**GUIDELINES FOR**

**GP SHARED MATERNITY CARE**



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**Disclaimer**

Bendigo Health (BH) has taken all reasonable care in the preparation of these guidelines for their intended use, which is to facilitate the effective and efficient clinical management of pregnant women, where their management and care is shared between their GP and other health service providers.

Each health service provider involved in shared maternity care of a patient must individually exercise professional judgement at all times in selecting the most appropriate care for a pregnant woman and subsequent management of her pregnancy. These guidelines have been developed to assist these health service providers in the discharge of that duty.

BH has used all reasonable endeavours to ensure that the content of these guidelines was correct at the time they were produced in 2007 and at review in 2013, 2017 and again in 2022; however, BH does not warrant that the information contained in the guidelines is in every respect accurate, complete or appropriate for every woman and her pregnancy. The information contained in these guidelines is not intended by BH to represent medical or general health advice.

**Acknowledgements**

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**ABBREVIATIONS AND ACRONYMS**

* AFI – Amniotic Fluid Index
* BH – Bendigo Health
* BGL – blood glucose level
* ß-hCG – Beta human chorionic gonadotropin
* BMI – Body mass index
* BP – Blood pressure
* CAT – Crisis Assessment and Treatment
* CF – Cystic Fibrosis
* CFTS – Combined First trimester test
* cm – Centimetre
* CMV - Cytomegalovirus
* CTG – Cardiotocograph
* CVS – Chorionic villus sampling
* DFM – Decreased fetal movement
* DNA – Deoxyribonucleic acid
* dTpa – Diphtheria-tetanus-pertussis acellular (reduced antigen content
* formulation)
* ECST – Early combined screening test
* EDD – Estimated day of delivery
* FBE – Full blood examination
* FBG – Fasting blood glucose
* FISH – Fluorescent in situ hybridisation
* free ß-hCG – Free beta human chorionic gonadotropin
* g – Grams
* GBS – Group B streptococcus
* GTT – Glucose tolerance test
* GP – General Practitioner
* Hb – Haemoglobin
* HCV – Hepatitis C virus
* HDFN – haemolytic disease of the fetus and newborn
* HIV – Human immunodeficiency virus
* Ig – Immunoglobulin
* IVF – in vitro fertilisation
* kg – Kilogram
* LFTs - Liver function tests
* LNMP – Last normal menstrual period
* LUSCS – Lower uterine segment caesarean section
* MAP – Maternity admission appointment
* M&C – Microscopy and culture
* MBS – Medicare Benefits Schedule
* mcg/day – Micrograms per day
* MCV/MCH – Mean cell volume/mean cell haemoglobin
* MSST – Maternal serum screening test
* mm – Millimetres
* mmHg – Millimetres of mercury
* MMR – Measles, mumps and rubella
* MSU – Midstream urine sample
* M&C&S – Micro and culture and sensitivities
* mU/L – Milliunits per litre
* MO – Medical Officer
* NIPT – Non-invasive prenatal testing
* NIPS – Non-invasive prenatal screening
* OTC – over the counter
* PCR – polymerase chain reaction
* PHN – primary health network
* PKU – Phenylketonuria
* PPMIS – Perinatal psychotropic medicines information service
* PRECS – planned repeat elective caesarean section
* RACGP – The Royal Australian College of General Practitioners
* RANZCOG – The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
* RBG – random blood sugar
* RCPA – Royal College of Pathologists of Australasia
* SIDS – Sudden Infant Death Syndrome
* SMA – Spinal muscular atrophy
* SMCA – Shared Maternity Care Affiliate
* ToLAC – Trial of labour after caesarean
* TOP - Termination of pregnancy
* TFT’s Thyroid Function tests
* TSH – Thyroid stimulating hormone
* US – Ultrasound
* VBAC – Vaginal birth after caesarean
* VCGS – Victorian Clinical Genetics Services
* VIHSP – Victorian Infant Hearing Screening Program
* VMR – Victorian Maternity Record
* WHC – Women’s Health Clinic

**PREFACE**

These guidelines have been developed to assist and support accredited GPs who are involved in SMC at BH. The aim of SMC is to provide community based, holistic, safe and culturally appropriate model of care for low risk women throughout their pregnancy. The woman’s labour, birth and immediate postnatal care are managed by the hospital.

BH SMC model is provided by a collaborative group of health professionals including GPs, BH obstetric MOs, BH midwives and BH WHC staff. For SMC to be successful, care providers, both in the community and hospital based, should take a team approach with shared responsibility for all aspects of the woman’s care, including timely and appropriate communication of results and abnormal findings. In some cases the management of an abnormal result will include the cessation of SMC. The GP involved will be notified in this event.

**MATERNITY CARE AT BENDIGO HEALTH**

**Referring women to BH for pregnancy care**

To refer a woman to BH for maternity care, the GP should send a referral to BH once:

* First trimester screen has been completed/or discussed if declined
* All Initial antenatal investigations completed and reviewed (attach the results or document the health service where completed) and if any treatment has been commenced (eg Thyroxin, Vit D, Iron).
* GP to discuss, offer and order morphology scan, and advise where this will be completed

To ensure all women can access the level of maternity care they require in a timely manner and be contacted about their appointments, GPs should provide all relevant information as per pregnancy referral template available to be downloaded from Bendigo Health website at [Bendigo Health Website - Women's Clinics](https://bendigohealth.org.au/womensclinics/#healthprofessionals)

*NOTE: Referrals may be rejected if information provided is incomplete, as per* [Specialist clinics in Victorian public hospitals - Access policy (health.vic.gov.au)](https://content.health.vic.gov.au/sites/default/files/2021-11/Specialist-clinics-in-Victorian-public-hospitals-access-policy.pdf)

Referrals should be comprehensive and contain:

To ensure all women can access the level of maternity care they require, women with low risk pregnancies should be referred to the maternity hospital closest to their homes.

* Name
* Address
* Date of birth
* Phone number (preferably mobile)
* Email address
* Country of birth
* Next Of Kin
* Aboriginal or Torres Strait Islander status of Mother and Baby
* Interpreter and language requirements
* Special needs (e.g. mobility) or additional support requirements
* GP details (practice address and provider number).

Mandatory clinical content includes:

* Estimated day of delivery (EDD or due date)
* Last normal menstrual period (LNMP)
* Relevant history including:
  + Previous pregnancies and outcomes
  + BMI
  + Smoking/any other substance use status
  + Psychosocial vulnerabilities or concerns
  + Community support in place (if applicable)
* Include investigations and results (pathology and all ultrasounds) and comment where completed

To ensure all women can be contacted about their appointments in a timely manner ensure referrals are comprehensive.

* Medications and management, including any indications for Aspirin and Calcium (see page 19) and if these have been commenced
* Any reasons that identify the patient as high risk or in need of early hospital assessment
* Current Symptoms
* Other co-morbidities, risks and concerns

It is not necessary for a woman to choose a model of maternity care prior to her first hospital visit, although it is helpful if she has discussed her options (including shared maternity care) with her GP.

**Referral contact details**

Women’s Clinics, Bendigo Health

PO Box 126

Bendigo, 3552

Phone: 5454 7288

**Fax: 5454 7286**

**Childbirth education and hospital tours**

Bendigo Health has a team of dedicated Midwives, Lactation Consultants, and Physiotherapists who are willing to support women and families in making the transition to parenthood by sharing their knowledge and expertise.

Women are encouraged to organise childbirth education early in pregnancy. Sessions available include: Labour, Birth & Early Parenting, Next Birth After Caesarean, Antenatal Physiotherapy, and Breastfeeding and Lactation Preparation. Childbirth & Early Parenting Education Sessions are available to book online at: [Bendigo Health Website - Pregnancy Care](https://bendigohealth.org.au/PregnancyCare/)

Women and families who do not attend childbirth education are welcome to view the Bendigo Health Maternity Ward Virtual Tour, to familiarise themselves with the facilities, including where to present when in labour, birth suites, postnatal ward and Special Care Nursery. This is available on the Bendigo Health website: [Bendigo Health Website - Pregnancy Care](https://bendigohealth.org.au/PregnancyCare/)

**SHARED MATERNITY CARE AFFILIATE (SMCA)**

SMCA is a model of care in which the majority of antenatal visits take place in the community with a hospital-accredited GP. Visits also take place at key times at the hospital. The provision of care and support to a woman while she is in labour is undertaken by the hospital. It is not the role of a SMCA to provide care and support once the woman is in labour, during the baby’s birth or in the immediate postnatal period while she is in hospital. This is not covered under the accreditation, roles or responsibilities of a shared maternity care provider. Therefore, the community-based SMCA and hospital-based doctors and midwives act as a team in the provision of a woman’s care.

It is important that both hospital and community providers:

* Are supportive of the shared maternity care model
* Are respectful and supportive in their approach to a woman’s decision to undertake shared care
* Do not attempt to divert a woman into another model of care unless this is medically indicated.

Women who are not strictly low risk may be eligible to undertake a modified form of shared maternity care (called modified shared maternity care). In this case, an individualised care plan will be documented in the Victorian Maternity Record (VMR) by the hospital doctor. The care plan provides information on additional review, care and investigations that are required.

**Responsibilities in the provision of shared maternity care**

For shared maternity care to work, a team approach between the community and hospital providers is required. Responsibility for a woman’s care is shared, including ordering investigations and the communication and management of investigations, results and any abnormal findings. These should be documented in the Victorian Maternity Record (VMR).

The following obligations form the basis of responsibilities and communication between the SMCA and hospital staff.

It is the responsibility of the hospital to:

* Notify the referring doctor if the woman does not attend her first hospital appointment
* Establish suitability for shared maternity care
* Ensure the woman has a VMR
* Ensure that the woman receives information about her required schedule of visits and tests (for both hospital and the SMCA)
* Ensure that the anticipated hospital appointments are organised for 36/40 and 40/40
* Notify the woman’s SMCA if shared maternity care ceases.

Clinical governance at the hospital includes:

* A list of accredited SMCAs available on the hospital website
* A robust system for accreditation and reaccreditation of SMCA’s
* Strong clinical governance for shared maternity care
* Referral guidelines and support for SMCA’s.

It is the responsibility of the SMCA to:

* Notify WHC if a woman does not attend her first SMCA visit
* Contact the woman if she does not attend her first scheduled SMCA appointment (if she is known to the practice)
* Notify WHC if a woman has a poor attendance record for her antenatal visits
* Ensure WHC has up-to-date details for the SMCA
* Abide by these guidelines, including when to refer to hospital
* Comply with accreditation/reaccreditation requirements.

It is the responsibility of both the hospital staff and the SMCA to:

* Record pregnancy assessment test results, each visit, findings and management in the VMR
* Review investigations they have ordered in a timely way
* Follow-up abnormal investigations and findings.

It is the responsibility of the woman to:

* Book appointments with the SMCA and the hospital
* Attend her appointments
* Bring her VMR to all appointments.

**Accreditation and re-accreditation of SMCA**

To maintain accreditation as SMCA’s all affiliates are invited to apply for reaccreditation every 3 years. This falls in line with the Royal Australian College of General Practitioners (RACGP) triennium.

To maintain accreditation as a SMCA, every 3 years, as per the RACGP triennium, all affiliates are invited to apply for reaccreditation

Reaccreditation criteria differ from initial accreditation criteria and for GPs for the 2023–2025 triennium:

**Re-credentialing requirements**:

* Review original application and make any changes eg contact details.

Submit the following:

* Evidence of FIVE HOURS of PREGNANCY RELATED education undertaken during 2020-2022. Unless it is clear on your RACGP CPD statement that it is relevant to pregnancy care, then course programs must be provided to ensure content meets the criteria for allocated time. Courses or other education activities must have content that is related to pregnancy, rather than solely women's health or gynaecology. Should an activity (such as Women's Health) include a segment on pregnancy related issues, the content will be reviewed with regards to time allocation towards the requirement of 5 hours of CPD.
* Signed Shared Maternity Care Agreement
* Current Professional Indemnity Certificate

BH has an application form for GPs who wish to provide SMC, which can be accessed via BH website. This includes:

 Shared Maternity Care Affiliate Credentialing - NEW APPLICATION

 Shared Maternity Care Affiliate Credentialing - RE-APPLICATION

See more at:

[Bendigo Health Website - Pregnancy Care](https://www.bendigohealth.org.au/services/detail/3490#healthprofessionals)

**Support for GPs**

1. **Victorian Maternity Record (VMR) patient held pregnancy record**

The VMR is the key means of Communication between the hospital and SMCA.

It is essential that this is completed at each visit by providers at all SMCA and hospital visits.

All health care providers must record examination, findings and investigations.

The VMR is the patient-held pregnancy record used at BH. If a woman has not had a VMR provided by her GP by the time she attends her first hospital visit, one will be given to her at the hospital.

Each woman enrolled in shared maternity care requires a VMR, and it is essential that this is completed at each visit by the SMCA and the hospital. The woman should be instructed to carry this with her at all times.

All providers need to document their care in the VMR (including any tests ordered and test results) as this is a key method of communication between the SMCA and the hospital. These need to be dated and signed.

The following should be recorded by all health care providers in the VMR:

* Date and gestation
* Blood pressure reading
* Measurement of fundal height in centimetres
* Fetal movements from 20 weeks
* Fetal auscultation with a Doppler from 20 weeks
* Checking fetal presentation from 30 weeks
* Checking oedema if present
* Consider a urine dipstick test for proteinuria

In order to expedite the follow-up of results, it is useful if the SMCA includes in the VMR the contact details of community ultrasound and pathology providers utilised

* Tests ordered and results
* Management
* Follow-up appointment

If required, GPs can print consultation notes from their clinical software and attach these to the record. If a woman attends a SMCA or hospital visit without her VMR, the SMCA or hospital should ensure that she leaves with written correspondence that she can attach to her pregnancy record.

In order to expedite the follow-up of results if required, it is useful if the SMCA includes in the VMR the contact details of community ultrasound and pathology providers utilised.

The VMR can be ordered online through the Department of Health and Human Services website. Also see: <https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/perinatal-reproductive/maternity-newborn-services/vic-maternity-record-order-form>

Encourage all women to complete the first pages of ‘personal details’ to engage them to use the VMR.

**B. BH Midwife.**

The assessment midwife at BH is a key person for GPs and women to contact for non-urgent enquiries from Monday – Friday 0900-1700:

Phone: 5454 7291

Calls outside of these hours should be directed to BH Birth Suite: 5454 8582 or BH registrar 5454 6018

**C. BH Registrar**

The obstetric registrar can be contacted on 5454 7205. If the registrar is unable to take the phone call and the matter is urgent the GP should phone 5454 6000 and ask to be put through to the consultant obstetrician on duty. For non-urgent queries the GP can phone the assessment midwife who will arrange for the registrar to return the call within an appropriate timeframe.

GPs should be aware that after hours obstetric cover in the hospital may be at either resident or registrar level, with a consultant on-call.

**D. Women’s Clinics**

Women’s Clinics is the outpatient department for Obstetric & Gynaecological services at BH providing hospital based midwifery, gynaecology and colposcopy clinics. It functions as the first point of contact for women. A written referral into the service is required.

Phone 5454 7288.

It is the hospital’s responsibility to establish a woman’s suitability for shared maternity care. However, it is valuable if shared maternity care has been discussed prior to referral and a woman’s preference indicated on the referral to the hospital.

**Suitability for shared maternity care**

At BH shared maternity care is an option for all women who have been assessed by the hospital as *healthy and with a normal pregnancy and a BMI <35*.

It is the hospital’s responsibility to establish a woman’s suitability for shared maternity care. However, it is valuable if shared maternity care has been discussed prior to referral and a woman’s preference indicated on the referral to the hospital.

**EXCLUSION CRITERIA FOR ROUTINE SHARED MATERNITY CARE**

**Note:** *Underlined / Italic conditions*: Women presenting with these conditions in the table below require Obstetric Consultation. Once a management plan is made, if deemed appropriate by Obstetric Team, care can be transferred back to the Midwifery Care Clinic/GP for ongoing care.

Care can be transferred between high risk and low risk clinics as indications for transfer of care arise and / or resolve.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Anaesthetic Difficulties*** | **Autoimmune disease**  SLE/connective tissue disorder | | **BMI / Maternal weight**  BMI <18 and >35 |
| **Cardiovascular disease**   * Arrhythmia/palpitations; murmurs: recurrent, persistent or associated with other symptoms * Cardiac valve disease * Cardiac valve replacement * Cardiomyopathy * Congenital cardiac disease * Hypertension * Ischaemic heart disease * Pulmonary hypertension | **Endocrine**   * Addison’s Disease, Cushing Disease or other endocrine disorder requiring treatment * Diabetes: Type 1, Type 2, GDM * Hyperthyroidism * *Thyroid disease - New diagnosis or hypothyroidism* | | **Coagulation** **disorders**   * Decline blood products * Haemoglobinopathies * Haemolytic anaemia * Other antibodies detected * Rhesus antibodies * Thalassaemia * Thrombophilia including antiphospholipid syndrome |
| **Drug dependence** | **Gastro-intestinal**   * Hepatitis B with positive serology * Hepatitis C * Inflammatory bowel disease includes ulcerative colitis and Crohn’s disease * Previous major abdominal/pelvic trauma | | **Genetic**   * Any condition |
| **Haematological**   * Anaemia at booking Hb < 90g/L * NAIT * ITP | **Organ transplants** | | **Perinatal Mental Health**   * Puerperal Psychosis * History severe PND * Bipolar * Schizophrenia * Personality disorders * Severe anxiety/depression requiring medication * Previous suicide attempt * Other Mental health disorder |
| **Infectious diseases**   * Cytomegalovirus * HIV infection * Parvo virus infection * Rubella * Syphilis * Toxoplasmosis * Tuberculosis * Varicella/Zoster * Genital Herpes * *Other infectious disease* | **Neurological**   * AV malformations * Epilepsy with medication * Multiple sclerosis * Muscular dystrophy or myotonic dystrophy * Myasthenia gravis * Spinal cord lesion (paraplegia or quadriplegia) * Subarachnoid haemorrhage, aneurysms. * Previous CVA * Spinal surgery * Brain surgery/brain lesions | | **Renal function disorders**   * Abnormal renal function * Previous urinary tract surgery * Recurrent urinary tract infections * Abnormal renal function * *Continence issues* |
| **Respiratory disease**   * Asthma requiring oral steroids and adult hospital admission * Severe lung function disorder * Sarcoidosis * Smoking >10/day | **Skeletal problems**   * History of developmental skeletal disorders * Osteogenesis Imperfecta * Scoliosis * Spinal surgery | | **System / connective tissue** diseases   * Anti-phosholipid syndrome * Marfan syndrome, Raynaud’s disease * Periarteritis nodosa * Scleroderma * Rheumatoid Arthritis * Systemic Lupus Erythematosus (SLE) * *Other connective tissue conditions* |
| **Pre-existing gynaecological disorders**   * Cervical abnormalities * *Abnormal cervical screening results requiring follow up in pregnancy* * Cervical surgery including *cone biopsy, laser excision or LLETZ biopsy* * *Fibroids* * Abdominal/Pelvic deformities (trauma, symphysis rupture) * Pelvic floor reconstruction * Colposuspension following prolapsed, fistula and/or previous rupture. * *IVF pregnancy* * Uterine abnormalities * Myomectomy * Bicornuate uterus, unicornuate uterus * Vaginal septum | | **Previous maternity history**   * *Age >40years* * ABO incompatability * Active blood incompatibility(Rh, Kell, Duffy, Kidd) * Auto-immune thrombocytopenia * Cervical weakness and or cervical suture * Cholestasis * Congenital and /or hereditary disorder of previous child * Eclampsia * Gestational hypertension – previous or current * Hypertension – previous or current * Grand-multipara ≥ 5 * IUGR <10 percentile * Macrosomia >4.5kg – previous or current * Multiple pregnancy * Non-cephalic presentation >34 weeks * Placental abruption * Placenta accreta * Postpartum haemorrhage requiring additional treatment/transfusion * Pre-eclampsia * Pre-term birth < 35 weeks in a previous pregnancy * Previous baby transfer to external NICU * Previous birth injury to mother or baby * Previous HELLP syndrome * Previous serious psychological disturbance * *Previous second trimester loss* * *Previous LUSCS* * *Recurrent miscarriage (3 or more first trimester)* * Rhesus ISO immunisation * Shoulder dystocia * Trophoblastic disease: hydatidiform mole or vesicular mole within last 12 months * Third or fourth degree laceration * *Ultrasound abnormality* | |

**NOTE:** All women should be informed that they must book a time with the pathology service to complete their GTT.

Any women with BMI>35 need an early OGTT with Booking antenatal bloods.

**Modified shared maternity care**

Some women may not be suitable for (routine) shared maternity care because they are not low risk, but may be assessed by the hospital doctor as appropriate for modified shared maternity care. In this situation, additional visits, surveillance and investigations may be required with the community and/or hospital provider. In these cases, an individual care plan will be developed by the hospital doctor and documented in the VMR. Some common schedules for modified shared maternity care are outlined below, including responsibilities of the SMCA and hospital.

**Advanced maternal age**

A woman with a maternal age ≥40 years at time of booking requires increased surveillance and additional tests due to an increased risk of age-related fetal abnormalities, gestational diabetes, pregnancy-induced hypertension, growth restriction and late fetal death in utero.

In this case, in addition to the routine requirements:

* An early glucose tolerance test (GTT) should be performed with initial tests (in addition to a 26–28 week GTT) (SMCA responsibility)
* Diagnostic testing for Down syndrome should be discussed (SMCA responsibility)
* More frequent visits are required; e.g. four-weekly until 28 weeks, two-weekly until 36 weeks, weekly until 40 weeks (SMCA responsibility, with hospital providing the recommended schedule)
* A growth and wellbeing ultrasound may be undertaken at 32–34 weeks (hospital responsibility)
* The 39 week visit is a hospital visit rather than SMCA visit (hospital responsibility)
* Induction of labour at about 40 weeks is considered (hospital responsibility).

**Pre-pregnancy BMI >35**

A woman with a maternal pre-pregnancy BMI ≥35 requires increased surveillance and additional tests due to an increased risk of folate deficiency, gestational diabetes, pregnancy-induced hypertension, intrauterine growth restriction (IUGR), malpresentation, caesarean section, stillbirth, thromboembolism, increased difficulty with anaesthesia and increased difficulty in breastfeeding.

In this case, in addition to the routine requirements:

* Recommend high dose folate (5mg/day) from preconception until 12 weeks
* An early glucose tolerance test (GTT) should be performed with initial tests (in addition to a 26–28 week GTT) (SMCA responsibility)
* Consider baseline investigations of renal and liver function in early pregnancy, such as serum electrolytes, creatinine and urea and liver function, and urine proteinuria (this assists in differentiating pre-existing dysfunction from pregnancy induced disorders later in pregnancy).
* An anaesthetic review at 34 weeks and dietician review at booking in is undertaken (hospital responsibility)
* More frequent visits are required; e.g. four-weekly until 28 weeks, two-weekly until 36 weeks, weekly until 40 weeks (SMCA responsibility, with hospital providing the recommended schedule)
* Serial growth and wellbeing ultrasound is organised at 28, 32 and 36 weeks (hospital responsibility).
* If previous bariatric surgery, consider B12, folate and iron supplements5 (SMCA and hospital responsibility)

**Aspirin, Calcium and Heparin**

**Aspirin**

Low-dose aspirin is most commonly used in pregnancy to prevent or delay the onset of pre-eclampsia (and its associated complications such as stillbirth, fetal growth restriction and preterm delivery). This is thought to be due to its anti-inflammatory and anti-platelet properties.

Consider Aspirin: start before 16 weeks (SMCA responsibility) Take aspirin 100-150 mg at night starting from 8-16 weeks until 36 weeks – recommend for women with one strong indication or consider if woman has two or more moderate indications for pre-eclampsia.

**Strong indications (recommend if any of):**

– Past history pre-eclampsia, especially if associated with preterm delivery and/or fetal growth restriction

– Multiple pregnancy

– Renal disease

– Chronic hypertension

– Autoimmune diseases such as SLE and antiphospholipid syndrome

– Diabetes (type 1 or 2)

**Moderate indications (consider if two or more of):**

– Primigravida or interpregnancy interval of ≥ 10 years

– Advanced maternal age (≥ 40 years)

– First-degree family history of pre-eclampsia

– High BMI (≥ 35)

– Donor sperm +/- donor egg pregnancies

– If an early pre-eclampsia screening result shows an increased risk of 1:180 or higher (note this is not a routinely recommended test)

**Calcium**

For women at risk of pre-eclampsia, adequate dietary calcium has also been found to decrease the risk of pre-eclampsia.

The recommended intake of calcium in pregnancy is 1,000 mg per day (1,300 mg/ day if < 19 years). Click [here](https://healthybonesaustralia.org.au/wp-content/uploads/2020/12/calcium-food-table-new.pdf) for the calcium content of food.

High-dose calcium supplementation (≥ 1 g/day) may decrease the risk of pre-eclampsia and associated problems in women with low dietary intake, and should be considered if adequate

dietary intake is not feasible.

**Low Molecular Weight Heparin**

All women should undergo a documented assessment of risk factors for venous thromboembolism (VTE) in early pregnancy or pre-pregnancy.

Women at risk should be provided education on symptoms of concern and what to do if these develop.

If a woman is at risk of venous thromboembolism, in order to identify her as potentially requiring an early hospital appointment, please include this in her referral to hospital.

Most common indications for thromboprophylaxis with enoxaparin (ClexaneTM, LovenoxTM , XaparinTM), which is a low molecular weight heparin (LMWH), are:

**Antenatal**

• Personal history VTE

• Family history of VTE (in first degree relative)

• Immobilisation (anticipated bed rest ≥ 7 days)

• Antiphospholipid syndrome

• Homozygous for high-risk thrombophilia genes

• Active systemic lupus erythematosus (SLE)

• Nephrotic syndrome with albumin ≤ 19g/L

• Cardiac disease (in some cases)

**Postnatal**

• After caesarean until mobile

• Been on antenatal anticoagulation for maternal venous thromboprophylaxis, regardless of mode of delivery. For 6 weeks postnatally

• Personal history of venous thromboembolic event, regardless of mode of delivery or whether they were on antenatal thromboprophylaxis. For 6 weeks postnatally

**Dose, duration, and use:**

The hospital will ensure there are no contraindications and advise on dose, duration and use according to the weight of the woman and the indication.

**When to cease:**

Women should be advised to cease enoxaparin at any of the following:

• At first sign of labour (until hospital review and further advice)

• At rupture of membranes (until hospital review and further advice)

• Before induction of labour, planned caesarean, epidural, or spinal (timing as per hospitals advice)

• With any bleeding (until hospital review and further advice)

**Cessation of shared care**

In the course of pregnancy, a woman may develop issues that mean she is no longer low risk and therefore requires a change in the model of maternity care and the cessation of shared maternity care.

In some cases, modified shared maternity care may still be appropriate, but this decision will be made and documented after assessment by the hospital doctor.

Shared maternity care is ceased in the following cases:

* Fetal abnormalities
* Gestational diabetes
* Placental problems such as placenta praevia, vasa praevia and placenta accreta
* Antepartum haemorrhage
* Cholestasis
* Fetal growth restriction
* Gestational hypertension or evidence of pre-eclampsia
* The development of exclusion criteria (see above)
* A woman requests cessation.

If these are noted by SMCA’s, appropriate and timely referral to a hospital must be undertaken. It is the hospital’s responsibility to notify SMCA’s of the cessation of shared maternity care or changes to modified shared maternity care and the reasons.

**Resources on shared maternity care and referral templates**

*Victorian Medical Record:*

Department of Health and Human Services

[Victorian Maternity Record (health.vic.gov.au)](https://www.health.vic.gov.au/patient-care/victorian-maternity-record)

Includes links on how to order VMR online

*Maternity Services and Models of Care:*

Department of Health and Human Services, Victoria

[Maternity and newborn care in Victoria (health.vic.gov.au)](https://www.health.vic.gov.au/patient-care/maternity-and-newborn-care-in-victoria)

*Better Health Channel:*

[Pregnancy and birth care options - Better Health Channel](https://www.betterhealth.vic.gov.au/health/servicesandsupport/pregnancy-and-birth-care-options)

*Shared Maternity Care with Bendigo Health:*

[Bendigo Health Website - Pregnancy Care](https://www.bendigohealth.org.au/services/detail/3490#healthprofessionals)

*Maternity Referral Template:*

[Bendigo Health Website - Women's Clinics](https://www.bendigohealth.org.au/womensclinics/#healthprofessionals)

**PRE-PREGNANCY CONSULTATION**

Many of the most important maternity interventions that result in improved health outcomes are best initiated prior to conception. These include lifestyle interventions, immunisation, smoking and alcohol cessation, folate and iodine supplementation, and screening of prospective parents for inherited disorders such as cystic fibrosis, haemoglobinopathies and fragile X syndrome (among others).

GPs are in a unique position to see a woman prior to pregnancy and can provide opportunistic pre-pregnancy screening and advice. The aim of the pre-pregnancy consultation is to:

* Provide the optimum situation for conception and pregnancy to occur in order to ensure the health of mother and child
* Identify and manage potential problems for the fetus and mother, based on personal and family history
* Provide education about the health care system and options available
* Develop a rapport with the woman and her family.

**Preventive activities before pregnancy**

The following information is reproduced from the *Guidelines for Preventive Activities in General Practice* with permission from the Royal Australian College of General Practitioners.

Every woman aged 15–49 years should be considered for pre-conception care. Pre-conception care is a set of interventions that aim to identify and modify biomedical, behavioural and social risks to a woman’s health or pregnancy outcome through prevention and management. This should include smoking cessation and advice to consider abstinence from alcohol (especially in the early stages of pregnancy), folic acid and iodine supplementation, review of immunisation status, medications and chronic medical conditions, especially glucose control in patients with diabetes.

There is evidence to demonstrate improved birth outcomes with pre-conception healthcare in women with diabetes, phenylketonuria and nutritional deficiency as well as benefit from the use of folate supplementation and a reduction in maternal anxiety. The information below lists all the potential interventions that have been recommended by expert groups in pre-conception care.

What does pre-conception care include?

*Medical issues*

*Reproductive life plan*

Assist your patient in developing a reproductive life plan that includes whether they want to have children. If they do, discuss the number, spacing and timing of intended children.

*Reproductive history*

Ask if there have been any problems with previous pregnancies such as infant death, fetal loss, birth defects particularly neural tube defects (NTD), low birth weight, pre- term birth, or gestational diabetes. Are there any ongoing risks that could lead to a recurrence in a future pregnancy?

*Medical history*

Ask if there are any medical conditions that may affect future pregnancies. Are chronic conditions such as diabetes, thyroid disease, hypertension, epilepsy and thrombophilia well managed?

*Medication use*

Review all current medications, including over-the-counter medications, vitamins and supplements.

*Genetic/family history*

Assess risk of chromosomal or genetic disorders, (e.g. cystic fibrosis (CF), fragile X, Tay–Sachs disease, thalassaemia, sickle cell anaemia and spinal muscular atrophy), by collection of data on family history and ethnic background. Provide opportunity for carrier screening for these and other more common genetic conditions.

*General physical assessment*

Conduct a Pap test and breast examinations before pregnancy if indicated or due. Also assess body mass index (BMI), BP and ask about periodontal disease. Encourage weight management / weight loss for those with BMI outside normal range.

*Substance use*

Ask about tobacco, alcohol and illegal drug use.

*Vaccinations*

Vaccinations can prevent some infections that may be contracted during pregnancy. If previous vaccination history or infection is uncertain, testing should be undertaken to determine immunity to varicella and rubella. Women receiving live viral vaccines such as MMR and varicella should be advised against becoming pregnant within 28 days of vaccination. Recommended vaccinations are:

* MMR
* Varicella (in those without a clear history of chickenpox or who are nonimmune on testing)
* Influenza (recommended during pregnancy to protect against infection if in second or third trimester during influenza season)
* Diphtheria, tetanus, pertussis (DTpa) (to protect newborn from pertussis).

*Family planning*

Based on the patient’s reproductive life plan (see above), discuss fertility awareness and how fertility reduces with age, chance of conception, and risk of infertility and fetal abnormality. For patients not planning to become pregnant, discuss effective contraception and emergency contraceptive options.

*Folic acid supplementation*

Women should take a 0.4–0.5 mg supplement of folic acid per day for at least 1 month prior to pregnancy, and for the first 3 months after conception. In women at high risk (i.e. those with a reproductive or family history of NTD, women who have had a previous pregnancy affected by NTD, women on anti-epileptics, and women who have diabetes) the dose should be increased to 5 mg per day.

*Healthy weight, nutrition and exercise*

Discuss weight management and caution against being overweight or underweight. Recommend regular moderate-intensity exercise and assess risk of nutritional deficiencies (e.g. vegan diet, lactose intolerant, calcium or iron and vitamin D deficiency due to lack of sun exposure).

*Psychosocial health*

Provide support and identify coping strategies to improve your patient’s emotional health and wellbeing. Smoking, alcohol and illegal drug cessation (as indicated)

Smoking, illegal drug use and excessive alcohol consumption during pregnancy can have serious consequences for an unborn child and should be stopped prior to conception.

*Healthy environments*

Repeated exposure to hazardous toxins in the household and workplace environment can increase the risk of miscarriage and birth defects. Discuss the avoidance of TORCH infections: Toxoplasmosis, Other – such as syphilis, varicella, mumps, parvovirus and human immunodeficiency virus (HIV) – Rubella, Cytomegalovirus, Herpes simplex.

* Toxoplasmosis: avoid cat litter, garden soil, raw/undercooked meat and unpasteurised milk products, and wash all fruit and vegetables
* Cytomegalovirus, parvovirus B19 (fifth disease): discuss importance of frequent hand washing, and child and healthcare workers further reducing risk by using gloves when changing nappies.
* Listeriosis: avoid paté, soft cheeses (feta, brie, and blue vein), pre-packaged salads, deli meats and chilled/smoked seafood. Wash all fruit and vegetables before eating. Refer to Australian food standards at [Pregnancy and healthy eating (foodstandards.gov.au)](https://www.foodstandards.gov.au/consumer/generalissues/pregnancy/Pages/default.aspx) regarding folate, listeria and mercury.
* Fish: limit fish containing high levels of mercury.

|  |  |
| --- | --- |
| **Pre-pregnancy consultation checklist** |  |
| Medical history |  |
| Reproductive and obstetric history |  |
| Genetic/family history |  |
| Mental health |  |
| Psychosocial history |  |
| Medicine use |  |
| Smoking and alcohol use and cessation |  |
| Substance use and cessation |  |
| Vaccinations |  |
| Folic acid and iodine supplementation |  |
| Healthy weight/nutrition/exercise |  |
| Health environment (toxoplasmosis, cytomegalovirus, parvovirus, listeria, fish) |  |
| Oral health |  |
| A general physical assessment |  |
| **Investigations** | |
| Determining immunity (e.g. rubella, varicella if immunity status unknown) |  |
| Screening for anaemia and thalassaemia (e.g. FBE and ferritin). |  |
| Testing for infectious diseases (e.g. HIV, chlamydia, Hepatitis B, Hepatitis C) |  |
| Carrier screening for cystic fibrosis, fragile X syndrome and spinal muscular atrophy (*if high-risk population*). |  |

**Resources on pre-pregnancy care**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Organisation web address** | Health professional information |
| Preparing for pregnancy | RACGP  [RACGP - Preventive activities prior to pregnancy](https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/guidelines-for-preventive-activities-in-general-pr/preventive-activities-prior-to-pregnancy) | Health professional information: RACGP guidelines for preventative activities in general practice |
| RANZCOG  [Pre-pregnancy Counselling (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Pre-pregnancy-Counselling-C-Obs-3a-Board-approved_March-2022.pdf) | Health professional information: Pre-pregnancy counselling and antenatal screening tests |
| Medicines in pregnancy  and breastfeeding | Therapeutic Goods Administration  [Prescribing medicines in pregnancy database | Therapeutic Goods Administration (TGA)](https://www.tga.gov.au/products/medicines/find-information-about-medicine/prescribing-medicines-pregnancy-database) | Health professional information: Comprehensive guide with multiple resources including Australian categorisation of risk of drug use in pregnancy and links to state based obstetric drug administration services |
| General | RANZCOG  [Maternity-Care-in-Australia-Web.pdf (ranzcog.edu.au)](http://ranzcog.edu.au/wp-content/uploads/2022/01/Maternity-Care-in-Australia-Web.pdf)  Under Routine Antenatal Care | Clinical guideline:  Vitamin and Mineral Supplementation and Pregnancy (2015) |
| Iodine | National Health and Medical  Research Council  [Iodine supplementation for Pregnant and Breastfeeding Women | NHMRC](https://www.nhmrc.gov.au/about-us/publications/iodine-supplementation-pregnant-and-breastfeeding-women#block-views-block-file-attachments-content-block-1) | Health professional information: Iodine supplementation for pregnant  and breastfeeding women |
| Food Standards Australia New  Zealand  www.foodstandards.gov.au/  consumer/generalissues/  pregnancy/Pages/  iodineandpregnancy.aspx | Consumer information:  Iodine and pregnancy  Better Health Channel |
| Better Health Channel  [Iodine - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/iodine) | Consumer information:  Iodine including recommended daily intake during pregnancy |
| Folate | Better Health Channel  [Pregnancy and diet - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-and-diet) | Consumer information:  Folate for pregnant women |
| Food Standards Australia  New Zealand  www.foodstandards.gov.au/  consumer/generalissues/  pregnancy/folic/Pages/default.aspx | Consumer information:  Folate and folic acid for pregnant  women |
| Family Planning Victoria  www.fpv.org.au/sexual-health-info/  sex-and-my-body/pregnancy/  planning-for-pregnancy/ | Consumer information:  Planning a pregnancy including the role of folate |
| Vitamin D | Department of Health and Human  Services, Victoria  [Low vitamin D in Victoria (health.vic.gov.au)](https://www.health.vic.gov.au/chief-health-officer/low-vitamin-d-in-victoria) | Health professional information:  Low vitamin D in Victoria |
| Pre and probiotics | <https://www.probioticadvisor.com/> | Information for health professionals |
| Diet and nutrition | Department of Health, Australia  [Healthy eating when you’re pregnant or breastfeeding | Eat For Health](https://www.eatforhealth.gov.au/eating-well/healthy-eating-throughout-all-life/healthy-eating-when-you%27re-pregnant-or-breastfeeding) | Health professional and consumer information: Information on healthy eating during pregnancy and breastfeeding, with multiple links |
| Better Health Channel  [Mercury in fish - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/mercury-in-fish) | Consumer information:  Pregnancy and diet  Mercury in fish |
| Queensland Health  [Healthy eating for vegetarian or vegan pregnant and breastfeeding mothers | Nutrition Education Materials Online (NEMO)](https://www.health.qld.gov.au/__data/assets/pdf_file/0024/726063/antenatal-veganveget.pdf) | Consumer information:  Healthy eating for vegan pregnant and breastfeeding mothers |
| Food Safety | Food Standards Australia New  Zealand  [Listeria (foodstandards.gov.au)](https://www.foodstandards.gov.au/consumer/safety/listeria/Pages/default.aspx) | Consumer information:  Listeria and pregnancy – includes a link to a video |
| foodandpregnancyvideos/listeriaa/  transcriptlisteria.aspx  www.foodstandards.gov.  au/publications/Pages/  listeriabrochuretext.aspx | Consumer information:  Listeria in pregnancy |
| www.foodstandards.gov.au/  consumer/chemicals/mercury/  Pages/default.aspx | Consumer information:  Mercury consumption in pregnancy |
| Exercise | Better Health Channel  [Pregnancy and exercise - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-and-exercise) | Consumer information:  Benefits and risks of exercise in  pregnancy |
| Smoking | QUIT Victoria  [Myths: Smoking and Pregnancy | Smokefree](https://women.smokefree.gov/pregnancy-motherhood/quitting-while-pregnant/myths-about-smoking-pregnancy) | Consumer information:  Common myths about smoking  during pregnancy |
| [How to quit when you're pregnant or breastfeeding](https://www.quit.org.au/articles/how-to-quit-when-pregnant/) | Consumer information:  Pregnancy and smoking and quit  advice |
| [Smoking – Quit services for Aboriginal communities - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/smoking-quit-services-for-aboriginal-communities) | Consumer information:  Indigenous/ATSI specific information |
| Better Health Channel  [Pregnancy and smoking - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-and-smoking) | Consumer information:  Pregnancy and smoking and quit  advice |
| Alcohol | National Health and Medical  Research Council  [Australian guidelines to reduce health risks from drinking alcohol | NHMRC](https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-reduce-health-risks-drinking-alcohol) | Health professional information:  *Australian Guidelines to Reduce*  *Health Risks from Drinking Alcohol* (2009) |
| Australian Drug Foundation  [Alcohol and pregnancy - Alcohol and Drug Foundation (adf.org.au)](https://adf.org.au/insights/alcohol-and-pregnancy/) | Consumer information:  Pregnancy, alcohol and other drugs |
| Royal Women’s Hospital: Women’s Alcohol and Drug Service (WADS)  <https://www.thewomens.org.au/health-professionals/maternity/womens-alcohol-and-drug-service/> | Health professional information:  Providing medical care, counselling and support to women with complex substance use, dependence and assessment and care of infants exposed to drugs and alcohol during pregnancy. |
| Better Health Channel  [Fetal alcohol spectrum disorder (FASD) - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/fetal-alcohol-spectrum-disorder-fasd) | Consumer information:  Fetal Alcohol Spectrum Disorder  (FASD) including contact details for associated resources. The effects of medication, drugs and  alcohol in pregnancy |
| Other drugs  *Amphetamine* | Mater Mother’s Hospital  [Using amphetamines during pregnancy and breastfeeding (worldssl.net)](https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Amphetamines-2021.pdf) | Consumer information:  Amphetamine use during pregnancy and breastfeeding |
| Royal Women’s Hospital: Women’s Alcohol and Drug Service (WADS)  [Using amphetamines during pregnancy and breastfeeding (worldssl.net)](https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Amphetamines-2021.pdf) | Health professional information:  Providing medical care, counselling and support to women with complex substance use, dependence and assessment and care of infants exposed to drugs and alcohol during pregnancy. |
| Other drugs  *Heroin/*  *Buprenorphine/Methadone* | RACGP  [Opioid-dependence-in-pregnancy.aspx (racgp.org.au)](https://www.racgp.org.au/getattachment/b3491585-d92e-4eab-bd1d-b5d4ef4f53a1/Opioid-dependence-in-pregnancy.aspx#:~:text=Pregnant%20women%20with%20opioid%20or,is%20essential%20for%20general%20practitioners.) | Health professional information:  A general practice perspective for managing opioid dependence |
| Royal Women’s Hospital WADS  <https://www.thewomens.org.au/health-professionals/maternity/womens-alcohol-and-drug-service/>  [Drug and Alcohol - Methadone Stabilisation In PregnancyPregnancy (worldssl.net)](https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/drug-and-alcohol-methadone-stabilisation-in-pregnancy_280720.pdf) | Health professional information:  Providing medical care, counselling and support to women with complex substance use, dependence and assessment and care of infants exposed to drugs and alcohol during pregnancy. |
| Other drugs  *Cannabis* | American Congress of  Obstetricians and Gynaecologists  [Marijuana and Pregnancy | ACOG](https://www.acog.org/womens-health/infographics/marijuana-and-pregnancy#:~:text=Research%20is%20limited%20on%20the,or%20breastfeeding%20not%20use%20marijuana.) | Health professional information:  Marijuana use during pregnancy and lactation |
| Oral health | Department of Health, Australia  [Oral health | Australian Government Department of Health and Aged Care](https://www.health.gov.au/resources/pregnancy-care-guidelines/part-c-lifestyle-considerations/oral-health) | Health professional information:  Oral health in antenatal care |
| Dental Health Services, Victoria  [Access to Victoria’s public dental care services (health.vic.gov.au)](https://www.health.vic.gov.au/dental-health/access-to-victorias-public-dental-care-services) | Consumer information:  Oral health and pregnancy. Includes how to make a public dental appointment |
| Better Health Channel  [Pregnancy and teeth - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-and-teeth) | Consumer information:  Dental health and pregnancy |

**CONFIRMATION OF PREGNANCY**

A copy of the initial investigation results should be given to the woman to bring to her first hospital visit.

A woman may present to her GP at any stage to confirm she is pregnant. It is best if this is done early in order to facilitate preventive health interventions and offer appropriate counselling for prenatal screening.

In addition to the objectives of the pre-pregnancy consultation, the aims of the early pregnancy consultation are to:

* Confirm pregnancy and woman’s decision
* Organise antenatal investigations
* Discuss genetic testing (including Down syndrome tests) and arrange if appropriate

If the Victorian Maternity Record (VMR) is provided, results should be recorded in this.

* Arrange a 19–22 week ultrasound with a community provider. Note radiology provider on BH referral.
* Refer to the hospital upon confirmation of pregnancy (do not wait for test results). Note pathology provider the woman will use on the BH referral.
* Make other referrals as appropriate (e.g. for genetic counselling, mental health team).

The Victorian Maternity Record may be started at this stage.

**Early pregnancy investigations**

All women, regardless of age, should be offered a test for Down syndrome.

In addition, some high-risk groups should be offered testing for fetal abnormalities/genetic carrier status.

In a general practice setting, an early pregnancy consultation usually occurs at 4–10 weeks gestation. Discussion should include LNMP/EDC; age; medical, reproductive, obstetric and family history (including inheritable conditions); BMI; cervical procedures; mental health; nutrition; smoking, substance and alcohol use; medicine use and social issues.

A comprehensive referral to the hospital should occur as soon as possible to ensure appropriate and timely triage and access to services. A copy of the investigation results should be faxed with referral to 5454 7286.

*Recommended early pregnancy investigations include*

|  |  |  |
| --- | --- | --- |
| blood group and antibody screen | hepatitis B screening for carrier status | rubella antibodies |
| FBE (including mean cell volume/mean cell haemoglobin (MCV/MCH) | hepatitis C serology | syphilis serology/TPHA |
| Ferritin (optional) | HIV serology | Midstream urine (MSU) for MC&S (microscopy, culture & sensitivity) |
|  | Ultrasound 19-21 week morphology ultrasound (gestational age, fetal number, placental position, and fetal morphology) |  |
| **Investigations to consider in those with risk factors include** | | |
| dating ultrasound | chlamydia (urine sample or cervical swab) | glucose tolerance test (GTT) if:   * Previous GDM * Previous elevated blood glucose level * Maternal age ≥40 years * Family history of diabetes (immediate family or a sister with GDM) * BMI > 35 kg/m2 * Previous macrosomia (birth weight > 4500g or > 90th centile) * Polycystic ovarian syndrome * Medications: corticosteroids, antipsychotic |
| haemoglobin electrophoresis (routine at WH unless a previous test result is available) / DNA analysis for alpha thalassaemia | varicella antibodies |
| thyroid stimulating hormone (TSH) | Cervical Screening Test |
| Vitamin D level |
| Recommended investigations for fetal abnormalities include:  • a test for Down syndrome – all women, regardless of age, should be offered this, including:   * combined first trimester screening (10 week serum screen + 12 week ultrasound) – not available at the hospital, OR * non-invasive prenatal testing (NIPT) – not available at the hospital, OR * second trimester maternal serum screening – available at the hospital * diagnostic testing (CVS or amniocentesis) for pregnancies at high risk of aneuploidy * 19 to 22 week fetal morphology ultrasound (only available in the hospital in limited circumstances). | | |

It is the primary responsibility of the provider ordering a test or noting any abnormal finding to ensure appropriate follow up, communication and management. However, all providers should check that follow up of any abnormal investigation or finding has occurred.

**Investigations for other inheritable genetic conditions**

Tests for other inheritable genetic conditions are ideally done before pregnancy or, otherwise, in early pregnancy.

Investigations to consider for fetal abnormalities include:

*Carrier screening*

Some population groups should be offered testing for genetic carrier status, including:

* Population groups at higher risk of cystic fibrosis, fragile X or spinal muscular atrophy (for cystic fibrosis this includes either partner from Northern European or Ashkenazi Jewish backgrounds)
* Population groups at higher risk of other genetic diseases where carrier screening is available (e.g. Tay–Sachs disease, thalassaemia, sickle cell anaemia).
* Reproductive genetic carrier screening is also available for couples with no personal or family history of genetic disease, with a number of tests available for varied conditions included. This is at cost to the patient.

*Diagnostic testing*

In cases of a personal or family history of either partner, other testing may be required.

These may include blood tests on either parent or investigations on the fetus (CVS/ amniocentesis). In these cases Genetics Services at the hospitals can provide advice to GPs and women, and counselling and testing for women if required. To ensure the provision of timely advice, directly contact the Genetics Services at the hospital the woman has been referred to.

It is the primary responsibility of the provider ordering a test or noting an abnormal finding to ensure appropriate follow-up, communication and management. However, all providers should check that follow-up of any abnormal investigation or finding has occurred.

**TESTING FOR DOWN SYNDROME AND OTHER FETAL ABNORMALITIES**

All pregnant women, regardless of age, should be offered a:

A test for Down syndrome, and

A 19–22 week fetal morphology ultrasound

In addition

High risk population based and carrier screening may be relevant, and

If there is a personal or family history of genetic problems, a referral to RWH genetics services should be considered – email: [fmu@thewomens.org.au](mailto:fmu@thewomens.org.au)

Most babies are born healthy, but about 2-4% are born with a birth defect that may require medical care. A number of screening and diagnostic tests are available to determine the risk of, or to diagnose, certain congenital problems in the fetus.

However, tests only have the capacity to screen for and diagnose some congenital problems. If a woman or her partner has a genetic condition, is a carrier or if there has been a previous congenital abnormality/genetic condition in another child, it is important that the couple is referred for genetic counselling. This should be done as early as possible – preferably pre-pregnancy, as it can take considerable time to determine whether or not a prenatal test is available and, if so, to obtain the result.

If a test is performed in the community, a copy of the results (if available) should be given to the woman to bring to her first hospital visit.

**Screening versus diagnostic tests**

Screening tests can be performed to determine the risk of having a baby with Down syndrome, some chromosomal abnormalities and neural tube defects. Screening tests do not diagnose a condition – rather, they determine the level of risk. If screening test results indicate a comparatively high likelihood of a problem, a diagnostic test such as chorionic villus sampling (CVS) or amniocentesis, or in some cases a very sensitive screening test such as a Non Invasive Prenatal Test (NIPT) may be offered.

The following table outlines risk by age of Down syndrome and other chromosomal abnormalities.

|  |  |  |
| --- | --- | --- |
| Maternal age at delivery (years) | Chance of having a live-born baby with Down syndrome\* | Chance of having a live-born baby with a chromosomal abnormality |
| 20–24 | 1 in 1411 | 1 in 506 |
| 25 | 1 in 1383 | 1 in 476 |
| 26 | 1 in 1187 | 1 in 476 |
| 27 | 1 in 1235 | 1 in 455 |
| 28 | 1 in 1147 | 1 in 435 |
| 29 | 1 in 1002 | 1 in 417 |
| 30 | 1 in 959 | 1 in 385 |
| 31 | 1 in 837 | 1 in 385 |
| 32 | 1 in 695 | 1 in 323 |
| 33 | 1 in 589 | 1 in 286 |
| 34 | 1 in 430 | 1 in 244 |
| 35 | 1 in 338 | 1 in 179 |
| 36 | 1 in 259 | 1 in 149 |
| 37 | 1 in 201 | 1 in 124 |
| 38 | 1 in 162 | 1 in 105 |
| 39 | 1 in 113 | 1 in 81 |
| 40 | 1 in 84 | 1 in 64 |
| 41 | 1 in 69 | 1 in 49 |
| 42 | 1 in 52 | 1 in 39 |
| 43 | 1 in 37 | 1 in 31 |
| 44 | 1 in 28 | 1 in 24 |
| 45 | 1 in 32 | 1 in 19 |

\* Risks of at the time of screening are higher

**Tests for Down syndrome and other aneuploidies**

Although a woman’s likelihood of having a foetus with Down syndrome (Trisomy 21), and some other chromosomal abnormalities such as Edward syndrome (Trisomy 18), and Patau syndrome (Trisomy 13) increases with age, a woman of any age can have a baby with aneuploidy and all women, regardless of age, should be offered a test for Down syndrome.

If a woman decides to undertake testing for Down syndrome, several options are available. These include:

* combined first trimester screening – not available at the hospital, *or*
* non-invasive prenatal testing (NIPT) – not available at the hospital, *or*
* second trimester maternal serum screening – available at the hospital
* diagnostic testing (amniocentesis or CVS) – available at the hospital if high risk

These tests vary in terms of timing, mechanisms, cost, sensitivity, specificity and availability at the hospitals.

It is important that women receive adequate counselling and that the results and management are documented, communicated and followed up adequately.

Follow-up and management of investigation results for fetal abnormalities require particular vigilance from both community and hospital providers. This is especially important as the tests may require coordination of different components: the hospital visit may not occur for some time and further tests and management may be time sensitive.

**Non-invasive prenatal testing (NIPT)**

Follow-up and management of investigation results for fetal abnormalities require particular vigilance from both community and hospital providers.

This is especially important as the:

Tests may require coordination of different components

The hospital visit may not occur for some time

Further tests and management may be time sensitive

These are a group of maternal blood tests based on cell-free DNA technology.

They are also referred to as non-invasive prenatal screening (NIPS) and cell-free DNA testing. They are available from about 10 weeks gestation and test for Down syndrome, Edward syndrome, Patau syndrome and some other chromosomal abnormalities.

NIPT has the highest sensitivity and specificity of all the screening tests for Down syndrome. However, it is not a diagnostic test. It cannot be used in triplet or higher order pregnancies.

The detection rate (sensitivity) is very high, at approximately 99% for Down syndrome (T21), 97% for Edward syndrome (T18) and 92% for Patau syndrome (T13), with low false positive rates that vary between different tests and for different aneuploidies. In about 5% of cases, a meaningful result is not achievable.

The NIPT test is not available at the hospital and a cost is associated. The test is available at VCGS and increasingly available at private pathology and specialist obstetric ultrasound providers.

If a NIPT test is performed without a 12-week fetal ultrasound, some providers also routinely order a 12-week ultrasound to screen for non-aneuploidy abnormalities; however, this varies amongst providers. In view of its high sensitivity and no risk of miscarriage, women may choose a NIPT over a diagnostic test such as CVS or amniocentesis, if they are high risk on a screening test or are of advanced maternal age.

**Does not test for**: All chromosome aneuploidies, Sub-chromosomal abnormalities (e.g. partial deletions and duplications, etc.), Non aneuploidy single gene mutations (e.g. Cystic Fibrosis, Spinal muscular atrophy, Huntington disease, Thalassaemia, etc.), Non-chromosomal disorders, such as neural tube defects, placental abnormalities and fetal growth restriction.

If a test indicating aneuploidy is obtained, CVS or amniocentesis should be offered to confirm the diagnosis before any intervention is undertaken.

Further information can be found on the Victorian Clinical Genetics Services (VCGS) website.

Also see: [www.vcgs.org.au](http://www.vcgs.org.au)

**Combined first trimester screening**

It is strongly suggested that women are reviewed by the person who ordered the combined first trimester screen one week after the ultrasound to ensure a result has been generated.

Combined first trimester screening tests for Down syndrome, Edward syndrome and Patau syndrome. It involves both a maternal blood test (ideally conducted between 9 and 10 weeks – but can be done from 9 weeks to 13 weeks and 6 days) and ultrasound (ideally done in the 12th week, but can be done from 11 weeks to 13 weeks and 6 days). This test calculates risk from maternal free beta human chorionic gonadotrophin (free ß-hCG) and pregnancy associated plasma protein-A (PAPP-A), maternal age and nuchal translucency measurement.

It’s detection rate (sensitivity) for Down syndrome is 90%, the false positive rate is approx. 5%, with a high-risk result reported at of ≥1 in 300. The detection rate for Edward and Patau syndrome is approx. 70%, the false positive rate is 0.4%, with a high-risk result reported at ≥1 in 175.

*This test is not available at the hospital. If a NIPT is undertaken, this test is not required.*

If a woman has a high-risk screening result on combined first trimester screening or second trimester maternal serum screening, she may choose to have:

A Non-invasive pre-natal test (NIPT), or

A diagnostic test (CVS or amniocentesis), or

• Further counselling

As the combined first trimester screen requires coordination of the blood and ultrasound components to generate a result, this means that ultrasound findings need to be provided by the ultrasound service to the Victorian Clinical Genetics Service (which is the maternal serum screening laboratory) to generate a result.

Results are generally available within seven days of the laboratory receiving the nuchal translucency report. A Medicare rebate is available for blood tests and ultrasounds.

Some out-of-pocket expenses may occur. Individual ultrasound services should be contacted about costs and in order to reduce the costs of the blood component, the SMCA should indicate on pathology forms that the woman is a public patient.

In the event of any concerns or abnormal results, Genetics Services at the hospital can be contacted to provide further advice and support.

**Second trimester maternal serum screening**

Second trimester maternal serum screening tests for Down syndrome, Edward syndrome and neural tube defects. This test calculates risk from maternal alpha fetoprotein (AFP), free beta human chorionic gonadotrophin (free ß-hCG), unconjugated oestriol (uE3) and Inhibin A and maternal age. Detection rates are approx. 70% for Down syndrome and 90% for neural tube defects. A high risk result is reported at ≥1 in 250 for Down syndrome and ≥1 in 200 for Edward syndrome.

The test is ideally performed at about 15 weeks gestation (although it can be done from 14–20 weeks). Results are generally available within seven days. This is the screening test for Down syndrome that is routinely available at the hospitals, if the woman’s first hospital appointment occurs at less than 20 weeks gestation and she has not already had a testfor aneuploidy.

**Diagnostic tests for chromosomal abnormalities**

Diagnostic tests such as CVS or amniocentesis should be considered/offered if:

* screening shows increased risk of chromosome abnormality (e.g. Down syndrome)
* maternal age is ≥37 years at expected date of confinement
* there is parental translocation
* there is previous trisomy
* there are major anomalies on ultrasound or
* the nuchal translucency is >3.5mm at ultrasound at 11-13 weeks
* there are previous neural tube defects (diagnostic method of choice is specialised obstetric ultrasound)
* there is a concern about disorders detected by DNA technology (e.g. Duchenne and Becker muscular dystrophy, myotonic dystrophy, fragile X, haemoglobinopathies, alpha and beta thalassaemia, sickle cell disease, haemophilia A or B, cystic fibrosis, Tay–Sachs disease, neurological diseases such as spinal muscular atrophy or Huntington’s disease).

There are many inborn errors of metabolism diagnosable prenatally by CVS or amniocentesis, but an exact biochemical diagnosis is needed in the index case before such a prenatal test can be considered.

If a woman later requests a TOP, the choice between a CVS and amniocentesis has implications on options for the method of termination of pregnancy (TOP). This is because an amniocentesis is performed at a later gestation than a CVS and therefore the results may not be available in time for a surgical TOP to be an option (as surgical TOPs are usually only available up to approximately 18 weeks gestation).

*Chorionic villus sampling (CVS)*

A CVS diagnostic test can be performed at 11–13 weeks and 6 days. If there is an indication for testing, this can be undertaken at the hospital and there are no out-of-pocket costs.

The test involves approx. 1% additional risk of miscarriage (in addition to the risk of miscarriage for all pregnancies). CVS also has a 1% risk of equivocal result (e.g. the risk of mosaicism – the presence of a mixture of cells with normal and abnormal karyotype – or maternal cell contamination of the sample). Results are generally available within two weeks.

*Amniocentesis*

An amniocentesis is usually performed at 15–18 weeks. If there is an indication for testing, this can be undertaken at the Royal Women’s Hospital and there are no out-of-pocket costs.

The test involves approx. a 0.5% additional risk of miscarriage (in addition to the risk of miscarriage for all pregnancies). Results are generally available within two weeks.

*Fluorescent in situ hybridisation analysis*

A fluorescent in situ hybridisation (FISH) analysis is an additional test that can be performed on the sample obtained at the CVS or amniocentesis in order to obtain an earlier preliminary result. FISH analysis gives a preliminary result in 48–72 hours but does not replace complete chromosomal analysis. FISH analysis has a cost involved and no Medicare rebate is available. If a test indicating aneuploidy is obtained, full results should be awaited to confirm the diagnosis before any intervention is undertaken.

Arranging CVS or amniocentesis

At BH, SMCA should refer women directly to the Royal Women’s Maternal Fetal Medicine Unit/Genetic Services (Ph: 8345 2180 Fax: 8345 2179, email [fmu@thewomen’s.org.au](mailto:fmu@thewomen's.org.au) ) or Western Health Maternal Fetal Medicine Unit and Genetics (see contact details page 75), who arrange counselling and testing.

**Tests for other inheritable genetic conditions**

When ordering investigations for genetic conditions (e.g. thalassaemia, cystic fibrosis, fragile X syndrome) for a woman and her partner, indicate on the investigation form if the woman is pregnant (and partner details for partner testing) so that the results and analysis can be expedited

Tests for other inheritable genetic conditions are ideally done before pregnancy or if this window has been missed, in early pregnancy.

Population-based carrier screening

This is referred to as ‘Reproductive genetic carrier screening’ and is available for couples with no personal or family history of genetic disease at a cost to the patient.

A number of tests with varied conditions included are available. They are not available at the hospitals.

Reproductive genetic carrier screening is an option for:

* »» couples with no known personal or family history of cystic fibrosis, fragile X or spinal muscular atrophy but who are from a population group with an increased risk.

Population groups at increased risk include northern European, Ashkenazi Jewish background and consanguineous couples (cousins married to each other)

* couples with no increased risk who wish to be screened for cystic fibrosis, Fragile X or spinal muscular atrophy

If either parent is identified as a carrier, immediate follow up is required; especially if the woman is pregnant, as prenatal diagnosis may be required

* population groups at higher risk of other genetic diseases where carrier screening is available (e.g. Tay–Sachs disease, haemoglobinopathies).

Reproductive genetic carrier screening is a blood test that can be taken at any pathology service, with results available in approximately 10 working days. There is a cost involved (no Medicare rebate is available).

If either parent is identified as a carrier, immediate follow up is required, especially if the woman is pregnant. Refer directly to the Genetics Services of the hospital the woman is booked into care with.

Information brochures and request forms are available on the Victorian Clinical Genetics Service website. Also see: [www.vcgs.org.au](http://www.vcgs.org.au)

Diagnostic testing

For   
Haemoglobinopathies undertake urgent partner testing. Otherwise refer directly to the Genetics service of the hospital for which the woman is booked into care

Diagnostic testing identifies particular gene alterations. The gene alterations of a vast array of inheritable genetic conditions can be tested, although not all inheritable problems can be tested for.

A personal or family history of inheritable genetic conditions of either partner may require counselling and potential testing. Testing may involve blood tests for either parent or tests on the foetus (CVS/amniocentesis). Depending on the gene alteration being sought, it can take several months for results to be available. A cost may be involved.

For diagnostic testing as above:

* Genetics Services at the hospitals can provide advice to GPs and women, and counselling and testing for women if required

**Genetic counselling**

Health care providers are encouraged to offer early advice and counselling regarding all tests offered. This is especially pertinent for screening and diagnostic tests for fetal abnormalities. All couples should be given the opportunity to consider these tests.

The SMCA should discuss the available routine tests, the nature of the tests, the conditions being tested for, the possibility of false positive and false negative results, and the advantages and disadvantages of testing (taking into account maternal age and medical, pregnancy and family history). Wherever possible, women should be offered written material in their spoken language, including information about local services and costs involved.

To ensure the provision of timely advice, if urgent or semi-urgent referral is required, it is best to contact the Genetics Services of units directly and not to utilise the general referral fax systems at hospitals

Counselling through genetic services may be required:

* if a woman is unsure about whether to undertake diagnostic testing (or if a woman would like to undertake CVS or amniocentesis)
* if a woman or her partner has a genetic condition or a family history of a genetic condition that they wish to find out more about (including testing and the possible implications); this is best done pre-pregnancy
* if a woman has a high-risk screening result, or if a couple with a high risk of having a child with a genetic condition, wishes to discuss prenatal testing, (including diagnostic testing), or if a health care provider requires secondary advice.

Genetics Services at the hospitals provide advice to GPs and women, and counselling, testing and referral for women and their partners either pre-pregnancy or during pregnancy. Genetics Services work closely with obstetric services including fetal management units), ultrasound departments and Victorian Clinical Genetics Services.

Generally, women must be booked for care at the hospitals or be eligible for such (if pre-pregnancy), but requirements for access vary.

**Fetal morphology ultrasound**

All women should be offered a fetal morphology ultrasound at 19–22 weeks.

The fetal morphology ultrasound can detect some structural abnormalities such as neural tube, cardiac, gastrointestinal, limb and central nervous system defects. It also confirms the accuracy of the expected date of delivery, locates the placenta, and may measure cervical length (normal length >25 mm), and check the ovaries and uterus for abnormalities. It is a poor screening test for Down syndrome, with a sensitivity of approximately 50%.

To expedite the hospital follow up of results if required, the SMCA should include in the VMR the contact details of the community ultrasound and pathology provider

At the hospitals, ultrasound department capacity is limited with hospital ultrasounds allocated according to clinical and social need. Routine fetal morphology ultrasound is only offered to women with high-risk pregnancies or in social need, based on the information provided in the GP’s initial referral to hospital for pregnancy care.

Women considered high risk generally include women who: are <19 years or ≥39 years of age; have a BMI ≥35; have diabetes, epilepsy or other serious medical conditions; have had ≥2 previous caesarean sections; have had a previous fetal abnormality or a disabled child; who have markers or are suspected of being high risk on earlier ultrasound (with some variation between hospitals of these criteria).

If a woman does not have a fetal morphology ultrasound organised by her first hospital visit – either in the community or at the hospital – she will be advised to make an appointment with her GP to organise a community referral.

*To expedite follow up of results, the SMCA should note in the VMR the ultrasound and pathology provider from which the tests were ordered.*

**Fetal maternal management service**

If a fetal abnormality is detected on ultrasound, Genetics services can be contacted for referral or advice. This can be done directly or through Women’s Clinics. If urgent or semi-urgent referral is required, it is best to contact the below services directly. These services work closely with genetics services, ultrasound and other obstetric services and are able to arrange counselling if a termination is being considered.

**Hospital Genetics Service contact details**

|  |  |
| --- | --- |
| Mercy Hospital for Women  Phone: 8458 4250  Fax: 8458 4254 | Werribee Mercy Hospital  Phone: 8754 3448 (direct line to On-Call Obstetrician). The SMCA should contact the On-Call Obstetrician, who will discuss the referral with the SMCA and then refer to Western Health (which provides genetics services for WMH). |
| The Women’s (Parkville)  Phone: 8345 2180  Phone GP quick access: 8345 2058  Fax: 8345 2179  Email: fmu@thewomens.org.au | Western Health (Maternal Fetal Medicine Unit and Genetics)  Phone: 8345 1811  Fax: 8345 0700 |

**Resources on testing for fetal abnormalities**

|  |  |  |  |
| --- | --- | --- | --- |
| Topic | Organisation/Web address | | Content summary |
| General genetic testing | World Health Organisation  [www.who.int/genomics/public/geneticdiseases/en/index2.html#ts](http://www.who.int/genomics/public/geneticdiseases/en/index2.html#ts) | | Health professional information:  Comprehensive site with multiple resources including thalassaemia, cystic fibrosis, Tay-Sachs disease, fragile X syndrome and Huntington’s disease |
| Victorian Clinical Genetics  Services (VCGS)  [www.vcgs.org.au](http://www.vcgs.org.au) | | Health professional and consumer  information:  Comprehensive site with  multiple resources for genetic testing  and support services in Victoria |
| National Health and Medical Research Council  [Medical Genetic Testing: information for health professionals | NHMRC](https://www.nhmrc.gov.au/about-us/publications/medical-genetic-testing-information-health-professionals)  [Genetics in Family Medicine: The Australian Handbook for General Practitioners (racgp.org.au)](https://www.racgp.org.au/download/Documents/RepsAndEndorse/genetics_in_family_medicine.pdf)  [Genetics in Family Medicine: The Australian Handbook for General Practitioners (racgp.org.au)](https://www.racgp.org.au/download/Documents/RepsAndEndorse/genetics_in_family_medicine.pdf) | | Health professional information:  *Medical Genetic Testing: information for health professionals.* Comprehensive guidelines guide with multiple resources for genetic testing.  *Genetics in Family Medicine: The*  *Australian Handbook for General*  *Practitioners* (2007)  Information on a variety of genetic  conditions including cystic fibrosis  and fragile X syndrome, includes  testing in pregnancy  *Genetics in Family Medicine. The*  *Australian Handbook for General*  *Practitioners. Testing and Pregnancy*  (2007) |
| RANZCOG  [Prenatal screening and diagnosis of chromosomal and genetic conditions (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Prenatal-Screening-and-Diagnostic-Testing-for-Fetal-Chromosomal-and-Genetic-Conditions.pdf)  Under Routine Antenatal Care | | Clinical guidelines:  *Prenatal Screening and Diagnosis of Chromosomal and Genetic Abnormalities in the Fetus in Pregnancy* (2015) *Prenatal Screening for Fetal Abnormalities* (2013) |
| Aneuploidy screening tests | | | |
| Maternal serum  screening | | Victorian Clinical Genetics Services  [www.vcgspathology.com.au/sections/MaternalSerumScreening/?docid=51a81179-f5d3-41ee-8892-992e00efe87d](http://www.vcgspathology.com.au/sections/MaternalSerumScreening/?docid=51a81179-f5d3-41ee-8892-992e00efe87d)  [www.vcgspathology.com.au/downloads/YourPregnancy-YourChoice.pdf](http://www.vcgspathology.com.au/downloads/YourPregnancy-YourChoice.pdf) | Health professional information:  Maternal serum screening test  Consumer information:  Maternal serum screening test |
| Combined  first trimester  screening | | [www.vcgspathology.com.au/downloads/CombinedFirstTrimesterScreening.Pdf](http://www.vcgspathology.com.au/downloads/CombinedFirstTrimesterScreening.Pdf)  [Prenatal\_Testing\_patients.pdf (vcgs.org.au)](https://www.vcgs.org.au/sites/default/files/downloads/Prenatal_Testing_patients.pdf) | Health professional information:  VCGS Pathology form for combined  trimester screening  Consumer information:  Prenatal testing, including combined first trimester Screening, 2nd trimester maternal Serum screening, CVS, amniocentesis and ultrasound |
| Non-invasive  prenatal test  (NIPT) | | RANZCOG  [Prenatal screening and diagnosis of chromosomal and genetic conditions (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Prenatal-Screening-and-Diagnostic-Testing-for-Fetal-Chromosomal-and-Genetic-Conditions.pdf)  [www.google.com.au/webhp?sourceid=chromeinstant&ion=1&espv=2&ie=UTF-8#q=Fetal%20chromosonal%20site%3Aranzcog.edu.au](http://www.google.com.au/webhp?sourceid=chromeinstant&ion=1&espv=2&ie=UTF-8#q=Fetal%20chromosonal%20site%3Aranzcog.edu.au) | Health professional information:  RANZCOG communiqué on *(NIPT) for Fetal Aneuploidy-* reflects emerging clinical and scientific advances (April 2015)  Prenatal screening and diagnosis  of chromosomal and genetic  abnormalities in the fetus |
| Victorian Clinical Genetics Services (VCGS)  [www.vcgs.org.au/perceptNIPT](http://www.vcgs.org.au/perceptNIPT) | Health professional and consumer  information:  Precept NIPT |
| Healthscope Pathology  [Harmony Test | Non-Invasive Prenatal Test (NIPT) | Clinical Labs](https://antenatal.clinicallabs.com.au/patient/harmony) | Health professional and consumer  information:  Harmony NIPT |
|  | | Melbourne IVF  [Prenatal Testing - NIPT | Melbourne IVF (mivf.com.au)](https://www.mivf.com.au/treatments-services/genetic-testing/prenatal-testing-nipt#:~:text=Non%2DInvasive%20Prenatal%20Testing%20(NIPT,for%20you%20and%20your%20baby.) | Health professional and consumer  information:  Panorama NIPT |
| Baby Center  [www.babycenter.com.au/a25011141/what-is-a-non-invasiveprenatal-test](http://www.babycenter.com.au/a25011141/what-is-a-non-invasiveprenatal-test) | Consumer information:  NIPT |
| Aneuploidy diagnostic tests | | | |
| Amniocentesis | | The Royal Australian and New Zealand College of Radiologists  [www.insideradiology.com.au/pages/view.php?T\_id=69#.VaMLZ1-qpBc](http://www.insideradiology.com.au/pages/view.php?T_id=69#.VaMLZ1-qpBc) | Health professional information:  Comprehensive guide with multiple  resources related to amniocentesis |
| Better Health Channel  [www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Amniocentesis](http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Amniocentesis) | Consumer information:  Amniocentesis |
| Baby Center  [www.babycenter.com.au/a327/amniocentesis](http://www.babycenter.com.au/a327/amniocentesis) | Consumer information:  Amniocentesis |
| Chorionic villus  sampling (CVS) | | The Royal Australian and New Zealand College of Radiologists  [COGU Training Program Handbook (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Certification-in-Obstetrical-and-Gynaecological-Ultrasound-COGU-Training-Program-Handbook.pdf) | Health professional information:  Comprehensive guide with multiple  resources related to CVS |
| Better Health Channel  [Pregnancy tests – chorionic villus sampling - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/pregnancy-tests-chorionic-villus-sampling) | Consumer information:  CVS |
| Tests for other genetic disorders | | | |
| Cystic fibrosis | | Cystic Fibrosis Victoria  [www.cfscreening.com.au/](http://www.cfscreening.com.au/) | Health professional and consumer  information:  Comprehensive guide with multiple resources related to cystic fibrosis including carrier testing |
|  | | Victorian Clinical Genetics Services (VCGS)  [Carrier screening for CF, FXS and SMA | VCGS](https://www.vcgs.org.au/news/carrier-screening) | Pathology request form and  information:  *Reproductive genetic carrier screen*  – carrier screening for cystic fibrosis,  fragile X syndrome and spinal  muscular atrophy |
| Fragile X | | Fragile X Association of Australia  [Fragile X Association of Australia](https://www.fragilex.org.au/) | Consumer information:  Fragile X with links to services and  support groups |
| Thalassaemia | | Thalassemia Australia  [Home – Thalassaemia and Sickle Cell Australia (tasca.org.au)](https://www.tasca.org.au/) | Health professional information:  Haemoglobinopathy carrier screening recommendations |
| About Down syndrome and other aneuploidies | | | |
| Down Syndrome | | Down Syndrome Australia  [www.downsyndrome.org.au](http://www.downsyndrome.org.au) | Health professional and consumer  information:  Comprehensive site with multiple  resources and contacts |
| Edward  syndrome  (Trisomy 18) | | Centre for Genetics Education  [Trisomy\_18\_Edwards\_syndrome\_fact\_sheet-CGE.pdf (genetics.edu.au)](https://www.genetics.edu.au/PDF/Trisomy_18_Edwards_syndrome_fact_sheet-CGE.pdf) | Health professional information:  Edward syndrome |
| Ultrasound | | | |
|  | | The Women’s  <http://thewomens.r.worldssl.net/images/uploads/fact-sheets/Ultrasound.pdf> | Consumer information:  Ultrasound use in pregnancy |
| Better Health Channel  [Pregnancy tests - ultrasound - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-tests-ultrasound) | Consumer information:  Ultrasound in pregnancy |
| Center Australian Medical Advisory  Board  [www.babycenter.com.au/a557439/ultrasound-variants-in-pregnancy](http://www.babycenter.com.au/a557439/ultrasound-variants-in-pregnancy) | Consumer information:  Ultrasound variants in pregnancy |

**ANTENATAL VISITS**

*Shared maternity care schedule of visits: Summary*

The following table provides a summary of the minimum routine antenatal visits for shared maternity care. It includes a description of what to consider at each visit.

Although there is considerable alignment between the hospitals, the recommended antenatal schedule and routine investigations vary slightly.

Shared Care providers should use their clinical judgement in determining reviews.

| **Antenatal Care Schedule- GP Shared Care Pathway** | |
| --- | --- |
| **Antenatal Care Schedule – GP Shared Care Pathway**  Women who are deemed to be low risk and will follow the GP shared care Pathway includes all women not excluded by [Exclusion Criteria for Routine Shared Maternity Care](#ExclusionCriteria). | |
| **Precautions and contraindications**  Midwives must be cognisant with all approved resource materials available within maternity services at Bendigo Health. Wherever possible women will have education and preparation for labour, birth, infant feeding and the postnatal transition incorporated as a component of regular review visits undertaken by midwives throughout pregnancy.  Women having predominately medical care throughout pregnancy do not see a midwife again during their pregnancy and this will need to be undertaken by the medical team. | |
| **Standard antenatal check at each visit:** | **Standard requirements**   * Introduce yourself and discuss the procedure with the patient. * Obtain consent. * Check patient identification. * Perform routine hand hygiene. * Document in the VMR using pen, include the date, time, signature, printed name and designation |
| 1. **Review history**  * Health and well-being – discuss normal, healthy weight gain * Ask [Family Violence](#FamilyViolence) questions if presenting without another adult * Review alerts and ensure allergies and alerts including any family violence issues are noted * Results of investigations ordered at last visit * Smoking behaviour enquiry and cessation advice  1. **Ask:**  * Is there anything you were particularly keen to discuss? * Enquire about fetal movements from 20 weeks * Is there anything you are concerned about? * Have there been any changes to your circumstances since your previous visit? * If primipara: Have you been to classes? If new to BH encourage hospital tour: [Bendigo Health Website - Pregnancy Care](https://bendigohealth.org.au/PregnancyCare/)  1. **Perform Examination**  * BP * FHR * S-F height, determine lie and presentation (if over 20/40) * Consider need for FWT  1. **Discuss investigation results**  * Review results of investigations ordered at last visit * Arrange any further investigations as indicated * Document investigation results in BOS under investigations  1. **Provide education and information**   According to clinical situation and as directed by the woman   1. **Arrange ongoing care**   Determine/offer next antenatal appointment   1. **Provide education and information**   According to clinical situation and as directed by the woman   1. **Document in record**   Document findings in the patients hand held record (VMR) or print out antenatal events page and replace patients previous copy with updated version   1. **Consider opportunity to screen for Family Violence**  * Ask [Family Violence](#FamilyViolence) questions if presenting without another adult * DAN (domestic abuse - No) If the questions have been asked and no disclosures made. * DAY (domestic abuse - Yes) If the questions have been asked, and a disclosure made. * DAU (domestic abuse – Unknown) If the questions have not yet been asked. * If using BOS, record appropriate code (DAN, DAY, or DAU) in the ‘Antenatal Management Plan’ where clinicians will see it immediately upon opening. Note: the ‘code’ will print out on the management plan * Create an ‘event note’ in the ‘Antenatal events tab’ to record further confidential details and **select ‘No’ to ‘Print on reports’** * Document referrals and more complex psychosocial issues. * Complete MSW referral. Provide details of support services available as shown in [Family Violence Resources and Social Services](#FamilyViolence) |
| **22-24 weeks**  **GP**  **Checks/tasks in addition to routine antenatal visit** | **Standard antenatal check PLUS:**   * Review 19-21 week morphology ultrasound (gestational age, fetal number, placental position and fetal morphology) * Rhesus D negative – advise the woman that it is recommended that she attend a 28 week assessment clinic appointment for anti-D prophylaxis * Order FBE/antibodies/OGTT. Give pathology slip and OGTT patient handout to woman to complete test at 28 weeks. Inform patient that OGTT appointment needs to be booked by phoning the pathology collection centre that they would like to attend. * *Note: advise the woman to have blood tests done a few days prior to the next appointment to ensure results are available for this appointment. If requiring anti-D, the antibody screen must be completed within 72 hours preceding anti-D administration* * Provide education regarding decreased fetal movements after 26 weeks |
|  |
| **28 weeks**  **GP** | **Standard antenatal check PLUS:**   * Results of investigations (GTT, FBE and antibodies) * Check Child Birth Education Classes have been booked * Discuss limiting sugars and fats for last trimester and getting regular exercise. |
| **28 week Antenatal Assessment Clinic Appointment (if Rhesus D Negative)** | Attend BH assessment Clinic Appointment for administration of anti-D immunoglobulin. |
| **31 weeks**  **GP** | **Standard antenatal check PLUS:**   * Begin to discuss labour, birth, third stage and early parenting planning * Ensure 34 week Anti-D administration with assessment clinic appointment is arranged (to coincide with 34 week appointment) * Measure maternal weight, re-calculate BMI |
| **34 weeks**  **GP** | **Standard antenatal check PLUS:**   * GBS swab explained, tubes labelled and information sheet given to woman to attend at 36-37 weeks * Give NST handout * Consider need for FBE/iron rich foods taken in an acidic environment * Discuss preparation for labour, birth and parenting planning with discussion tailored towards individual needs of the woman. Encourage re-read of pregnancy booklet * Discuss normal movements in pregnancy * Review birth options/plans * Discuss regular contractions 5 minutely lasting 60 seconds over 30 mins or SROM before contact to Birth suite. Discuss non pharmacological methods of pain relief at home. |
| **34 week Assessment Clinic Appointment (if Rhesus D Negative)** | Attend BH assessment Clinic Appointment for administration of anti-D immunoglobulin. |
| **36 weeks**  **Obstetrician** | **Obstetric consultant appointment:**   * Where indicated book caesarean section with anaesthetic review, keep pathology slips with consent and patient questionaire * If breech presentation, discuss management – ultrasound and external cephalic version (ECV), if appropriate * Assess risk of PPH and document management plan in BOS as required * GBS swab attended and sent |
| **38 weeks**  **GP** | **Standard antenatal check PLUS:**   * Discuss labour, when to come to hospital or other relevant information * Discuss contractions 5 minutely lasting 60 seconds over 30 mins or SROM before calling hospital |
| **40 weeks**  **Medical review in ANC** | **Standard antenatal check PLUS:**   * Consider VE/Bishops score/stretch and sweep * Book CTG for 40+4 weeks in Antental Assessment Clinic * Book CTG and ultrasound (with AFI) to be completed prior to the 41/40 week appointment * Plan and book IOL as close to 42 weeks as possible |
| **41 weeks**  **Medical review in ANC** | **Standard antenatal check PLUS:**   * Review CTG and ultrasound/AFI   **Prolonged pregnancy management**   * VE to assess ‘Bishop score’ and consider ‘stretch and sweep’ * CTG second daily from 41 weeks (unless Saturday, then book Friday; or if Sun, book Monday) * AFI twice weekly from 41 weeks (e.g. Mon & Thurs, Tues& Fri or Wed & Sat) |

**Standard antenatal consultation and examination**

First-trimester visits are primarily to assess maternal and fetal wellbeing. They particularly focus on assessing the risk of complication, but also confirm the EDD, take a comprehensive history and discuss risk behaviours to establish care options.

Second-trimester visits are primarily scheduled to monitor fetal growth, maternal wellbeing and signs of pre-eclampsia.

Third-trimester visits are primarily to monitor fetal growth and movements, maternal wellbeing and signs of pre-eclampsia, and to assess and prepare women for admission, labour, birth and going home.

A standard antenatal consultation and examination is performed at each SMCA and hospital appointment.

**SMCA consultation discussion points**

Health care providers (both hospital and SMCA) should check that, in addition to maternal concerns, the following information has been discussed with the woman during her pregnancy.

Throughout pregnancy:

* Diet & exercise
* Smoking/alcohol and drug use and cessation if relevant
* Mental health and wellbeing
* Relationships and support networks
* Intimate partner violence
* Breastfeeding
* Pelvic Floor Exercise (resources available on the Continence Foundation Australia website).

Early pregnancy:

* Models of care
* Folate and iodine supplementation
* Medicines (prescription, over-the-counter, vitamins and vitamin A derivatives)
* Influenza vaccination (including partners/caregivers/grandparents)
* Listeria and toxoplasmosis prevention
* Diet, nutrition and weight gain
* Common discomforts in pregnancy
* Anti-D if relevant
* Exercise, work, travel, sex
* Oral health care – 5454 7994
* Expectations for pregnancy/birth.

Later in pregnancy:

* Symptoms/signs of premature labour (discussed at hospital visit)
* Discuss normal baby movements and refer patients to the Movements Matter section in the BH [Pregnancy Handbook.](https://www.bendigohealth.org.au/Assets/Files/65966-BH-A5%20Pregnancy%20Handbook%20Combined2.pdf)
* Advice on sleeping on either side after 28 weeks
* Labour and birth, including expectations (discussed at hospital visit)
* Vaginal birth after caesarean (discussed at hospital visit)
* Pertussis immunisation (recommended in each pregnancy, ideally at 28–32 weeks.

Also partners/caregivers if > 10 years since immunisation)

* Breastfeeding
* Baby products and safety.

In the final weeks:

* Newborn care
* Baby injections Hepatitis B vaccine and/or Konakion)
* Postpartum maternal immunisations – pertussis and/or MMR if indicated
* Postnatal GP check for mother and baby at 6 weeks
* Community maternal and child health services
* Promote Raising Children Network – <http://raisingchildren.net.au/>

***Weight gain in pregnancy***

Health care providers should discuss weight gain throughout the pregnancy with women. Health care providers should discuss and encourage exercise throughout pregnancy.

[Bendigo Health Pregnancy e-Handbook: Page 8](https://bendigohealth.org.au/Assets/Files/65966-BH-A5%20Pregnancy%20Handbook%20Combined2.pdf)

Expectant mothers and their care providers need to balance the benefits of pregnancy weight gain for the fetus with the risks of too much or too little increase, which can result in consequences for both mothers and children. For mothers, the ramifications of excess weight gain include increased chances of retaining extra kilos after birth, wound infections, postpartum haemorrhage or needing a Caesarean section; for children the risks include being born preterm or larger than normal. Each of these consequences increases the chances for subsequent health problems – such as heart disease and diabetes in the case of extra weight, and impaired development in the case of premature birth. At the same time, women who have a low BMI in pregnancy may be at increased risk of preterm delivery, or baby having a low birth weight.

To minimize the risks, women should aim to conceive while at a normal BMI and gain weight within the guidelines during pregnancy, as shown in table below [Bendigo Health Pregnancy e-Handbook.](https://bendigohealth.org.au/Assets/Files/65966-BH-A5%20Pregnancy%20Handbook%20Combined2.pdf) Helping women achieve these goals will require health care providers to increase the counselling they give their patients on weight, diet, and exercise.

Prenatal care providers and expectant mothers should work together to set pregnancy weight gain goals based on the guidelines and other factors relevant to each patient’s individual needs.

Expected weight increase per trimester of pregnancy:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Underweight** | **Healthy/ Normal weight range** | **Overweight** | **Obese** |
| **BMI** | **Less than**  **18.5 kg/m2** | **18.5 – 24.9 kg/m2** | **25-29.9**  **kg/m2** | **Higher than**  **30 kg/m2** |
| **First Trimester** | 1 – 3 kg | 1 – 3 kg | 0 – 1 kg | 0 – 1 kg |
| **Second Trimester** | 5 – 7 kg | 5 – 6 kg | 3 – 5 kg | 2 – 4 kg |
| **Third Trimester** | 6 – 8 kg | 5 – 6 kg | 4 – 5 kg | 3 – 4 kg |
| **Total in Pregnancy** | **12 – 18 kg** | **11 – 16 kg** | **7 – 11 kg** | **5 – 9 kg** |
| **Twin Pregnancy** |  | **16 – 24 kg** | **14 – 22 kg** | **11 – 19 kg** |

Institute of Medicine Guidelines 2009

Women who are assessed as eligible by the hospital and choose shared maternity care are then registered for shared maternity care. This involves:

* The woman receiving a schedule of visits and tests
* Ensuring the woman has been provided with a VMR
* Ensuring that hospital appointments are made
* A letter of registration, which is sent to the SMCA to inform the SMCA of the woman’s enrolment into shared care (within 72 hours).
* The woman needs to make her own appointments with the SMCA.

If the woman does not attend her first SMCA visit, the SMCA must notify WHC.

**ANTENATAL INVESTIGATIONS**

This section provides information on routine investigations and commonly considered antenatal investigations. Antenatal investigations and some prenatal investigations (for fetal abnormalities) can be performed either in the community or at the hospital. Considering the time-sensitive nature of some investigations, and the timely intervention for some conditions, it is preferable that investigations are performed by a woman’s GP prior to her first hospital visit.

If a test is performed in the community, a copy of the results (if available) should be included in the VMR and given to the woman to bring to her hospital visits. It is the primary responsibility of the provider ordering a test or noting any abnormal finding to ensure appropriate follow up, communication and management. However, all providers should check that follow up of any abnormal investigation has occurred.

**Initial routine investigations**

Recommended initial investigations include:

* blood group
* antibody screen
* FBE (including MCV/MCH)
* ferritin
* Hepatitis B screening for carrier status
* Hepatitis C serology
* Syphilis serology
* Rubella antibodies
* HIV serology
* Urinalysis/MSU MC&S

Investigations to consider include:

* Dating ultrasound
* Vitamin D level
* Haemoglobin electrophoresis /DNA analysis for alpha thalassaemia
* Varicella antibodies
* Diabetes screen - Glucose tolerance test (GTT) or HbA1C and Fasting blood Glucose
* Chlamydia (urine sample or cervical swab) if under 25 years old
* Thyroid stimulating hormone (TSH)
* Cervical screening / HPV screening.

**Routine Investigations**

*Blood Group*

If a woman is Rhesus negative and has no Rh antibodies:

* Routine prophylactic anti-D is given at the hospital at 28 and 34 weeks
* Routine prophylactic anti-D is given postnatally at the hospital if the baby is
* Rhesus positive.
* In the event of a sensitising event, refer the woman to Bendigo Health emergency department for Rh D immunoglobulin (anti-D).

*Antibody screen*

An antibody screen is recommended for every woman early in every pregnancy and again at 28 weeks, even if Rhesus positive, as antibodies may develop over time.

*FBE and ferritin*

A general screen for anaemia, thrombocytopenia, iron deficiency and haemoglobinopathies (e.g. thalassaemia, sickle cell anaemia). A previous normal MCV excludes thalassaemia. If a low haemoglobin/MCV is found, tests and partner testing may be required for haemoglobinopathy. Refer later in this section for further information on haemoglobinopathies.

All pregnant women have a full blood examination (FBE) in early pregnancy. Women with risk factors for iron deficiency should also have serum ferritin measured.

*Hepatitis B screening for carrier status*

All women should be offered a screening test for hepatitis B virus early in pregnancy because at-risk screening misses approximately half of hepatitis B carriers. A specialist consultation is generally undertaken at the hospital if a woman has abnormal liver function tests (LFTs), a high viral load or is newly diagnosed. Contact WHC to arrange a specialist consultation if required.

*Hepatitis C serology*

Hepatitis C serology is performed to determine hepatitis carrier status and is offered routinely at BH. Risk factors include injecting drug use, migration from countries with high rates of endemic hepatitis C virus (HCV), blood transfusion prior to 1990, incarceration, high-risk sexual activity, and HCV-positive sexual partners or household contact. A specialist consultation is generally undertaken at the hospital if a woman has abnormal LFTs, a high viral load or is newly diagnosed.

*Syphilis serology*

All women should be offered a screening test for syphilis early in pregnancy. Although unusual, it is easily treated. If left untreated, consequences can be devastating.

*Rubella antibodies*

Testing to check rubella immunity should be undertaken early in pregnancy. Rubella vaccination is a live vaccine, so it cannot be given in pregnancy. Women who are non-immune will be offered immunisation at the hospital post-delivery.

*HIV serology*

High-level evidence indicates that all women should be offered a screening test for HIV early in pregnancy.

*Urinalysis/MSU M&C&S*

When asymptomatic bacteriuria is detected it should be treated with a full course of an appropriate and safe antibiotic to improve outcomes with respect to pyelonephritis, preterm birth and low birth weight. A repeat MSU micro and culture should be performed after treatment.

**Other initial investigations to consider**

*Dating ultrasound*

A dating ultrasound is performed to establish estimated date of confinement. Optimal timing for most accurate dating is 7–13 weeks so that the crown rump length can be measured; with the most accurate dating being earlier, but when the crown rump length can be measured (as opposed to just a yolk sac measurement).

A dating ultrasound is indicated if:

* Elective lower uterine caesarean section planned and 12-week ultrasound not planned, or
* Dates are unclear.

*Tests for haemoglobinopathies: Haemoglobin electrophoresis and DNA analysis*

The aim of haemoglobinopathy testing is to identify couples at risk of having a fetus with a major haemoglobinopathy. This includes B thalassaemia major (both parents with B thalassaemia minor or with B/E haemoglobin), Barts hydrops (4 gene alpha haemoglobin deletion – parents have alpha thalassaemia minor with 2 gene deletion) and sickle cell disease (parents heterozygous S and Beta, D or C).

A haemoglobin electrophoresis should be ordered if any of the following apply:

* Low MCV (< 83 fL) or MCH (<28.1 pg) in the absence of iron deficiency
* A family history of thalassaemia or haemoglobinopathy
* A partner has thalassaemia or haemoglobinopathy
* The woman or partner is from a high-risk ethnic background (e.g. Mediterranean, Middle East, Africa, Asia, India, Sri Lanka, Pakistan, Bangladesh, Pacific Islands, South America, New Zealand Maori).

Urgent partner screening is essential if a woman has an abnormal haemoglobin electrophoresis or a thalassaemia/haemoglobinopathy cannot be excluded; e.g. haemoglobin electrophoresis can yield a false negative for B thalassaemia if a woman is iron deficient. Therefore, if a woman has iron deficiency anaemia and thalassaemia cannot be excluded, partner screening is recommended.

Partner testing consists of a FBE, haemoglobin electrophoresis and ferritin. A request for blood to be kept for DNA analysis if later required is valuable.

If the partner testing is normal, no further investigation is required. If partner testing is also abnormal, contact Bendigo Health Women’s Clinics as soon as possible and provide results in order for appropriate referral to the correct hospital department. At this stage is it useful to request a DNA analysis on the woman and her partner’s blood specimen. To expedite analysis, mark as urgent and state the woman is pregnant.

*Varicella antibodies*

Determines varicella immunity if the woman has no known immunisation or has a clear history of varicella.

This is a live vaccine, so it should not be given in pregnancy. Non-immune women require immunisation post-delivery with their GP. Two doses are required. Refer to: [Varicella (chickenpox) | The Australian Immunisation Handbook (health.gov.au)](https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/varicella-chickenpox#:~:text=Varicella%2Dcontaining%20vaccine%20is%20recommended%20for%20children%20at%2018%20months,a%20history%20of%20varicella)

*Early glucose tolerance test or other screen for diabetes*

Women with any of the following high risk for diabetes (see below), should have a GTT test in first trimester or at first booking appointment if not already performed to exclude undiagnosed type 2 diabetes or GDM:test is

* Previous GDM
* Previously elevated blood glucose level
* Maternal age ≥40 years
* 1st degree relative with diabetes (e.g. sibling or parent with DM)
* BMI >35 kg/m² (at conception).
* Previous macrosomia baby (birth weight > 4500gms or > 90th centile)
* Polycystic ovarian syndrome or metabolic syndrome
* Medications: corticosteroids, antipsychotics

If the result is normal, a GTT is still required at 26–28 weeks (also see later in this section).

*Chlamydia*

Urine test conducted if the woman has symptoms of chlamydia infection, previous infection or if she is <29 years old.

*Vitamin D*

Testing of Vitamin D levels in pregnancy is not recommended as part of routine pregnancy screening. Pregnant women should be tested for vitamin D deficiency early in pregnancy or pre-pregnancy if has any of the following risk factors for Vitamin D deficiency:

* Dark-skinned women, including Asian women
* Women who spend a lot of time indoors and who 'cover up'
* Limited sunlight exposure: cold climate, short winter days, indoor occupation, need for protective clothing
* Malabsorption (e.g., cystic fibrosis, short bowel syndrome, inflammatory bowel disease, untreated coeliac disease or a history of bariatric surgery).

The Medicare Benefits Schedule (MBS) places restrictions on criteria for Vitamin D testing, with one of the following risk criteria needs to be applicable and included on the pathology form:

* Malabsorption
* Deeply pigmented skin
* Chronic and severe lack of sun exposure for cultural, medical, occupational or residential reasons.
* Chronic renal failure or renal transplant recipient, hyperparathyroidism, hypo or hypercalcaemia, or hypophosphataemia

Management of vitamin D deficiency includes:

* Increasing safe sun exposure
* Increasing food intake of vitamin D
* Adequate calcium supplementation
* Vitamin D supplementation
* Considering other family members.

*Thyroid stimulating hormone (TSH)*

Screen for thyroid function with a TSH is indicated if the woman has a history of thyroid disease, autoimmune disease, non-physiological goitre or a strong family history of thyroid disease.

*Cervical screening test*

If due, screening for cervical cancer can generally be undertaken during pregnancy to at least 28 weeks gestation. Do not use a cytobrush.

*CMV and toxoplasmosis serology*

These are not recommended for screening of immunity, as interventions for nonimmune women are not clear. If a practitioner decides to order these to check immunity in high risk women, please only order IgG, and not IgM (as the IgM levels have a high false positive rate).

*Population carrier screening (for cystic fibrosis, spinal muscular atrophy, fragile X)*

Unless a woman has already had testing, information on carrier screening for the more common genetic conditions of cystic fibrosis, spinal muscular atrophy, and fragile X syndrome should be offered to all women planning a pregnancy (ideally) or in the first trimester of pregnancy. This is referred to as “Reproductive genetic carrier screening” and is available for couples with no personal or family history of genetic disease at a cost to the patient. This can be undertaken by mouth swab or blood test

**Second trimester investigations**

|  |  |  |
| --- | --- | --- |
| Test | Timing | Notes |
| GTT | 26–28 weeks | Ordered by the hospital |
| FBE | 26–28 weeks | Ordered by the hospital |
| Antibody screen | 26–28 weeks | Ordered by the hospital |

The hospital is responsible for ordering the second trimester investigations. It is important the results are checked and acted upon appropriately by the SMCA, even though they were not ordered by them, the results should be entered into the VMR.

*Glucose Tolerance Test (GTT)*

A GTT of 75 g of glucose is routinely undertaken at 26–28 weeks to screen for gestational diabetes. The woman needs to book an appointment with the hospital pathology service or with a community provider to do the test. The test involves a 12-hour fast, after which fasting plasma glucose is measured then a 75-gram glucose drink taken, and then 1 and 2 hour plasma glucose measured.

Refer to The Australasian Diabetes in Pregnancy Society (ADIPS) criteria for diagnosing gestational diabetes.

If a SMCA confirms a diagnosis of gestational diabetes they should contact WHC as soon as possible. The shared maternity care coordinator will:

* Make appropriate hospital appointments with the DIP (Diabetes in Pregnancy) clinic.
* Cease shared care (unless a modified arrangement is made between the SMCA and the hospital; if so, ensure this is documented in the VMR).

Management of gestational diabetes is a multidisciplinary task that involves regular monitoring of blood glucose levels, eating a healthy balanced diet, and undertaking regular physical activity and sometimes insulin use. It also requires increased surveillance, blood tests and ultrasounds and may necessitate earlier delivery.

*FBE and ferritin*

A general screen for anaemia, thrombocytopaenia and iron deficiency. Consider ferritin if previous low Hb, ferritin or clinical indication.

*Antibody screen*

An antibody screen is recommended for every woman in the second trimester, even if Rhesus positive, as antibodies may develop over time.

**Third trimester investigations**

|  |  |  |
| --- | --- | --- |
| Test | Timing | Notes |
| Screening for Group B streptococcus (GBS) | 35–37 weeks | Given to the woman at 34 week appointment for women to take the swab themselves between 35-37 weeks |
| Consider: FBE and  ferritin | 34–37 week | Consider if previous low haemoglobin, low ferritin or clinical indication |

*Group B streptococcus*

If the GBS swab result is positive or a urine test at any stage in pregnancy shows GBS colonisation, but there are no symptoms, antenatal treatment is not required and the hospital will administer intravenous antibiotic treatment (usually penicillin) at the onset of labour. Approximately 25 % of women test positive for group B streptococcus.

Antibiotics during labour decrease the risk of early onset group B streptococcal disease in the newborn from 1 in 200 to 1 in 4,000.

The SMCA should remind a woman with a positive GBS screen result to present to hospital with rupture of membranes and/or in early in labour as it is preferable that antibiotic treatment is administered at least 4 hours prior to the birth of the baby.

A woman is considered colonised with GBS if any of the following applies:

* GBS bacteriuria at any time during current pregnancy
* Previously given birth to an infant with invasive GBS disease
* GBS swab at 36 weeks is positive for GBS

|  |
| --- |
| Women should be advised on how to collect the swab sample for GBS screening: |
| 1. Remove swab from packaging. Insert swab 2cm into vagina, (front passage). Do not touch cotton end with fingers. 2. Insert the same swab 1cm into anus (back passage). 3. Remove cap from sterile tube. 4. Place swab into tube. Ensure cap fits firmly. 5. Make sure swab container is fully labelled with name, date of birth, date and time of collection. Place swab container into transport bag and return to pathology for testing. | |

**RESOURCES ON ANTENATAL VISITS, INVESTIGATIONS AND FINDINGS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | **Organisation web address** | | **Content summary** |
| General testing and care | Department of Health and Human Services, Australia  <https://www2.health.vic.gov.au/hospitals-and-health-services/safer-care-victoria/maternity-ehandbook> | | Victorian clinical care guidelines:  The Maternity e-Handbook provides clinical guidance for maternity clinicians caring for women during pregnancy, birth and the postpartum period across Victoria. |
| 3 Centres Collaboration  [Pregnancy Care Guidelines (health.gov.au)](https://www.health.gov.au/sites/default/files/documents/2021/02/pregnancy-care-guidelines-pregnancy-care-guidelines.pdf) | | Antenatal care guidelines:  Multiple resources related to investigations, examination and schedule visits for low-risk pregnancy |
| RANZCOG  [Prenatal assessment of fetal structural conditions (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Prenatal-Assessment-of-Fetal-Structural-Conditions.pdf)  Under Routine Antenatal Care | | Clinical guidelines:  *Routine Antenatal Assessment in the Absence of Pregnancy Complications* (2013)  *Prenatal Screening for fetal Abnormalities* (2013)  *Maternal Group B Streptococcus (GBS) in Pregnancy: Screening and Management* (2012) – *GBS Swab Sheet (Diagram)*  *Prenatal Assessment of Fetal Structural Abnormalities* (2015) *Fetal Morphology Ultrasound* (2014)  *Measurement of cervical length for prediction of preterm birth* (2012) |
| American Congress of Obstetricians and Gynaecologists  [How Your Fetus Grows During Pregnancy | ACOG](https://www.acog.org/womens-health/faqs/how-your-fetus-grows-during-pregnancy#:~:text=During%20pregnancy%2C%20the%20lining%20of,many%20times%20its%20normal%20size.) | | Prenatal-Development-How-Your- Baby-Grows-During-Pregnancy Consumer information:  Fetal development during pregnancy |
| Diabetes | Australasian Diabetes in Pregnancy Society  <http://adips.org/downloads/ADIPSConsensusGuidelinesGDM-03.05.13VersionACCEPTEDFINAL.pdf> | | Clinical guidelines:  *ADIPS Consensus Guidelines for the Testing and Diagnosis of Diabetes Mellitus in Australia* (2013) |
| National Institute for Health and Clinical Excellence (UK)  [www.nice.org.uk/guidance/ng3](http://www.nice.org.uk/guidance/ng3)  <http://pathways.nice.org.uk/pathways/diabetes-in-pregnancy%20> | | Clinical guideline:  *Diabetes in pregnancy: management of diabetes and its complications from preconception to the postnatal period* (2015)  Algorithms on diabetes in pregnancy with links to various aspects of care from gestational diabetes to postnatal diabetic care |
| Diabetes Australia  [www.diabetesvic.org.au](http://www.diabetesvic.org.au) | | Comprehensive guide for health  professionals and consumers:  Multiple resources on diabetes,  including free booklet and DVD  resources |
|  | Bendigo Health Guidelines  PROMPT | | Clinical guideline:    Related to diabetes in pregnancy and labour |
| Better Health Channel  [Diabetes - gestational - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/diabetes-gestational) | | Consumer information:  Covers various aspects of diagnosis  and management and support for  women with gestational diabetes |
| Thyroid | RANZCOG  [Guidelines for appointment of obstetricians and gynaecologists to specialist positions in Australia and New Zealand (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Guidelines-for-appointment-of-obstetricians-and-gynaecologists-to-specialist-positions-in-Australia-and-New-Zealand.pdf) Under Routine Antenatal Care | | Clinical guideline:  Testing for Hypothyroidism During Pregnancy with Serum TSH (2015) |
| Endocrine Society (US)  [Management of thyroid dysfunction during pregnancy and postpartum: an Endocrine Society clinical practice guideline - PubMed (nih.gov)](https://pubmed.ncbi.nlm.nih.gov/22869843/) | | Clinical guideline:  Management of Thyroid Dysfunction during Pregnancy and the Postpartum (2012) |
| RACGP  [RACGP - Thyroid disease in the perinatal period](https://www.racgp.org.au/afp/2012/august/thyroid-disease-in-the-perinatal-period) | | Health professional information:  Article on Thyroid disease in the perinatal period (2012) |
| Hypertension | Society of Obstetric Medicine of Australia and New Zealand (SOMAZ)  [Guideline for the Management of Hypertensive Disorders of Pregnancy (somanz.org)](https://www.somanz.org/content/uploads/2020/07/HTguidelineupdatedJune2015.pdf) | | Health professional information:  *Guideline for the management of hypertensive disorders of pregnancy* (2014) |
| Vitamin D | Department of Health and Human Services, Victoria  [https://www.health.vic.gov.au/sites/default/files/migrated/files/collections/policies-and-guidelines/l/low\_vitamin\_d\_info-rtf.rtf](https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=web&cd=&ved=0CAQQw7AJahcKEwiwrKT5qZP7AhUAAAAAHQAAAAAQAg&url=https%3A%2F%2Fwww.health.vic.gov.au%2Fsites%2Fdefault%2Ffiles%2Fmigrated%2Ffiles%2Fcollections%2Fpolicies-and-guidelines%2Fl%2Flow_vitamin_d_info-rtf.rtf&psig=AOvVaw1VlS8j2jY6CBtmKf9CFQuU&ust=1667610101118572) | | Health professionals information:  Low vitamin D in Victoria including  a section on 25-hydroxy vitamin D  testing and treatment |
| RANZCOG  [Vitamin-and-mineral-supplementation-in-pregnancy-C-Obs-25-Review-Nov-2014-Amended-May-2015.pdf (hps.com.au)](https://www.hps.com.au/wp-content/uploads/2019/04/Vitamin-and-mineral-supplementation-in-pregnancy-C-Obs-25-Review-Nov-2014-Amended-May-2015.pdf)  Under Routine Antenatal Care | | Clinical guideline:  Vitamin and Mineral Supplementation and Pregnancy (2014). Includes  advice on Vitamin D |
| Medical History | | | |
| Asthma | National Asthma Council Australia  [www.asthmahandbook.org.au/](http://www.asthmahandbook.org.au/)  [Pregnancy and asthma - National Asthma Council Australia](https://www.nationalasthma.org.au/living-with-asthma/resources/patients-carers/factsheets/pregnancy-and-asthma) | Health professional information:  Australian Asthma Handbook  available for purchase and download  Consumer information:  Healthy living information for managing asthma in pregnancy.  Includes link to an asthma plan | |
| Better Health Channel  [Asthma - pregnancy and breastfeeding - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/asthma-pregnancy-and-breastfeeding) | Consumer information:  Managing asthma during pregnancy  and breastfeeding | |
| Epilepsy | Epilepsy Foundation of Victoria  [Epilepsy Management Plans | Epilepsy Foundation](https://epilepsyfoundation.org.au/understanding-epilepsy/epilepsy-and-seizure-management-tools/epilepsy-plans/) | Health professional and consumer information:  Includes access to online epilepsy management plans | |
| American Academy of Neurology  [www.neurology.org/content/73/2/142.full](http://www.neurology.org/content/73/2/142.full) | Health professional information:  Article on Management issues for  women with epilepsy – *Focus on*  *pregnancy* (2009) | |
| Better Health Channel  [Epilepsy - lifestyle issues - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/epilepsy-lifestyle-issues) | Consumer information:  Epilepsy and lifestyle | |
| Obesity | RANZCOG  [Management of Obesity in Pregnancy (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Management-of-Obesity-in-Pregnancy.pdf)  Under Routine Antenatal Care | Clinical guideline:  *Management of Obesity in Pregnancy*  (2013) | |
| Department of Health and Human Services, Victoria  [Care of the obese pregnant woman and weight management in pregnancy (August 2011) (health.vic.gov.au)](https://www.health.vic.gov.au/publications/care-of-the-obese-pregnant-woman-and-weight-management-in-pregnancy-august-2011) | Clinical guideline:  *Maternity and Newborn Clinical*  *Network Obesity Guideline* (2011) | |
| Female genital  mutilation | The Women’s  [Deinfibulation Timing and Technique (worldssl.net)](https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/deinfibulation-timing-and-technique_280720.pdf)  <https://www.thewomens.org.au/health-professionals/health-professionals-gynaecology/family-reproductive-rights-education-program-farrep/> | Health professional information:  On services and supports available  for women and de-infibulation | |
| Common concerns in pregnancy | | | |
| General | RACGP  [www.racgp.org.au/download/documents/AFP/2010/November/201011rio.pdf](http://www.racgp.org.au/download/documents/AFP/2010/November/201011rio.pdf) | Health professional information:  Article *Does it matter if I’m ‘just’ pregnant?* (2010) outlining how medical problems should be managed differently during early pregnancy | |
| Better Health Channel  [Carpal tunnel syndrome - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/carpal-tunnel-syndrome)  [Restless legs syndrome (RLS) - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/restless-legs-syndrome-rls)  [Indigestion (heartburn and reflux) - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/indigestion)  [Pregnancy - morning sickness - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-morning-sickness)  [Pregnancy – labour - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-labour)  [Pregnancy and travel - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-and-travel) | Consumer information:  Provided by the Victorian  Government on:  Carpal tunnel syndrome  Restless legs syndrome  Heartburn  Pregnancy and morning sickness  Pregnancy and labour  Travel during pregnancy | |
| Travel | Centers for Disease Control and Prevention  [www.cdc.gov/travel/yellowbook/2016/advising-travelerswith-specific-needs/pregnanttravelers](http://www.cdc.gov/travel/yellowbook/2016/advising-travelerswith-specific-needs/pregnanttravelers) | Health professional information:  Travel during pregnancy | |
| Incontinence | Continence Foundation of  Australia  [www.continence.org.au/pages/pregnancy.html](http://www.continence.org.au/pages/pregnancy.html) | Consumer information:  Includes a video link and resources  specific to pregnancy related bladder  and bowel continence issues | |
| Childbirth | | | |
|  | Better Health Channel  [Childbirth - pain relief options - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/childbirth-pain-relief-options)  [Pregnancy and birth care options - Better Health Channel](https://www.betterhealth.vic.gov.au/health/servicesandsupport/pregnancy-and-birth-care-options)  [Caesarean section - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/caesarean-section) | Consumer information provided by the Victorian Government on:  Pain relief options during childbirth  Medical Interventions during childbirth  Caesarean section | |
| Neonatal conditions | | | |
|  | Department of Health ehandbook  [Neonatal ehandbook - Department of Health and Human Services, Victoria, Australia](http://www3.health.vic.gov.au/neonatalhandbook/index.htm) | Covers a range of neonatal conditions | |

**RHESUS AND RH D IMMUNOGLOBULIN (ANTI-D)**

All Rhesus (D) negative women who with no preformed anti-D antibodies are routinely offered:

**Anti-D at 28 weeks**

This is arranged by the hospital and administered at around 28-weeks in the assessment clinic. There is no antenatal check at this time; the woman is still required to see her SMCA for a check.

**Anti-D at 34 weeks**

This is arranged by the hospital and given in Assessment clinic

**Anti-D postnatally if baby is Rh (D) positive**

This is arranged by the hospital and occurs within 72 hours postnatally at the hospital.

**Anti-D for sensitising events**

* Unless a woman has already received anti- D for the particular sensitising event, SMCAs should send women to the hospital Emergency Department for anti-D as soon as possible after a sensitising event.

Sensitising events include:

* In the first trimester (<12 weeks) events such as:
* Ectopic pregnancy
* Miscarriage
* Termination of pregnancy (medical or surgical)
* An invasive prenatal diagnostic procedure (including chorionic villus sampling,
* amniocentesis and cordocentesis)
* A curettage
* An abdominal trauma considered sufficient to cause fetomaternal haemorrhage.
* After the first trimester, in addition to the above, sensitising events include:
* Obstetric haemorrhage – e.g. vaginal bleeding/antepartum haemorrhage
* External cephalic version (whether successful or not)
* Abdominal trauma.

In-utero therapeutic interventions (invasive prenatal diagnostic procedures, transfusion, fetal surgery, insertion of stent, laser)Note: Rh D immunoglobulin is not required in the event of threatened miscarriage in the first trimester (prior to 12 weeks gestation).

For first trimester miscarriage with no instrumentation; there is conflicting evidence as to whether anti- D is indicated, with some services recommending anti-D and others not.

Women with continued PV bleeding between 12 and 20 weeks gestation, should be offered Rh D immunoglobulin at a minimum of 6-weekly intervals

**Resources on prophylactic anti-D**

|  |  |
| --- | --- |
| Organisation web address | Content summary |
| National Blood Authority  <http://www.blood.gov.au/system/files/documents/glines-anti-d.pdf> | Clinical guideline:  Guidelines on the prophylactic use of Rh D  immunoglobulin (Anti-D) in obstetrics (2003) |
| RANZCOG  [Guidelines for the use of Rh(D) Immunoglobulin (Anti-D) in obstetrics (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Anti-D-guidelines_July-2021.pdf)  Under Red cell Iso-immunisation and Rh(D) prophylaxis | Clinical guideline:  *Guidelines for the prophylactic use of Rh*  *(D) immunoglobulin (Anti-D) in obstetrics in*  *Australia* (2012) |
| BH [BENDIGO HEALTH CARE GROUP (amazonaws.com)](https://prod-prompt-documents.s3.ap-southeast-2.amazonaws.com/9139/9139_v8.1.pdf?X-Amz-Expires=86400&response-content-disposition=inline%3Bfilename%3D%22RH%20%28D%29%20Immunoglobulin-VF%20Protocol%20Human%20Anti-D%20Rh%20Immunoglobulin%20solution%20for%20intramuscular%20inje.pdf%22&x-amz-security-token=IQoJb3JpZ2luX2VjENz%2F%2F%2F%2F%2F%2F%2F%2F%2F%2FwEaDmFwLXNvdXRoZWFzdC0yIkcwRQIhANAoDbFKtdwlBUhe4%2BKjyvssP1PZFYchld3n4BbPXplPAiBMBjp2cqsGpyI%2FeGM%2F7ggLYHeoO3D0JpqbDWaGKs27sCrBBAjF%2F%2F%2F%2F%2F%2F%2F%2F%2F%2F8BEAMaDDc0MjQ5MzU4NTk0MyIMKmkk3WyA7SSFdiyRKpUE1UKat0CpE85GJSRq0UmHibl0w1D%2FXGURvTjpPtFESBKws6e2JeIY5sxWD%2F5JmugJ%2BAAdoyALr8issWZLTM4Gd79pdwGMK%2B%2BCbuIe3eN54DDIGxWrz4lX7yMBegO5wdx1okiN0ivcabVkx8jubCp%2BoDb0Dbyrt6V%2F5NRZWg0DVNdPm%2FyaN%2BL71KjvndNpPbHzmPGR%2FpdaehRstUr4MHEZwdxFrdeoJsRgPk2%2BI9dqzKoNigZwuVzhM52s%2Bnv8iwVLsglZmaS81dUVCDZZtcn7x4eRJq0wVKId6WHMR54s7GZn24ufQxmpHIpAI8MpKqcNiJ7CbYts0rJwauiccEOQwCTG7zFsT5XuGYOsakjUbbSIZPTO3%2BGBrd%2Bz%2Fe76uGsBfgUYTPr6oiZRzlPVc64kHnuzCzvCOsfPefJsx3%2FYUfA%2BX1XxCNSD9Zyj8QxKvBy8FMG%2B0FzNyWA4UCWzpWahjc42M%2FsaPbNcECJt8cvyY7L1m1Ch4PgaaK8i8HtjO1QhyApJyVBdnywpyDPca36I7W8iepzjEOnGMladTG1T5LXzyOK%2B4fq7Gkf3OeS9g89r9%2F8iUke4ur6f6G5CLXcPSUi35OJxLvQDU2GTmxdam4YxPo6HSnY1FVnz9ADETpW8z3kUotm2xhU5QgjjdeaM4WhazmoQMZlI9%2FWenXP%2BIf8IcqxsbVfJNWzFY62z04%2Fcs%2FRQNHcwjsOQmwY6pgF78Bvi2qdwbGxXdKVogwj4eRlxfq9TIzWngnwYZeA9xGFIeOFfc1hX7lfT0rK4f32ffNkCGCi1GOvdK%2Fnhu9mBXXD54d9SqiKKXuBIrZsKCE%2F%2BFnkwCRVlxXps7S5rfcnpkXX7kbrN%2BXsnzFPQsmLd7QZIUelXxvzsdISOKsAz2sYhTk%2Bt%2BC4Xkx%2BEGnsW5qxbcQDxrZ8nbbWbfxsOQ0BN%2BsrReP1A&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=ASIA2ZYARAILXLIUZB76/20221104/ap-southeast-2/s3/aws4_request&X-Amz-Date=20221104T011439Z&X-Amz-SignedHeaders=host;x-amz-security-token&X-Amz-Signature=bd371266042ffa5cf632ce0928bb7b69573f420522793150d498c21450af569c) | Clinical Protocol accessed via PROMPT |

**INFECTIOUS DISEASES IN PREGNANCY**

The Australasian Society of Infectious Diseases *Management of Perinatal Infections* (2014) is a useful resource that covers the management of 14 common perinatal infections, including CMV, Herpes Simplex, Toxoplasma gondii, Parvovirus, Varicella and Streptococcus Group B [Management of Perinatal Infections 2014 edition.pdf](file:///C:\Users\BGMiller\Downloads\Management%20of%20Perinatal%20Infections%202014%20edition.pdf)

Each hospital has access to physician advice regarding infectious diseases. An infectious disease may be detected prior or after a woman has attended her first hospital appointment.

* For urgent assessment of an infectious illness or exposure to an infectious disease, refer women to the Emergency Department or contact the On Call Registrar for advice. If referring to the Emergency Department, so appropriate arrangements can be made to minimise exposure to others, please call prior to sending the woman in.
* If a non-urgent infectious disease appointment is required and the woman is registered for shared maternity care, contact WHC and note this in the VMR/referral.
* If a non-urgent infectious disease appointment is required and the woman has not yet been seen at the hospital, please send a comprehensive referral in via the normal referral pathways, clearly stating that the woman is pregnant and what the issues are.
* Please be clear on the referral if the woman has already been referred for maternity care or if the referral is for both maternity care and infectious diseases referral.

Referral to an Infectious diseases physician at the hospital should occur with:

* Newly diagnosed hepatitis B or C
* Hepatitis B or C with abnormal liver function tests or high viral loads.

If this has not been arranged, SMCA should contact WHC to organise this.

**Varicella exposure and infection**

If a woman has been exposed to varicella during pregnancy and she is non-immune or of unknown immunity, or if a woman develops varicella in pregnancy, the SMCA should refer to the Emergency Department for specialist advice as soon as possible.

Women may be offered zoster immune globulin (VZIG) and antivirals, especially when delivery is imminent, infection is recent or the woman is systemically unwell. If a woman is thought to be potentially infectious, appropriate arrangements can be made to minimise exposure to others, please call the Emergency Department prior to sending the woman in.

Pregnant women who are not immune are at high risk of severe disease and complications. The Department of Human Services guidelines for the control of infectious diseases states:

*Varicella infection during the first trimester of pregnancy confers a small risk of miscarriage. Maternal infection before 20 weeks may rarely result in the fetal varicella zoster syndrome, with the highest risk (2%) occurring at 13–20 weeks.*

*Clinical manifestations include growth restriction, cutaneous scarring, limb hypoplasia and cortical atrophy of the brain.*

*Intrauterine infection can also result in herpes zoster in infancy. This occurs in less than 2% of infants. The highest risk is associated with infection in late pregnancy. In the third trimester, maternal varicella may precipitate the onset of premature labour. Severe maternal varicella and pneumonia at any stage of pregnancy can cause fetal death.*

Women who are non-immune to varicella with no known immunisation history should be advised to:

* Avoid unwell people
* Present to the Emergency Department immediately if in contact or potential contact with varicella (phone prior)
* Reconsider overseas travel
* Be immunised in general practice after delivery. (As varicella vaccine is a live vaccine, it is contraindicated in pregnancy)

**Slapped cheek infection (parvovirus)**

Parvovirus B19 (slapped cheek) infection in the first 20 weeks of pregnancy can cause fetal anaemia with hydrops fetalis. Fetal death occurs in less than ten per cent of cases. Pregnant women who have been exposed to parvovirus infection in the first 20 weeks of pregnancy should be offered serological testing for parvovirus-specific IgG to determine their susceptibility. The diagnosis of parvovirus infection is usually made, serologically, by demonstration of IgG seroconversion and/or the presence of parvovirus IgM. IgM is usually detectable within 1–3 weeks of exposure and lasts for 2–3 months. Repeat testing in 10–14 days may be required.

Women who are diagnosed with parvovirus should be referred to the hospital promptly so that a tertiary ultrasound and obstetric review can be undertaken. This can be facilitated by WHC. If further management is required, including serial ultrasound, this will be arranged by the hospital and shared maternity care is usually ceased.

**Resources on infectious diseases**

|  |  |  |
| --- | --- | --- |
| Topic | Organisation web address | Content summary |
| General infectious diseases in pregnancy | Australasian Society of Infectious Diseases  [Management of Perinatal Infections 2014 edition (1).pdf](file:///C:\Users\BGMiller\Downloads\Management%20of%20Perinatal%20Infections%202014%20edition%20(1).pdf) | Clinical guidelines:  Comprehensive guidelines (2014) with multiple resources relating to the management of 14 perinatal infections.  Endorsed by RANZCOG |
| Medical Journal of Australia  [1: Infections in pregnant women | The Medical Journal of Australia (mja.com.au)](https://www.mja.com.au/journal/2002/176/5/1-infections-pregnant-women) | Health professional information:  Article *Infections in pregnant*  *women* (2002) |
| General infectious  diseases in  pregnancy | Better Health Channel  [Chlamydia - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/chlamydia)  [www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Chickenpox](http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Chickenpox)  [[Chickenpox - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/chickenpox))](http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Cytomegalovirus_(cmv))  [Cytomegalovirus (CMV) - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/cytomegalovirus-cmv)  [ww [Hepatitis C - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/hepatitis-c)](http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Slapped_cheek_disease?open)  [Slapped cheek disease - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/slapped-cheek-disease)  [Toxoplasmosis - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/toxoplasmosis) | Consumer information:  By the Victorian Government on  a number of pregnancy related  topics including:  Chlamydia  Chickenpox  Cytomegalovirus  Hepatitis C  Slapped cheek disease  Toxoplasmosis |
| Parvovirus | Department of Health, Australia  [Department of Health and Aged Care | Parvovirus B19 infection and its significance in pregnancy](https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-cdi-2000-cdi2403s-cdi24msa.htm) | Health professional information:  Parvovirus B19 infection and its  significance in pregnancy |

**MATERNAL VACCINATIONS**

A range of immunity checks and vaccinations are recommended in or before pregnancy. Others are not routinely recommended, but may be considered in high-risk groups or situations and some are contraindicated in pregnancy.

**Recommended vaccinations**

*Rubella (vaccination contraindicated if pregnant)*

Rubella immunity should ideally be checked before each pregnancy unless there is known recent adequate immunity. Vaccination and a post-vaccination check should be undertaken pre-pregnancy, with pregnancy avoided for 28 days after vaccination.

Vaccination cannot be undertaken while pregnant because MMR is a live vaccine. If a woman is found to be low in immunity during pregnancy, this should be noted on her VMR, information provided to her on what to do if she is potentially exposed to rubella and she should be administered MMR vaccine in the hospital postpartum period.

Rubella containing vaccines can be given to breastfeeding women.

*Varicella (vaccination contraindicated if pregnant)*

Varicella immunity should ideally be checked pre-pregnancy if a woman has an uncertain clinical history of varicella infection or vaccination. Vaccination is with two doses, at least four weeks apart, with pregnancy avoided for 28 days after vaccination.

Vaccination cannot be undertaken while pregnant because varicella vaccine is a live vaccine. If a woman is found to be low in immunity during pregnancy, this should be noted on her VMR, information provided on her on what to do if she is potentially exposed to varicella and she should be administered varicella vaccine postpartum. This is undertaken by a woman’s GP (as the hospitals do not vaccinate for varicella postpartum). Varicella containing vaccines can be given to breastfeeding women.

*Influenza (annual seasonal)*

Influenza vaccination is recommended for pregnant women and is safe to administer during any stage of pregnancy or while breastfeeding. Pregnant women are a priority group for influenza vaccination, with the vaccine funded.

* Antenatal influenza vaccination is recommended to protect both the pregnant woman and the baby from influenza and its complications.
* It is best given prior to the onset of the influenza season; however, can be given at any time during the year. The influenza season usually occurs from June to September in most parts of Australia
* Can be given at the same time as the pertussis vaccine
* It is safe for women to have repeated flu vaccinations (for two different seasons) in pregnancy: – For women who received an influenza vaccine late in the previous year, revaccinate when the next vaccine becomes available before the end of pregnancy

Many large studies have shown no evidence of an increased risk of adverse pregnancy outcomes (such as stillbirth, low birth weight, pre-eclampsia, congenital abnormality, or preterm birth) related to influenza vaccination during pregnancy

*Pertussis (whooping cough)*

Pertussis vaccine is generally administered by the reduced antigen formulation of dTpa vaccine.

Pertussis vaccine is recommended to be given at 28–32 weeks of each pregnancy, even if a recent booster has been given. This 28–32 week window is recommended as it takes 2 weeks after vaccination to make antibody with active placental transfer occurring from 30 weeks gestation. However, if this 28–32 week “window” is missed, pertussis vaccine can be administered at any time during the third trimester up to delivery. Vaccination during pregnancy has the advantage of achieving more timely and high pertussis antibody responses in the mother and infant after birth, as compared with vaccination given postpartum or prior to conception, with studies suggesting a benefit to the fetus as long as vaccine is given more than two weeks prior to delivery.

Side effects appear to be minimal, but it may be beneficial for women receiving a booster to be alerted to the potential for local side effects. There is no recommended minimum time between immunisations but local injection site reactions may be higher in those vaccinated frequently. It is recommended as a single dose.

Adult household contacts and carers of babies (e.g. partners, grandparents) should ideally receive a dTpa vaccine at least two weeks before beginning close contact with the infant if ≥10 years have elapsed since a previous dose.

**Vaccinations not routinely recommended**

Consider if high risk. The following vaccinations are not routinely recommended, but may be considered in high-risk women or situations:

*Hepatitis B*

Can be given to pregnant women at increased risk of hepatitis B (e.g. use injecting drugs, household contact with a person with chronic hepatitis, occupational risk)

*Hepatitis A*

‘Hepatitis A vaccine is not routinely recommended for pregnant or breastfeeding women, but can be given where vaccination is considered necessary’. (e.g. travel to endemic areas)

*Typhoid Parental Vi polysaccharide*

‘Parental Vi polysaccharide vaccines are not routinely recommended for pregnant of breastfeeding women, but can be given where vaccination is considered necessary e.g. travel to endemic areas(Note the oral live attenuated typhoid vaccine is contraindicated in pregnant women)’.

*Pneumococcal vaccines*

‘Not routinely recommended. Can be given to pregnant women at the highest increased risk of invasive pneumococcal disease’ (e.g. functional or anatomical asplenia, immunocompromised)

*Meningococcal vaccines (some)*

‘Not routinely recommended. Can be given to pregnant women at increased risk of meningococcal disease’ (e.g. travel to endemic areas or at higher risk of invasive disease)

*H. influenza type b (Hib)*

‘Not routinely recommended. Can be given to pregnant women at increased risk of Hib disease (e.g. with asplenia)’

*Injectable polio*

‘Not routinely recommended. Can be given to pregnant women at high risk of poliovirus exposure (e.g. travel to endemic countries)’

*Rabies*

‘Can be given to pregnant women for whom this vaccine would otherwise be recommended (e.g. post-exposure prophylaxis)’

**Contraindicated vaccinations**

* Measles, Mumps, Rubella (MMR)
* Varicella and zoster vaccines
* Oral (live) typhoid (IPV)
* Rotavirus
* BCG
* HPV
* Japanese encephalitis.

Cholera vaccine

**Resources on maternal vaccinations**

|  |  |  |  |
| --- | --- | --- | --- |
| Topic | Organisation  web address | | Content  summary |
| Maternal vaccinations | | | |
| General | | Therapeutic Goods Administration  [Prescribing medicines in pregnancy database | Therapeutic Goods Administration (TGA)](https://www.tga.gov.au/products/medicines/find-information-about-medicine/prescribing-medicines-pregnancy-database) | Health professional information:  *Prescribing medicines in pregnancy database.*  Information for health professionals  planning the medical management  of pregnant patients or patients  intending to become pregnant |
| Department of Health, Australia  [Vaccination for women who are planning pregnancy, pregnant or breastfeeding | The Australian Immunisation Handbook (health.gov.au)](https://immunisationhandbook.health.gov.au/contents/vaccination-for-special-risk-groups/vaccination-for-women-who-are-planning-pregnancy-pregnant-or-breastfeeding) | Health professional information:  NHMRC *Australian Immunisation*  *Handbook 10th edition* (2014)  Section 3.3.2 contains information  related to women who are planning  pregnancy, pregnant, breastfeeding  and pre-term infants |
| Melbourne Vaccine Education  Centre  [Maternal vaccination during pregnancy - The Melbourne Vaccine Education Centre (MVEC) (mcri.edu.au)](https://mvec.mcri.edu.au/references/maternal-vaccination-during-pregnancy/) | Health professional and consumer  information:  Comprehensive guide with multiple  resources related to maternal  vaccination during pregnancy with  links to other immunisation resources |
| Influenza | | Influenza Specialist Group  [www.isg.org.au/index.php/](http://www.isg.org.au/index.php/) | Health professional information:  Links to a range of education and  resources related to influenza |
| Australian Immunisation  Handbook  [Influenza (flu) | The Australian Immunisation Handbook (health.gov.au)](https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/influenza-flu) | Consumer information:  Influenza vaccination 2015  Including 13 in LOTE |
|  | | Department of Health, Australia  [2015 seasonal influenza vaccines | Therapeutic Goods Administration (TGA)](https://www.tga.gov.au/news/media-releases/2015-seasonal-influenza-vaccines) | Consumer information:  Influenza vaccination 2015 |
| Measles, mumps  and rubella | | Australian Immunisation  Handbook  [The Australian Immunisation Handbook, 10th edition - 2015 Update - Australian Government Department of Health - Citizen Space](https://consultations.health.gov.au/ohp-immunisation-branch/the-australian-immunisation-handbook-10th-edition/) | Health professional information:  From the NHMRC *Australian*  *Immunisation Handbook 10th edition*  (2014) |
| Department of Health and Human Services, Victoria  [Measles mumps rubella: immunisation information (health.vic.gov.au)](https://www.health.vic.gov.au/publications/measles-mumps-rubella-immunisation-information) | Consumer information:  Measles, mumps and rubella |
| Better Health Channel  [Rubella - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/rubella) | Consumer information:  Rubella |
| Varicella | | Australian Immunisation  Handbook  [The Australian Immunisation Handbook | Australian Government Department of Health and Aged Care](https://www.health.gov.au/resources/publications/the-australian-immunisation-handbook) | Health professional information:  From the NHMRC A*ustralian*  *Immunisation Handbook 10th edition*  (2014) |
| Diphtheria,  tetanus and  pertussis | | Australian Immunisation  Handbook  Diptheria  [Diphtheria | The Australian Immunisation Handbook (health.gov.au)](https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/diphtheria)  Tetanus  [Tetanus | The Australian Immunisation Handbook (health.gov.au)](https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/tetanus)  Pertussis  [Pertussis (whooping cough) | The Australian Immunisation Handbook (health.gov.au)](https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/pertussis-whooping-cough) | Health professional information:  From the NHMRC *Australian*  *Immunisation Handbook 10th edition* (2014) |
| Department of Health and Human Services, Victoria  [Adult-adolescent diphtheria, tetanus and pertussis (whooping cough) (health.vic.gov.au)](https://www.health.vic.gov.au/publications/adult-adolescent-diphtheria-tetanus-and-pertussis-whooping-cough) | Consumer information:  Diphtheria, tetanus and pertussis |

**MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: HOSPITAL SUPPORT SERVICES**

All providers of shared maternity care have a responsibility to appropriately assess, document and respond to problems that arise during a woman’s pregnancy.

For non-urgent queries and situations, during business hours, the SMCA can contact WHC who can assist in obtaining results, organising non-urgent follow-up appointments at the hospital and informing the SMCA of hospital care. If more urgent assessment, care or referral is required, contact the Emergency Department or the on-call obstetric registrar. All providers should check that follow-up of any incomplete or abnormal investigation findings occurs.

**Women’s antenatal assessment clinic**

Assessment Clinic provides obstetric and midwifery investigations, monitoring and management of maternal and fetal assessment issues >20/40 weeks including:

* small for dates, poor interval growth or fetal growth restriction
* decreased fetal movements
* non-cephalic presentation at ≥36 weeks
* prolonged pregnancy (post-dates)
* hyperemesis gravidarum
* concerns about cholestasis (jaundice and/or severe pruritus)
* Cardiotocograph (CTG) monitoring
* Anti-D administration
* Pre-eclampsia (PE) blood pressure monitoring, blood and urine collection for pathology.
* Hypertension (i.e. a persistent reading ≥140/90 mmHg or a rise of ≥ 30 mmHg systolic and 15 mmHg diastolic from baseline
* Planning of Iron Infusions
* Review of Obstetric Ultrasounds

The above list is not exhaustive and the pregnancy assessment services do not replace referral to the hospital Emergency Department for urgent problems. The SMCA is encouraged to phone the service prior to sending a woman in to discuss the concerns with a senior midwife. The outcome of each visit will be documented in the VMR.

**Assessment Clinic contact details and operating hours**

SMCA’s can refer a woman directly to assessment clinic. SMCA should detail concerns in the VMR for the woman to take with her and should also phone the service prior to her arrival.

Phone: 5454 7291

Monday – Friday: 9.00 am – 5.00 pm

**Birthing Suite**

The Birthing Suite is available 24 hours a day for assessment of urgent antenatal problems for women greater than 20 weeks. Phone advice is also available 24 hours a day for SMCA’s and GP’s. Referral by phone or letter is appreciated. Presentation to the Maternity Unit will be documented in the woman’s VMR. The SMCA will also receive correspondence within 48 hours of the woman’s presentation.

Referral to the hospital Birthing Suite is recommended if the woman has:

* threatened preterm labour (≤37 weeks)
* undiagnosed abdominal pain
* preterm and/or pre-labour rupture of membranes
* antepartum haemorrhage
* unusual migraines/visual disturbances
* regularly contracting and thought to be in labour
* seizures
* a requirement for anti-D immunoglobulin following a sensitising event
* Problems usually seen in the Assessment Clinic if after hours.

*The above list is not exhaustive*

**Birthing Suite Contact Details**

Phone: 5454 8582 5454 7272

**Women’s Ward Contact Details**

Phone: 5454 8584

**Obstetric registrar/On-call obstetrician/staff specialist**

The on-call obstetric registrar can be contacted 24 hours a day to discuss urgent or complex clinical issues.

**Women’s Clinics**

Women’s Clinics will respond to issues that may arise and ensures that non-urgent queries from SMCA’s are dealt with in a timely manner.

Women’s Clinics will:

* Organise routine hospital appointments
* Organise extra appointments for additional non-urgent clinical consultation with, for example, obstetric doctors/allied health/psychiatry/genetics/physicians
* Organise hospital follow up for gestational diabetes
* Obtain investigation results
* Change shared maternity care providers (if requested by the woman)
* Notifying SMCA’s of cessation of shared maternity care.

Women’s Clinics may also be able to assist with:

* Non-urgent reassessment, review and advice of community ultrasound results and other pathology results by the relevant department
* Arrange CVS/amniocentesis for women booked for care at the hospital.

**Women’s Clinics contact details**

Phone: 5454 7288 Fax: 5454 7286

**Emergency Department**

The Emergency Department is available 24 hours a day for assessment of urgent antenatal (<20 weeks gestation) or postnatal problems.

Referral to the hospital Emergency Department is recommended if the woman has:

* First trimester bleeding or pain that cannot be appropriately diagnosed and managed in the community.

**Emergency Department contact details**

Phone: 5454 8100 Triage: 5454 8102

**MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: FOLLOW UP OF FINDINGS**

It is the primary responsibility of the provider ordering the test or noting an abnormal finding to ensure appropriate follow up, communication and management

**Abnormality on ultrasound**

For non-urgent situations, Women’s Clinics can assist in organising follow-up or advice of an abnormal ultrasound finding. This includes:

* when a SMCA is unsure of the interpretation of findings from an ultrasound
* if a tertiary ultrasound is required
* if further counselling or consultation is required.

WHC will require the patient information and ultrasound results.

The registrar on call, genetics services or the fetal maternal management service can also be contacted for advice.

**The Royal Womens Hospital**

**The Royal Womens Hospital Genetics Services**

Ph: 8345 2180

Fax: 8345 2179

**Fetal Medicine Unit**

Ph: 8345 2158

Fax: 8345 2139

*‘Markers’ on ultrasound*

Recent advances in ultrasound have led to the discovery of a growing number of findings on ultrasound that are not an anomaly in themselves, have no functional repercussions (they are not harmful in themselves) and may disappear. These are often referred to as ‘markers’. Some of these are serious indictors of underlying problems with the fetus, whereas some are thought to be essentially normal variants or ‘soft’ markers that are of no consequence, especially when they are isolated and in women who have a low risk of chromosomal abnormality.

If a marker is detected on ultrasound, the first priority is to exclude any associated abnormalities with a detailed anatomical survey of the mid-trimester fetus undertaken by a specialist obstetric service.

This can be undertaken at a tertiary centre who will also direct any further investigations and follow-up as required. This can be organised via WHC.

The result of Down syndrome/aneuploidy tests should also be reviewed to ensure these are low risk.

In all cases woman should be referred to the hospital genetics service or fetal maternal management service if there is:

* a high-risk marker present (even if this is single; e.g. absent nasal bone, echogenic bowel, significantly increased nuchal translucency or aberrant subclavian artery),
* more than one marker present,
* a high risk or borderline aneuploidy screening test result.

The following table provides a summary of some common markers on ultrasound and significance and management if isolated on specialist obstetric ultrasound and low-risk aneuploidy screening result.

|  |  |  |
| --- | --- | --- |
| **Marker on**  **ultrasound** | **Significance**  if isolated on specialist  obstetric ultrasound and low risk  aneuploidy screening result | **Action**  if isolated on specialist  obstetric ultrasound and low risk  aneuploidy screening result |
| Absent Nasal Bone | Even when isolated, absent nasal bone and, to a lesser degree, a hypoplastic nasal bone are major markers for Down  syndrome and other aneuploidy | Refer to hospital |
| Echogenic bowel | Even when isolated, a major marker of Down syndrome and other problems (e.g. cystic fibrosis, CMV infection) | Refer to hospital |
| Significantly  increased nuchal  translucency at  11–13+6 weeks | Even when isolated, greatly  increased risk of Down syndrome, other aneuploidies and other abnormalities (e.g. heart disease) | If ≥3.0 mm  (>95th percentile) - Refer to hospital  If 2.5mm–3.0mm – Ensure tertiary scan obtained (eg specialist obstetric US service) |
| Choroid plexus  cysts | Present in 3% of all foetuses at  16–24 weeks | Reassure  If isolated, no significant increase in risk of aneuploidy.  (If not isolated or increased risk of aneuploidy – refer to hospital) |
| Echogenic  heart focus/  intracardiac  focus | Present in 3–5% of foetuses – usually resolves in third trimester  Small bright spot seen in the  Baby’s heart – thought to represent mineralisation/small deposits of calcium in the heart valve. | Reassure  No increased chromosomal  problems  (If not isolated, increased risk of aneuploidy – refer to hospital) |
| Pyelectasis | Enlargement collecting system  Present in 1% of pregnancies with boys > girls.  >50% get in next pregnancy | If isolated, no significant increase in risk of aneuploidy.  (If not isolated or increased risk of aneuploidy – refer to hospital)  Even if isolated need to follow-up fetal +/- newborn kidneys as although most resolve before birth/  within a few months after birth, 1:500 cases develop significant renal disease  If mild renal pelvis dilatation  (4–7mm), then repeat ultrasound at 32 weeks.  If still present at 32 weeks, postnatal follow-up will be required.  If moderate to severe renal pelvis dilatation (>7mm), then refer to hospital Fetal Maternal Management  Service and consider earlier repeat ultrasound at 26–28 weeks)  Be vigilant next pregnancy |
| Single umbilical  artery | Present in 2% of pregnancies | If isolated, no significant increase in risk of aneuploidy.  (If not isolated or increased risk of aneuploidy – refer to hospital)  Even if isolated association with renal problems and may be at increased risk of growth restriction  Ensure kidneys checked on  ultrasound and are normal  Greater surveillance required for fetal growth  Growth and wellbeing US in third trimester (generally at 28, 32 and 36 weeks) |
| Aberrant  subclavian artery | There is thought to be an increased risk of Down syndrome, other aneuploidy and cardiac anomalies.  There is currently insufficient data to quantify these risks | Refer to hospital |

**Low-lying placenta**

If the placenta is found to be low-lying (<20mm from internal os), a repeat ultrasound should be performed at 32-34 weeks to identify persistent low-lying placenta or placenta praevia. If the placenta in covering the os, a repeat ultrasound should be performed earlier at 28 weeks. This can be organised by the SMCA (to be undertaken in the community) or can be organised by the hospital staff at the booking in appointment. . If undertaken in the community and a placenta praevia is diagnosed or there are ongoing concerns, contact the WHC so a hospital appointment can be made for the woman. If a placenta praevia is diagnosed, shared care will cease.

When a low-lying placenta is diagnosed, advise the woman to present immediately to the hospital’s Emergency Department if she has any vaginal bleeding. Depending on the level of concern, restrictions on travel and intercourse may also be appropriate.

**High risk of fetal abnormality**

If a fetal abnormality is detected on ultrasound or the woman has a complicated pregnancy due to a high-risk condition (e.g. heart disease in the woman or fetal abnormalities) the Fetal Maternal Management Service (these are called by various names) should be contacted for referral or advice. This can be done directly by Women’s Clinics or if an urgent or semi-urgent referral is required, it is best to contact the unit directly. These services work closely with genetics services, ultrasound and other obstetric services and are able to arrange counselling if a termination is being considered.

**Termination of pregnancy – consideration or decision for fetal abnormality**

When termination of pregnancy (TOP) is considered for any reason, a referral should be made to the hospital as early as possible. This is also the case if the diagnosis of a fetal abnormality is uncertain and/or the woman is not yet sure of her decision. This allows for prompt diagnostic work-up and specialist advice to be obtained so that if this is the eventual decision, this can be performed as early as possible and treatment options are maximised. When antenatal diagnosis is indicated, some women may prefer CVS to amniocentesis so that an earlier result can be obtained and termination of pregnancy undertaken earlier if warranted and more options are available.

BH provides limited termination services and a full range of screening and investigations for fetal abnormality, and refers women to another provider for advice and counselling if they wish to consider termination >12/40 weeks. RWH and WH provide termination services.

The *Abortion Law Reform Act 2008* (Vic) includes amendments as at 1 July 2010 and says that termination of pregnancy may be performed at any time during a pregnancy. Section (s.) 5(1) of the Act specifies that termination after 24 weeks can be performed only if the medical practitioner ‘reasonably believes that the abortion is appropriate in all the circumstances’ and ‘has consulted at least one other registered medical practitioner who also reasonably believes that the abortion is appropriate in all the circumstances’. In determining whether the circumstances warrant an abortion after 24 weeks, the registered medical practitioner must have regard to ‘all relevant medical circumstances’ and ‘the woman’s current and future physical, psychological and social circumstances’ (s. 5(2)).

Maternal concern overrides any definition of decreased fetal movement based on the number of movements felt.

In the case of a woman reporting decreased or absent fetal movements, organise same day referral to the hospital for review and a CTG.

It is insufficient to perform only a Doppler fetal monitor

**Decreased fetal movements**

All pregnant women should be provided with verbal and

written information regarding normal fetal movements during

the antenatal period.

Provide and explain ['Your Pregnancy' Brochure | Still Aware](https://stillaware.org/yourpregnancy/myths-about-movements), and discuss monitoring baby’s movements and safe sleeping in pregnancy, referring to “Fetal Movements’ section in [Pregnancy Handbook](https://www.bendigohealth.org.au/Assets/Files/65966-BH-A5%20Pregnancy%20Handbook%20Combined2.pdf). This information is available online in translated resources: [Movements Matter | The Centre of Research Excellence in Stillbirth (stillbirthcre.org.au)](https://stillbirthcre.org.au/parents/safer-baby/movements-matter/)

Maternal perception of decreased fetal movement (DFM) is a common reason for presentation to the hospital for assessment. There is no objective definition of decreased fetal movement, and the nature of movements may change as the pregnancy advances, but there is no evidence that DFM should occur as pregnancy advances or labour commences. Studies have demonstrated an association between DFM and adverse perinatal outcomes, including stillbirth, fetal growth restriction, preterm birth, neonatal low Apgar and fetomaternal haemorrhage.

Women should be asked about fetal movements at each appointment after 20 weeks and advised to contact their maternity care provider and present for assessment if they have concerns about decreased or absent fetal movement. Women should not wait until the next day to report concerns. Maternal concern overrides any definition of DFM based on the number of movements felt.

* For decreased fetal movements from 26 weeks onwards:

Organise immediate referral to the hospital for clinical assessment and a CTG. It is insufficient to perform only a fetal heart rate with a handheld Doppler.

* For decreased fetal movements between 24.0 and 25+6 weeks of gestation:

Clinical assessment of growth and confirm the presence of a fetal heart rate with a Doppler handheld device.

* If fetal movements have never been felt by 24 weeks of gestation, arrange an ultrasound.

Formal fetal movement counting/kick charts for all women or for women at increased risk of adverse pregnancy outcomes are not currently recommended as they are not evidence-based.

**Small for gestational age**

Generally, if fundal height is more than 2 cm smaller than expected by dates or there is significant deviation or concern about growth patterns, timely referral or specialist ultrasound is required. Referral can be made directly to WHC who can organise a timely ultrasound.

Referral to the hospital is required as soon as possible if the ultrasound indicates:

* A baby is not biophysically well
* A baby is ≤15th percentile
* A baby whose growth pattern is not normal
* Any other concerns.

Depending on the urgency referral to hospital may occur through the Registrar, WHC, or Maternity Ward.

For serial growth scans a minimum of 2 weeks between scans is usual.

Generally, if fundal height is more than 2 cm smaller than expected by dates or there is significant deviation or concern about growth pattern, timely referral or specialist ultrasound is required.

**Large for gestational age**

Clinical signs of large gestational age include symphysial fundal height of > 2cm larger than dates.

In this case:

* Review GTT to confirm woman does not have gestational diabetes (if there are any concerns, refer to the diabetes service)
* If there is a concern about polyhydramnios, please organise an ultrasound. If ultrasound confirms polyhydramnios a tertiary scan is required
* In the absence of diabetes or concern about polyhydramnios, how this is managed depends on the woman’s previous obstetric history and preference.

The objective of undertaking a growth and wellbeing ultrasound is to either inform:

* The woman’s decision about a ToLAC/VBAC, or
* Whether early induction of labour or caesarean section is a recommended option

If the woman has had uneventful vaginal delivery of a large baby before, an ultrasound is unlikely to provide any information to inform the timing and mode of delivery. However, where the size of the fetus will inform the mode or timing of delivery, an ultrasound at 34-36 weeks is valuable.

This includes:

• For a primagravida

• Where the woman has not had a large baby before by uneventful vaginal delivery

• If the woman is considering a trial of labour after caesarean section

If an ultrasound indicates a baby who is ≥90th percentile, depending on the circumstances, SMCA may wish to organise referral to the hospital doctor via the WHC for discussion.

**Hypothyroidism**

Universal screening of pregnant women with TSH is not currently recommended or performed at any of the tertiary hospitals, although targeted screening for women as higher risk is recommended (e.g. history of thyroid disease, autoimmune disease, non-physiological goitre or strong family history of thyroid disease).

Due to stimulation by BhCG in early pregnancy, the thyroid stimulating hormone (TSH) decreases from week 6 until the end of the first trimester, returning to normal concentrations from the beginning of the second trimester. The increased renal blood flow and glomerular filtration rate in pregnancy leads to increased iodine clearance and, therefore, the need for increased iodine intake during pregnancy. It is recommended that women who are pregnant, planning a pregnancy or breastfeeding should take an iodine supplement of 150 micrograms (μg) each day.

Hypothyroidism (or overt hypothyroidism) is defined as:

• Low FT4 and/or FT3 with high TSH, or

• TSH>10 with normal FT4 and FT3

Overt hypothyroidism is associated with adverse effects on pregnancy and fetal development, including increased risksof miscarriage, pregnancy-induced hypertension, preeclampsia, placental abruption, anaemia and postpartum haemorrhage. Hypothyroidism has been strongly associated with poor outcomes in pregnancy for both the mother and baby, and requires treatment. A hospital Endocrinology review is advised and can be organised through WHC.

**Endocrinology Recommendations**

*Before Pregnancy*

Where possible, ensure that women have TSH within the normal range (0.5-5.5 mlU/L). When there is a history of recurrent miscarriage it is acceptable to aim for a TSH within the normal range for first trimester pregnancy before conception. Thyroxine is not recommended for women with elevated anti-thyroid antibodies with appropriate thyroid function.

*Hypothyroidism in pregnancy with TSH 2.6-9.9mlU/L*

1. Commence or increase thyroxine by 50 micrograms daily
2. Repeat TSH measurement 4 weeks after a change in thyroxine dose and adjust replacement accordingly. Do not check TSH more frequently as it needs 4 weeks to reach a steady state.
3. Once TSH in desired range, repeat TSH measurement at beginning of each trimester. If TSH outside of desired range, adjust thyroxine dose and reassess after 4 weeks.

*Post-partum*

1. *Newly diagnosed hypothyroidism:*

Stop thyroxine on delivery and repeat TSH 6 week’s post-partum. Manage in accordance with usual guidance

1. *Established hypothyroidism*

Reduce thyroxine to pre-pregnancy dose. Repeat TSH 6 week’s post-partum and manage in accordance with usual guidance

If a woman’s BP is ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg, she needs to be reviewed that day at the hospital for BP monitoring and investigations as appropriate

**Subclinical hypothyroidism**

Subclinical hypothyroidism is defined as a TSH concentration elevated beyond the upper limit of the pregnancy-specific reference range (but < 10 mU/l), with a normal FT4. In such cases no further testing is required. The significance and treatment of subclinical hypothyroidism in pregnancy remains controversial.

Current RANZCOG guidelines do not support treatment; however, some clinicians prefer to treat women with subclinical hypothyroidism. If it is decided to treat subclinical hypothyroidism, the general recommendation is to treat with thyroxine 50mcg daily if TSH > 4.0.

In these cases:

• Test TFTs along with the routine bloods at 26-28 weeks

• Target TSH is 0.1 to 2.5 mU/L

• If TSH is in the normal range, continue therapy throughout pregnancy and cease post-delivery

• In subsequent pregnancies, check TSH in early pregnancy

**Gestational hypertension and pre-eclampsi**Gestational hypertension is defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg in a previously normotensive pregnant woman who is ≥20 weeks of gestation and has no proteinuria or new signs of end-organ dysfunction.

Referral at lower BPs should occur if there are other symptoms of pre-eclampsia

Gestational hypertension is a temporary diagnosis for hypertensive pregnant women who do not meet criteria for pre-eclampsia, with the diagnosis changed to preeclampsia if proteinuria or signs of end-organ dysfunction develop.

It is not appropriate for a SMCA to commence antihypertensive medicine

If a SMCA finds a woman’s BP is ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg, with or without proteinuria, refer on the same day to the Assessment Clinic for BP monitoring and investigations as appropriate (or to Birth Suite if after hours). Referral at lower BPs should occur if there are other symptoms of pre-eclampsia (e.g. proteinuria, oedema of face hands or feet, headache, visual disturbances, nausea, epigastric pain, maternal irritability).

It is not appropriate for a SMCA to commence antihypertensive medicine. It is important to note that pre-eclampsia can first appear postpartum, when urgent referral to an Emergency Department is required

**Maternal jaundice/pruritus**

Pruritus in pregnancy is common and may be a benign condition related to skin issues such as dry skin, eczema or pruritic urticarial papules and plaques of pregnancy (PUPPP) or a serious symptom of systemic illness. Intrahepatic cholestasis of pregnancy is almost invariably associated with itchy palms and soles. A rash may not be present. It is associated with increased perinatal mortality and, if suspected, is an indication to measure serum bile acids, preferably fasting.

If pruritus is associated with clinical jaundice, abdominal pain, systemic illness or decreased fetal movement, then urgent referral to the Birth Suite is required. If there are no associated symptoms or signs, LFTs/serum bile acids, may be required to determine if there is concern of a systemic illness. If there are abnormal results, refer women to the WHC or Birth Suites if after hours as soon as possible.

**Resources on abnormal findings in pregnancy**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Organisation/web address** | **Content summary** |
| Neural tube  defects | Centre for Genetics Education  [Neural\_Tube\_Defects.pdf (vcgs.org.au)](https://www.vcgs.org.au/sites/default/files/downloads/Neural_Tube_Defects.pdf) | Health professional information:  Neural tube defects |
| Better Health Channel  [Spina bifida - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/spina-bifida) | Consumer information:  CNS birth defects including spina  bifida |
| Termination of  pregnancy | Victoria Government  [www.legislation.vic.gov.au/domino/Web\_Notes/LDMS/LTObject\_Store/LTObjSt1.nsf/DDE300B846EED9C7CA257616000A3571/69D6C3A5305F935BCA2577610017C10D/$FILE/08-58a003.pdf](http://www.legislation.vic.gov.au/domino/Web_Notes/LDMS/LTObject_Store/LTObjSt1.nsf/DDE300B846EED9C7CA257616000A3571/69D6C3A5305F935BCA2577610017C10D/$FILE/08-58a003.pdf) | *Abortion Law Reform Act 2008*,  incorporating amendments as of  1 July 2010 |
| The Women’s  [Miscarriage, stillbirth & death of a baby | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/patients-visitors/clinics-and-services/pregnancy-birth/miscarriage-stillbirth-baby-death) | Consumer information: With links to support services for women who need to terminate pregnancy due to genetic or fetal abnormality |
| Decreased fetal  movements | The Australian and New Zealand  Stillbirth Alliance  [www.ranzcog.edu.au/doc/dfm.html](http://www.ranzcog.edu.au/doc/dfm.html) | Clinical guideline:  *Management of Women who report Decreased Fetal Movements* (2010). Endorsed by RANZCOG |
| RACGP  [Care of Women With Decreased Fetal Movements (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Care-of-Women-With-Decreased-Fetal-Movements.pdf) | Health professional information:  Article *Decreased fetal movements: a practical approach in a primary care setting* (2014) |
|  | Baby Center  [www.babycenter.com.au/a549375/your-babys-movements-inpregnancy](http://www.babycenter.com.au/a549375/your-babys-movements-inpregnancy) | Consumer information:  Fetal movements during pregnancy and when to contact a health professional for help |
| Small for  gestational age | Department of Health and Human  Services, Victoria  [Small for gestational age infants | Safer Care Victoria](https://www.safercare.vic.gov.au/clinical-guidance/neonatal/small-for-gestational-age-infants#:~:text=Small%20for%20gestational%20age%20(SGA)%20infants%20are%20defined%20as%20having,percentile%20for%20the%20gestational%20age.) | Health professional information:  Neonatal eHandbook Information on small for gestational age infants |
| Queensland Government  [Guideline: Term small for gestational age baby (health.qld.gov.au)](https://www.health.qld.gov.au/__data/assets/pdf_file/0034/139939/g-sga.pdf) | Health professional information:  Small for gestational age infants  clinical guideline |
| Baby Center  [www.babycenter.com/0\_intrauterine-growth-restrictioniugr\_1427406.bc](http://www.babycenter.com/0_intrauterine-growth-restrictioniugr_1427406.bc) | Consumer information:  Multiple resources related to babies who are small for dates |
| Large for  gestational  age | Merck Manual  [Large-for-Gestational-Age (LGA) Infant - Pediatrics - MSD Manual Professional Edition (msdmanuals.com)](https://www.msdmanuals.com/en-au/professional/pediatrics/perinatal-problems/large-for-gestational-age-lga-infant) | Health professional information:  Large for gestational age fetus |
| Hypertension | Society of Obstetric Medicine  of Australia and New Zealand  (SOMAZ)  [Guideline for the Management of Hypertensive Disorders of Pregnancy (somanz.org)](https://www.somanz.org/content/uploads/2020/07/HTguidelineupdatedJune2015.pdf) | Health professional information:  Guideline for the management of  hypertensive disorders of pregnancy  (2014) |
| The Women’s  [High blood pressure & preeclampsia | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-problems/pregnancy-problems-in-later-pregnancy/preeclampsia)  [High blood pressure & preeclampsia | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-problems/pregnancy-problems-in-later-pregnancy/preeclampsia) | Consumer information:  High blood pressure and eclampsia  during pregnancy with a link to  Australian Action on preeclampsia  Pre-eclampsia |
| Jaundice  and pruritus | Mayo Clinic  [Cholestasis of pregnancy - Symptoms and causes - Mayo Clinic](https://www.mayoclinic.org/diseases-conditions/cholestasis-of-pregnancy/symptoms-causes/syc-20363257#:~:text=Intrahepatic%20cholestasis%20of%20pregnancy%2C%20commonly,other%20parts%20of%20the%20body.) | Consumer information:  US information about cholestasis in pregnancy |

Also review:

* Antenatal visits, investigations and findings
* Testing for Down syndrome and other fetal abnormalities

**MENTAL HEALTH AND WELLBEING IN PREGNANCY**

The Edinburgh Postnatal Depression Scale (EPDS) is an appropriate tool to use to assess antenatal depression and is available through medical software. A proforma may be downloaded from the following sites:

*Beyond Blue*

<https://www.beyondblue.org.au/the-facts/anxiety-and-depression-checklist-k10>

*The Black Dog Institute*

[edinburgh-postnatal-depression-scale.pdf (blackdoginstitute.org.au)](https://www.blackdoginstitute.org.au/wp-content/uploads/2020/04/edinburgh-postnatal-depression-scale.pdf)

All women will have an EPDS completed at their first midwifery visit. This can be repeated at any time if there are ongoing concerns. If a high EPDS (with consent from the woman) a referral will be made to BH Maternity Support Program (MSP). A letter will be sent to the nominated GP regarding the EPDS score.

If a woman experiences mental health issues during her pregnancy, there are a number of services that can be accessed within the maternity, community and acute setting depending on:

* The nature and acuity of the problem
* Where she is booked for maternity care
* Where she lives
* Whether she can access private services

For women with severe mental health issues (e.g. bipolar disorder, schizophrenia, severe depression or those taking antipsychotic medication or mood stabilisers), it is preferable that specialist advice is sought pre-pregnancy or early in pregnancy.

If the matter is urgent, the woman can present to the hospital Emergency Department for triage and appropriate referral or the Crisis Assessment and Treatment (CAT) Team can be contacted.

For a full list of services across Victoria refer to the ‘Adult Specialist Mental Health Services (16-64 Years)’ page of the Department of Health and Human Services website. Also see: [Adult specialist mental health services (16-64 years) - Mental Health Services - Victorian Government Health Information, Australia](http://www3.health.vic.gov.au/mentalhealthservices/adult/index.htm)

Further information about Victorian Mental Health Services is available on the department’s ‘Victoria’s Mental Health Services’ webpage. Also see: [Accessing Mental Health Services - Victorian Government Health Information, Australia](http://www3.health.vic.gov.au/mentalhealthservices/)

The National Health Services Directory is also a useful website to search for community mental health providers and sites. Also see: [www.nhsd.com.au/](http://www.nhsd.com.au/) Women (and families) can self-refer to some of these services directly by contacting the services outlined below.

**Hospital mental health service**

To obtain appropriate hospital triaging and support, referrals for maternity care should contain current and past psychiatric history and medication and significant family and social history.

BH has a Maternity Support Program (MSP) that can be assessed for women with mental health issues, emotional concerns or complex social concerns who are receiving pregnancy care. MSP will refer/link with community supports as required.

To access these services in a non-urgent situation SMCA’s can:

* Include details and a request in the referral letter for maternity care
* Contact WHC to arrange an appointment at the hospital if the woman is undertaking shared maternity care.

Contact the relevant hospital mental health team directly via the hospital switchboard for advice during business hours

**Hospital mental health service contact details**

Phone: 5454 6000 (switchboard – ask for the psychiatry registrar)

Maternity Support Clinicians: 5454 7282 / 0427 410 523

**Private providers**

Referring a woman directly to a private provider (psychiatrist or psychologist) is an option the SMCA may consider when caring for a pregnant woman with mental health issues. In this instance, communicate this in the VMR. Even if a woman has private supports and care, if the woman has a severe mental health issue it is important this is communicated to the hospital staff, as she may have issues when she is hospitalised, in the postpartum and in caring for her child.

**Adult specialist mental health services (including Crisis Assessment and Treatment**

**(CAT) Teams) 1300 363 788**

Adult specialist mental health services provide both urgent and non-urgent support. All services provide psychiatric triage and referral 24 hours, seven days a week. Also see: [Mental health](https://www.health.vic.gov.au/mental-health). They provide a range of services, including urgent community-based assessment and short-term treatment interventions to people in psychiatric crisis. CAT services have a key role in deciding the most appropriate treatment option and in screening all potential inpatient admissions. CAT services provide intensive community treatment and support, often in the person’s own home, during the acute phase of illness as an alternative to hospitalisation. CAT services also provide a service to designated hospital emergency departments through an onsite presence.

**Inpatient psychiatric service**

If a woman requires admission for a psychiatric condition during pregnancy, this is usually arranged by the referring hospital psychiatric team or CAT teams. Admissions to the BH Mental Health Services can be arranged if deemed necessary.

In the postnatal period, both public and private mother and baby services and early parenting centres provide clinical and support services for parents experiencing difficulties (including mental health problems). Where there are concerns about the wellbeing of a child or family, Child FIRST is the referral point for family services in Victoria. Also see:

[Family and parenting support - DFFH Service Providers](https://providers.dffh.vic.gov.au/family-and-parenting-support)

**Parent Infant Unit (PIU)**

Bendigo Health’s PIU – Parent Infant Unit is an acute 5 bed mental health facility for caregivers and infants under the age of 12 months and not walking. The unit provides pregnancy and early parenting mental health specialist assessment and treatment in the form of individual and group therapy and medication management. Admissions can also occur in the third trimester of pregnancy. The caregiver (ie. Mother, Father or other carer) is the admitted patient and the infant is a border. The carer must have an acute mental health concern. All infants will have a Paediatric review post arrival. A non-admitted partner (i.e. partner/father) can also stay (as a guest) provided they are actively involved in the care of the infant and the therapeutic plan for caregiver and infant. All admissions to the PIU are via Psychiatric Triage (1300 363 788) followed by an assessment by the Psychiatric Registrar and weekly review by the Consultant Psychiatrist. All possible referrals are welcome to be discussed with the Nurse in charge (ph. 5454 7765 business hours) prior to referral via Triage to allow for clarification/secondary consultation.

**Medicines Information Service (MIS)**

The MIS specialises in providing information on medicine use, including psychotropic medicines, in pregnancy and breastfeeding, women’s health and neonates. The service is also able to provide advice regarding adverse drug reactions, drug interactions, compatibilities, product information, complementary or herbal medicines use and much more.

The MIS is provided by the specialist pharmacists at the Royal Women’s and operates from Monday to Friday (9am to 5pm), excluding public holidays.

Phone: (03) 8345 3190

Email: drug.information@thewomens.org.au

Alternatively, Rodney Whyte (pharmacist) is contactable at Monash Medical Centre, Mon-Fri 9:00-5:00, on 9594 2361.

**Alcohol and drug use**

The Mercy, Royal Women’s and Western Health each have a service to support women with alcohol and substance use issues during pregnancy and postpartum. These units work closely with the hospital social work and mental health services and can also provide advice to SMCA’s.

Alcohol and drug service contact details

*Mercy Hospital for Women*

Phone: 8458 4201 (coordinating midwife – women can self-refer to this service once they are booked in for care at the hospital)

*The Women’s (Parkville and Sandringham)*

Phone: 8345 3931 (Women’s Alcohol and Drug Service – women can self-refer to this service once they are booked in for care at the hospital)

*Werribee Mercy Health*

Phone: 8754 3341

*Western Health*

Phone: 8345 1727 (Maternity Outreach and Support Service Clinic)

**Family Violence / intimate partner violence**

All hospitals have social workers and other services that have experience in managing family violence.

Intimate partner violence is responsible for more ill-health and premature death in Victorian women under the age of 45 than any other preventable risk factor, including high blood pressure, obesity and smoking. Findings from a 2004 VicHealth study of the health costs of violence demonstrated the seriousness and prevalence of intimate partner violence.

Intimate partner violence has wide-ranging and persistent effects on a woman’s physical and mental health, contributing 8.8% of the total disease burden of Victorian women aged 15 to 44. Direct health consequences for women exposed to violence include depression, anxiety, phobias, suicide attempts, chronic pain syndromes, psychosomatic disorders, physical injury, gastrointestinal disorders, irritable bowel syndrome and a variety of reproductive consequences. The influence of the abuse can persist long after it has stopped, and the more severe it is, the greater the impact on a woman’s physical and mental health.

One in five Australian women report being subjected to violence at some stage in their adult life, increasing their risk of mental health problems, behavioural and learning difficulties. The risk of violence is higher in pregnant women and in the period following the birth of a child. Young women who have been exposed to violence are more likely to have an unplanned pregnancy, termination or miscarriage. It takes them longer to make contact with medical services for antenatal care than women who are not exposed to violence, and their babies are more likely to have a problem diagnosed after birth. In addition, it is estimated that one in four Victorian children have witnessed intimate partner violence, increasing their risk of mental health problems, behavioural and learning difficulties.

**Family Violence screening - what to ask:**

All women should be asked about family violence. The current Common Risk Assessment Framework (CRAF) provides the best evidence-based questions for family violence screening. These include:

* Are you ever afraid of someone in your family or household? If so, who?
* Has someone in your family or household ever put you down, humiliated you or tried to control what you can or cannot do?
* Has someone in your family or household ever threatened to hurt you?
* Has someone in your family or household every pushed, hit, kicked, punched or otherwise hurt you?
* Are you worried about your children or someone else in your family or your household?
* Would you like help with any of this now?

Note: It is recommended that questions are phrased so they address the last 12 months, for example, “In the last 12 months has someone in your family or household ever threatened to hurt you?”

**Management of a woman who discloses family violence**

If ‘yes’, ask ‘would you like to discuss this further or be linked / referred to other specialist supports?

**If woman is in immediate danger and is ready to access available services –**

**In hours:**

* refer to Maternity Support Worker (MSW) immediately who will engage appropriate specialist family violence services and/or police as indicated; and
* provide woman with information on services available as outlined below

**After hours:**

* complete referral to 24-hour first-response service Safe Steps Family Violence Resource Centre as per [number](#Appendix3FVsupports) below
* complete MSW referral

**If the woman does not want to do anything at this stage:**

* provide woman with information on services available and relevant phone number as outlined below

**Family Violence Resources and Support Services**

**Business hours**

The Orange Door1800 512 359

Services offered:

* Adults, children and young people's family violence services
* Child and family services
* Aboriginal services
* Services for people who use violence

Centre for Non Violence 54303000

* Assessment, advocacy, safety planning, support and referral for women and children who have experienced family violence
* Information about family violence and related issues
* Assistance to obtain crisis accommodation
* Non-legal support and a coordinated response with police, legal and family services.
* Men’s behaviour change program- for men who are thinking about their anger, behaviour, relationship issue or parenting and need to get help and support.

Loddon Campaspe Community Legal Centre 54450909

Loddon Campaspe Community Legal Centre provides free legal information and advice to Central Victorians who can’t afford a lawyer or who can’t get legal aid.

Loddon Campaspe Centre against Sexual Assault (LCCASA) 54410430

LCCASA's services include counselling, support and advocacy for people who have experienced sexual assault, either recently or in the past.  Adults, young people and children are able to access our services.

Child Protection 1300 664 977

When a child has been exposed to or is at risk from family violence.

Police 000

**After hours**

Safe Steps Family Violence Resource Centre 1800 015 188

Victoria’s state-wide first response service for women, young people and children experiencing family violence. Safe Steps provides a number of services including a 24/7 family violence response phone line, risk assessments, emergency accommodation, advocacy and referrals.

Website: [www.safesteps.org.au/](http://www.safesteps.org.au/)

Child Protection 13 12 78

**Additional services**

In Touch Multicultural Centre Against Family Violence 1800 755 988

Website: [inTouch - inTouch - Multicultural Centre Against Family Violence](https://intouch.org.au/)

Provides phone support and advice to women from culturally and linguistically diverse backgrounds in their primary language

1800 RESPECT (National Sexual Assault and 1800 737 732

Family Violence Counselling Service)

Confidential information, counselling and support service open 24 hours for people impacted by sexual assault, domestic or family violence and abuse.

Child FIRST (Child and Family Information Referral and 54401147

Support Team)

Each Child FIRST provides a central referral point to a range of community-based family services and other supports within each of the Child FIRST catchment areas.

Victorian Sexual Assault Crisis Line (After Hours) 1800 806 292

State-wide after-hours, confidential, telephone crisis counselling service for people who have experienced both past and recent sexual assault

**Resources on mental health and wellbeing in pregnancy**

|  |  |  |
| --- | --- | --- |
| Topic | Organisation / web address | Content summary |
| Mental health  and wellbeing | Beyond Blue  [Our work in perinatal mental health - Beyond Blue](https://www.beyondblue.org.au/about-us/about-our-work/perinatal-mental-health)  [www.beyondblue.org.au/the-facts/pregnancy-and-early-parenthood](http://www.beyondblue.org.au/the-facts/pregnancy-and-early-parenthood) | Comprehensive guide with multiple resources related to perinatal mental health  Consumer information:  Multiple resources on mental  health during pregnancy and early parenthood including where to get help for parents |
| Post and Antenatal Depression  Association (PANDA)  [Postnatal Psychosis: Signs and symptoms | PANDA](https://panda.org.au/articles/postnatal-psychosis-signs-and-symptoms/?gclid=EAIaIQobChMI6p2_opud-wIVQUkrCh15Fw3aEAAYASAAEgJVf_D_BwE) | Comprehensive guide with multiple resources related to perinatal depression and anxiety for parents |
| Department of Health and Human  Services, Victoria  [Adult specialist mental health services (16-64 years) - Mental Health Services - Victorian Government Health Information, Australia](http://www3.health.vic.gov.au/mentalhealthservices/adult/index.htm) | Website for adult specialist mental  health services (16–64 years) with  links to metropolitan and rural  support services |
| The Women’s  [Mental health & pregnancy | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/pregnancy-and-birth/mental-health-pregnancy) | Consumer information:  Multiple fact sheets relating to mental health and pregnancy including baby blues, depression, bi-polar, anxiety, schizophrenia, eating disorders and post-partum psychosis |
| Mental Health Association of NSW  [Services - Relationships Australia NSW (relationshipsnsw.org.au)](https://www.relationshipsnsw.org.au/support-services/?gclid=EAIaIQobChMIz8yw0Zud-wIVyg0rCh2XaAx3EAAYASAAEgL76fD_BwE) | Consumer information:  Multiple resources on mental  health during pregnancy and early  parenthood |
| Smiling Mind and Beyond Blue –  Mind the Bump  [Smiling Mind](https://www.smilingmind.com.au/?utm_term=a%20smiling%20mind&utm_campaign=Generic+Smiling+Mind+Brand&utm_source=adwords&utm_medium=ppc&hsa_acc=3715315936&hsa_cam=16604853283&hsa_grp=135072321256&hsa_ad=588547199237&hsa_src=g&hsa_tgt=kwd-377508578300&hsa_kw=a%20smiling%20mind&hsa_mt=b&hsa_net=adwords&hsa_ver=3&gclid=EAIaIQobChMInrze3pud-wIVd5hmAh3Kzw40EAAYASAAEgJPY_D_BwE) | Free meditation app to help support  mental and emotional wellbeing in  the journey to parenthood for both  individuals and couples |
| Medicines  Medicines continued | The Women’s Pregnancy and  breastfeeding medicines guide  <https://thewomenspbmg.org.au/> | Health professional information:  Comprehensive web based  pregnancy and breastfeeding  medicines guide developed by the  Women’s and available on annual  subscription |
| Therapeutic Goods Administration  [Obstetric drug information services | Therapeutic Goods Administration (TGA)](https://www.tga.gov.au/obstetric-drug-information-services) | Health professional information:  Comprehensive guide with multiple  resources including Australian  categorisation of risk of drug use in  pregnancy and links to the Obstetric Drug Administration Service |
| Mercy Health  [Psychotropic medication during pregnancy and lactation - PubMed (nih.gov)](https://pubmed.ncbi.nlm.nih.gov/17710428/) | Health professional information:  *Psychotropic Medication in*  *Pregnancy /Lactation* (2008) |
| The Women’s  [Medicines in pregnancy (thewomens.org.au)](https://www.thewomens.org.au/images/uploads/fact-sheets/Medicines-in-pregnancy-140219.pdf)  [Medicines in breastfeeding (thewomens.org.au)](https://www.thewomens.org.au/images/uploads/fact-sheets/Medicines-in-breastfeeding-151018.pdf) | Consumer information:  Medicine use during pregnancy  Medicine use while breastfeeding |
| Alcohol and drug use | The Women’s  [Pregnancy, drugs & alcohol | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-drugs-alcohol) | Consumer information:  Alcohol, cigarette smoking and drug use during pregnancy |
| Intimate partner  violence | Safe steps – Family Violence  Response Centre  [www.safesteps.org.au/](http://www.safesteps.org.au/) | Domestic Violence Crisis Service –  Available 24/7.  Central contact point for women’s refuges in Victoria.  Provides telephone crisis  counselling, referral, information and support  Phone: 1800 015 188 or  03 9322 3555 |
| inTouch  [inTouch - inTouch - Multicultural Centre Against Family Violence](https://intouch.org.au/) | Provides phone support to women from culturally and linguistically diverse backgrounds in their primary language.  Phone: 1800 755 988 or 9413 6500 |
| Domestic Violence Resource  Centre, Victoria  [www.dvrcv.org.au/](http://www.dvrcv.org.au/) | Provides training, publications,  research and other resources to  those experiencing (or who have  experienced) family violence,  and practitioners and service  organisations who work with family violence survivors |
| VicHealth  [VicHealth framework for preventing violence against women](https://www.vichealth.vic.gov.au/programs-and-projects/vichealth-framework-for-preventing-violence-against-women) | Link to research and resources  related to violence and preventing  against women |
| Domestic Violence Victoria  [www.dvvic.org.au/](http://www.dvvic.org.au/) | Peak body for family violence services in Victoria.  Information on causes, statistics and impacts of family violence with a number of links. |
| The Women’s  [Violence & sexual assault | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/patients-visitors/clinics-and-services/violence-sexual-assault#:~:text=Violence%20against%20women%20may%20include,financial%2C%20spiritual%20or%20cultural%20abuse.&text=The%20Women%27s%20provides%20a%2024,victim%2Fsurvivors%20of%20sexual%20assault.) | Consumer information:  Contains multiple multilingual  resources relating to family violence and what to do |

**POSTNATAL CARE**

The average hospital stay after the birth of a baby is 1–2 days for a vaginal birth and 3 days for a caesarean section. A hospital discharge summary is sent to the SMCA and nominated GP within 48 hours of discharge. In the case of significant complications, fetal or neonatal death, the GP and SMCA will be contacted by phone by the registrar or consultant.

Immediate postnatal care at the hospital includes:

* Physical assessment of mother and baby
* Wound/perineal/breast care
* Parenting and emotional wellbeing
* Supporting parents to care for their baby
* Breastfeeding/infant feeding (initiation and support)
* Routine newborn screening test for hypothyroidism, phenylketonuria (PKU), cystic fibrosis and some metabolic disorders (Guthrie test)
* Routine newborn hearing screening
* Contraception education.
* Information in Sudden Infant Death Syndrome (SIDS) and advice about safe sleeping
* Advice on Pelvic Floor Exercises

**Child health record**

All parents are given a *My Health and Development Record*(child health record) in hospital. This document is used by parents, maternal child health nurses and GP’s as a record of a child’s health and development, including growth, immunisations and development milestones. The child health record is used as a communication tool between parents and health care providers, and documents all maternal child health nurse visits.

**Routine investigations in hospital**

Newborn screening test (NST)

The newborn screening test (Guthrie test) involves a blood sample obtained with a heel prick and placed on pre-printed filter paper. All tests are processed by the Victorian Clinical Genetics Service. Newborn screening identifies babies with an increased risk of having hypothyroidism, PKU, cystic fibrosis and more than 20 additional metabolic disorders.

The NST is performed when the baby is between 48 and 72 hours old. A greater number of false positives and false negatives occur when the screening is done before 48 hours. If a baby is discharged before 48 hours, the newborn screening test is attended by the Midwifery Home Care midwives the next day. The hospital is responsible for ensuring that all babies are screened. This includes babies that are transferred to other hospitals or domiciliary midwifery programs. About 0.1% of babies that undergo newborn screening are diagnosed with a condition. Hospitals monitor results weekly, and notification is sent to the paediatrician/GP. Parents are also notified if test results indicate that their baby is at increased risk. Diagnostic testing can also be arranged to confirm the results.

Newborn screening laboratory contact details

*Victorian Clinical Genetics Services (VCGS)*

Phone: 8341 6201 or 1300 118 247

Fax: 8341 6390

Email: screeninglab@vcgs.org.au

*Royal Children’s Hospital Genetic Counselling Service*

Phone: 8341 6201

Newborn hearing screening

As part of the Victorian Infant Hearing Screening Program (VIHSP), all babies born at BH undergo a routine hearing screen and risk factor assessment prior to discharge. If a baby has not been screened prior to discharge, an outpatient appointment will be made for the screening to be undertaken. Screening results are documented in the *My Health and Development Record,* and a diagnostic audiology referral is organised if indicated.

This is followed up by VIHSP and the maternal child health nurse.

If a pass result is obtained but risk factor/s are identified, this is documented in the child health record. The maternal child health nurse also notes the follow-up that should be undertaken, including referral for diagnostic audiology at the 2 week and/ or 6–8 month check, if required. If a GP identifies additional risk factors or parental concerns about a baby’s hearing, a referral for diagnostic audiology can be made.

Risk factors for hearing loss include:

* Family history of congenital hearing impairment
* Rubella, cytomegalovirus or toxoplasmosis during pregnancy
* Admission to neonatal intensive care or special care nursery for 2 or more days
* Apgar score <4 at 5 minutes of age
* Birth weight <1500 g
* Severe jaundice /Exchange transfusion
* Baby receiving Aminoglycosides antibiotics in the neonatal period
* Congenital abnormalities of the head and neck
* Bacterial meningitis
* Later risk factors e.g. developmental delay, head injury.

Victorian Infant Hearing Screening Program contact details

Phone: 9345 4941 / 54547297 (Bendigo)

Fax: 9345 5049

Email: [email.vihsp@rch.org.au](mailto:email.vihsp@rch.org.au)

**Breastfeeding**

The World Health Organization states that exclusive breastfeeding is recommended up to 6 months of age, with continued breastfeeding along with appropriate complementary foods up to 2 years of age or beyond. According to the 2010 Australian National Infant Feeding Survey, exclusive breastfeeding was initiated for 90% of babies at birth (i.e. their first feed was breastmilk or equivalent). The proportion of babies exclusively breastfed decreased to 61% before the end of the first month of life, and continued to decrease, with 39% of babies exclusively breastfed to around 4 months of age and 15% to around 6 months.

It is widely believed that breastfeeding positively influences the physical and emotional health of both mother and infant. It provides protection against many diseases and infections for both mother and baby, and adequate nutrition for normal growth and development of the baby. Hospitals strongly encourage breastfeeding with support and education for all women in the antenatal and postnatal period.

Breastfeeding is discussed and encouraged by hospital staff at antenatal visits and childbirth education sessions. In the immediate postnatal period, lactation consultants are available at the hospital to provide advice and support.

Breastfeeding support is also available for up to 6 weeks postpartum at BH’s Breastfeeding Support Clinic for women who:

* Have been identified as having risk factors for breastfeeding difficulties during pregnancy (e.g. have had poor breastfeeding experiences, multiple pregnancies, breast surgery)
* Experience breastfeeding problems whilst an inpatient or at home
* Require additional support.

GPs, SMCAs and women can contact breastfeeding services at the hospitals directly for advice. In addition to the hospital breastfeeding services, many maternal and child health services and early parenting centres provide assessment and support (e.g. Australian Breastfeeding Association).

Hospital breastfeeding support contact details

BFSS Phone: 5454 7293 / 0427 356 675

For bookings call Women’s Clinics: 5454 7288

**Postnatal care in the community**

In addition to providing immediate postnatal care, BH offers at least one domiciliary midwife visit for all women within the first few days after discharge. This service also notifies the appropriate Maternal Child Health Service at the time of discharge from midwifery home care, with the local Maternal and Child Health Service then undertaking a home visit. Additional services are available through the Maternal and Child Health Service, such as Enhanced Home Visiting, if required.

Most postnatal care is undertaken in the community by GPs in conjunction with the Maternal and Child Health Service. Infants in Australia have a higher percentage of GP visits during the first year of life than any other year. The table below shows high levels of maternal morbidity at 6 months postpartum and low levels of maternal satisfaction with hospital postnatal care in Victoria. All women and their babies are encouraged to visit their GP for a postnatal check at 6 weeks, or earlier if needed. If a woman does not have a GP, the hospital can assist her to find one prior to discharge.

|  |  |  |
| --- | --- | --- |
| Common maternal postnatal problems in first 6–7 months  after child birth (Victoria) | | |
| **Problem** | **Primiparas (%)** | **Multiparas (%)** |
| Backache | 44 | 43 |
| Bowel problems | 10 | 11 |
| Constantly re-living baby’s birth | 7 | 5 |
| Contraception | 8 | 9 |
| Depression | 19 | 20 |
| Haemorrhoids | 26 | 24 |
| Mastitis (if breastfeeding) | 16 | 18 |
| More coughs and colds than usual | 9 | 13 |
| No health problems | 5 | 6 |
| Other | 7 | 8 |
| Pain from a caesarean wound | 63+ | 60 |
| Painful perineum | 31 | 15 |
| Relationship with partner | 19 | 18 |
| Sex | 31 | 24 |
| Tiredness/exhaustion | 68 | 70 |

+ Only includes women who had a caesarean section (n+1336).

Source: Adapted from Brown S, Davey M, Bruinsma F. Women’s views and experiences pf postnatal hospital

care in the Victorian Survey of Recent Mothers 2000. Midwifery; 21, 109–26, 2005.

The following is recommended as part of postnatal care:

* Every woman should see their GP for postnatal care
* The timing of visits should be individualised and reflect a woman’s needs
* Both the mother and child should be assessed by the GP at the 6-week postnatal check-up
* A patient-centred approach should be adopted by the GP, focusing on relevant issues and concerns.

GP guide for postnatal check-up of the mother

The 6-week postnatal check-up with the GP should include:

* Physical assessment of mother and baby
* Follow up any issues from pregnancy, birth and postnatal period
* Developmental assessment of the baby
* Emotional wellbeing of mother, including postnatal depression/adjustment and follow-up of any issues from pregnancy and birth
* Opportunity for parents to express concerns
* Relationship and social supports
* Health promotion and preventative health, including contraception
* Support breastfeeding / infant feeding and positive parental/child interaction
* Pelvic floor assessment and advice
* [Family violence](#FamilyViolence) screening, see pages 94-97

Physical assessment should include:

* Follow-up of complications of pregnancy (e.g. hypertension, pre-eclampsia, gestational diabetes)
* BP check
* Check wounds
* Check for fever, anaemia and vaginal loss
* Assess for breastfeeding difficulties
* Ask about urinary and faecal continence
* Ask about perineal symptoms and intercourse.

Investigations and immunisations to consider include:

* Haemoglobin if previous anaemia or postpartum haemorrhage
* If gestational diabetes, follow-up of GTT result for 6 weeks after birth, and ongoing follow-up if required. A Pap smear if due
* Checking MMR immunisation (if rubella antibody titre is low antenatally, MMR vaccination is usually given at the hospital postpartum; if not given, please administer).
* Varicella immunisation if non-immune (this is not usually given at the hospital – 2 doses required)
* Pertussis immunisation of mother and carers/other close family members if not already undertaken (for mother, recommended in each pregnancy, ideally at 28–32 weeks; for partners and other caregivers if not given in past 10 years)
* Hepatitis B/C surveillance if relevant.

Other issues for assessment/discussion include:

* Sex, dyspareunia, libido
* Maternal nutrition
* Sleep and rest
* Alcohol, smoking and drug use
* Liaison with other community services (in particular for recent migrants, mothers from Aboriginal and Torres Strait Islander backgrounds, adolescent mothers, mothers with alcohol and substance use issues)
* Awareness of postnatal depression (both parents), intimate partner violence, parenting and child mistreatment.

**GP guide for postnatal check-up of the baby**

The aim of the GP visit is also to assess the baby’s physical and developmental wellbeing, and allow discussion of health promotion and any issues or concerns.

Physical assessment includes:

* A general physical examination ( assessment for head shape/fontanelles, skin, jaundice, tone, heart, testes, genitalia/anus, natal cleft, squint, eyes (red reflex), hips)
* Assessment of growth (height, weight and head circumference)
* A check to see if the baby is smiling, following object and maintaining gaze
* Identification of risk of hearing problems
* Follow-up of any complications or parental concerns
* Follow-up of relevant tests.

Investigations and immunisations include:

* Follow-up of investigation results (e.g. fetal hydronephrosis, TFT’s)
* Follow-up of abnormal clinical findings (e.g. prolonged jaundice, heart murmurs)
* A screening hip ultrasound for babies at risk of hip dysplasia (breech, talipes, family history)
* Immunisations as per National Health and Medical Research Council schedule.

Other issues for discussion:

* Appropriate feeding and weight gain
* If mother was vitamin D deficient during pregnancy, vitamin D supplementation (e.g. Pentavite®) at least while exclusively breastfeeding
* Settling and sleep
* Sudden Infant Death Syndrome (SIDS) prevention
* Dangers of passive smoking
* Car safety and other injury prevention
* Sun protection
* Community and other support and resources.

**Follow-up of common issues in the postnatal period**

Gestational diabetes

If a woman had gestational diabetes, GP’s should ensure a GTT was performed at around 6 weeks after the birth. BH routinely give woman a pathology request slip for a GTT prior to discharge. Even if the result of this postnatal GTT is normal, women are at increased risk of developing diabetes later in life (30% –50% chance within 15 years after a pregnancy).

Therefore, this is an opportunity to offer women counselling, to discuss minimisation of risk factors for diabetes and vascular disease, and for the GP to arrange regular testing (e.g. 2-yearly GTT if normal, yearly if impaired result).

Pregnancy-induced hypertension

For women who have had pregnancy induced hypertension:

* Review blood pressure and taper off antihypertensive medicine as appropriate; management plan is individualised and usually stated on discharge summary. Hospital review may have been arranged or may not be required
* Most women are able to cease their antihypertensive medicine by about 2 months postpartum
* Ensure other risk factors and surveillance for cardiovascular risk factors are addressed
* If moderate/severe pregnancy induced hypertension, refer to obstetrician pre-pregnancy for subsequent pregnancies for consideration of early prophylaxis
* Review results of hospital investigations (e.g. lupus markers/prothrombin gene mutations) and manage accordingly.

Hepatitis B carrier

If the mother is a hepatitis B carrier, GP’s should:

* Undertake hepatitis B surveillance of the mother
* Confirm that the baby has received 2 injections post birth (hepatitis B immunoglobulin and hepatitis B paediatric formulation) (Engerix-B paediatric or H-B-VAX II paediatric)
* Reinforce the need for full immunisation of the child
* Test the child’s immunity (Hep B SAb) and carrier status (Hep B SAg) at around 12 months (can be done from 9–15 months)
* Ensure all other family members and household contacts have been immunised and that immunity is confirmed with a blood test
* If the woman is on antiviral medication, ensure that this is not suddenly ceased due to the risk of ‘hepatitis B flare’.

Vitamin D supplementation for babies

Risk factors for vitamin D deficiency in newborns include:

* Maternal vitamin D deficiency – vitamin D is transferred form the mother to the fetus across the placenta, and reduced vitamin D stores in the mother are associated with lower vitamin D levels in the infant

Babies do not routinely have vitamin D levels checked, even if the mother is vitamin D deficient. Supplementation is indicated if a mother is vitamin D deficient.

**Maternal and child health service and local government family services**

The Maternal and Child Health Service and local government family services provide a range of support services for babies, women and families, including assessment, referral, home support and visits from a maternal child health nurse, enhanced maternal child health services and help with breastfeeding, parenting and social connections, and drop-in centres. Many also have culturally sensitive groups and activity groups. Women and GP’s can contact the local service to arrange support.

Maternal and Child Health Service contact details

Maternal and Child Health Line

Phone: 13 22 29 (24 hours, seven days a week)

Directory services with postcode search:

[www.education.vic.gov.au/findaservice/Home.aspx](http://www.education.vic.gov.au/findaservice/Home.aspx)

**Child and family services and support**

Child and family information, referral and support teams (Child FIRST) include enhanced maternal child health services and other support services (e.g. social work, housing, legal, and drug and alcohol services) and can be contacted when a health professional feels a family requires additional support.

Issues may include:

* Young, isolated or unsupported families
* Parenting problems that may affect the child’s development
* Social or economic disadvantage that may adversely impact on a child’s care, safety or development
* Family conflict or breakdown
* Families under pressure due to a family member’s physical or mental illness, substance use, disability or bereavement.

GP’s are encouraged to contact the Maternal and Child Health Service to discuss additional support if required. Referral to this service does not replace mandatory reporting of child abuse to the Victorian Child Protection Service (see below).

Child and family services and support contact details

Bendigo Child FIRST

175 Hargreaves St Bendigo 3550

Phone: 5440 1147

Phone: 1800 260 338

Fax: 5440 1108

Website: [www.dhs.vic.gov.au/for-individuals/children,-families-and-young-people/family-and-parenting-support/family-services/child-first-child-and-family-information,-referral-and-support-teams](http://www.dhs.vic.gov.au/for-individuals/children,-families-and-young-people/family-and-parenting-support/family-services/child-first-child-and-family-information,-referral-and-support-teams) for full list of referral numbers.

**Mandatory reporting requirements for health professionals**

Mandatory reporting of suspected child physical or sexual abuse:

Doctors, nurses, teachers and police must report suspected child physical or sexual abuse to the child protection service. This mandated obligation is set out in s184 of the Children, Youth and Families Act 2005.

Professionals are mandated to report child abuse:

* When they form a belief on reasonable grounds that a child needs protection from physical injury or sexual abuse
* Where they form this belief while practising a mandated profession
* Each time they become aware of any further reasonable grounds for this belief.

'Forming a belief' is the process of asking whether you are more or less likely to believe the child faces significant harm based on the information available. It does not mean you have to prove the abuse has occurred or is likely to occur.

* More information can be found at:
* <https://www2.health.vic.gov.au/about/populations/vulnerable-children>

*Child Protection Services contact details*

Child Protection Services (to make a notification of child abuse)

Phone: 1800 675 598 OR

Direct line: 9843 5422

Child Protection Crisis Line

Phone: 13 12 78 (after hour’s service)

**Mother and baby inpatient mental health services**

Within the Bendigo region the GP will call triage 24 hour Psychiatric Triage assessment team (Ph: 1300 363 788) and discuss the individual woman. A plan will then be made regarding follow-up based on the assessment.

The BH PIU – Parent Infant Unit is an acute 5 bed / 5 cot mental health facility for caregivers and infants under the age of 12 months and not walking. Admissions can also occur in the third trimester of pregnancy. The caregiver (ie. Mother, Father or other carer) is the admitted patient and the infant is a border. The carer must have an acute mental health concern. All infants will have a Paediatric review post arrival. A non-admitted partner (i.e. partner/father) can also stay (as a guest) provided they are actively involved in the care of the infant and the therapeutic plan for caregiver and infant. Upon admission to the PIU the caregiver will be assessed by the Psychiatric Registrar and have a weekly review by the Consultant Psychiatrist. All possible referrals are welcome to be discussed with the Nurse in charge (ph. 5454 7765 business hours) prior to referral via Triage to allow for clarification/secondary consultation.

There are three other public inpatient mother and baby services in Victoria. They are located at the Austin Hospital, Werribee Mercy Hospital and Monash Medical Centre. These services provide specialist assessment and management of women with mental illness in the postnatal period. Generally, infants up to 12 months of age are admitted with their mothers. SMCA’s can refer a woman through the local Adult Mental Health Service, where an intake worker will assess the woman and arrange admission.

Public mother and baby inpatient unit contact details:

*Bendigo Health Parent Infant Unit*

Psychiatric Triage Phone: 1300 363 788

Psychiatry Reception 5454 7765

*Austin Health – Heidelberg*

Phone: 9496 6406 or 9496 5000 (after hours)

Fax: 9496 4366

*Monash Medical Centre (Clayton)*

Phone: 9594 1414

Fax: 9594 6615

*Werribee Mercy Hospital (Werribee)*

Phone: 9216 8465

Fax: 9216 8470

Referring a woman directly to a private provider (psychiatrist or psychologist) is also an option for GPs to consider when caring for a woman with mental health issues in the postnatal period. Private facilities with both mother and baby units and parenting centres are also available. To refer, SMCAs should contact the facilities directly.

All services provide both day and inpatient programs.

Private mother and baby units contact details

*North Park Private Hospital (Bundoora)*

Phone: 9468 0850 or 9468 0804 (after hours)

Fax: 9468 0300

*Mitcham Private Hospital (Mitcham)*

Phone: 9210 3134

Fax: 9210 3183

*Albert Road Clinic (Melbourne)*

Phone: 9256 8322

Fax: 9820 9588

*Masada Private Hospital (St Kilda East)*

Phone: 9038 1413

Fax: 9038 1309

**Early parenting centres**

Early parenting centres provide non-urgent support for families with children 0 to 3 years who have difficulty establishing feeding, sleeping and other early childhood routines. Families can stay at the centres or attend day stay programs. Women can self-refer to these services.

**Early parenting centre contact details**

*Tweddle Child and Family Health Service (Footscray)*

Phone: 9689 1577

Fax: 9689 1922

*Mercy Health O’Connell Family Centre (Canterbury)*

Phone: 8416 7600

Fax: 9816 9729

*Queen Elizabeth Centre, Noble Park*

Phone: 9549 2777

Fax: 9549 2779

**Sudden infant death syndrome**

Families are provided with advice about safe sleeping at the hospital and by maternal child health nurses. Information on safe sleeping and bereavement support, including in languages other than English, is available on the Red Nose website.

Also see: [www.rednose.com.au](http://www.rednose.com.au)

**Resources on postnatal care**

|  |  |  |
| --- | --- | --- |
| Topic | Organisation web address | Content summary |
| Services | | |
| Child FIRST  – Child and  family protection  services | Department of Health and Human Services, Victoria  [www.dhs.vic.gov.au/for-individuals/children,-families-and-youngpeople/family-and-parentingsupport/family-services/child-first-child-and-familyinformation,-referral-and-supportteams](http://www.dhs.vic.gov.au/for-individuals/children,-families-and-youngpeople/family-and-parentingsupport/family-services/child-first-child-and-familyinformation,-referral-and-supportteams) | Comprehensive guide with multiple  resources related to child and family  protection services across Victoria  including mandatory reporting  requirements for child abuse |
| Maternal and  child health  services | Maternal and Child Health  Services – Department of Health and Human Services, Victoria  [Maternal and Child Health Service](https://www.health.vic.gov.au/primary-and-community-health/maternal-and-child-health-service) | Comprehensive guide with multiple resources for consumers and Maternal and Child Health Service professionals, other health professionals to support them in maintaining high service standards for Victorian families |
| Child Health  Record | Department of Education and Training, Victoria  [My Health Record for parents | My Health Record](https://www.myhealthrecord.gov.au/for-parents) | Comprehensive guide with multiple resources related to My Health and Development Record (the green book given to parents for each child born) |
| Newborn Tests | | |
| Newborn blood  screening | Victorian Clinical Genetics Services  [Newborn Bloodspot Screening | VCGS](https://www.vcgs.org.au/tests/newborn-bloodspot-screening) | Health professionals information:  Newborn blood screening |
| Better Health Channel  [Newborn bloodspot screening - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/newborn-screening) | Consumer information:  Newborn blood screening |
| Newborn hearing  screening | The Royal Children’s Hospital  [www.rch.org.au/vihsp/about\_vihsp/About\_the\_Victorian\_Infant\_Hearing\_Screening\_Program\_VIHSP](http://www.rch.org.au/vihsp/about_vihsp/About_the_Victorian_Infant_Hearing_Screening_Program_VIHSP) | Comprehensive site:  Victorian Infant Hearing Screening  Program (VIHSP) with links to public, private, metropolitan and rural maternal screening services |
| Newborn hip  screening and  hip Dysplasia | Department of Health and Human  Services, Victoria  [Developmental dysplasia of the hip in neonates | Safer Care Victoria](https://www.safercare.vic.gov.au/clinical-guidance/neonatal/developmental-dysplasia-of-the-hip-in-neonates#:~:text=Developmental%20dysplasia%20of%20the%20hip%20(DDH)%20is%20the%20preferred%20term,presentation%20and%20positive%20family%20history.) | Health professional information:  The Neonatal eHandbook.  Developmental dysplasia of the hip  in neonates |
| International Hip Dysplasia Institute  [Home - International Hip Dysplasia Institute](https://hipdysplasia.org/) | Health professional information:  The use of US screening for hip  dysplasia in infants |
| Better Health Channel  [Hip disorders - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/hip-disorders) | Consumer Information:  Developmental hip dysplasia |
| Newborn Health and Care | | |
| Clinical  guidelines | Department of Health and Human Services, Victoria  [Neonatal ehandbook | Safer Care Victoria](https://www.safercare.vic.gov.au/clinical-guidance/neonatal) | Clinical guidelines:  The Neonatal eHandbook  Provides a structured approach to the clinical management of conditions regularly encountered by health professionals caring for newborns. There are guidelines for  over 90 newborn conditions that may present during the early newborn period |
| Immunisation | Department of Health, Australia  [The Australian Immunisation Handbook | Australian Government Department of Health and Aged Care](https://www.health.gov.au/resources/publications/the-australian-immunisation-handbook) | Comprehensive guide with  multiple resources including the  electronic version of The Australian  Immunisation Handbook 10th Ed |
| Hepatitis B | RANZCOG  [Management of Hepatitis C in pregnancy (ranzcog.edu.au)](https://ranzcog.edu.au/wp-content/uploads/2022/05/Management-of-Hepatitis-C-in-Pregnancy-C-Obs-51.pdf) | Health professional information:  Hepatitis B in pregnancy. Also covers immunisation and testing of the baby |
| Jaundice | The Royal Children’s Hospital  [Clinical Practice Guidelines : Jaundice in early infancy (rch.org.au)](https://www.rch.org.au/clinicalguide/guideline_index/Jaundice_in_early_infancy/) | Health professional information:  Clinical Practice Guidelines on  Jaundice in Early Infancy |
| Department of Health and Human Services, Victoria  [Jaundice in neonates: Neonatal ehandbook - Department of Health and Human Services, Victoria, Australia](http://www3.health.vic.gov.au/neonatalhandbook/conditions/jaundice-in-neonates.htm) | Health professional information:  Jaundice in neonates |
| Better Health Channel  [Jaundice in babies - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/jaundice-in-babies) | Consumer information:  Jaundice in babies |
| Birthmarks | Better Health Channel  [Birthmarks - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/birthmarks) | Consumer information:  Birthmarks |
| Infant feeding and breast care | | |
| Breastfeeding | Australian Breastfeeding  Association  [www.breastfeeding.asn.au/bfinfo/index.html](http://www.breastfeeding.asn.au/bfinfo/index.html) | Comprehensive information:  Multiple resources on breastfeeding  including the contact details for the  Helpline |
| Medicines Information Service (MIS)  Phone: 8345 3190\*  \*9am to 5pm (excluding public holidays)  Email: [drug.information@thewomens.org.au](mailto:drug.information@thewomens.org.au) | Health professional and consumer  information:  The MIS provides evidence-based medicines information via telephone and email. |
| The Women’s Pregnancy and Breastfeeding Medicines Guide (PBMG)  [www.thewomens.org.au/pbmg](http://www.thewomens.org.au/pbmg) | Health professional information:  A quick reference guide for healthcare professionals providing comprehensive, practical and unbiased specialised information on medicine use in pregnancy and breastfeeding via an online subscription. |
| The Women’s  [Breast & nipple thrush | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/breastfeeding/breastfeeding-problems/breast-and-nipple-thrush#:~:text=Signs%20of%20nipple%20and%20breast%20thrush&text=your%20nipples%20may%20appear%20bright,your%20baby%27s%20bottom%2C%20or%20both.)  [Infant feeding - Breastfeeding the Healthy Term Baby (worldssl.net)](https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/infant-feeding-breastfeeding-the-healthy-term-baby_280720.pdf)  [Breastfeeding overview | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/breastfeeding/breastfeeding-overview)  [Breastfeeding | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/breastfeeding)  [Medicines, drugs & breastfeeding | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/breastfeeding/medicines-drugs-and-breastfeeding)  [Breastfeeding problems | The Royal Women's Hospital (thewomens.org.au)](https://www.thewomens.org.au/health-information/breastfeeding/breastfeeding-problems) | Health professional information:  Breast and nipple thrush guideline  Breastfeeding the healthy term baby guideline  Consumer information:  An overview of breastfeeding  General breastfeeding information  Medicines, drugs and breastfeeding  Common breastfeeding problems |
|  | Department of Health, Australia  [www.health.gov.au/breastfeeding](http://www.health.gov.au/breastfeeding) | Comprehensive guide with multiple  resources related to National  Breastfeeding Guidelines and  strategies |
| Bottle feeding | Raising Children Network  <http://raisingchildren.net.au/articles/how_to_bottle-feed.html/context/203> | Consumer information:  Multiple resources related to bottle  feeding babies |
| Safe sleeping, sudden infant death syndrome | | |
| Safe sleeping,  sudden infant  death syndrome | Red Nose  [Home | Red Nose Australia](https://rednose.org.au/) | Comprehensive guide with multiple  resources including information  on safe sleeping techniques and  bereavement support for SIDS |
|  | Better Health Channel  [Sudden unexpected death in infants (SUDI and SIDS) - Better Health Channel](https://www.betterhealth.vic.gov.au/health/healthyliving/sudden-unexpected-death-in-infants-sudi-and-sids) | Consumer information:  Sudden unexpected death in infants  (SUDI and SIDS) |
| Maternal care | | |
| General  physiotherapy | The Women’s  [Improving your recovery after birth: Physiotherapy advice (worldssl.net)](https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Improving-your-recovery-after-birth-240219.pdf) | Consumer information:  Physiotherapy advice on improving  your recovery after birth |
| Pelvic floor | The Women’s  [The Royal Women's Hospital: How to tone your pelvic floor - YouTube](https://www.youtube.com/watch?v=yb_c9rGv_0o) | Consumer video:  How to tone your  pelvic floor |
| Better Health Channel  [Pelvic floor - Better Health Channel](https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/pelvic-floor) | Consumer information:  Pelvic floor muscles care and  exercises |
| Spinal and  epidural | The Women’s  [Epidural or Spinal: advice for going home (thewomens.org.au)](https://www.thewomens.org.au/images/uploads/fact-sheets/Epidural-Spinal-advice-for-going-home-2018.pdf) | Consumer information:  Care after a spinal or epidural |
| Contraception | Family Planning Victoria  [www.fpv.org.au/](http://www.fpv.org.au/) | Consumer and health professional  information:  Information on a range of  contraception |
| Parenting | | |
|  | Raising Children Network  <http://raisingchildren.net.au/> | Consumer information:  Comprehensive, practical,  expert child health and parenting  information and activities covering  children aged 0-15 years |
|  | The Royal Children’s Hospital  [www.rch.org.au/kidsinfo/fact\_sheets/Parent\_information\_about\_newborn\_babies\_interacting/](http://www.rch.org.au/kidsinfo/fact_sheets/Parent_information_about_newborn_babies_interacting/) | Consumer information:  Parents interacting with their newborn |
|  |  | |
| Safety | | |
| General | The Royal Children’s Hospital  [www.rch.org.au/safetycentre/](http://www.rch.org.au/safetycentre/) | Health professional and consumer information:  RCH Safety Centre.  Comprehensive site with multiple resources on safety – including furniture, dogs, home, water, road.  Includes Home Safety Checklist |
| Child safety –  car restraints | VicRoads  [Child restraints : VicRoads](https://www.vicroads.vic.gov.au/safety-and-road-rules/vehicle-safety/child-restraints) | Consumer information:  Mandatory requirements for  appropriate child safety restraints for vehicles, including contact details |
| Nursery and  baby furniture | The Royal Children’s Hospital  [www.rch.org.au/kidsinfo/fact\_sheets/Nursery\_and\_Baby\_Furniture\_Safety/](http://www.rch.org.au/kidsinfo/fact_sheets/Nursery_and_Baby_Furniture_Safety/) | Consumer information:  Nursery and baby furniture safety  including associated links and  contact details |

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