TEST

Nuchal translucency test

A nuchal translucency test uses ultrasound to measure fluid behind a baby's neck early in pregnancy.

WHAT IT MEASURES
Fluid under the skin behind the baby's neck

SAMPLE
None; ultrasound imaging

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually 20 to 30 minutes

RESULTS IN
Measurement immediately; combined result timing varies by laboratory

USED FOR
Screening for chromosome conditions and some structural differences

MAIN LIMITATION
Cannot confirm or rule out a chromosome condition

Overview

A nuchal translucency test, often called an NT test or NT scan, is an ultrasound measurement made early in pregnancy. It measures the clear, fluid-filled space under the skin at the back of the developing baby's neck.

All babies have some fluid in this area. A larger measurement can be linked with a higher chance of certain chromosome conditions, including Down syndrome, Edwards syndrome and Patau syndrome. It can also be associated with some heart, skeletal or genetic conditions.

The test is usually performed between 11 weeks and 13 weeks plus 6 days of pregnancy. The baby must also be within a suitable size range for the measurement. Local screening programs may use slightly different appointment windows.

NT is a screening test, not a diagnostic test. It estimates the chance of a condition but cannot tell you for certain whether the baby has that condition.

Why the test is ordered

The NT measurement may be used as part of first-trimester screening for chromosome conditions. In combined screening, it is considered with:

The result is usually reported as a calculated chance, such as "1 in 1,000," rather than a definite positive or negative answer.

The scan also provides an early opportunity to check the number of babies, confirm the pregnancy dates and look at early development. However, it does not replace the detailed anatomy ultrasound usually performed later in pregnancy.

Some services use cell-free DNA screening instead of, or alongside, NT-based screening. Cell-free DNA examines small pieces of placental DNA in your blood and is a more accurate screening test for common chromosome conditions. It is still not diagnostic.

- Your age
- The baby's size and gestational age
- Levels of pregnancy-related substances in your blood

Who should have the test

Prenatal screening and diagnostic testing options should be discussed with anyone who is pregnant, regardless of age or previous pregnancy history. Whether an NT measurement is offered routinely depends on your location, local screening program, stage of pregnancy and the screening approach you choose.

You may be offered NT measurement as part of combined first-trimester screening. It may also be assessed during an early ultrasound even if you have chosen cell-free DNA screening.

The test is optional. You can choose screening, diagnostic testing or no testing after receiving information about what each option can and cannot show.

An NT measurement may not be possible if the pregnancy is too early or too advanced, the baby is outside the required size range, or a clear image cannot be obtained.

How to prepare

You can eat and drink normally. Fasting is not needed, and you can usually take your regular medicines as prescribed.

The imaging centre may ask you to arrive with a comfortably full bladder. This can move the

uterus into a position that is easier to see through the abdomen. Follow the instructions in your appointment letter because bladder requirements differ.

Wear clothing that allows easy access to your lower abdomen. Bring details of previous scans and screening tests if they were performed somewhere else.

Before the appointment, consider whether you want to know your screening result and how you might use that information. You do not need to make decisions about further testing before the scan.

What happens during the test

Most NT scans are performed through the abdomen. You lie on an examination bed while a clinician places gel on your skin and moves an ultrasound probe over your lower abdomen.

The clinician waits until the baby is in a suitable position. They measure the baby from the top of the head to the bottom of the torso and then measure the fluid behind the neck. Several images may be taken to obtain an accurate measurement.

The scan may take longer if the baby is facing the wrong direction or moving. You may be asked to change position, walk for a few minutes or empty your bladder.

If a clear abdominal image cannot be obtained, you may be offered a transvaginal ultrasound. A covered ultrasound probe is gently placed inside the vagina. You can ask the clinician to stop at any time.

Understanding your results

The NT measurement is reported in millimetres. It is compared with what is expected for a baby of the same size because the measurement normally increases as pregnancy progresses.

There is no single cutoff that applies to every pregnancy. Laboratories and screening programs use different methods, and interpretation varies with gestational age, fetal size, your age, pregnancy history and other test results.

An increased measurement means the chance of certain chromosome, heart or genetic conditions is higher. It does not mean the baby definitely has a medical condition. Many babies with an increased NT measurement do not have the conditions being screened for.

A measurement within the expected range lowers some risks but cannot rule out chromosome conditions, genetic disorders or structural differences.

If NT is part of combined screening, the final report may give a numerical chance. A smaller

denominator indicates a higher calculated chance: for example, 1 in 100 represents a higher chance than 1 in 1,000. The threshold used to offer additional testing varies by screening program.

What affects the results

The most important influences are timing, fetal size, fetal position and measurement technique. NT must be measured in a precise ultrasound view. A slightly different head position or placement of the measurement markers can change the number.

Other factors include:

Age does not change the physical NT measurement, but it can change the calculated chance in combined screening. Blood-marker calculations may also be adjusted for factors such as gestational age, weight, smoking, diabetes, fertility treatment and multiple pregnancy.

Food, coffee, ordinary activity and the time of day do not meaningfully change the NT measurement. Medicines do not usually alter it, although your full clinical history still matters when the overall result is interpreted.

- An appointment outside the recommended pregnancy window
- Incorrect pregnancy dating
- Limited image quality because of fetal position or abdominal scarring
- Higher body weight, which can make abdominal images less clear
- Multiple pregnancy, which requires each baby to be assessed separately
- Differences in ultrasound equipment and operator training

Accuracy and limitations

NT alone does not detect every pregnancy affected by a chromosome condition. Some affected babies have a measurement within the expected range. This means the test can miss a condition.

It can also suggest an increased chance when the baby does not have the condition being screened for. An increased measurement is therefore not a diagnosis.

Accuracy is better when NT is combined with blood tests and other clinical information. Cell-free DNA screening is generally a more accurate screening method for common chromosome conditions, but it does not assess every chromosome or genetic disorder.

Chorionic villus sampling and amniocentesis can provide diagnostic chromosome results. These are invasive procedures with different risks and timing, so they are not direct replacements for a simple ultrasound measurement.

NT cannot provide a complete assessment of the baby's anatomy. A later detailed ultrasound, and sometimes a specialist fetal heart scan, may be more appropriate for looking for structural differences.

Risks and complications

Standard diagnostic ultrasound does not use radiation and has no known risk to the pregnancy when used appropriately. An abdominal scan may involve mild pressure but should not be painful.

A transvaginal scan can feel uncomfortable and may occasionally be followed by light spotting. It does not involve taking a sample from the pregnancy and does not cause miscarriage.

What happens next

If the NT measurement and any combined screening result are within the expected range, you will usually continue with routine pregnancy care. This commonly includes a detailed anatomy ultrasound later in pregnancy.

If the NT is increased or the calculated chance is higher, you may be offered an appointment with a fetal medicine specialist or genetic counsellor. Options may include:

An increased NT result is not an emergency. You normally have time to discuss what the result means and decide whether you want further testing.

The scan itself should not cause significant symptoms. Seek urgent pregnancy assessment for heavy bleeding, severe or persistent abdominal pain, leaking fluid, fainting or other acute symptoms, rather than waiting for a routine results appointment.

- Cell-free DNA screening
- Chorionic villus sampling or amniocentesis
- A detailed ultrasound
- A specialist fetal heart scan
- Testing for additional genetic conditions in selected situations

Common questions

Can I drink coffee before an NT scan?

Yes. Coffee does not alter the NT measurement. Follow any separate advice you have received about caffeine during pregnancy.

Do I need a full bladder?

Sometimes. A comfortably full bladder may improve an abdominal ultrasound image, especially earlier in pregnancy. Follow the instructions from your imaging centre.

Does the time of day matter?

No. The NT measurement is not known to change meaningfully according to the time of day.

Can I exercise before the scan?

Yes. Normal activity and exercise do not affect the measurement. Follow any pregnancy-specific activity restrictions given for another medical reason.

What if the baby is in the wrong position?

The clinician may ask you to move, cough, walk or return later. If an accurate measurement still cannot be obtained within the screening window, another screening method may be discussed.

Can the test tell me the baby's sex?

NT does not determine sex. It may be too early for ultrasound appearances to be reliable, and local policies about reporting fetal sex differ.

Sources

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