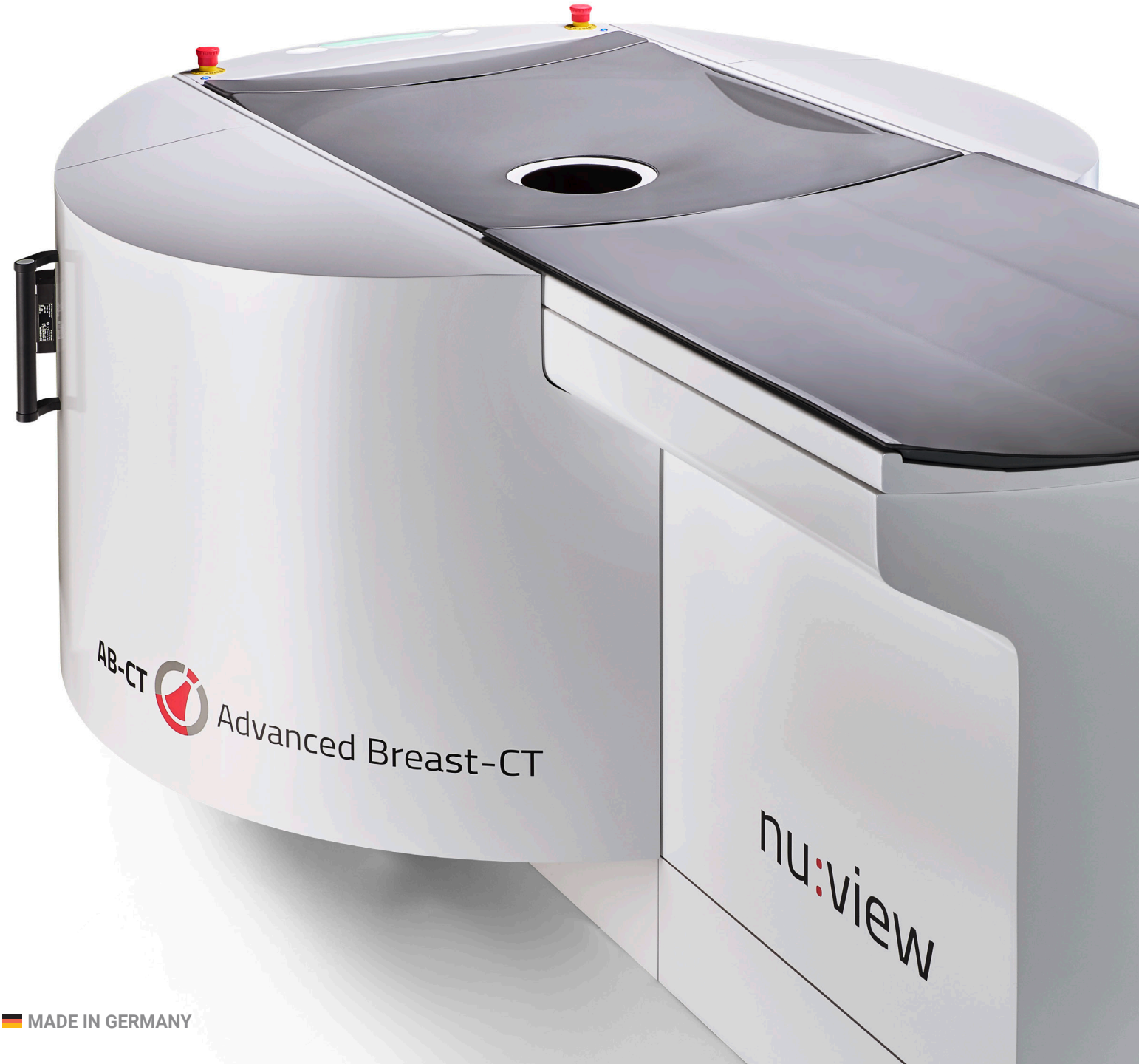
AB-CT Advanced Breast-CT

nu:view

A DISRUPTIVE TECHNOLOGY IN THE ERA OF BREAST IMAGING



MADE IN GERMANY

DESIGNED FOR CLINICAL EXCELLENCE

nu:view, the world's first dedicated breast CT scanner to use spiral CT technology, is the brainchild of Erlangen-based company AB-CT.

What sets **nu:view** apart is the very **high image resolution coupled with low radiation dose and short scan times.** To maximize image quality and dose efficiency at the same time, the leading edge breast CT system uses a unique state-of-the-art single photon counting detector. In the course of one rotation around the breast, 2,000 projection images are created – with a full spiral scan taking as little as 7 to 12 seconds.

Doing all this without breast compression, an **excellent patient comfort** is ensured. For the first time, a CT scanner makes it possible to acquire superimposition-free images of the breast in a single scan – with superb soft tissue differentiation and in true 3D.

- ✓ **Out-of-the-box protocols for acquisition and reconstruction**
- ✓ **Continue working in your familiar reporting environment – no custom viewer required**
- ✓ **Ease of use, flexible support of clinical workflows**

Even with high-tech devices and skilled, qualified radiologists, the early and accurate diagnosis of breast cancer remains challenging. Conventional diagnosis methods, while well-established, are not always reliable. 3D imaging with high isotropic resolution, on the other hand, offers clear advantages.

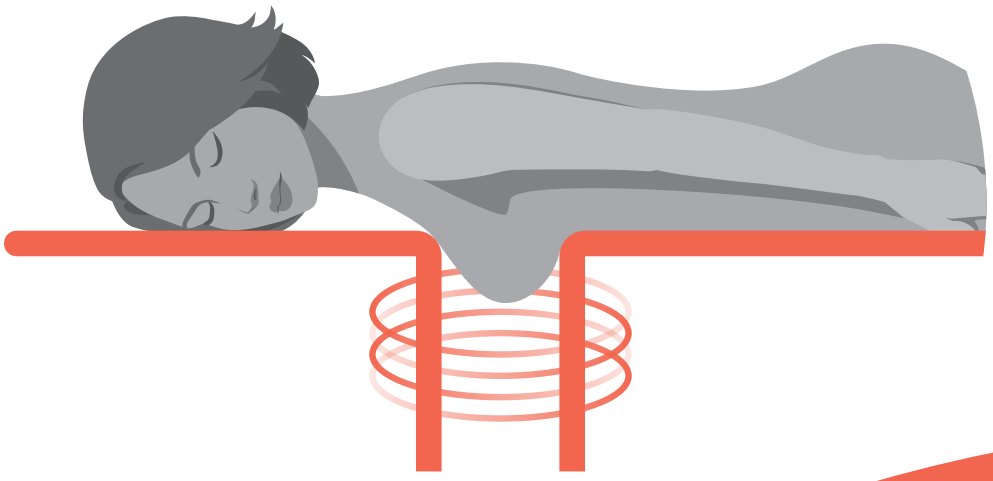
RESPECTING PATIENTS

It's not just the unrivalled technology nu:view impresses with – our dedicated breast CT has also been developed with the highest level of patient comfort in mind.

During the image acquisition process, the patient lies prone on the scanner table with the breast to be examined conveniently placed into the opening.
No breast compression is applied, helping to improve patient comfort during a potentially stressful examination.

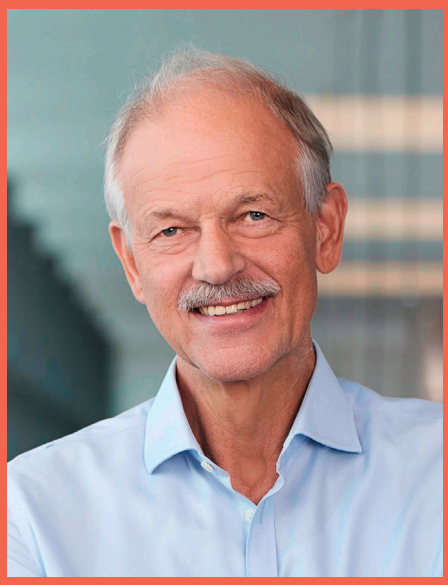
The scan parameters are adjustable to accommodate **various clinical requirements and patient types.**
Even patients with small breasts and dense breast tissue, mastodynia or implants are able to experience the comfort, convenience, and peace of mind **nu:view** offers.

- ✓ **No squeeze, no touch positioning**
- ✓ **Keeps the female breast in its natural shape**
- ✓ **High patient comfort**



"Dedication to Computed Tomography has driven my professional life for more than 30 years. I am very proud that AB-CT is fully reflecting this dedication – last but not least for the benefit of our customers and patients."

Prof. Dr. Dr. med. h.c. mult.
Willi Kalender (†), Ph. D.
Founder



LEADING EDGE

1. True 3D images with a very high isotropic resolution
2. Superimposition-free and superb soft tissue differentiation
3. Low dose in the range of mammograms
4. No breast compression, short scan times
5. Seamless clinical integration to RIS & PACS (DICOM)
6. Excellent detectability of microcalcifications

X-Ray Tube

- Focal spot size: 0.4 (IEC 60336)
- Tube voltage: 60 kV
- Tube current: 5–125 mA
- Power: 7.5 kW

Scan

- Spiral CT scan
- Up to 2,000 projections per 360° rotation
- Acquisition times of 7–12 s per scan
- Low patient dose levels in the range of mammograms

Detector

- Type: Photon counting detector (direct conversion)
- Sensor: CdTe, 0.75 mm thick
- Pixel size: $(100\ \mu m)^2$
- Detector area: about 280 × 50 mm^2
- Detector rows: 512
- Frame rate: up to 1,000 Hz

Reconstruction

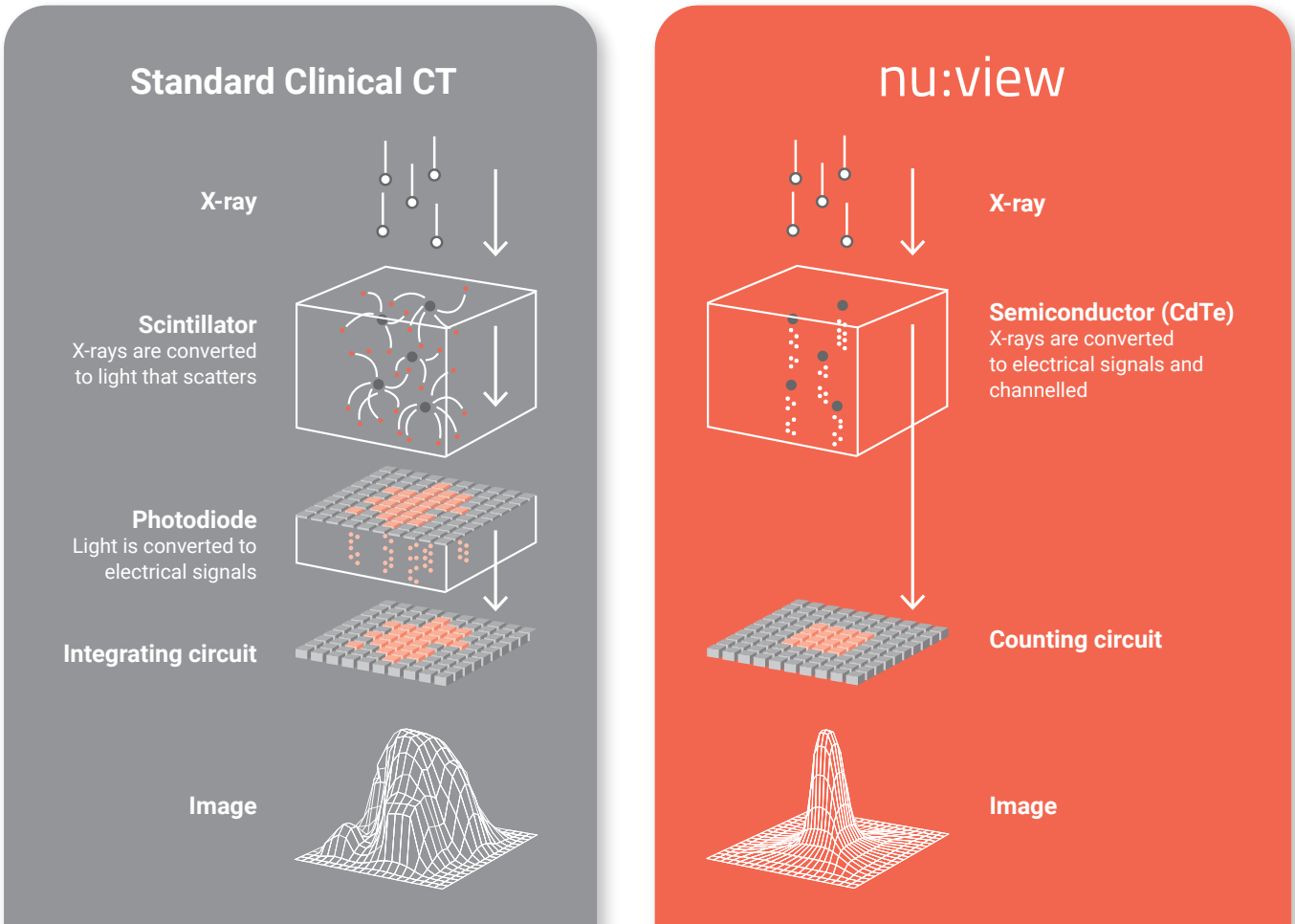
- Fully isotropic high spatial resolution
- Field of measurement: Ø 200 mm × 160 mm
- Voxel size: $(90\ \mu m)^3$, $(150\ \mu m)^3$, $(300\ \mu m)^3$
- Filtered back-projection

One of **nu:view**'s key technologies: a unique detector. The special, concavely shaped **single photon counting** hybrid detector made of highly sensitive material (CdTe) converts x-rays directly into electrical signals. Using the photon counting and energy thresholding capability, it features an unrivalled combination of geometric and absorption efficiency in clinical breast imaging. The resulting images are of **truly impressive** levels of detail and can be acquired at **low dose**.

- ✓ Direct converting
- ✓ Single photon counting
- ✓ High geometric and absorption efficiency
- ✓ Excellent image detail at low radiation dose

EVERY SINGLE PHOTON COUNTS

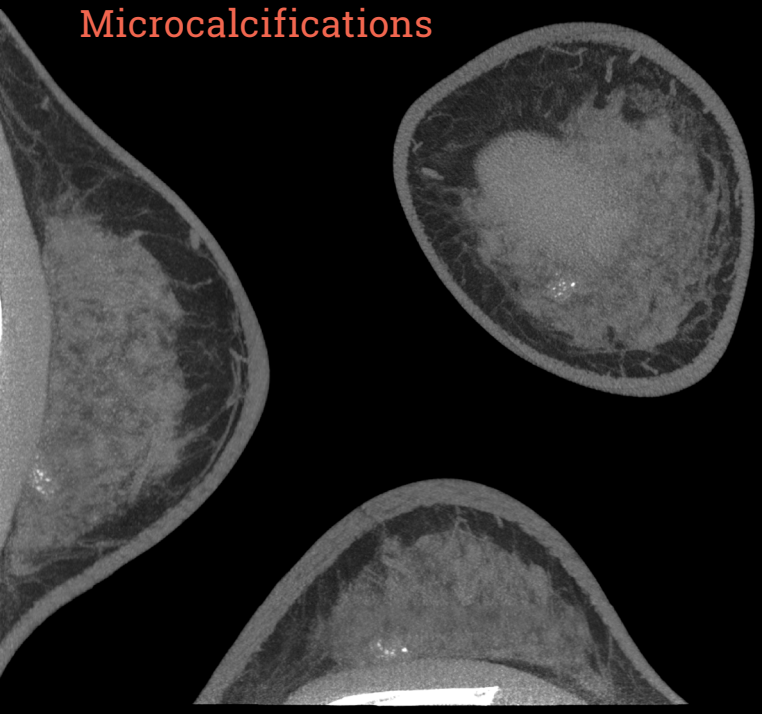
Using the latest detector technology, **nu:view** combines excellent image quality with low dose.



CLINICAL

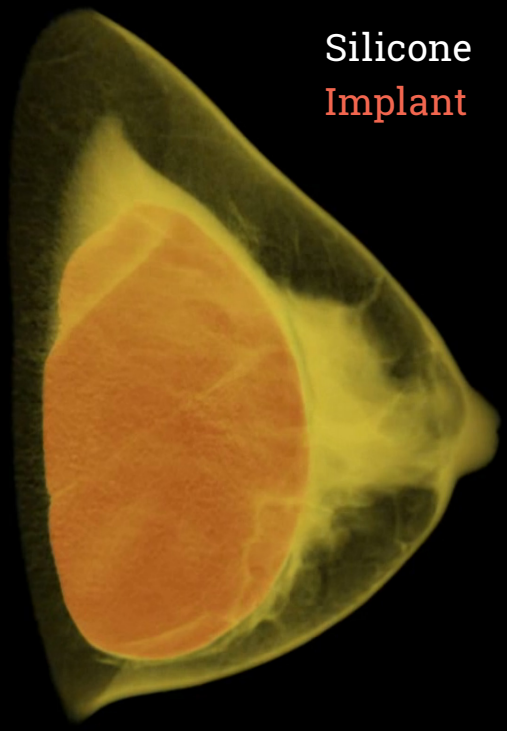
Selection of clinical cases to illustrate some of

Suspicious Regional Microcalcifications



BI-RADS 4 | Histology: Sclerosing adenosis sagittal (left), Coronal (right), Transverse (center) view
Images courtesy Universitätsspital Zurich (USZ), Switzerland

Silicone Implant



BI-RADS 2 | 3D volume rendering
Images courtesy Universitätsspital Zurich (USZ), Switzerland

*"I cannot emphasize enough the importance of this method being completely compression-free. Some women had missed their breast checks for years because they feared compression. **nu:view** really solves their dilemma.*

And with high resolution, real 3D images at dose levels comparable to mammography, us radiologists clearly benefit from breast CT as well. The multiplanar pictures decrease the number of recalls caused by superimposed structures."

Prof. Dr. Dr. med. Andreas Boss
former radiologist at Universitätsspital Zurich (USZ), Switzerland; chief radiologist at GZO AG Spital Wetzikon, Switzerland since 2023

EARLY DETECTION

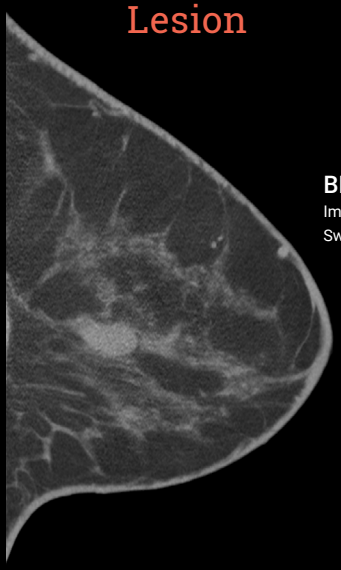
Since women can choose breast CT instead of screening mammography at the University Hospital Zurich (USZ), breast cancer detection rates have notably increased. Prof. Dr. Dr. med. Andreas Boss is not only happy about **nu:view**'s image quality. He attributes the augmented findings primarily to the fact that women who had refused routine check-ups in the past feel now encouraged to have this potentially life-saving examination.

Women from all over Switzerland come to Zurich for a non-compressive scan with **nu:view**. Breast CT is also an excellent fit for women with implants.

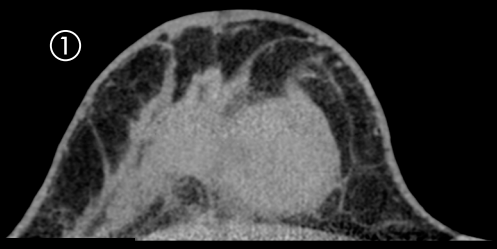
CASES

nu:view's amazing imaging capabilities

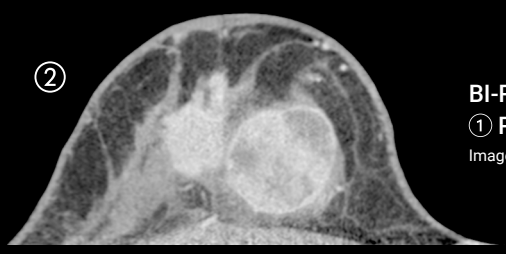
Lesion



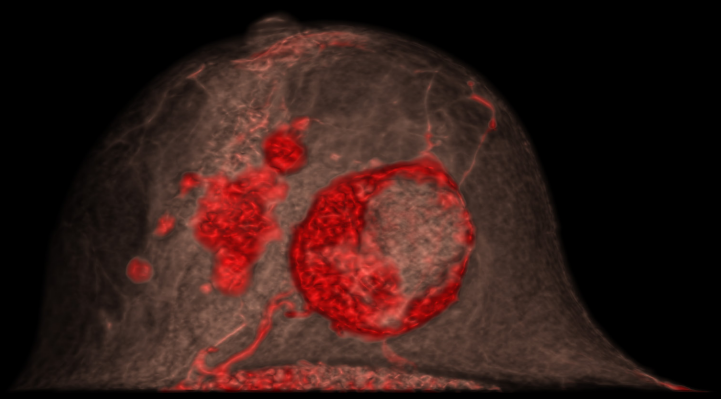
BI-RADS 3 | Sagittal view
Images courtesy Universitätsspital Zurich (USZ), Switzerland



BI-RADS 5 | Transverse view
① Pre-contrast · ② Post-contrast
Images courtesy Universitätsspital Zurich (USZ), Switzerland



Multicentric Breast Cancer



BI-RADS 5 | 3D volume rendering with contrast agent
Images courtesy Universitätsklinikum Erlangen, Germany

Previous mammography had depicted a single mass only. On sonography, the round, circumscribed lesion had cystic and solid components; several other suspicious lesions were also detected. Breast CT was performed to confirm multicentric breast cancer. (see images above)

Pre-contrast: Round mass lesion with hypodense (necrotic/liquid) centre. Pre-contrast images are suspicious for more than one lesion.

Post-contrast: The palpable mass enhances the contrast material inhomogeneously. Several other contrast enhancing masses with irregular and smooth margins in more than one quadrant of the breast are delineated.

FUNCTIONAL IMAGING

Complementing breast CT with contrast enhancement, radiologists in Erlangen are taking **nu:view**'s potential even further, e. g. for the subtly nuanced pre-op depiction of multicentric disease. Isotropic 3D reconstructions help with tumour visualizations for surgical intervention, while contrast agent added to the native scan facilitates the differentiation between benign and malignant lesions.

> *"The exceptional sensitivity of contrast-enhanced breast CT makes it perfect for tumour detection, staging and pre-operative planning."*

Prof. Dr. med. Evelyn Wenkel
former radiologist at Universitätsklinikum Erlangen, Germany;
radiologist at Radiologie München, Germany since 2022

AB-CT Advanced Breast-CT

NO COMPRESSION. NO SUPERIMPOSITION.

JUST GREAT IMAGING

WE ARE AB-CT

AB-CT is a pioneering medical technology company specialising in high-quality diagnostic breast imaging. With **nu:view** our expert team of genius medical physicists, software and design engineers did not just develop another CT device, but a disruptive technology designed to leverage clinical excellence. Our vision is to empower radiologists all over the world to diagnose breast cancer at the earliest possible stage.

LEARN MORE

Want to learn more about real 3D breast imaging with **nu:view** and explore the possibilities? Please contact us at: info@ab-ct.com. We are happy to help.

CERTIFIED

CE 0197

nu:view – the leading edge breast CT – has received CE approval in 2018. AB-CT maintains a quality management system for medical products in accordance with EN ISO 13485.

Please contact AB-CT to check availability in your territory.

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