



Diagnostic Procedures for your Baby

A close-up photograph of a pregnant woman's bare midsection. Two hands, likely belonging to a partner or healthcare provider, are gently resting on her belly. The woman is wearing a grey maternity top. The background is softly blurred, showing a white wall and a wooden headboard.

Diagnostic Procedures for your Baby

Routinely, all women are offered screening for abnormality in pregnancy to determine their risk of having a baby with a structural abnormality or genetic disorder. This is usually via methods that are non-invasive to the pregnancy, like ultrasound or blood taking from the mother. However, some women may be offered an invasive 'diagnostic test' which provides more certainty about whether their child has a particular condition. This could be offered following a high-risk result obtained on a prior screening test, or a structural difference that has been detected in your baby on ultrasound. Knowing about whether a baby has a particular condition may be important and valuable information to families.

Direct information about a baby's genetic makeup or infection status can be obtained through invasive diagnostic procedures, which carry a small risk to the pregnancy. These procedures are performed by trained specialists and aim to provide the most comprehensive information available. Your doctor or geneticist will discuss with you the risks and benefits of having the procedure done to help you make an informed decision for you and your family.

This brochure is designed to help you better understand the options, the benefits of diagnostic testing and what to expect during the process.

+ Who should consider an invasive procedure?

Invasive diagnostic testing is recommended for women who:

- Have a suspected foetal infection
- Have high-risk screening results
- Have a family history of genetic conditions
- Have a previous child affected by a genetic condition
- Have a baby with structural abnormalities detected on ultrasound

There are generally three main methods of obtaining a sample directly from the pregnancy. These include amniocentesis, chorionic villus sampling, and foetal blood sampling.





Amniocentesis

Amniocentesis involves collecting a small sample of amniotic fluid which contains foetal cells that reflect the baby's health and genetic makeup. This test is typically offered after 15 weeks of pregnancy.

How is it performed?

A thin needle is inserted into the uterus through the abdomen under ultrasound guidance to take a small amount of amniotic fluid (the fluid around the baby). Most women feel a slight pressure or pain during the procedure. It is described as being similar to taking a blood test.

Will the procedure hurt the foetus?

Due to continual use of the ultrasound during the procedure, injury to the foetus is rare. Care is taken to avoid placing the needle near the foetus.

What are the risks involved?

The risk of a miscarriage following an amniocentesis is about 0.3% to 0.5%. Consult a doctor or visit the emergency department if there is persistent abdominal pain, vaginal bleeding or leaking of fluids after the procedure.

How long does it take to obtain the results?

The process of amniocentesis takes about 5 to 10 minutes. The results will be available in 1 to 3 weeks depending on the test chosen.

Chorionic Villus Sampling (CVS)

CVS involves collecting a small sample of tissue from the placenta, which shares the baby's genetic makeup. The test is typically offered between 11 and 13 weeks of pregnancy, making it an option for early diagnosis.

How is it performed?

Local anaesthesia is administered to the skin and subcutaneous tissue. A thin needle is inserted through the abdomen or a small tube through the cervix under ultrasound guidance to collect a tiny sample of placental tissue. Most women feel mild cramping or discomfort during the procedure.

Will the procedure hurt the foetus?

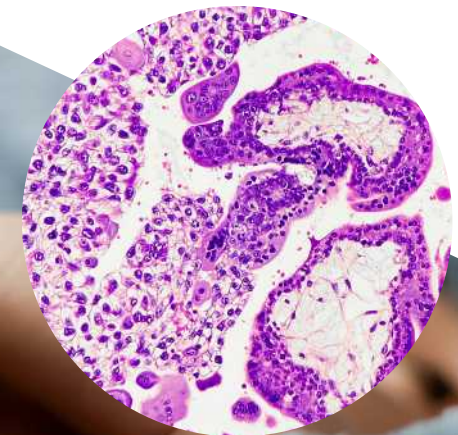
Ultrasound guidance ensures the needle or tube avoids the baby. Injury to the foetus is rare.

What are the risks involved?

The risk of miscarriage following CVS is about 0.5%. Consult a doctor or visit the emergency department if there is persistent abdominal pain, vaginal bleeding or leaking of fluids after the procedure.

How long does it take to obtain the results?

The process of CVS takes about 5 to 10 minutes. The results will be available in 1 to 3 weeks depending on the test chosen.



Foetal Blood Sampling (FBS)

FBS involves taking a small sample of the baby's blood from the umbilical cord. The procedure is usually offered between 18 and 23 weeks of pregnancy and is generally reserved for cases where other tests are inconclusive or when doctors need to check for blood disorders or infections.

Who should consider this test?

FBS is recommended when:

- Previous tests were unclear or inconclusive.
- There is a need to check for foetal infections or blood conditions.

How is it performed?

Local anaesthesia is given during the procedure to reduce the discomfort. A thin needle is inserted through the abdomen under ultrasound guidance into the umbilical cord to collect a small blood sample. Most women feel mild cramping or pain during the procedure.

Will the procedure hurt the foetus?

Ultrasound guidance ensures the needle is placed safely. Injury to the foetus is rare.

What are the risks involved?

The risk of miscarriage is around 1% to 1.5%. Consult a doctor or visit the emergency department if there is persistent abdominal pain, vaginal bleeding or leaking of fluids after the procedure.

How long does it take to obtain the results?

Results are available within 5 days, depending on what is being tested.

What can be detected from the samples obtained?

The sample obtained from the amniocentesis or chorionic villus sampling may be sent for one or more tests which can detect the following:

- Chromosomal abnormalities caused by the lack or addition of a chromosome, such as Down syndrome.
- Conditions involving gene deletions like Spinal Muscular Atrophy (SMA).
- Certain inherited disorders such as thalassaemia, haemophilia and cystic fibrosis.
- Certain foetal infections like cytomegalovirus (CMV), toxoplasmosis and parvovirus.

Additionally, foetal blood sampling can directly detect foetal anaemia (low blood count) and thrombocytopenia (low platelets).



What happens if the tests indicate an abnormality in the foetus?

If an abnormality is detected, a specialist will provide a detailed explanation of the findings and discuss what they mean for you and your baby. You will be offered clear guidance and support in considering your options.



About the National University Centre for Women and Children

National University Centre for Women and Children (NUWoC) is a national university specialist centre that aims to empower women, children and their families to lead healthier lives. We provide comprehensive medical and surgical services ranging from pre-conception to child and maternal health.

NUWoC comprises the Department of Obstetrics & Gynaecology (O&G) and Khoo Teck Puat – National University Children's Medical Institute (KTP-NUCMI) of National University Hospital. It focuses on the right-siting of appropriate services in the community and builds complementary services in National University Health System's (NUHS) centres of excellence – Ng Teng Fong General Hospital and Alexandra Hospital.

Through a generous gift from the Estate of Khoo Teck Puat, KTP-NUCMI established an integrated outpatient facility with medical, diagnostic and rehabilitation services for children. We are also the only public specialist centre in Singapore that offers paediatric kidney and liver transplant programmes.

For more information about us, visit www.nuh.com.sg/NUWoC

Emergency (24-hr)

Location NUH Main Building, Zone F, Level 1
Contact +65 6772 5000

Women's Clinic – Emerald/Ruby

Location NUH Kent Ridge Wing, Zone D, Level 3, D03-06
Operating Hours 8.30am – 6pm (Mon to Thu), 8.30am – 5.30pm (Fri), 8.30am – 12.30pm (Sat)
Email appointment@nuhs.edu.sg

Women's Clinic – Sapphire

Location NUH Kent Ridge Wing, Zone D, Level 3, D03-03
Operating Hours 8.30am – 6pm (Mon to Thu), 8.30am – 5.30pm (Fri), 8.30am – 12.30pm (Sat)
Email appointment@nuhs.edu.sg

Women's Clinic – Jade [Former Clinic G]

Location NUH Kent Ridge Wing, Zone C, Level 3, C03-02
Operating Hours 8.30am – 6pm (Mon to Thu), 8.30am – 5.30pm (Fri)
Email appointment@nuhs.edu.sg

Fetal Care Centre

Location NUH Kent Ridge Wing, Zone D, Level 3, D03-04
Operating Hours 8am – 5.30pm (Mon to Thu), 8am – 5pm (Fri)
Email appointment@nuhs.edu.sg

Clinic for Human Reproduction

Location NUH Kent Ridge Wing, Zone D, Level 4, D04-02
Operating Hours 8am – 5pm (Mon to Fri), 8.30am – 12.30pm (Sat)

NUWoC Women's Clinic @ JMC

Location Jurong Medical Centre, Level 2
Operating Hours 8.50am – 11.30pm (Tue & Thu), 2pm – 5pm (Mon & Fri)

Jurong Clinic for Women

Location 130 Jurong Gateway, #01-231
Operating Hours 9am – 12pm, 2pm – 5pm (Mon to Sat), 6pm – 9pm (Mon to Thu)
General Enquiry +65 6665 4277
Appointment Line +65 6908 2222
Email appointment@nuhs.edu.sg

NUWoC Women's Clinic @ NTFGH

Location Ng Teng Fong General Hospital, Tower A – Specialist Outpatient Clinics, Level 7
Operating Hours 8.30am – 5.30pm (Mon to Fri), 8.30am – 12.30pm (Sat)
Appointment Line +65 6908 2222
Email appointment@nuhs.edu.sg

Our Patient Care Institutions

National University Hospital

Ng Teng Fong General Hospital

Alexandra Hospital

Tengah General and Community Hospital (upcoming)

Jurong Community Hospital

National University Polyclinics

Jurong Medical Centre

National University Cancer Institute, Singapore

National University Heart Centre, Singapore

National University Centre for Oral Health, Singapore

NUHS Diagnostics

NUHS Pharmacy



Scan the QR code for more information on our patient care institutions.

OneNUHS Hotline: (65) 6908 2222

OneNUHS General Enquiries: contactus@nuhs.edu.sg

OneNUHS Appointments: appointment@nuhs.edu.sg

www.nuhs.edu.sg

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Information is correct at time of printing [July 2026] and subject to revision without prior notice.