

OBSTETRICS &  
GYNAECOLOGY

## ANTENATAL SCREENING

Pregnancy is a happy event. To ensure the best outcome for both baby and mother, there are some screening tests the couple may consider.



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At the first consultation, an ultrasound scan is important to confirm that the baby is growing in the uterine cavity and that it's not an ectopic pregnancy. Pregnancy dating based on fetus size is most accurate when done in the first trimester. Accurate dating enables proper scheduling of further tests and assessment of fetal growth at each stage of pregnancy.

First trimester screenings include blood tests for anaemia, thalassaemia (a genetic form of anaemia), blood group, syphilis and HIV. The other important test at this time is to screen for Down Syndrome (DS), a condition where the baby has three copies of chromosome 21, and other common chromosomal abnormalities. In the past, DS screening involves an ultrasound to assess the fetal Nuchal Translucency (thickness of neck skin) and a blood test to evaluate the level of Alpha-fetoprotein, beta-human chorionadotrophins and estriol. A composite risk is calculated based on the results of these two tests and the maternal age — 90% of DS will be detected as they fall into the high risk category. These patients usually have to undergo an invasive procedure like amniocentesis or chorionic villus sampling to confirm the diagnosis.

The newer Non-Invasive Prenatal Testing (NIPT) is another DS screening option. By checking the free-cell fetal DNA (cfDNA) fraction in maternal blood, we can now check for conditions where the fetus has three copies of chromosomes 21, 18 and 13, and also to check that the number of X and Y chromosomes are correct. The test is more than 99% sensitive. In the event that the NIPT result shows high risk for DS, a confirmation test by amniocentesis is done. Due to the increased reliability of NIPT, the need for an invasive test has markedly decreased.

An ultrasound is usually done between 18 and 22 weeks to assess that the fetal structures have developed normally. Glucose tolerance test is now offered universally to all pregnant women between 24 and 28 weeks to screen for gestational diabetes. Previously, only those with

risk factors like family history of diabetes, advanced maternal age and high BMI were screened, but this was changed when a study in KKH showed that about a third of patients without risk factors will have gestational diabetes. Proper management of patients with gestational diabetes can reduce maternal and fetal complications significantly.

Fetal growth scan is done at 32 weeks to assess proper fetal growth. Low fetal growth parameters may indicate placental problems, conditions like pre-eclampsia or intra-uterine infections, where further tests may be indicated. Close monitoring of these fetuses, and counselling regarding the proper timing and mode of delivery is important to ensure optimal fetal outcome.

In the past, some babies developed fever, pneumonia (lung infection) or meningitis (infection of the brain membrane) soon after birth, which was traced to the presence of Group B Streptococcus (GBS) bacteria in the mother's vagina that the baby picked up during the labour process. All pregnant women are now screened in the last few weeks of pregnancy by a vaginal and rectal swab. GBS-positive women will be given intravenous antibiotics to reduce the chance of the baby becoming infected.

While pregnancy ought to be a joyful journey, the journey may be hazardous for some babies. Antenatal screenings can identify some of these hazards and help doctors outmanoeuvre them. 🍀

