

A guide to tests and investigations

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for uncomplicated pregnancies



The timing and will vary betwe The weeks indic a rough guide.	number of vi en health ser ated here are	sits vices. e just	-1 1 AE
ROUGH GUIDE	VISIT	Pg	The tests
7-12	1	10 11 12 13 14 14 15 19	Recommended tests for discussion:Blood group, Rh and antibodiesFull Blood ExaminationRubellaHIVHep B/Hep C if indicatedSyphilisUrine test (MSU) for asymptomatic bacteriuriaTest to be offered at this visit:Serum Screening (Down syndrome screening test) will be offered.If you agree they will go ahead with the blood and urine tests at this visit and organise serum screening (done 14-20 weeks). They may do a physical examination this visit, including blood pressure (BP).Discuss 18-20 week ultrasound scan for anomalies
12-20	2	19 22/24	 Discuss results Complete any unfinished tests or physical exam Serum screening test Discuss 18-20 week ultrasound scan for anomalies Measure BP, check uterine size
18-22	3	20	 Complete any unfinished tests eg serum screening Discuss any results Measure BP, check uterine size Discuss blood sugar test for next visit
26-28	4	23	 Discuss any results Complete blood sugar test Measure BP, check baby's heartbeat, size and position If Rh negative, FBE & Rh antibodies, Anti-D injection (28-30 weeks)
30-32	5		 Discuss any results Measure BP, check baby's movements, heartbeat, size and position
33-36	6		 Measure BP, check baby's movements, heartbeat, size and position FBE If Rh negative, check Rh antibodies, Anti-D injection
36-38	7		 Measure BP, check baby's movements, heartbeat, size and position Group B Streptococcus Screen
38-40	89		 Measure BP, check baby's movements, heartbeat, size and position Discuss signs of labour
40-42	1011		 Measure BP, check baby's movements, heartbeat, size and position Discuss fetal monitoring, CTG and ultrasound if baby not delivered Discuss induction Possible vaginal examination
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This information is based on research¹ to help you make choices about tests in an uncomplicated pregnancy

During pregnancy many tests and examinations will be discussed with you. The choices and decisions you have to make can be confusing. We will try to make it easier for you.

This booklet aims to help you understand:

- How and why routine tests are done²;
- What happens next when something is found; and
- How to read your pregnancy record (look for this symbol:) so you feel better prepared to ask questions and make decisions about what is best for you and your baby. Common medical terms are on page 30.

How to make the best use of this booklet:

- Read it before your first visit
- Take it to all of your visits and refresh your memory about what to expect at each particular visit by reading the relevant section



Write down any questions you have and discuss anything you are not sure about with your midwife or doctor

Most tests have good evidence behind them but some don't

Most routine tests have good science behind them – it is a very good idea to have them. Some we are not so sure about. You should know about these tests even though you may not want to hear that we are unsure what is best. Your midwife or doctor should:

- give you this written information as early as possible
- offer you tests. If you choose not to have a test, ask your doctor or midwife about possible consequences
- document your choice to have a test or not to have a test in your record
- discuss tests during appointments
- complete tests only when you feel informed enough to say "go ahead".

Scientific research constantly moves on and new tests, methods and connections are discovered. This can mean that care will change between pregnancies. Be careful where you get information from. Books and websites written for consumers may not be accurate or contain the latest research. This book is based on the 3Centres Consensus Guidelines on Antenatal Care for midwives and doctors published in 2001 by Monash Medical Centre. Mercy Hospital for Women and The Royal Women's Hospital, Melbourne. Senior obstetricians and midwives looked at the best available evidence for pregnancy care, debated the issues and came up with 17 sets of guidelines. If interested, check out www.3centres.com.au or Having a Baby in Victoria http://maternity.vic.gov.au



If you have been pregnant before you may have had tests that are not in here. There are 3 reasons they are not discussed in this book: because they have proven inaccurate, OR unnecessary in uncomplicated pregnancies, OR simply that we haven't written any guidelines yet.

Most tests are done early in pregnancy

Most tests are done at your 1st or 2nd visit. There is a lot to cover so first appointments are longer. Your midwife or doctor will need to know about your:

- contact details, age, ethnic background and other statistics
- current symptoms and general health (called a medical history)
- previous pregnancies (called an obstetric history)
- family and partner's medical histories and
- Iffestyle especially smoking, drinking behaviours and recreational drug use, your work and home environment and your family situation.

This is because your answers provide clues about this pregnancy - what to expect and what warning signs to look for. This information combined with test results helps decisions about '**what next**?' It is confidential information. However most of it is put in your pregnancy record (called an antenatal record) and you carry a copy. If you are concerned about someone seeing any of the information in your copy, please let your midwife or doctor know. There are ways around this situation. There are other notes kept apart from your hand held record. Hospitals have different ways of recording your history and care. They all give you a unique record number called your UR number which lets them keep track of all your records.

If you smoke you will be offered advice and assistance to quit or cut down. You will be asked at each visit about your smoking because cutting down or quitting at any stage of your pregnancy will be beneficial to your baby's health. When you smoke your baby smokes with you because carbon monoxide, nicotine and other poisons cross the placenta.

Blood tests

At your first visit your midwife or doctor will ask if they can collect a blood sample, after discussing the tests with you. There are no risks to the baby and it may be a bit uncomfortable but it shouldn't hurt you. Tell the person taking your blood if you are nervous about needles or injections of any kind – there are things they can do to help.

Urine tests

Urine testing may be done at different times during pregnancy for a specific reason.³ You are asked to collect a fresh sample of your urine for testing.

Vaginal swabs

A swab may be done at different times during your pregnancy. A vaginal swab will show if you have bacteria or viruses present. You can do it or if you prefer, your midwife or doctor can do it for you.



Ultrasound scans

During pregnancy your midwife or doctor may suggest an ultrasound scan. Ultrasound has many uses. It uses sound waves and echoes to create pictures of what is happening in your body. It is more accurate for some uses than others and has to be done by an expert in pregnancy scans for best results. There are no risks to the baby.

In early and mid pregnancy routine ultrasound is mostly used to check:

- position of placenta in uterus
- the baby's:
- form; are heart, kidneys, brain and other parts properly formed?
- risk of a genetic or chromosomal abnormality such as Down syndrome
- size; to determine your due date (called gestational age).

Doppler ultrasound is a different type of ultrasound used to listen to your baby's heartbeat. Ultrasound is very useful but it will not always be able to detect fetal abnormalities.

Physical examinations

At most visits your midwife or doctor will feel your abdomen to check the size of the baby. Later in the pregnancy the baby's position is important. You will be offered the opportunity to listen to your baby's heartbeat later on too - for your enjoyment and reassurance. Generally speaking, vaginal examinations are not done unless there is a special need. If you haven't had a smear test (for cervical cancer) in more than 2 years your doctor may ask to do one at your first visit. The 3Centres haven't written guidelines on whether vaginal examinations or pap smears are worthwhile to do in early pregnancy.



In the past women usually had their urine tested with a paper reagent strip at every visit for sugar and protein to pick up signs of a condition called preeclampsia. We know that this test isn't very accurate. Other tests (such as measuring your blood pressure) give more reliable information. The urine test you have at your first visit isn't for preeclampsia but for presence of bacteria. You may also have your urine tested if your blood pressure is raised, to check the functioning of your kidneys or for other clinical reasons which your midwife or doctor will explain.



Ask questions too

Each women has different needs and questions. If you think of anything that might possibly affect you or the baby ask your midwife or doctor about it. They may be able to help a lot.

- Why do I need to have this test?
- What does it involve?
- Will it hurt?
- What will happen next if the test shows something isn't quite right?
- Are there any potential risks, drawbacks or harms in having this test?
- What are the potential benefits or advantages of having this test?
- When will I get the results?
- How will I find out?
- Does my age or ethnic background impact the detection rate for this condition or the chance the result is wrong (that is, a false positive or false negative result)?

If you are unsure about or disagree with the advice you are given you can ask: "Are there any other options for testing or treating this condition?" or "Can I confirm this with someone else before I decide?". Don't feel awkward - this is usually very straightforward to organise



Put your 'odds' in context, if you are Australian

	Level of risk	Your everyday risk of	Your pregnancy risk of Having Gestational diabetes is between 3-8% (3 to 8 in 100) ⁽¹⁾ Having a urinary tract infection without symptoms is 5 -10% (5 to 10 in 100) ⁽⁵⁾ Your baby being born with low birth weight - under 2500gms - is 7% (7 in 100) ⁽²⁾ Having a very big baby – over 4000gms is 12% (12 in 100). ⁽²⁾ Getting preeclampsia or having hypertension is 5-10% of all pregnancies in Australia (5 to 10 in 100) ⁽¹⁾⁽³⁾ Being a vaginal carrier of Group B Streptococcus (GBS) is 12-15 % (12 to 15 in 100) ⁽¹⁾		
veryday Risks versus	High more than 1 in 100	A bad hair day for the average person is 30% or 30 in 100. (For some lucky individuals it may be as low as 1% or 1 in 100) The chance of a rainy day in Melbourne (averaged across the year) is 40% or 40 out of 100 ⁽⁸⁾			
is Pregnancy Risks	Moderate 1 in 100 to 1 in 1000	Dying in any given year is 1 in 200 if you smoke 10 or more cigarettes a day# Risk of death by any cause by 40 years is 1 in 1000*	Having HIV if you or yo history of injecting dru (1 in 100) (figures relate and syringe programs) ⁽² Having a fetus detected syndrome in early preg about 1 in 355 ⁽²⁾ The number of babies be syndrome is 1 in 996. ⁽²⁾ T baby with Down syndro maternal age increases. For example, at age: <u>20-24</u> the risk is 1 in 1474 <u>25 years</u> the risk is 1 in 1350 <u>30 years</u> the risk is about 1 in 900 Having a baby born with is 0.1-0.4% (1 to <u>4 in 10</u>	bur partner have a gs is less than 1% to those in needle of twith Down nancy is estimated for alive with Down the risk of having a me increases as <u>35 years</u> the risk is 1 in 384 <u>37 years</u> the risk is 1 in 242 <u>40 years</u> the risk is 1 in 112 <u>45 years</u> the risk is 1 in 28 ⁽⁷⁾ th GBS disease (sepsis) 00) ⁽¹⁾	
	Low 1 in 1000 to 1 in 10 000		Having syphilis is 1 in 2000 pregnancies ⁽⁶⁾		
	Very low 1 in 10 000 to 1 in 100 000	Dying in a car crash this year 1 in 10,000* Winning Tattslotto <i>the odds</i> are so low they are off the table!	3.PEARLS Pre-eclampsia Research Laboratories, <u>www.preeclampsia.org.au</u> <u>/expert/risk.htm</u> 4. HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia, Annual Surveillance	Fact Sheets for Health Professionals, http://www.nevdgp.org.au 7. www.genetics.com.au/genetics 2004/ad/flactsheets/j527.pdf This website is produced by the Centre for Genetics Education, University of Sydney, NSW. Risk figures sourced from Cuckle HS, Waid NJ and Thompson SG (1987) Estimating a woman's risk of having a pregnancy associated with Down syndrome using her age and serum alphafetoprotein level. Br J Obs Gyn, 94, 387-402 8. "The great Australian weather debate", http://members.optusnet .com.au	
	Note: Descriptions in the Everyday risk column refer to the chance of an individual dying or having a condition in any one year.	# Estimates are based on British figures. Source: Calman, 1996, Cancer: cancer, science and society and the communication of risk;BMI, 313,799-802 "Austrolian estimates as quoted in the Age, Good Weekend 1. <u>http://www.betterhealthchannel. vic.gov.au</u> 2. Victorian estimates from the Perinatal Data Collection Unit, Deopartment of Human Services. Victoria	Report, 2003, National Centre in HIV Epidemiology and Clinical Research, <u>www.med.unsw.edu.</u> <u>auInchecr/</u> 5.Smaill F. Antibiotics for asymptomatic bacteriuria in pregnancy (Cochrane Review). In: The Cochrane Library, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd. 6. NorthEast Valley Division of Conversit Benetism Conversion		

Infections of the Newborn.



Most tests are done in the first 13 weeks of pregnancy (called the first trimester). These visits will:

- work out when your baby is due
- gather information that affects your pregnancy
- assess your health and your baby's health especially your risk of complications, and
- work out the type of care you want during pregnancy and birth.

At your first or second visit a doctor will examine you to make sure you are healthy for pregnancy and childbirth. There are no guidelines written on the most effective way to do a first physical or exactly what it should cover. It is likely to include taking your blood pressure, listening to heart and lungs, feeling your abdomen⁴,

weighing you and measuring your height.⁵ Your height and weight measurements will be used to calculate your Body Mass Index (BMI). The BMI is a guide to whether you are a healthy weight for your height. Your weight in kilograms is divided by your height in metres squared, (weight/height squared). If your BMI is well outside the normal range you will not be considered as 'low risk'. The examination **may** include a check of your breasts and/or a pap smear test to check for cervical cancer if you haven't had one for 2+ years.

As most tests are done in the first 13 weeks, it is important you attend for examination at the recommended times.

CHECK your pregnancy/antenatal record wherever you see this symbol. If you are not sure where or how test results are recorded ask your midwife or doctor.



Your midwife or doctor will check your baby's growth and position by feeling your abdomen. Later on they will offer you the chance to hear your baby's heartbeat. These checks are more important from the middle of your pregnancy.



If your pregnancy is uncomplicated 3Centres Guidelines do not recommend weighing you at every visit through pregnancy. This may surprise you. Once weight gain was thought to provide clues about your baby's health and growth but there is no good evidence for this - not to mention the fact that the scales are often unreliable! Weight gain is not a reliable indicator of your health (or how quickly you will return to your pre-pregnancy weight). If your midwife or doctor asks to weigh you after the booking visit, it is probably for another reason eg a research project or for anaesthetic risk. If they don't tell you, ask them why. If you are interested in your weight gain go ahead and weigh yourself but don't worry too much about what the scales say!

Blood Group Test

Your midwife or doctor needs to know your blood type. They also need to know if your blood has the Rhesus D factor. Most women are Rhesus D positive (85%) which does not cause any problems. If you don't have the Rhesus D factor (you are RhD negative) and your baby does (it is RhD positive) problems can occur. If you are Rhesus D negative there are some things you should be aware of.

Because we do not know your baby's blood type until it is born, we look after all Rhesus D negative mothers as if their baby was RhD positive. We do this because during pregnancy some of your baby's blood cells may enter your blood stream. Your immune system recognises these as being different to your red blood cells so your body then makes antibodies to destroy those cells. This is not a problem for you but if those antibodies cross to your baby they can damage your baby's blood cells.

The risk of this occurring is low but because it can be a serious problem we check during your pregnancy to make sure you have not developed any antibodies. If there is a time during your pregnancy when blood may cross into your blood stream such as if you have some bleeding you will be given an Anti-D injection to prevent antibodies developing.

What next?

Your midwife or doctor will record your blood group and Rhesus D factor on your antenatal record and tell you what it is. If you are Rhesus D positive you have nothing further to do.

If you are Rhesus D negative, your midwife or doctor will assume your baby is Rh positive and offer an Anti-D immunoglobin injection at your 26-28 week and your 34-36 week visits. You will have another injection after the birth of your baby if your baby is RhD positive.

Your blood group is recorded as A, B, AB,or O and your Rhesus D factor as positive (+) or negative (-)



Full Blood Examination (FBE)

A full blood examination (FBE) includes a a blood count test which counts the number and size of red blood cells (mean cell volume), white blood cells and platelets in your blood. Red blood cells contain haemoglobin (Hb) which carries oxygen and this gives blood its red colour. If you don't have enough you are anaemic.

A mean cell volume (MCV) test is a way to screen for a blood disorder called **thalassaemia**. Thalassaemia is an inherited disorder (genetic), so if you carry it, we will need to test the father of the baby as well. If both parents are carrying the gene there is a chance (25%) that your baby will be born with thalassaemia major. **Thalassaemia major** leads to severe anaemia and needs ongoing treatment.

What next?

If your anaemia is related to low iron, you may be offered dietary advice and iron tablets.

If your anaemia is not related to low iron, you will be offered a test for thalassaemia. The father of your baby may be asked to have a full blood examination.

CHECK your pregnancy/antenatal record wherever you see this symbol. If you are not sure where or how tests results are recorded ask your midwife or doctor.

Rubella

Rubella is another name for the German measles virus. It is really uncommon to get this infection when you are pregnant in Australia because most women born and raised here were immunised against it as children. But if you were not immunised and catch it for the first time in early pregnancy, your baby has a very high risk of being born with major problems.

What next?

If your blood test shows you are immune to rubella, there is nothing more to do. If you are not immune, discuss this with your doctor or midwife and you should be immunised after your baby is born. If you have recent rubella infection you will be offered further counselling.



CHECK your pregnancy/antenatal record.

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HIV/Aids Test

HIV is uncommon in Victoria but because we can help you and reduce the chance of passing it to your baby, we offer you testing. HIV is a virus that attacks your immune system, your body's defence against sickness. Over time it damages it so badly your body can't fight infections or cancers. A person has AIDS when their immune system is so weak that they develop a serious illness. HIV is passed from person to person through vaginal fluids, semen, blood or breast milk. About one baby in four (25%) will get the virus from a mother with HIV during pregnancy or birth. The risk of passing the virus to your baby is reduced to about one in twenty (5%) by taking special drugs during pregnancy, possibly giving birth by Caesarean section, bottle-feeding your baby and special drugs for your baby. So if you have it there is a lot that can be done to reduce the chance of your baby getting HIV. There is a lot that can be done to help you. Your midwife or doctor will talk you through the advantages and disadvantages of having the test and what a positive result might mean. Only after this discussion should you decide whether you want to be tested.

Positives (+)

For example the advantages of knowing your HIV status are:

- + You have peace of mind
- + You can greatly reduce the chance of the virus passing on to your baby or others
- + You can take better care of yourself
- + You will receive close medical attention and treatment.

Negatives (-)

On the other hand you may feel that:

- There is no need since you and your partner have not had sex with
- anyone else (though bear in mind that research from this part of the world shows that many married women who now have HIV thought they weren't at risk)
- You can't cope with finding out you are HIV positive while pregnant
- There may be social consequences. Your partner, friends or family may reject you or react badly if they know you are HIV positive.

What next?

If your test shows you are HIV positive your midwife or doctor will arrange for a further test to confirm the result and offer you further counselling to help you to decide what happens next. If you decide to continue the pregnancy you will be offered special medical care that includes drug therapy for you and eventually your baby and possibly birth by Caesarean section. You will be advised to bottlefeed your baby.

CHECK your pregnancy/antenatal record.

Hepatitis B Virus (Hep B) and Hepatitis C Virus (Hep C) Tests

"Hepatitis" means inflammation of the liver. Inflammation can cause scarring and can stop your liver working well. In pregnancy your midwife or doctor will discuss Hepatitis B (Hep B) and C (Hep C). Everyone is offered Hep B testing but you will only be offered Hep C testing if you have certain risk factors.

Hepatitis B virus can cause liver disease as you grow older. If you have it, you probably got it by direct contact with the blood of an infected person, from your mother as an infant or through having sex with an infected person without a condom. Without treatment, there is a high chance you will pass it on to your baby as you give birth. Most women who have Hepatitis B don't know they have it.

Hepatitis C virus also affects the liver. Very few people get seriously ill with this virus. Transmission occurs when your blood comes into contact with the blood of a person who has it - usually through a break in the skin. It is highly unusual for Hep C to be caught during sex. Only about 1 in 100 pregnant women will have it. About 4-8% (4 to 8 out of 100) of babies born to infected mothers will be infected with Hep C. The long term effects of this remain unknown.

You are considered to have an increased risk of Hep C if:

- You or your partner (past or present) shared drug preparation and injecting equipment
- You had a blood transfusion or received donated blood, organs or tissues (in Australia this risk is very low)
- > You've had a needlestick injury or handle blood in a health setting; and/or
- You have a tattoo, body piercing or other forms of skin penetration, eg some beauty therapies (in Australia this risk is very low)
- Your mother or partner had Hep C.

Your midwife or doctor will offer you Hep C testing. Or you can ask to have it. They will check when they take your history.

Positives (+)

The advantages of knowing your Hep C status are:

+ You can take better care of yourself during and after pregnancy.

Negatives (-)

- There is no vaccine for Hep C or treatments you can take during pregnancy but there are options for treatment after you have given birth.

What next?

It is recommended that all babies are vaccinated against Hep B. This will be discussed with you during your pregnancy.

Hepatitis B If you have Hep B your baby's chance of infection can be reduced by a course of Hep B vaccine and immunoglobulin. Your midwife or doctor will arrange their first dose of Hep B vaccine and immunoglobulin soon after your baby is born. Your GP or other health professional, eg. local council, gives all babies further doses of vaccine when they are 2 months, 4 months and 12 months old.

Hepatitis C The long term effects of Hepatitis C infection in children are currently being investigated.

) Syphilis Test

Syphilis is a sexually transmitted disease that is very rare in Victoria. However the consequences of having it are serious for your baby so we recommend the test. You may have no obvious symptoms so you may not know you have it. It can cross the placenta and infect the baby. Early treatment can prevent most problems. If it is not treated, 40% of infected babies will die, and 40% will have birth defects.

What next?

If you have syphilis, you will be offered counselling and treated immediately with antibiotics. This will prevent most problems for your baby.

Urinary Tract Infection Test (Asymptomatic Bacteriuria Test)

Pain or burning when you go to the toilet, or wanting to go all the time are symptoms of a urinary tract infection. But some infections don't have symptoms. Asymptomatic bacteriuria is one of these. Those words simply mean "bacteria in your urine that cause no symptoms". It may be a problem for a baby because it can develop into an infection and may cause **preterm labour** (labour before 37 weeks) and low birth weight babies. Having a baby preterm or a low birth weight baby means your baby is not likely to be as healthy initially as if it was born after 37 weeks.

The test recommended for asymptomatic bacteriuria involves a mid stream urine (MSU) test where a sample is tested for different things. This is usually done at your first visit. You collect it while waiting and will get instructions on how to do it. Your midwife or doctor will send the sample to a lab for testing.

What next?

If you have the bacteria with no symptoms you will be given antibiotics. Later on in your pregnancy you will have another MSU to check that the bacteria have gone. If you have symptoms you will be given antibiotics immediately.



CHECK your pregnancy/antenatal record.

Tests for Down syndrome and other disorders

At your first visit you will be **offered** a screening test for Down syndrome and other disorders. Screening tests such as Maternal Serum Screening (MSS), give parents information to help them decide if they want to have diagnostic testing. These tests do not tell you if your baby has the condition or not, only about the chance or risk. If your result says you are more likely, you can go on to have a diagnostic test.

Down syndrome is caused by a having an extra chromosome (Trisomy 21) and is the single most common known cause of intellectual disability in our community. In Victoria about 1 baby in 996 is born alive with Down syndrome. If you are older your risk is greater than if you are younger. After 15 weeks, Maternal Serum Screening can also detect whether you are at higher risk of having a baby with a neural tube defect including Spina Bifida or a condition called Trisomy 18. For some parents the possibility of raising a baby with a disability is something they feel they could not do. Others feel they could (or should). The issues are complicated and choices can be very difficult.

As with other screening tests your midwife or doctor should cover both the positives and negatives of the tests without trying to influence your decision for or against. Just because we have a test available doesn't automatically mean you should be tested⁶.

The 3 Centres Guidelines recommend that all women are offered Maternal Serum Screening at their first visit and, if they choose to, have the test at their next visit (between 14 and 20 weeks). Maternal Serum Screening measures different hormones produced by the placenta and baby which can be detected

in your blood. Variations in hormone levels are markers for Down syndrome and other defects such as Trisomy 18 and neural tube defects.

If you want Maternal Serum Screening, you will be weighed when your blood is taken – your weight is needed to interpret the results.

Maternal Serum Screening detects 7 out of 10 or (70%) of babies with Down syndrome.



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Nuchal translucency

An ultrasound performed at 11-13 weeks (called a Nuchal Test or Nuchal Translucency Screen) can take measurements of the fold at the back of the baby's neck and can be used to estimate the risk of Down syndrome and Trisomy 18. This test will detect 8 out of 10 (80%) of babies with these problems. This test is not routinely available and may have to be arranged privately through your GP. There will be out of pocket costs.

First Trimester Combined Screen

This test combines the results of a blood test taken around 10 weeks and ultrasound at 11-13 weeks. It can detect 9 out of 10 or (90%) babies with Down syndrome. This test also has to be arranged privately through a GP and will involve some expense.

You are considered "at higher risk" of having a baby with Down syndrome if your risk factor is equal to or greater than 1 in 250, eg 1 in 200, 1 in 100.

Positives (+)

- None of these tests harms the baby or increases your risk of miscarriage
- Screening tests give you a result on which to choose diagnostic testing

 or not.
- + Serum Maternal Screening tests detect 7 out of 10 babies with Down syndrome
- Nuchal Translucency can detect 8 out of 10 babies with Down Syndrome or Trisomy 18.
- First Trimester Combined Screening can detect 9 out of 10 babies with Down syndrome



You can discuss all the options with your midwife or doctor if you want to find out more. It is best to choose one of the screening methods (Maternal Serum Screening, Nuchal Translucency or First Trimester Combined Screen).

Negatives (-)

- The process may make you very anxious
- These tests do not tell you if you have a baby with Down syndrome
- You might be told "Your risk is low", but you could still have a baby with Down syndrome.
- 1 in 20 women who have Maternal Serum Screening (5%) will be told, "You have a high risk of having a baby with Down syndrome" but for most of these women (about 39 out of 40) diagnostic (amniocentesis) testing will show they are not having a baby with Down syndrome
- The detection rates vary with your age eg a 20 year old has only a 30% chance the test will detect a baby with Down syndrome. A 30 year old has a 50% chance. A 40 year old has a 90% chance.

What next?

You may be notified of your result within two weeks. (Some health sevices adopt a 'no news is good news' approach and only notify you if you are at increased risk.) If you have an increased risk of having a baby with Down syndrome Trisomy 18 or a neural tube defect (1 in 250), you will be offered further counselling and diagnostic testing as soon as possible.

You may be offered Chorion Villus Sampling (CVS) if you are between 11 and 13 weeks pregnant. This test carries a risk of miscarriage of about one in one hundred. If you are more than 15 weeks pregnant you will be offered an amniocentesis. Amniocentesis also has a risk of miscarriage. One woman in every two hundred who has the test will miscarry after the test. Diagnostic test results usually take two weeks.

Diagnostic testing has more issues to work through and a genetic counsellor can help you. The counsellor's role is to help you and your partner clarify your feelings, values and beliefs about diagnostic testing and what it might lead to. The tests can tell you if you have a baby with Down syndrome but not if the Down syndrome is mild or severe. Are you prepared to have a diagnostic test that has extra risk of miscarriage? Are you prepared to raise a child with Down syndrome or have an abortion? The counsellor will help you answer these questions and refer you to support groups and resources. They will not tell you what to do.

CHECK your pregnancy/antenatal record.

More information about the screening and diagnostic tests is available at: <u>www.genetichealthvic.net.au/pages/search.html</u> Enter the name of the test you are interested in.



Weeks 14-26

There are far fewer tests through the middle part of pregnancy than at the start. Visits in the middle part of pregnancy monitor your baby's growth, your well being and signs of preeclampsia.

and the second

18-20 week scan for abnormalities

When you have your booking visit your midwife or doctor will ask if you want an ultrasound scan between 18 and 20 weeks. Some health services may require you to organise the scan through your GP.

Positives (+)

- + it does not harm your baby or increase your risk of miscarriage
- + About half of all abnormalities will be identified
- + You get to see your baby on screen
- + It can be a bonding experience.



Negatives (-)

- You may feel anxious
- There are some abnormalities which ultrasound cannot detect
- The quality of the scan depends on a number of factors including the position of your baby, your size, the skill of the person doing it and the abnormalities they are looking for – some are very hard to pick up. For best results for pregnancy scans check the operator is experienced in pregnancy ultrasounds.
- You may have to pay.

What next?

If the scan suggests your baby has an abnormality, they may ask you to have another scan (perhaps with a different person) or offer you further tests to confirm the diagnosis. If further tests confirm a problem, you will be offered counselling. You may be referred to a specialist unit to care for you.

CHECK your pregnancy/antenatal record under "U.S"

) Blood sugar tests for gestational diabetes

You will be offered a test for gestational diabetes (GDM) prior to the visit that falls between 24 and 28 weeks. The tests are done at the 24-28 week visit. You have a higher risk of having GDM and testing would be recommended if you:

- are overweight
- are from certain Ethnic backgrounds
- are older than 30 years
- have a family history of diabetes
- have a past history of GDM
- have sugar in your urine
- have had previous pregnancy problems.

One test for GDM is called the oral glucose challenge test (called an OGCT). Glucose is sugar and this test shows how much sugar your body can break down in one hour. You drink a liquid that contains a certain amount of glucose. After an hour your blood is tested. If your blood sugar level is above a certain level then you go on to have the next test (called an oral glucose tolerance test OGTT). Some hospitals do not do an OGCT but go straight to an OGTT.

Positives (+)

Negatives (-)

- This is the easiest test to have of the diabetes tests – it takes less time than an OGTT and you can eat beforehand
- It is not a very accurate screening test
- The sugary drink can make you feel sick
- + your blood is only taken once.
- You may still have to have an OGTT

Another test for diabetes is called the 2-hour glucose tolerance test (OGTT). About 75% of women who have a high OGCT go on to have a normal OGTT. This test is like the other one and shows how much sugar your body can break down in two hours. You do not eat for 8 hours before you have the first blood test, you drink the liquid and then your blood is tested again after 1 and then 2 hours. (This involves 3 blood tests)

Positives (+)

- + It is more accurate than an OGCT
- + If you go straight to OGTT you only have one type of test.

Negatives (-)

- You have to fast overnight before it (from 10pm and no breakfast)
- It takes a lot of time
- The sugary drink can make you feel sick
- Your blood is taken 3 times.

About 6 in 100 women have high blood sugar levels on both tests and these women are said to have gestational diabetes (GDM). It can cause your baby to grow bigger since they absorb the extra sugar in your blood. Large babies can be difficult to deliver and may require delivery by a Caesarean section. Unlike other types of diabetes, it usually goes away once your baby is born. Even though these tests are common in Australia they are very controversial. Researchers cannot agree whether it is worthwhile or not and are waiting on big studies to help decide. Unfortunately that research will not be out until later this decade! The 3Centres Guidelines require your midwife and doctor to inform you about the issues in having the test so you can decide.

Positives (+)

- A diagnosis enables you to be treated for a condition that can cause problems for you and your baby
- + You may worry less.

Negatives (-)

- Researchers can't agree on the best method of testing and are unsure how accurate and useful current tests are
- Researchers can't agree on the exact level of blood glucose that is dangerous and diagnoses GDM. If your blood sugar is way over the cut-off level you have a serious condition and you need specialist care. But if you are on or near the cut-off you may be diagnosed as having a severe condition when in another hospital or another country you would not be considered at risk. Your pregnancy will be managed very differently and you get the label "high risk".
- There is some evidence that you treat yourself and baby differently if you think of yourself as ill.

What next?

A diagnosis of gestational diabetes has serious implications for your pregnancy. You will be referred to a specialist and may need to change your diet and lifestyle.



Blood Pressure Test

Your blood pressure rises and falls throughout pregnancy. Usually it drops in middle pregnancy and rises later in pregnancy.

It is very important your blood pressure is measured and recorded the same way each visit like this: you sit down and put your feet up (your feet should be supported on a stool or bed). After letting you rest in this position for a few minutes your midwife or doctor will put a band on your arm, inflate the band until it is tight and listen for a certain sound as the pressure is slowly eased off and the blood flows through your arm. When they hear certain sounds they record that point on your medical record. Hypertension or 'high blood pressure' is diagnosed at certain measurements.

What next?

If you have high blood pressure you will be closely monitored for further signs of preeclampsia. Your blood pressure will be taken more often and your urine will be tested for protein. You may have to attend a day clinic at the hospital.

You are diagnosed with preeclampsia if you have high blood pressure combined with protein in your urine. Preeclampsia affects about 2% (2 in 100) of pregnant women. Symptoms usually begin in the second half of pregnancy. You may not feel sick at all.

The longer you have preeclampsia, the more dangerous it becomes. Preeclampsia may reduce the blood flow to the placenta and this may lower the amount of nutrients and oxygen available to your baby. This can cause them to be small. Doctors may check your baby's health frequently with tests like ultrasound and fetal heart rate monitoring (CTG).

If your symptoms are severe, you may be admitted to hospital and given drugs to control your high blood pressure and to help avoid seizures. The only cure is



birth. If your preeclampsia is severe, your baby needs to be born.

CHECK your pregnancy/ antenatal record for the BP and comments column where your result is written as a fraction like 110/70

Baby movements (Fetal movements)

You may feel your baby moving as early as 16 weeks. Even up to 28 weeks your baby may move some days but not on others. Midwives and doctors will ask what you can feel from your third visit (about 20 weeks). Slowing or stopping of movement can be a cause for concern, especially late in pregnancy.

Some babies are more active than others but, generally speaking, movement is a reassuring sign of good health. If your baby stops moving or slows down significantly, something may be wrong and you should tell your midwife or doctor as soon as possible. This is especially important in the third trimester (from 26 weeks).

What next?

Your midwife or doctor will discuss further tests of baby health with you eg recording your baby's heartbeat on a special machine (CTG), keeping a kick chart or having an ultrasound scan. You may be referred to a day clinic at the hospital.



CHECK your pregnancy/antenatal record under FH/FM and comments. FMF means "Fetal movements felt."

Baby heartbeat (Fetal heart)

Doppler ultrasound enables you to 'hear' your baby's heartbeat during pregnancy visits.

Your midwife or doctor will offer you Doppler from about 20 weeks if they have a machine. This is primarily for your benefit so you can hear your baby's heartbeat. It is very rare your midwife or doctor cannot detect a heartbeat but if this happens, it is still not usually a cause for concern in the first half of pregnancy. It may just mean the baby is in a different position.

What next?

The midwife or doctor may get you to move to see if they can pick up a heartbeat. If not, you will be referred to a clinic at the hospital for an ultrasound scan.



CHECK your pregnancy/antenatal record under FH/FM and comments.

) Baby growth (Fundal height)

Your midwife or doctor checks your baby's growth by checking the height of the uterus (called fundal height). Some carers will use a tape measure and some will just feel your abdomen to measure growth and position (called palpation). The tape measure may be more reliable if you see different people through your pregnancy. Between about 22 and 36 weeks the height in centimetres is a rough guide to how long you have been pregnant. For example, a height of 22cm means you have been pregnant about 22 weeks.

If you are larger (the fundus is higher) than expected, there could be a number of explanations. You could have a big baby, or there may be too much fluid around the baby or you could even be expecting twins. If the fundus is smaller than expected your baby may not be growing as fast as it should. It could also mean that your due dates are wrong and should be revised.

If your baby is smaller than expected for their age, they are probably just a small healthy baby. However sometimes small babies are not healthy and these ones are called 'growth restricted'. There are many causes of 'unhealthy small babies'.



Common causes of growth restriction are:

- Poor nutrition
- Smoking
- Drug and alcohol use
- Infections
- Birth defects
- Preeclampsia.

What next?

If your midwife or doctor is worried about your baby's growth they will arrange an ultrasound to get further information about the size and health of the baby. Your baby's health will be checked often and you may be referred to a day clinic at the hospital.

CHECK your pregnancy/antenatal record under Fundal Height and comments.

Baby's position

Your midwife or doctor will check the baby's position by feeling for baby's head, bottom, arms and legs (palpation). This is done at the same time as checking for growth.

In the first few months of pregnancy babies change position often because they are small and have plenty of room to move around. By 36 weeks most babies are in their final position for birth. Most (95 out of 100, 95%) are head first which is the easiest position for birth.

What next?

If the baby is bottom first, your doctor may counsel you about having the baby turned (called external cephalic version, or ECV). If the baby doesn't turn, or you don't wish to have this procedure the different options will be discussed with you and you may need to consider a Caesarean section.



CHECK your pregnancy/antenatal record under presentation and comments.





If your pregnancy progresses normally you may have only one new test in the third trimester (GBS). Your blood pressure is taken and baby health checks for heartbeat, size and position are done at every visit. Your visits focus on preparing for birth and going home. If you haven't had your baby by 41 weeks then your midwife or doctor will discuss arrangements for an induction where you are given hormones to start (induce) labour.

Group B Streptococcal Test (GBS)

Group B Streptococci (GBS) are bacteria that occur naturally in the vagina and intestinal tract (anus) in about 15 out of 100 (15%) of women. This is normal and rarely harmful when you are not pregnant. However, in a very small number of cases (1 in 100) the bacteria can pass to your baby when you give birth and may cause an infection that makes your baby very sick (called Early Onset GBS Disease, 1 in 800).

The 3Centres Guidelines suggest doctors and midwives identify the risk of GBS infection in one of 2 ways: (i) by looking for risk factors during labour (ii) by taking a swab from your bottom (anal) and vaginal region at about 36 weeks.

These are the risk factors for which you would receive antibiotics:

- a previous infant with GBS
- **•** GBS bacteria in your urine during pregnancy
- if you go into labour preterm (before 37 weeks)
- **)** prolonged rupture of membranes, 18 or more hours
- signs of infection during labour.



Process for 35-36 week swab screening

The swab test will tell you if you have GBS bacteria present or not. Different hospitals have different methods for taking the swab. You will be given an instruction sheet, the equipment you need and an explanation.

When the guidelines were written both methods were considered equally effective and asking questions is easier for you than taking a swab, but emerging evidence suggests the swab might detect more cases.

What next?

• If you have GBS or GBS risk factors we will let you know and treat you with antibiotics during labour to reduce the risk to your baby.

CHECK your pregnancy/antenatal record.

If haven't had your baby by 41 weeks you will have increased monitoring to make sure your baby is okay. Your midwife or doctor will talk to you about arranging to have labour induced (started by hormones).



What does that mean?

- Routine tests are discussed with everyone. They are the standard tests for uncomplicated pregnancy. This booklet focuses on routine tests covered by the 3Centres Guidelines.
- Special tests are discussed only if your midwife or doctor suspects you need them (you have a risk factor). The medical word is 'indicated'.
- Screening tests are a first step. These tell you if you are likely have a disease or condition, or not. If your result says you are more likely (screen positive), you can go on to have a diagnostic test. Most pregnancy tests are screening tests.
- Markers provide "clues" to whether you have a condition. They are used in screening tests.
- Diagnostic tests tell you if you have a disease or condition. Often there are risks, inconvenience, discomfort or high costs involved with diagnostic tests. They may only be offered if your carer suspects a condition or complication.
- A positive result means the test picked up something. You either have a condition, or have a higher chance of having a condition. Further investigation is needed.
- A negative result means nothing was picked up of concern. No further investigation is needed.

Unfortunately test results aren't always 100% accurate:

- A false positive is where you are told you have a condition or complication that you don't.
- A false negative is where you are told you don't have a condition or complication and you do.
- **Para** How many babies you already have. This includes fetuses who have reached 20 weeks gestation.
- Gravida A pregnant woman. Primigravida or gravida 1 means a first pregnancy. Secundigravida – pregnant for the second time. Multigravida means a woman who is pregnant for at least the third time.
- BMI Body mass index A guide to whether you are a healthy weight for your height. It is calculated by dividing your weight by the square of your height
- **NAD** No abnormalities detected
- **EDD** Expected date of delivery
- **EBD** Expected birth date



About the authors

This booklet was written in 2002 by Jo Campbell with help from Dr Maryanne Biro, Therese Cotter, Glenda McDonald and many other staff. Additional editorial advice was provided by Dr Chris Tippett, Assoc. Prof. Euan Wallace, Dr Sheila Mulvey and Dr John Regan who were all obstetricians at Southern Health. It was funded by a grant from the Department of Human Services Victoria. Jo is a sociologist and project manager. Dr Maryanne Biro is a senior lecturer in midwifery. Therese is a senior midwife and a Director of Nursing. Glenda recruited women to be our 'consultants'. She ran 2 workshops to get advice and feedback on content, layout and language and talked to women attending our clinics. She also consulted widely with staff using a checklist modified from the 'Communicating with Consumers Good Practice Guide to Providing Information.'

This version has been updated and modified to describe tests and investigations commonly carried out in antenatal settings throughout Victoria. Further staff consultations were undertaken at the Mercy Hospital for Women and The Royal Women's Hospital, and feedback from a consumer evaluation undertaken at Southern Health informed the final draft of this booklet. This information is based on the best available research evidence outlined in the 3 Centres Consensus Guidelines on Antenatal care (2001) written by a team of senior doctors and midwives from Southern Health, The Royal Women's Hospital and Mercy Hospital for Women. These guidelines cover most of the tests and investigations offered in pregnancy and are currently under review. The review process is due to be completed by October 2005. This booklet is valid until then. The guidelines with all the research can be found at <u>www.3centres.com.au</u>

Find out more: recommended reading and Internet sites

You can find out more about the evidence for different parts of your pregnancy care from:

- <u>www.: http://maternity.health.vic.gov.au</u> (Having a baby in Victoria, click on "Your pregnancy")
- www.genetichealthvic.net.au
- <u>www.australianbaby.info</u> (Has week by week info about your pregnancy and developing baby as well as info about tests etc.)
- <u>www.betterhealth.vic.gov.au</u> (Enter "pregnancy" beside search site button)
- <u>www.informedhealthonline.org</u> (conducts reviews of health research and has a special section for consumers)
- <u>www.maternitywise.org</u> (an American website, download "A guide to effective care in pregnancy & childbirth") Bear in mind the differences because it relates to the USA.
- ▶ L de Crespigny, M Espie & S Holmes. Prenatal Testing: Making choices in pregnancy. Penguin Books Australia 1998.

