



Breast Imaging (Mammography-Ultrasound) and Breast Biopsy

Patient information

Your doctor has referred you to Advanced Radiology Clinics for breast imaging or a breast biopsy. This may be because you have a breast lump, or because of a different symptom such as discomfort or discharge. The information herein describes what may happen in our department. You might have a mammogram or a breast ultrasound scan, or both. You may also have a biopsy.

What tests might be undertaken?

It is standard practice that any woman with a breast lump is offered a 'triple assessment'. Using several tests increases the thoroughness of the examination, in case any of the individual tests fails to detect an abnormality. If you have recently had any of these tests you should say so.

1. The triple assessment means that the woman's breast will be examined by a doctor trained in breast disease.
2. Then her breast will be imaged by X-rays (mammograms) or by an ultrasound scan. (The choice between mammography or an ultrasound scan for imaging depends largely on the woman's age, although some women have both tests. Ultrasound scanning alone is used more often for women under 35, to avoid the slight risk associated with X-rays. Younger women's breast tissue is also often very dense and unusual features may not show on X-rays.)
3. Finally, some fluid or cells may be removed from the lump by means of a small needle through the skin (a fine needle aspiration or FNA). Sometimes it is necessary to perform a core biopsy of the lump, which removes a small piece of the lump using a slightly larger needle. Local anaesthetic is usually used for these needle tests.



On arrival in the radiology department

The medical technologist will explain the procedures to you. You will be shown to a private cubicle and asked to remove the clothes above your waist (wearing something like a blouse and trousers/skirt is ideal). A hospital gown is provided and possibly a dressing gown or you may be asked to bring your own dressing gown. You may be asked to place your clothes and any personal items either in a locker, or a basket which you keep with you. Alternatively, you may be asked to remove your clothing above your waist in the privacy of the mammogram or ultrasound room. You should mention if you are pregnant, have breast implants or are taking anticoagulants (blood-thinning tablets).

Can you bring a relative or friend to the department?

Yes, but friends or relatives are not usually allowed in the X-ray room and there may be other areas which are confined to those having tests.

What is a mammogram?

A mammogram is the name for an X-ray carried out on the breast. The X-ray is a picture which shows internal structures of the body. It is produced by exposure to a controlled source of X-rays and is generally recorded either on special photographic film or digitally.

These days, some X-ray images are kept in digital form on computer and viewed on screen. Despite all the newer, more sophisticated forms of scanning (such as MRI or a CT scan), a plain X-ray remains one of the most accurate ways of breast imaging.

Are there any risks in having a mammogram?

There are some risks involved with X-rays. Most of these relate to the slightly increased risk of developing a cancer. This should, though, be kept in perspective. The amount of radiation involved is equal to that which we receive naturally from the environment over a period of a few months to a year. All risks are relative, and the possible benefits of the examination have to be taken into account as well. If you do have a breast lump, or other significant problem, then the risk of not having the



examination will be much greater than the risk associated with the radiation.

If you are pregnant, or think you might be, it is essential that you tell the radiographer. An ultrasound scan may be used instead. If mammograms are required, then the radiographer will cover your lower stomach with a lead apron. This reduces the radiation dose to your baby even though it is actually a very small dose.

You must also tell the radiographer if you have breast implants.

Who will you see when you have a mammogram?

Generally, a radiographer will care for you, but your images will be examined later by the radiologist, sometimes assisted by a radiographer.

Are you required to make any special preparations for a mammogram?

Yes, it is important that you do not wear talcum powder. Also make sure that there is no deodorant, antiperspirant or perfume on your breasts.

What does the mammogram involve?

Once you are in the X-ray room, your breasts will in turn be positioned against part of an X-ray machine. Each breast needs to be compressed between the X-ray machine and a flat X-ray plate. A certain amount of heavy pressure is felt briefly. Remember this pressure is important to get good results – the pressure reduces the movement of the breast so there is no blurring of the picture and the flattening of the breast reduces the amount of radiation required to produce the picture. Two X-ray views are taken of each breast from different angles. The medical technologist goes behind a screen, but at all times you are in view of the radiographer, and can be heard, should you have a problem. You need to keep still. You may hear a slight whirring from the X-ray machine.



How long will the mammogram take?

Time will be spent getting you into the correct position for the X-rays. As a total of four X-rays are required, you are generally in the room for about twenty minutes.

Will the mammogram hurt?

Generally people find the pressure on the breast while having a mammogram is uncomfortable and some find it painful. However, the process is quickly over. Tenderness in the breasts can make the process more uncomfortable.

What is an ultrasound scan of the breast?

An ultrasound scan builds up a picture of the inside of the breast. It uses sound waves of a frequency above the range at which the human ear can hear. A small hand-held probe is pressed against the skin surface. It both generates sound waves and detects any echoes reflected back off the surfaces and tissue boundaries of internal organs. The probe can be moved over the skin to view the breast from different angles. The pictures are displayed on a monitor and recorded for subsequent study.

Are there any risks in having an ultrasound scan?

No, there are no known risks and it is considered to be very safe. It is a commonly used method of breast imaging.

Who will you see when you have an ultrasound scan?

You will be cared for by a small team and seen by a radiologist or a sonographer depending upon the type of investigation you are having. During the scan, the radiologist/sonographer will look at the images on the screen and, if necessary, look at the record of the images later.

Are you required to make any special preparations before an ultrasound examination?

No.



What does the ultrasound scan entail?

The radiologist or sonographer will generally ask you about the breast problem you have. Once you are lying on the couch, your breast will be examined, for example, to check the position of any lumps. A gel will be applied to your skin over the area of the breast to be scanned. This gel allows the probe to slide easily over the skin and helps to produce clearer pictures. The lights in the room will be dimmed, so that the pictures on the screen can be seen more clearly.

The radiologist or sonographer will be beside you, slowly moving the probe over your skin while viewing the images on the screen. Records of selected images will be made so that they can be viewed later.

Upon completion, the gel will be wiped off and you will be free to get dressed.

How long will the ultrasound scan take?

The actual scan should take around 10-20 minutes.

Will the ultrasound scan hurt?

No.

FINE NEEDLE ASPIRATION OF THE BREAST (FNA)

There are two types of biopsies that can be performed, a Fine needle aspiration (FNA) and a Core biopsy.

What is a fine needle aspiration of the breast?

It is a way of taking fluid or cells from the breast, so that they can be examined under a microscope. It is not actually a biopsy, as intact tissue is not removed, although some people may call it a biopsy. The abbreviation is FNA.



Are there any risks in having an FNA?

It should be stressed that the answer is generally no. Occasionally, there may be some bleeding inside the breast and a bruise or swelling (haematoma) will form. Obviously care has to be taken that no infection occurs. Care must also be taken that the needle does not pass beyond the breast through the chest wall (special care would be taken if a lump is at the back of a small breast).

Needle procedures of this kind often require the patient's consent.

Who will you see when you have an FNA?

When an abnormal area has only shown up on mammograms or an ultrasound scan, then it is much more likely that the radiologist will do the biopsy test with the assistance of a sonographer.

Are you required to make any special preparations for an FNA?

No, but you might like to wash your breasts before coming to the clinic. If you are taking tablets to thin the blood (anticoagulants) you should tell the doctor or sonographer.

What does an FNA involve?

Generally, a small needle, similar to the one used for taking a blood sample, is placed into the breast and into the area being studied. A local anaesthetic may be used. Using a syringe on the end of the needle, suction is applied to draw up fluid and cells. The needle is moved up and down through the breast tissue while this is happening. The needle is then removed, and the material placed in a special bottle or on to a microscope slide. The procedure may then be repeated once or twice more.

If the abnormal area can only be seen on an ultrasound scan, the radiologist needs to use the ultrasound probe at the same time to make sure that the correct area is sampled.

If the abnormal area can only be seen on the mammograms, then the procedure needs to be done in association with the X-ray machine. This is called a stereotactic-guided biopsy. For this, the breast needs to be



compressed in exactly the same way as for a mammogram, but for a longer period of time while the needle is put into the breast.

How long does an FNA take?

Again, this depends on how it is being done. If the doctor can feel the abnormal area, it only takes a few moments. It will not take much longer with ultrasound guidance. It may take 15 or 20 minutes if it is necessary to use the mammography machine.

Will an FNA hurt?

If you have one, you might feel some stinging or a stabbing pain while it is being done, but this does not last. Often local anaesthetic is used. If there is bruising and a hard swelling (haematoma) forms afterwards, this may be uncomfortable for a day or two. Most women do not find an FNA too painful and tolerate it very well.

CORE BIOPSY OF THE BREAST

What is a core biopsy of the breast?

Unlike a FNA which takes a few cells from an abnormal area, a core biopsy takes a small silver of tissue. This tissue can then be examined under a microscope.

Are there any risks in having a core biopsy?

It should be stressed that the answer is generally no. Occasionally, there may be some bleeding inside the breast and a bruise or swelling (haematoma) will form. Obviously care has to be taken that no infection occurs. Care must also be taken that the needle does not pass beyond the breast through the chest wall (special care must be taken if the lump is at the back of a small breast).

Needle procedures of this kind often require the patient's consent.



Who will you see when you have a core biopsy?

When an abnormal area has only shown up on mammograms or an ultrasound scan, then it is much more likely that the radiologist will do the biopsy test with the assistance of a sonographer..

Are you required to make any special preparations for a needle core biopsy?

No, but you might like to wash your breasts before coming to the clinic in case you have one. If you are taking tablets to thin the blood (anticoagulants), you should tell the doctor or sonographer.

What does a core biopsy entail?

This depends on whether the abnormal area can be felt, or whether it can only be seen on an ultrasound scan or mammograms.

If a definite lump can be felt, the skin over the lump will be numbed by local anaesthetic, which may sting briefly. A small nick may be made in the skin to assist in placing the biopsy needle close to the lump. The needle is generally attached to a small device, or 'gun', which quickly fires the needle into the lump with a loud clicking noise and takes a narrow tubular core of tissue from it. The needle is then withdrawn from the breast and the specimen removed from it. The process may be repeated.

If the abnormal area can only be seen on an ultrasound scan, the radiologist needs to use the ultrasound probe at the same time to make sure that the correct area is sampled. The same procedure is followed, except that in addition the ultrasound probe is used.

If the abnormal area can only be seen on the mammograms, then the procedure needs the X-ray machine to help guide the needle. This is called a stereotactic-guided biopsy. For this, the breast needs to be compressed in exactly the same way as for a mammogram, but for a longer period of time while the needle is put into the breast.



How long will the core biopsy take?

Again, this depends on how it is being done. If the doctor can feel the abnormal area, it only takes a few moments. It will not take much longer with ultrasound guidance. It may take up to 30 minutes if it is necessary to use the mammography machine.

Will the core biopsy hurt?

If you have one, you will feel some stinging as the local anaesthetic goes in, but the area soon goes numb. During the actual biopsy, you will probably only notice the loud clicking of the biopsy 'gun'. If there is bruising and a swelling (haematoma) forms afterwards, this may be uncomfortable for a day or two afterwards.

When are the results available?

The results of your mammogram or ultrasound scan are usually available on the day dependent if comparison films are available or not on the day of your visit. The results of an FNA or core biopsy, if these have been needed, generally take a few days to come through. If you have either of these needle tests, you will probably be given another appointment in a week or so to discuss the results with a breast surgeon.

Everyone working at Advanced Radiology Clinics is very aware that this can be a most worrying and stressful time. They know that you want results as soon as possible and make every attempt to process things quickly but they do need all the results before giving you advice.

Finally

Some of your questions should have been answered by this leaflet, but remember that this is only a starting point for discussion about your treatment with the doctors looking after you. Make sure you are satisfied that you have received enough information about the procedure.



Note

Although this information is designed for women it is not uncommon for men to sometimes also have breast imaging and breast biopsies performed.