PROCEDURE

Amniocentesis

Amniocentesis uses a thin needle to collect amniotic fluid for testing during pregnancy.

PURPOSE
Diagnose selected fetal chromosome, genetic, or neural tube conditions

PROCEDURE TYPE
Diagnostic; minimally invasive ultrasound-guided needle procedure

WHERE IT IS DONE
Outpatient fetal medicine clinic or hospital procedure room

ANAESTHESIA
Usually none; local anaesthetic sometimes offered

HOW LONG IT TAKES
About 10 to 20 minutes

PREPARATION
Follow bladder, medicine, blood group, and transport instructions

RECOVERY
Same day; avoid strenuous activity and driving if advised

MAIN RISKS
Pregnancy loss, fluid leakage, infection, bleeding, Rh sensitisation

RESULTS
Several days to weeks, depending on laboratory tests

Overview

Amniocentesis is a diagnostic test performed during pregnancy, usually from 15 weeks onward. Guided by ultrasound, a clinician passes a thin needle through your abdomen into the amniotic sac and removes a small amount of fluid.

Amniotic fluid contains fetal cells and substances that can provide information about chromosomes, certain genetic conditions, and open neural tube conditions such as spina bifida. Amniocentesis can give a more definite answer than screening, but it cannot detect every medical or developmental condition.

Having the test is your choice. Your healthcare team or a genetic counsellor can explain what it may find, its limitations, and how results could affect pregnancy care or decisions.

Why the procedure is performed

You may be offered amniocentesis after:

Testing may examine chromosome number and structure, look for a specific gene change, or use chromosome microarray to identify smaller missing or extra pieces of genetic material. Fluid can also be tested for markers associated with open neural tube conditions.

Removing a larger amount of fluid to relieve severe excess amniotic fluid is called amnioreduction. It uses a similar technique but is a treatment rather than routine diagnostic testing.

- A prenatal screening result showing an increased chance of a chromosome condition
- An ultrasound finding associated with a chromosome or genetic condition
- A previous pregnancy or family history involving an inherited condition
- Carrier testing showing that the biological parents could pass on a condition
- Concern about a fetal infection that can be tested in amniotic fluid

Who should and should not have it

Amniocentesis may be appropriate if diagnostic information could affect pregnancy management, preparation for birth, treatment, or decisions about continuing the pregnancy. Screening, diagnostic testing, or no further testing may each be reasonable depending on your priorities.

The procedure is generally avoided before 15 weeks because complication risks are higher. It may be delayed if you have fever, infection near the needle site, significant bleeding, contractions, or another pregnancy concern requiring assessment.

Tell the team if you take blood thinners or have a bleeding disorder. Your medicine plan may need adjustment, but do not stop prescribed medicine yourself.

Being Rh-negative, carrying twins, or having a blood-borne infection does not necessarily prevent amniocentesis, but these situations need specialist planning. Genetic counselling can help determine whether available testing can answer your specific question.

How to prepare

Follow your facility's instructions, which may vary with pregnancy stage and medical history.

You usually do not need to fast. Ask whether your bladder should be full or empty. Provide a current list of medicines, including aspirin, blood thinners like warfarin or apixaban , supplements, and non-prescription products. Tell the team your blood group, whether you are Rh-negative, and about allergies or blood-borne infections.

Arrange transport or a support person if advised. Before consenting, confirm which laboratory tests are planned because different tests detect different conditions.

What happens during the procedure

You lie on an examination bed with your abdomen exposed. Ultrasound is used to locate the fetus and placenta and select a safe path for the needle.

After cleaning your skin with antiseptic, the clinician passes a thin needle through the abdominal wall into a pocket of amniotic fluid while watching continuously with ultrasound. Local anaesthetic may be offered. A small amount of fluid is withdrawn, then the needle is removed.

You may feel pressure, a brief sharp sensation, or menstrual-like cramping. Collection usually takes only a few minutes, and the fetal heartbeat is generally checked before or afterward.

The sample is sent to a specialist laboratory. Occasionally, testing does not produce a clear result or enough cells, and another sample may be discussed.

Recovery and what to expect afterward

Mild cramping or abdominal tenderness may last several hours. Acetaminophen, also called paracetamol, may help if your healthcare team says it is safe. Ask before taking other pain medicines.

You can usually eat and drink normally. Plan a quiet day and follow instructions about avoiding strenuous exercise, heavy lifting, and sex. Gentle movement is usually acceptable.

Sedation is uncommon. You may be able to drive if you feel well and your facility permits it, but arrange a ride if advised. Do not drive after sedating medicine or if you feel faint, have significant pain, or feel unwell.

Many people return to desk-based work the next day. More time may be needed for physically demanding work.

Risks and possible complications

Amniocentesis carries a small procedure-related risk of pregnancy loss, although this can be difficult to separate from the pregnancy's existing miscarriage risk. Timing, pregnancy factors, and clinician experience may affect risk.

Other possible complications include:

If you are Rh-negative and not already sensitised, you may receive anti-D immunoglobulin to help prevent an immune reaction to Rh-positive fetal blood cells.

There may also be a small chance of passing certain blood-borne infections to the fetus. Tell the specialist about known or possible infections before the procedure.

- Amniotic fluid leaking from the vagina
- Vaginal bleeding or persistent cramps
- Infection inside the uterus
- Rh sensitisation
- Failure to obtain a usable result
- Very uncommon needle injury

Results and follow up

Results for common chromosome-number conditions may be available within several working days. Full chromosome analysis, microarray, or specific genetic testing often takes one to three weeks or longer.

Your team should explain how you will receive the result and arrange any needed appointment, genetic counselling, or ultrasound monitoring.

Testing may find no condition, confirm a condition, or identify a change with uncertain health effects. A normal result applies only to the conditions tested and does not guarantee that the baby has no other medical or developmental condition.

If a condition is found, you should receive information about its possible effects, care during pregnancy and after birth, and your pregnancy options. You do not need to make major decisions before you understand the result.

Alternatives

Chorionic villus sampling: Collects placental tissue, usually earlier than amniocentesis. It can diagnose many chromosome and genetic conditions but does not directly test amniotic fluid markers for open neural tube conditions.

Cell-free DNA screening: Uses your blood to screen for selected chromosome conditions without entering the uterus. It has no procedure-related miscarriage risk but is not diagnostic. A high-chance result usually requires confirmation.

First- or second-trimester screening: Blood tests and ultrasound estimate the chance of selected conditions but provide less certainty than diagnostic testing.

Detailed ultrasound: May identify physical differences, including many neural tube conditions, but cannot rule out all genetic or chromosome conditions.

No further testing: You may decline invasive testing and continue routine or enhanced ultrasound care, accepting that some uncertainty may remain until later in pregnancy or after birth.

When to call your healthcare team

Contact your maternity or fetal medicine team promptly if you develop:

Seek emergency care for heavy bleeding, severe or constant pain, fainting, difficulty breathing, or rapidly worsening symptoms.

Brief mild cramping without bleeding or fluid leakage can occur. Mention symptoms that continue during follow-up even if they do not seem urgent.

- Persistent or worsening abdominal pain
- Vaginal bleeding
- Clear fluid leaking or gushing from the vagina
- Fever, chills, or feeling unwell
- Regular contractions
- Reduced fetal movement, if you already regularly feel movement

Common questions

Will I be asleep?

Usually not. Amniocentesis is generally performed without sedation. Local anaesthetic may be offered.

Can I drive home?

Possibly, if you had no sedation and feel well. Follow your facility's instructions and do not drive if you feel faint, uncomfortable, or unwell.

How painful is amniocentesis?

You may feel a brief sharp sensation, pressure, or menstrual-like cramping. Discomfort usually improves soon after the needle is removed.

When will I know the results?

Some results take several working days. Full chromosome, microarray, or gene testing often takes one to three weeks or longer.

Can the needle touch the baby?

Continuous ultrasound guides the needle away from the fetus. Needle injury is possible but very uncommon.

Does a normal result mean my baby is healthy?

It is reassuring for the conditions tested, but amniocentesis cannot detect every birth difference, illness, or developmental condition.

Sources

- American College of Obstetricians and Gynecologists. Prenatal Genetic Diagnostic Tests
- Royal College of Obstetricians and Gynaecologists. Amniocentesis and Chorionic Villus Sampling, Green-top Guideline No. 8
- NHS. Amniocentesis
- MedlinePlus. Amniocentesis
- International Society of Ultrasound in Obstetrics and Gynecology. Practice Guidelines: invasive procedures for prenatal diagnosis