THIRD TRIMESTER ULTRASOUND

This is performed between **32 and 34 weeks** of pregnancy and has as main objectives: **1)** to assess the **baby's growth**, including an estimated weight. This estimate is based on measurements of the head, abdomen, and thigh bone (femur). In normal circumstances, it has a margin of error of 10–15%. It is used to calculate the baby's growth percentile, similar to the assessment carried out after birth; **2)** to assess the **baby's position** (whether the baby is head-down, breech, or lying transverse); **3)** to assess the location of the **placenta; 4)** to assess the amount of **amniotic fluid**; **5)** to assess **blood flow** in the umbilical cord and in some of the baby's organs.

IMPORTANT NOTE ABOUT OBSTETRIC ULTRASOUND

Normal pregnancy ultrasounds do not guarantee that babies will be born completely healthy because **1)** many diseases do not cause anatomical changes in the baby, including most cases of Down syndrome; and **2)** some anatomical malformations are very difficult or even impossible to diagnose by ultrasound. On the other hand, some abnormalities identified on ultrasound have an uncertain prognosis. This means that some babies with these abnormalities may develop significant health problems after birth, while others may not have any manifestations at all.

GROUP B STREPTOCOCCUS SCREENING

In most pregnant women, it is recommended to collect vaginal and perianal swabs between **35 and 37 weeks** of pregnancy to determine whether they are carriers of a bacterium called Group B Streptococcus. The sample is collected during an antenatal appointment, is painless, and is somewhat similar to a vaginal examination. Group B Streptococcus is present in 10–30% of pregnant women without causing symptoms or health problems, but it can infect the baby during labour and cause an illness in the first days of life that occasionally is life-threatening. If you are a carrier of this bacterium, you will be advised to receive antibiotics during labour, which greatly reduces the risk of newborn infection.

DO ALL PREGNANT WOMEN NEED THE SAME TESTS?

Most pregnant women undergo the tests and examinations described in this leaflet. However, every pregnancy is unique, so antenatal care needs to be individualised. If you have a pre-existing medical condition or if any complications arise during pregnancy, it may be necessary to carry out additional tests to those described here. Do not hesitate to ask your healthcare professionals, if the purpose of any test or its results are not completely clear.

References

1. Direção Geral de Saúde. Programa nacional para a vigilância da gravidez de baixo risco, Lisboa, 2015. ISBN 978-972-675-233-2.
2. American College of Obstetricians and Gynecologists, Practice bulletin no. 175: Ultrasound in Pregnancy. Obstet Gynecol 2016;128(6):e241-256.
3. National Institute of Clinical Excellence. Clinical guideline: Antenatal care for uncomplicated pregnancies. London, RCOG Press, 2008.

UNIDADE LOCAL DE SAÚDE
SANTA MARIA

ROUTINE PREGNANCY TESTS

UNIDADE LOCAL DE SAÚDE SANTA MARIA

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During pregnancy, several **ultrasound** and **laboratory tests** (blood and urine) are recommended, and their results are important to optimize the health of both mother and baby. The results of these test will be explained to you by the healthcare professional providing antenatal care.

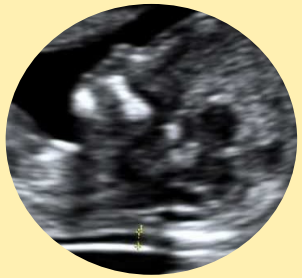
FIRST TRIMESTER OF PREGNANCY

BLOOD AND URINE TESTS

These are usually requested during the first pregnancy appointment, although some may have already been performed during preconception care. Blood and urine are collected with the following objectives:

- **Complete blood count**: red blood cells, white blood cells, and platelets. This is used to screen for anaemia, infection, and low platelet levels.
- **Blood group and irregular antibodies**: pregnant women whose blood group is Rh negative require additional care during pregnancy and childbirth.
- **Serology screening of infections**: to determine whether you have previously had contact with rubella, toxoplasmosis, cytomegalovirus, syphilis, human immunodeficiency virus (HIV), and hepatitis B. It is important to avoid these maternal infections during pregnancy, but if they do occur, early treatment is usually required.
- **Fasting blood glucose** (after at least 8 hours of fasting): blood sugar levels are used to evaluate whether you have diabetes, which requires additional care during pregnancy.
- **Biochemical screening:** measurement of two substances (PAPP-A and β-hCG) that are associated with a higher risk of chromosomal abnormalities (the most well-known being trisomy 21, or Down syndrome). The results are combined with the findings from first-trimester ultrasound (see below) to calculate the overall risk of chromosomal abnormalities.
- **Pre-eclampsia screening**: measurement of a substance (PlGF), which together with your medical history, blood pressure measurement, and assessment of blood flow in the uterine arteries during first-trimester ultrasound (see below), is used to calculate the risk of developing pre-eclampsia. Women with a high-risk result can substantially reduce the probability of developing pre-eclampsia by taking daily low-dose acetylsalicylic acid (aspirin).
- **Urine culture**: used to screen for urinary tract infections.

FIRST TRIMESTER ULTRASOUND



This ultrasound is performed between **11 and 13 weeks** of pregnancy, with the following main objectives: **1)** To confirm the presence of a **heartbeats**; **2)** to perform **pregnancy dating** (by measuring the baby), as it is sometimes necessary to correct gestational age calculated from the last menstrual period; **3)** To determine the **number of babies** present; **4)** For parents who wish to do so, to carry out **combined screening** for the most common chromosomal abnormalities (Trisomy 21, which causes Down syndrome, Trisomy 18, and Trisomy 13), which are not easily diagnosed on routine pregnancy ultrasounds. This is done by measuring nuchal translucency (thickness of the skin at the back of the baby's neck), evaluating the nasal bones, and combining this with biochemical markers in the mother's blood (mentioned above,) to calculate a risk of the baby having one of these chromosomal abnormalities. This allows parents to decide whether they would like to proceed with additional, more accurate diagnostic tests. When combined screening shows a risk between 1 in 100 and 1 in 1,000 (intermediate risk), parents may choose to perform **cell-free fetal DNA testing** (analysis of fetal DNA circulating in the mother's blood), which is a highly accurate screening test for chromosomal abnormalities, and in these situations is subsidised by the state..

When the risk of chromosomal abnormalities is higher than 1 in 100, or if cell-free fetal DNA testing indicates a high risk, the pregnant woman may choose to undergo **invasive prenatal diagnostic testing** (chorionic villus sampling or amniocentesis - see specific information leaflet), which can determine accurately whether chromosomal abnormalities are or not present. 5) **Pre-eclampsia screening** is also carried out by measuring blood flow in the uterine arteries, together with the other assessments explained above. **6)** A basic assessment of the baby's main organs is performed to **rule out some major congenital abnormalities**.

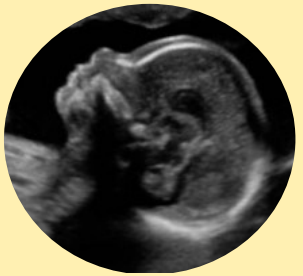
SECOND TRIMESTER OF PREGNANCY

BLOOD AND URINE TESTS

These tests are carried out between 24 and 28 weeks of pregnancy.

- **Complete blood count**: with the same purpose as in the first trimester.
- **Serology screening of infections**: for toxoplasmosis if first-trimester blood tests showed that you have not previously had this infection.
- **Oral glucose tolerance test**: if fasting blood glucose in the first trimester was normal. A blood sample is taken following at least 8 hours of fasting, and then you will be given a drink containing 75 g of glucose. Blood samples are subsequently repeated one hour and two hours after drinking this solution.
- **Urine culture:** with the same purpose as in the first trimester.

SECOND TRIMESTER ULTRASOUND (ANATOMY SCAN)



This ultrasound is ideally performed between **20 weeks and 22 weeks plus 6 days** of pregnancy and the main objectives are: **1)** to assess the baby's most **important anatomical structures**, namely the head, brain, face, heart, lungs, spine, kidneys, abdomen, stomach, gallbladder, bladder, limbs, and also the genital organs, which make it possible to determine the baby's gender. Ultrasound does not detect all malformations and diseases that babies may be born with, but only those that cause changes in the anatomy of structures that can be visualised. **2)** to assess **placental location** and the quantity of **amniotic fluid**; **3)** to reassess, either alone or in combination with first-trimester combined screening, of the probability that the baby has **Down syndrome**; **4)** to assess the baby's **growth**; and **5)** to assess the length of the cervix (the canal connecting the lower part of the uterus to the vagina) as a way of identifying women at higher **risk of preterm birth** (birth before 37 weeks of pregnancy, which is associated with a higher risk of complications for the newborn). Women at increased risk of preterm birth may reduce this risk by taking a specific medication during pregnancy.

THIRD TRIMESTER OF PREGNANCY

BLOOD AND URINE TESTS

Between 32 and 34 weeks of pregnancy, the following tests are carried out.

- **Complete blood count:** with the same purpose as in the first and second trimesters.
- **Serology screening of infections**: for toxoplasmosis if previous blood tests showed that you have not previously had this infection; for syphilis, human immunodeficiency virus (HIV), and hepatitis B, as these infections require additional care during labour and for the newborn.
- **Urine culture:** with the same purpose as in the first trimester.