Patient Pregnancy Information

SASOG
BETTEROBS PROGRAMME

The BetterObs programme

The South African society of Obstetricians and Gynaecologists (SASOG) has devised a programme with the intention of promoting safer deliveries, healthier babies and better outcomes all around.

Congratulations on your pregnancy!

SASOG BETTEROBS PROGRAMME

The South African Society of Obstetricians and Gynaecologists (SASOG) has devised a programme with the intention of promoting safer deliveries, healthier babies and better outcomes all round. It is a very special journey for you and your family. You share this very special journey with your baby, your family and also with your caregiver. It is very important that you are aware of the PRECAUTIONS and INFORMATION that are relevant to ensuring a safe and stress free pregnancy for you and your baby.

As a member of SASOG your caregiver/ Obstetrician is dedicated to give you and your baby the safest care possible through the SASOG BetterObs programme. All pregnancies carry risks. The risk profile of your pregnancy might change as the pregnancy proceeds and this will be discussed with you as your pregnancy continues. Although your Obstetrician will take utmost care to deliver your baby as safely as possible, there are unfortunately no guaranteesas (despite best efforts) there might be underlying pregnancy characteristics that are beyond the Obstetrician's control.

SASOG has compiled some information to inform all pregnant patients about the SPECIAL TESTS available to assist in caring for you and your baby to the best of our ability. Some tests are very important (and should be done) and some are optional. These tests are briefly discussed in the following part of this information leaflet. Your Obstetrician will guide you in selecting the optimal tests to be done in your pregnancy, but you are also encouraged to ask about the other tests available and thus will be the final decision maker.

If any ADVERSE EVENT should occur during your pregnancy or your delivery, you are encouraged to discuss these events with your caregiver. Should these issues not be resolved to your satisfaction, then you can contact the SASOG Secretary (info@sasog.co.za). We will then take these matters further as part of the BetterObs programme.

Lastly SASOG encourages you to ensure ADEQUATE MEDICAL COVER for your precious pregnancy. Every year, in November you can upgrade your medical aid plan. Do not take it for granted that your medical aid fund will cover all medical costs, as your pregnancy care often costs your obstetrician more in indemnity insurance fees than the "100%" fees that some of the basic medical aids will reimburse you. SASOG encourages you to discuss this with your Obstetrician, but also strongly encourages you to take this up with your medical aid broker/fund to ensure adequate cover!

Read through the information leaflet carefully and make sure you sign the Informed Consent provided by your Obstetrician. This will contribute tremendously towards a safe and pleasant pregnancy and safe delivery for all involved.

The SASOG BetterObs Team

About Informed Consent

Basically, informed consent means that sufficient information is provided to the patient to make an informed decision about management options and that the patient actually understands the information and the implications of acting on that information.

Informed consent relates to a person's right to human dignity and autonomy. The medical practitioner has the duty to obtain the consent, as he/she is in a position to answer questions and provide further details.

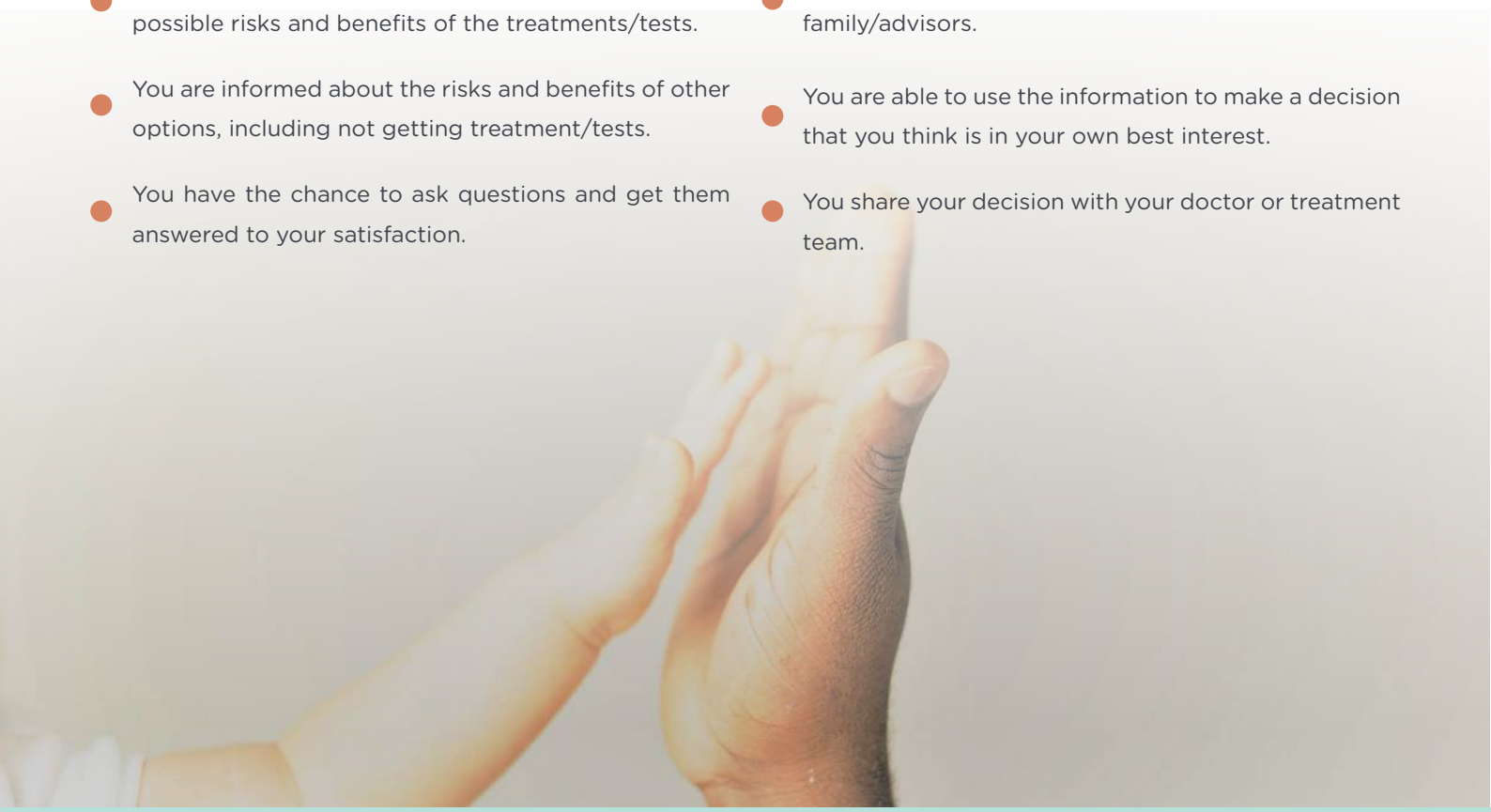
> It has long been part of South African law that a patient must provide informed consent for all medical treatment (diagnostic of therapeutic) on him/her. (Stofberg v Elliot, 1912)

Did you know?

- Consent means that you give someone permission to do something.
- Consent is not only a form - it is an open and ongoing conversation.
- The doctor has to explain everything about the treatment and tell you about other options.
- The doctor has to explain in a way you can understand.
- Nobody is allowed to force or deceive you into giving permission for a treatment.

Informed Consent is a process that includes all of these steps:

- You will be informed or receive information about the possible risks and benefits of the treatments/tests.
- You are informed about the risks and benefits of other options, including not getting treatment/tests.
- You have the chance to ask questions and get them answered to your satisfaction.
- You have time (if needed) to discuss the plan with family/advisors.
- You are able to use the information to make a decision that you think is in your own best interest.
- You share your decision with your doctor or treatment team.



Routine Prenatal Tests

Your Obstetrician/Gynaecologist will request some tests to check that you are healthy.

Full Blood Count (FBC)

A FBC counts the numbers of different types of cells that make up your blood. The number of red blood cells can show whether you have a certain type of anaemia. The number of white blood cells shows how many disease-fighting cells are in your blood, and the number of platelets can reveal whether you have a problem with blood clotting.

Blood Typing

Results from a blood type test can show if you have the Rh factor or any red blood cell antibodies. The Rh factor is a protein that can be present on the surface of red blood cells. Most people have the Rh factor — they are Rh positive. Others do not have the Rh factor — they are Rh negative. If your fetus is Rh positive and you are Rh negative, your body can make antibodies against the Rh factor. In a pregnancy, these antibodies can damage the fetus's red blood cells.

If you are Rh negative, your blood will be tested for Rh antibodies at 20, 26, 32 and 38 weeks of pregnancy. If you do not have Rh antibodies, you will be offered intra-muscular injection of Rh immunoglobulin. This shot prevents you from making antibodies during the rest of your pregnancy. If you have Rh antibodies, you may need special care.

An Indirect Coombs test will also be done. This tests for the presence of ANY important antibodies against the fetal red blood cells and not just the Rhesus factor. A negative test result means that your blood is compatible with the blood you are to receive by transfusion. A negative indirect Coombs test for Rh factor (Rh antibody titer) in a pregnant woman means that she has not developed antibodies against the Rh positive blood of her baby.

Thyroid Stimulating Hormone (TSH)

Your doctor may request a test to ensure that your thyroid is functioning properly, because thyroid problems are associated with pregnancy complications.

Glucose Screening Test

This screening test measures the level of glucose (sugar) in your blood. A high glucose level may be a sign of gestational diabetes. This test is usually done between 24 weeks and 28 weeks of pregnancy.

If you have risk factors for diabetes or had gestational diabetes in a previous pregnancy, screening may be done in the first trimester of pregnancy.

Blood Pressure*

To determine whether you might be developing a condition called pre-eclampsia (high blood pressure brought on by the pregnancy).

Urine Analysis*

Your urine may be tested for red blood cells (to see if you have urinary tract disease), white blood cells (to see if you have a urinary tract infection), and glucose (high levels may be a sign of diabetes mellitus). The amount of protein is also measured. The protein level early in pregnancy can be compared with levels later in pregnancy. High protein levels in the urine may be a sign of pre-eclampsia, a serious complication that usually occurs later in pregnancy or after the baby is born.

*these tests are performed at every visit

Routine Blood Tests

Your Obstetrician/Gynaecologist will request some tests to check that you are healthy:

Antibodies Against Rubella (german measles)

Rubella (also called german measles) can cause birth defects if a woman is infected during pregnancy. Your blood is tested to check whether you have had a past infection with rubella or if you have been successfully vaccinated against this disease. If you do not have protective antibodies against rubella, you should avoid anyone who has the disease whilst you are pregnant as it is highly contagious, and you should receive a vaccination after the baby is born,even if you are breastfeeding. You should not be vaccinated against rubella during pregnancy.

Antibodies Against HIV

If a pregnant woman is infected with HIV, there is a chance she can pass the virus to her fetus. HIV attacks cells of the body's immune system and causes acquired immunodeficiency syndrome (AIDS).

If you are pregnant and infected with HIV, you can be given medication and take other steps that can greatly reduce the risk of passing HIV on to your baby during pregnancy, labour, delivery or afterwards.

Antibodies Against Hepatitis B

Hepatitis B and hepatitis C viruses infect the liver. Pregnant women who are infected with hepatitis B or hepatitis C virus can pass the virus to their fetuses. The risk of hepatitis B infection in the baby can be reduced by vaccination after birth. All pregnant women are tested for hepatitis B virus infection. If you have risk factors, you also may be tested for the hepatitis C virus.

Antibodies Against Syphilis

All pregnant women are tested for syphilis early in pregnancy. Syphilis can cause complications for you and your fetus. If you have this infection, you will be treated during pregnancy and tested again to see if the treatment has worked.

Is There Screening For Zika Virus?

Your health care professional will ask you questions about travel to areas with Zika. Your answers will help determine if you need testing for Zika virus.

Group B Streptococci (GBS)

GBS is a type of bacteria that lives in the vagina and rectum. Many women carry GBS and do not have any symptoms. GBS can be passed to a fetus during birth. Most babies who get GBS from their mothers do not have any problems. A few, however, become sick. This illness can cause serious health problems and even death in newborn babies. GBS usually can be detected with a routine screening test that is given between 35 weeks and 37 weeks of pregnancy. For this test, a swab is used to take samples from the vagina and rectum. If the test result for GBS is positive, antibiotics can be given during labour to help prevent the baby from becoming infected.

Screening and Diagnostic Tests for fetal development

Every pregnancy carries a small risk that the baby is not developing normally. It is important to realize that no test or combination of tests can ever guarantee a normal baby. On the other hand, the vast majority of babies are normal (even if no screening test had been done!). It is also important to make sure that your doctor is aware of any family or personal history of medical conditions that may have an effect on the baby's development.

The following risk factors indicate that your chance of carrying a fetus with an abnormality is higher than average and it is important that you inform your doctor of any of the following:

- I am 35 years old or more
- I have epilepsy (fits, seizures, convulsions) and take medication for it
- I have diabetes
- I take medication for a chronic condition
- I have used over-the-counter medication/herbal remedies/traditional medicine during this pregnancy
- I took medication for a chronic condition within 3 months before falling pregnant
- I did not take vitamin supplements before I fell pregnant
- I have had a previous pregnancy with an abnormal fetus
- I have lost a previous pregnancy at a late stage
- I have had more than 1 previous miscarriage
- My partner, I or one of our family members was born with an abnormality
- My partner, I or one of our family members suffer from mental impairment
- My partner, I or one of our family members had a termination (abortion) for an abnormal pregnancy
- There is a genetic (inherited, familial) condition in my or my partner's family
- I have smoked during this pregnancy
- I have used alcohol during this pregnancy
- I have used recreational drugs during this pregnancy such as marijuana, TIK, methamphetamine, heroin, cocaine etc.

Tests are performed to determine whether your baby is at risk for certain physical or mental problems. These tests include prenatal screening tests, which give an assessment of risk, and prenatal diagnostic tests (which give a more conclusive answer on whether a baby, which is at risk of some problem, is definitely affected or not).

What is a screening test?

Screening tests are tests done on everyone who requests it. A screening test does not give a definitive answer about whether a condition is present or absent, but gives an indication of the likelihood (low, intermediate, or high risk). The majority of afflicted individuals (e.g. fetuses with Down syndrome) should be in the "high risk" group. The proportion of afflicted individuals that is detected by the test is called the sensitivity. The proportion of the normal individuals that is falsely labelled as high risk is called the false positive rate. Ideally, a screening test would have a high sensitivity (although it is never 100%), and low false positive rate (although it is never 0%).

What is a diagnostic test?

A diagnostic test is a test done on someone at risk of a condition and gives a definitive answer about whether the condition is present or absent. A diagnostic test has some features that makes it unsuitable for use as a screening test, such as risk or cost.

Why are these tests done?

The main aim is to detect fetuses at high risk of Down syndrome. Other benefits include detecting fetuses at risk of a chromosomal abnormality other than Down syndrome, and diagnosing a miscarriage or some major fetal abnormalities. Blood tests and fetal ultrasound tests for pregnant women check the levels of protein and hormones being produced by the fetus and examine how the fetus is forming. The levels of four different substances as well as early findings on ultrasound can enable doctors to identify pregnancies that are at a higher risk for birth defects such as Down syndrome or neural tube defects (brain and spinal cord problems). If the screening tests suggest problems, your doctor might recommend additional tests, such as amniocentesis or chorionic villus sampling, or refer you to an expert to confirm the findings.

Terminology

What is "genetic counselling"?

As there are many options of different tests and even combinations, and these options can be confusing. If you require more information, and especially if you have a family history of genetic conditions, a session with a genetic counsellor can be arranged to have a more in-depth discussion about your options.

What is "sensitivity"?

The chance of detecting an abnormality if it is present (i.e. a 60% sensitivity for Down syndrome means that out of 10 babies with Down syndrome, 6 would show up as high risk, and four would show up as low risk).

What is "false positive rate"?

The chance of a high risk result if the baby is normal (e.g. a 5% false positive rate would mean that 1 in 20 of normal pregnancies would be labelled as high risk by the chosen test)

Informative Websites

South African Medical Association:
www.samedical.org

South African Society for Ultrasound:
www.sasuog.org.za

The World's most detailed 3D model of human anatomy online: www.human.biodigital.com

A society to specialists in the field of Reproductive Medicine: www.sasreg.co.za

Every Newborn - An Action Plan to end preventable deaths:
https://www.who.int/maternal_child_adolescent/documents/every-newborn-action-plan/en/

Prenatal Testing Timeline Overview

1 week

8-12 Weeks

BLOOD TESTS

- Antibodies against Rubella, Syphilis, Hepatitis B & HIV
- Haemoglobin
- Blood group, Indirect Coombs

ULTRASOUND

- Date pregnancy
- Determine multiple pregnancy

8-13 Weeks

GENETIC SCREENING

- Early Combination Test (recommended)
- Biochemical Screening
- Simple NT scan

Alternatively

- Extended NT scan
- NIPT

10 weeks

11-14 Weeks

GENETIC DIAGNOSTIC TESTS

- Chronic Villus Sample

15-19 Weeks

SCREENING

- Maternal serum Alpha-Feto-protein
- Biochemical screening for Down Syndrome
- Anatomy scan/Genetic Sonogram
- Specialist Fetal Assessment

19-20 Weeks

GENETIC DIAGNOSTIC TESTS

Amniocentesis (after 16 weeks) OR
Cordocentesis (after 19 - 20 weeks)

20 weeks

24-36 Weeks

SCREENING

- Screening Ultrasound
- Specialized fetal assessment

24-28 Weeks

Glucose screening test

30 weeks

35-37 Weeks

GBS Test

37 weeks

Screening and Diagnostic Tests for fetal development

1st Trimester

Early Combination Tests (Recommended screening tests)

This consists of a blood test (PAPP-A and free b-HCG) done at 8 - 13 weeks, with an ultrasound examination ("simple NT scan") done at 12–13 weeks. The simple NT scan should be done by someone who is accredited by the Fetal Medicine Foundation. The list of practitioners is available on:

https://fetalmedicine.org/lists/map/certified/NT.

(The name "NT" refers to the measurement of the nuchal translucency thickness, a patch of fluid behind the fetal neck which is thickened in most fetuses with Down Syndrome.) If the early combination test demonstrates a lower than 1 in a 1000 risk, no further testing for Down Syndrome is recommended. If an intermediate risk is found, between 1 in 300 and 1 in a 1000, the possibilities would include a diagnostic test or further screening with an extended NT scan by an expert or cell-free DNA (NIPT) testing. If it indicates a high risk, more than 1 in 300, a diagnostic test such as amniocentesis or chorionic villus sample or NIPT is offered or referral to an expert. The early combination test has a sensitivity of 85% for Down Syndrome and 5% false positive rate.

Alternative screening tests

Biochemical Screening only, entails the blood test for PAPP-A and free b-HCG which is done between 8-13 weeks as part of the early combination test. Ultrasound examination is still needed to determine the pregnancy duration accurately and exclude problems such as a major fetal abnormality, multiple pregnancy or miscarriage. This has a 60% sensitivity for Down Syndrome and a 5% false positive rate.

Simple NT scan only, without biochemical screening has a 75% sensitivity for Down Syndrome and a 5% false positive rate.

Extended NT scan, which entails a similar procedure to the early combination screen, but with a more detailed ultrasound evaluation including evaluation of the nuchal translucency and nasal bone, as well as the fetal blood flow. There are fewer practitioners accredited for this. (https://fetalmedicine.org/lists/map/certified/DV).

The sensitivity for Down Syndrome is 90% and the false positive rate 2.5%.

Cell-free DNA testing, also called NIPT (non-invasive prenatal testing) performed on a maternal blood sample. The test is very accurate but currently very expensive. It can be performed any time after 10 weeks, but also requires an ultrasound examination beforehand to exclude problems such as a major fetal abnormality, multiple pregnancy or miscarriage. This has a sensitivity for Down Syndrome of more than 99% and a more than 1% false positive.

Diagnostic test

A chorionic villus sample (CVS) can be done to confirm or refute the presence of Down Syndrome, other chromosomal anomalies or specific genetic conditions. It entails aspirating cells from the placenta by putting a needle under ultrasound guidance into the womb. There is a risk of causing a miscarriage of around 1 in 200.

2nd Trimester

Maternal serum Alpha-Feto-Protein (MS-AFP)

MS-AFP is a blood test done between 15 and 19 weeks. It is advisable to help detect fetal spina bifida (open spine), unless the practitioner who performs the anatomy scan is a well-trained expert. MS-AFP can detect 60% of fetuses with spina bifida with a 5% false positive rate.

Screening for Down Syndrome

Screening for Down Syndrome is less accurate in the second than in the first trimester (with the exception of cell-free DNA testing which is the same whenever it is done). If Down Syndrome screening was not done in the first trimester, it can be done by means of:

1. Second trimester biochemical screening (a blood sample to test AFP, HCG and oestriol which is done between 15 and 19 weeks). This has a 65% sensitivity and a 5% false positive rate.

2. Anatomy scan, which has a 40% sensitivity and a 5% false positive rate, or

3. Genetic sonogram, a more detailed ultrasound examination to examine the ultrasound markers of a fetal chromosomal abnormality. This has a 75% sensitivity and a 10% false positive rate.

4.Cell-free DNA testing (NIPT). This has a sensitivity of more than 99% and a false positive rate of less 1%.

Anatomy Scan (fetal anatomical survey)

The main aim is to detect fetuses at risk of physical problems. Other benefits include detecting fetuses at risk of a chromosomal abnormality (if this had not been done in the first trimester) and detecting pregnancies at risk of pre-term delivery or growth restriction. Not all abnormalities can be detected. As a general rule of humb, about 50% of serious abnormalities are detected by this ultrasound examination (and 50% not). Some would not be detected because it is not easily seen on ultrasound and some because the conditions only develop later in pregnancy.

Factors which influence the accuracy of this ultrasound examination includes the training and expertise of the operator, the quality of the ultrasound equipment, and factors which influence the ability to see the fetus on ultrasound, such as the mother's build, abdominal wall scarring, position of the fetus (or fetuses), pregnancy duration, amount of amniotic fluid and position of the placenta.

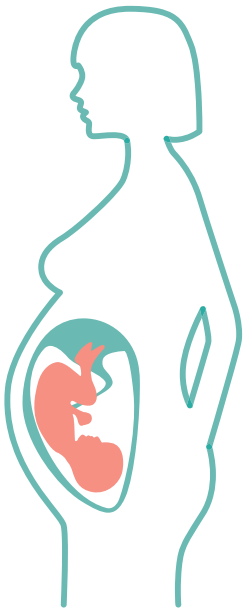
Specialised Fetal Assessment

This is a more detailed ultrasound evaluation which is performed by a fetal specialist, with special training and expertise in diagnostic ultrasound. This is usually done where prior tests (screen ing tests or factors in the history) suggest a high likelihood of a fetal problem.

Diagnostic Test

Fetal cells for genetic testing, can be obtained from the amniotic fluid by inserting a needle under ultrasound guidance into the amniotic cavity (amniocentesis) or from fetal blood by inserting a needle under ultrasound guidance into the umbilical cord (cordocentesis). These tests have a 1 in 200 and 1 in 100 risk of causing a miscarriage, respectively.

3rd Trimester

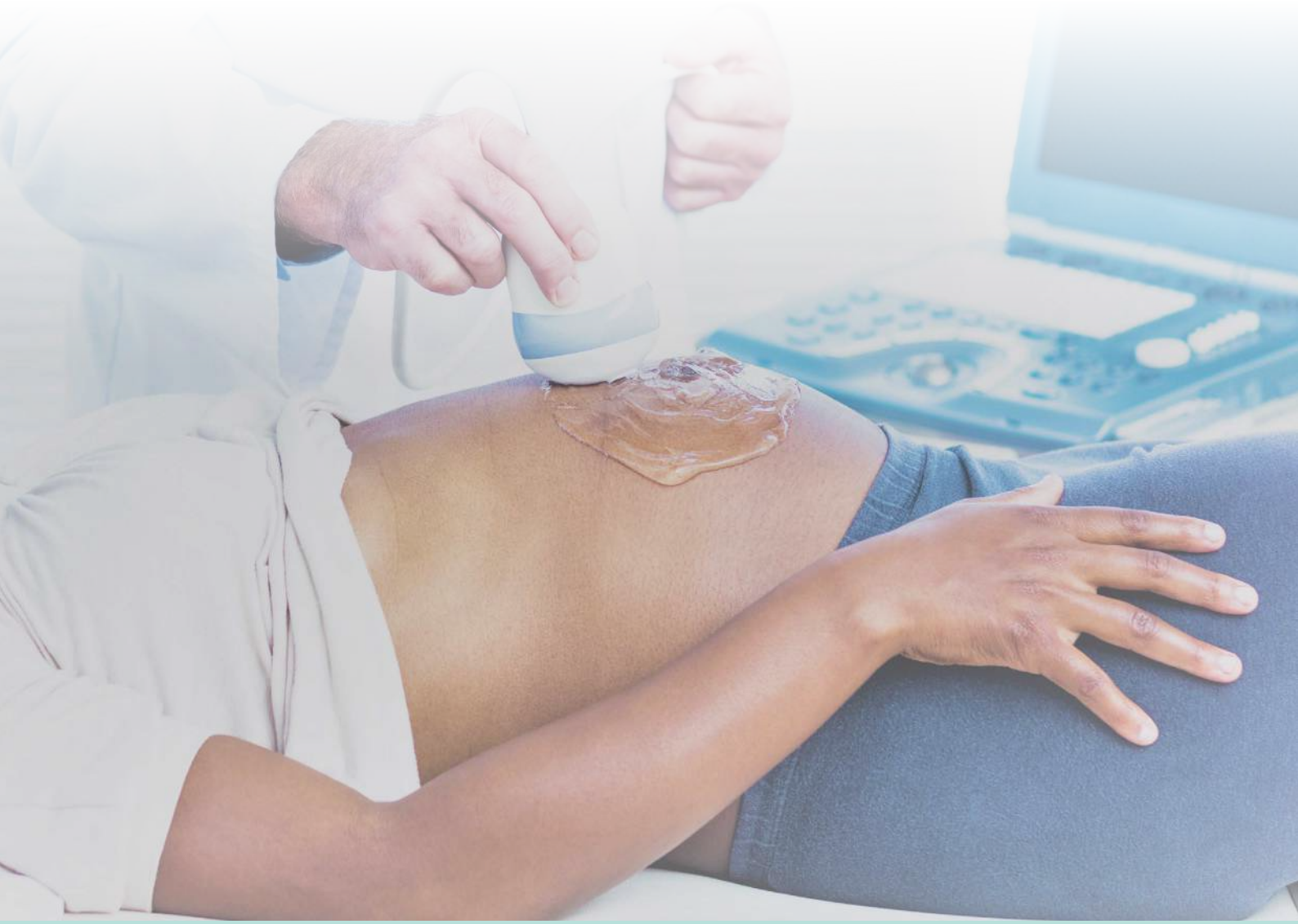


Screening Ultrasound ("growth scan")

The main aim of the growth scan is to detect fetuses that are not growing well. Other benefits include structural fetal assessment (to detect physical problems that only develop late in the pregnancy). The growth scan would usually be done by your obstetrician.

Specialised Fetal Assessment

This is a more detailed ultrasound evaluation which is performed by a fetal specialist, with special training and expertise in diagnostic ultrasound. Common reasons are to determine the cause of problems developing late in pregnancy (such as decreased fetal growth or increased amniotic fluid volume), or to evaluate a pregnancy at risk for fetal abnormalities (due to factors such as the family history, maternal medical problems or adverse events in the pregnancy).



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