# Shared Maternity Care

## Guidelines | 2020

# Acknowledgements

Northeast Health Wangaratta (NHW) have based their Guidelines for Shared Maternity Care Affiliates on the Guidelines for Shared Maternity Care Affiliates 2015

The Royal Women's Hospital

Mercy Public Hospitals Incorporated

Western Health



ISBN: 978-0-646-94452-4



October 2015

Suggested citation: *Guidelines for Shared Maternity Care Affiliates 2015*, the Royal Women's Hospital, Mercy Public Hospitals Incorporated and Western Health, Melbourne, 2015.

This publication is available on the hospital websites:

www.thewomens.org.au
www.mercyhealth.com.au
www.westernhealth.org.au

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# Definition

Shared care is a cooperative arrangement whereby antenatal and postnatal care of the pregnant woman is shared between a Shared Care Provider and a specialist obstetrician, GP Obstetrician or hospital based obstetric unit.

A shared care provider is a registered health medical practitioner or registered midwife engaging in shared care with a specialist obstetrician, GP Obstetrician or hospital based obstetric unit.

A shared care provider may, utilising these guidelines, share care with one of the following entities:

- Hospital antenatal clinic
- Specialist obstetrician accredited to a hospital; and
- A GP obstetrician accredited to a hospital

*(Ref: RANZCOG Shared Maternity Care obstetric patients July 2016).*

## Northeast Health Wangaratta Model of Shared Care

The organisation of and participation in a shared care program at NHW is voluntary. The shared care program is a local entity and its form, structure and guidelines are developed at a local level. NHW expect shared care providers to adhere to good antenatal and postnatal obstetric practice and will provide opportunities for GPs to stay informed about local and evidence based practice.

# Disclaimer

This information is intended to provide general advice to practitioners in North East Victoria who have a direct relationship when treating and referring pregnant women to Northeast Health Wangaratta for Obstetric care and birthing. This information does not substitute proper assessment with respect to the individual circumstances of women presenting for maternity and obstetric care. Information provided throughout this guideline is based on current and emerging clinical evidence and may be subject to change.

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## Clinical Governance & Quality Committee – Northeast Health Wangaratta

The Clinical Governance & Quality Committee (CGQC) is responsible for overseeing clinical performance and quality improvement across NHW to ensure safe, high quality, appropriate services are provided that meet the needs of the community. It also provides oversight of the accreditation processes across the organisation to ensure requirements are met.

# Abbreviations

| | |
|---|---|
| ß-hCG | beta human chorionic gonadotropin |
| BMI | body mass index |
| BP | blood pressure |
| CAT | Crisis Assessment and Treatment |
| cm | centimetre |
| 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 |
| EDC | estimated day of confinement |
| FBE | full blood examination |
| FISH | fluorescent in situ hybridisation |
| free ß-hCG | free beta human chorionic gonadotropin |
| g | grams |
| GBS | group B streptococcus |
| GP | general practitioner |
| GTT | glucose tolerance test |
| Hb | haemoglobin |
| HCV | hepatitis C virus |
| HIV | human immunodeficiency virus |
| 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 |
| MHW | Mercy Hospital for Women |
| MIS | The Women's Medicines Information Service |
| 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 |
| NHW | Northeast Health Wangaratta |
| NIPT | non-invasive prenatal testing |
| PBMG | The Women's Pregnancy and Breastfeeding Medicines Guide |
| PKU | phenylketonuria |
| RACGP | The Royal Australian College of General Practitioners |
| RANZCOG | The Royal Australian and New Zealand College of Obstetricians and Gynaecologists |
| RWH | The Royal Women's Hospital (The Women's) |
| s. | Section |
| SIDS | Sudden Infant Death Syndrome |
| SMCA | shared maternity care affiliate |
| TOP | termination of pregnancy |
| 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 |

# Contents

# 1 MATERNITY CARE AT NORTHEAST HEALTH WANGARATTA

The models of care available at Northeast Health Wangaratta (NHW) are:

| Model of Care | Risk | Description | Eligibility & Information |
|---|---|---|---|
| **Antenatal Clinic** | For low risk pregnancies | Must have a NHW credentialed Obstetric Provider | Referral is required for all these levels of care, all are free of charge, unless no Medicare |
| **Midwifery Group Practice** | For low risk pregnancies | Must have a NHW credentialed Obstetric Provider | Criteria to determine suitability for Midwife Care Program.<br>Suitability may change during pregnancy |
| **Obstetrician Specialist Care** | Usually reserved for high risk pregnancies<br>but low to medium risk pregnancies can attend | Is a NHW credentialed Obstetric Provider | Most women are eligible |

This may differ from other maternity services in the region and across Victoria, resources describing models of care can be round on the 'Maternity and newborn services' page of the Department of Health and Human Services website. See: Department of Health and Human Services

## Hospitals working closely together in the Hume Region to deliver excellence in maternity care are listed below

| Health Service | Coordinator Phone: number | On-Call Doctor / Switchboard |
|---|---|---|
| Albury Wodonga Health<br>Level 5 Maternity<br>Level 4 Newborn | Phone: 02 6051 7250<br>Fax: 02 6051 7249 | Phone: 02 6051 7111 |
| Northeast Health Wangaratta<br>Level 4 Maternity<br>Level 3 Newborn | Phone: 03 5722 5225<br>Fax: 03 5722 5305 | Phone: 03 5722 5111 |
| Benalla Health<br>Level 3 Maternity<br>Level 2 Newborn | Phone: 03 5761 4222 | Phone: 03 5761 4222 |
| Mansfield District Hospital<br>Level 3 Maternity<br>Level 2 Newborn | Phone: 03 5775 8800<br>Fax: 03 5775 8803 | Phone: 03 5775 8800 |

| Health Service | Coordinator Phone: number | On-Call Doctor / Switchboard |
|---|---|---|
| Yarrawonga Health<br>Level 1 Maternity and Newborn | Phone: 03 5743 8135 | Phone: 03 5743 8111 |
| Alpine Health<br>Level 1 Maternity and Newborn | Phone:<br>0438 754 019 or<br>03 5751 9300 Myrtleford<br>Fax:<br>03 5754 3554 Mt Beauty<br>03 5751 9395 Myrtleford | Phone:<br>03 5751 9300 Myrtleford<br>03 5754 3500 Mt Beauty<br>03 5755 0100 Bright |

## Services for Aboriginal and Torres Strait Islander women and families are listed below

| Health Service | Coordinator Phone: number | On-Call Doctor / Switchboard |
|---|---|---|
| Albury Wodonga Aboriginal Health Service<br>Midwifery Care<br>Koori Liaison Support Officer | Free call: 1800 421 640<br>Phone: 02 6040 1200<br>Fax: 02 6040 1222 | Phone: 02 6040 1200 |
| Mungabareena Aboriginal Corporation<br>Koori Liaison Support Officer | Phone: 02 6024 7599<br>Fax: 02 6056 0376 | Phone: 02 6024 7599 |

# Referring women to hospital

When referring a woman to NHW for maternity care, the general practitioner (GP) should send a referral as soon as possible after pregnancy is confirmed. GPs should provide as much relevant information as possible.

Referrals should be comprehensive and contain:

- ✓ name
- ✓ address
- ✓ date of birth
- ✓ Phone: number (preferably mobile)
- ✓ country of birth
- ✓ Aboriginal or Torres Strait Islander status
- ✓ interpreter and language requirements
- ✓ special needs (eg. mobility) or additional support requirements
- ✓ GP details (practice address and provider number).

Refer a woman to hospital as soon as possible after pregnancy is confirmed

Mandatory clinical content includes:

- ✓ estimated day of confinement (EDC or due date)
- ✓ last normal menstrual period (LNMP)
- ✓ body mass index (BMI)
- ✓ relevant history, symptoms, signs, investigation results, medication and management and any reasons that identify the patient as high risk or in need of early hospital assessment.

To assist GPs to provide high-quality information, NHW has an electronic downloadable referral form available on the website. NHW - Health Professionals

Alternatively, you may choose to use the Victorian GP Referral Template (formerly the Victorian State-wide Referral Form – 'VSRF') which can be found in Medical Director Templates software or can be downloaded from the NHW/Health Professional website.

If a woman has been referred for care at NHW and at any time her pregnancy becomes complicated or is considered to be very high risk, she will be referred to a tertiary maternity service that meets her needs by the doctors at NHW.

Based on a low risk pregnancy, GPs should be encouraging women during her first visits to consider the maternity care options available to her, and to support her to make decisions based on her personal choices.

To ensure all women can access the level of maternity care they require in a timely way and be contacted about their appointments, ensure referrals are comprehensive

# NHW Referral contact details

## NHW Antenatal Clinic

Phone: 03 5722 5225

Fax: 03 5722 5305

GP Obstetric Referral Form

# Childbirth Education and Maternity Tours

Women and their support partner are encouraged to participate in childbirth education at NHW. For women living in other Local Government areas who will birth at NHW there are local options for childbirth education.

Childbirth education will provide women with information about:

- ✓ labour
- ✓ pain relief
- ✓ breastfeeding
- ✓ hospital services.

Women who aren't able to attend childbirth education sessions can arrange a hospital tour to familiarise themselves with the facilities, including where to present when in labour, birth suites and postnatal care and rooming.

### Northeast Health Wangaratta Childbirth Education

Education sessions are offered through group sessions or individually
To book in or ask for more information: See Childbirth Education
For bookings phone: 03 5722 5225

**Alpine Health Childbirth Education**

Education sessions are offered through group sessions or individually
Group sessions are scheduled across the year
To book in or ask for more information
For bookings phone: 0439 754 019
Email: maternity@alpinehealth.org.au

**Yarrawonga Health Childbirth Education**

Education sessions are offered through group sessions or individually
For more information: See Pregnancy and Beyond
For bookings phone: 03 5743 8135

**Benalla Health Childbirth Education**

Education sessions are offered through group sessions or individually
For more information: See Midwifery Services
For bookings phone: 03 5761 4222

**Mansfield Health Childbirth Education**

Education sessions are offered through group sessions or individually
To book in or ask for more information: See Mansfield Maternity Services
For bookings phone: 03 5775 8800

# Hospital Support Services

Through the development of comprehensive maternity care plans, NHW can provide support for women and families who have identified needs which might include:

- ✓ Aboriginal and Torres Strait Islander women
- ✓ Refugee women
- ✓ Women from culturally diverse backgrounds
- ✓ Women who have been circumcised
- ✓ Women with physical disabilities
- ✓ Women with intellectual disabilities and learning difficulties
- ✓ Women who experience homelessness
- ✓ Women requiring support for weight management
- ✓ Women who experience Domestic Violence
- ✓ Women who have Mental Health issues

Please indicate on the initial referral if additional support or an interpreter is required.

# 2 SHARED MATERNITY CARE

At NHW, shared maternity care is a model of care in which the majority of antenatal visits take place in the community and has a shared maternity care relationship with the hospital – affiliated GP, obstetrician or midwife (a shared maternity care affiliate [SMCA]). Visits also take place at key times at the hospital or through satellite clinics such as:

- ✓ Antenatal Clinic – Northeast Health Wangaratta
- ✓ Antenatal Clinic – Yarrawonga Health

Women in labour, giving birth and receiving immediate post-natal care will attend NHW as an admitted patient. Women who have received Shared Maternity Care from their local health service (see list below) will be provided the option to return for postnatal care providing mother and baby are well.

| Birthing Hospitals in the Hume Region | Maternity Care – Non Birthing in the Hume Region |
|---|---|
| • Albury Wodonga Health – Wodonga Campus<br>• Northeast Health Wangaratta<br>• Benalla Health<br>• Mansfield District Hospital<br>• Deniliquin Hospital | • Yarrawonga Health – Antenatal, Postnatal and Domiciliary Home Visits care only<br>• Albury Wodonga Aboriginal Health Service – Antenatal Care only<br>• Mungabareena Aboriginal Corporation – Aboriginal Liaison Officer |

## Women Centred Care

Women centred care underpins our philosophy and values relating to maternity care. With this in mind, an interdisciplinary team approach will be provided throughout the maternity journey. It is therefore important that both hospital and community providers:

- ✓ Support the shared care model
- ✓ Respect and support an approach to a woman's decision to undertake shared care
- ✓ Don't divert a woman into another model of care unless it is medically indicated.

Women who have been assessed as a moderate or higher risk may be able to participate in a modified shared maternity care model. Once assessed, a comprehensive and individualised care plan will be documented by a NHW doctor and communicated to the appropriate shared care team. The care plan will be documented in the Victorian Maternity Record (VMR) by the hospital doctor. All care plans will be developed with the woman and reviewed regularly.

# Responsibilities in the provision of shared maternity care

Shared maternity care is successful when a committed team consisting of community, hospital and the woman are fully engaged and take the responsibility for ensuring the care is shared across the maternity continuum. Key responsibilities include ordering investigations, communicating and managing investigations and results and following up any abnormal findings.

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 Shared Maternity Care Affiliate and is not covered under the accreditation, roles or responsibilities of a shared maternity care provider

NHW use the Victorian Maternity Record (VMR) and all results and communication should be updated to ensure each party has current information.

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

## It is the responsibility of Northeast Health Wangaratta to:

- ✓ notify the referring doctor of the receipt of referral for pregnancy care
- ✓ notify the woman of the first hospital appointment details and location
- ✓ establish suitability for shared maternity care
- ✓ notify the SMCA that the woman has registered for shared maternity care
- ✓ notify the referring doctor of the outcome of the first hospital visit
- ✓ 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 and the woman is notified
- ✓ notify the woman's SMCA if shared maternity care ceases.

## Clinical Governance at the Hospital includes:

- ✓ a list of affiliated SMCAs available on the hospital website
- ✓ strong clinical governance for shared maternity care
- ✓ referral guidelines and support for SMCAs.

Shared maternity care is available to all women who have been assessed as being low-risk by the hospital

### It is the responsibility of the SMCA to:

- ✓ contact the woman if she does not attend her first scheduled SMCA appointment (if she is known to the practice)
- ✓ notify the antenatal ward clerk if a woman has a poor attendance record for her antenatal visits
- ✓ ensure the antenatal ward clerk has up-to-date details for the SMCA
- ✓ abide by these guidelines, including when to refer to hospital
- ✓ communicate any feedback to support continuous improvement of the shared care system operating at NHW.

### It is the responsibility of both the hospital and the shared care provider to:

- ✓ record 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.

Both the SMCA and hospital providers must record test results, each visit, findings and management in the VMR

It is the woman's responsibility to:

- ✓ book appointments with the SMCA
- ✓ attend appointments
- ✓ bring VMR to all appointments.

A woman is required to make her own appointments with her SMCA

## Shared Maternity Care Affiliates

GPs, obstetricians and midwives who would like to provide shared care with NHW are encouraged to register as an affiliate and have their details listed as a provider of choice on the NHW website. Shared care maternity affiliates should have:

- ✓ unrestricted medical registration
- ✓ Medical indemnity
- ✓ regular CPD in antenatal and postnatal care eg. annual attendance at annual shared maternity care workshops provided by NHW.

## Suitability for shared maternity care

At NHW, shared maternity care is an option for all women who have been assessed by the hospital as healthy and with a normal pregnancy. 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.

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# Exclusion criteria for routine shared maternity care

## Medical and social history

- ≥40 years of age at the time of booking
- pre-pregnancy BMI is ≥35 or ≤18.5
- cardiac disease, including hypertension
- renal disease
- diabetes and some endocrine disorders
- major psychiatric disorders
- haematological disorders, including thromboembolic disease
- history of obstetric cholestasis
- epilepsy requiring anticonvulsant drugs
- malignant disease
- severe asthma
- chemical dependency
- human immunodeficiency virus (HIV) positive
- Hepatitis B or C with abnormal liver function
- auto-immune disorders
- a cone biopsy or ≥2 loop excisions of the transformation zone (LLETZ)
- drug abuse.

## Previous obstetric history

- a stillbirth or neonatal death (unexplained or recurrent reason)
- recurrent (3 or more) miscarriage
- fetal growth restriction (birth weight <2800 g at term)
- pre-term birth (≤32 weeks)
- severe pre-eclampsia
- Rhesus isoimmunisation or other significant blood group antibodies
- placental abruption
- cervical insufficiency
- congenital abnormalities
- uterine rupture.

## Current pregnancy

- multiple pregnancy
- some congenital abnormalities
- pregnancy associated plasma protein-A (PAPP-A) Multiples of Median (MoM) <0.4 on first trimester early combined screening test. (This is a blood marker utilised in the first trimester early combined screening test that is combined with other markers to generate an aneuploidy risk; however, a low level in itself may predict poorer obstetric outcomes).

**Note:** Previous lower uterine segment caesarean section (LUSCS), in vitro fertilisation (IVF) and other assisted conception, treated thyroid disease, subclinical hypothyroidism and previous gestational diabetes do not preclude shared maternity care.

# 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 eg. four-weekly until 28 weeks, two-weekly until 36 weeks, weekly until 40 weeks (SMCA responsibility, with hospital providing the recommended schedule)
- ✓ a urine dipstick test for proteinuria is required at each visit from 28 weeks (SMCA and hospital responsibility)
- ✓ 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 and stillbirth.

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)
- ✓ an anaesthetic and dietician review is undertaken (hospital responsibility)
- ✓ more frequent visits are required eg. four-weekly until 28 weeks, two-weekly until 36 weeks, weekly until 40 weeks (SMCA responsibility, with hospital providing the recommended schedule)
- ✓ a urine dipstick test for proteinuria is performed at each visit from 28 weeks (SMCA and hospital responsibility)
- ✓ a routine growth and wellbeing ultrasound is organised at 32-34 weeks (hospital responsibility).

*See NHW website for Obesity Guidelines*

If a woman becomes unsuitable for shared maternity care and this is noted by a SMCA, the SMCA is required to ensure appropriate and timely referral to the hospital

# 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 SMCAs, appropriate and timely referral to a hospital must be undertaken. It is the hospital's responsibility to notify SMCAs of the cessation of shared maternity care or changes to modified shared maternity care and the reasons.

# Victorian Maternity Record

The Victorian Maternity Record (VMR) is the patient-held pregnancy record used at the hospitals. A VMR will be given to each woman at her first hospital visit. Each woman enrolled in shared maternity care requires a VMR, and it is essential that this is completed at each visit by providers at all SMCA and hospital visits.

All providers need to document their care in the VMR (including any tests ordered and test results). These need to be dated and signed.

## The following must 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
- ✓ tests ordered and results
- ✓ management
- ✓ follow up appointment.

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

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.

*See also:* www.health.vic.gov.au/maternitycare/vmrorderform.htm

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

# Resources for shared maternity care and referral templates

| | |
|---|---|
| Maternity Services and Models of care | Department of Health and Human Services, Victoria<br>https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/perinatal-reproductive/maternity-newborn-services<br><br>Better Health Channel<br>https://www.betterhealth.vic.gov.au/searchresults?q=Models%20of%20Maternity%20Care<br><br>Department of Health and Human Services Victoria – Maternity capability framework<br>https://www2.health.vic.gov.au/about/publications/policiesandguidelines/Capability-framework-for-Victorian-maternity-and-newborn-services<br><br>Baby Center<br>www.babycenter.com.au/a536330/birth-choices |
| Maternity Referral templates | Northeast Health Wangaratta<br>GP Obstetric Referral Form<br><br>Antenatal Clinic Pre-referral management guidelines |
| Victorian Maternity Record | Department of Health and Human Services, Victoria<br>Health professional and consumer information:<br><br>Includes links on how to order VMR online<br>https://www2.health.vic.gov.au/about/publications/FormsAndTemplates/Victorian%20Maternity%20Record%20VMR%20sample<br><br>https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/perinatal-reproductive/maternity-newborn-services/vic-maternity-record-order-form |

For more information: **Northeast Health Wangaratta Antenatal Clinic**
Phone:: 03 5722 5225 Fax:: 03 5722 5305

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).

# 3 PRE-PREGNANCY CONSULTATION

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

Reproduced with permission from The Royal Australian College of General Practitioners from: Guidelines for preventive activities in general practice. 9th edn, updated. East Melbourne, Vic: RACGP, 2018. Available at https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/red-book

Every woman of reproductive age should be considered for pre-conception care (C). This consists 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.[i1] Preconception care should include reproductive planning and the effective use of contraception to prevent unplanned pregnancy (A), smoking cessation (A)[ii] and advice to consider abstinence from alcohol (especially if planning a pregnancy, or if the woman could become pregnant or is in the early stages of pregnancy),[iii] folic acid and iodine supplementation (A),[iv] [v]nutrition and weight assessment,[vi] review of immunisation status (C),[vii] medications (B),[viii] oral health,[ix] and chronic medical conditions, especially glucose control in patients with diabetes (B).[x]

There is evidence to demonstrate improved birth outcomes with preconception healthcare in women with diabetes, phenylketonuria and nutritional deficiency,[xi] as well as benefit from the use of folate supplementation[xii] and a reduction in maternal anxiety.[xiii] Below is information about all the potential interventions in preconception care that expert groups have recommended (C).

## What does pre-conception care include?

### Medical issues

#### Reproductive life plan

Assist your patients to develop a reproductive life plan that includes whether they want to have children. If they do, discuss the number, spacing and timing of intended children, and provide effective contraception to enable the implementation of this plan and reduce the risk of an unplanned pregnancy. If relevant, discuss reduction in fertility with advancing maternal age.

#### 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, preterm birth, or gestational diabetes. Also, if there are 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? Consider if current management is optimal for early pregnancy given that early embryogenesis will occur prior to any consultation in pregnancy.

### Medication use
Review all current medications for teratogenic effects, including over-the-counter medications, vitamins and supplements.

### Genetic/family history (also refer to Chapter 2. Genetic counselling and testing)
Increased frequency of intellectual disability, multiple pregnancy losses, stillbirth or early death, and children with congenital abnormalities may suggest the presence of genetically determined disease. Patients of particular ethnic backgrounds may be at increased risk and can benefit from genetic testing for specific conditions. Possible consanguinity (eg. cousins married to each other) should be explored, for example, by asking, 'Is there any chance that a relative of yours might be related to someone in your partner's family?' General practitioners (GPs) should consider referral to, or consultation with, a genetic service for testing because test results, which rely on sensitivity, specificity, and positive predictive value, are not straightforward. Testing often involves complex ethical, social and legal issues. The time on waiting lists for genetic services is usually longer than one month, so direct consultation and liaison by Phone: are necessary when the genetic advice could affect a current pregnancy. Provide opportunity for carrier screening for genetic conditions (eg. cystic fibrosis, haemoglobinopathies) and referral for genetic counselling based upon risk factors.

### General physical assessment
Conduct a breast examination and, if it is due, perform a cervical screening test (eg. Papanicolaou [Pap] test) before pregnancy. Also assess body mass index (BMI) and blood pressure (BP), and check the oral cavity.

### Substance use
Ask about tobacco, alcohol, and illegal drug use. Offer counselling and referral for specialised assistance when use is identified.

### Vaccinations
The need for vaccination, particularly for hepatitis B, rubella, and varicella, should be assessed as part of any preconception health check. Vaccinations can prevent some infections that may be contracted during pregnancy, and relevant serological testing can be undertaken to ascertain immunity to hepatitis B and rubella. Routine serological testing for varicella does not provide a reliable measure of vaccine-induced immunity; however, it can indicate whether natural immunity has occurred due to prior infection. Women receiving live viral vaccines such as measles, mumps, and rubella (MMR) and varicella should be advised against becoming pregnant within 28 days of vaccination. It is also important that women of child-bearing age who present for immunisation should be questioned regarding the possibility of pregnancy as part of the routine pre-vaccination screening, to avoid inadvertent administration of a vaccine(s) not recommended in pregnancy (refer to Section 2.1.4 Pre-vaccination screening in the *Australian immunisation handbook*, 10th edn). Recommended preconception vaccinations are:

- MMR
- varicella (in those without a clear history of chickenpox or who are non-immune on testing)
- influenza (recommended during pregnancy)
- diphtheria, tetanus, acellular pertussis (dTpa; to protect newborn from pertussis).

## Lifestyle issues

### Family planning
Based on the patient's reproductive life plan (refer to above), discuss fertility awareness and how fertility reduces with age, chance of conception, the 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 per day supplement of folic acid for at least one month prior to pregnancy, and for the first three months after conception. Where there is a known increased risk of NTD (ie. patients taking anticonvulsant medication, or with pre-pregnancy diabetes mellitus, previous child or family history of NTD, 5-methyltetrahydrofolate deficiency or BMI >30 kg/m2) or a risk of malabsorption, a 5 mg daily dose is recommended.[xiv]

### Iodine supplementation
Women who are pregnant, breastfeeding or considering pregnancy should take an iodine supplement of 150 µg each day.[xv]

### 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 (eg. vegan diet, lactose intolerance, and calcium, iron, or vitamin D deficiency due to lack of sun exposure).

### Psychosocial health
Discuss perinatal mental health, including anxiety and depression, pre-existing mental health conditions, psychological or psychiatric assessment and treatment, use of medication, and the risk of exacerbation of mood disorders in pregnancy and postpartum. Mental health screening should include a psychosocial assessment.

### Smoking, alcohol and illegal drug cessation (as indicated)
Smoking[xvi], illegal drug[xvii] and excessive alcohol use[xviii] 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 affect fertility and increase the risk of miscarriage and birth defects. Discuss the avoidance of TORCH infections: Toxoplasmosis, Other (eg. syphilis, varicella, mumps, parvovirus, and human immunodeficiency virus [HIV], listeriosis), Rubella, Cytomegalovirus and Herpes simplex.

- Toxoplasmosis: Avoid cat litter, garden soil, raw/undercooked meat, and unpasteurised milk products; wash all fruit and vegetables
- Cytomegalovirus, parvovirus B19 (fifth disease): Discuss the importance of frequent hand-washing. Those who work with children or in the healthcare sector can further reduce risk by using gloves when changing nappies
- Listeriosis: Avoid pate, soft cheeses (eg. feta, brie, blue vein), pre-packaged salads, deli meats and chilled/smoked seafood. Wash all fruit and vegetables before eating. Refer to Food Standards Australia New Zealand
- www.foodstandards.gov.au/consumer/generalissues/pregnancy/Pages/default.aspx regarding folate, listeria and mercury
- Fish: Limit fish containing high levels of mercury. Refer to www.betterhealth.vic.gov.au/health/healthyliving/mercury-in-fish

Guidelines for preventive activities in general practice. 9th edn, updated. East Melbourne, Vic: RACGP, 2018. Available at https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/red-book

# Pre-pregnancy consultation checklist

In a pre-pregnancy consultation, the GP should check a woman's:

- ✓ 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

and should undertake:

- ✓ a general physical assessment
- ✓ investigations: pre-pregnancy investigations depend on the clinical scenario

and usually consist of:

- ✓ determining immunity (eg. rubella, varicella if immunity status unknown)
- ✓ screening for anaemia and thalassaemia (eg. FBE and ferritin).

Other common investigations performed in at-risk populations include:

- ✓ testing for infectious diseases (eg. 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 | Summary |
|---|---|---|
| Preparing for pregnancy | RACGP<br>https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/red-book | Health professional information:<br>Guidelines for preventive activities in general practice. 9th edn, updated. East Melbourne, Vic: RACGP, 2018. |
| | RANZCOG<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Pre-pregnancy-Counselling-(C-Obs-3a)-review-July-2017_1.pdf?ext=.pdf | Health professional information:<br>Pre-pregnancy counselling andantenatal screening tests |
| | The Women's<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/preparing-for-pregnancy | Consumer information:<br>Preparing for pregnancy; range of topics including lifestyle and immunisation |
| Medicines in pregnancy and breastfeeding | Medicines Information Service (MIS)<br>Phone: 8345 3190<br>9am to 5pm (excluding public holidays)<br>Email: drug.information@thewomens.org.au | Health professional and consumer information:<br>The MIS provides evidence-based medicines information via Phone: and email. |
| | The Women's Pregnancy and Breastfeeding Medicines Guide (PBMG)<br>www.thewomens.org.au/pbmg | Health professional information:<br>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. |
| | Therapeutic Goods Administration<br>https://www.tga.gov.au/prescribing-medicines-pregnancy-database#.VDczumeSzHU | Health professional information:<br>Comprehensive guide with multiple resources including Australian categorisation of risk of drug use in pregnancy and links to state based obstetric drug administration services. |

| Topic | Organisation / web address | Summary |
|---|---|---|
| | NICE (National Institute for Care Excellence)<br>https://www.nice.org.uk/guidance/cg192 | Health professional information:<br>Psychotropic Medication in Pregnancy/Lactation (2008) |
| | The Women's<br>https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Herbal-medicines-in-pregnancy-breastfeeding-171018.pdf | Consumer information:<br>Herbal preparations and traditional medicines during pregnancy and breastfeeding |
| Iodine | General RANZCOG<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Vitamin-and-mineral-supplementation-in-pregnancy-(C-Obs-25).pdf?ext=.pdf | Clinical guideline:<br>Vitamin and Mineral Supplementation and Pregnancy (2015) |
| | Food Standards Australia New Zealand<br>https://www.foodstandards.gov.au/consumer/generalissues/pregnancy/Pages/iodineandpregnancy.aspx | Consumer information:<br>Iodine and pregnancy |
| Folate | The Women's<br>https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/folate-in-pregnancy_110219.pdf | Health professional information:<br>Folate in pregnancy |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/folate-for-pregnant-women | Consumer information:<br>Folate for pregnant women |
| | Food Standards Australia New Zealand<br>https://www.foodstandards.gov.au/consumer/generalissues/pregnancy/Pages/iodineandpregnancy.aspx | Consumer information:<br>Folate and folic acid for pregnant women |
| | Family Planning Victoria<br>https://www.fpv.org.au/for-you/pregnancy/pre-pregnancy | Consumer information:<br>Planning a pregnancy including the role of folate |
| Vitamin D | The Women's<br>https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/vitamin-d-testing-management-maternity-patients-newborns_160517.pdf | Clinical guideline:<br>Vitamin D testing and management in maternity patients and newborns (2014) |

| Topic | Organisation / web address | Summary |
|---|---|---|
| | The Women's<br>https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Vitamin-D-in-pregnancy-2018.pdf | Consumer information:<br>Pregnancy and vitamin D |
| | Department of Health and Human Services, Victoria<br>https://www2.health.vic.gov.au/public-health/chief-health-officer/cho-publications/low-vitamin-d-in-victoria | Health professional information:<br>Low vitamin D in Victoria Diet, nutrition, food safety and exercise |
| Diet and Nutrition | The Women's<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/a-healthy-pregnancy/food-nutrition-in-pregnancy<br>https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Healthy-eating-pregnant.pdf<br>https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Healthy-eating-pregnant-VV.pdf<br>https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Iron-in-pregnancy2018.pdf | Consumer information:<br>Food and nutrition in pregnancy Vegetarian eating and pregnancy Weight gain in pregnancy Dietary intake of iron in pregnancy |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/pregnancy-and-diet | Consumer information:<br>Pregnancy and diet, Mercury in Fish |
| | Diet and nutrition Queensland Health<br>https://www.health.qld.gov.au/__data/assets/pdf_file/0024/726063/antenatal-veganveget.pdf | Consumer information:<br>Healthy eating for vegan pregnant and breastfeeding mothers |
| | Exercise Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/pregnancy-and-exercise | Consumer information:<br>Benefits and risks of exercise in pregnancy |
| Smoking, alcohol and other drugs | Smoking QUIT Victoria<br>https://www.quit.org.au/articles/the-risks-of-smoking-while-pregnant/<br>https://www.quit.org.au/articles/im-ready-quit-how-do-i-start/<br>https://www.quit.org.au/resources/aboriginal-communities/ | Consumer information:<br>Common myths about smoking during pregnancy, Pregnancy and smoking and quit advice<br>Indigenous/ATSI specific information |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-and-smoking | Consumer information:<br>Pregnancy and smoking and quit advice |

| Topic | Organisation / web address | Summary |
|---|---|---|
| | Alcohol National Health and Medical Research Council<br>https://www.nhmrc.gov.au/health-advice/alcohol | Health professional information:<br>*Australian Guidelines to Reduce Health Risks from Drinking Alcohol* (2009) |
| | The Women's<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-drugs-alcohol | Consumer information:<br>Multiple resources to improve health outcomes associated with pregnancy, drugs and alcohol |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/healthyliving/Alcohol-and-pregnancy | Consumer information:<br>Fetal Alcohol Spectrum Disorder (FASD) including contact details for associated resources. The effects of medication, drugs and alcohol in pregnancy |
| Other Drugs<br>*Amphetamine* | Mater Mother's Hospital<br>http://brochures.mater.org.au/brochures/mater-mothers-hospital/amphetamine-use-during-pregnancy-and-breastfeeding | Consumer information:<br>Amphetamine use during pregnancy and breastfeeding |
| Other drugs<br>*Heroin/ Buprenorphine* | The Women's and Turning Point<br>https://www.turningpoint.org.au/sites/default/files/inline-files/Alcohol-and-Drug-Withdrawal-Guidelines-2018.pdf | Clinical guideline:<br>Clinical Guidelines for the use of buprenorphine in pregnancy (2003) |
| Other drugs<br>*Cannabis* | American Congress of Obstetricians and Gynaecologists<br>https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Marijuana-Use-During-Pregnancy-and-Lactation | Health professional information:<br>Marijuana use during pregnancy and lactation |
| Oral Health | Department of Health, Australia<br>https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Oral-Health-Care-During-Pregnancy-and-Through-the-Lifespan | Health professional information:<br>Oral health in antenatal care |
| | Dental Health Services Victoria<br>https://www.health.gov.au/resources/pregnancy-care-guidelines/part-c-lifestyle-considerations/oral-health | Consumer information:<br>Oral health and pregnancy. Includes how to make a public dental appointment |

| Topic | Organisation / web address | Summary |
|---|---|---|
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/pregnancy-and-teeth | Consumer information:<br>Dental health and pregnancy |
| | Northeast Health Wangaratta<br>https://www.northeasthealth.org.au/dental/ | Consumer information:<br>Dental health and pregnancy |

*See also:*
*Models of Maternity Care – Section 2*
*Medical History – Section 5*
*Vaccinations – Section 9*
*Genetic testing – Section 10*
*Mental health and wellbeing and intimate partner violence – Section 12*

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# 4 CONFIRMATION OF PREGNANCY

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.

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

In addition to the objectives of the pre-pregnancy consultation

- ✓ (*See Section 3*), 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
- ✓ arrange a 19-22 week ultrasound with a community provider
- ✓ refer to the hospital upon confirmation of pregnancy (do not wait for test results)
- ✓ make other referrals as appropriate (eg. for genetic counselling, mental health team).

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

## Early pregnancy investigations

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); mental health; nutrition; smoking, substance and alcohol use; medicine use and social issues. *See Section 3 for more detail*.

A comprehensive referral to the hospital should occur as soon as possible to ensure appropriate and timely triage and access to services. *See also Section 1*. A copy of the investigation results should be given to the woman to bring to her first hospital visit.

Recommended initial investigations include (*see Section 6 for more detail*)

- ✓ blood group
- ✓ antibody screen
- ✓ FBE (including mean cell volume/mean cell haemoglobin (MCV/MCH))
- ✓ ferritin
- ✓ hepatitis B screening for carrier status
- ✓ hepatitis C serology
- ✓ syphilis serology
- ✓ rubella antibodies
- ✓ HIV serology
- ✓ urinalysis/midstream urine sample (MSU) microscopy and culture (M,C&S).

Investigations to consider in those with risk factors include (*See Section 10 for more detail*)

- ✓ dating ultrasound
- ✓ haemoglobin electrophoresis /DNA analysis for alpha thalassaemia
- ✓ varicella antibodies
- ✓ glucose tolerance test (GTT) or other screen for diabetes
- ✓ chlamydia (urine sample or cervical swab)
- ✓ vitamin D level
- ✓ thyroid stimulating hormone (TSH)
- ✓ Cervical screening test
- ✓ Recommended investigations for fetal abnormalities – *See Section 10*.

> All women, regardless of age, should be offered a test for Down syndrome and testing for genetic carrier status

- ✓ a test for Down syndrome – all women, regardless of age, should be offered this, including:
  - 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 (CVS or amniocentesis) for pregnancies at high risk of aneuploidy – available to be organised by the hospital if high risk
  - a 19 to 22 week fetal morphology ultrasound

# Investigations for other inheritable genetic conditions

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

> 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 been prioritised and communicated to the hospital.

## Carrier Screening

All groups should be offered testing for genetic carrier status, even couples with no personal or family history of genetic disease. A number of tests are 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 or on either parent or investigations on the fetus (CVS/amniocentesis). In these cases, the O&G registrar at the hospital 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 hospital early in the pregnancy.

*See also Section 10.*

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.

# 5 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.

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

**This guide is the suggested *minimum* number of visits for women**.

| | |
|---|---|
| Every antenatal review | • Weigh<br>• Maternal blood pressure (BP)<br>• Symphysis-fundal height (SFH) from 24 weeks<br>• Fetal station from 28/40<br>• Fetal heart (commence from 16-20 weeks)<br>• Review: Flu vax. And Pertussis vaccine from 20 weeks<br>• Confirm all tests performed<br>• Check available results and discuss/refer as necessary<br>• Discuss antenatal classes<br>• Discuss fetal movements – provide handout from 22 weeks gestation – "Your Baby's Movements in Pregnancy"<br>• Explore and document on BOS any social risk factors (Family Violence, Drugs and Alcohol) Refer to Social work, Department of Human Services or enhanced Maternal and Child Health as required<br>• Check mental health status |
| **12-14 weeks**<br>Booking visit (Midwife) | **Document and discuss:**<br>• Take a comprehensive medical and social history Access old history.<br>• Check risk factors for GDM. Risk factors include:<br>– *Polycystic Ovarian Syndrome*<br>– *Phx of GDM*<br>– *Family Hx of Type 1 Diabetes*<br>– *BMI >35*<br>– *Previous baby >4500*<br>If any of these risk factors are present, order early GTT. If GDM – refer to Diabetes Education, Dietetics and place in purple folder<br>• Height and weight assessed to calculate BMI. Discuss obese guidelines if appropriate<br>• Confirm all antenatal blood results available. If Rh negative place in red file<br>• Check 1st Trimester Combined Screening/Non Invasive Prenatal Test Screening (NIPT). Check PAPP-A Result, NT and BHcg Results<br>• Check all ultrasound (USS) results. Book Morphology Scan<br>• Determine Estimated Date of Birth<br>• Confirm model of care. Provide information regarding scheduled visits<br>• Weigh and discuss recommended gestational weight gain (dependant of booking BMI)<br>• Baseline BP |

| | |
|---|---|
| | • Discuss Diet and Antenatal vitamins<br>• Discuss Alcohol and substance usage. Refer to Drug and Alcohol counselling if required<br>• Discuss Smoking behaviour/cessation. Refer to Quit if required<br>• Check for allergies<br>• Psychosocial Risks checked. Edinburgh Depression Scale to be attended (place in Green folder if any flags)<br>• Complete referrals if required ie. Physio, Diabetes, Social Work, Perinatal Mental Health, Enhanced Home Visiting, DHS, Child First. If referrals sent, date & mark as FAXED and file in Correspondence section of notes<br>• Discuss options for antenatal education<br>• Discuss estimated length of stay and transfer to other health services<br>• Ensure all information recorded on front booking sheet and on BOS<br>• Give Antenatal Information Pack & VMR |
| **20 Weeks**<br>NHW Doctor/Midwife Review | **Standard review plus:**<br>• Check Morphology USS<br>• Confirm Model of Care<br>• Request for Growth Scan 28 weeks if indicated |
| **24 Weeks**<br>Midwife/GP Review | **Standard review plus:**<br>• Discuss warning signs, bleeding signs PET etc<br>• Discuss consent for students<br>• Discuss upcoming screen for GDM and implications. Give Pathology slip for 26-28 week Bloods<br>• Discuss prophylactic Anti-D if appropriate. Give appropriate handout<br>• Offer Pertussis vaccination<br>• If Midwifery Shared Care book doctor review at 28 weeks |
| **28 Weeks**<br>NHW Doctor/Midwife Review | **Standard review**<br>• Confirm model of care<br>• Give 28 week Mid information pack |
| **30 Weeks**<br>Midwife/GP Review | **Standard review plus:**<br>• Discuss stages of labour including spurious and early labour<br>• Discuss Syntocinon for third stage and give handout about Physiological 3rd stage if required<br>• Discuss Perineal Tears, Episiotomy<br>• Discuss Vaginal Exams, Speculum Exam<br>• Discuss Optimal fetal positioning/Educate importance of side sleeping<br>• Discuss Ruptured membranes<br>• Review 28 week Bloods – GTT, FBE, Iron Studies, Blood Group and Antibodies. Refer to Diabetes and Dietetics if GDM<br>• Give Anti D if required<br>• Request for Growth Scan 34 weeks if indicated |

| | |
|---|---|
| **32 Weeks**<br>Midwife/GP Review | **Standard review** |
| **34 Weeks**<br>Midwife Review/NHW Midwife or Doctor/GP | **Standard review**<br>• Anti D prophylaxis<br>• Review 34 week Growth Scan<br>• Request for Growth Scan 36 weeks if indicated<br>• Midwife to arrange Ward Tour if not attending NHW Antenatal Classes<br>• Discuss when to come in for labour<br>• Discuss Pain relief – Pharmacological/Nonpharmacological<br>• Discuss types of Fetal monitoring, Auscultation, CTG, FSE<br>• Discuss birth preferences<br>• Discuss Antenatal hand expressing. LC referral if required<br>• Discuss and sign consent for K, B and NNST |
| **36 Weeks**<br>NHW Doctor/Midwife Review | **Standard review plus:**<br>• GBS screening, discuss process for screening and antibiotic prophylaxis<br>• Order repeat FBE & Iron studies<br>• Discussion of malpresentation of the fetus – organise ECV |
| **38 Weeks**<br>Midwife/GP Review | **Standard review plus:**<br>• Discuss induction of labour, CRB, Prostin, Syntocinon<br>• Discuss Postdates monitoring |
| **40 Weeks**<br>NHW Doctor Review | **Standard review plus:**<br>• Discussion of induction<br>• Provide USS Slip for AFI, Dopplers |
| **41 Weeks**<br>NHW Doctor Review | **Standard review plus:**<br>• CTG, AFI |

# 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 EDC, 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, maternal wellbeing and signs of pre-eclampsia, and to assess and prepare women for admission, labour and going home. If the woman is from an outlying community where the local hospital has a maternity service, the woman may opt to return to this facility for postnatal care if appropriate. This requires further discussion with the woman and the service at the earliest opportunity.

Each visit must be documented in the VMR along with copies of all results of investigations

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

- ✓ general wellbeing check-up
- ✓ enquiry about fetal movements from 20 weeks
- ✓ blood pressure check
- ✓ measurement of fundal height in centimetres
- ✓ fetal auscultation with Doppler fetal monitor from 20 weeks
- ✓ checking fetal presentation from 30 weeks
- ✓ inspection of legs for oedema (a sign of pre-eclampsia and thromboembolic disease – also check for other signs of thromboembolic disease)
- ✓ consideration of urine testing with a dipstick
- ✓ consideration of weighing
- ✓ ensuring investigations are arranged/results checked and followed up if required
- ✓ completing the VMR for each visit (both test results and visit sections) and reviewing previous entries.

For information on the early pregnancy consultation at the first GP visit, *see Section 4*.

# 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

- ✓ smoking/alcohol and drug use and cessation if relevant
- ✓ mental health and wellbeing
- ✓ relationships and support networks
- ✓ intimate partner violence
- ✓ breastfeeding

## Confirmation of Pregnancy

## SMCA consultation discussion points

**Early pregnancy:**

- ✓ models of care
- ✓ folate and iodine supplementation
- ✓ medicines (prescription, over-the-counter, vitamins and vitamin A derivatives)
- ✓ influenza vaccination (including partners/caregivers)
- ✓ listeria and toxoplasmosis prevention
- ✓ diet, nutrition, and weight gain
- ✓ common discomforts in pregnancy
- ✓ anti-D if relevant
- ✓ exercise, work, travel, sex
- ✓ oral health care
- ✓ expectations for pregnancy/birth.

**Later in pregnancy:**

- ✓ symptoms/signs of premature labour (discussed at hospital visit)
- ✓ 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)
- ✓ baby products and safety.

**In the final weeks:**

- ✓ newborn care
- ✓ baby and postpartum maternal immunisations (diphtheria, tetanus, pertussis, varicella, rubella)
- ✓ postnatal GP check for mother and baby
- ✓ community maternal and child health services.

# Weight gain in pregnancy

## Health care providers should discuss weight gain in pregnancy with women

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 pounds after birth or needing a Caesarean section; for children the risks include being born preterm or larger than normal with extra fat. 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, adding too few pounds during pregnancy increases risks for stunted fetal growth and preterm delivery.

To minimize the risks, women should aim to conceive while at a normal BMI and gain within the guidelines during pregnancy, the committee concluded.

Helping women achieve these goals will require health care providers to increase the counseling they give their patients on weight, diet, and exercise.

This counseling should occur not just during pregnancy, but well before women plan to conceive, given that many should lose weight to begin pregnancy closer to or at a normal BMI… 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.[xixxx]

The Institute of Medicine (US) makes the following recommendations for weight gain for singleton pregnancy:

| **Woman's Pre-pregnancy weight category** | **Body Mass Index** | **Recommended range of total weight gain** (kgs) | **Recommended rate of weight gain in 2nd and 3rd trimester** (kg/wk) |
|---|---|---|---|
| Underweight | Less than 18.5 | 12.7 - 18.1 | 0.51 |
| Normal weight | 18.5 - 24.9 | 11.3 - 15.9 | 0.42 |
| Overweight | 25 - 29.9 | 6.8 - 11.3 | 0.28 |
| Obese (includes all classes) | 30 and greater | 5 - 9 | 0.22 |

*Source: modified from Institute of Medicine (US). Weight Gain during Pregnancy: Re-examining the Guidelines, National Academies Press, Washington, DC, 2009, p.254.*

# Hospital visits

If undertaking routine shared maternity care, women are generally booked in for key hospital visits at:

- ✓ 12-20 weeks
- ✓ 28
- ✓ 36 weeks
- ✓ about 40 weeks.

These are organised by the antenatal clinic and communicated to the woman at, or soon after, her first hospital visit. In addition, the shared maternity care coordinator can organise appointments for additional non-urgent clinical consultations and communicate these to a woman, for example, with obstetric doctors, dietetics, physiotherapy, social work, physicians, psychiatry or genetics. This may be at the request of the SMCA or hospital staff.

## First hospital visit: 12-20 weeks

Each woman has a detailed health and social assessment undertaken at the first hospital visit (the booking in visit). This provides the opportunity to explore many aspects of maternity care and for women to discuss models of care. A woman will be provided with written material covering care and hospital contacts. The first hospital visit may consist of a doctor or midwife appointment or both. If there are 2 components of the first hospital visit, these may occur on different days or on the same day and can take up to 3 hours. It is at this first hospital visit that a woman is officially 'booked in' for the birth of her baby at the hospital.

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 the shared maternity care coordinator. The following table shows requirements for the clinical consultation and investigations at the first hospital visit (12-20 weeks).

| Responsibility | Clinical Consultation | Investigations |
|---|---|---|
| **Hospital doctor and/or midwife**<br>The first hospital visit may consist of a doctor or midwife appointment or both. If both, these may occur on different days or the same day. | • Comprehensive medical, obstetric, and social history<br>• Physical examination<br>• Make internal hospital referrals as required, including genetics counselling<br>• Decide on estimated date of confinement and document in VMR<br>• Discuss/arrange investigations and prenatal tests that have not been ordered by GP and can be performed at the hospitals (note some Down syndrome tests that are routinely available in the community cannot be performed at the hospital)<br>• Ensure fetal morphology ultrasound is arranged if not already done (this may or may not be available at the hospital – see 'Fetal morphology ultrasound' in Section 10)<br>• If Rhesus negative, discuss Rh D immunoglobulin (anti-D)<br>• Ensure the woman has a VMR<br>• Ensure the results and findings are entered into the VMR<br>• Determine whether the woman is eligible for shared maternity care/ establish and organise the woman's model of maternity care<br>• Options for birth if previous caesarean section | *See also Section 6.*<br>Antenatal Investigations recommended and to consider.<br>It is preferable that initial investigations are ordered by the GP with copies of results given to the woman to bring to the first hospital visit.<br>If investigations have not been done, they will be arranged at the first hospital visit. |

| Responsibility | Clinical Consultation | Investigations |
|---|---|---|
| | **Discussion of lifestyle and wellbeing:**<br>• changes in pregnancy<br>• smoking, alcohol and other drug cessation<br>• medicines (prescriptions, over-the counter, vitamins)<br>• diet and nutrition<br>• listeria and toxoplasmosis prevention<br>• hospital and community supports<br>• (how and when to seek help)<br>• breastfeeding<br>• influenza vaccination via GP<br>• Information about arranging childbirth education classes | |

## Hospital visit at approximately 28 weeks

At NHW, women have a midwife antenatal appointment at this time. Review by a hospital doctor may occur if required. If anti-D is required, it is organised by the hospital staff at this visit and its administration is documented in the VMR. This appointment involves both a routine clinical assessment and a discussion about admission, birth and the postnatal period. This discussion is often called a Maternity Admission Appointment (or MAP appointment) and includes a discussion and the provision of information about:

- admission and discharge
- childbirth education
- previous birth experience
- signs of labour, when to come to hospital, where to present and what to bring
- birth plan, pain relief, monitoring, episiotomy, labour support
- infant feeding (breastfeeding support)
- neonatal screening tests (Guthrie test and hearing screen), vitamin K, hepatitis B immunisation
- postnatal contraception and child safety/car restraints
- GP postnatal check and community support services (including establishing a support network)

All hospitals arrange routine 28 and 34 week anti-D for women who are Rhesus negative with no antibodies. Its provision should be documented in the woman's VMR by the hospital

The following table shows requirements for the clinical consultation and investigations at approximately 28 weeks.

| Responsibility | Clinical Consultation | Investigations |
|---|---|---|
| **Hospital midwife**<br>**Hospital doctor review may occur if required** | • Antenatal consultation and examination<br>• Order/check investigations<br>• Review and complete VMR entries | GTT<br>FBE<br>Antibody screen<br>Anti-D prophylaxis for Rhesus negative women with no rhesus antibodies – at 28 weeks<br>*See also Section 7* |

Women will receive their anti-D during either the 34 week SMCA visit or 36 week hospital visit

## Hospital visit at approximately 36 weeks

The following table shows requirements for the clinical consultation and investigations at approximately 36 weeks.

| Responsibility | Clinical Consultation | Investigations |
|---|---|---|
| **Hospital doctor review may occur if required** | • Antenatal consultation and examination<br>• Review and complete VMR entries<br>• If previous lower uterine segment caesarean section (LUSCS), document decision on whether woman will attempt a vaginal birth after caesarean (VBAC) or have an elective LUSCS<br>• If elective caesarean, a pre-operative visit is arranged by the hospital | GBS swab<br>Consider FBE/ferritin<br>Anti-D prophylaxis for Rhesus negative omen with no Rhesus antibodies – at 34 weeks<br>*See also Section 7* |

## Hospital visit at approximately 40 weeks to 40 weeks + seven days

The following table shows requirements for the clinical consultation and investigations at 40 weeks to 40 weeks + seven days.

| Responsibility | Clinical Consultation | Investigations |
|---|---|---|
| **Hospital doctor or midwife** | • Antenatal consultation and examination<br>• Review and document investigations/results<br>• Review and complete VMR entries<br>• Monitoring/arrange induction if applicable | If applicable:<br>Cardiotocograph (CTG)<br>Amniotic Fluid Index (AFI) |

## Hospital care from 41 weeks onwards

After 40 weeks + seven days, a woman has hospital visits with close surveillance.

# 6 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.

*See also Section 10.*

## 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 M&C&S.

### Investigations to consider include:

- ✓ dating ultrasound
- ✓ haemoglobin electrophoresis/DNA analysis for alpha thalassaemia
- ✓ varicella antibodies
- ✓ glucose tolerance test (GTT) or other screen for diabetes
- ✓ chlamydia (urine sample or cervical swab)
- ✓ vitamin D level
- ✓ thyroid stimulating hormone (TSH)
- ✓ cervical screening.

## 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 the closest maternity hospital emergency department for Rh D immunoglobulin (anti-D).

*See also Section 7.*

## Antibody screen

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

## FBE and ferritin

A general screen for anaemia, thrombocytopenia, iron deficiency and haemoglobinopathies (eg. 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.

## 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 the hospital to arrange a specialist consultation if required.

*See also Section 6 and Section 14 for further information on hepatitis B carriers.*

## Hepatitis C serology

Hepatitis C serology is performed to determine hepatitis carrier status and is offered routinely. 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 should 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:

- × MCV< 80 or MCH<27 (with no previous normal levels)
- × a family history of thalassaemia or haemoglobinopathy
- × a partner has thalassaemia or haemoglobinopathy
- × the woman or partner is from a high-risk ethnic background (eg. Mediterranean, Middle East, Africa, Asia, India, Sri Lanka, Pakistan, Bangladesh, Pacific Islands, South America, New Zealand Maori).

A request for blood to be kept for a DNA analysis if later required is valuable.

Urgent partner screening is essential if a woman has an abnormal haemoglobin electrophoresis or a thalassaemia/haemoglobinopathy cannot be excluded, eg. 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 the shared maternity care coordinator 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.

*See also:* https://immunisationhandbook.health.gov.au/

## Early glucose tolerance test or other screen for diabetes

If a woman has one high risk factor or two moderate risk factors for diabetes (see below), Australian Diabetes in Pregnancy Society (ADIPS) recommends a 75 g GTT with venous plasma samples taken at fasting, 1 hour and two hours is performed at the first opportunity after conception.[xxi] Where this is not feasible, a glycosylated haemoglobin (HbA1c), and fasting or random venous plasma glucose should be measured. No GTT is required if a woman is known to have diabetes. Women with one moderate risk factor should initially be screened with HbA1c and either a random or a fasting glucose test in early pregnancy followed by a pregnancy 75g GTT if clinically indicated.

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

**High Risk Factors for GDM:**

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

**Moderate Risk Factors for GDM:**

- ✓ Ethnicity with a high prevalence of diabetes: Asian, Indian subcontinent, Aboriginal, Torres Strait Islander, Pacific Islander, Maori, Middle Eastern, Non-white African
- ✓ BMI 25-35Kg/m2 (at conception)

## Chlamydia

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

## Vitamin D

Vitamin D deficiency is thought to be common among pregnant women, although standards for defining vitamin D deficiency are not well established. Universal supplementation is not currently recommended for pregnant women. Pregnant women at risk of vitamin D deficiency should be tested early in pregnancy or ideally pre-pregnancy.

**Risk factors for vitamin D deficiency in pregnant women include:**

- ✓ low levels of sun exposure on skin (especially veiled women people working in an enclosed environment, taxi drivers or night-shift workers)
- ✓ dark-skinned women
- ✓ obese women: an inverse association exists between obesity and 25(OH) D levels that have been attributed to the storage of vitamin D in fat. The clinical significance of low serum 25(OH) D levels in this group of women is uncertain
- ✓ malabsorption (gastrointestinal absorption problems) and other medical conditions – conditions that impair fat absorption are associated with inadequate vitamin D absorption from the gut (eg. Crohn's disease, celiac disease, cystic fibrosis).

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.

**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.

*See also Section 11 for Hospital Support Services and Section 12 for Follow-up of Findings: Management and Referral of Abnormal Findings.*

## 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 non-immune 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). For investigation of suspected infections, please see Section 8.

# Second trimester investigations

| Test | Timing | Notes |
|---|---|---|
| GTT | 28-40 weeks | Ordered by hospital staff |
| FBE | 28-40 weeks | Ordered by hospital staff |
| Antibody Screen | 26-30 weeks | Ordered by hospital staff |

## Glucose Tolerance Test (GTT)

A GTT of 75 g of glucose is routinely undertaken at 26-28 weeks to diagnose 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 g glucose drink taken, and the 1 and 2 hour plasma glucose measured.

The Australasian Diabetes in Pregnancy Society (ADIPS) criteria for diagnosing gestational diabetes is any of:

- ✓ Fasting ≥5.1mmol
- ✓ hour ≥10mmol
- ✓ 2 hour ≥8.5mmol.

If a SMCA confirms a diagnosis of gestational diabetes, contact the antenatal ward clerk as soon as possible. The antenatal ward clerk will:

- ✓ make appropriate hospital appointments with a diabetes educator and obstetrician
- ✓ 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.

## 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 | Performed at the hospital – women are offered an opportunity to take the swab themselves |
| Consider: FBE and ferritin | 35-37 weeks | 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 early in labour as it is preferable that antibiotic treatment is administered at least 4 hours prior to delivery.

# Resources on antenatal visits, investigations and findings

| Topic | Organisation / web address | Summary |
|---|---|---|
| General testing and care | Department of Health, Australia<br>www.health.gov.au/antenatal | National antenatal care guidelines:<br>On each of the 3 trimesters with core principles of care on a variety of antenatal topics (2012) |
| | RANZCOG<br>https://ranzcog.edu.au/statements-guidelines<br>Under Routine Antenatal Care | Clinical guidelines:<br>*Routine Antenatal Assessment in the Absence of Pregnancy Complications* (2013)<br>*Prenatal Screening for fetal Abnormalities* (2013)<br>*Maternal Group B Streptococcus (GBS) in Pregnancy: Screening and Management* (2012) – *GBS Swab Sheet (Diagram)*<br>*Prenatal Assessment of Fetal Structural Abnormalities* (2015)<br>*Fetal Morphology Ultrasound* (2014)<br>*Measurement of cervical length for prediction of preterm birth* (2012) |

| Topic | Organisation / web address | Summary |
|---|---|---|
| | American Congress of Obstetricians and Gynaecologists<br>https://www.acog.org/Patients/FAQs/How-Your-Fetus-Grows-During-Pregnancy | Consumer information:<br>Fetal development during pregnancy |
| Diabetes | Australasian Diabetes in Pregnancy Society<br>https://www.adips.org/information-for-health-care-providers.asp<br>www.Adips.org/downloads/ADIPSConsensusGuidelinesGDM3.05.13VersionACCEPTEDFINAL.pdf | Clinical guidelines:<br>*ADIPS Consensus Guidelines for the Testing and Diagnosis of Diabetes Mellitus in Australia* (2013) |
| | Diabetes Australia<br>www.diabetesvic.org.au | Comprehensive guide for health professionals and consumers:<br>Multiple resources on diabetes, including free booklet and DVD resources |
| | The Women's<br>https://www.thewomens.org.au/health-professionals/clinical-resources/ | Clinical guidelines:<br>Several related to diabetes in pregnancy and labour (2012/2013) |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/diabetes-gestational | Consumer information:<br>Covers various aspects of diagnosis and management and support for women with gestational diabetes |
| Thyroid | RANZCOG<br>https://ranzcog.edu.au/statements-guidelines<br>Under routine antenatal care | Clinical guideline:<br>*Testing for Hypothyroidism During Pregnancy with Serum TSH* (2015) |
| | Endocrine Society (US)<br>https://www.endocrine.org/clinical-practice-guidelines/thyroid-dysfunction-during-pregnancy-and-postpartum | Clinical guideline:<br>*Management of Thyroid Dysfunction during Pregnancy and the Postpartum* (2012) |
| | RACGP<br>https://www.racgp.org.au/afp/2012/august/thyroid-disease-in-the-perinatalperiod<br>https://www.racgp.org.au/afp/2012/august/thyroid-disease-in-the-perinatal-period/ | Health professional information:<br>Article on Thyroid disease in the perinatal period (2012) |
| Hypertension | Society of Obstetric Medicine of Australia and New Zealand (SOMAZ)<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/ISSHP-classification-of-hypertensive-disorders-of-pregnancy-2014.pdf?ext=.pdf | Health professional information:<br>*Guideline for the management of hypertensive disorders of pregnancy* (2014) |

| Topic | Organisation / web address | Summary |
|---|---|---|
| | The Women's<br>https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/hypertension-management-of-acute_51118.pdf | Consumer information:<br>High blood pressure and eclampsia during pregnancy with a link to Australian Action on Preeclampsia Pre-eclampsia |
| Vitamin D | The Women's<br>https://www.thewomens.org.au/images/uploads/downloadable-records/clinical-guidelines/vitamin-d-testing-management-maternity-patients-newborns_160517.pdf | Clinical guideline:<br>Vitamin D testing and management in maternity patients and newborns (2014) |
| | RANZCOG<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Vitamin-and-mineral-supplementation-in-pregnancy-(C-Obs-25).pdf?ext=.pdf | Clinical guideline:<br>Vitamin and Mineral Supplementation and Pregnancy (2014). Includes advice on Vitamin D |
| Medical History<br>Asthma | National Asthma Council Australia<br>https://www.asthmahandbook.org.au/populations/pregnant-women/pregnancy/asthma-care<br>www.asthmahandbook.org.au/ | Health professional information:<br>Australian Asthma Handbook available for purchase and download<br>Consumer information:<br>Healthy living information for managing asthma in pregnancy. Includes link to an asthma plan |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/asthma-pregnancy-and-breastfeeding?viewAsPdf=true | Consumer information:<br>Managing asthma during pregnancy and breastfeeding |
| Epilepsy | Epilepsy Foundation<br>https://epilepsyfoundation.org.au/managing-epilepsy/women-and-epilepsy/pregnancy-planning/ | Health professional and consumer<br>information:<br>Includes access to online epilepsy management plans |
| | American Academy of Neurology<br>www.neurology.org/content/73/2/142.full | Health professional information:<br>Article on Management issues for women with epilepsy – *Focus onpregnancy* (2009) |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/epilepsy-lifestyle-issues | Consumer information:<br>Epilepsy and lifestyle |

| Topic | Organisation / web address | Summary |
|---|---|---|
| Obesity | RANZCOG<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Management-of-obesity-(C-Obs-49)-Review-March-2017.pdf?ext=.pdf<br>Under Routine Antenatal Care | Clinical guideline:<br>*Management of Obesity in Pregnancy* (2013) |
| | Department of Health and Human Services, Victoria.<br>https://www2.health.vic.gov.au/about/publications/policiesandguidelines/care-obese-pregnant-woman-mncn-guide | Clinical guideline:<br>*Maternity and Newborn Clinical Network Obesity Guideline* (2011) |
| | Safer Care Victoria<br>https://www.bettersafercare.vic.gov.au/resources/clinical-guidance/maternity-ehandbook/obesity-during-pregnancy-birth-and-postpartum | Clinical guideline:<br>Obesity during pregnancy, birth and postpartum |
| | Northeast Health Wangaratta<br>https://www.northeasthealth.org.au/wp-content/uploads/Obstetrics-Obese-1-2-3-NHW0001496-V2.pdf | Health Professional Information:<br>Obese 1,2 & 3 Antenatal Schedule of Care for GPs and Midwives |
| Female Genital Mutilation | The Women's<br>https://www.thewomens.org.au/health-professionals/health-professionals-gynaecology/family-reproductive-rights-education-program-farrep | Health professional information:<br>On services and supports available for women and de-infibulation |
| Childbirth | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/planning-for-labour-and-birth<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/childbirth-pain-relief-options | Consumer information:<br>Provided by the Victorian Government on:<br>Pain relief options during childbirth |
| | The Women's<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/labour-birth/preparing-for-labour | Preparing for childbirth |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/caesarean-section | Caesarean section |
| | DHHS Better Safer Care Victoria<br>https://www.bettersafercare.vic.gov.au/resources/clinical-guidance/maternity-ehandbook | General Information |

| Common Concerns in Pregnancy | | |
|---|---|---|
| General | The Women's<br>https://www.thewomens.org.au/health-professionals/clinical-resources/<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/a-healthy-pregnancy/common-concerns-in-early-pregnancy | Clinical guidelines:<br>Many guidelines and resources related to 3 trimesters of pregnancy<br>Consumer information:<br>Common concerns of early pregnancy and helpful tips to minimise their impact |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/carpal-tunnel-syndrome<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/restless-legs-syndrome-rls<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/indigestion<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/pregnancy-morning-sickness<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/pregnancy-labour<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/pregnancy-and-travel | Consumer information:<br>Provided by the Victorian Government on:<br>Carpel tunnel syndrome<br>Restless legs syndrome<br>Heartburn<br>Pregnancy and morning sickness<br>Pregnancy and labour<br>Travel during pregnancy |
| Travel | Center for Disease Control and Prevention<br>https://wwwnc.cdc.gov/travel/page/yellowbook-home-2014<br>https://wwwnc.cdc.gov/travel/page/pregnant-travelers | Health professional information:<br>Travel during pregnancy |
| Continence | Continence Foundation of Australia<br>https://www.continence.org.au/pages/women.html | Consumer information:<br>Includes a video link and resources specific to pregnancy related bladder and bowel continence issues |

*See also:*
*Iodine, Folate, Vitamin D/Diet, Nutrition, Food safety and exercise/Smoking, alcohol and other drugs/ Oral health – Section 3*
*Infectious Diseases – Section 8*
*Vaccinations – Section 9*
*Genetic testing – Section 10*
*Mental health and wellbeing and intimate partner violence – Section 13*
*Breastfeeding – Section 14*

# 7 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.

## Anti-D at 34 weeks

This is arranged by the hospital. The Anti-D can also be given at Yarrawonga Health at 34/40 and recorded on the NHW Drug Chart.

## 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:[xxiixxiii]

- 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 – eg. vaginal bleeding/antepartum haemorrhage
- external cephalic version (whether successful or not)
- abdominal

**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.

# Resources on prophylactic anti-D

| Organisational Web Address | Content |
|---|---|
| National Blood Authority<br>https://www.blood.gov.au/guidelines-prophylactic-use-rh-d-immunoglobulin-anti-d-obstetrics | Clinical guideline:<br>*Guidelines on the prophylactic use of Rh D immunoglobulin (Anti-D) in obstetrics* (2003) |
| RANZCOG<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Use-of-Rh(D)-Isoimmunisation-(C-Obs-6).pdf?ext=.pdf<br>Under Red cell Iso-immunisation and Rh(D) prophylaxis | Clinical guideline:<br>*Guidelines for the prophylactic use of Rh (D) immunoglobulin (Anti-D) in obstetrics in Australia* (2012) |

# 8 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, and Toxoplasma gondii, Parvovirus, Varicella and Streptococcus Group B. See: www.asid.net.au/documents/item/368

NHW 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.

Emergency Department reception number is 03 5722 5261

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 the antenatal ward clerk and note this in the VMR.
- 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.

## 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 retardation, 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.*[xxiv]"

## 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[xxv]. 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 the Obstetric registrar. 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 | Organisational Web Address | Content |
|---|---|---|
| General infectious diseases in pregnancy | Australasian Society of Infectious Diseases<br>https://www.asid.net.au/documents/ | Clinical guidelines:<br>Comprehensive guidelines (2014) with multiple resources relating to the management of 14 perinatal infections. Endorsed by RANZCOG |
| | Medical Journal of Australia<br>https://www.mja.com.au/journal/2002/176/5/1-infections-pregnant-women | Health professional information:<br>Article *Infections in pregnant women* (2002) |
| General infectious diseases in pregnancy | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/chlamydia<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/chickenpox<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/cytomegalovirus-cmv<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/hepatitis-c<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/slapped-cheek-disease<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/toxoplasmosis | Consumer information:<br>By the Victorian Government on a number of pregnancy related topics including:<br>Chlamydia<br>Chickenpox<br>Cytomegalovirus<br>Hepatitis C<br>Slapped cheek disease<br>Toxoplasmosis |
| Parvovirus | Department of Health, Australia<br>https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-cdi-2000-cdi2403s-cdi24msa.htm | Health professional information:<br>Parvovirus B19 infection and its significance in pregnancy |

*See also: Vaccinations – Section 9*

# 9 MATERNAL VACCINATIONS

## Recommended vaccinations

### Rubella

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

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 (see Section 8) 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

Influenza vaccination is recommended for pregnant women and is safe to administer during any stage of pregnancy or while breastfeeding.[xxvi]

### Pertussis (whooping cough)

Pertussis vaccine is generally administered by the reduced antigen formulation of dTpa vaccine. Pertussis vaccine is recommended to be given from 20 weeks of each pregnancy, even if a recent booster has been given. This 20 week window is recommended as it takes 2 weeks after vaccination to make antibody with active placental transfer occurring from 22 weeks gestation. However, if this 20 "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.

# 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

A check for hepatitis carrier status (Hep BSAg) is a routine first trimester test, however a check for hepatitis immunity (Hep BSAb) is not routine; hepatitis B is an inactivated viral vaccine: 'Hepatitis B vaccine is not routinely recommended for pregnant or breastfeeding women. However, WHO states that neither pregnancy nor breastfeeding is a contraindication to the use of this vaccine'.[xxvii]

## Hepatitis A

'Hepatitis A vaccine is not routinely recommended for pregnant or breastfeeding women but can be given where vaccination is considered necessary'. [xxviii]

## 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. (Note the oral live attenuated typhoid vaccine is contraindicated in pregnant women)'.[xxix]

## Pneumococcal vaccines

'Not routinely recommended. Can be given to pregnant women at the highest increased risk of invasive pneumococcal disease'.

## Meningococcal vaccines (some)

'Not routinely recommended. Can be given to pregnant women at increased risk of meningococcal disease'.

## H. influenza type b (Hib)

'Not routinely recommended. Can be given to pregnant women at increased risk of Hib disease (eg. with asplenia)'.

## Injectable polio

'Not routinely recommended. Can be given to pregnant women at high risk of poliovirus exposure (eg. travel to endemic countries)'.

## Rabies

'Can be given to pregnant women for whom this vaccine would otherwise be recommended (eg. post-exposure prophylaxis)'. [15]

# Contraindicated vaccinations

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

# Resources on Maternal Vaccinations

| Topic | Organisational Web Address | Content |
|---|---|---|
| General | Therapeutic Goods Administration<br>https://www.tga.gov.au/prescribing-medicines-pregnancy-database#.VDczumeSzHU | Health professional information:<br>*Prescribing medicines in pregnancy database.*<br>Information for health professionals planning the medical management of pregnant patients or patients intending to become pregnant |
| | Department of Health, Australia<br>https://www.health.gov.au/news/the-digital-australian-immunisation-handbook<br>https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups | Health professional information:<br>The Australian Immunisation Handbook provides clinical advice for health professionals on the safest and most effective use of vaccines in their practice.<br>Vaccination for special risk groups contains information related to women who are planning<br>pregnancy, pregnant, breastfeeding and pre-term infants |
| | Melbourne Vaccine Education Centre<br>https://mvec.mcri.edu.au/immunisation-references/maternal-vaccination-during-pregnancy/ | Health professional and consumer information:<br>Comprehensive guide with multiple resources related to maternal vaccination during pregnancy with links to other immunisation resources |

| Topic | Organisational Web Address | Content |
|---|---|---|
| Influenza | Influenza Specialist Group<br>http://www.isg.org.au/index.php/ | Health professional information:<br>Links to a range of education and resources related to influenza |
| | Australian Immunisation Handbook<br>https://immunisationhandbook.health.gov.au/vaccines?f%5B0%5D=field_related_diseases%3A3741 | Consumer information:<br>Influenza vaccination<br>Including 13 in LOTE |
| | Department of Health, Australia<br>https://www.health.gov.au/funnelback/search?query=Influenza%20Vaccinations | Consumer information:<br>Influenza vaccination |
| Measles, Mumps and Rubella | Australian Immunisation Handbook<br>https://immunisationhandbook.health.gov.au/vaccines?f%5B0%5D=field_related_diseases%3A3741 | Health Professional Information<br>Online Immunisation Handbook |
| | Department of Health and Human Services, Victoria<br>https://www2.health.vic.gov.au/public-health/infectious-diseases | Consumer information:<br>Measles, mumps and rubella |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/rubella | Consumer information:<br>Rubella |
| Varicella | Australian Immunisation Handbook<br>https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups | Health Professional Information<br>Online Immunisation Handbook |
| Diphtheria, tetanus and pertussis | Australian Immunisation Handbook<br>Diphtheria<br>https://immunisationhandbook.health.gov.au/vaccines?f%5B0%5D=field_related_diseases%3A3741<br>Tetanus<br>https://immunisationhandbook.health.gov.au/vaccines?f%5B0%5D=field_related_diseases%3A3741<br>Pertussis<br>https://immunisationhandbook.health.gov.au/vaccines?f%5B0%5D=field_related_diseases%3A3741 | Health professional information:<br>Online Immunisation information |
| | Department of Health and Human Services, Victoria<br>https://www2.health.vic.gov.au/public-health/infectious-diseases/disease-information-advice/diphtheria | Consumer information:<br>Diphtheria, tetanus and pertussis |

*See also: Infectious Diseases in Pregnancy – Section 8*

# 10 TESTING FOR DOWN SYNDROME AND OTHER FETAL ABNORMALITIES

Most babies are born healthy, but about 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.

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

- test for Carrier screening
- test for Down syndrome, and a 19–22 week fetal morphology ultrasound.

If there is a personal or family history of genetic problems, a referral to O&G registrar at the hospital should be arranged ASAP

## 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*[xxx] | Chance of having a live-born baby with a chromosomal abnormality [xxxi] |
|---|---|---|
| 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 |

# Tests for Down syndrome and other aneuploidies

Although a woman's likelihood of having a fetus 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

These are a group of tests 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.

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.

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.

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.

# Combined first trimester screening

Combined first trimester screening tests for Down syndrome, Edward syndrome and Patau syndrome. It involves both a maternal blood test (ideally conducted between 9 weeks 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.

Its detection rate (sensitivity) for Down syndrome is 90%, the false positive rate is approx. 5%, with a high-risk result is 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.***

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.

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.

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.

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.

# 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% 00 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 week's 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 available at the hospital, if the woman's first hospital appointment occurs at less than 20 weeks gestation and she has not already had a test for 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 (eg. 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 (eg. 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.

## Chorionic villus sampling (CVS)

A CVS diagnostic test can be performed at 10–14 weeks. If there is an indication for testing, this can be undertaken at the hospitals 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 (eg. 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 hospitals 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

Arrangements for a CVS or amniocentesis if a woman is high risk: Registrars and obstetricians can arrange a CVS or amniocentesis for high-risk women who are booked for care at the hospital after the woman has been adequately counselled. The SMCA should contact the On Call obstetric registrar via hospital switch to discuss the situation.

# Tests for other inheritable genetic conditions

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
- population groups at higher risk of other genetic diseases where carrier screening is available (eg. 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).

*See also Section 6.*

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. See also: https://www.vcgs.org.au/tests/prepair

## Diagnostic testing

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 fetus (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
- to ensure the provision of timely advice, directly contact Genetics Services at the hospital the woman has been referred to
- for some conditions, tests can also be ordered directly by GPs; include a description of the family member (affected or carrier) relationship, name and date of birth, and details of the type of mutation if known.

*See also Section 11.*

When ordering investigations for genetic conditions (eg. 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.

## Genetic counselling

Health care providers are encouraged to offer early advice and counselling regarding all tests. 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.

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.

Counselling through the hospital may be required:

- if a woman is unsure about whether to undertake diagnostic testing
- 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 if a couple with a high risk of having a child with a genetic condition wishes to discuss prenatal testing, including diagnostic testing
- if a health care provider requires secondary advice.

# 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 confinement, locates the placenta, and measures 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%.

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; had 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.

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

As with all investigations, the referring practitioner is responsible for reviewing the result. If advice is required regarding a result, contact the Obstetric registrar. In addition, the result should be noted in the results section of the VMR and a copy of the results provided to the woman to bring to her next hospital visit.

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.

## Hospital Ultrasound Service

Phone: 03 5722 5001
Freecall: 1800 672 253 (not free from mobile phones).
Email: medical.imaging@nhw.org.au
Green Street, Wangaratta, Victoria 3677
Monday to Friday – 8.30am to 5.00pm
(24 hours / 7 days for emergency cases)

SMCAs are able to order ultrasounds at the hospital and to follow-up ultrasound results obtained from an external provider.

# Resources on testing for fetal abnormalities

| Topic | Organisational Web Address | Content |
|---|---|---|
| General Genetic Testing | World Health Organisation<br>https://www.who.int/genomics/public/en/ | Health professional information:<br>Comprehensive site with multiple resources including thalassaemia,<br>cystic fibrosis, Tay-Sachs disease, fragile X syndrome and Huntington's disease |
| | Victorian Clinical Genetics Services (VCGS)<br>https://www.vcgs.org.au/ | Health professional and consumer information: Comprehensive site with<br>multiple resources for genetic testing and support services in Victoria |
| | National Health and Medical Research Council<br>https://www.nhmrc.gov.au/about-us/publications/medical-genetic-testing-information-health-professionals<br>https://www.racgp.org.au/download/Documents/RepsAndEndorse/genetics_in_family_medicine.pdf | Health professional information:<br>*Medical Genetic Testing: information for health professionals.*<br>Comprehensive guidelines guide with multiple resources for genetic testing.<br>*Genetics in Family Medicine: The Australian Handbook for General*<br>*Practitioners* (2007)<br>Information on a variety of genetic conditions including cystic fibrosis<br>and fragile X syndrome, includes testing in pregnancy<br>*Genetics in Family Medicine. The Australian Handbook for General Practitioners. Testing and Pregnancy* (2007) |
| | RANZCOG<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Prenatal-screening_1.pdf?ext=.pdf<br>Under Routine Antenatal Care | Clinical guidelines:<br>*Prenatal Screening and Diagnosis*<br>*of Chromosomal and Genetic Abnormalities in the Fetus in Pregnancy* (2015)<br>*Prenatal Screening for Fetal*<br>*Abnormalities* (2013) |
| **Aneuploidy Screening Tests** | | |
| Maternal serum screening | Victorian Clinical Genetics Services<br>https://www.vcgs.org.au/tests#reproductive-genetic-testing<br>https://www.vcgs.org.au/tests/prepair | Health professional information:<br>Maternal serum screening test<br>Consumer information:<br>Maternal serum screening test |

| Topic | Organisational Web Address | Content |
|---|---|---|
| Combined first trimester screening | Victorian Clinical Genetics Services<br>https://www.vcgs.org.au/tests#reproductive-genetic-testing<br><br>https://www.vcgs.org.au/tests/prepair | Health professional information:<br>VCGS Pathology form for combined trimester screening and information including first trimester Screening, 2nd trimester maternal Serum screening, CVS, amniocentesis and ultrasound.<br><br>Consumer information:<br>Prenatal carrier testing |
| Non-invasive prenatal test (NIPT) | RANZCOG<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Prenatal-screening_1.pdf?ext=.pdf | Health professional information:<br>RANZCOG communiqué on *(NIPT) for Fetal Aneuploidy*- reflects emerging clinical and scientific advances (April 2015)<br>Prenatal screening and diagnosis of chromosomal and genetic abnormalities in the fetus |
| | Victorian Clinical Genetics Services (VCGS)<br>https://www.vcgs.org.au/tests/perceptnipt | Health professional and consumer information:<br>Precept NIPT |
| | Baby Centre<br>https://www.babycenter.com.au/ | Consumer information:<br>NIPT |
| **Aneuploidy diagnostic tests** | | |
| Amniocentesis | The Royal Australian and New Zealand College of Radiologists<br>https://www.insideradiology.com.au/ | Health professional information:<br>Comprehensive guide with multiple resources related to amniocentesis |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/pregnancy-prenatal-tests | Consumer information:<br>Amniocentesis |
| | Baby Center<br>https://www.babycenter.com.au/a327/amniocentesis | Consumer information:<br>Amniocentesis |
| Chorionic villus sampling (CVS) | The Royal Australian and New Zealand College of Radiologists<br>https://www.insideradiology.com.au/chorionic-villous-sampling/ | Health professional information:<br>Comprehensive guide with multiple resources related to CVS |

| | | |
|---|---|---|
| **Tests for other genetic disorders** | | |
| Cystic fibrosis | Cystic Fibrosis Victoria<br>https://cfcc.org.au/what-is-cf/carrier-screening/ | Health professional and consumer information:<br>Comprehensive guide with multiple resources related to cystic fibrosis including carrier testing |
| Fragile X | Fragile X Association of Australia<br>https://www.fragilex.org.au | Consumer information:<br>Fragile X with links to services and support groups |
| Thalassaemia | Thalassemia Australia<br>https://www.tasca.org.au/ | Health professional information:<br>Haemoglobinopathy carrier screening recommendations |
| **About Down syndrome and other aneuploidies** | | |
| Down Syndrome | Down Syndrome Australia<br>https://www.downsyndrome.org.au/ | Health professional and consumer information:<br>Comprehensive site with multipleresources and contacts |
| Edward Syndrome | Centre for Genetics Education<br>https://www.genetics.edu.au/publications-and-resources/facts-sheets/FactSheet30 | Health professional information:<br>Edward syndrome |
| Ultrasound | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/pregnancy-prenatal-tests | Consumer information:<br>Ultrasound in pregnancy |
| | Center Australian Medical Advisory Board<br>https://www.babycenter.com.au/a557439/ultrasound-variants-in-pregnancy | Consumer information:<br>Ultrasound variants in pregnancy |

*See also: Resources on abnormal findings in pregnancy in Section 12.*

# 11 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 the antenatal clinic ward clerk. The antenatal clinic ward clerk 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 and the on-call obstetric registrar. All providers should check that follow-up of any incomplete or abnormal investigation findings occurs. *See also Section 12*.

This section contains a variety of support and referral pathways offered at the hospital.

Pregnancy assessment service hours are generally within business hours. Outside these times, women should be referred to the maternity unit.

## Pregnancy assessment service

The hospital has a pregnancy assessment service that provides obstetric, midwifery and investigations, monitoring and management for maternal and fetal assessment for issues including:

- high blood pressure or concerns about pre-eclampsia
- small for dates, poor interval growth or fetal growth restriction
- decreased fetal movements
- non-cephalic presentation at ≥36 weeks
- prolonged pregnancy (post-dates)
- hyperemesis
- concerns about cholestasis.

Referral to the pregnancy assessment Service is recommended if a woman has:

- hypertension (when systolic BP is 140 mmHg and/or diastolic BP is 90 mmHg)
- a small fundal height (2 cm more or less than for dates, significant deviation from growth pattern or concerns on ultrasound)
- intractable vomiting
- decrease in fetal movements
- jaundice or symptoms of cholestasis
- non-cephalic presentation ≥ 36 weeks gestation.

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.

### Pregnancy assessment service contact details and operating hours

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

**Northeast Health Labour Ward phone: 03 5722 5225**

## Emergency Department

The Emergency Department and labour ward are available 24 hours a day for assessment of urgent antenatal or postnatal problems. Phone advice from the Obstetric registrar is also available 24 hours a day for SMCAs and GPs. Referral by Phone: or letter is appreciated. Presentation to the hospital 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 is recommended if the woman has:

- first trimester bleeding or pain that cannot be appropriately diagnosed and managed in the community
- threatened preterm labour (≤37 weeks)
- undiagnosed abdominal pain
- preterm rupture of membranes
- antepartum haemorrhage
- unusual migraines/visual disturbances
- seizures
- a requirement for anti-D immunoglobulin following a sensitising event
- requirement for immunoglobulin post varicella or measles exposure if non immune
- problems usually seen in the Pregnancy Assessment Service if after hours.

The above list is not exhaustive.

**Emergency Department reception phone: 03 5722 5261**

## Obstetric registrar/On-call obstetrician

The on-call obstetric registrar can be contacted 24 hours a day to discuss urgent or complex clinical issues. To contact the registrar, phone the hospital switchboard and ask for the on-call obstetric registrar.

**On-call obstetric registrar phone: 0455 081 615**

# The Antenatal Ward Clerk

The antenatal ward clerk is the key person for non-urgent contact for SMCAs and women. They can respond to issues that may arise and ensure that non-urgent queries from SMCAs are dealt with in a timely manner. The antenatal ward clerk is the point of contact for:

- updating a woman's contact details
- organising routine hospital appointments
- organising extra appointments for additional non-urgent clinical consultation with, for example, obstetric doctors/allied health/psychiatry/genetics/physicians
- organising hospital follow up for gestational diabetes
- obtaining non-urgent information about hospital care (eg. discharge summaries, investigation results)
- changing shared maternity care providers (if requested by the woman)
- notifying SMCAs of cessation of shared maternity care.

**Northeast Health Wangaratta Antenatal Clinic**
Phone:: 03 5722 5225 Fax:: 03 5722 5305
**GP Obstetric Referral Form**

# 12 MANAGEMENT AND REFERRAL OF ABONORMAL FINDINGS: FOLLOW-UP OF FINDINGS

All providers of shared maternity care have a responsibility to appropriately assess, document and respond to problems that arise during a woman's pregnancy (including any investigations ordered, investigation results, abnormal investigation or clinical findings and action taken). All providers should check that follow up of any incomplete or abnormal investigation or clinical findings occur.

*See also Section 11* – for further information on hospital support and referral pathways. This section contains a variety of common scenarios requiring support by and referral to the hospital.

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

## High-risk aneuploidy screening result

Follow up of a high-risk aneuploidy screening test result may include a number of options, depending on the woman's preference, and the SMCA's level of confidence

Options include:

- Referral for a non-invasive prenatal test (eg. via Victorian Clinical Genetics Service, private pathology services or several specialist obstetric ultrasound services). A cost is involved. *See also Section 10*
- A diagnostic test – CVS or amniocentesis, *see also Section 10*
- Contact the On-Call Obstetric registrar, who will discuss the referral with the SMCA.

## High-risk neural tube defect result

Follow-up of a high-risk result for neural tube defects requires a referral to a tertiary centre ultrasound service for diagnosis as soon as possible. Contact the Obstetric registrar for advice.

*See also Section 11 and 'Abnormality on ultrasound' below.*

## Abnormality on ultrasound

The registrar on call can be contacted for advice

### '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 the hospitals, who will also direct any further investigations and follow-up as required.

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 registrar genetics service or fetal maternal management service if there is:

- a high-risk marker present (even if this is single, eg. 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 (eg. cystic fibrosis, CMV infection) | Refer to hospital |
| Significantly increased nuchal translucency at 11–13 weeks<br>≥3.5 mm (>99$^{th}$ percentile)<br>2.5mm–3.5mm (>95$^{th}$ percentile) | Even when isolated, greatly increased risk of Down syndrome,<br>other aneuploidies and other abnormalities (eg. heart disease) | Refer to hospital |
| Choroid plexus cysts | Present in 3% of all fetuses 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 fetuses – usually resolves in third trimester<br>Small bright spot seen in the baby's heart – thought to represent mineralisation/small deposits of calcium in the heart valve. | Reassure<br>No increased chromosomal<br>Problems (If not isolated, increased risk of aneuploidy – refer to hospital) |

| 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 |
|---|---|---|
| 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.<br>(If not isolated or increased risk of aneuploidy – refer to hospital)<br>Even if isolated need to follow-up fetal +/- newborn kidneys as although most resolve before birth/<br>within a few months after birth, 1:500 cases develop significant renal disease<br>If mild renal pelvis dilatation (4–7mm), then repeat ultrasound at 32 weeks.<br>If still present at 32 weeks, postnatal follow-up will be required.<br>If moderate to severe renal pelvis dilatation (>7mm), then refer to hospital 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)<br>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<br>Growth and wellbeing US in third trimester (generally at 28 and 34 weeks) |
| Aberrant subclavian artery | There is thought to be an increased<br>risk of Down syndrome, other aneuploidy and cardiac anomalies.<br>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 about 34 weeks to identify persistent low-lying placenta or placenta praevia. This can be organised by the SMCA (to be undertaken in the community) or can be organised by the hospital staff at the booking for the 28-week hospital visit. If undertaken in the community and a placenta praevia is diagnosed or there are ongoing concerns, contact the antenatal ward clerk 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, the Obstetric registrar can be contacted for referral or advice. This can be done directly or through the hospital switchboard.

# 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. NHW provides termination services. Early TOP is coordinated through clinic 35 at Gateway Health or via the Obstetric registrar.

*See also:* https://www.gatewayhealth.org.au/services/sexual-health-clinics

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)).

# Decreased fetal movements

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. Fetal movements are usually not altered by intravenous glucose administration, sugary/cold drinks/food or by a recent meal.

Studies have demonstrated an association between DFM and adverse perinatal outcomes, including stillbirth, fetal growth restriction, preterm birth, neonatal low Apgar and fetomaternal haemorrhage.

Although optimal management of DFM has not been established, there is some indication that a reduction in stillbirth rates is achieved by increasing maternal and clinical awareness about DFM and its causes. Factors that might modify a woman's perception of movements include her weight and placental position.

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.

In the case of a woman reporting DFM, refer her to the hospital for review and a CTG. It is insufficient to perform only a Doppler fetal monitor.

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.

# 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 the hospital's Pregnancy Day Service or the SMCA can organise a timely ultrasound at a specialist community service.

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, Pregnancy Day Service or emergency service. For serial growth scans a minimum of 2 weeks between scans is usual.

# Large for gestational age

Generally, if fundal height is more than 2 cm greater than expected by dates:

- review the woman's GTT to confirm she does not have gestational diabetes (if there are any concerns, refer to the diabetes service)
- a specialist ultrasound is generally not required but may be useful if the mode of delivery is under question, with fetal size a factor in this decision.

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.

A SMCA can organise a timely ultrasound at a specialist community service or contact the antenatal ward clerk to organise an outpatient review.

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 antenatal ward clerk for discussion.

# Sub-clinical hypothyroidism

Universal screening of pregnant women with TSH is not currently recommended although targeted screening for women as higher risk is recommended (eg. history of thyroid disease, autoimmune disease, nonphysiological goitre or strong family history of thyroid disease).

As ß-hCG and TSH have some similar elements, ß-hCG can stimulate the thyroid and therefore TSH levels are lower in pregnancy. If no laboratory reference range has been provided the normal range of THS is:

- 1st trimester: 0.1-2.5 mU/L
- 2nd trimester: 0.2–3.0 mU/L
- 3rd trimester: 0.3–3.0 mU/L

If TSH levels are higher, ensure the woman is on iodine supplementation of at least 150 mcg/day and order full thyroid function tests and the range of thyroid antibodies. If T4 is normal (indicating subclinical hypothyroidism) and antibodies are not elevated, the role of thyroxine replacement is controversial and an individualised discussion should take place with the patient based on her wishes; gestation and level of TSH – with a lower threshold to treat with thyroxine at an earlier gestation and a higher TSH. In this situation most clinicians use 50–100 mcg thyroxine per day with a TSH blood test after 2–4 weeks.

If T4 is low, there is a markedly high TSH (if TSH> 10, but many clinicians would treat at much lower levels than this) or there are elevated antibodies, treatment with thyroxine should be initiated and appropriate referral made to the hospital for urgent review.

# Gestational hypertension and pre-eclampsia

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.

'Detecting a rise in "booking" nor preconception (>30/15 mmHg), rather than relying on an absolute value has in the past been considered useful in diagnosing preeclampsia in women who do not reach blood pressure of 140 or 90mmHg. Available evidence does not support the notion that these women have an increased risk of adverse outcomes. Nevertheless such a rise may be significant in some pregnant women, particularly in the presence of hyperuricaemia, proteinuria or a small for gestational age (SGA) infant and these women warrant closer monitoring.'[xxxii] 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.

If a woman's BP is ε140 mmHg and/or diastolic blood pressure ε90 mmHg, she needs to be reviewed that day at the hospital for BP monitoring and investigations as appropriate.

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 pregnancy day service for BP monitoring and investigations as appropriate (to the labour ward if the pregnancy day Service is closed).

Referral at lower BPs should occur if there are other symptoms of preeclampsia.

Referral at lower BPs should occur if there are other symptoms of pre-eclampsia (eg. proteinuria, headache, visual disturbances, nausea, and epigastric pain). 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.

It is not appropriate for a SMCA to commence antihypertensive medicine.

# 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 me sure 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 hospital Emergency Department 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 pregnancy day service or Emergency Department as soon as possible.

# Resources on abnormal findings in pregnancy

| Topic | Organisational Web Address | Content |
|---|---|---|
| Neural tube defects | Centre for Genetics Education<br>https://www.genetics.edu.au/publications-and-resources/facts-sheets/fact-sheet-60-neural-tube-defects | Health professional information:<br>Neural tube defects |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/spina-bifida | Consumer information:<br>CNS birth defects including spina bifida |
| Termination of pregnancy | Victoria Government<br>http://www.legislation.vic.gov.au/Domino/Web_Notes/LDMS/LTObject_Store/LTObjSt6.nsf/DDE300B846EED9C7CA257616000A3571/001EE318AB77546CCA257A2A007AC018/%24FILE/08-58aa005%20authorised.pdf | *Abortion Law Reform Act 2008*, incorporating amendments as of<br>1 July 2010 |
| | The Women's<br>https://www.thewomens.org.au/patients-visitors/clinics-and-services/pregnancy-birth/miscarriage-stillbirth-baby-death | Consumer information:<br>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<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/DFM-Clinical-Practice-Guideline-Update_Final_05102016.pdf?ext=.pdf | Clinical guideline:<br>*Management of Women who report Decreased Fetal Movements* (2010).<br>Endorsed by RANZCOG |
| | RACGP<br>https://www.racgp.org.au/afp/2014/november/decreased-fetal-movements-a-practical-approach-in-a-primary-care-setting/ | Health professional information:<br>Article *Decreased fetal movements: a practical approach in a primary care setting* (2014) |
| | Baby Center<br>https://www.babycenter.com.au/a549375/your-babys-movements-in-pregnancy | Consumer information:<br>Fetal movements during pregnancy and when to contact a health professional for help |
| Small for gestational age | Department of Health and Humans Services, Victoria<br>https://www.bettersafercare.vic.gov.au/resources/clinical-guidance/maternity-and-newborn-clinical-network/small-for-gestational-age-infants | Health professional information:<br>Neonatal eHandbook<br>Information on small for gestational age infants |
| | Queensland Government<br>https://www.health.qld.gov.au/__data/assets/pdf_file/0034/139939/g-sga.pdf | Health professional information:<br>Small for gestational age infants clinical guideline |
| | Baby Center | Consumer information: |

| Topic | Organisational Web Address | Content |
|---|---|---|
| | https://www.babycenter.com/0_measuring-large-or-small-for-gestational-age_1453305.bc | Multiple resources related to babies who are small for dates |
| Large for Gestational Age | Merck Manual<br>https://www.merckmanuals.com/professional/pediatrics/perinatal-problems/gestational-age | Health professional information:<br>Large for gestational age fetus |
| Hypertension | Society of Obstetric Medicine of Australia and New Zealand (SOMAZ)<br>https://ranzcog.edu.au/womens-health/patient-information-resources/pre-eclampsia-and-high-blood-pressure-during-pregn | Health professional information:<br>Guideline for the management of hypertensive disorders of pregnancy (2014) |
| | The Women's<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-problems/pregnancy-problems-in-later-pregnancy/pre-eclampsia | Consumer information:<br>High blood pressure and eclampsia during pregnancy with a link to<br>Australian Action on preeclampsia |
| Jaundice and pruritus | Mayo Clinic<br>https://www.mayoclinic.org/diseases-conditions/cholestasis-of-pregnancy/symptoms-causes/syc-20363257 | Consumer information:<br>US information about cholestasis in pregnancy |

*See also:*
*Antenatal visits, investigations and findings – Section 6*
*Testing for Down syndrome and other fetal abnormalities – Section 10*

# 13 MENTAL HEALTH AND WELLBEING IN PREGNANCY

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 (eg. 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.

Further information about Victorian Mental Health Services is available on the department's 'Victoria's Mental Health Services' webpage.

The National Health Services Directory is also a useful website to search for community mental health providers and sites.

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.

NHW has access to mental health services that can assess and manage women with mental health issues who are receiving pregnancy

To access these services in a non-urgent situation, GPs and SMCAs can:

- include details and a request in the referral letter for maternity care
- contact the antenatal ward clerk to arrange an appointment at the hospital if the woman is undertaking shared maternity care.

Contact the hospital mental health team directly via the hospital switchboard for advice during business hours: 03 5722 5103

# 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)

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. See also: Mental Health Services

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.

## Urgent Adult Mental Health Referrals

| | |
|---|---|
| Wangaratta | 1300 783 347 |
| Wodonga | 1300 881 104 |
| Albury | 1800 800 944 |
| Shepparton | 1300 369 005 |

## Urgent Child & Adolescent Mental Health Referrals

| | | |
|---|---|---|
| Wangaratta | 03 5723 8900 | AH 1300 783 347 |
| Wodonga | 02 6051 7900 | AH 1300 881 104 |
| Albury | 02 6058 1750 | |
| Shepparton | 1300 369 005 | |

## Non Urgent Adult Mental Health Referrals

| | |
|---|---|
| Wangaratta | 03 5722 5347 |
| Wodonga | 03 6051 7950 |
| Albury | 03 6058 1750 |
| Shepparton | 1300 369 005 |

## Perinatal Mental Health

### Perinatal Emotional Health Program

| | |
|---|---|
| Wangaratta | 03 5722 5347 |
| Wodonga | 02 6051 7950 |
| Shepparton | 1300 369 005 |

# 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. 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. See also: https://services.dhhs.vic.gov.au/family-support

*See also Section 14.*

# 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 Women's and operates from Monday to Friday (9am to 5pm), excluding public holidays.

Phone: 03 8345 3190
Email: drug.information@thewomens.org.au
Website: https://www.thewomens.org.au/contact

# Alcohol and drug use

Each hospital has services to support women with alcohol and substance use issues during pregnancy and postpartum. The hospital social work and mental health services and can also provide advice to GPs and SMCAs.

Referrals to Drug and Alcohol Services in North East Victoria is facilitated by **ACSO** (Australian Community Services Organisation).

- ACSO Intake offer services to people aged ≥16 years.
- Young people aged < 25 years are offered the choice to attend a youth AOD service, as appropriate.
- There is no upper age limit in place for AOD services.
- Intake services also support families and significant others of people with AOD issues.

**Referral information**
Highlight the reason for referral and include in all referrals:

- Patient name
- Patient postcode or region
- Patient contact number
- Consent to call patient
- Referring general practitioner's email address

**GP Referrals**
Phone: 03 9413 7193 Fax: 03 9413 7189
Email: gpreferral@acso.org.au

**Self-Referral**
Phone: 1300 022 760

**Gateway Health (Wangaratta)**

Phone: To access this service, call ACSO - 1300 022 760 OR
Phone: Gateway Health 03 5723 2000 Fax: 03 5722 2313
Email: gvhumeintake@acso.org.au OR info@gatewayhealth.org.au
Post: PO Box 224, Wangaratta, VIC 3676

**Telehealth available** - appointments required

- AOD Assessment, counselling, and care and recovery coordination.
- Non-residential AOD withdrawal program.
- Opioid Dependence program (pharmacotherapy support).

# Intimate partner violence

The hospital has social workers and other services that have experience in managing intimate partner 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 demonstrate the seriousness and prevalence of intimate partner violence.[xxxiii] 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.

## Crisis service contact details

In case of emergency contact:

**Police**

Phone: 000

**Safe Steps – Family Violence Response Centre – Available 24/7**

(previously called Women's Domestic Violence Crisis Service)
Website: www.safesteps.org.au/
Phone: 1800 015 188 toll-free or 03 9322 3555
State-wide 24-hour crisis support and safe accommodation for women and their children.

Central contact point for women's refuges in Victoria.

**inTouch Multicultural Centre Against Family Violence**

Website: https://intouch.org.au/

Phone: 1800 755 988 toll-free or 03 9413 6500

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

# Resources on mental health and wellbeing in pregnancy

| Topic | Organisational Web Address | Content |
|---|---|---|
| Mental health and wellbeing | Beyond Blue<br>http://resources.beyondblue.org.au/prism/file?token=BL/1881<br>https://healthyfamilies.beyondblue.org.au/pregnancy-and-new-parents | Comprehensive guide with multiple resources related to perinatal mental Health Consumer information:<br>Multiple resources on mental health during pregnancy and early parenthood including where to get help for parents |
| | Post and Antenatal Depression Association (PANDA)<br>https://www.panda.org.au/info-support/during-pregnancy<br>https://www.panda.org.au/info-support/after-birth<br>https://www.panda.org.au/health-professionals/clinical-guidelines | Comprehensive guide with multiple resources related to perinatal depression and anxiety for parents |
| | Department of Health and Human Services, Victoria<br>https://www2.health.vic.gov.au/mental-health/mental-health-services | Website for adult specialist mental health services (16–64 years) with links to metropolitan and rural support services |
| | The Women's<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/mental-health-pregnancy/<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/mental-health-pregnancy/baby-blues/ | Consumer information:<br>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<br>https://wayahead.org.au/ | Consumer information:<br>Multiple resources on mental health during pregnancy and early parenthood |
| | Smiling Mind and Beyond Blue – Mind the Bump<br>https://www.mindthebump.org.au | Free meditation app to help support mental and emotional wellbeing in the journey to parenthood for both individuals and couples |

| Topic | Organisational Web Address | Content |
|---|---|---|
| Medicines | The Women's Pregnancy and breastfeeding medicines guide<br>https://www.thewomens.org.au/health-professionals/support-services-professionals/medicines-information-service/ | Health professional information:<br>Comprehensive web based pregnancy and breastfeeding medicines guide developed by the Women's and available on annual subscription |
| | Therapeutic Goods Administration<br>https://www.tga.gov.au/prescribing-medicines-pregnancy-database#.VDczumeSzHU | Health professional information:<br>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<br>https://www.sahealth.sa.gov.au/wps/wcm/connect/5a7850804eeda72cb154b36a7ac0d6e4/psychotropic%2Bdrug%2Buse%2Bin%2Bpregnancy%2Band%2Bbreastfeeding_29042016.pdf?MOD=AJPERES&CACHE=NONE&CONTENTCACHE=NONE | Health professional information:<br>*Psychotropic Medication inPregnancy /Lactation* (2008) |
| Alcohol and drug use | The Women's<br>https://www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-drugs-alcohol | Consumer information:<br>Alcohol, cigarette smoking and drug use during pregnancy |
| Intimate partner violence | Safe steps – Family Violence Response Centre<br>https://www.safesteps.org.au/ | Domestic Violence Crisis Service – Available 24/7.<br>Central contact point for women's refuges in Victoria. Provides Phone: crisis counselling, referral, information and support<br>Phone: 1800 015 188 or<br>03 9322 3555 |
| | inTouch<br>https://intouch.org.au | Provides Phone: support to women from culturally and linguistically diverse backgrounds in their primary language.<br>Phone: 1800 755 988 or 9413 6500 |

| Topic | Organisational Web Address | Content |
|---|---|---|
| | Domestic Violence Resource Centre, Victoria<br>http://www.dvrcv.org.au/ | Provides training, publications, research and other resources to those experiencing (or who have<br>experienced) family violence, and practitioners and service organisations who work with family<br>violence survivors |
| | VicHealth<br>https://www.vichealth.vic.gov.au/search?q=Intimate%20partner%20violence&l= | Link to research and resources related to violence and preventing against women |
| | Domestic Violence Victoria<br>http://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<br>https://www.thewomens.org.au/health-information/violence-against-women/violent-relationships/ | Consumer information:<br>Contains multiple multilingual resources relating to family violence and what to do |

# 14 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.

## Child health record

All parents are given a *My Health and Development Record*[xxxiv] (child health record) in hospital. This document is used by parents, maternal child health nurses and GPs 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 – Guthrie test

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 done at the hospital and 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 newborn screening test 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 carried out before the baby leaves hospital and again in the community as soon after 48 hours as possible (by the domiciliary midwife). 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: 03 8341 6272

Fax: 03 8341 6339

Email: screeninglab@vcgs.org.au

**Royal Children's Hospital Genetic Counselling Service**

Phone: 03 8341 6201

## Newborn hearing screening

As part of the Victorian Infant Hearing Screening Program (VIHSP), all babies born at NHW 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
- congenital abnormalities of the head and neck
- bacterial meningitis
- later risk factors eg. developmental delay, head injury.

**Victorian Infant Hearing Screening Program contact details**

Phone: 03 9345 4941

Fax: 03 9345 5049

Email: 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.[xxxv] According to the 2010 Australian National Infant Feeding Survey, exclusive breastfeeding was initiated for 90% of babies at birth (ie. 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.[xxxvi] 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. The hospitals strongly encourage breastfeeding with support and education at each hospital 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 at hospital outpatient clinics for women who:

- have been identified as having risk factors for breastfeeding difficulties during pregnancy (eg. have had poor breastfeeding experiences, multiple pregnancies, breast surgery)
- experience breastfeeding problems within the first 3 months postpartum
- require additional support.

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

**Northeast Health Wangaratta Lactation Clinic**

Phone: 03 5722 5487

34 Cusack Street
Wangaratta Vic 3677

# Postnatal care in the community

In addition to providing immediate postnatal care, the hospital offers at least one domiciliary midwife visit for all women within the first few weeks after discharge. The hospital also notifies the local Maternal Child Health Service at the time of discharge, with the local Maternal and Child Health Service then undertaking a home visit. Additional services are available through the Maternal and Child Health Service 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.[xxxvii] 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. The hospitals encourage all women and their babies to visit their GPs 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 childbirth (Victoria)**

| Problem | Primiparas (%) | Multiparas (%) |
|---|---|---|
| Back Ache | 44 | 43 |
| Bowel Problems | 10 | 11 |
| Constantly reliving babies' 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 Caesarean wound | 63+ | 60 |
| Pain from 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.

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

- physical assessment of mother and baby, including feeding and settling
- developmental assessment of the baby
- emotional wellbeing of mother and baby
- opportunity for parents to express concerns
- relationship and social supports
- health promotion.

## GP guide for postnatal check-up of the mother

The aim of the GP visit is to: assess physical and emotional wellbeing, parenting and relationship issues; follow-up on any issues from pregnancy, birth and the postpartum period; undertake preventative health and health promotion; support breastfeeding and positive parental – child interactions; and, address any additional concerns.

**Physical assessment should include:**

- follow-up of complications of pregnancy (eg. hypertension, pre-eclampsia, gestational diabetes)
- 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, arranging a GTT for 6 weeks after birth – this is not done by the hospital and needs to be arranged by a woman's GP. Please discuss and establish ongoing screening and recall systems (generally 2 yearly GTT if normal and yearly if impaired result)
- 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:**

- physical, social, emotional wellbeing
- relationships, parenting and supports
- breastfeeding/infant feeding
- postnatal depression/adjustment
- sex, dyspareunia, libido
- contraception
- exercise, including pelvic floor
- maternal nutrition
- sleep and rest
- alcohol, smoking and drug use
- vitamin D supplementation if mother was deficient during pregnancy (baby, mother
- and other family members to be supplemented); continue until end of exclusive
- breastfeeding
- 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 and following
- 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 (eg. fetal hydronephrosis)
- follow-up of abnormal clinical findings (eg. 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 (eg. 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, GPs should arrange a GTT at around 6 weeks after the birth. The hospitals do not routinely arrange a follow-up GTT; this should be arranged by a woman's GP.

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 (eg. 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 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 (eg. lupus markers/prothrombin gene mutations) and manage accordingly.

### Hepatitis B carrier

If the mother is a hepatitis B carrier, GPs 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 from 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
- prematurity – vitamin D levels are particularly low in premature infants who have less time to accumulate vitamin D from the mother through transplacental transfer.

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, help with breastfeeding, parenting and social connections, and drop-in centres. Many also have culturally sensitive groups and activity groups. Many services also have a range of multidisciplinary services such as social work, the hospital, women and GPs 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:
https://www2.health.vic.gov.au/primary-and-community-health/maternal-child-health

# 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 (eg. 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.

GPs 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

**Child First**

1800 705 211

For more information: https://services.dhhs.vic.gov.au/families-and-children

# Mandatory reporting requirements for health professionals

The *Children and Young Persons Act 1989* (Vic.) (s. 64 (1C)) states that certain professionals (including GPs, obstetricians and midwives) must report to Child Protection Services, when, in the course of their professional duty:

- they 'form the belief on reasonable grounds that a child is in need of protection [because] the child has suffered, or is likely to suffer significant harm as a result of physical injury and the child's parents have not protected or are unlikely to protect, the child from harm of that type'
- 'the child has suffered, or is likely to suffer, significant harm as a result of sexual abuse and the child's parents have not or are unlikely to protect, the child from harm of that type'.

## Child Protection Services contact details

Child Protection Services (to make a notification of child abuse, contact the regional Child Protection Service)

**Child Protection Crisis Line**

Phone: 1300 664 977 (business hours)

Phone: 13 12 78 (after hours service)

# Mother and baby inpatient mental health services

The three public inpatient mother and baby services in Victoria 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. SMCAs can refer a woman through the local Adult Mental Health Service, where an intake worker will assess the woman and arrange admission.

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.

*See also Section 13.*

## Public mother and baby inpatient unit contact details

**Austin Health – Heidelberg**

Phone: 03 9496 6406 or 03 9496 5000 (after hours)

Fax: 03 9496 4366

**Monash Medical Centre (Clayton)**

Phone: 03 9594 1414

Fax: 03 9594 6615

**Werribee Mercy Hospital (Werribee)**

Phone: 03 9216 8465

Fax: 03 9216 8470

## Private mother and baby units contact details

**North Park Private Hospital (Bundoora)**

Phone: 03 9468 0850 or 03 9468 0804 (after hours)

Fax: 03 9468 0300

**Mitcham Private Hospital (Mitcham)**

Phone: 03 9210 3134

Fax: 03 9210 3183

**Albert Road Clinic (Melbourne)**

Phone: 03 9256 8322

Fax: 03 9820 9588

**Masada Private Hospital (St Kilda East)**

Phone: 03 9038 1413

Fax: 03 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

**Albury-Wodonga Tresillian Family Care Centre**

Phone: 02 6051 7174

Email: https://www.tresillian.org.au/contact-us/enquiry-form/?t=1316&l=1647

1 Benson Street, Wodonga VIC 3690

**Tweddle Child and Family Health Service (Footscray)**

Phone: 03 9689 1577

Fax: 03 9689 1922

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

Phone: 03 8416 7600

Fax: 03 9816 9729

**Queen Elizabeth Centre, Noble Park**

Phone: 03 9549 2777

Fax: 03 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 SIDS and Kids website.

*See also:*
www.sidsandkids.org/
https://www.healthdirect.gov.au/sudden-infant-death-syndrome-sids

# Resources on postnatal care

| Topic | Organisational Web Address | Content |
|---|---|---|
| Child FIRST – Child and family protection services | Department of Health and Human Services, Victoria<br>https://services.dhhs.vic.gov.au/families-and-children | 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<br>https://www2.health.vic.gov.au/primary-and-community-health/maternal-child-health | 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 | Maternal and Child Health Services – Department of Health and Human Services, Victoria<br>https://www2.health.vic.gov.au/primary-and-community-health/maternal-child-health | 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<br>https://www.vcgs.org.au/tests/prepair | Health professional information:<br>Newborn blood screening |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/newborn-screening | Consumer information:<br>Newborn blood screening |
| Newborn hearing screening | Royal Children's Hospital<br>https://www.rch.org.au/vihsp/ | Comprehensive site:<br>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 – Safer Care Victoria<br>https://www.bettersafercare.vic.gov.au/resources/clinical-guidance/maternity-and-newborn-clinical-network/developmental-dysplasia-of-the-hip-in-neonates | Health professional information:<br>The Neonatal eHandbook.<br>Developmental dysplasia of the hip in neonates |

| Topic | Organisational Web Address | Content |
|---|---|---|
| | International Hip Dysplasia Institute<br>https://hipdysplasia.org/developmental-dysplasia-of-the-hip/ | Health professional information:<br>The use of US screening for hip dysplasia in infants |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/developmental-dysplasia-of-the-hip-ddh | Consumer Information:<br>Developmental hip dysplasia |
| Newborn Health and Care | Department of Health and Human Services, Victoria<br>https://www2.health.vic.gov.au/about/publications/policiesandguidelines/Postnatal%20Care%20Program%20Guidelines%20for%20Victorian%20Health%20Services | Clinical guidelines:<br>*The Neonatal eHandbook*<br>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<br>https://immunisationhandbook.health.gov.au/vaccines?f%5B0%5D=field_related_diseases%3A3741 | Comprehensive guide with multiple resources. Online Immunisation Handbook |
| Hepatitis B | RANZCOG<br>https://ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Management-of-Hepatitis-B-in-Pregnancy-(C-Obs-50).pdf?ext=.pdf | Health professional information:<br>Hepatitis B in pregnancy. Also covers immunisation and testing of the baby |
| Jaundice | The Royal Children's Hospital<br>https://www.rch.org.au/clinicalguide/#tab-J | Health professional information:<br>Clinical Practice Guidelines on Jaundice in Early Infancy |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/jaundice-in-babies | Consumer information:<br>Jaundice in babies |

| Infant feeding and breast care | | |
|---|---|---|
| Breastfeeding | Australian Breastfeeding Association<br>https://www.breastfeeding.asn.au/bfinfo/ | Comprehensive information:<br>Multiple resources on breastfeeding including the contact details for the Helpline |
| | Medicines Information Service (MIS)<br>Phone: 03 8345 3190*<br>*9am to 5pm (excluding public holidays)<br>Email: drug.information@thewomens.org.au | Health professional and consumer information:<br>The MIS provides evidence-based medicines information via Phone: and email. |
| | The Women's Pregnancy and Breastfeeding Medicines Guide (PBMG)<br>https://thewomenspbmg.org.au/ | Health professional information:<br>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<br>https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/breast-and-nipple-thrush_160517.pdf | Health professional information:<br>Breast and nipple thrush guideline Breastfeeding the healthy term baby guideline<br>Consumer information:<br>An overview of breastfeeding<br>General breastfeeding information<br>Medicines, drugs and breastfeeding<br>Common breastfeeding problems |
| | Department of Health<br>https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-brfeed-index.htm?Open=&utm_source=health.gov.au&utm_medium=redirect&utm_campaign=digital_transformation&utm_content=breastfeeding | Comprehensive guide with multiple resources related to National Breastfeeding Guidelines and strategies |
| Bottle Feeding | Raising Children Network<br>https://raisingchildren.net.au/newborns/breastfeeding-bottle-feeding | Consumer information:<br>Multiple resources related to bottle feeding babies |

| | | |
|---|---|---|
| **Safe sleeping, sudden infant death syndrome** | | |
| Safe sleeping, sudden infant death syndrome | SIDS and Kids<br>https://rednose.org.au/ | Comprehensive guide with multiple resources including information on safe sleeping techniques and bereavement support for SIDS |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/HealthyLiving/sudden-unexpected-death-in-infants-sudi-and-sids | Consumer information:<br>Sudden unexpected death in infants (SUDI and SIDS) |
| **Maternal care** | | |
| General Physiotherapy | The Women's<br>https://thewomens.r.worldssl.net/images/uploads/fact-sheets/Pelvic-floor-exercises-210319.pdf | Consumer information:<br>Physiotherapy advice on improving your recovery after birth |
| | The Women's<br>https://www.thewomens.org.au/patients-visitors/clinics-and-services/gynaecology/continence-prolapse/ | Consumer video: How to tone your pelvic floor |
| | Better Health Channel<br>https://www.betterhealth.vic.gov.au/health/ConditionsAndTreatments/pelvic-floor | Consumer information:<br>Pelvic floor muscles care and exercises |
| Contraception | Family Planning Victoria<br>https://www.fpv.org.au/for-you/contraception | Consumer and health professional information:<br>Information on a range of contraception |
| Parenting | Raising Children Network<br>https://raisingchildren.net.au/ | Consumer information:<br>Comprehensive, practical, expert child health and parenting information and activities covering children aged 0-15 years |
| | Royal Children's Hospital<br>https://www.rch.org.au/cocoon/your-baby/ | Consumer information:<br>Parents interacting with their newborn |
| | Tresillian Parent and Baby Service<br>https://www.tresillian.org.au/about-us/what-we-do/day-services/ | Consumer information:<br>Multiple resources for families experiencing early parenting challenges |

| Safety | | |
|---|---|---|
| General | The Royal Children's Hospital<br>https://www.rch.org.au/search/?addsearch=Safety%20Centre | 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<br>https://www.vicroads.vic.gov.au/safety-and-road-rules/vehicle-safety/child-restraints | Consumer information:<br>Mandatory requirements for appropriate child safety restraints for vehicles, including contact details |
| Nursery and Baby Furniture | The Royal Children's Hospital<br>https://www.rch.org.au/kidsinfo/fact_sheets/Safety_Furniture_tip_over_prevention/ | Consumer information:<br>Nursery and baby furniture safety including associated links and contact details |
| Growing Safely | The Royal Children's Hospital<br>https://www.rch.org.au/kidsinfo/fact_sheets/Safety_Around_the_home/<br>https://www.rch.org.au/kidsinfo/#tab-All | Age specific advice for parents and carers of children from birth to 5 years |

*Mental health and wellbeing and intimate partner violence – see section 13*

# WOMEN'S VOICES

*"Shared Care is the best kept secret"*

*"Thanks! Shared care with my Dr and the hospital was GREAT"*

*" …I could see a doctor I knew, liked and trusted"*

*"Helped set up a great relationship for my whole family with our local GP"*

*"Shared care was excellent, I only waited once for one hour, at the hospital to see a doctor"*

*"It's been great bringing my baby back to the doctor who looked after me when I was pregnant"*

*"My doctor was there throughout the whole thing which will be my baby's doctor"*

*"We speak the same language"*

*"If my GP wasn't able to assist, she sourced the necessary person at the hospital to guide and assist me"*

*"Was great for my GP (and I felt comfortable) to see my progress and if I needed medical attention she was just a Phone: call away"*

*"Had a long term relationship with GP...she has helped me with so many things, including when I had trouble getting pregnant…will be my baby's doctor"*

*"…convenient for my lifestyle"*

*"I have 3 children so not having to go to the hospital all the time was great"*

*"So much more convenient, not having to park and wait at the hospital every visit"*

*"Shared care was a brilliant process and I would recommend it"*

Ref: The Women's Maternity Shared Care Guidelines 2015

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