

Factsheet Mammography

What is a mammography?

- The most widely used method when screening for breast cancer is mammography. A mammogram is a special X-ray examination of the breast. Compressing the woman's breast between two plates the image of the breast tissue is captured. While there may be some discomfort, it is important that the breast is compressed to increase the image quality and to lower the exposure to radiation.
- Each breast is X-rayed at least twice: from top to bottom (CC) and at a 45° angle (MLO).
- Analog mammography records images on a special film cassette. The X-rays passing through the breast tissue blacken the X-ray film.
- Digital mammography the X-rays hit an advanced detector which senses the image data digitally.
- Both analog and digital mammography involve the use of X-rays. However, the radiation dose generated lies in the low dose range. The introduction of digital mammography allowed to further reduce the dose, especially if a Tungsten tube is used.
- There are two types of mammograms – a **screening mammogram** and a **diagnostic mammogram**.
 - **Screening mammogram:** X-ray examination of a breast when the woman has no complaints or symptoms of breast cancer. The goal is to detect cancer when it is still too small to be palpated by a woman or her physician.
 - **Diagnostic mammogram:** Advisable for anyone who notices a lump or hardening when palpating the breast or armpits, has a family history of breast cancer, or where an abnormality is found during a screening mammogram. A diagnostic mammogram is usually more time-consuming because additional images need to be taken of the areas in question and a biopsy may need to be performed.

- A **biopsy** is performed when the mammogram shows tumor suspicious tissue in the patient's breast. During this procedure, cells are extracted from the breast while the patient is anaesthetized locally. These cells are then carefully examined under a microscope and are used to determine whether the tissue is cancerous or a benign tumour (non-cancerous).
- There are two different types of biopsy: **Upright biopsy** and **prone table biopsy**.
 - **Upright biopsy:** Can be performed with the MAMMOMAT digital mammography systems. Here, a special biopsy unit is simply added to the standard system. Advantages: During an upright biopsy the woman is usually sitting or can also be lying on her side on a stretcher thereby maintaining very close contact to the doctor.
 - **Prone table biopsy:** The patient is lying in prone position, while the procedure is performed outside the patient's view and the doctor is maintaining eye contact with the patient. With this method, full patient and lesion access is given during the complete procedure.

What Role does the digital Siemens MAMMOMAT Inspiration play?

- MAMMOMAT Inspiration as a full-field digital system is an ideal screening device for early breast cancer detection. It is very fast, so the examination time is only four minutes for four images of the breast.
- Compression is optimized with respect to the individual breast tissue density: A special algorithm allows compression only as long as the patient's breast is soft and pliable. For best image quality, it stops at the point of optimal compression.
- Since the well-being of the patient is also of highest concern, the MAMMOMAT systems offer with the MoodLight feature a solution to guarantee comfortable situation for the women that are examined: The LED panels that glow in different colors and can be freely selected, have a soothing, calming effect on both patients and operating personnel during the examination.