

Tests during Pregnancy

Pregnant women are advised to get certain tests done at different periods throughout the pregnancy; depending on the individual and the circumstances. These help the doctor to assess the pregnancy and detect problems early, if any. Some tests are done routinely and some are special tests done for specific situations.

Mentioned below is the overview on the tests done during pregnancy but the time when these tests needs to be done may vary depending on requirement.

For more information please contact your doctor.

Pregnancy time can be divided into 3 periods of three months each -

- First trimester - week 1 to week 13 (first 3 months of pregnancy)
- Second trimester - week 14 to 27 (next 3 months of pregnancy)
- Third trimester - week 28 to delivery (last 3 months of pregnancy)

Below is some basic information on the tests-

- Blood test - the blood is collected from the arm using a needle/syringe. If only few drops of blood are needed then the index finger is pricked and blood is collected.
- Urine test- Mid stream urine sample (urine sample collected during the middle of a flow of urine) is collected avoiding contamination of the sample.
- Ultrasonography (USG) - A test in which a probe/instrument is moved over the abdomen or inserted in the vagina to see the foetus in the womb in the form of pictures.

First trimester tests	Second trimester tests	Third trimester tests
Complete blood count(CBC)	Complete blood count	Complete blood count
Haemoglobin	Fasting glucose	Urine examination
Blood group	Post prandial glucose	USG
Serum creatinine	Uric acid test	Indirect Coombs test (IDCT)
Thyroid stimulating hormone (TSH)	Urine examination	
Hepatitis B (HbsAg)	USG/Anomaly scan	
Syphilis test (VDRL)	Triple marker screen	
HIV antibody	Amniocentesis	
Urine examination		
USG - Dating scan		

USG - Early anomaly scan		
Rubella antibody (German measles)		
Double marker screen		
Chorionic villus sampling		

Tests Done during First Trimester

► CBC

- When is it done? - Blood test generally done in the first, second and third trimester or anytime during the pregnancy as required.
- Why is it done? - To check haemoglobin and different cells in the blood (red blood cells, white blood cells and platelets).
- What if it is not normal? - Low haemoglobin (anaemia) and abnormal red blood cells need to be investigated further; other tests may be required to find its cause, e.g. nutritional deficiency, type of anaemia, Thalassemia etc. Increased white blood cells could indicate infection and low levels of platelets could be due to pregnancy or some illness for which further tests may be required.

► Haemoglobin

- When is it done? - Blood test generally done in the first, second and third trimester or anytime during the pregnancy as required.
- Why is it done? - To check for a protein called haemoglobin which carries oxygen in the blood.
- What if it is not normal? - If the haemoglobin is found to be low (anaemia), other tests may be required to find its cause, e.g.; nutritional deficiency, types of anaemia, Thalassemia etc.

► Blood Group

- When is it done? - Blood test done in the first trimester and repeated at week 28 of pregnancy.
- Why is it done? - Done to find out mothers blood group and to check for differences in the blood type between mother and the baby (Rh incompatibility i.e. positive or negative blood group).
- What if it is not normal? - If the mother has negative blood group and the father has positive blood group then the mother would be advised an injection (Anti D) by the doctor during the pregnancy and/or after delivery to prevent any complications in this as well as future pregnancies.

► Serum Creatinine

- When is it done? - Blood test done in the first trimester.
- Why is it done? - Done to check for presence of creatinine in the blood. Creatinine is a waste substance present in the blood and removed by the kidneys through urine.
- What if it is not normal? - An increase level of creatinine in the blood indicates kidney problems. The doctor may advice tests like sonography or other blood tests (kidney function test etc) to find the exact cause and decide further treatment.

► TSH

- When is it done? - Blood test done in the first, second or third trimester.
- Why is it done? - To check for a hormone called TSH which is required for normal functioning of the human body.
- What if it is not normal? - High or low levels of TSH in blood indicate problem of the thyroid hormone which can cause harm to

the mother and the baby. Tests like free T3 and free T4 need to be done and treatment started accordingly.

▶ Hepatitis B

- When is it done? - Blood test done in the first trimester and may be repeated in the third trimester if required.
- Why is it done? - To check for infection with Hepatitis B virus as this can harm the baby.
- What if it is not normal? - A mother with this infection can pass the virus to the baby and cause infection. If positive, the baby should get an injection called hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine within 12 hours of birth.

▶ Syphilis

- When is it done? - Blood test done in the first trimester and may be repeated in the third trimester if required.
- Why is it done? - To check for sexually transmitted disease (STDs; diseases transmitted through sexual intercourse) as it can infect the baby or cause death of the baby during delivery.
- What if it is not normal? - If there is an infection, the doctor may ask to test for other STDs (like Gonorrhoea & Chlamydia), prescribe medicines to treat the mother, and to prevent the passing of infection from mother to child. The baby's blood should also be tested after birth to rule out infection. In case the baby is infected then medication need to be given after birth for 7 - 10 days

▶ Human Immunodeficiency Virus (HIV) Antibody

- When is it done? - Blood test done in the first trimester and may be repeated in the third trimester or as required.
- Why is it done? - Done to check for HIV which causes AIDS.
- What if it is not normal? - If the mother has HIV infection, the doctor will prescribe anti-HIV medicines to prevent passing of the virus from mother to child and protect the baby from getting infected.

▶ Rubella Antibody

- When is it done? - Blood test done in the first trimester or when required.
- Why is it done? - To check for past or present infection with Rubella (IgG & IgM antibodies), which causes birth defects or death of the baby.
- What if it is not normal? - In case of present infection, sonography of the baby may be required to check for abnormalities. In case of a serious defect the doctor may counsel the couple regarding the available treatment options for continuing or ending the pregnancy so that appropriate decision can be taken under the guidance of the doctor.

▶ Urine Examination

- When is it done? - Urine test generally done during first trimester and repeated regularly during pregnancy.
- Why is it done? - To check for levels of sugar and protein in the urine, infection, jaundice, etc.
- What if it is not normal? - High levels of protein may indicate kidney problem. High sugar levels may be a sign of high blood sugar levels. More tests may be advised to know the exact cause of high protein and sugar in the urine. In case of an infection the doctor may prescribe medicines and for jaundice treatment needs to be started.

▶ USG - Dating scan

- When is it done? - Generally done during 5 - 7 weeks of pregnancy.
- Why is it done? - It helps to confirm the pregnancy, estimate the length /duration of pregnancy, to check if pregnancy has occurred outside the womb (ectopic pregnancy), to check for single or multiple pregnancies (twins, triplets) and to check baby's heart beats.
- What if it is not normal? - If the scan shows ectopic pregnancy the doctor will advise to terminate the pregnancy as it would be life threatening for the mother. In case of multiple pregnancies the doctor will counsel the mother on appropriate care to be

taken like additional mineral and vitamin intake during pregnancy, etc.

▶ USG - Early Anomaly Scan

- When is it done? - Generally done during 11-13 weeks of pregnancy.
- Why is it done? - To check nuchal translucency (amount of fluid behind the neck of the baby) and to rule out birth defects.
- What if it is not normal? - An abnormal scan means possible defects in the growth of the baby. Double marker test is recommended along with this test to confirm any birth defects.

▶ Double Marker Screen

- When is it done? - Blood test done between 10-13 weeks of pregnancy to check for 2 hormones - human chorionic gonadotropin and unconjugated estriol.
- Why is it done? - Tells whether the baby is at an increased risk for certain birth defects or abnormalities. e.g., Down's syndrome (mental or physical retardation), etc.
- What if it is not normal? - If double marker screen and early anomaly scan is abnormal then the doctor may advise advanced tests like amniocentesis and chorionic villus sampling to confirm the defect. In case of a serious defect the doctor may counsel the couple regarding the available treatment options for continuing or ending the pregnancy so that appropriate decision can be taken under the guidance of the doctor.

▶ Chorionic Villus Sampling

- When is it done? - Done during 11-13 weeks of pregnancy. Under ultrasound guidance, few cells from the placental tissue (organ that connects the developing baby to the mother and allows transfer of nutrients and gas) are removed without harming the baby to check for genetic defects.
- Why is it done? - Done to check for certain genetic abnormalities like Down's syndrome in the growing baby.
- What if it is not normal? - If the test shows defects, the doctor may counsel the couple regarding the available treatment options for continuing or ending the pregnancy so that appropriate decision can be taken under the guidance of the doctor.

Tests Done During Second Trimester

▶ CBC

- When is it done? - Blood test generally in the first, second and third trimester or anytime during the pregnancy as required.
- Why is it done? - It is used to check haemoglobin and cells in the blood (red blood cells, white blood cells and platelets).
- What if it is not normal? - Low haemoglobin or abnormal red blood cells need to be investigated further; other tests may be required to find its cause, e.g. nutritional deficiency, types of anaemia, etc. High levels of white blood cells could indicate infection and low levels of platelets could be due to pregnancy or some illness.

▶ Urine Examination

- When is it done? - Urine test generally done during first trimester and repeated regularly during pregnancy.
- Why is it done? - To check for levels of sugar and protein in the urine, infection, jaundice, etc. High sugar levels may be a sign of gestational diabetes and high levels of protein may indicate kidney problem or preeclampsia. High blood pressure can in turn cause complications like baby with low birth weight, delivery before time, etc.
- What if it is not normal? - High sugar levels may be a sign of diabetes. Further test may be advised to confirm gestational diabetes. In case of pre-eclampsia - characterized by high blood pressure and excess protein in the urine, the doctor may take necessary measures (rest, medications etc) to control and treat it. In case of an infection the doctor may prescribe medicines and for jaundice treatment needs to be started.

► Fasting Glucose

- When is it done? - Blood test done during 28 weeks of pregnancy and in the third trimester if required.
- Why is it done? - To check the sugar level in the blood. High sugar levels may be a sign of gestational diabetes (diabetes that can develop during pregnancy) which can be unhealthy for both the mother and the baby. If not treated, the baby may be more likely to have problems at birth like low blood sugar level or high birth weight.
- What if it is not normal? - If the levels are high the mother is asked to do glucose challenge test which helps in confirming gestational diabetes. The test involves drinking a sugar solution and measuring sugar levels in the blood after certain time. Normally the body will control the blood sugar levels but inability to do so will confirm gestational diabetes. Medications may be required if gestational diabetes is confirmed.

► Post Prandial Glucose

- When is it done? - Blood test done around 24-28 weeks of pregnancy.
- Why is it done? - To determine amount of sugar levels in the blood after 2 hours of meal.
- What if it is not normal? - Further investigation may be needed to see if it is short term increase in sugar levels or an increase due to diabetes. Medications may be required if gestational diabetes is confirmed.

► Uric Acid

- When is it done? - Blood test done during 20 weeks of pregnancy.
- Why is it done? - Done to check the levels of uric acid in the blood which is produced from the breakdown of the food and wear and tear of body. A high level of uric acid during pregnancy is a cause of concern for both the mother and the baby and is associated with a condition called as pre-eclampsia.
- What if it is not normal? - If the levels are high further tests may be required and the doctor may give appropriate medicines to reduce uric acid and associated complications (high blood pressure, etc.).

► Triple Marker Screen

- When is it done? - Blood test done between 15-20 weeks of pregnancy to check for 3 substances - alpha-fetoprotein, human chorionic gonadotropin and unconjugated estriol.
- Why is it done? - Helps find the risk of the baby having birth defects like neural tube defect (abnormalities of brain/spinal cord), Down's syndrome, etc.
- What if it is not normal? - If abnormal, the doctor may advice further investigations like a USG or amniocentesis to check for physical and mental retardation.

► USG / Anomaly Scan

- When is it done? - Generally done between 18-20 weeks of pregnancy.
- Why is it done? - To check if all the body parts of the baby have properly developed, to rule out mental/physical retardation, if there is excessive or reduced levels of amniotic fluid (fluid surrounding the baby), position of placenta, weight and growth of the baby.
- What if it is not normal? - If the baby has any abnormalities/deformities the doctor may advice possible future management or in some cases when the defect is severe the doctor may suggest pregnancy termination. In case of growth delay or low weight doctor may suggest rest and medications.

▶ Amniocentesis

- When is it done? - Done between 15-20 weeks of pregnancy which involves removal of amniotic fluid, (fluid surrounding the baby). This fluid has fetal cells which are used for the test.
- Why is it done? - The cells are used to check genetic defects in the growing baby, e.g., mental retardation, trisomy.
- What if it is not normal? - An abnormal test would mean that the baby will be born with a birth defect and hence the doctor may counsel the couple regarding the available treatment options for continuing or ending the pregnancy so that appropriate decision can be taken under the guidance of the doctor.

Tests Done during Third Trimester

▶ CBC

- When is it done? - Blood test generally done before pregnancy and/or in the first, second and third trimester or anytime during the pregnancy as required.
- Why is it done? - To check haemoglobin and different cells in the blood (red blood cells, white blood cells and platelets).
- What if it is not normal? - Low haemoglobin and abnormal red blood cells need to be investigated further; other tests may be required to find its cause, e.g.; nutritional deficiency, types of anaemia, etc. High levels of white blood cells could indicate infection and low levels of platelets could be due to pregnancy or some illness.

▶ Urine Examination

- When is it done? - Urine test generally done during first trimester and repeated regularly during pregnancy.
- Why is it done? - To check for levels of sugar and protein in the urine, infection, jaundice, etc. High sugar levels may be a sign of gestational diabetes and high levels of protein may indicate kidney problem or preeclampsia. High blood pressure can in turn cause complications like baby with low birth weight, delivery before time, etc.
- What if it is not normal? - High sugar levels may be a sign of diabetes. Further test may be advised to confirm gestational diabetes. In case of pre-eclampsia - characterized by high blood pressure and excess protein in the urine, the doctor may take necessary measures (rest, medications etc) to control and treat it. In case of an infection the doctor may prescribe medicines and for jaundice treatment needs to be started.

▶ USG

- When is it done? - Generally done at around 32 weeks or later during pregnancy if needed.
- Why is it done? - Helps determine the weight of the baby, its movements, position how the baby has developed and position of placenta.
- What if it is not normal? - An abnormal USG helps the doctor identify the problem with the baby so that appropriate measures can be taken.

▶ IDCT

- When is it done? - Blood test done in the third trimester if the mother is having negative blood group.
- Why is it done? - Done to find out Rh incompatibility.
- What if it is not normal? - If the mother has negative blood group and the father has positive blood group, she would be advised

an injection (Anti D).

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