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SONOGRAPHY

MN Sonography

11 – 14 weeks scan

Please take a moment to read through the information sheet

The scan can be performed between 11 weeks and 4 days and 13 weeks and 6 days; however, the scan should ideally be timed between 12 weeks and 3 days and 13 weeks and 3 days. A transabdominal scan is usually performed; however, it may be required to have a closer look vaginally.

The aims of the scan:

- To date the pregnancy accurately and determine the estimated due date;
- To diagnose multiple pregnancies. Approximately 2% of natural conceptions and 10% of assisted conceptions result in multiple pregnancy;
- To diagnose major structural abnormalities. Approximately 1% of babies have a major abnormality that may be visible at this stage. If an abnormality is detected, a referral may be made to a specialist for further evaluation;
- To assess the chance/risk of a chromosomal abnormality. The most common of these are Downs syndrome (also known as Trisomy 21/T21), Edwards syndrome (Trisomy 18/T18) and Patau syndrome (Trisomy 13/T13);
- To assess the risk of developing pre-eclampsia (high blood pressure which is caused or aggravated by pregnancy).
- Your individual risk for this pregnancy is calculated by taking into account your age, measurement of hormones in your blood and the ultrasound findings.
- **NOT** for Estimation of fetal gender.

Risk assessment for Down's syndrome:

Everybody regardless of age, have a small chance of delivering a baby with a chromosomal abnormality. Everybody has a choice to have a risk assessment for chromosomal abnormalities.

The only way of knowing for certain whether a baby has a chromosomal anomaly or not, is to do an invasive procedure such as a chorionic villus sample or amniocentesis. These procedures have a risk of about 1/300 to cause a miscarriage. The most accurate, but most expensive, screening test for Down syndrome is non-invasive testing of fetal DNA.

The factors that are taken into consideration when the risk for Down's syndrome is calculated are as follow:

- The age of the mother;
- The measurement of fluid behind the baby's neck (Nuchal translucency/NT);
- Presence or absence of the baby's nasal bone;
- Presence or absence of physical abnormalities;
- Blood flow through a small vessel (ductus venosus) in the baby's liver;

- Level of 2 proteins in the mother's blood **(free B-hCG and PAPP-A)**. This blood test is known as the first trimester Downs syndrome biochemistry. The blood test is ideally done at **10 weeks**; however, it can be done between 8 weeks and 0 days and 13 weeks and 6 days.

With the results of the blood test included in the calculation, the detection rate for Downs syndrome is 95% and without the blood test results, 80%. Not all babies with Downs syndrome will show physical signs on ultrasound and we therefor feel it is important to have the blood test done.

There is other test available that have a better than 95% detection rate for Downs syndrome. These tests are also optional.

- Non-invasive prenatal testing (NIPT) is a blood test on the mother and therefor carries no risk of miscarriage. The detection rate for Downs syndrome with NIPT is approximately 99.8%. Unfortunately, this test is still expensive in South Africa, approximately R3 000 – R6 500, depending on where you have it done.
- Invasive testing carries a small risk of miscarriage, approximately 1 in 300. The two options are CVS (chorionic villus sampling) or amniocentesis. CVS is preformed between 12 and 14 weeks and amniocentesis from 16 weeks onwards. The detection rate for Down's syndrome is 99.99% and we therefor call it a diagnostic test.

MN Sonography offer does not offer NIPT or invasive testing. We can refer you for these tests if you would like.

A baby can be proven to not have a chromosomal abnormality like Downs syndrome, but still have a physical/structural abnormality and for this reason we still recommend this scan to detect structural abnormalities as found in 1% of babies.

After today's test the next specialised scan that is recommended is at **20 – 22 weeks**. The baby still develops up to 18 weeks and only thereafter can an assessment be done to detect structural abnormalities. There is another list of signs/markers that we check for Downs syndrome at this stage.

Personal risk of pre-eclampsia

Pre-eclampsia is a dreaded condition in pregnancy: high blood pressure brought on by the pregnancy, which is of danger to yourself and the baby. The risk can be calculated in the same way as calculating the risk of Down syndrome based on your background risk, the results of hormone tests and physical and ultrasound examination. 90% of early pre-eclampsia (developing before 34 weeks) can be detected (for a 10% false positive risk), and 80% of early pre-eclampsia prevented by using low-dose aspirin and calcium supplements. **As with the Down syndrome screening, the most accurate results are obtained by practitioners with the right training and accreditation.**

19-22w Scan

The 20 weeks ultrasound examination ("detail ultrasound") can be done from 19 to 22 weeks.

The scan is usually performed transabdominally. Sometimes, it may be necessary to do the scan transvaginally.

The aims of 20 weeks ultrasound examination are to:

- Evaluate the structural development of the baby, with special attention to the brain, spine, face, heart, stomach, bowel, kidneys and limbs. If you wish, the fetal gender can be determined.
- Determine the growth of the baby,
- Determine the position of the placenta and the amount of amniotic fluid,
- Measure the length of the cervix if needed to assess the risk of preterm labour (especially in the first pregnancy, or in case of a previous preterm delivery) and
- Measure the blood flow in the uterine arteries to assess the risk of growth restriction and pre-eclampsia.

Most babies (>95%) are born healthy. Of babies with serious structural abnormalities, the 20 weeks ultrasound scan can detect about half. Whether it is detected or not, can depend on a number of factors, such as:

- The specific condition: some conditions, such as spina bifida, anencephaly (deficient development of the skull) and gastroschisis (a defect in the abdominal wall), are detected in more than 90% of cases. Some conditions (such as cerebral palsy or autism) are usually NOT seen on ultrasound. Some conditions (such as certain forms of dwarf growth or hydrocephalus) only develop later on in pregnancy.
- How well the baby is seen on ultrasound. This in turn depends on the quality of the ultrasound equipment and the skill of the person doing the ultrasound, but also on factors like the pregnancy duration, the position of the baby and placenta, the amount of amniotic fluid and the amount of fluid or fat or possible scar tissue in your abdominal wall. **Especially if your BMI is above 30**, it can be tricky to visualize every detail well.

The 20 weeks ultrasound is not the ideal screening test for Down's syndrome, as it is less accurate than the evaluation at 12 weeks. If you have missed the 12 weeks' evaluation and you do want to know what the risk of Down syndrome is, the options would include a blood test done between 15 and 19 weeks (the "triple test") alone or in combination with the 20 weeks ultrasound, cell free fetal DNA testing (NIPT) or an invasive test.

If something out of the ordinary is seen, further tests might be recommended. These tests might include blood tests or an invasive test such as an amniocentesis, consultation with other specialists (such as geneticists), or repeating the ultrasound examination after some time.

General

- I acknowledge that the scan must be paid for in full before the commencement of my scan on the day of my appointment.
- **This is not a cosmetic scan.** Vital information about the wellbeing and health of your baby will be obtained in these scans. Please treat it with the appropriate reverence and respect.
- The Sonographer needs to concentrate on measuring and observations that she needs to make during the assessment. Please keep talking and questions during the visit – especially in the scan room – to a minimum. There will be time after your scan to ask questions and to discuss any findings made during your appointment.
- We gently remind you that **only the patient and her partner** (or ONE other chosen person) will be attending the examination. Keep in mind, though, that too many people can make it difficult for you and your partner to focus if something specific needs to be explained. Make sure beforehand who can accompany you to the scan, and whether the sonographer would prefer you arriving with a full or an empty bladder.
- Children under 10 years are not permitted in the scan room. No exceptions.
- No cell phones will be allowed in the scan room under any circumstances. Cell phones must be switched off upon entering the scan suite as these devices tend to disturb all involved if left on.
- Absolutely no video recordings with your cell phone will be allowed under any circumstances. No exceptions. The photographs taken during the visit will be sent to your email as soon as it is possible to do so, usually immediately after the scan.
- How well the baby can be seen depends on the quality of the ultrasound and the skill of the person doing the scan. Other contributing factors include the pregnancy duration, the position in which the baby is lying and the placenta as well as how much amniotic fluid is present. Also, please note that an Increased BMI may cause difficulty in visualizing all the details well due to an increased amount of fat or scar tissue in your abdominal wall.
- Please visit our website for more details on the scans and the Terms and conditions of the practice. You can also visit the SASUOG website for more information on the different chromosomal abnormalities and the procedures that can be done.

Please sign this information sheet acknowledging the following:

I had enough time to read this information sheet and I was given enough opportunity to raise any questions I might have regarding this information sheet. I understand how today's test works and that I have the option of other, more accurate tests for the detection of chromosomal abnormalities like Downs syndrome.

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Signature

_____ _____

Name Date