PROCEDURE

Fine-needle aspiration

Fine-needle aspiration uses a thin needle to remove cells or fluid for testing or drainage.

PURPOSE
To collect cells or drain fluid from a lump

PROCEDURE TYPE
Diagnostic or therapeutic; minimally invasive needle procedure

WHERE IT IS DONE
Outpatient clinic, imaging suite, or bedside

ANAESTHESIA
Usually local; sedation for some deep targets

HOW LONG IT TAKES
Usually 10 to 30 minutes

PREPARATION
Usually none; medication changes or fasting for sedation

RECOVERY
Same day; no driving if sedated

MAIN RISKS
Bruising, bleeding, infection, or an inconclusive sample

RESULTS
Laboratory results usually take several days

Overview

Fine-needle aspiration, or FNA, is a procedure that removes cells or fluid through a very thin, hollow needle. The sample is usually examined in a laboratory to help identify what a lump or abnormal area contains.

FNA can be used on areas such as the thyroid, lymph nodes, breast, salivary glands, skin, or deeper organs. Ultrasound or another imaging method may guide the needle to the correct place. For some internal areas, the needle may be passed through an endoscope, which is a flexible viewing tube.

Unlike a core needle biopsy, FNA collects loose cells rather than a small cylinder of tissue. It usually causes less discomfort and bruising, but the smaller sample may not provide all the information needed for a diagnosis.

FNA may also be used to drain a fluid-filled cyst. In that situation, it can both investigate the lump and relieve pressure or discomfort.

Why the procedure is performed

Your healthcare team may recommend FNA when an examination or scan finds a lump, enlarged lymph node, cyst, or other abnormal area. The aim is often to determine whether the area is benign, meaning non-cancerous, or whether it needs further investigation or treatment.

The procedure may be used to:

An FNA result is one part of the assessment. Your symptoms, examination, scans, blood tests, and medical history may also affect what happens next.

- Check cells from a lump or enlarged lymph node
- Investigate a thyroid nodule or breast lump
- Test an abnormal area seen on an imaging scan
- Drain fluid from a cyst or collection
- Help plan surgery or other treatment
- Check whether a previously treated condition has returned

Who should and should not have it

FNA may be suitable when an abnormal area can be reached safely and a cell sample is likely to answer the clinical question. It is often chosen because it is quick, usually requires little recovery time, and may avoid a surgical biopsy.

It is not always the right test. A core needle or surgical biopsy may be more useful when the laboratory needs to see how cells are arranged within a larger piece of tissue.

FNA may be delayed, changed, or avoided if:

Pregnancy does not automatically rule out FNA. However, your team should know if you are or may be pregnant because this can affect the choice of imaging guidance and sedation.

- There is no safe route to the abnormal area
- You have an uncontrolled bleeding problem
- Medicines affecting blood clotting have not been safely managed

- There is a skin infection where the needle would enter
- You cannot safely remain in the required position
- Imaging suggests that FNA is unlikely to collect enough useful material

How to prepare

The treating facility's own instructions take priority because preparation depends on the body area, imaging method, and whether sedation is planned.

Many superficial FNAs need no special preparation. You may be able to eat, drink, and take your usual medicines. Procedures involving sedation or certain deeper organs may require fasting.

Tell the team about all prescription medicines, over-the-counter products, and supplements you take. This is especially important for anticoagulants and antiplatelet medicines, often called blood thinners. Do not stop these medicines unless the clinician responsible for your procedure gives you specific instructions.

Also tell the team about allergies, bleeding conditions, previous reactions to anaesthesia or sedation, and any chance of pregnancy.

Wear comfortable clothing and avoid jewellery or products that cover the procedure area. If you will receive sedation, arrange for a responsible adult to take you home and follow the facility's instructions about supervision afterward.

What happens during the procedure

You will be positioned so the clinician can reach the target safely. The skin is cleaned with an antiseptic solution.

Ultrasound is commonly used to locate the area and watch the needle as it moves. CT or another imaging method may be used for deeper targets. Some easily felt lumps can be sampled without imaging.

The clinician may inject local anaesthetic to numb the skin. This can briefly sting. For some very small, superficial samples, local anaesthetic may not be needed. Sedation is sometimes used for deep or endoscopic procedures, but general anaesthesia is uncommon.

A thin needle is passed into the target. The clinician moves the needle gently within the area or applies suction to collect cells and fluid. You may feel pressure, a pinching sensation, or brief discomfort. Several passes may be needed to obtain enough material.

The sample is placed on slides or in a specimen container. In some facilities, a laboratory specialist checks immediately whether enough cells were collected. This does not usually provide the final result.

After the needle is removed, pressure is applied and a small dressing is placed over the site.

Recovery and what to expect afterward

Mild soreness, tenderness, or bruising is common. A cold pack wrapped in cloth may help if your facility recommends it. Use only pain relief that your healthcare team says is suitable for you, particularly if you take medicines that affect bleeding.

Most people can eat normally afterward. If you received sedation or had an endoscopic procedure, follow the specific instructions about when to restart food and drinks.

Light everyday activity is usually possible the same day. Avoid strenuous activity or heavy lifting for as long as your facility advises, especially after a deep-organ biopsy.

You can usually drive after a simple FNA performed with local anaesthetic alone, provided you feel well and can move safely. Do not drive after sedation. You will need someone else to take you home.

Many people return to work the same day or the next day. You may need longer if your job is physically demanding, the sample came from a deep organ, or you received sedation.

Risks and possible complications

FNA is generally less invasive than core or surgical biopsy, but it still has risks.

The most common effects are temporary pain, bruising, and a small amount of bleeding. A blood collection under the skin, called a haematoma, can occasionally form.

Other possible problems include infection, fainting, and injury to nearby structures. Risks differ by the area sampled. For example, a needle procedure involving the chest can sometimes allow air to collect around a lung.

The sample may contain too few cells or may not clearly identify the condition. This is called a non-diagnostic or inconclusive result. Another FNA, a core needle biopsy, surgery, or follow-up imaging may then be needed.

Results and follow up

A pathologist, a doctor who examines cells and tissue, usually reviews the sample. Results commonly take several days. Special stains, molecular tests, or review by another laboratory may take longer.

The report may describe the sample as benign, malignant, suspicious, indeterminate, or non-diagnostic. The exact terms depend on the body area and laboratory reporting system.

A benign result may still require routine monitoring if the lump grows, causes symptoms, or looks concerning on imaging. An uncertain or non-diagnostic result does not automatically mean cancer; it means the sample did not provide a clear answer.

Your healthcare team should explain the result, how well it matches your scans and examination, and whether you need surveillance, another biopsy, or treatment. Ask when and how you will receive the result rather than assuming that no news means a normal result.

Alternatives

The practical alternatives depend on what is being investigated.

A core needle biopsy uses a larger needle to remove small pieces of tissue. It provides more information about tissue structure but usually causes more bruising and requires a slightly larger skin puncture.

A surgical or excisional biopsy removes part or all of a lump. It provides a larger sample and may be more definitive, but it involves an incision, a scar, and sometimes sedation or general anaesthesia.

Imaging follow-up avoids an immediate needle procedure. It may be reasonable for an area with reassuring features, but it delays a tissue diagnosis and requires you to return for repeat scans.

Blood tests and imaging can provide useful clues but usually cannot replace direct cell or tissue sampling when a definite laboratory diagnosis is needed.

For a simple cyst, observation may be an option if it is not painful or concerning. Drainage can relieve pressure, but the cyst may refill.

When to call your healthcare team

For routine follow-up, contact the team if you have questions about dressing care, activity, pain relief, or when to expect results.

Seek prompt medical advice if you develop:

Call emergency services for trouble breathing, severe chest pain, fainting, heavy bleeding, or rapidly increasing neck swelling. These symptoms are uncommon but need immediate assessment.

- Increasing pain, swelling, warmth, or redness
- Pus or other unusual drainage
- Fever or chills
- Bleeding that continues despite firm pressure
- A rapidly enlarging lump near the needle site

Common questions

Will I be asleep?

Usually not. Most superficial FNAs are performed while you are awake, with either local anaesthetic or no anaesthetic. Sedation may be offered when the target is deep or reached through an endoscope.

Can I drive home?

You can often drive after local anaesthetic alone if you feel well. You must not drive after sedation. Follow the facility's specific instructions and arrange transport in advance if sedation is planned.

How painful is it?

Most people feel a brief sting, pinch, or pressure. The area may remain mildly sore or bruised for a short time. Deep-organ procedures can cause more discomfort than sampling a lump close to the skin.

When will I know the result?

Final laboratory results usually take several days. Special testing can take longer. Ask before leaving when the result is expected and who will discuss it with you.

What if the sample is inconclusive?

You may need another FNA, a core needle biopsy, surgery, or follow-up imaging. An inconclusive sample means there were not enough useful cells or the findings were unclear; it is not itself a diagnosis.

Will the needle spread cancer?

Needle-track spread is considered an unusual complication. Your team weighs this risk against the benefit of obtaining a diagnosis and chooses the biopsy method based on the location and

suspected condition.

Sources

- Fine Needle Aspiration - MedlinePlus, US National Library of Medicine
- Fine Needle Aspiration Biopsy - American Cancer Society
- Thyroid Biopsy - RadiologyInfo.org, American College of Radiology and Radiological Society of North America
- Biopsy - NHS