PROGRAMME MAMMOGRAPHIE

ADDITIONAL EXAMINATIONS

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de la Santé

Direction de la santé

PROGRAMME
MAMMOGRAPHIE

Notes

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"Programme Mammographie"

ADDITIONAL EXAMINATIONS

DID YOU KNOW?

Various additional examinations, combined with a screening mammogram, often help to rule out a cancer diagnosis.
Surgical intervention can be avoided in the case of most benign lesions.

Following a mammogram, around 5 women in 100 are told they need to have additional examinations:
if this happens to you,
it doesn't mean you have cancer.
In 9 out of 10 cases, it means there is a benign abnormality.

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Talk to your doctor about it.

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If an abnormality is detected during palpation or at the screening mammogram, the doctor will prescribe additional examinations.

WHAT ARE THESE ADDITIONAL EXAMINATIONS?

A careful clinical examination takes place, and this is usually followed by:

- *radiological examinations (images focusing on the abnormality),*
- *a breast ultrasound,*
- *an MRI (magnetic resonance imaging) scan,*
- *percutaneous sampling (cytology or histology).*

Additional examinations have three essential functions:

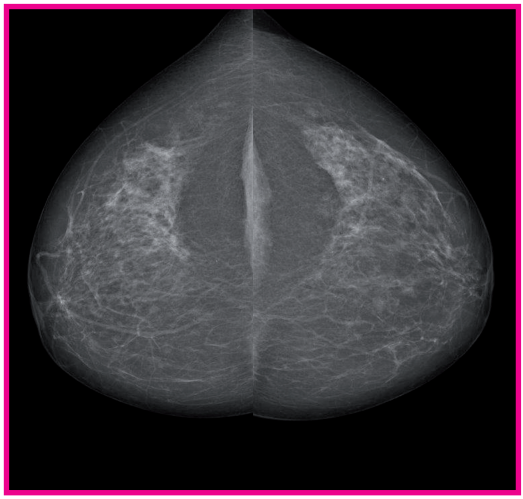
- *to identify the abnormality that has been detected, confirming or ruling out suspected cancer,*
- *to determine whether the lesion is unique or not, by examining both breasts in their entirety,*
- *to help with choosing the most suitable treatment.*

It is very important that the radiologist, who is an expert in breast imaging, studies the entire dossier and not just the examinations in isolation.
If cancer is confirmed, he will present the results to other doctors who specialise in breast diseases at a multi-disciplinary meeting.

A REMINDER: MAMMOGRAMS

A mammogram is an X-ray taken of the breasts. It is currently the principal method for detecting potential abnormalities which can be an indication of breast cancer. Mammograms make it possible to detect small lesions that cannot be felt during palpation (such as micro-calcifications, changes in the structure of the breast or star-shaped images).

Two images are systematically taken of each breast, one from the front and one from the side, and both sides are compared. The images are examined on a special digital console.



Note: The number of X-rays needed is very low, and if the applicable conditions are properly respected (with instructions being followed and quality control done using specific criteria), the benefits of having a mammogram outweigh the potential disadvantages.

2 DIFFERENT CONTEXTS: SCREENING AND DIAGNOSIS

Screening mammograms

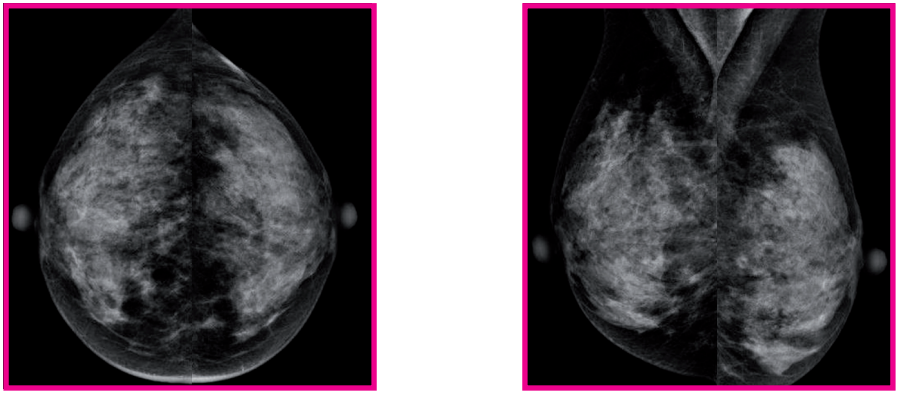
Mammograms are the benchmark in terms of breast cancer screening examinations. They make it possible to see small cancers at an early stage before symptoms are apparent.

These examinations can be carried out:

- *As part of the national breast cancer screening programme for women aged 50 to 70: the "Programme Mammographie".*
- *Or on an individual basis, in particular when a woman presents specific risk factors (especially a personal and family history of cancer).*
- *Note that certain cancers cannot be seen on a mammogram, usually for technical reasons: either because the breasts are too dense, or because the lesion is situated in a part of the breast that does not show up in the images, or because the image is atypical and gets confused with a benign lesion. This is why it is important to pay attention to any clinical changes in the breasts between screenings and consult your doctor.*

What is a dense breast?

Mammograms are black and white images. Dark zones represent adipose tissue, while light zones represent areas that are rich in glands. Suspect lesions in the breast also usually show up as white. If the "white" tissue is predominant, this might mean that it is impossible to tell the difference between normal glandular tissue and abnormal tissue - this is referred to as a "masking effect". In such cases, additional examinations such as ultrasounds are necessary to rule out lesions. This is more often the case in women under the age of 50.



Mammogram of dense breast

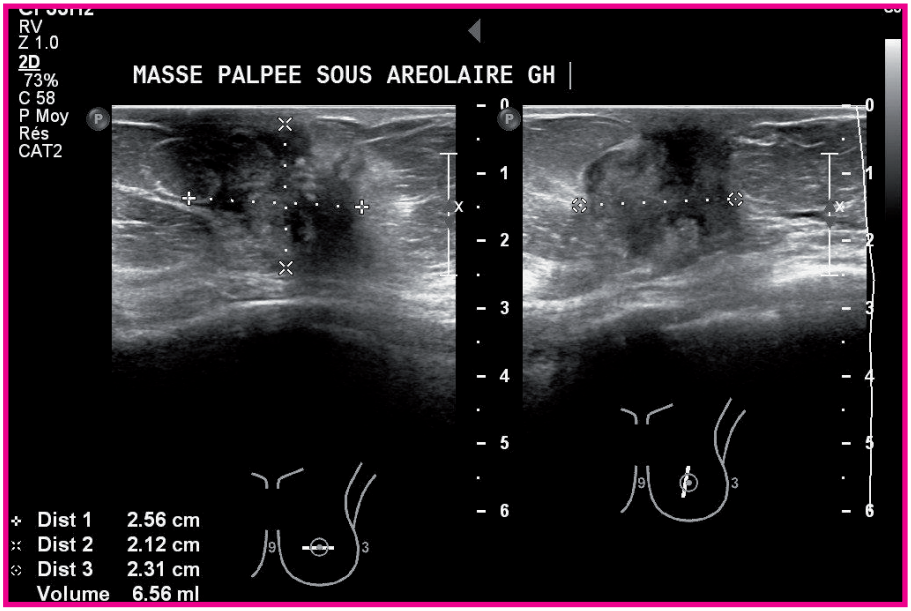
Diagnostic mammograms: 2 situations

1. *A mammogram is carried out when a patient presents clinical abnormalities such as discharge from the nipples, redness of the skin, a "lump" in the breast, etc. Such abnormalities are noticed by the patient herself or during the annual clinical examination carried out by her doctor. Where abnormalities are detected on basic systematic images (taken from the front and the side), additional images can target the suspect areas.*

2. *Often, a diagnostic mammogram with targeted images is also necessary in order to focus on an abnormality that is picked up during screening.*

BREAST ULTRASOUND

This technique uses ultrasound to produce images of the inside of the breast "in real time". The procedure does not use X-rays and is painless. A radiologist carries out the procedure. A mammary ultrasound is often carried out in addition to mammogram, in order to highlight mammary abnormalities, or in cases where the breast tissue is very dense and the mammogram is inconclusive.



ultrasound of a cancer

The patient lies on an examining table, naked from the waist up. In order to ensure that the ultrasound waves from the emitter probe conduct well, the doctor applies "contact gel" to each breast. A very careful study of each breast (from the clavicle down to the underside of the breast) and of the armpits is then carried out.
This is the preferred examination used to tell the difference between a cyst (a benign closed cavity containing a liquid substance) and a malignant tumour.
During the ultrasound, the radiologist records images of the zones that are examined.

MAGNETIC RESONANCE IMAGING (MRI)

Magnetic Resonance Imaging uses a magnetic field (without X-rays) and radio frequency waves.
The patient is placed in a tunnel (a cylindrical magnet), positioned on her front. The breasts are held still inside a device (a sensor) which picks up the transmitted information.
Generally speaking, this examination lasts for 20 to 30 minutes and requires an injection of a contrast medium. The images are influenced by circumstances: for example, they are easier to interpret in the 10 days following a menstrual period or following the menopause.
The doctor always needs to know a patient's precise hormonal situation at the time of the examination (where she is in her cycle, whether she is menopausal, whether she is taking hormones, etc.). He or she also needs to know elements of the patient's history in order to rule out anything that may prevent the MRI from going ahead (for example: the presence of a pacemaker).
This method of investigation must be carried out by expert radiologists and in very specific situations: it is used in diagnostics where neither the clinical examination, the mammogram, the ultrasound or the percutaneous sample have made it possible to make a diagnosis. It is also used as part of preoperative assessment or when monitoring cancer treatment that is underway. This costly examination is also recommended for women who present a very high risk of breast cancer. A number of abnormalities can be brought to light, and this often leads to additional examinations, such as a mammary ultrasound, being used to confirm the presence of a suspect lesion. (It is referred to as having a "second look", because the ultrasound targets suspect areas.)

PERCUTANEOUS SAMPLING

When a lump is found in the breast or an abnormality shows up in the images, percutaneous sampling - or a biopsy - is carried out, so that the tissue can be examined using a microscope. This is called an anatomopathological examination.

An anatomopathological examination is not a form of treatment. It provides specific information on the type of lesion, whether it is benign or malignant. In the case of breast cancer, it can describe the characteristics, thanks to special markers. This makes it possible to improve personalised treatment for patients.
Under local anaesthetic, a small incision of a few millimetres is made in the skin in order to introduce the needle. The progression of the needle towards the suspect zone, as well as the removal of samples, is followed on a screen throughout the process.
These samples will provide sufficient material to enable a precise diagnosis to be made during microscopic study. These biopsies are usually carried out with ultrasound tracing but can also be traced using a mammogram or MRI scan.

In this way, it is often possible to avoid surgical biopsies involving hospitalisation and general anaesthetic for benign abnormalities.

Biopsies on a special "prone table"

In some cases, samples can be taken using radiographic tracing on a special "prone table" (there is only one of these in the country, in the Senology Unit of the Centre Hospitalier de Luxembourg - Maternité). This is done when the lesion is not easy to see on an ultrasound, usually because there are clusters of micro-calcifications.
Before the procedure, the radiologist carefully studies the mammogram images and examines the patient in order to see whether it will be possible to take samples. Some women find it hard to lie on their front, or the size of their breasts, if they are too small, makes it impossible to carry out the procedure. The patient lies on her front, and there is an opening through which the breast is passed in order to carry out the procedure. Under local anaesthetic, a needle is introduced to the nearest millimetre using computer pinpointing. Afterwards, a compression bandage is applied to the breast to prevent any bleeding, and the patient is monitored in hospital if necessary.

prone table

PREOPERATIVE MAMMARY LOCALISATION

If the lesion detected with imaging cannot be found by palpation, the surgeon needs to know its exact location in order to remove only abnormal breast tissue without damaging the rest of the breast. Preoperative mammary localisation involves indicating the place where the lesion is situated. Under local anaesthetic, before the surgical procedure begins, a metal anchor wire introduced by the radiologist, and is then traced using a mammogram or ultrasound.

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