MEDICLINIC

FIRST TRIMESTER SCAN
11-14 WEEK SCAN

The first trimester scan is carried out between 11-14 weeks.

It aims to:

1. Confirm the heartbeat of the baby.
2. Measure the size of the baby to assess the exact week of the pregnancy and give an accurate EDD (estimated date of delivery)
3. Check if there is one baby or more
4. Ensure that the development of the baby is normal
5. Screen the pregnancy for problems in the baby and for possible problems, in the mother and the baby, later on in the pregnancy.

What does the first trimester scan screen for?

The first trimester scan can screen for structural problems in the baby, chromosomal problems in the baby and also for the chance for developing blood pressure related problems in the mother or growth related problems in the baby during the pregnancy.

What structural problems can the first trimester scan assess?

With advances in ultrasound technology, successful assessment of structures in the first trimester fetus is becoming possible. This allows us to confirm that the baby is developing normally with more confidence even at this early stage. However, a small proportion of fetuses will have major anomalies and this can be identified at this stage. Obviously, the extent of assessment depends significantly on the quality of the images obtained. This in turn depends on the position of the baby and how easily ultrasound waves are allowed through the maternal tissues. Also, not all structures can be assessed at this gestation, as development of structures is also dependent on the gestational age of the fetus. We would therefore recommend that this scan is always followed up with a morphology scan at 18-23 weeks of gestation.

What happens if a structural anomaly is identified?

If a structural anomaly is identified, we will discuss it in detail with you and will arrange for further tests, scans and consultations as appropriate. A detailed plan of management will be drawn for the pregnancy and the baby including the place and time of delivery and the inclusion of a multidisciplinary team.

How does the first trimester scan screen for chromosomal anomalies?

All pregnant women have a chance related to their age for having a baby with chromosomal anomalies such as Down's syndrome. The first trimester scan looks at the fluid behind the neck (nuchal translucency, NT), the presence or absence of ossified nasal bone (calcification process) and a few additional markers to calculate an individualized risk for patient. This risk will indicate whether the age-related chance has increased or decreased due to the scan findings. This risk is calculated particularly for common chromosomal abnormalities like Trisomy 21 (Down's syndrome), Trisomy 13 (Patau's syndrome) and Trisomy 18 (Edward's syndrome). This scan is also called the NT scan.

What is the Combined Screening Test?

The NT scan can be combined with a blood test that estimates the level of two hormones in the maternal blood (PAPPA and free beta hCG). The findings of the NT scan are then combined with that of the blood test (levels of the hormones) to give a score that indicates the risk for the common chromosomal abnormalities like Trisomy 21 (Down's syndrome), Trisomy 13 (Patau's syndrome) and Trisomy 18 (Edward's syndrome). This combination of a scan and the blood test is called the Combined Screening Test.

What are the results I can expect from the Combined Screening Test? How will I get them?

The results of the Combined Screening test will be conveyed to you either by the Fetal Medicine nurse or by your Consultant.

Based on the calculation, your risk may be classified as "High", "Low" or "Intermediate".

Your consultant will discuss this in detail with you in person and explain the chance that has been calculated specifically for you in this pregnancy.

The measurement of the Nuchal translucency may sometimes be above the expected range in some babies. In some pregnancies, we may find some other markers or abnormalities. If any of these are noted, they will be explained to you at the time of the scan.

What happens if I have a High or Intermediate Risk?

If the risk from the Combined Screening falls into the High or Intermediate category, your Consultant will discuss it with you. You can have further tests to clarify this, if you choose to.

The results of the screening test will not be able to give you a definitive answer. This is because the Combined Screening test is not a diagnostic test. It is only capable of assessing the chance and is able to identify approximately 90% - 95 % of babies with Down's syndrome. If it gives a high-risk result, it does not mean that the baby has the syndrome. In the same way, a low risk result does not guarantee a normal baby.

The need for further testing is a decision based on personal choice.

What are the types of further tests I can have for chromosomal abnormalities?

The following tests may be offered as a second line investigation after the results of the first trimester screening has been computed. However, some may choose these tests as their preferred test for screening / diagnosis for chromosomal anomalies.
The further tests could be of two types –
1. Non-invasive tests (NonInvasive Prenatal Test, NIPT).
2. Invasive tests (CVS / Amniocentesis)

Non-invasive prenatal screening test (NIPT)

Non-invasive prenatal screening test (NIPT) is a high end screening test and involves testing the genetic material of the baby (DNA) that is floating in the mother's blood sample. It has a higher detection rate for Down syndrome (99.5%) when compared to the Combined screening test (90-95%).

This test may be offered to patient in the following circumstances:

1. Advanced maternal age; > 35 years, NIPT may be offered as a first line screening test in women who are 35 years or older as they are thought to be at a slightly higher risk for carrying a baby with chromosomal abnormalities

2. When the Combined screening shows a High or intermediate risk

3. When there is a family history of chromosomal anomalies

4. When the NT scan shows an increased nuchal translucency measurement or if other markers are seen on scan

5. When the patient chooses this as the preferred screening test

The NIPT test can give either a positive or negative result. A positive NIPT means that there is a very high chance of the baby having a chromosomal problem. A negative NIPT means that there is a very low chance of the baby having a chromosomal problem

The NIPT results can take up to 14 working days and occasionally, may not have any results at all (No Call). In some cases, a repeat sample may be required for testing (Redraw). If any of this happens, the Consultant will inform the patient and discuss this in detail and if need be offer an invasive test.

The NIPT is a reliable test. However, when a positive test result is received from the NIPT, it is recommended that it is confirmed with an invasive test, as cases of false positive NIPT have been reported
Similar to any other screening test, the negative result does not guarantee a normal child either.
Many people choose this test as it does not have any risk to the pregnancy.

Invasive tests (CVS / Amniocentesis)

Invasive tests (Chorionic Villous Sampling, CVS / Amniocentesis) are diagnostic tests that can be done to confirm whether the fetus is actually affected. This is the only way to reliably ascertain whether the baby is affected by the chromosomal abnormality.

In these tests, a sample (Placental tissue or amniotic fluid) is taken from the pregnancy and sent to the Genetic laboratory for analysis. A rapid result is obtained in 3 -7 working days. It is a reliable report and highlights details of only a few chromosomes. This is followed by a detailed report called a full karyotype that is obtained after the sample is cultured. The full culture report takes 14-21 days. These tests are invasive in nature and carry a small risk of miscarriage (1-2/1000), associated with the procedure, even in the best of trained hands. Hence, the decision to choose this test is made after careful evaluation and discussion. However, recent studies did not find any excess risk after CVS as compared with not having any procedure at all.

This test may be offered to patients in the following circumstances:

1. Advanced maternal age; > 35 years, by patient choice

2. When the Combined screening shows a High or intermediate risk.

3. When there is a family history of chromosomal anomalies.

4. When the NT scan shows an increased nuchal translucency measurement or other markers are detected on the scan.

5. When the patient chooses this as the preferred test.

How does the first trimester scan screen for pre-eclampsia and growth restriction?
At the 11-14 week scan, we can record the blood pressure of the patient and assess the blood flow to the uterus (Uterine Artery Doppler). This can be combined with some blood parameters and then a risk calculation can be made to predict the chance of developing pre-eclampsia (blood pressure problems) or Growth Restriction (growth problems in the baby).

The result of this screening will indicate whether you are at risk of developing these problems, later on during the pregnancy. In these situations, we would recommend that Aspirin tablet (150mg once daily) is considered until 36 weeks of gestation. This is the current recommendation as the use of Aspirin is associated with a significant reduction in the risk of pre-eclampsia in the mother and /or growth restriction in the fetus. However, a small proportion of women may not benefit from Aspirin and this cannot be predicted without using the tablets. Nevertheless, the screening for pre-eclampsia will make us more vigilant (if screen positive) so that the condition may be picked up early and management plans made as appropriate.

Does a normal scan ensure / guarantee a normal healthy baby/ pregnancy?
No, a normal 11-14 week scan or a low risk screening report does not guarantee a normal baby or a healthy pregnancy. It indicates a lower chance for these problems as it is only a screening test.

Can the screening test harm me or my baby?
The screening test cannot harm you or your unborn baby. However, it is important to consider carefully whether to have the test.

Do I need to have the screening test(s)?
No, having any of these tests is entirely optional. The decision to have any test is usually made after discussion with the Consultant.

You may wish to choose to proceed with only one part of the test and decline some aspects. For example, you can have the 11-14 week scan, but decline the Down Syndrome screening.

However, when we scan you, it is important for you to understand that the scan may pick up structural abnormalities in the baby at any stage. If any are identified, we as doctors have a duty to inform you of these problems. Your antenatal care can proceed as normal even if abnormalities are detected.

What happens if I have missed my 11-14 week scan?
You may consider other tests for screening such as the Quadruple marker test, which can be done from 15-19 weeks. However, the detection rates are lower (75%) than the Combined Screening test described above. Alternatively, the NIPT test can be considered. The NIPT can be done from 10 weeks onwards up to any stage of the pregnancy.

Can my children come along to watch the scan?
In general, the family can come along to watch the scan. However, it is important to understand that the scan room tends to be dark and the doctor scanning you will need to focus on the scan. This might not be comfortable for young children. Further, the scan is usually straightforward and normal in most pregnancies, but it may be necessary to discuss some details in some pregnancies. All these need to be considered whilst planning to bring your family and children into the scan room.

If you have any further concerns or queries, please do not hesitate to ask your Obstetrician / Fetal Medicine Consultant before / during your scan appointment.