Government of South Australia

Department of Health

# GP OBSTETRIC SHARED CARE PROTOCOLS

## A STATEWIDE MODEL

**MARCH 2006**

SA Divisions of General Practice Inc

**Health System Management**
**Department of Health**

**SA Divisions of General Practice Inc**
**(Working with Divisions of General Practice in SA)**

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# ACKNOWLEDGMENTS

In a unique partnership in 2002 and 2003, the then Department of Human Services (DHS) worked with the SA Divisions of General Practice Inc (SADI), member Divisions of General Practice and other key clinicians in the public and private sector, to develop a best practice model for GP (General Practitioner) Obstetric Shared Care in South Australia. Inclusive in this model is a uniform guidelines and protocols booklet for GPs and hospitals to assist them to care for women in accordance with current evidence based antenatal practice.

The development and implementation of a statewide program for GP Obstetric Shared Care (GPOS) was one of the key achievements of the Healthy Start Models of Care Work Group, established by DHS to action some of the recommendations of the *Healthy Start Implementation Plan 2000-2011.* The Plan provides a broad framework for the provision of high quality services to women and their families in the areas of Obstetric, Neonatal and Gynaecology services.

Acute Care and Clinical Services in the Health Systems Management Division of the now Department of Health (DH), has responsibility for overseeing the implementation of Healthy Start and for the development of programs and policies within the context of the Implementation Plan.

The review and updating of the March 2003 edition of the GPOSC uniform guidelines and protocols booklet was undertaken in 2005. Many of the original members of the group who developed the first protocol booklet participated in the review process.

Sincere thanks are extended to the following for their dedication to the task:

- Dr Diana Cox — Director, Statewide GP Obstetric Shared Care Program (April 2003 – June 2005)
- Dr Dragica Sosa — GP representative of SADI from Adelaide Northern Division of General Practice
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- Dr Ross Sweet — Senior Consultant, Women's and Babies' Division, WCH
- Dr Jeff Hillen — Staff Specialist, Obstetrics and Gynaecology, Modbury Public Hospital
- Dr Jane Kitchen — GP Representative, Limestone Coast Division of General Practice Inc
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- Ms Christine Andrews — Senior Project Officer, Health Systems Management Division, Department of Health.

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# Table of Contents

# 1. OBSTETRIC SHARED CARE

Women wishing to attend a South Australian public hospital for their care during pregnancy and in childbirth have the option of having shared care, which means most of their obstetric care is managed by their General Practitioner (GP).

Entry into a shared care arrangement will depend on the woman's wishes, the agreement of her GP and the Consultant Obstetrician at the participating public hospital.

While it is not necessary that the GP wishing to conduct shared care holds the DRANZCOG (Diploma of the Royal Australian College of Obstetricians and Gynaecologists), he/she should have adequate knowledge and skill in obstetric care and be familiar with the policies of the participating hospital. GPs undertaking obstetric shared care are expected to meet the accreditation requirements for obstetric shared care.

Obstetric medical indemnity insurance is not required while the pregnancy management is under the overall direction of a public hospital obstetric unit.

**Shared care automatically implies that the responsibility for the health of the woman and her baby is shared.**

**Women must be referred to a Consultant Obstetrician at the participating hospital for consultation before 20 weeks gestation.**

The following guidelines and protocols are to help you as a GP undertaking shared care, and the staff at the participating hospital, to care for women in accordance with current evidence based obstetric practice.

# 2. SOUTH AUSTRALIAN (SA) PREGNANCY RECORD

The aim of the South Australian Pregnancy Record is to improve continuity of care, improve women's participation in their care and to promote early and appropriate use of antenatal services, particularly amongst disadvantaged groups. **The SA Pregnancy Record must be used for all women involved in GP Shared Care.**

The South Australian Department of Health (DH) has decreed that the SA Pregnancy Record is to be **the substantive record of the woman's pregnancy** and **MUST be completed at each visit. Information is to be recorded in the SA Pregnancy Record at every visit by the care provider and must be sufficient to meet the care provider's duty of care in diagnostic and treatment decisions.**

Information need not be duplicated, but clinicians may do so by choice. If duplication is required, it is recommended that the SA Pregnancy Record be photocopied. All original pathology and ultrasound results are to be included in the SA Pregnancy Record.

The SA Pregnancy Record should be given to the woman at her first antenatal visit after confirmation of pregnancy and should be carried by the woman to all appointments during her pregnancy, including those with other health professionals. The woman should be made aware that the SA Pregnancy Record is the **ONLY** complete medical record maintained for her antenatal care and becomes part of the obstetric hospital's medical records.

**As the substantive record, the SA Pregnancy Record will be filed in the medical records at the hospital where the birth occurs**. **The SA Pregnancy Record is not to be destroyed under any circumstances.**

The *Guidelines for the use of the SA Pregnancy Record* can be viewed at www.sadi.org.au under the GP Obstetric Shared Care Program file.

# 3. MEDICAL INDEMNITY RECOMMENDATIONS

The risk of litigation in the practice of obstetrics mainly relates to the conduct of labour.

Recently litigation is also occurring when antenatal screening tests have been omitted, or when serious medical problems or obstetric complications have not been detected during the pregnancy.

**To be indemnified for the practice of obstetric shared care the following guidelines must be adhered to:**

1. Appropriately qualified GPs are indemnified for treatment of pregnant women up to the commencement of labour, or the onset of major antenatal complications if they follow these guidelines.

2. Ensure all appropriate antenatal screening tests are performed:

   (a) **any investigations requested by shared care GPs for any pregnant woman under his/her care must be followed up by the GP concerned;**

   (b) an expectation that these results will be followed up and acted upon by the participating hospital will NOT relieve the GP from the liability to follow up the investigation and/or act upon the results.

3. Unless the treating GP has appropriate obstetric qualifications:

   (a) the woman should be referred to a hospital clinic Consultant Obstetrician for consultation by a Consultant Obstetrician/Obstetric Registrar before 20 weeks gestation;

   (b) if shared care is planned then the Consultant Obstetrician/Obstetric Registrar should see the woman at 36 weeks and again at term, provided that the antenatal course is uneventful. Should any problems occur before 36 weeks, or between 37 and 40 weeks, the Consultant Obstetrician should be advised;

   (c) GPs may continue to see pregnant women for antenatal visits or for intercurrent medical problems, but in shared care the responsibility for the obstetric care and the delivery of the baby must rest with the Consultant Obstetrician or with a GP who has obstetric insurance arrangements (MIA or UMP).

4. In an emergency situation, e.g. haemorrhage or pre-term birth, any doctor irrespective of their cover must render whatever emergency assistance they can, and will be indemnified.

5. If a shared care GP is going to be away from his or her practice, then the woman's care must be handed over to another shared care GP, or she must be referred back to the participating hospital or GP Obstetrician. It is not acceptable for GPs without shared care accreditation cover to provide back up.

6. GPs who are qualified GP Obstetricians and who provide antenatal care which does not comply with the Shared Care Guidelines must be insured under the GP Obstetrics or GP Rural Obstetrics category, irrespective of whether the delivery is being handled publicly or privately.

7. Further details can be obtained from your indemnifier MIA (phone: 8267 5166) or UMP (phone: 8271 8266).

# 4. ACCREDITATION AND CPD (CONTINUING PROFESSIONAL DEVELOPMENT) REQUIREMENTS

To become an accredited Obstetric Shared Care GP in South Australia, a GP must fulfil the requirements listed below.

## Accreditation

As previously stated on page 7, while it is not necessary that the GP wishing to conduct shared care holds the DRANZCOG, he/she should have adequate knowledge and skill in obstetric care. Ideally, this would be previous experience with a 3-6 month placement in obstetrics with an accredited hospital. GPs undertaking obstetric shared care are expected to meet the accreditation requirements for obstetric shared care and be familiar with the policies of the participating hospital.

To be able to practice obstetric shared care GPs must:

1. have had recent obstetric shared care or antenatal hospital experience OR complete a clinical attachment at a hospital antenatal clinic; and
2. attend an Obstetric Shared Care accreditation seminar and complete the associated knowledge questionnaire satisfactorily.

If they have not had experience within the last 5 years they will need to do a Clinical Attachment at an antenatal clinic and attend an Accreditation Seminar.

These seminars are held annually over 6 hours and attendance obtains RACGP (Royal Australian College of General Practitioners) Group 1 points.

## To Maintain Accreditation

The GP must over a three year period either:

1. attend two relevant antenatal or postnatal CPD events (one of which may, in special circumstances, be the OSC Video and questionnaire); or
2. repeat the Accreditation Seminar.

The three year cycle is run in parallel with the triennium set down by the RACGP and the Australian College of Rural and Remote Medicine (ACRRM) for GP Vocational Registration.

Seminars and workshops are held by the OSC Program and are usually of 2 hours duration in the evening on topics relevant to Obstetric Shared Care. GPs who attend other appropriate CPD events may submit a copy of the Program to the CPD Committee for assessment of its relevance for accreditation.

**If the recommended best practice protocols are not followed and patient management problems occur accreditation may be withdrawn.** This is monitored by reviewing patient records. GPs who have not been following protocols will be contacted, either by phone or letter to inform them of their protocol omission. Repeated omissions or serious management problems will be reviewed by the OSC Advisory Committee and may result in withdrawal of accreditation.

GPs who have been previously accredited in South Australia and maintain their CPD requirements can continue to provide care as previously.

**If accreditation is not maintained a GP's name will be removed from the GPOSC Program database, which would preclude participation in Obstetric Shared Care.**

# 5. CONTRAINDICATIONS TO SHARED CARE

Special arrangements can be made for shared care for most women, but it is not recommended for women with the conditions listed under Section 6. However, some GPs may have skills that enable them to manage women with some of these conditions, especially in rural areas. Discussion with a Consultant Obstetrician is recommended to clarify management in these situations.

**In circumstances where a woman has one of the listed complications and requests shared care, please make this clear in your referral letter to the Consultant Obstetrician involved.**

The basic philosophy in this approach is that these women may have ongoing or future health needs for which the GP is responsible. It may not necessarily be appropriate to interrupt that process in pregnancy and in some circumstances it may be better to establish a modified system of shared obstetric care between the GP and the Consultant Obstetrician.

# 6. RELATIVE CONTRAINDICATIONS TO SHARED CARE

## Conditions identified before or at the inception of pregnancy:

### From general history

- significant endocrine disease including diabetes mellitus
- significant cardiac disease
- renal disease
- significant hypertension
- severe respiratory disease
- neurological disease including epilepsy on medication
- thrombo-embolic disorders or antiphospholipid syndrome
- illicit drug use or treatment related to such use
- haematological disorders e.g. haemoglobinopathy, thrombocytopenia, significant anaemia
- significant psychiatric disorders
- significant gastro-intestinal disease

### From obstetric history

- severe pre-eclampsia
- perinatal death
- placental abruption
- preterm births at less than 34 weeks
- intra-uterine growth restriction
- recurrent pregnancy loss
- suspected cervical incompetence

### From early pregnancy assessment

- Rh or other blood group antibodies
- anaemia
- multiple pregnancy
- haemoglobinopathy

**Conditions arising during pregnancy:**

**Include any of the above and:**

- antepartum haemorrhage
- fetal abnormality on ultrasound
- suspected intra-uterine growth restriction
- recurrent urinary tract infection
- gestational diabetes
- deep vein thrombosis or embolism
- pruritus of pregnancy
- placenta praevia
- non-cephalic presentation after 36 weeks
- gestational hypertension
- pre-eclampsia
- threatened preterm labour
- cholestasis of pregnancy

# 7. BOOKING AT THE PARTICIPATING HOSPITAL

To participate in the Shared Care Program with a participating South Australian public hospital the woman needs to be seen at the hospital clinic before 20 weeks.

Each participating hospital's booking procedure for obstetric shared care is outlined in Section 11 Appendices or phone the Midwife Coordinator (refer 16.1).

For women more advanced in their pregnancy, with obstetric complications, or who wish to have counselling about amniocentesis/chorionic villus sampling (CVS) the GP should contact the obstetric shared care midwife coordinator to discuss the issues and book the earliest possible appointment at the participating hospital. This particularly applies to rural practice especially if the patient is high risk or of Aboriginal or Torres Strait Islander background.

At the first hospital clinic visit, the woman should bring a referral letter from her GP highlighting any special risk factors (or a copy of the faxed letter) and her SA Pregnancy Record which has been completed for all GP visits and includes copies of all test results.

# 8. SHARED CARE WITH A HOSPITAL BIRTH CENTRE

Women who choose the option of Birth Centre care are not precluded from full participation in obstetric shared care with their GP. Refer to the appendix for the participating hospitals guidelines for booking with the Birth Centre.

At Flinders Medical Centre and the Lyell McEwin Hospital there are Birth Centres and OSC patients may access these facilities by 'sharing care' with the Birth Centre midwives**. If a woman wishes to have shared care and use the Birth Centre this should be discussed at the first hospital clinic visit.** If assessed as suitable, subsequent Birth Centre arrangements will be made.

Although the shared care will be provided by the woman's GP and Birth Centre midwives, the woman will be seen by an obstetrician at 36 weeks. This is part of the indemnity requirements for GPs providing shared care when the woman wishes to birth in a Birth Centre.

# 9. OBSTETRIC SHARED CARE VISIT SCHEDULE

| Weeks | Antenatal Visits – GP and Participating Hospital |
|---|---|
| **Between 6 – 12** | **Confirm pregnancy – GP**<br>• Discuss options of care<br>• Commence use of South Australian Pregnancy Record<br>• Booking bloods/investigations – send copies to participating hospital antenatal clinic<br>– discuss prophylaxis with Rh D immunoglobulin (Anti-D) for Rh negative women at 28 and 34 weeks<br>• Counselling for Down syndrome and other genetic conditions. Discuss options: – 1st or 2nd Trimester screening ;CVS, Amnio with follow-up as appropriate (refer to 16.6 and PPGs)<br>- CVS appointment 10 − 12 weeks<br>- 1st trimester screening 11 – 13 weeks 6 days<br>• Arrange booking appt at participating hospital before 20 weeks<br>• Book morphology US appointment |
| **Between 12 − 20**<br><br>**14 − 20**<br>**15 − 20**<br>**19 − 20** | **Antenatal visit with GP 4 weekly if required**<br><br>2nd trimester screening for Down, NTDs (refer to 16.6 and PPGs)<br>Amniocentesis 15 − 20 weeks<br>Morphology U/S |
| **Before 20** | **A/N booking visit participating hospital clinic**(allow up to 3 hours) with **Consultant/Registrar**<br>• Book appropriate birthing mode of care<br>• Discuss breastfeeding<br>• Book antenatal classes, 36 and 40 week hospital visit |
| **Between 24 −34**<br><br>**At 28 weeks**<br><br><br>**At 34 weeks** | **A/N visit with GP**<br>**(2 – 4 weekly. Individualise according to patient need)**<br><br>• FBE/OGCT<br>• Rh antibodies + Rh prophylaxis for Rh negative women. Send copy of results to participating hospital antenatal clinic.<br><br>**GP visit** - Anti-D prophylaxis for Rh negative women |
| **36** | A/N visit **participating hospital clinic** with **Consultant/Registrar**<br>• Discuss birthing plan<br>• LVS for Group B strep. |
| **37 − 39** | A/N visit **GP** (1 – 2 weekly as required) |
| **40 − 41** | A/N visit **participating hospital clinic** with **Consultant/Registrar** |
| **Total participating hospital clinic visits** | **3 − 4** |
| **Total GP visits** | **7 − 8** |

**Postnatal**

**2 weeks:** **GP visit for Mother and baby (see Section 19 for Check Forms)**

**6 weeks:** **GP visit for Mother and baby (see Section 19 for Check Forms)**

**Key:**

**Hospital Clinic Visits** **GP Visit**

# 10. FIRST APPOINTMENT

This is ideally with the woman's GP who commences the South Australian (SA) Pregnancy Record, arranges the date of the first hospital clinic appointment (consider dating ultrasound if necessary) and booking blood tests (copies of results addressed to the antenatal clinic at the participating hospital).

Explain shared care protocols, including timing and nature of visits to the participating hospital and GP. Discuss breastfeeding.

## History

- Personal details and history are recorded in the SA Pregnancy Record.

## Examination

- Perform a general examination if necessary, including heart, lungs and breasts and record the findings in the SA Pregnancy Record.
- Blood pressure (measured on the right arm with the woman seated, with appropriate size cuff i.e. large cuff when arm circumference is > 32 cms).
- A cervical smear should be done if indicated by best practice guidelines.
- Weight (kgs) and height (cms) to be measured, BMI to be calculated and recorded at the first visit.

## Booking Tests

The GP ordering the booking tests must ensure that copies of the woman's results are available at the participating hospital at the time of the first hospital visit.

**Booking Investigations (with appropriate counselling and consent) are:**

- Complete blood picture
- Blood group and antibody screen
- Rubella titre
- Syphilis serology
- Hepatitis B screen
- Hepatitis C screen
- HIV test
- Mid Stream Sample of Urine (MSSU)

There are some tests that may be offered to specific groups:

- Haemoglobin electrophoresis
- Ferritin/Iron studies

**All women must be offered (with appropriate counselling) screening for chromosomal anomalies – either nuchal translucency and biochemistry between 11 and 13 weeks 6 days, or biochemistry at 14-20 weeks 6 days**. The ultrasound scan is performed at all obstetric hospitals except WCH, and through private radiology providers, whilst the blood test is through SAMSAS, who calculates the risk of chromosomal anomalies for that woman.

**GPs need to have read and be familiar with the section on "Risks and screening for Down Syndrome" and "Maternal Age and Risk".**

For high risk women or those with a family history of genetic disorder, discuss CVS (10-12 weeks) and Amniocentesis (15-20 weeks). Women aged 35 years or more may opt for one of the diagnostic tests and forgo further screening. Refer to the participating hospital for counselling.

### Medications in pregnancy

If the woman is on long term medication, advice about use in pregnancy can be obtained form the Drug Information centre at the WCH Pharmacy (Phone 8161 7222 Monday- Friday 9 am – 5 pm).

### Supplements in pregnancy

- Calcium, vitamins and fluoride are not usually necessary.
- Supplemental iron will only be required if haemoglobin is below 100g/L.
- Folic acid 0.5 mg should be taken at least one month prior to conception and until 12 weeks gestation. If the woman is at increased risk of neural tube defect, on antiepileptic drugs or has hyperhomocysteinaemia, the daily dose should be 5 mg.

### Other

Handouts for women on listeria, healthy eating and smoking in pregnancy are available in Section 17.

## 11. SUBSEQUENT ANTENATAL APPOINTMENTS

### Refer to Section 9. Obstetric Shared Care Visit Schedule

At each visit, the following **must be documented in the SA Pregnancy Record**:

- gestation in completed weeks;
- symphysio-fundal height in centimetres (see Section 16.4), also recorded on graph in SA Pregnancy Record;
- blood pressure (measured on the right arm with the woman seated, with appropriate size cuff i.e. large cuff when arm circumference is > 32 cms) at cessation of Korotkoff IV;
- presentation and descent (fifths of fetal head palpable) after 30 weeks gestation;
- fetal heart and fetal movements;
- laboratory test results.

Refer the woman back to the Hospital Clinic if any abnormalities of blood pressure, growth or routine tests are identified.

### Depression

**The recognition of depression in the antenatal period is important** as it may require treatment during the pregnancy and is a strong predictor for post partum depression. It is appropriate to use the Edinburgh Postnatal Depression Scale to assess antenatal depression (see Section 16.5).

Each public hospital obstetric unit has mental health support units (see Section18) for referring the woman to if this is required. GPs can also refer patients to a psychiatrist for a **one-off psychiatric assessment and management plan (Item 291) if they wish to manage the patient in their practice.** To arrange an appointment for a patient, call 8172 2050 (9am – 5pm, Monday to Friday).

**This service, the GP-PASA 291** is a joint initiative of RANZCP and SADI. The Department of Health funds the assessments provided by private Adelaide psychiatrists. **For further information on the GP-PASA 291 Protocol**, contact the SADI Program Development Officer, *GP Access to Psychiatrists,* on 8271 8988.

### Visits

**19-20 Weeks**

- Morphology ultrasound (usually at 18 weeks).
- Calculate final expected date of birth.

**Between 24-34 Weeks**

- 2-4 weekly visits according to individual woman's needs.

**26-30 Weeks**

- FBE
- Oral glucose challenge test (50 gm sugar load; followed I hour later by a venous sample sent to a laboratory for analysis).
- Rh antibodies for rhesus negative women, prior to administration of prophylactic Anti-D (see Section 14).

**34-36 Weeks**

- Second dose of prophylactic Anti-D to be given to Rhesus negative women at 34 weeks gestation.
- Visit with Consultant Obstetrician is required at 36 weeks for women having Obstetric Shared Care.
- At 36 weeks a Low Vaginal Swab for Group B Streptococcus, if positive the woman is treated with antibiotics in labour (there is no indication for treating antenatally).

**37-39 Weeks**

- 1-2 weekly visits according to individual woman's needs.

**40-41 weeks**

- Visit with Consultant Obstetrician-Discuss labour and induction of labour.

**NB:** Any abnormal results of other tests thought necessary by the GP should be either discussed with the participating hospital, or the woman should be referred there for further action.

## 12. HOW TO MANAGE ABNORMAL RESULTS

**Any investigations requested by a GP for any pregnant woman under his/her care must be followed up by the GP concerned. It is the GPs responsibility to follow up all abnormal results irrespective of whether a copy has been sent to the hospital.**

### Complete Blood Picture

Where the haemoglobin is 100g/L or less (particularly if red cell abnormalities are present) fasting iron, folate and B12 studies are recommended.

Testing for thalassaemia (haemoglobin electrophoresis) should also be considered where appropriate. Low white cell or platelet counts should prompt discussion with, and/or referral to the participating hospital.

### Blood Group and Antibody Screen

Any positive test for antibody levels should prompt immediate referral to the participating hospital.

**Rubella Titre**
A "non immune" level should prompt a note to discuss immunisation with the woman postnatally. **Under no circumstances should immunisation be given in pregnancy.** Contact with young children with rubella should be avoided.

**Syphilis Serology**

A positive result should prompt referral to the participating hospital.

**Hepatitis B and C and HIV tests**

A positive result in any of these tests should prompt immediate referral to the infectious diseases team at the participating hospital.

**Maternal Serum Screening**

Abnormal maternal serum screening results must be referred urgently to the participating hospital for counselling with a view to offering CVS or Amniocentesis (refer to Section 16.6).

**Morphology Ultrasound**

Any abnormality should prompt discussion with/referral to the participating hospital.

**Oral Glucose Challenge Test**

An elevated level (7.8 or above) should prompt immediate referral for a 2 hours glucose tolerance test (GTT).

An elevated result on the 2 hours GTT should prompt immediate referral to the midwife coordinators at the participating hospital, an obstetrician or a physician. A copy of the result is to be sent to the participating antenatal clinic.

Diabetes education and monitoring should be arranged.

# 13. HOW TO MANAGE ABNORMAL FINDINGS/SYMPTOMS

**Intrauterine Growth Restriction (IUGR)**

Measure Symphysial-fundal height (SFH), plot on Growth Chart in the South Australian Pregnancy Record. If SFH <10th percentile or serial SFH measurements are flattening (see Section 16.4), then refer the woman for an ultrasound and request:

- fetal size/growth compared with previous ultrasound (BPD, abdominal circumference);
- Doppler of umbilical artery flow;
- amniotic fluid index (ask for normal range).

If any Parameters are abnormal, contact Obstetric Registrar/Consultant for advice or refer to the hospital for urgent assessment.

**Reduced Fetal Movements**

Check fundal height and fetal heart (with Sonicaid if available). If abnormal, refer urgently to the participating hospital for assessment.

If normal, get the patient to monitor fetal movements (Kick Chart). Count every fetal movement, until 10. If <10 in 12 hours patient is to attend the hospital for an urgent Cardiotocogram (CTG).

If the GP or woman is uncomfortable about the situation, or there is a previous history of fetal death in utero, or a stillbirth, refer to the hospital for a CTG.

**Hypertension**

Definition: Systolic BP is greater than or equal to 140 mm Hg and/or Diastolic BP is greater than or equal to 90 mm Hg.

Chronic Hypertension is diagnosed prior to pregnancy or before 20 weeks.

Gestational Hypertension is diagnosed after 20 weeks (without pre-existing hypertension).

Pre-eclampsia is gestational hypertension associated with any sign of a multi-system disorder including proteinuria and one of the following:

- persistent cerebral symptoms (H/A, visual disturbances, increased reflexes);
- epigastric or RUQ pain;
- IUGR;
- thrombocytopenia or abnormal LFTs.

**Management of Hypertension**

- if BP is elevated, review within a few days;
- if persistent, perform the following tests - MSSU for proteinuria on dipstick and send for "Protein/Creatinine Ratio"; bloods for CBP, U/E, urate, LFTs, with copy of results provided to the hospital. Educate patient re signs/symptoms of pre-eclampsia (as stated above);
- discuss with Obstetric Registrar/Consultant if persistent elevation of BP or any suggestion of pre-eclampsia or IUGR, or refer to the participating hospital.

**Vaginal Bleeding**

Minor bleeding:

- review ultrasound result for placental site (clear of os);
- speculum view of cervix (? normal smear within 2 years, if not repeat using spatula only);
- if normal advise avoiding strenuous exercise and intercourse for 1 week.

Moderate or repeated bleeding:

- as above and refer for ultrasound;
- if normal advice as above;
- if abnormal then discuss result with Obstetrician.

Severe Bleeding:

- IV access and urgent transfer to hospital.

**Remember if patient is Rh negative she requires Anti-D (refer to Section 14).**

**Abnormal Presentation**

If > 36 weeks and suspected breech or transverse lie, refer to an Obstetrician for an assessment as soon as possible.

# 14. CARE FOR WOMEN WHO ARE Rh D NEGATIVE

Pregnant women who are Rh D negative fall into two categories: those with and those without Anti-D antibodies. **Women with Rh D antibodies are not suitable for shared care.**

The following information therefore relates only to **women who are Rh D negative and have no preformed antibodies.**

## Testing for Anti-D antibodies:

- All women should be tested for blood group antibodies at the first antenatal visit.
- Women who are Rh negative and had no Rh D antibodies in early pregnancy should be tested again for the presence of antibodies at the end of the second trimester of pregnancy.
- Ideally testing should precede administration of Anti-D. However, if both are done at the same clinic appointment, the sequence in which they occur does not matter. It takes some time (2-4 hours) before the Anti-D that has been injected can be detected in the circulation.
- If antibody testing was done at 26 or 27 weeks, it need not be repeated before Anti-D administration at 28 weeks.
- Further testing later in pregnancy (after administration of Anti-D) is superfluous because the test cannot distinguish between endogenous and administered Anti-D.

## Anticipating prophylactic Anti-D administration in pregnancy

- All women who are Rh D negative and have no preformed Anti-D antibodies should be informed about the need to prevent Rh D sensitisation. This includes:
  - Anti-D administration if a sensitising event occurs in pregnancy;
  - routine prophylaxis at 28 and 34 weeks gestation;
  - further prophylaxis after birth if the baby is not Rh D negative.
- Recurrent vaginal bleeding requires discussion with/or referral to the participating hospital before administering doses of Anti-D.
- Informed consent for prophylaxis should be obtained early in pregnancy (as soon as the Rh D status has been determined). This is to cover any and all occasions on which Anti-D may become indicated during pregnancy.
- The woman's consent for prophylaxis must be documented in her South Australian Pregnancy Record.

## Notes in aid of obtaining informed consent

Ensure that the woman understands what Rh D sensitisation means and the consequences it may have, if not necessarily for this, at least for future pregnancies.

- Provide the woman with an information leaflet and ensure that she reads and understands it.
- Antenatal administration of Anti-D to all Rh negative women is recommended by the NHMRC. Administration of Anti-D to all Rh negative women who give birth to a Rh positive baby has been practiced for many years in Australia.
- Anti-D is a blood product. As it is made from human blood, there is a theoretical risk of transmission of blood borne diseases. However, the risk of transmission is extremely small because of the careful selection of blood donors and because of the way in which Anti-D is produced from the blood.
- More than 1½ million doses of Anti-D have been given in Australia without a single viral transmission thus far.

- The risk of HIV transmission, for example, is currently estimated to be less than 1 in 5 million Anti-D ampoules administered. Thus far, HIV has never been transmitted through Anti-D injections.
- One case has been reported of transmission of Hepatitis C attributed to Anti-D administration. This occurred overseas.
- Jehovah's Witnesses should be informed that, although Anti-D is made from human blood, it does not contain blood elements and, therefore, should not be against their religious beliefs. If in doubt, they should consult with their religious leaders.

## Anti-D prophylaxis for potentially sensitising events

- Potentially sensitising events are defined as any situation in which there is an increased likelihood of fetal red blood cells entering the maternal circulation. These include:
    - any uterine bleeding in pregnancy ranging from (threatened) miscarriage to antepartum haemorrhage
    - any abdominal trauma in pregnancy
    - any uterine or intra-uterine intervention (such as external cephalic version, amniocentesis, etc…). However, the responsibility for prophylaxis rests with the hospital at which these interventions are performed.
- If a sensitising event occurs before 13 weeks gestation the recommended prophylaxis consists of 250 IU (international units) CSL Rh D immunoglobulin.
- If a sensitising event occurs at or after 13 weeks gestation the recommended prophylaxis consists of 625 IU (international units) CSL Rh D immunoglobulin.
- If a woman has a sensitizing event after routine prophylaxis at 28 weeks, she should have a dose of Anti-D regardless of when the prophylactic dose was administered.

## Routine prophylaxis at 28 and 34 weeks (with or without previous sensitising events)

- Rh D negative women without preformed Anti-D antibodies should receive 625 IU CSL Rh D immunoglobulin at 28 weeks (after or simultaneously testing for preformed Rh D antibodies) and again at 34 weeks.
- Anti-D can be administered before the result of the test for endogenous Anti-D at 28 weeks becomes available provided that the woman had no Anti-D antibodies at the beginning of pregnancy.
- Basic principles about the timing of the routine prophylaxis are:
    1. the Anti-D administration will provide cover for a minimum of 6 weeks;
    2. the risk of sensitisation increases as pregnancy progresses.
- Thus, if someone has received Anti-D slightly before 28 weeks, the 34 weeks injection should still be given as planned at 34 weeks.
- If someone has missed out on receiving Anti-D at 28 weeks (for example because they did not attend) Anti-D should be given at the next visit (better late than never). In that case, the second injection should be planned 6 weeks later, provided that the woman is still pregnant then.
- If a woman has received Anti-D for a potentially sensitising event, e.g. antepartum haemorrhage or trauma, before 28 weeks, she should still receive Anti-D at 28 and 34 weeks as scheduled unless the Anti-D for the sensitizing event was administered less than 1 week before the prophylactic dose being due.

## Administration of Anti-D

- Rh D immunoglobulin should be given slowly by deep intramuscular injection, using a 20 gauge needle.

- Administration of Anti-D must be documented in the woman's South Australian Pregnancy Record.
- If the Rh D status of the woman is known at the time of her first visit at the hospital, the midwife coordinator at the hospital will ensure that the shared care GP receives the Anti-D for routine administration at 28 and 34 weeks provided that the woman has given her consent to the prophylaxis.

### Summary of dose recommendations for Rh D negative women

| | Dose of CSL Rh D immunoglobulin |
|---|---|
| ***Sensitising events*** | |
| o before 13 weeks | **250 IU** |
| o at or after 13 weeks | **625 IU** |
| ***Routine prophylaxis*** | |
| o at 28 and at 34 weeks | **625 IU** |

## 15. BIRTH AND POSTNATAL CARE

The care of the woman during labour and birth will be the responsibility of the obstetric team at the participating hospital.

At discharge, a summary of the pregnancy and birth outcome will be sent to the GP. Some hospitals perform this task electronically via OACIS so please ensure your current details are available and accurate with OACIS.

Each participating hospital has support for breastfeeding difficulties (refer to the Appendix).

A postnatal visit for mother and baby is advised at 2 weeks and 6 weeks. Some women may be required to return to the participating hospital if they have experienced particular problems during pregnancy or childbirth. This appointment will be made for the woman prior to discharge.

During the postnatal period, the GP may identify problems that require referral back to the participating hospital or to a Paediatrician.

### POSTNATAL TWO WEEK VISIT (See Section 19 for Check Form)

**MOTHER**

Opportunity for early contact to check how she is coping, sleeping, her relationship with partner. What other supports/help are available.

Apply the Edinburgh Postnatal Depression Scale if necessary (see Section 16.5).

**Review:**

- BP if hypertension during pregnancy
- lochia
- perineum
- abdominal wound if LSCS
- feeding - breastfeeding?

- contraception

**Referral:**
- community health centre
- lactation consultant
- Australian Breastfeeding Association
- social worker

**BABY**

**Review:**
- weight
- feeding - breast/bottle
- sleeping patterns
- cardiovascular examination
- signs of jaundice
- observe mother's handling technique and bonding
- SIDS advice

**Referral:**
- Children, Youth & Women's Health Service (Child & Youth Health)
- Paediatrician

## POST NATAL SIX WEEK VISIT (See Section 19 for Check Form)

**MOTHER**

Review as for two week visit and ask about intercourse, incontinence (urinary or faecal).

**Examination:**
- BP
- breasts, nipples
- abdomen − fundus involuted? LSCS scar
- perineum, V/E Uterus involuted? Pap smear if due

Follow-up on pregnancy complications e.g. gestational diabetes, hypertension.

**BABY**

As for two week visit and including the following.

**Examination:**
- appearance- ? well nourished ? jaundice
- weight, length, head circumference - plot on growth charts
- fontanelle
- eyes – tracking (red light reflex)
- facial symmetry- smiling
- hearing
- cardiovascular
- femoral pulses
- hip testing

- testes - fully descended?
- reflexes

**Discuss:**

- bowel habits
- immunisation
- cot safety
- SIDS awareness

# 16. FURTHER INFORMATION FOR DOCTORS

**16.1 Obstetric Shared Care Midwife Coordinators**

**16.2 Patient Assistance Transport Scheme (PATS)**

**16.3 Infections**

**16.4 Guidelines for Measuring Symphysio-Fundal Height**

**16.5 Edinburgh Postnatal Depression Scale (EPDS)**

**16.6 Risks and Screening for Down Syndrome**

**16.7 Maternal Age and Risk**

**16.8 Breastfeeding**

**16.9 Smoking during Pregnancy**

**16.10 Commonly Asked Questions**

## 16.1 OBSTETRIC SHARED CARE MIDWIFE COORDINATORS

The statewide GPOSC Program has a position of Midwife Coordinator in each of the five metropolitan public hospitals. The key responsibilities of the Midwife Coordinator are to coordinate and direct antenatal/postnatal activities, ensuring that professional standards of practice provided by the Program are maintained.

Each Midwife Coordinator is a Registered Midwife who through experience and education is an expert clinical practitioner in antenatal/postnatal management.

The Midwife Coordinator also identifies and improves the liaison role between GPs, the participating hospital and health workers involved in the care of antenatal/postnatal women and their infants, ensuring that the management of clinical activities is effective, professional and caring.

The Midwife Coordinator acts as an advocate, both for women involved in the GP Obstetric Shared Care Program and for the GP. She is also available to rural GPs who require information even if the woman is not giving birth at a metropolitan hospital.

**The Midwife Coordinator should be the first point of contact for any clinical or administrative problems unless the matter is urgent, in which case the Obstetric Registrar or Consultant Obstetrician on call should be contacted.**

An accreditation database of GPs for each metropolitan Division is maintained by the GPOSC Secretariat based at SADI, and is available to the Midwife Coordinators.

**GPOSC Midwife Coordinators can be contacted only between 8:00 am to 4:30 pm daily.**

| | | |
|---|---|---|
| Women's and Children's Hospital: | 8161 7000 | Pager 4259 |
| Flinders Medical Centre: | 8204 4650 | Pager 20109 |
| Lyell McEwin Hospital | 8182 9000 | Pager 6470 |
| Modbury Hospital | 8161 2227 | |
| The Queen Elizabeth Hospital | 8222 6000 | Pager 6470 |

## 16.2 PATIENT ASSISTANCE TRANSPORT SCHEME (PATS)

The Patient Assistance Transport Scheme is an important access and equity program administered by Country Health in the South Australian Department of Health. The Scheme particularly considers those in greatest need and is administered with sensitivity to meet the financial and medical circumstances of people seeking assistance.

Addressing the needs of Aboriginal and Torres Strait Islanders is seen as a specific priority.

Through PATS, eligible patients and their escort may be reimbursed for **some** travel and accommodation costs. This applies when South Australian families need to travel more than 100 kilometers (each way) to receive **specialist** medical treatment not available at a closer centre.

People who are eligible for reimbursement will need to pay the first $30 of any travel costs and the cost of the first night's accommodation. They may also need to pay the cost of subsequent accommodation, depending on the cost of that accommodation.

Social workers at the metropolitan public obstetric hospitals are able to help patients and their families with accommodation options and accessing the PATS. The telephone numbers for the Social Work departments of each hospital are listed in Section 17 Appendices.

Women who live more than a two hour drive from their obstetric hospital should be advised to stay close to the hospital from 36 weeks of pregnancy.

**NB: The GP must sign the PATS form before the woman travels to see her specialist.**

**<u>Adelaide PATS Office</u> (includes advice about accommodation and support services)**

Health Consumer Support Service
Department of Health
11 Hindmarsh Square
ADELAIDE SA 500000

(08) 8226 6550
Free call (during office hours) on 1800 188 115

**Application forms are also available from regional PATS offices (see below for details), or from local hospitals:**

| | |
|---|---|
| Mount Gambier & District Health Services | (08) 8721 1551 |
| Port Augusta Hospital & Regional Health Service | (08) 8648 5500 |
| Riverland Regional Health Service | (08) 8580 2400 |
| Whyalla Hospital & Health Services | (08) 8648 8190 |

## 16.3 INFECTIONS

Pregnancy may be complicated by any of the common infections.

There are however infections which can impact adversely on fetal well-being. Discussion with a Consultant Obstetrician is required where these infections are suspected or there is a history of exposure.

### Infections include:

- Coxsackie (Hand, Foot and Mouth Disease)
- Cytomegalovirus
- Epstein-Barr virus (Glandular Fever)
- Genital herpes simplex (HSV)
- Hepatitis B
- HIV/AIDS
- Listeria (see 17.4)
- Measles and measles contacts
- Mycobacterium tuberculosis
- Parasitic diseases
- Parvovirus (Slapped Cheek syndrome)
- Rubella infection
- Toxoplasmosis
- Varicella–zoster (Chicken Pox)

**For more information refer to the South Australian Perinatal Practice Guidelines "*Section 3 Infection in Pregnancy*" at www.health.sa.gov.au/ppp**

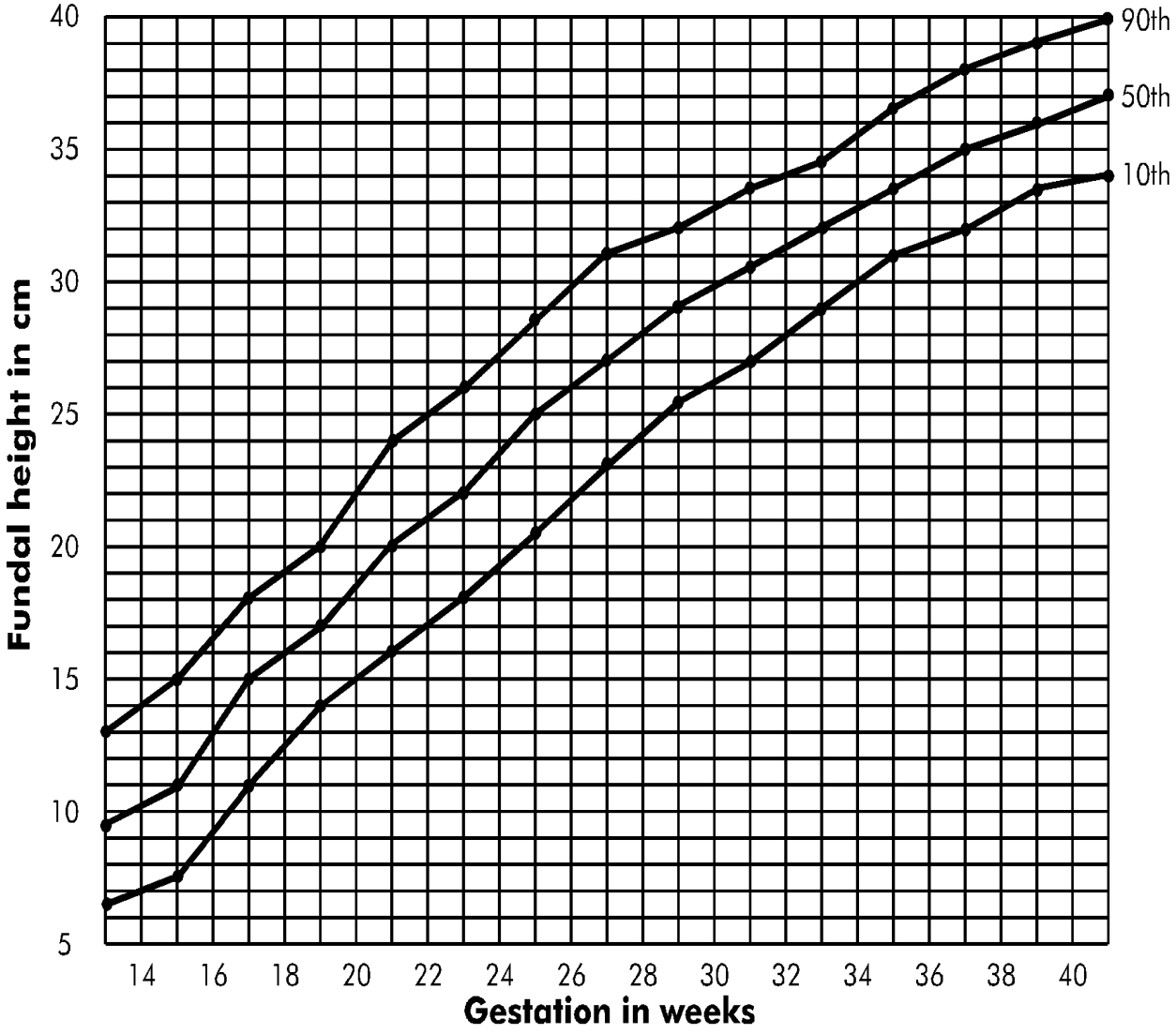
## 16.4 GUIDELINES FOR MEASURING SYMPHYSIO-FUNDAL HEIGHT

1. The woman should be lying in the supine position with her head supported on a single pillow. The couch should be flat.

2. Measure the highest point of the fundus to the top of the symphysis pubis. Begin measuring from the fundus since this is the more variable end point.

3. Measure with the tape scale facing downwards so that you are less influenced by previous results.

4. Measurements should be recorded to the nearest centimetre.




**Symphysio-Fundal Chart**

Taylor P, Coulthard AC, Robinson JS. Symphsio-fundal height from 12 weeks' gestation. Aust NZ J Obstet Gynaecol 1984; 24 (3):189-91

## 16.5 EDINBURGH POSTNATAL DEPRESSION SCALE (EPDS)

**Instructions for users**

- The mother is asked to underline which comes closest to how she has been feeling in the previous seven days.
- All 10 items must be completed.
- Care should be taken to avoid the possibility of the mother discussing her answers with others.
- The mother should complete the scale herself unless she has limited English or has difficulty reading.

**How are you feeling?**

As you have recently had a baby, we would like to know how you are feeling now. Please **underline** the answer which comes closest to how you have felt in the past seven days, not just how you feel today.

Here is an example, already completed:

I have felt happy
Yes, most of the time
Yes, some of the time
No, not very often
No, not all

**In the past seven days**

1. **I have been able to laugh and see the funny side of things:**
   As much as I always could
   Not quite so much now
   Definitely not so much now
   Not at all

2. **I have looked forward with enjoyment to things:**
   As much as I ever did
   Rather less than I used to
   Definitely not so much now
   Hardly at all

3. **I have blamed myself unnecessarily when things went wrong ***
   Yes most of the time
   Yes, some of the time
   Not very often
   No, never

4. **I have felt worried and anxious for no good reason:**
   No, not at all
   Hardly ever
   Yes sometimes
   Yes, very often

5. **I have felt scared or panicky for no good reason ***
   Yes, quite a lot
   Yes, sometimes
   No, not much
   No, not at all

6. **Things have been getting on top of me ***
   Yes, most of the time I haven't been able to cope at all
   Yes, sometimes I haven't been coping as well as usual
   No, most of the time I have coped quite well
   No, I have been coping as well as ever

7. **I have been so unhappy that I have had difficulty sleeping ***
   Yes, most of the time
   Yes, sometimes
   Not very often
   No, not at all

8. **I have felt sad or miserable ***
   Yes, most of the time
   Yes, quite often
   Not very often
   No, not at all

9. **I have been so unhappy that I have been crying ***
   Yes, most of the time
   Yes quite often
   Only occasionally
   No, never

10. **The thought of harming myself has occurred to me ***
    Yes, quite often
    Sometimes
    Hardly ever
    Never

**Scoring**

Response categories: 0, 1, 2, and 3 according to increased severity of the symptom.

Items marked with an asterisk * are reverse scored (i.e. 3, 2, 1, 0). The total score is calculated by adding together the scores of each of the 10 items.

Mothers who score above 12 are likely to be suffering from a depressive illness of varying severity. The EPDS should not override clinical judgement. A careful clinical assessment should be carried out to confirm the diagnosis. The scale indicates how the mother has felt during the previous week and in doubtful cases, it may be usually repeated after two weeks. The scale will not detect mothers with anxiety neuroses, phobias or personality disorders.

## 16.6 RISKS AND SCREENING FOR DOWN SYNDROME

**What is screening?**

Screening is a process of identifying a group at risk within a population that would otherwise be at overall low risk of having a disease or condition. Most screening programmes target the 5% of a population at the highest risk of that condition. In that highest risk group, a diagnostic test can then be offered that will identify with a high degree of certainty whether the condition that was screened for is present or not. This means that 1 in 20 people offered a screening test will have a high risk result. The people in this group will then be faced with a decision of whether or not to have a subsequent diagnostic test.

If the diagnostic test has potential complications (such as that of miscarriage with CVS or amniocentesis), the anxiety generated from being placed in that high risk group can be quite significant. If the test is then not undertaken (perhaps for fear of miscarriage), this anxiety may continue for the remainder of the pregnancy, until the birth of a normal baby reassures the parents, or the birth of an abnormal baby confirms their worst fears. For this reason, offering a screening test should always be accompanied by an explanation of the 1 in 20 likelihood of a high risk result (and that it will most probably be a "false positive"), and of the decisions for further testing that may need to be made if the screening test indicates a high risk.

**Screening tests available for Down syndrome**

**1. First trimester screening**

This test involves using a nomogram that combines the ultrasonographic measurement of nuchal translucency (essentially lymphatic fluid that has accumulated behind the neck of the fetus), with the blood measurement of two hormones [Pregnancy Associated Plasma Protein-A (PAPP-A) and Beta Human Chorionic Gonadotropin (ß-HCG)] combined with the risk associated with the woman's age.

If age alone is used as a screening test, identifying the 5% group at highest risk will have the potential to diagnose about 40% of babies with Down syndrome. Use of the biochemical tests (blood test) alone will have the same potential to diagnose Down syndrome (about 40%). Using nuchal translucency alone (again for a 5% false positive) will potentially diagnose about 60% of Down syndrome fetuses. Combining biochemical tests, nuchal translucency and age, as in the first trimester screen, will detect about 85% of babies with Down syndrome among the 5% of women at highest risk (ie. the test has an 85% sensitivity).

The first trimester screen is offered from 11 weeks gestation to 13 weeks 6 days (or a crown rump length of 45 to 84 mm). It is essential that the person doing the ultrasound screening is properly trained in the technique, since the validity of the measurement depends on the use of very precise measuring techniques. Therefore, it is very important that the ultrasound is performed by an accredited technician (sonographer, radiologist or obstetrician).

A high risk result on first trimester screening means that the woman belongs to the 5% of women at highest risk and this equates to a risk of Down syndrome of at least 1 in 300. The early screening allows the woman to have a chorion villus sample (CVS) if she chooses. However CVS is performed between 10 and 12 weeks and often, by the time the First trimester screening result is available the woman is >12 weeks pregnant. An earlier diagnosis will either reassure the woman that the fetus does not have an aneuploidy, or it will diagnose an aneuploidy sufficiently early to permit vacuum aspiration if the woman chooses to terminate the pregnancy.

Chorion villus biopsy carries a risk of miscarriage that is about 0.5 to 1% above the background risk. As the risk of CVS is higher than that of amniocentesis, the higher risk must be weighed against the perceived benefits of earlier diagnosis.

For some women termination of pregnancy is not an acceptable option. These women may still choose to undergo invasive testing either to obtain reassurance that the baby does not have an aneuploidy or to prepare for the birth of a baby with an aneuploidy. Very occasionally adoption may be sought. It is, therefore, inappropriate to offer prenatal diagnosis only on condition that the woman would opt to terminate the pregnancy if an abnormality is detected.

**2. Second trimester screening**

This screening test is performed between 15 and 20 weeks. It involves using a nomogram that combines the risk associated with the mothers age with the levels of three hormones [alpha-fetoprotein (AFP), Beta-Human Chorionic Gonadotrophin (ß-HCG), and oestriol ($E_3$)] in the maternal circulation. For a 5% false positive rate, the test offers a sensitivity of about 75%. This does not necessarily mean that it is an inferior test to the first trimester screen (with a sensitivity of 85%), because about 10% of pregnancies with a Down syndrome fetus will end in spontaneous miscarriage before the time of the second trimester screening.

If the test places the woman in the 5% of the population at highest risk (1 in 300 or higher), she can then decide whether to have an amniocentesis or not. This diagnostic test has a miscarriage rate of 0.5% above the background miscarriage rate. If termination is desired as a result of the diagnosis obtained by amniocentesis, gestational age will be too advanced for safe vacuum aspiration. Termination will require a medical procedure (usually misoprostol) and is likely to involve 2 to 3 days hospitalisation.

For some women the higher risk of unintentional miscarriage of a normal baby with CVS (~1/100)(instead of the lower risk with amniocentesis ~1/200) does not outweigh the disadvantages of needing the more traumatic mid-trimester termination if the fetus has an aneuploidy. For others the extra hardship of a mid-trimester termination rather than an early termination, if there is an abnormality, looms larger than the increased risk of unintentional miscarriage.

**Should both tests be performed?**

Both the first trimester and second trimester screening are set to identify the 5% of women at highest risk, but they are set independently and do not necessarily select the same women. As the nature of each test implies a false positive rate of 5%, performing both tests has the potential of doubling the false positive rate to nearly 10% with little extra gain. As a result, doing both tests will merely increase the chances of pregnancy loss from an unnecessary invasive test. At present SAMSAS will not calculate aneuploidy risk on a Second Trimester Screen if a First Trimester screen has already been performed. The use of sequential testing is currently being explored on an experimental basis in many centres. Sequential testing has the potential to increase the overall sensitivity for the same false positive rate, or even a reduced false positive rate. Such testing requires an alteration in the nomograms used in order to achieve this and, at this time (2006), should be seen as investigational only.

**Can ultrasound be used as a screening test for Down syndrome?**

About 50% of babies with Down syndrome will have features that are potentially identifiable (ultrasound markers of aneuploidy) on a proficiently conducted 18 to 20 weeks morphology ultrasound. This means that half of the babies with Down syndrome have an apparently normal morphology ultrasound examination. Thus, the best sensitivity of the test is only 50%. Such a low sensitivity means that ultrasound is not an acceptable screening test.

The use of isolated soft ultrasound markers to modify age risk has been validated and may be used at the morphology ultrasound to increase the risk of aneuploidy previously calculated. Hence a woman referred for morphology ultrasound and found to have “soft markers” may be counselled that her fetus’ ultrasound findings have increased the overall risk assessment and that she now falls within the high risk category (highest 5%). She can

then decide to have an amniocentesis if she considers the individual risk assessment significant enough.

For further information about the increased risk in specific cases please contact the Midwife Coordinator at the relevant hospital who will refer you to the appropriate clinician to calculate the risk .

**Should Neural Tube Defects be screened for in the second trimester screen?**

The second trimester screen involves measurement of alpha-fetoprotein (α FP) as one of the components examined. A higher level of alpha-fetoprotein is associated with neural tube defects and a variety of other structural problems, such as gastroschisis and omphalocoele. In addition, it is a marker for abnormalities of placentation, and is thus associated with abruption, intrauterine fetal death and pre-eclampsia.

If the alpha-fetoprotein level is elevated, then a morphology ultrasound and counselling in a tertiary obstetric centre would be justified.

If the woman has undergone first trimester screening, screening for alpha-fetoprotein alone in the second trimester confers little benefit because the fetal abnormalities that would be screened for would also be detected on the morphology ultrasound scan.

## 16.7 MATERNAL AGE AND RISK

In screening for fetal Down syndrome, maternal age is well recognised as part of the risk assessment. The following table shows the likelihood that a pregnancy is affected from the risk report issued by the **South Australian & Tasmanian Maternal Serum Antenatal Screening (SAMSAS) Program** according to the mother's age at delivery (Program Performance Data Update 12, issued December 2003).

The aim of the SAMSAS Program is to provide accurate forewarning of certain fetal abnormalities and pregnancy pathologies to obstetricians, general practitioners and midwives as they manage the pregnancies under their care. SAMSAS maintains a close liaison with ultrasonographers, health centres, antenatal clinics and counselling support structures.

SAMSAS is located in the Department of Genetic Medicine at the Women's and Children's Hospital, North Adelaide, South Australia. The data presented and the performances quoted herein are those of the SAMSAS program and **do not apply** to other software or maternal serum testing centres.

Medical practitioners and other health professionals are advised to request the maternal serum screening performance figures from the centre performing the testing on their patients, should that testing not be done by the SAMSAS Program.

**The SAMSAS first trimester screen** involves a risk calculation derived from the combination of two biochemical placental markers - free beta hCG and Papp-A, with the ultrasound marker nuchal translucency.

**The second trimester screen** uses biochemical markers only − alpha-fetoprotein, free beta hCG and unconjugated estriol.

**The likelihood ratio** derived from the marker combinations in 1st or 2nd trimester screens is used to adjust the risk at delivery of having a baby with Down syndrome. For both screens a risk cut off of 1:300 is used to categorise the pregnancy as either "at increased risk" or "not at increased risk". The cut off of 1:300 determines the percentage of pregnancies screened at increased risk (recall rate, RR) and the percentage of affected pregnancies which can be detected (detection rate, DR). For a 5% recall rate, we would expect to detect 75 – 90% of all affected pregnancies with Down syndrome in the first trimester, and 60-75% in the second trimester.

**In the December 2003 Update** we use 65 first trimester and 80 second trimester marker profiles from Down syndrome pregnancies and over 1000 marker profiles from unaffected pregnancies to produce age-specific performance data for each trimester. These data are presented in table 1 and figures 1−3. The prevalence of Down syndrome at the time of screening was calculated for each maternal age in order to calculate the odds of having an affected pregnancy, following either an "at increased risk" or "not at increased risk" report. The prevalence used was calculated from the maternal age risk at delivery, adjusted for expected fetal loss after the time of screening from both 1st and 2nd trimesters.

**These data highlight the improved specificity achieved with the 1st trimester combined screen and the differential performance across age groups. The data will assist in counselling and decision making by providing both health professional and patient with odds that better reflect outcomes.**

**SASMAS**: Telephone: (08) 8161 7285
Fax : (08) 8161 8085
e-mail: samsas@wch.sa.gov.au
website: **www.chempathadelaide.com/samsas**

# Update 12
# Prenatal Screening for Down syndrome
# Age Specific Performance
# 1st & 2nd Trimester Screening
# SAMSAS Program

**HOW TO READ THIS TABLE**

For a 30 year old screened using the **1st Trimester Combined Screen**, there would be a **4.4%** chance of being screened "at increased risk" and a **75.4%** chance of detecting an affected pregnancy. For a pregnancy screened "at increased risk" there would be a **1 in 44** chance that the pregnancy is affected by Down syndrome and for a pregnancy screened "not at increased risk", the chance would be **1 in 2,962.** Comparative performance figures for a second trimester screen are provided in the last 4 columns.

**Table 1**

| **Maternal Age at Delivery Years** | **Maternal Age Risk at Delivery 1:n** | **1st Trimester** Combined Screen % of Pregnancies Screened **At Increased Risk** | **1st Trimester** Combined Screen % of **Affected Pregnancies Detected** | **1st Trimester** Combined Screen **Odds of** having an **Affected** Pregnancy following an At Increased Risk Report **1:n** | **1st Trimester** Combined Screen **Odds of** having an **Affected** Pregnancy following a Not at Increased Risk Report **1:n** | **2nd Trimester** Screen **%** of Pregnancies Screened at **Increased Risk** | **2nd Trimester** Screen **%** of **Affected Pregnancies Detected** | **2nd Trimester** Screen **Odds of** having an **Affected** Pregnancy following an At Increased Risk Report **1:n** | **2nd Trimester** Screen **Odds of** having an **Affected** Pregnancy following a Not at Increased Risk Report **1:n** |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 1663 | **3.1** | **69.2** | **52** | **3662** | 3.4 | 46.3 | 98 | 2391 |
| 16 | 1659 | **3.1** | **69.2** | **52** | **3654** | 3.4 | 46.3 | 98 | 2385 |
| 17 | 1654 | **3.1** | **69.2** | **52** | **3643** | 3.4 | 46.3 | 98 | 2378 |
| 18 | 1647 | **3.1** | **69.2** | **52** | **3627** | 3.4 | 46.3 | 98 | 2367 |
| 19 | 1638 | **3.1** | **69.2** | **51** | **3607** | 3.5 | 46.3 | 98 | 2354 |
| 20 | 1627 | **3.1** | **69.2** | **51** | **3583** | 3.5 | 46.3 | 98 | 2337 |
| 21 | 1611 | **3.1** | **69.2** | **51** | **3548** | 3.5 | 47.5 | 95 | 2369 |
| 22 | 1591 | **3.1** | **70.8** | **49** | **3696** | 3.5 | 47.5 | 95 | 2338 |
| 23 | 1564 | **3.1** | **70.8** | **48** | **3633** | 3.6 | 48.8 | 92 | 2354 |
| 24 | 1531 | **3.1** | **72.3** | **46** | **3749** | 3.7 | 48.8 | 92 | 2302 |
| 25 | 1487 | **3.1** | **72.3** | **45** | **3641** | 3.7 | 48.8 | 91 | 2235 |
| 26 | 1433 | **3.1** | **72.3** | **43** | **3509** | 3.9 | 50.0 | 88 | 2204 |
| 27 | 1367 | **3.4** | **73.8** | **44** | **3528** | 4.0 | 51.3 | 86 | 2153 |
| 28 | 1288 | **3.5** | **73.8** | **43** | **3321** | 4.3 | 53.8 | 82 | 2133 |
| 29 | 1195 | **4** | **75.4** | **44** | **3264** | 4.5 | 55.0 | 79 | 2028 |
| 30 | 1089 | **4.4** | **75.4** | **44** | **2962** | 4.9 | 55.0 | 78 | 1841 |
| 31 | 975 | **4.6** | **76.9** | **41** | **2819** | 5.5 | 57.5 | 75 | 1734 |
| 32 | 855 | **5.5** | **76.9** | **43** | **2448** | 6.3 | 57.5 | 75 | 1508 |
| 33 | 733 | **6.3** | **80** | **40** | **2404** | 7.3 | 60.0 | 71 | 1359 |
| 34 | 617 | **6.8** | **86.2** | **34** | **2917** | 8.5 | 61.3 | 68 | 1166 |
| 35 | 509 | **8.1** | **87.7** | **33** | **2662** | 10.2 | 71.3 | 58 | 1272 |
| 36 | 412 | **9.8** | **89.2** | **32** | **2409** | 12.4 | 73.8 | 55 | 1100 |
| 37 | 329 | **11.3** | **89.2** | **29** | **1891** | 15.1 | 77.5 | 51 | 993 |
| 38 | 259 | **13** | **89.2** | **26** | **1460** | 18.4 | 82.5 | 46 | 966 |
| 39 | 202 | **15.2** | **90.8** | **24** | **1303** | 22.4 | 86.3 | 42 | 912 |
| 40 | 156 | **17.9** | **93.8** | **21** | **1446** | 27.0 | 91.3 | 37 | 1041 |
| 41 | 119 | **21.5** | **96.9** | **18** | **1500** | 34.2 | 95.0 | 34 | 812 |
| 42 | 91 | **25.5** | **96.9** | **17** | **1531** | 40.6 | 98.8 | 30 | 775 |
| 43 | 69 | **30.9** | **96.9** | **15** | **1077** | 48.0 | 98.8 | 27 | 753 |
| 44 | 52 | **36** | **96.9** | **14** | **751** | 56.7 | 98.8 | 24 | 746 |
| 45 | 40 | **39.6** | **98.5** | **11** | **1127** | 64.7 | 100.0 | 21 | n/a |

# REQUESTING FIRST TRIMESTER SCREENING

**Two request forms are required**, one for the blood analysis and one for the nuchal translucency ultrasound scan.

**BLOOD ANALYSIS**

1. 5-10 mls clotted blood sample, taken between 10 and 13 weeks gestation is required. A list of collection centres is provided on the reverse of the SAMSAS request form.
2. Use a SAMSAS request form, telephone (08) 8161 7285 if you require some of these:
   (a) the test request is "**first trimester screen**",
   (b) complete the gestational age information, the gestation must be between 10w0d – 13w6d,
   (c) specify the ultrasound practice performing the nuchal translucency scan,
   (d) refer **patient to the Privacy Disclosure on the SAMSAS request form**,
   (e) give the patient the SAMSAS pre-test information booklet,
   (f) send the blood specimen to Women's and Children's Hospital. **For interstate or remote areas check with SAMSAS on what services are available.**

**ULTRASOUND**

3. Book a Nuchal Translucency scan with the imaging group of choice. The fetus must be between 11w0d – 13w6d gestation at the time of the scan.
4. Complete an ultrasound request form, specifying "**risk of fetal abnormality**"; and **"Copy to SAMSAS"**. To comply with the National Privacy Legislation and Fair Information Code, refer **patient to the Privacy Disclosure on the SAMSAS request form**.

SAMSAS will coordinate the results with the ultrasound practice and you will receive a single report giving the risks calculated for the pregnancy. Post-test information booklets are provided with all reports issued by SAMSAS on pregnancies found at increased risk of fetal abnormality.

**Availability of first trimester screening**
Combined ultrasound and biochemistry screening is not at present offered through all hospitals/clinics. Check with the hospital/clinic concerned.

**Costs**
For privately insured patients SAMSAS continues its policy of accepting 'Medicare only' for the serum biochemistry analyses. There may be a gap payment for the ultrasound measurement. Check with the practice providing this service.

**Second trimester screening** of pregnancies for fetal Down syndrome and neural tube defects remains in place with the accepted timing of the blood sample being 14w0d to 20w6d. We recommend, that if a pregnancy is screened in first trimester then any request in second trimester be confined to **neural tube defect (NTD) screening only**. First trimester screening does not include detection of fetal NTDs.

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## Gestational Age Windows for Antenatal Screening for Birth Defects

| | | | |
|---|---|---|---|
| **1st Trimester** | **Blood sample** | **10w0d – 13w6d** | **Optimal gestation 10 − 12 weeks** |
| | **Ultrasound** | **11w0d – 13w6d** | **Optimal gestation 11 − 12 weeks** |
| **2nd Trimester** | **Blood sample** | **14w0d – 20w6d** | **Optimal gestation 16 weeks** |

## 16.8 BREASTFEEDING

Breastfeeding is the normal method of feeding infants and positively influences both their immediate and long-term health.

**GPs have a very important role in encouraging and supporting women to breastfeed.**

- The initial antenatal interview between a woman and her doctor or midwife should include a careful assessment of her (and her partner's) attitudes, beliefs, expectations, knowledge and experience in relation to infant feeding.
- Women are more likely to breastfeed if:
  - their husband/partner and mother supports breastfeeding
  - they attend antenatal classes
  - they decide to breastfeed early in pregnancy
  - they decide to breastfeed prior to becoming pregnant.

**Recommendations for breastfeeding**

- Exclusive breastfeeding for the first 6 months.
- Continued breastfeeding until 12 months of age, with introduction of solids around 6 months of age.
- Breastfeeding continued beyond 12 months as desired by mother and child.

**Benefits of Breastfeeding**

**Mother**

- Accelerated weight loss and return to pre-pregnancy body weight.
- May protect against premenopausal breast cancer, ovarian cancer and osteoporosis.
- Promotes a loving bond between mother and baby.
- Convenient and inexpensive.
- Prolonged period of post-partum infertility.

**Infant**

- Increased protection against bacteraemia, meningitis, urinary tract infection, otitis-media, and SIDS.
- Possible reduced risk of developing obesity, coronary vascular disease, cancer, Type 2 diabetes, asthma and delayed onset of coeliac disease.
- Reduced incidence and duration of diarrhoeal illnesses.
- Improved cognitive development.
- Reduced risk of developing cow's milk allergy.
- Reduced malocclusion due to better jaw shape and development.

**GPs have a very important role in supporting women to overcome any breastfeeding problems.**

- Some women cease breastfeeding too early because they encounter problems, do not have support, or mistakenly feel they do not have an adequate supply of breast milk.
- Timely support and management is the key to overcoming these problems to ensure continued breastfeeding.
- Refer to services providing breastfeeding support (see Section 20)

## 16.9 SMOKING DURING PREGNANCY

Smoking cessation interventions based on the National Tobacco Strategy 1999 to 2002[1].

- Effective smoking cessation intervention should be offered to pregnant smokers at the first antenatal visit and throughout pregnancy and post partum.
- Extended psychosocial interventions that exceed minimal advice to quit should be made available for pregnant women.
- Pharmacotherapy should be considered when a pregnant woman is smoking more than 10 cigarettes per day, who have made a recent, unsuccessful attempt to quit and who are motivated to quit[2].

**Pregnant and lactating women**

**Issues**

- Around 30% of Australian women are smokers when they become pregnant and 23% smoke during pregnancy.
- Cigarette smoking by pregnant women causes adverse fetal outcomes including stillbirth, spontaneous abortion, reduced fetal growth, preterm birth, low birth weight, placental abruption, sudden infant death, cleft palate, cleft lip and childhood cancers.
- Maternal smoking increases the risk of poor health outcomes in infants and children including sudden infant death syndrome, respiratory infections, asthma, and middle ear disease.
- Although abstinence early in pregnancy will produce the greatest benefits to the mother and foetus, smoking cessation at any point during the pregnancy will be beneficial.
- Up to a quarter of women who smoke before pregnancy quit before their first antenatal visit but a quarter of these relapse to smoking during the pregnancy. Relapse in the post-partum period is high.
- Compared to usual care, participation in smoking cessation programs during pregnancy improves birth outcomes including rate of low birth weight, rate of pre-term birth and mean birth weight.

**Smoke Free Pregnancy Project**

**Call the Quitline on 131 848 for help**

[1]Miller M, Wood L 2002. Smoking cessation interventions. Review of evidence and implications for best practice in health care settings. Final Report August 2001 for the Department of Health and Ageing. Commonwealth of Australia, Canberra (http://www.health.gov.au/pubhlth/publicat/document/smoking_ces.pdf)

[2] Walsh R A, Lowe J B, Hopkins P J Quitting smoking in pregnancy *Medical Journal of Australia* 2001:175: 320-323

## 16.10 COMMONLY ASKED QUESTIONS

These are some topics about which GPs are frequently asked.

**Diet**

- Should be sensible and well balanced (see Section 17.4). If woman is vegetarian consider iron studies.
- Folic Acid (see Section 17.2).
- Prevention of Listeria (see Section 17.3).
- Vitamin supplements (see Section 17.4).
- Mercury in fish (see Section 17.4)

**Morning Sickness**

This can be managed by:

- Eating small, frequent meals and drinking plenty of fluids.
- Vitamin B6, 25 mg three times daily.
- Metoclopramide 10 mg three times daily (or other anti-emetic) if necessary.
- IV fluids may be required if the woman is becoming dehydrated.
- Acupuncture and ginger.
- Stemetil suppositories

**Heartburn**

This can be helped by:

- Eating small, frequent meals. Antacids or ranitidine may be used as necessary.
- Avoiding fatty foods, coffee, tea, and alcohol.
- Sleeping propped up or tilting head end of bed up.
- Avoid eating prior to bedtime.

**Constipation**

- Can be uncomfortable during pregnancy and after the birth.
- Include plenty of fresh fruits, vegetables and wholegrain breads and cereals in the diet.
- Drink plenty of water and exercise regularly.
- Take extra fibre if needed.

**Drugs**

- DO NOT stop necessary medication without prior discussion.
- Fever or pain should be treated with Paracetamol (**not** Aspirin).
- Recreational drugs – abstain as they are harmful to the woman and baby.
- Contact the Women's and Children's Hospital *Medicines & Drug Information Centre* (Monday to Friday 9am – 5pm) on (08) 8161 7222.

**Smoking**

- Harmful to the woman and baby (see Section 16.9 and 17.5).
- Contact the Quitline on 131 848.

**Alcohol**

- Pregnancy and alcohol do not mix.
- There is no evidence that any amount of alcohol is safe during pregnancy.
- Alcohol can harm the baby for life.

**Tiredness**

- May be more tired than usual in the first few weeks of pregnancy and may need more rest than normal.
- Lying down during the day or going to bed early may help.
- Try to lighten the load when doing household chores.
- Try to sit down while working, whenever possible.

**Exercise**

- A moderate exercise program is desirable.
- Women should not exercise in hot, humid conditions.
- Overheating should be avoided.
- The peak heart rate should be limited to less than 140 beats/minute.
- Research has demonstrated that women who continue to exercise **strenuously**, especially into the third trimester, have an increased risk of IUGR and/or preterm labour. These women should be advised to reduce their exercise intensity by 25 – 30% and to always warm up and cool down.
- Advisable to avoid contact sports after the 16$^{th}$ week of pregnancy.
- For 3 months after birth women should continue to adhere to these guidelines.
- Breastfeeding women who exercise must ensure they increase their fluid intake and have adequate rest and food.

**Body Temperature**

- Any febrile illness should be treated with Paracetamol in appropriate doses.
- Women exercising in pools should ensure the water temperature is less than 30°C.
- Women should avoid hot spas and saunas. This is particularly important in early pregnancy.

**Leg cramps**

These may be alleviated by:

- Increasing fluid intake.
- Calcium supplementation.
- Drinking a small glass of tonic water or bitter lemon before bedtime.

**Dentist**

- Good dental hygiene is important in pregnancy and women should be advised to attend the dentist for a check up if they have not had one in the last six months.

**Sexual Intercourse**

- Sexual activity can normally continue according to the couple's wishes.
- If vaginal bleeding has occurred after intercourse, this must be assessed by vaginal speculum examination.

**Fetal Movements**

- If the number of movements is reduced, the woman should be referred to hospital for assessment.

**Family History of Genetic Condition**

Genetic conditions that can be screened for and/or diagnosed represent a rapidly changing field of medicine. If faced with such a family history it is suggested that you contact the Women's and Children's Hospital *Genetic Counselling Service* on (08) 8161 7375 for advice before any testing. Wherever possible, appropriate genetic workup is best undertaken prior to a pregnancy.

# 17. DOCTORS' COPIES OF INFORMATION FOR WOMEN

**17.1 Chorion Villus Sampling and Amniocentesis**

**17.2 Folic Acid and the Prevention of Neural Tube Defects**

**17.3 Listeria and Pregnancy**

**17.4 Healthy Eating and Pregnancy**

**17.5 Smoking and Pregnancy**

**17.6 Mothers – Benefits of Breastfeeding**

**17.7 Common Problems with Breastfeeding and where to go for help**

**For further information on 17.1, 17.2 and 17.3 refer to the South Australian Perinatal Practice Guidelines at www.health.sa.gov.au/ppg**

# 17.1 CHORION VILLUS BIOPSY AND AMNIOCENTESIS

Early in pregnancy chorion villus biopsy (CVS) and amniocentesis can be used to detect whether the fetus has a chromosomal abnormality, such as Down syndrome. Because these procedures carry a certain risk, especially of miscarriage, they are only used when the risk of a chromosomal abnormality appears to outweigh the risk of the procedure itself. This can be because of advanced maternal age, a high risk on a screening result, a specific family history, or risk factors detected on ultrasound.

Basically the two techniques are based on obtaining some cells from the fetus which are sent to the laboratory for chromosome analysis. With chorion villus biopsy these cells are obtained from the developing placenta. With amniocentesis these cells are obtained from the fluid that surrounds the fetus. This determines the basic differences and the advantages and disadvantages of both techniques. These can be summarised as follows:

- overall the risk of miscarriage after the procedure is about twice as high with chorion villus biopsy (approximately 1:100) than with amniocentesis (approximately 1:200).
- for chorion villus biopsy to be conducted as safely as possible, it needs to be done at a specific time in pregnancy which is mostly between 10 and 12 weeks.
- amniocentesis is too risky when conducted before 15 weeks of pregnancy and is therefore conducted a few weeks later than a chorion villus biopsy.
- with chorion villus biopsy the results are usually available within a few days of the procedure, but with amniocentesis it can take two weeks before the final results become available. This is because the cells that are obtained need to grow in the laboratory before they can be analysed and this process cannot be hurried up.
- as a result chorion villus biopsy will detect an abnormality earlier than amniocentesis making it easier to terminate the pregnancy if necessary.
- your blood group needs to be known before undergoing either chorion villus sampling or amniocentesis and, if you are Rhesus negative, you will need to receive an injection of Anti-D.

**Chorion Villus Sampling (CVS)**

Although it does not look like it, the placenta basically resembles a large tree with very many tiny branches named chorionic villi (the plural for chorionic villus). Chorionic villus sampling means that a small number of these branches (<1% of the entire placenta) is removed for analysis. Because the placenta has the same chromosomes as the fetus this can be used to detect chromosomal abnormalities in the fetus.

The CVS test is performed at around 10-12 weeks of pregnancy. The first step is to have an ultrasound examination to determine the position of the fetus and decide where the chorionic villi can be obtained. To limit the risk of infection the sample is usually obtained through the abdominal wall. This means that the skin is cleaned with an antiseptic solution. Usually a little local anaesthetic is injected in the skin and a needle is then passed through the abdomen into the uterus to draw up a small sample of chorionic villi into a syringe. This is done under ultrasound guidance to ensure that the right location is reached. Contrary to common belief the procedure is not painful although it tends to be scary and somewhat uncomfortable. You do not need to be admitted to hospital for it and it is usually conducted as an outpatient procedure. It is not necessary to fast before the procedure, but you should bring someone with you who can drive you home afterwards. You have to remain under observation for about 30 minutes and you should not drive yourself home afterwards.

It is advisable to rest at home for about 48 hours after the procedure and to abstain from strenuous activity or exercise. It is advisable to avoid intercourse. It is also advisable to avoid intercourse within the first week after the procedure. You should also contact your doctor if you experience any cramping pain, blood loss or loss of clear fluid after the procedure.

## Amniocentesis

Amniocentesis is not carried out before 15 weeks of pregnancy because amniocentesis earlier in pregnancy carries a risk of causing deformities in the baby. The exact timing may depend on the amount of amniotic fluid present as determined by ultrasound. The procedure is always preceded by ultrasound to determine where the placenta is and where the needle needs to be inserted to obtain a good sample with minimal risk. On occasions this may mean that the procedure will be postponed for up to a week to ensure that a clear sample of amniotic fluid (the fluid around the baby) can be obtained. The procedure involves putting a needle through the abdominal wall into the uterus to draw up some of the fluid surrounding the baby into a syringe. Therefore, the skin is rubbed clean with an antiseptic solution and a small amount of local anaesthetic agent is injected into the skin to minimise the discomfort of the procedure.

There is no need to fast, from food or fluids, before undergoing an amniocentesis, but you should not drive yourself home afterwards. Amniocentesis is done as an outpatient procedure but you will have to remain in hospital for at least 30 minutes before you can return home. At home it is important to abstain from strenuous activity for about 48 hours and to avoid intercourse for a week.

About 1 in 10 women experience some cramping after the procedure, which usually requires no more than some rest and simple analgesics (Paracetamol is quite safe). Such cramps do not mean that you are likely to have a miscarriage. However, if you develop a temperature, pain or shivering, or if you have some bleeding or loss of fluid you should consult your doctor or the hospital where the amniocentesis was performed.

## Important notes

- You should note that chorion villus biopsy and amniocentesis check only the chromosomes of the fetus. In some special circumstances they can also detect some inherited diseases in people who are known to be at risk of passing the disease on to their baby. However, they cannot guarantee that the baby will not have another abnormality at the time of birth or will be one hundred percent healthy. Not everything in life, either before or after birth, is determined by chromosomes.
- Both amniocentesis and chorion villus sampling will reveal whether the fetus is male or female, but you will not be told the sex of the fetus unless you specifically ask. Please think carefully whether you want to know the answer before you ask the question.

## 17.2 FOLIC ACID AND THE PREVENTION OF NEURAL TUBE DEFECTS

### Neural Tube Defects

Neural tube defects (spina bifida, anencephaly and encephalocoele) are a major group of serious birth defects.

The abnormality occurs when the spinal cord and brain are forming during the fourth week after conception (in the sixth week after the last normal menstrual period).

Over 95% of neural tube defect cases are born into families which have had an affected baby. The total prevalence of neural tube defects (NTDs) is 1 in every 500 babies in South Australia. This figure is similar in other states of Australia. There has been no upward or downward trend since 1966. There are about 40 cases each year in South Australia, 20 of which are spina bifida.

While the total prevalence of NTDs in South Australia has remained stable, prenatal diagnosis and termination of pregnancy has resulted in an 84% fall in birth prevalence during 1966-1991.

In South Australia tests before 28 weeks can detect 85% of NTD affected pregnancies.

### Folic Acid

Folic Acid is one of the B group vitamins and has an essential role in the very early development of the human nervous system.

Good sources of dietary folic acid are green vegetables, wholegrain breads and cereals, nuts, dried beans, peas and lentils and some fruits such as oranges, bananas and strawberries.

Folic acid is the name for standard pharmaceutical preparation. The different forms, which occur naturally in food, are collectively called folate.

### Neural Tube Defects and Folic Acid

Prevention of the occurrence of NTDs is the ideal and research has shown that up to 70% of NTDs can be prevented by taking folic acid around the time that you plan to become pregnant.

Supplementation needs to begin before conception for it to be effective. It is recommended that you start increasing your folic acid intake one month before you intend to become pregnant and continue it until you are three months pregnant. Usually supplementation involves taking a tablet to ensure adequate intake.

There is no evidence that other vitamins or minerals will reduce your chance of having a baby with a NTD. There is no evidence that folic acid is effective in preventing a NTD if a woman starts taking it after she has become pregnant.

There is almost certainly more than one cause for NTDs. Taking folic acid around the time that you intend to become pregnant cannot prevent all cases of neural tube defects.

### Groups with Increased Risk of Neural Tube Defects

Couples who have had a child with a neural tube defect are at an increased risk of having a second affected child. The risk is approximately 1 in 30. You should receive genetic counselling and it is recommended that the woman should take a higher dose of folic acid (5

mg daily) before becoming pregnant. If prenatal diagnosis is an option, the available methods should be discussed.

Couples with a close family history of NTD, and individuals with spina bifida, also have an increased chance of having an affected child.

If you have epilepsy and are taking sodium valproate or carbamazepine, you are at an increased risk of having a baby with spina bifida. This risk is estimated to be about 1 in 100 for sodium valproate and probably also for carbamazepine. It is recommended that if you are taking anticonvulsant medications that you should also take the higher dose (5 mg daily) of folic acid, following discussion with their doctor.

**Recommendations**

Health professionals, especially GPs, have a key role in helping to prepare women for conception.

All women of reproductive age, especially those planning a pregnancy, should be encouraged to increase their intake of folic acid, particularly one month before and during the first three months of pregnancy. This will greatly reduce a woman's chance of having a baby with NTD (up to 70%).

For low risk women (those with no close family history of NTD), taking a daily low dose folic acid tablet (0.5 mg/500 mcg) as a supplement to their normal diet will ensure a satisfactory intake of folic acid. Women who do not take folic acid supplements in tablet form can achieve similar daily folic acid intake by eating a diet enriched in folate foods, though many women will find the necessary changes in diet difficult to maintain.

Health professionals have an important role in helping to alleviate anxiety in those pregnant women who have not increased their intake of folic acid prior to conception. The very low individual risk of having a baby with a NTD should be stressed to these women. There could be potential benefit from folic acid supplementation (0.5 mg/day) to women whose pregnancies are diagnosed before six weeks of pregnancy. It is recommended that women continue to take 0.5mg folate (folic acid) per day during the first three months of pregnancy to help prevent neural tube defects.

**Safety Issues**

Folic acid is generally regarded as non toxic to humans. There have been very few reported cases of adverse reactions from folic acid. Toxicity has only been reported with high doses of folic acid (15 mg daily).

If you have the vitamin B12 deficiency (pernicious anaemia) you will need to discuss your specific requirements with your doctor.

**Availability of Folic Acid**

All pharmacies will stock at least one brand of folic acid. Purchase does not require a prescription. Customers may have to ask for the folic acid as it is sometimes held in the dispensary. No one brand is recommended over another.

**Important Note:**

> **Multi vitamin preparations rarely contain the recommended 500 mcg of folic acid and women will generally require a specific folic acid preparation. Check the label if unsure.**

## 17.3 LISTERIA AND PREGNANCY

**What is a Listeria Infection?**

You can get a listeria infection from eating contaminated food. The listeria bacteria are found in nature and in some foods. Listeria is not a new disease but it is only over the last ten years that is has been recognised that the bacteria can be transmitted through food.

Listeria infection is uncommon and causes few or no symptoms in healthy people. If infected, pregnant women may experience a mild, brief episode of illness. A listeria infection during pregnancy has a higher risk of transmission to the unborn child and can lead to miscarriage, stillbirth, pre-term birth or can make a newborn baby very ill.

It is important that you see your doctor in the early stages of your pregnancy if you think you may have a temperature or if you are feeling unwell generally.

**Prevention is Better than Cure**

It is important you reduce the risk of contracting this infection during your pregnancy. You can do this by taking simple food hygiene steps at home, being careful about what you eat when eating out, and avoiding certain foods at higher risk of listeria contamination (see guide to foods).

**How You Can Reduce the Risk of Listeria Infection during Pregnancy**

For the health of you and your baby during pregnancy, it is important that you select a nutritious diet from a wide variety of foods such as vegetables, fruit, dairy foods, bread, cereals, pasta, lean meat, fish, eggs and nuts.

However, you should eat freshly cooked or freshly prepared food only. It's important that you do not eat food where there is any doubt about its hygienic preparation and/or storage.

Avoid eating foods during pregnancy which could contain listeria. These are mostly chilled, ready to eat foods including:

- soft cheese such as brie, camembert and ricotta (these are safe if cooked and served hot);
- takeaway cooked diced chicken (as used in chicken sandwiches);
- cold meats;
- pate;
- pre-prepared or stored salads;
- raw seafood (such as oysters and sashimi);
- smoked seafood such as smoked salmon, smoked oysters (canned are safe);
- soft serve ice-cream;
- un-pasteurised dairy products.

**Other Precautions**

Make sure all food is fresh.

Listeria is destroyed by conventional cooking so freshly cooked foods are safe to eat. However, listeria is one of the few bacteria that will grow in refrigerated foods. This is why chilled ready-to-eat foods should be avoided.

Do not eat food that has been prepared and then stored in a refrigerator for more than 12 hours.

When re-heating food in the microwave at home, make sure it is steaming hot throughout.

**Eating Out**

It's best not to use salad bars in restaurants, supermarkets or delicatessens. Avoid pre-prepared salads.

Refrigerated foods that are past their "use by" or "best before" date should also not be eaten.

If you buy ready-to-eat, hot food, make sure it is served steaming hot throughout. Only eat food that is served hot. Do not eat food that is served lukewarm.

It is best to avoid smorgasbords. If this is not possible, choose the hot foods only.

**Good Food Hygiene**

Take some simple food hygiene steps to reduce the risk of listeria infection and other food-borne illnesses.

- Always thaw ready-to-eat frozen food in the fridge or microwave – do not thaw at room temperature.
- Keep raw meat covered and separate from cooked food and ready-to-eat food.
- Always store raw meat below other food in the refrigerator to prevent it dripping onto food.
- Wash hands, knives and cutting boards in hot soapy water after handling raw food to avoid cross contamination of cooked and ready-to-eat food.
- Thoroughly cook all raw food of animal origin.
- Keep hot food hot (above 60°C) and cold food cold (at or below 5°C).
- Do not let cooked foods cool down on the bench. Put them in the fridge to cool.
- Thoroughly reheat food until steaming hot.
- Avoid un-pasteurised milk, or food made from un-pasteurised milk.

## 17.4 HEALTHY EATING AND PREGNANCY

### Weight gain during pregnancy

It is healthy and normal to put on about 10–13 kg when you are pregnant. You may gain less or more weight. If you eat healthy food and only eat when you are hungry you will put on the right amount of weight for you.

- First 3 months: you will usually gain about 1 or 2 kilograms, or possibly less if you have morning sickness.
- 6 months: During the next 3 months you will probably gain about 6 kilograms.
- 9 months: During the last 3 months you will probably gain about 5 kilograms.

### Healthy eating

Eating healthy food is important in helping your baby to grow and develop. The guidelines for healthy eating are to eat:

- A wide variety of different healthy foods — not just the same foods every day.
- Base your diet around more bread, rice, pasta, oats and cereals (especially wholemeal and wholegrain types), fruits and vegetables.
- Low fat dairy products.
- Lean meat, chicken, fish, eggs, nuts and legumes.
- Less fat (less chips, snack foods, fried food and fatty takeaways).
- Less sugar (less cakes, biscuits, soft drinks and lollies).
- Less salt, by choosing reduced-salt processed food (by reading labels), using less salt in cooking and at the table.
- It's also important to drink plenty of water, about 6 - 8 glasses each day.

If your diet hasn't been as healthy as it could be, pregnancy is a great time to make some changes. Here are some simple, practical ideas to make your eating healthier:

- Have a piece of fruit for a snack instead of chocolate or biscuits.
- Carry a bottle of water with you so you can avoid buying soft drinks while you're out.
- Trim visible fat from meat. Try grilling or dry roasting meat.
- Try stir fries (a great way to eat vegetables).
- Experiment with different grains such as barley, faro, couscous and brown rice to add more variety to your diet.
- Cut up raw salad vegetables such as carrots, celery and mushrooms - store them in the fridge for snacking on throughout the day.
- Choose reduced or low fat dairy products instead of the full cream type.
- Try snacking on air-popped popcorn instead of chips and other fatty snacks.

### Fish

Fish are a valuable source of protein, minerals, vitamin B12, and iodine, are low in saturated fat and contain omega-3 fatty acids. Omega-3 fatty acids are important for the development of the central nervous system in babies, before and after they are born.

Most fish in Australia have low mercury levels, but some fish contain mercury levels that may harm an unborn baby or young child’s developing nervous system.

Pregnant and breastfeeding women, and women planning pregnancy, can have:

- 2-3 serves per week of any fish and seafood (other than those listed below), 1 serve being equal to 150 gms; **or**

- 1 serve per week of Orange Roughy (Deep Sea Perch) or Catfish, and **no other fish that week; or**
- 1 serve per fortnight of Shark (Flake) or Billfish (Broadbill, Swordfish and Marlin), and **no other fish that fortnight**.

Source: Food Standards Australia New Zealand at www.foodstandards.gov.au

**Alcohol**

***No alcohol is the safest choice.***

- Alcohol from your blood enters your unborn child's blood. This may negatively affect the child from conception onwards.
- It is not known whether there is a safe level of alcohol to drink during pregnancy.
- Drinking alcohol during pregnancy may increase your chances of miscarrying, having a baby with a low birth weight, fetal alcohol syndrome, congenital (birth) defects and cognitive (learning) defects.

**Tea Coffee, Cola drinks**

- These drinks contain significant amounts of caffeine.
- The developing baby is not able to break down large amounts of caffeine very well.
- It is recommended during pregnancy and breastfeeding that you limit your intake of caffeine by having no more than 2 - 3 cups in total of tea, coffee, or cola per day.
- Some caffeine is passed through breast milk and high doses may make babies irritable.

**Vitamin Supplements**

- Apart from folic acid, vitamin supplements are not generally necessary.

**Do you have to eat any special food when you are pregnant?**

The following nutrients are important when you are pregnant:

- Calcium is needed for your baby's bones and teeth. Calcium-rich foods include dairy products such as milk, cheese and yoghurt. If you drink soy milk or rice milk, ensure it is calcium enriched. Almonds and bony fish such as sardines and salmon also contain calcium.
- Iron is important for healthy blood (to prevent anaemia). Good sources of iron include red meat, fish, chicken, eggs and wholegrain foods. A vitamin C source such as tomato or orange juice with every meal will help the iron to be absorbed.
- Fibre and plenty of fluid help to prevent constipation. There is fibre in fruit and vegetables (especially if you do not peel them), wholemeal and wholegrain bread, rice, pasta and cereal (like porridge, Weetbix and VitaBrits).
- Protein is needed to help the baby grow. Meat, fish, chicken, eggs, milk, cheeses, nuts, tofu, dried beans and peas are all good sources of protein.
- **Folic acid or folate** helps prevent spina bifida in your baby and is also important for your blood. Folate is in many green vegetables, chickpeas, soybeans, oranges, bananas, strawberries, cereals, nuts and Vegemite. Supplements are usually required.

**AUSTRALIAN GUIDE TO HEALTHY EATING FOR PREGNANT WOMEN**

| Food group | Daily number of serves | Sample serving sizes |
|---|---|---|
| Bread, cereals, rice, pasta & noodles | 4–6 | 2 slices of bread or 1 medium bread roll<br>1 cup cooked rice, pasta or noodles<br>1 1/3 cups breakfast cereal flakes |
| Vegetables & legumes (dried beans, lentils or peas) | 5–6 | 1 small potato<br>1 cup salad vegetables<br>½ cup cooked vegetables<br>½ cup cooked dried beans, lentils or peas |
| Fruit | 4 | 1 medium apple, pear, orange or banana<br>2 fresh apricots, plums or kiwi fruit<br>4 dried apricot halves |
| Milk, yoghurt & cheese<br>(You need an extra 300mg of calcium or about 1 extra glass of milk each day when pregnant) | 2 | 1 250mL cup milk<br>1 200g tub yoghurt<br>2 slices (40g) cheese |
| Meat, fish, poultry, eggs, nuts, tofu, legumes (dried beans, lentils or peas) | 1–1 ½ | ½ cup lean mince or 2 small chops<br>½ cup cooked dried beans, lentils/peas<br>1 medium fish fillet<br>2 small eggs |
| Extra foods | 0–2 ½ | 2 tablespoons cream or mayonnaise<br>4 plain sweet biscuits<br>1 tablespoon butter, margarine or oil<br>1 can soft drink |

If you are concerned about your diet, ask your doctor to refer you to a dietician or look under dietician in the Yellow Pages. Your health professional can help you to develop eating plans that will help you cope with eating the food needed to make sure you and your baby are well nourished.

## 17.5 SMOKING AND PREGNANCY

If you are already pregnant and you smoke, you and your baby will still benefit greatly if you can quit now. Giving up smoking is one of the best things that you can do for your own health and for the health of your baby.

### What happens when you smoke?

- The umbilical cord is your baby's lifeline. Blood flow through this cord provides your baby with oxygen and all the nutrients it needs to grow. Smoking cigarettes increases the level of carbon monoxide in your bloodstream. Carbon monoxide replaces oxygen in your blood, so the amount of oxygen made available to your baby through the umbilical cord is reduced when you smoke.
- The nicotine in cigarettes increases your heart rate and your baby's heart rate. It also causes your blood vessels to narrow, reducing the flow of blood through the umbilical cord. Nicotine also causes a reduction in breathing movements in your baby.
- Carbon monoxide and nicotine make it harder for your baby to get the oxygen and nourishment it needs and places unnecessary stress on the baby's heart and reduces its breathing exercises.

### Other problems smoking may cause:

**During pregnancy**

- Higher risk of miscarriage.
- Smokers are more likely to have complications during the birth.
- Higher risk of a low birth weight baby. Low-weight babies are more vulnerable to infection and other health problems.
- Higher chance of having pre-term birth (baby born early).
- Higher chance of having a stillbirth (baby born dead).

**After the birth**

- Maternal smoking may be a risk factor for sudden infant death syndrome (SIDS).
- Babies of smokers are more likely to suffer from asthma and other respiratory infections than are those of non-smokers.
- After your baby is born, the poisons you inhale through cigarettes are passed on to the baby though your breast milk, and through passive smoking.

Sometimes it can be very hard to give up smoking, especially if your friends or your partner are still smoking. But it is something that you need to do for yourself and your baby. There are many qualified people who can offer information and support to help you give up smoking.

**Smoke Free Pregnancy Project**

**Call the Quitline on 131 848 for help**

## 17.6 MOTHERS - BENEFITS OF BREASTFEEDING

- Breastfeeding is the normal method of feeding infants. It has a positive influence on both their immediate and long-term health. Current recommendations are:
  - exclusive* breastfeeding for the first 6 months;
  - continued breastfeeding until 12 months of age;
  - introduction of solids around 6 months of age; and
  - breastfeeding beyond 12 months as desired by mother and child.

  * Exclusive breastfeeding means the baby is receiving only breast milk and if required, medications, including vitamins or minerals.

- ***A healthier baby*** – babies fed breast milk get less gastroenteritis (tummy upsets), and are less likely to get allergies, asthma, juvenile diabetes and respiratory or urinary tract infections. Mother's milk may also help protect from sudden infant death syndrome (SIDS). You will have a healthier and happier baby and fewer trips to the doctor or sleepless nights tending to a sick baby.

- ***Breast milk is the perfect food for your baby*** – breast milk contains important nutrients/ elements that are not found in formula and that help your baby grow, develop and learn in the best possible way.

- ***Mother's milk is best for your baby's physical development*** – Babies fed mother's milk have the best possible food to help them grow and develop well. Even the sucking action used by breastfeeding babies helps to develop their mouth, teeth and jaw.

- ***Save money and time*** – artificial substitutes for mother's milk can cost up to $1,200 a year, including bottles, teats and other equipment. And with a healthy baby, you'll need to spend less on health care. Breastfeeding is quick, efficient and hygienic. You don't have to spend time washing or disinfecting bottles and teats or wait for the bottle to heat up while your baby is hungry in the middle of the night.

- ***Your health*** – breastfeeding may protect against some diseases such as cancer of the breast or ovaries and osteoporosis later in your life. Breastfeeding uses up more energy than when you are pregnant, therefore it will help you return to your pre-pregnancy weight.

- ***Loving bond between mother and baby*** – breastfeeding helps you and your baby feel close to each other and develop a loving bond.

***BREASTFEEDING IS THE NORMAL WAY TO FEED A BABY***

## 17.7 COMMON PROBLEMS WITH BREASTFEEDING AND WHERE TO GO FOR HELP

Breastfeeding your infant is the best thing you can do for your child. Most women can breastfeed and it can take a few weeks to establish good breastfeeding practice. Most problems encountered during breastfeeding can be overcome. Some common problems with breastfeeding are listed below with suggestions about how to deal with them.

**Attachment**

- Correctly positioning and attaching the infant at the breast are vital in helping the infant develop an effective suck. Infants who suck well empty the breast effectively and stimulate ample milk supply. When good milk drainage has been established mothers are less likely to experience blocked ducts or mastitis. If feeding hurts, your baby is almost certainly not 'on the breast' or 'attached' properly.

**Engorgement**

- When your milk first 'comes in', your breasts may feel full and uncomfortable. An engorged breast becomes very tight and hard.
- It usually happens during the first week after the birth or if you suddenly feed the baby a lot less than usual. Keep feeding often and your milk supply will settle down. You may need to express a little milk before feeding so your baby can attach to the breast properly.
- Engorgement is less likely if the baby has unrestricted access to the breast from birth.
- Engorgement is mostly preventable and always manageable.

**Blocked milk ducts**

- A blocked duct feels like a tender (or sore) lump in your breast. When you start making milk, your breasts may feel very full and uncomfortable. The milk banks up and part of your breasts may become tender, hardened and reddish.
- It can be caused by:
  - missed or rushed, interrupted feeds
  - not feeding at regular times
  - not having the baby in the right position
  - pressure from clothes or bra
  - an awkward sleeping position
  - pressing your finger on your breast during the feed
  - injury or bumps to the breast.
- Try feeding your baby more frequently or feeding in slightly different positions. Gently massage the sore part from behind and towards the nipple during the feed and if you need to, use a cold pack afterwards.

**Mastitis**

- If your breast gets inflamed (hot) and sore you may have mastitis. There is usually a red, sore, lumpy area in the breast while the mother feels as if she has the flu and may have a fever.
- Mastitis is caused by:
  - an inflammation or infection in blocked ducts that have not got better
  - cracked nipples
  - stress
  - mother not being well.
- See your doctor if you are feeling unwell, but do not stop breastfeeding.

**Insufficient milk**

- How often does my baby need to feed? It's best to feed whenever your baby seems hungry. The baby will feed at least 8 times in 24 hours including during the night in the first few weeks. As the baby grows, your supply and the baby's needs will change and you may find that the baby does not need to be fed as often.
- Babies are more hungry at some times than at others. When babies are growing fast (growing spurts) they get hungry more often and if you feed them more often you make more milk to meet their need.
- Do I have enough milk? Sometimes mothers feel that they don't have enough milk or that their milk is not good enough and therefore they stop breastfeeding. Your milk is the perfect food for your baby. Let your baby feed for as long or as often as they like. The more the baby sucks, the more milk you will make.
- These are the signs that your baby is getting enough milk:
  - 6 - 8 wet nappies in 24 hours and several poos a day in the first few weeks of life. After this some babies can go a few days without a poo.
  - Baby is putting on weight. Average the weight gains over several weeks to allow for weekly differences.
  - The baby seems bright and there are some times when the baby is awake and happy.

**Sore and damaged nipples**

- Many mothers have sore nipples when they start breastfeeding but this should get better quickly. If soreness goes on, or lasts through the whole feed or if there are cracks in the nipple, seek advice from a trained lactation consultant.
- Breastfeeding should not hurt. Wash breasts only with water – soaps or shampoo will dry them out. A little breast milk on the nipple allowed to air can help sore or dry nipples. If your nipples become very sore or cracked your baby may not be attaching properly when feeding.
- Get early assistance from a health professional experienced in breastfeeding management, such as a lactation consultant or breastfeeding counsellor.

**Crying babies**

- Crying is a baby's way of communicating a need. Some babies cry with no evident cause, however prolonged crying needs careful evaluation. There may be medical reasons why your baby continues to cry and your doctor should investigate this. Mothers of infants who are seen to cry often may lose confidence in breastfeeding. Ensuring your baby is receiving enough milk by feeding more often may help.

Mothers should be aware of the changing nature of infants feeding patterns, development and behaviour. If you have concerns about your infant seek counselling from a well-informed health professional, lactation consultant or Australian Breastfeeding Association counsellor.

The following web sites will give you more information about common breastfeeding problems:

- www.breastfeeding.asn.au/bfinfo/care.html
- www.cyh/com/cyh/parentopics/usr
- www.health.sa.gov.au/pubhlth/strateg/brfeed/index/htm This website contains the resources produced for the National Breastfeeding Strategy.

# 18. INFORMATION RELATING TO INDIVIDUAL HOSPITALS

## 18.1 Flinders Medical Centre (FMC)

## 18.2 Lyell McEwin Hospital (LMH)

## 18.3 Modbury Public Hospital (MPH)

## 18.4 The Queen Elizabeth Hospital (TQEH)

## 18.5 Women's and Children's Hospital (WCH)

## 18.1 Flinders Medical Centre (FMC)

The Flinders Medical Centre (FMC) provides a comprehensive level 3[3] obstetric service for women and their families, catering for women having a low risk pregnancy and for women having complicated pregnancies.

**Obstetric Clinics**

Clinics are conducted mornings and afternoons at FMC and afternoons and evenings at the Noarlunga Health Service.

**High Risk Pregnancy Clinic**

Clinics are conducted jointly by Consultant Obstetricians and other medical specialists for women with complicated pregnancies.

**Young Women's Pregnancy Clinic**

A program designed specifically for young, pregnant women. It provides an informal opportunity to meet with midwives, a peer support worker and other young women.

**Childbirth and Parenting Education**

A wide range of childbirth classes designed to meet the woman's needs, lifestyle and information preference are provided.

**Mood Disorders Clinic**

A mental health nurse provides support for women during and after their pregnancy. Women may self refer to the clinic. The nurse also provides in-patient and home visits.

**Continence Clinic**

Conducted by a midwife to assess, educate and support women with urinary incontinence.

**Birth Centre**

This is an option for women assessed as low risk of complications and who prefer a more natural approach to childbirth with little intervention. Women and their families are supported through pregnancy and birth by a team of midwives who support active birth in a relaxed, homely environment.
Women may also choose to have shared care with an accredited general practitioner or private Consultant Obstetrician and the Birth Centre midwives.

**Maternity Outreach Service**

Midwives provide a home visiting service for women during their pregnancy and after the birth.

**Postnatal Support Service**

A drop-in service conducted by a lactation consultant/midwife designed to help with unexpected feeding and settling difficulties that arise in the early days.

**Multiple Birth Support Service**

Provided by a midwife who supports and educates families with multiple births.

[3] Level 3 services provide comprehensive care for women with uncomplicated pregnancies and normal babies; and all types of illnesses, abnormalities and complications in women and babies.

## Telephone and fax lists for Flinders Medical Centre

| | | |
|---|---|---|
| Flinders Medical Switchboard | 8204 5511 | Fax: 8204 5450 |
| Birth Centre | 8204 3130 | |
| Childbirth Education | 8204 4680 | |
| Continence Nurse | 8204 4667 | |
| Maternity Outreach | 8204 5189 | |
| Mental Health Nurse | 8204 5914 | Pager: 2361 |
| Multiple Birth Coordinator | 8204 4296 | Pager: 2761 |
| Obstetric Bookings | 8204 5197 | Fax: 8204 5210 |
| Obstetric Clinic Appointments | 8204 5197 | |
| Postnatal Support Service | 8204 4216 | |
| Radiology (Ultrasound appointments) | 8204 5367 | |
| Shared Care Midwife Coordinator | 8204 4650 | Pager: 20109 |
| | | |
| Noarlunga Health Service | 8384 9222 | |
| Noarlunga Health Service Maternity | 8384 9454 | |

## 18.2 Lyell McEwin Hospital (LMH)

The Lyell McEwin Hospital (LMH) provides a level 2[4] obstetric service for women and their families, catering for women having a low risk pregnancy and for women having complicated pregnancies. LMHS has been awarded the Baby-Friendly Hospital Accreditation.

**Booking procedures for Shared Care:**

1. Send fax to the Women's & Children's Clinic (WCC) on 8282 1612 "Attention Shared Care"; or
2. Before 12 weeks gestation telephone WCC on 8282 1611 and ask for an appointment for "shared care new" (currently these are on Tuesday, Friday and some Mondays). Urgent appointments can be arranged at short notice via a phone call to the Midwife Coordinator.

**Birth Centre**

This is an option for women assessed as low risk of complications and who prefer a more natural approach to childbirth with little intervention. Women and their families are supported through pregnancy and birth by a team of midwives who support active birth in a relaxed, homely environment.

Women wishing to use the Birth Centre and have shared care with their GP ideally should make their wishes known at the shared care booking visit. If undecided at this time, later bookings can be made by negotiation. Women may have alternate visits with their GP and the birth centre midwife until the 36 week Consultant visit then transfer to the Birth Centre for all remaining visits. This plan is negotiable.

**Antenatal Clinics**

Midwives run the low-risk antenatal clinics in the Birthing and Assessment Unit. The Consultant Obstetricians run the high-risk antenatal clinics along with the Registrars and RMOs as a teaching hospital.

**High Risk Pregnancy and Pre-Pregnancy Counselling Clinic**

Clinics are conducted jointly by Consultant Obstetricians and other medical specialists for women with complicated pregnancies.

**Recurrent Pregnancy Loss Clinic**

A dedicated Recurrent Pregnancy Loss Clinic – appointments phone 8182 9306.

**Young Women's Pregnancy Clinic**

A program designed specifically for young, pregnant women. It provides an informal opportunity to meet with midwives, a peer support worker and other young women.

**Childbirth and Parenting Education**

A wide range of childbirth classes designed to meet the woman's needs, lifestyle and information preference are provided.

**Breastfeeding Day Assessment and Support Unit**

Available to all breastfeeding mothers of babies of up to 8 weeks and is staffed by midwives who are Lactation Consultants or who have completed an appropriate breastfeeding course.

**Perinatal Mental Health Service**

A mental health team of 2 midwives and a psychiatrist provide support for women during and after their pregnancy. Women may self refer to the service. The midwife also provides in-patient and home visits. Support groups are also run and coordinated on site, by the team.

[4] Level 2 services provide comprehensive care for women with uncomplicated pregnancies and normal babies and care for most illnesses in women and a limited range of babies.

**Complex Case Multidisciplinary Meeting**

A weekly forum presents complex cases and discusses antenatal and postnatal management for women with complex medical and/or psychosocial problems.

This multidisciplinary team consists of Obstetricians, Paediatricians, Shared Care Liaison Midwife, midwives, mental health midwives, social workers, CYFS, CAYH, Anglicare, Drug and Alcohol Services Council (DASC) representative and invited care providers, as the need arises.

**Continence Clinic**

Conducted by an accredited incontinence midwife practitioner to assess, educate and support women with continence issues (both faecal and urinary). This clinic interlinks with the colorectal and urodynamic team.

**Northern Women's Community Midwifery Program**

A community based midwifery service, offering continuity of midwifery care and carer throughout pregnancy, labour and the postnatal period. It is based at the Northern Women's Community Health Centre, and works closely with LMH. Contact 8252 3711 for more information.

**Mothercarer Program**

The LMH is the only metropolitan maternity service in Australia to offer the Mothercarer Program. Women who are discharged after a 'short stay' are eligible for the Program which provides a carer in the home for up to 6 hours per day for up to 6 days, and a daily visit by the domiciliary midwife. The Mothercarer, trained in mother and baby basic health, will link with the home visiting midwives and also assist with normal household duties.

**Baby Friendly Hospital Initiative (BFHI) Accredited**

A World Health Organisation (WHO) initiative to promote, support and encourage breastfeeding. LMH has been accredited as a BFHI hospital since 2000.

**Telephone list for Lyell McEwin Hospital**

| | |
|---|---|
| Hospital number | 8182 9000 |
| O&G Department Office Tel | 8182 9306 |
| O&G Department Office Fax | 8182 9337 |
| Birthing Centre | 8182 9326 |
| Clinic Midwife | 8282 1613 |
| Clinic Receptionist | 8282 1611 |
| Continence Midwife | 8282 1497 |
| High-risk pregnancies (O&G Dept) | 8182 9306 (Professor Dekker's secretary) |
| Mental Health Midwife | 8182 9000 (Pager 7006 Mon-Fri) |
| Phone appointments | 8282 1611 |
| Shared Care Midwife Coordinator | 8182 9000 (Pager 6470 Mon-Fri 8am -6pm) |
| Ultrasound appointments | 8182 9999 |

## 18.3 Modbury Public Hospital (MPH)

Modbury Public Hospital provides a comprehensive level 1[5] obstetric service to women.

**Medical Complications of Pregnancy Clinic**

Conducted weekly by an Obstetric Physician specialising in joint management with the Consultant Obstetrician of most medical complications. For women with serious medical complications of pregnancy, care is conducted in liaison with the Women's and Children's Hospital.

**Obstetric Psychiatry Clinic**

Conducted weekly by a Psychiatrist, providing both antenatal and postnatal care for those women who feel the need for counselling regarding any psychological issues or concerns, such as postnatal depression etc.

**Antenatal Education**

Classes are conducted weeknights and Saturday mornings covering topics such as infant feeding, pain relief in labour, methods of delivery or any issues our clients wish to discuss.

MPH utilises a **'Young Mums Group'**, providing support and information relevant to young people's needs, such as budgeting advice etc. which is run by the Women's and Children's Hospital.

**Home Visiting Midwives Service**

A 7-day service for women following discharge.

**Breastfeeding Clinic**

Conducted weekly by lactation consultants for women with breastfeeding problems, or who need reassurance or support in this area.

**Postnatal Clinic and Well Baby Clinics**

Conducted weekly to provide a comprehensive 6 week postnatal check for mother and baby. Includes postnatal contraceptive advice for women (including the lactating mother) and a full baby check by the paediatric medical team.

**Telephone and fax lists for Modbury Public Hospital**

| | |
|---|---|
| Hospital Number | 8161 2000 |
| Fax | 8161 2111 |
| Email Address | sandyphillips@modbury.sa.gov.au |
| Antenatal Appointments | 8161 2593 (8.30am - 4.30pm) |
| Antenatal Class Bookings | 8161 2154 |
| Clinic Midwifery Staff | 8161 2547 |
| Home Visiting Midwives | 0407 227 665 |
| Shared Care Midwife Coordinator | 8161 2227 |
| Social Worker | 8161 2000 or pager 90 |
| Ultrasound Appointments | 81612068 |

[5] Level 1 service provides comprehensive care for women with uncomplicated pregnancies and normal babies.

## 18.4 The Queen Elizabeth Hospital (TQEH)

The Queen Elizabeth Hospital (TQEH) does not currently provide a birthing service. Women can receive antenatal care (2 half day clinics per week) by midwives at TQEH, but they need to give birth and receive postnatal care at another hospital, usually the Women's and Children's Hospital (WCH).

The woman needs to be assessed as "low risk" and expecting a "normal vaginal delivery" if she wishes to have her antenatal care provided by a midwife.

**Home Visiting Midwives**

The Midwives provide a follow-up service for women and their baby in their own home and are integral to the postnatal care outlined above.

**Midwifery Group Practice – see WCH for more information**

A model of care that offers low risk women access to team midwifery. Women need to be triaged early (by 10 weeks) and booked through TQEH if they wish to have this care.

**Mental Health Midwife** (contact via TQEH pager number 20515)

Support for women who are at risk of developing post-natal depression, and for others who have a past history of mental illness. An antenatal and postnatal support group has also been established in the western suburbs, facilitated by a Coordinator.

**Continence Clinic**

The clinic midwives work in conjunction with specialised medical staff with women who have, or develop, continence problems resulting from pregnancy or birth. This service also includes education, assessment and support for all women with a continence issue. The service interlinks with the colorectal and gynaecology teams.

**Baby Friendly Hospital Accredited**

A World Health Organisation initiative to promote, support and encourage breastfeeding; TQEH has been accredited as a Baby Friendly Hospital since 1997.

**Antenatal Educator**

Provides education to women and their families on an individual basis or as a group session. Special group classes are available for teenagers, and in Vietnamese. Other non-English speaking background women are offered one to one education sessions with an interpreter and the educator.

**Women's Health Clinic**

This clinic provides contraceptive advice, routine smears and breast checks.

**Telephone and fax lists for The Queen Elizabeth Hospital**

| | | |
|---|---|---|
| Antenatal Appointments | 8222 7050 (8am to 4pm) | Fax: 8222 7986 |
| Antenatal Bookings | 8222 7681 (8am to 4pm) | |
| Antenatal Class Bookings | 8222 7050 | |
| Clinic Midwifery Staff | 8222 7678 | |
| Continence Nurse Advisor | 8222 6062 (9am to 4pm) | |
| Home Visiting Midwives | 8222 7899 | |
| Mental Health Midwife | 8222 6000 pager 6454 | |
| Shared Care Midwife Coordinator | 8222 6000 pager 6470 | |
| Postnatal area | 8222 7647 | |
| Social Worker | 8222 7250 | |
| Ultrasound Appointments | 8222 6894 | |

## 18.5 Women's and Children's Hospital (WCH)

The Women's and Children's Hospital (WCH) provides a comprehensive level 3[6] obstetric service, providing all levels of care.

**Medical (Traditional) Antenatal Care (Public Patients)**

During your pregnancy you will regularly visit the Women's Outpatients Department where you will be cared for by a combination of Doctors and Midwives. A different team of Doctors and Midwives will assist with your labour and birth. You will have your baby in the Hospital's Delivery Suite.

**Midwives Clinic (Public Patients)**

If you attend the midwives clinic you will see the same midwife for most visits. You may ask to see a Doctor at any time during your pregnancy. A different team of experienced Doctors and Midwives will assist you during and after the birth of your baby. You will have your baby in the Hospital's Delivery Suite.

**Shared Antenatal Care with a General Practitioner (Public Patients)**

It may be possible for you to visit your own GP for most of your pregnancy and after the birth of your baby, provided your GP is accredited by the WCH. You will need to visit the Hospital at least once before the 20th week of your pregnancy and again at 36 and 40 weeks. From 40 weeks all your visits will be at the WCH. We encourage you to see your GP two weeks and again six weeks after the birth of your baby (refer to the end of this WCH section for details on booking with the WCH Midwife Coordinator for GP Obstetric Shared Care).

**Midwifery Group Practice (Public Patients)**

Sometimes known as "Caseload Midwifery", Midwifery Group Practice (MGP) enables women to be cared for by the same midwife (Primary Midwife) supported by a small team of midwives throughout their pregnancy, during childbirth and in the early weeks at home with a new baby. The Primary Midwife will continue to provide care regardless of the need for medical involvement. Where a baby is born will depend on availability of rooms and specific needs at the time of labour.

**High Risk Pregnancy Service**

Provides assessment and management for women with pregnancies complicated by medical, surgical or psychiatric problems, or by fetal complications. Obstetric Consultants provide care.

**Maternal Fetal Medicine Unit**

The Maternal Fetal Medicine Unit at the Women's and Children's Hospital in Adelaide provides a sub-specialist referral centre to women who are experiencing complicated pregnancies, and problems with their unborn babies. Amongst our consultants are the only RANZCOG certified MFM sub-specialists in South Australia.

**Warinilla**

Available to women who are drug dependent or have had a previous problem with drugs and alcohol

**Parent Education**

Tours of the obstetric facilities are available Monday to Friday mornings (with the exception of public holidays). Women should be at the Women's Outpatient Clinic, 1st Floor, Queen Victoria Building prior to 9 am on the day of their choice. There is a large range of choices for women wanting antenatal education, ranging from evening classes to a Saturday workshop. There are also classes on specific topics.

[6] Level 3 services provide comprehensive care for women with uncomplicated pregnancies and normal babies; and all types of illnesses, abnormalities and complications in women and babies.

**Domiciliary Midwife**

The postnatal Domiciliary Care Service is offered to all women who live within a 20km radius of the WCH, when they leave the Hospital after their baby is born. WCH provides a midwifery home visiting service for up to 5 days.

**Breastfeeding Day Assessment and Support Unit**

Available to all breastfeeding mothers of babies up to 8 weeks and is staffed by midwives who are Lactation Consultants or who have completed an appropriate breastfeeding course.

**Neonatal Clinic**

Babies who have been admitted to the WCH nurseries or who have other complications will be seen in the Neonatal Clinic for up to 12 months.

**Postnatal Clinic**

Women who have had difficult births or complications will be reviewed in this clinic. Women are encouraged to attend their General Practitioners for their routine 6-week check with their babies. They are unable to attend the Women's and Children's Hospital for the routine 6-week check.

**Allied Health Physiotherapy**

Physiotherapists provide services within Allied Health's Paediatric and Women's Health Programs. Services include assessment, diagnosis and management of children and women in the areas of neonatology, perinatal medicine, gynaecology, obstetrics and paediatrics.

**Contact Numbers for the Women's and Children's Hospital**

| | |
|---|---|
| Admissions | 8161 7508 |
| Antenatal Bookings (Outpatients Clinic) | 8161 7492 / 8161 7593 |
| Antenatal/Gynaecology Ward | 8161 7726 |
| Breastfeeding Day Assessment Unit | 8161 7959 |
| Core Laboratory | 8161 6704 |
| Cytogenetics (Amnio/CVS results) | 8161 7413 |
| Day Assessment Unit | 8161 7719 |
| Director of Obstetrics & Gynaecology | 8161 7000 |
| Drug Information | 8161 7222 |
| Maternal Fetal Medicine (MFM) | 8161 7000 page MFM Consultant |
| Medical Genetics | 8161 6281 |
| Midwifery Group Practice | 8161 8406 |
| Parent Educator | 8161 7571 |
| Physiotherapy | 8161 7579 |
| Shared Care Midwife Co-ordinator | 8161 7000 Pager 4259 (8am – 4.30pm) |
| Fax: | 8161 8189 |
| Social Work | 8161 7580 |
| South Australian Maternal Serum Antenatal Screening Program (SAMSAS) | 8161 7285 Fax: 8161 8085 |
| Ultrasound Bookings | 8161 6055 |
| Ultrasound Results | 8161 7391 |
| Women's Assessment Service (Emergency) | 8161 7530 |

**Preferred Laboratory of choice**: IMVS or WCH laboratories

**Booking Procedures for Obstetric Shared Care**

1. GPs may send a referral via fax to the Midwife Coordinator's office on 8161-8189; **or**
2. GPs may wish to contact the Midwife Coordinator directly on 8161-7000, pager 4259 to arrange appointments; **or**
3. GPs may wish to advise their patients to contact the Midwife Coordinator directly on 8161-7000, pager 4259 prior to 12 weeks to schedule an appointment convenient to the patient. Antenatal clinic days are held on Tuesday, Wednesday and Friday.

# *2 Week Postnatal Check (Mother)*

**For completion by General Practitioner**

…….../……../…….. (Date of Consult) …..……..Weeks postnatal

Mother's Last Name | Mother's First Name | D.O.B

*** (Mother to fill in before seeing doctor)**

1. How are you feeling about yourself? .....

.....

2. How are you feeling about the baby and how is baby going? .....

.....

3. How are you sleeping? .....

4. How is your partner feeling? .....

*** (Doctor to complete: this is a guide for your examination of mother)**

1. Lochia Normal ❑ Excessive ❑

2. Perineum (healing/sutures/pain) .....

3. Abdominal wound: (sutures left?) .....

4. Breasts and Nipples: Breastfeeding ❑ Cracks/Grazes ❑
Suppression ❑ Pain/discomfort (? Mastitis) ❑

5. Family supports/relationships with: .....

6. Edinburgh Postnatal questionnaire given (if applicable): No ❑ Yes ❑

Result:……

7. Referral: Child & Youth Health (eg Torrens House / Day Clinic) ❑ Australian Breastfeeding Assoc. ❑
Lactation Consultant ❑ Social Worker ❑

8. Other Issues (e.g. headaches, backache, haemorrhoids, incontinence)

.....

9. Comments: .....

.....

# *2 Week Postnatal Check (Baby)*

**For completion by General Practitioner:** **this is a guide for your examination of baby**

| ……/……/…… (Date of Consult) | | | |
|---|---|---|---|
| | | | |
| Last Name | First Name | D.O.B | SEX |

1. Age (days):……

2. Base weight: ……..kgms

| | |
|---|---|
| Birth Weight: | ..…….kgms ……% |
| Birth Head Circumference: | . …….. cms…..……% |
| Birth Length: | …..…….. cms……..…% |

3. Feeding: Breast ❑ Frequency .....
*(should be at least 4 hourly and at least once overnight)*

Bottle ❑ Type of formula .....

Amount/Frequency .....

Mixed ❑……

4. Behaviour between feeds:……

5. Sleeping patterns:……

6. Appearance:……

7. Physical examination *(if necessary):*……

| | | | |
|---|---|---|---|
| 8. Cardiovascular abnormalities e.g. murmur | | Yes ❑ | No ❑ |
| 9. Hip testing: | Right: | Normal ❑ | Abnormal ❑ |
| | Left: | Normal ❑ | Abnormal ❑ |
| 10. Jaundice: | | Yes ❑ | No ❑ |

*(NB: Should **not** be present if formula fed. If breastfeeding **may** be normal but do not assume so)*

| | | | |
|---|---|---|---|
| 11. Mother's handling: | Confident: | Yes ❑ | No ❑ |
| | Interactive: | Yes ❑ | No ❑ |
| 12. SIDS awareness / advice given: | | Yes ❑ | No ❑ |
| 13. Referral: | Child & Youth Health | ❑ | |
| | Paediatrician | ❑ | |

14. Comments:……

……

# *6 Week Postnatal Check (Mother)*

**For completion by General Practitioner**

| | | |
|---|---|---|
| ……/……/…… (Date of Consult) | | |
| Mother's Last Name | Mother's First Name | D.O.B |

*** (Questions to ask mother)**

1. General health / Comments
*How do you feel about yourself and your baby? How is your partner coping? Supports?*

.....

2. BP:..... LMP: .....

3. Feeding: Breast ❑ Formula ❑ Mixed ❑

4. Breast / Nipples: .....

5. Abdomen wound: Scar: .....

6. Last Pap Smear: Date: ..... Result: .....

7. Perineum / Pelvic Examination: Vagina ❑ Vulva ❑ Pelvic Floor ❑
Adnexae ❑ Uterus ❑ Perineum ❑

8. Rubella Status: Immune ❑ Not immune ❑ Vaccinated: Yes ❑ No ❑

9. Intercourse: Resumed: Yes ❑ No ❑ Problems: Yes ❑ No ❑

10. Contraception: Yes ❑ No ❑

11. Incontinence: Urinary: Yes ❑ No ❑ Faecal: Yes ❑ No ❑

12. Follow up of pregnancy complications:
*(e.g. gestational diabetes, hypertension)* Yes ❑ No ❑

13. Edinburgh Postnatal Depression Scale given (if applicable) Yes ❑ No ❑
Result:

13. Referrals to other services:

| | | | |
|---|---|---|---|
| Child & Youth Health *(eg. Torrens House / Day Clinic)* | ❑ | Community Health Centre | ❑ |
| Lactation Consultant | ❑ | Australian Breastfeeding Association | ❑ |
| Social Worker | ❑ | Other *(please state)*..... | ❑ |

14. Other issues:.....

15. Comments: .....

.....

# *6 Week Postnatal Check (Baby)*

**For completion by General Practitioner**

| ……/……/…… (Date of Consult) | | | |
|---|---|---|---|
| Last Name | First Name | D.O.B | SEX |

1. Birth Weight: % (percentile) ……kgms…..…%
2. Birth Head Circumference: ……....cms …..…%
3. Birth Length: ……...cms ……%

| **6 Week Check** | |
|---|---|
| Bare weight % (percentile) | ……kgms …...…% |
| Head circumference | ……cms ……% |
| Length | ……cms ……..% |

4. Fontanelle: ……..
5. Eyes: Appearance: ……
   Tracking: ……
   Facial Symmetry: ……
6. Smiling: Yes ❑ No ❑ Observed ❑ History only ❑
7. Nutrition: (appearance) ……
8. Behaviour between feeds ……
9. Sleeping patterns ……
10. Cardiovascular: murmurs ……
11. Femoral pulses present Right ❑ Left ❑
12. Hip testing: Right Normal ❑ Abnormal ❑
    Left Normal ❑ Abnormal ❑
13. Testes fully descended: Right Yes ❑ No ❑
    Left Yes ❑ No ❑
14. Jaundice: Yes ❑ No ❑
15. Feeding: Type…… Frequency…… Formula…… Formula……
16. Guthrie follow up results (okay?) Yes ❑ No ❑

*(If not, specify abnormality)*……

17. Hearing: …… 16. Bowel habits: ……
18. Immunisation discussed: …… 18. Cot safety advice: ……
19. SIDS awareness discussion: ……..

## 20. BREASTFEEDING INFORMATION

# Breastfeeding Day Services & Support Services

ABN 77 515 546 956 May 2005

www.lactation.org.au or www.breastfeeding.asn.au

| Location | When | Staffed by | Available to | Contact |
|---|---|---|---|---|
| **Australian Breastfeeding Association** | Venues and dates throughout the week | Coffee mornings. Discussion meetings. Phone counselling. Home visits by arrangement. Books & booklets available. | All expectant and breastfeeding families. Groups throughout Adelaide and country areas. | 7 day counselling<br><br>(08) 8411 0050 |
| **Women's & Children's Hospital**<br>North Adelaide Post Natal Ward | Monday to Friday. | 3 clients per day (booked) Staffed by Midwife/ Lactation Consultant. | All breastfeeding mothers of babies up to 8 weeks. | (08) 8161 7958 Essential to book. |
| **Lyell McEwin Health Service**<br>Postnatal 1A. Elizabeth Vale | Monday to Friday. | 2 clients per day. Staffed by Midwives. | All breastfeeding mothers of babies up to 12 weeks postnatal. | (08) 8182 9380 Essential to book the day before. |
| **Gawler Health Service** | Arrange via Community Midwife. | Staffed by Midwives. | All breastfeeding mothers of babies up to 6 weeks. | (08) 8521 2011 |
| **Flinders Medical Centre**<br>Bedford Park Postnatal (Ward 4C) | Tuesday, Thursday and Fridays. 9.00 am - 4.30 pm | Midwife/Lactation consultant. | All mothers and babies. No age limit. | (08) 8204 4216 |
| **Modbury Public Hospital**<br>Modbury | Tuesdays 8:30 am – 4:30 pm | Midwife/Lactation Consultant | All breastfeeding mothers of babies up to 6 weeks. | (08) 8161 6000 Ext: 2154 |
| **Mt Barker Hospital**<br>Wellington Road | Tuesdays 9.00 am – 4.00pm | Midwife/Lactation Consultant | All mothers and babies. No age limit. | (08) 8393 1777 |

# Child & Youth Health
# Family & Baby Program (FAB)
# Intensive Post Natal Support

ABN 77 515 546 956 May 2005

www.lactation.org.au or www.breastfeeding.asn.au

**CYH can offer Day Service/Breast Feeding Support at the following sites for Parents of Babies 0 – 12 months**

| METROPOLITAN | | COUNTRY | |
|---|---|---|---|
| Cowandilla | 8354 8000 | Barossa | 8562 3366 |
| Edwardstown | 8179 4500 | Berri | 8580 2526 |
| Elizabeth City | 8282 2922 | Mount Gambier | 8725 0705 |
| Enfield | 8342 4070 | Murray Bridge | 8539 3400 |
| Marion | 8179 4500 | Port Augusta | 8648 5563 |
| Modbury | 8397 7700 | Port Lincoln | 8682 2414 |
| Mount Barker | 8398 6600 | Port Pirie | 8638 4500 |
| Norwood | 8362 5422 | Whyalla | 8648 8930 |
| Port Adelaide | 8444 2000 | | |
| Seaford | 8392 4510 | | |
| Salisbury | 8182 0000 | | |
| Woodcroft | 8325 8800 | | |
| Woodville | 8243 1177 | | |

**24 Hour parent Helpline: 1300 364 100www.cyh.com**

# General Practitioners
# Who are also Lactation Consultants

ABN 77 515 546 956 May 2005

www.lactation.org.au or www.breastfeeding.asn.au

| Doctor | Location | Phone |
|---|---|---|
| Cameron, Catherine | Toorak Gardens | 8364 1688 |
| Goold, Jennifer | North Adelaide | 8267 1207<br>0417 870 591 |
| Ierace, Carolina | Findon | 8356 1311 |
| Khaw, Carole | Toorak Gardens | 8364 1688 |
| Lawlor-Smith, Carolyn | Happy Valley | 8381 2822 |
| Mccaul, Moira | Franklin St, City | 8410 0774 |
| Peterson, Catherine | Seacombe Gardens | 8296 0122 |
| Price, Cate | Flagstaff Hill | 8270 1194 |
| Ramsey, Alison | Mt Barker | 8391 1300 |
| Sosa, Dragica | Salisbury North | 8258 8988 |

## Obstetrician & Gynaecologist Lactation Consultant

| | | |
|---|---|---|
| Nichols, Mandy | Flinders Private Hospital, Bedford Park & Ashford Specialist Centre, Ashford | All appointments<br>Ph: 8297 1855 |

# Lactation Consultants in Private Practice

**May 2006**

www.lactation.org.au or www.breastfeeding.asn.au

| | |
|---|---|
| **Murphy, Carolyn**<br>RN, RM, IBCLC, Child Health Nurse | Ph: 8271 0597<br>Fee negotiable |
| **Gilpin, Jo**<br>RN, RM, IBCLC, Grad. Dip Soc. Science, Health Counselling<br>Child Health Nurse | Ph: 8556 8252 (Home)<br>Mobile:0408 848 279<br>$50.00 per consultation (approx. 1 hr) |
| **Bruce, Jill**<br>RN, RM, IBCLC, Diabetes Educator | Ph: 0416 008 775 (contact anytime)<br>Fees apply for a home visit |

## Private Hospital Services

Private hospitals have lactation consultants available at no cost to mothers who deliver at these hospitals, but a fee may apply if delivered elsewhere.

A lactation consultant can be contacted either through the private hospital postnatal clinic or by ringing the maternity section of the private hospital. Depending on the hospital the mother may have up to six (6) visits with a lactation consultant to assist with breastfeeding.

- **Ashford Hospital** Ph: 8375 5997 (Newborn Support)
- **Burnside War Memorial Hospital Inc** Ph: 8202 7222 (Maternity)
- **Calvary Hospital** Ph: 8239 9307 (Postnatal Clinic)
- **North Eastern Community Hospital** Ph: 8366 8255 (Postnatal Support Clinic)