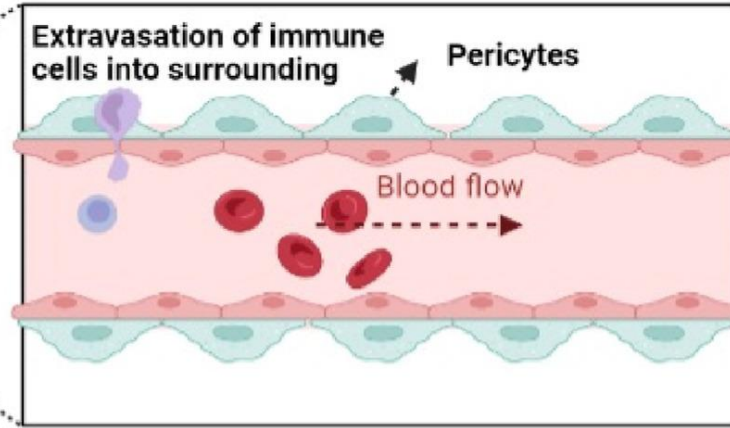
CEM and Angiogenesis



Normal vasculature

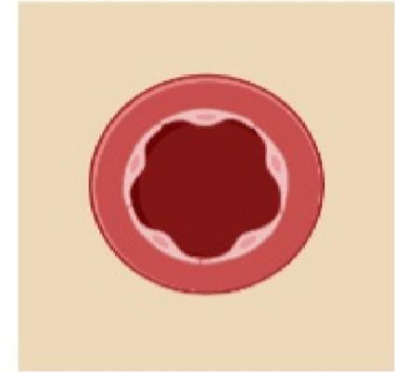


Normalized vasculature



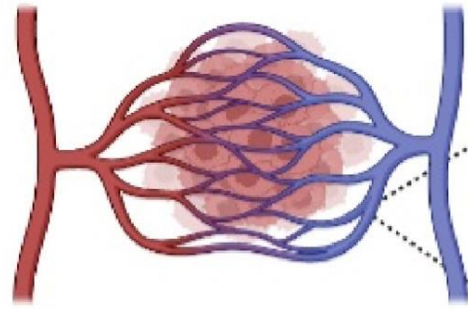
↓↓ Hypoxia
↑↑ Drug delivery

vessel cross-section

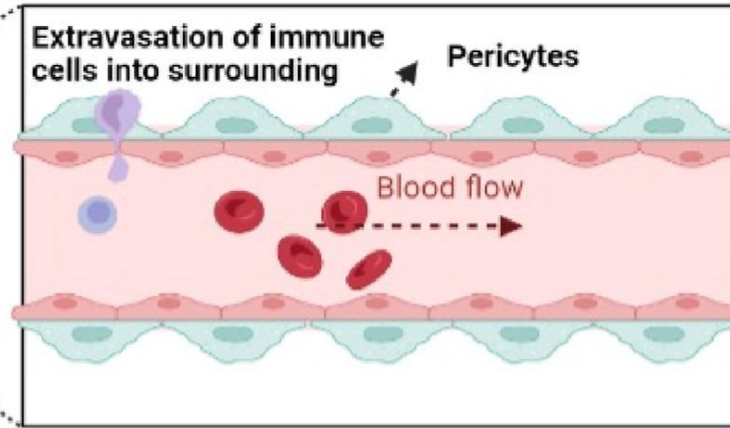


A monolayer of tight ECs line normal blood vessels

Normal vasculature

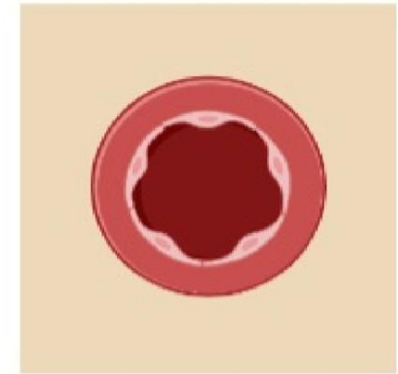


Normalized vasculature



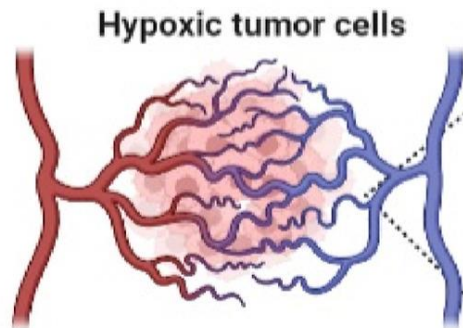
↓ ↓ Hypoxia
↑ ↑ Drug delivery

vessel cross-section

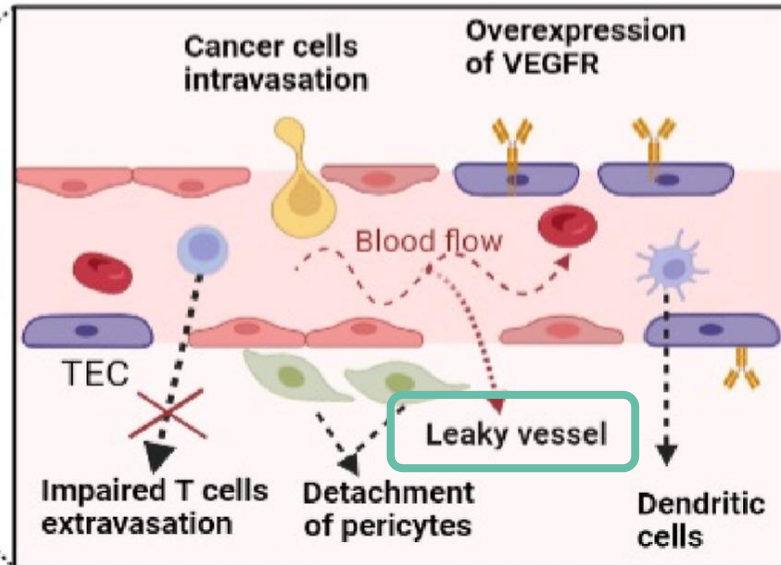


A monolayer of tight ECs line normal blood vessels

Tumor vasculature

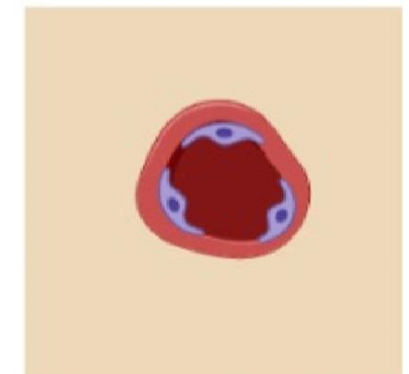


Structural abnormalities of tumor vessels

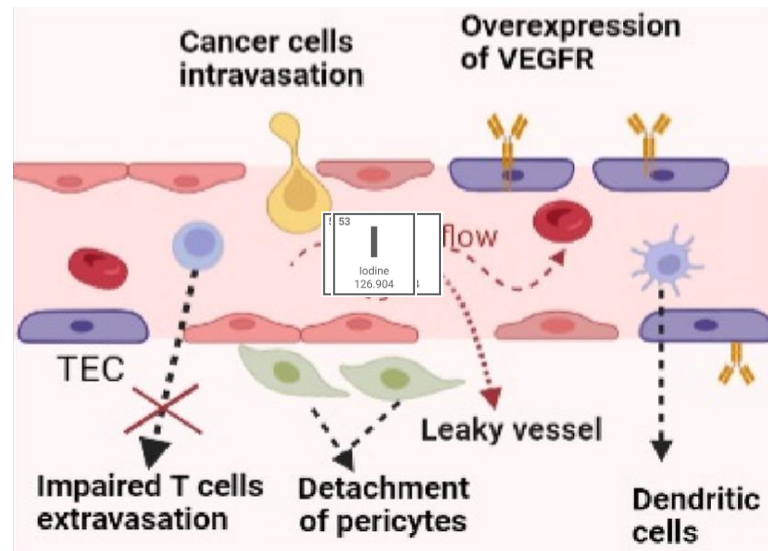
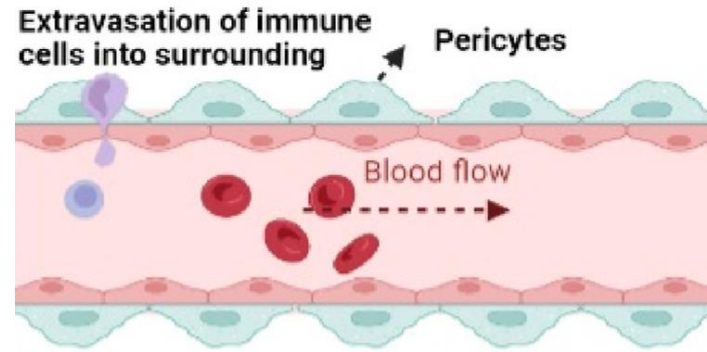


↑ ↑ Hypoxia
↓ ↓ Drug delivery

vessel cross-section



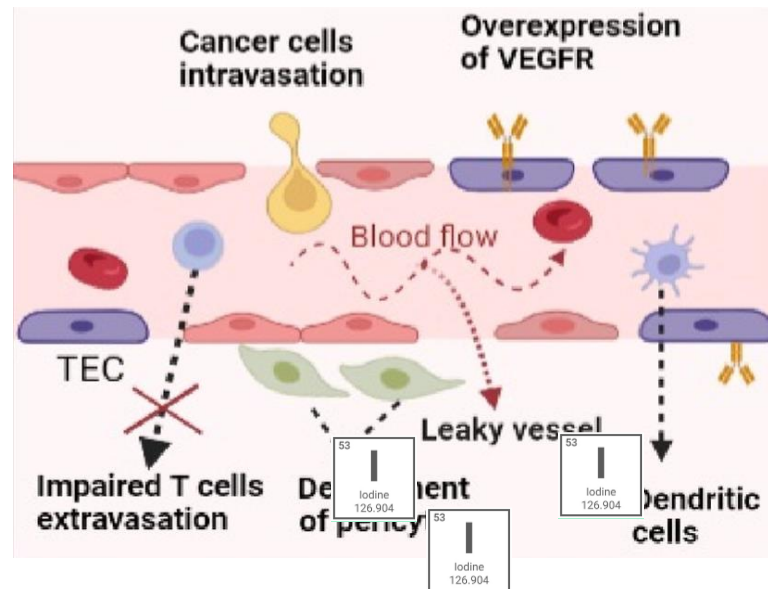
Narrowing of lumen due to interstitial fluid pressure



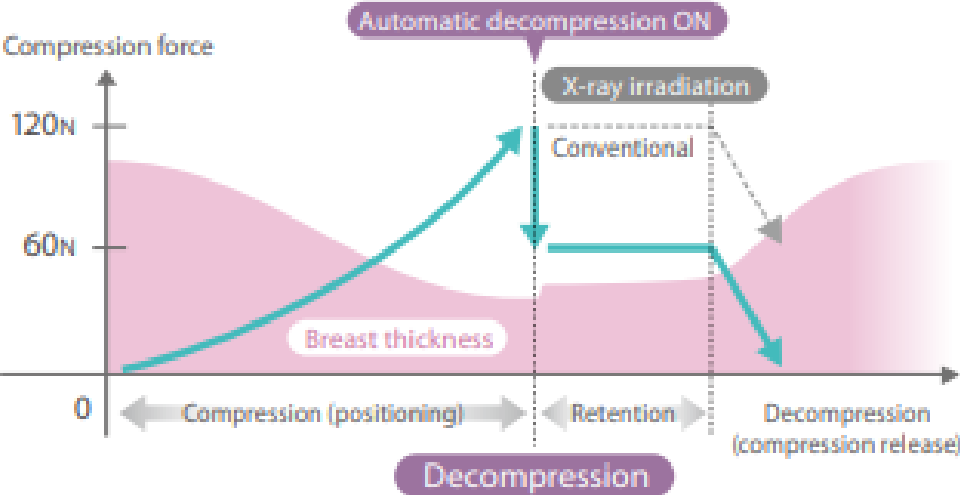
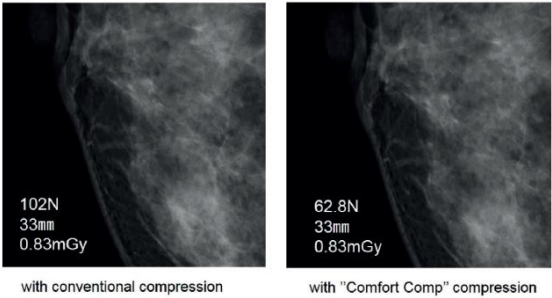
CEM and Angiogenesis

CEM images the Iodine that leaks into the extracellular spaces.

- Having a high concentration of Iodine arrive at the tumor in a short period of time increases the leakage of Iodine into the extracellular spaces.
- The greater the Iodine leak, the more definitive the CEM results.



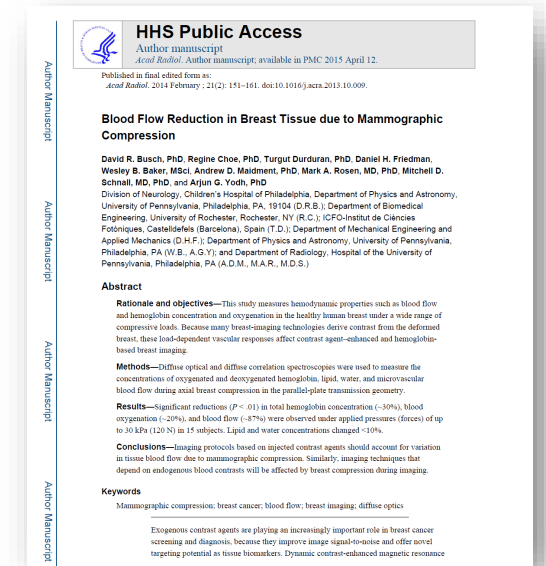
How to Improve CEM?



Breast Compression

In theory, if compression pressure (force) is reduced:

- Blood flow is increased.
- A higher concentration of iodinated contrast will reach the tumor.
- More iodinated contrast will leak into the extracellular spaces.
- CEM imaging will be enhanced.



Busch et al. Blood Flow Reduction in Breast Tissue due to Mammographic Compression. *Acad Radiol*. 2014 February 21(2): 151-161.

BRAID STUDY

Abbreviated MRI and CEM had the highest cancer detection rates of the modalities included, with each also finding more invasive cancers than ABUS. However, ABUS led to lower recall and biopsy rates.

Comparison between supplemental breast imaging modalities in BRAID study			
Measure	ABUS	Abbreviated MRI	CEM
Cancer detection rate (per 1,000 exams)	4.2	17.4	19.2
Invasive cancer detection rate (per 1,000 exams)	4.2	15	15.7
Recall rate	4%	9.7%	9.7%
Biopsy rate	1.5%	4.9%	4.4%

The team reported one case of extravasation in the abbreviated MRI arm, no adverse events in the ABUS arm, and 24 iodinated contrast reactions in the CEM arm. For the latter, this included 17 minor events, six moderate, one severe case, and three extravasations.

Gilbert said the abbreviated MRI results replicate those of the DENSE trial and that CEM can also match these results.

— **hypervascular CEM (hv/CEM)**



LINDA.APERFECTWORLD.ORG

LINDA CAUSEY 2007

Remote Monitoring 3D Ultrasound



IcosaMed
SMART HEALTHCARE

NOW WHAT?





Thank You

References:

Grigoryants NF, Sass S, Alexander J. Novel Technologies in Breast Imaging: A Scoping Review. *Cureus*. 2023 Aug 24;15(8):e44061. doi: 10.7759/cureus.44061. PMID: 37746370; PMCID: PMC10517733.

Tong, X., Liu, C.Z., Luo, Y. *et al*. Panoramic photoacoustic computed tomography with learning-based classification enhances breast lesion characterization. *Nat. Biomed. Eng* (2025). <https://doi.org/10.1038/s41551-025-01435-3>

Grigoryants NF, Sass S, Alexander J. Novel Technologies in Breast Imaging: A Scoping Review. *Cureus*. 2023 Aug 24;15(8):e44061. doi: 10.7759/cureus.44061. PMID: 37746370; PMCID: PMC10517733.