Information for pregnant women and their partners
Dr Karuna Raja

Congratulations on your pregnancy and welcome to our practice. **Your partner/family members are welcome to attend consultations with you.** This document provides some useful information about the management of your pregnancy, including; routine tests, antenatal visits and matters relating to childbirth. You will find the answers to many of your day to day queries here.

I have visiting rights at the:

- Delivery Suite, RPA Women & Babies, Camperdown
- Birth Centre, RPA Women & Babies, Camperdown

Our contact details:

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Newtown 2042
Phone 02 **9550 5766**, Fax 02 **9557 2593**
Mobile (for emergencies) 0402805241
Email: office@drkraja.com.au
Website: www.drkraja.com.au

After hours, holiday /conference cover:

The phone switches to after hours cover from 5pm to 9am. During that time, I am available through the Switch board at RPA hospital **(02) 9515 6111** or on my mobile **0402805241 (in case of emergency)**. If you don't hear back from me, please ring again or if it is urgent, ring your own GP or go to the casualty department at your nearest hospital. **After 20 weeks of pregnancy, you should ring RPA delivery suite (95158444). If you are less then 20 weeks pregnant and experiencing any symptoms e.g. bleeding, please ring or present to the Accident and Emergency of the nearest hospital.**

When in labour, please ring the delivery suite (labour ward) or the Birth Centre (if you are booked there). The delivery suite staff will advise me of your attendance and examination findings and a plan of management is established.

The course of labour is unpredictable. The delivery suite midwives attempt to keep me informed at all times and give enough notice for me to arrive in time for your delivery. However, sometimes due to circumstances such as a rapid delivery, you may already have had the baby before I arrive **(a good outcome),** or if there is an emergency, I may have to ask another doctor, who is closer in location, to get started or deliver (for example prepare/ start caesarean section in an emergency). I am covered by other consultants for holidays/ conferences/teaching and registrar training commitments. I am mostly covered by Dr Sue Jacobs. However, from time to time, there are other consultants who may be covering. I also have weekend arrangements and alternate weekends are shared with other obstetricians. I attempt to inform you about the arrangements in advance, however it is not always possible. I may also ask other obstetricians to cover me at short notice; for example, if I am going out for dinner or attend a concert etc. In that case, you will be

managed by them until my return.

I am covered by both male and female colleagues and it may not always be possible to have a female doctor attending you (if you have preference for a female obstetrician and other health professionals). In an emergency, I may seek help from both male and female colleagues.

Fees for services:

Fees for your pregnancy are based upon the level of care. The Medicare and your fund will cover some expenses. A separate sheet is provided on fees. Please contact your individual fund and Medicare to calculate the amount of rebate you will be receiving. There are out of pocket expenses. Most funds cover your in- patient (hospital admission) expenses.

The Pathology tests are usually bulk billed by Central Sydney Pathology (RPAH Medical Centre, Level 3/307). We could also request bulk billing from private pathology. However, it is up to them to honour the request. For ultrasound examinations, you are referred to specialist women ultrasound practices and these practices do not bulk bill but there are Medicare rebates. **It is advised to have your ultrasound in specialist practices only**.

Routine Care of Newborn Babies at RPAH: Your choices:

All babies born at RPA Hospital receive routine care from midwives, nurse practitioners in training and doctors. An important part of this is the newborn examination, often referred to as the "Baby check". All babies will be examined at birth by the attending midwife and will then be examined again in more detail, usually on day 2 or 3. This examination is to look for previously unrecognised abnormalities and involves a complete examination, particularly of the hips and heart.

As a private patient in RPA Hospital, you have choices with respect to this routine care.

Choice 1: Hospital Care:

This is the care that is provided to all babies whose mothers are admitted as public patients. The 'Baby check' examination will be performed by a resident medical officer or a neonatal nurse practitioner in training who are part of the Department of Newborn Care. They receive specific training in this examination and work under the direct supervision of one of the Neonatal Staff Specialists. There is no fee for this service.

The Neonatal Staff Specialists are not usually able to provide routine care but are available to review babies if there are specific concerns from obstetrician, doctors in training or midwives or if you have concerns. If one of the Staff Specialists sees your baby, there are no out of pocket expenses.

Choice 2: Private Pediatrician:

You can choose to have your baby examined privately by one of the Visiting Paediatricians.
(I usually refer to Dr Joanne Leal, Central Paediatrics, 96 Percival Rd Stanmore. Tel: 9564 5777).
Choosing this option, your baby will have their own Paediatrician, who will perform a "Baby check" and will be available to consult if there are any concerns or problems that arise with your baby during your hospital stay and beyond. Your Pediatrician will also be able give you an appointment to perform the important 4 to 6-week examination in his/her rooms and follow up beyond that if you wish. See the 'Blue Book' for the recommended infant examination schedule during the first year. There are Medicare rebates for these services, however there are some out of pocket expenses.

Information relating to the Antenatal Period

Calculating Expected date of delivery from last menstrual period:
9 months and 7 days = 283 days. (Based on 28 days cycle)
If you have longer cycles e.g. 35 days add 7 days

A dating ultrasound is important to determine the correct date and location of the pregnancy and is offered routinely in most hospitals. It is particularly important and recommended

- ❖
- ❖ If you are unsure of last menstrual period
- ❖ Have been taking contraceptive pills in the previous 3 months
- ❖ Have been breastfeeding within 3 months of conceiving
- ❖ Any bleeding/cramping or other concern about pregnancy

Visits/Appointments:
Your first appointment usually takes about 30-60 minutes and subsequent appointments are scheduled for 15 minutes. Please arrange with staff if you wish to have a longer appointment. Your first visit to this practice should be around 8 weeks unless there is an indication that you require an earlier appointment e.g. previous miscarriage, risk of ectopic pregnancy.

If the pregnancy is straightforward, you will be seen monthly until 28 weeks, fortnightly until 36 weeks and then weekly until you give birth. You could choose to have shared care with your family doctor if you prefer this option.

At each visit you will have your blood pressure taken and weight recorded (unless you wish otherwise). I will discuss the results of tests e.g. blood tests and ultrasounds and will also be able to answer any questions about the 'day to day' issues in your pregnancy. You will also have an obstetric (abdominal) ultrasound /examination. A vaginal/speculum examination is not performed except for collecting a Pap smear, vaginal swab for infection or if there is abnormal bleeding or discharge. A vaginal examination may be performed at about 40 weeks or if you are overdue.

Antenatal preparation:

All women should see their GPs many months before they decide to fall pregnant to discuss their personal medical/ surgical history including current medication. Your GP should also be aware of you and your partner's ethnic background and family history of any fetal abnormality/genetic/hereditary condition. If you had any complications/issues in your previous pregnancy, please discuss the impact of it on your next pregnancy, with your obstetrician or GP. In selected population or on your request, screening for cystic fibrosis (CF), Fragile X syndrome (FXS) and Spinal Muscular Atrophy (SMA)may be recommended.

Vaccinations:
Many months before your pregnancy, you should have checked your immune status for Rubella (German Measles), Varicella (chicken pox) and Pertussis (whooping cough) and get vaccinated if not immune. It is also advisable to have vaccination for Hepatitis B.

Folic acid:
It is recommended that you continue to take folic acid 0.5 mg (or higher dose if recommended) at least for the first 3 months around conception. Ideally you should be taking the folic acid commencing about 3 months before falling pregnant and continuing taking for about first three

months of pregnancy.

Information for mothers who are blood group negative (Rhesus disease):

Rh factor is a blood group protein Rh (D) which is attached to red blood cells. 85% of the population has this protein (called Rh positive) but 15% do not have it (called Rh negative). When mother's blood type is negative and the baby is Rh Positive, serious complications can occur with current and future pregnancies. This is rare now with the almost universal administration of use of Anti D injections. If your blood group is negative, you will be given an Anti-D injection at about 28 weeks and again at 32-34 weeks and after your delivery If baby is Rh positive). The Rh disease will not affect the pregnancy, if: The woman is Rh positive and the baby is Rh negative, and if the woman is Rh negative and the fetus is also Rh negative.

Fetal blood group is jointly inherited from both the parents. For this reason, a fetus may have a different blood type to its parents.

Antenatal tests:

Most of the following tests are part of the routine antenatal screening in NSW and recommended.

- Full blood count, screening for thalassemia, Iron studies
- Blood Group
- Antibody Screen (in early pregnancy and at 28 weeks +_36 weeks)
- Rubella – to check for immunity to German Measles
- HIV
- Hepatitis B & C
- VDRL – to check for syphilis
- Mid stream urine to check for silent urinary infection
- Glucose tolerance test (75 g GTT) at 28 weeks. Some women would also have the test at 20 weeks or earlier, if they have risk factors for developing diabetes in pregnancy e.g. family history, diabetes in previous pregnancy,
- Varicella Zoster (chicken pox)
- Vaginal swab in early pregnancy to exclude bacterial vaginosis in some women with risk factors e.g. previous premature delivery, Screening for STI in some women
- TFT, Urinary iodine, Vit D

Disorders detected by DNA technology:

The following genetic diseases can be detected by prenatal diagnosis. There are others which are not included in this list. If you believe there is a family history of a known or unknown genetic disorder, it would be important to discuss this with your GP even before you start trying for a baby.

- Duchenne and Becker muscular dystrophy
- Myotonic dystrophy
- Fragile X
- Hemoglobinopathy's e.g. alpha and beta thalassemia and sickle cell disease
- Hemophilia A and B
- Huntington disease
- Cystic fibrosis
- Neurological diseases such as neurofibromatosis, peroneal muscular dystrophy and spinal muscular atrophy
- Adult polycystic kidney disease.

Please discuss with your GP or myself early in the pregnancy if there is any history of these disorders in your or your partner's family as you would be referred for genetic counselling.

10 weeks

NIPT- See information about Harmony (trade name of the NIPT test provided by one company. There are many companies providing the test with different names) Please go to www.sufw.com.au

11-13 weeks

Early anatomy /serum screening and genetic counseling: Please go to www.sufw.com.au

The normal human cells have 46 chromosomes (genetic material). Any extra or missing chromosome or change in the structure or arrangement of the chromosome can produce fetal abnormality and intellectual impairment. Not all genetic abnormalities can be identified despite extensive testing.

You may be offered genetic counselling if it is considered that your baby has increased risk of chromosomal abnormality e.g. family history or age >34 years or at your request or the results of the first trimester screening.

The risk of chromosomal problems in babies is increased with maternal age and more so after 34-35 years of age. However, the first trimester screening tests now is offered to all women for screening of chromosomal conditions. An ultrasound is performed between 11.5 – 13.5 weeks to measure the thickness of skin at the back of the baby's neck (NT) and other anatomy. This is performed by a specialist in woman ultrasound and is non-invasive. A combined first trimester blood (maternal) and nuchal translucency test is available to increase the accuracy (up to about 90%) of estimation of risk of chromosomal condition. It consists of a blood test at around 12 weeks of pregnancy, followed by an ultrasound. A combined risk is then calculated taking into account the maternal age. Most practices also calculate a risk of pre-eclampsia in pregnancy (if you are considered at high risk of pre-eclampsia, Aspirin 150 mg at night, started before 16 weeks of pregnancy have been shown to reduce the risk)

A low risk result means that the probability of Down syndrome and other less common chromosomal abnormality is very low. Around 5% of screening results will be high risk but most of these babies will not have Down syndrome or other chromosomal condition. However, if the test result is high risk, you would be offered further testing i.e. Chorionic Villous sampling (CVS) or amniocentesis (amnio).

Testing for genetic conditions or chromosomal problems is optional and in no way compulsory

Specialized tests:

Based on your age, family history or abnormal first trimester screening NIPT, Nuchal translucency and blood test, it may be necessary to have more detailed testing as described below. An ultrasound examination is performed before performing these tests. Both tests are performed by specialist doctors.

Chorionic villous sampling:

Chorionic villi are small thread like projections that make up part of the early placenta. Cells

of the placenta are very similar in chromosomal structure to the fetus and so abnormalities in the chromosomes of chorionic villi are also found in the chromosomes of the baby. During the procedure, a small amount of placental tissue is taken through vagina (or some times through abdomen) and cells are examined for chromosomal abnormalities. This test can be performed from 10 weeks gestation onwards. The results are usually available in 2 weeks. This is an invasive test with risks of infection and miscarriage. You would have extensive pre-test counselling if you are recommended to have this test.

Amniocentesis:

This test also provides information about chromosomal structure of the baby and is performed from 15 weeks gestation onwards. It involves removing a small amount of amniotic fluid (water around the baby) through abdomen; It contains baby cells that have been shed from the skin, lungs and bladder of the baby. The results are available in approximately 2-3 weeks. There is a small risk of miscarriage and infection with this test.

Possible complications of amniocentesis and CVS:

The risk of miscarriage is less than one loss of pregnancy every 200 women tested. The risk of miscarriage is slightly higher with CVS. Leaking of amniotic fluid (rupture membrane) and infection can occasionally occur after amniocentesis and CVS. Sometimes the results could be incorrect due to the sample growing mother's cell rather than fetal cells.

15-19 weeks- Fetal anomaly scan/maternal serum screening:

A second trimester maternal serum screening could be offered if you missed first trimester screening. This test is best performed between 15-17 weeks gestation.

A detailed ultrasound examination of your baby is performed between 18-20 weeks to detect any structural abnormality. You will be given a photograph of the baby, or you may request a CD.

Antenatal test at 26-28 weeks:

- Full blood count, Iron studies
- Antibody Screen
- Glucose Tolerance Test (2 hour) –

Growth Ultrasound at 36 weeks:

Most women will be offered a wellbeing ultrasound at 36 weeks.

Antenatal test at 36 weeks:

A Low Vaginal Swab – to check Strep B, which you may carry (30% Australian women carry this bacterium in their vagina without usually having any adverse effects). Rarely Strep B infection can be harmful to the baby if appropriate measures are not taken during the delivery (most commonly antibiotics to kill the bacteria at the time of vaginal delivery). In case of previous mid-trimester miscarriage or a premature delivery, a vaginal swab may also be performed early in the pregnancy. All results will be discussed at your next visit but should there be a problem you will be contacted earlier.

Further ultrasound evaluation:

Additional ultrasounds may be needed to check the baby's growth and well-being, liquor volume, or length of cervix or placental location.

Booking into the hospital:

1) **LABOUR WARD**:
The booking office at RPA will send you an email inviting you to "book a bed" around the 20-week gestation. You can do this personally in the diagnostic Centre (**Suite 210, Level 2**, RPAH Medical Centre, 100 Carillon Avenue, Newtown – **9515 7344, Fax 9515 7339**). Alternatively, you can visit the front desk at RPA Women and Babies, Level 5 Royal Prince Alfred Hospital, Camperdown.

2) **THE BIRTH CENTRE**:
Bookings need to be made preferably before 11 weeks. A waiting list is kept if vacancies occur. Book in person at the Birth Centre (ask for directions at the front desk on Level 3 of RPA Women and Babies) or by calling **9515 6405**.

Antenatal classes:

Antenatal cases are important and help you and your partner prepare for birth and caring of a baby. You also become familiar to the hospital and staff. Please attempt to book for classes at around 14-16 weeks of pregnancy (although the classes don't start till later), as these are always overbooked.

The following are recommended classes. However, you could choose to do classes in your local area:

- **RPAH Women and Babies Parent Education Centre**
  9515 5284 (Bookings from 8am to 3.30pm) Email **rpah**.parenteducation@sswahs.nsw.gov.au

Are we going to have a perfect baby?

As future parents, we worry about the possibility of a child born with a medical condition or birth defect. Of every 100 babies born in Australia, about 2-3 have a significant birth defect. In addition, 2-3 of every 100 babies born have a minor defect. Most of these babies have parents with no obvious risk factors, inherited disease or medical problems. Most common defects are neural tube defects such as spina bifida, cardiac, digestive system and renal abnormalities, Chromosomal problems such as Down syndrome, Cerebral palsy (not a defect), cleft lip and palate, club foot, congenital hip dislocation, congenital hypothyroidism, phenylketonuria, cystic fibrosis, fetal alcohol syndrome

The Causes of birth defects could be genetic/chromosomal but many times there is no obvious cause. Most birth defects result from genetic and environmental factors and although the genetic factors are difficult to modify, environmental factors such as smoking, alcohol, drugs such as cocaine and amphetamine, poor nutrition are avoidable. Certain infections e.g. rubella can cause significant fetal damage and contact with people/children with any infection should be avoided.

Steps to take to reduce your risk:

A pre-pregnancy visits to your obstetrician or your GP is important. The doctor will review the family history of you and your partner to see if the risk of genetic conditions is increased in your baby based on this history. It is recommended that you take 0.5 mg folic acid commencing 2-3 month before conception and continue it in first trimester.

You should also be up to date with your vaccination mainly rubella, varicella, whooping cough and hepatitis B.
You should stop smoking and avoid passive smoking. Avoid alcohol altogether or limit it to one standard drink per day. Don't smoke marijuana or take any street drugs. Avoid over the counter medicines and complimentary medicine during pregnancy. Avoid high body temperature such as spa, sauna or heavy exercise. You should have regular antenatal check up from early pregnancy.

Common pregnancy symptoms/problems/considerations

Nausea and vomiting of pregnancy (NVP):
Commonly known as morning sickness, it affects about 50% of all pregnant women. It is usually worse in early pregnancy and improves or resolves by the 16th week of the pregnancy. The following are some principles and remedies that may be helpful in relieving the symptoms. Please refer to https://mothertobaby.org for information about NVP.

Avoid over-eating and eat small amounts of food every 2-3 hours. Drink liquids such as water and soup between meals rather than with meals and about an hour after solids. This helps to prevent distension of the stomach. Avoid fried and spicy food and avoid strong food aroma. Sitting upright after meals helps reduce gastric reflux. A night snack such as yoghurt, milk or bread may reduce nausea in the morning. It also helps to eat some dry cereal or crackers before getting out of bed in the morning. Herbal teas can help. In some cases, medicines called 'antiemetics' may be required to treat your condition. Vitamin supplements may be required.

Breast feeding:
Breast is best. Most women will be able to breast feed successfully but require some help at least initially. It is recommended that you attend a prenatal breast-feeding class. However, there are breast feeding classes in the post-natal ward and midwives and lactation consultants are available for help with breast feeding. We strongly recommend breast feeding.

NSW breastfeeding help line (02) 96398686 (7 days a week)
National web site www.breastfeeding.asn.au

Finding a Bra (Modified from Australian Breast-feeding association):
Wearing a supportive bra may reduce the stretching of tissues that could result in sagging and reduce discomfort of enlarging breast. The right time to be fitted for a maternity bra varies from woman to woman. The breast begins to prepare for lactation early in pregnancy and some women will outgrow their usual bra size earlier than others. Most of the changes to the breast have occurred by around four months (16 weeks gestation) and this is a good time to be fitted, if you haven't done it earlier. A correctly fitted bra gives you comfort and support, so it is a good idea to be professionally fitted. It is not necessary to buy a bra you will grow into i.e. Too big can be as bad as too small!

Many women prefer under wire fashion bras and are confused when told these are not recommended during pregnancy or lactation. The reason for this is your changing breast shape. When breastfeeding, the breasts can increase and decrease in size during the day, as milk is produced and removed. Retained fluid in late pregnancy can also cause the breast to swell. Although only a slight change in size is occurring, a rigid under wire may put pressure on the breast when it is fuller. Such pressure can lead to blocked

milk ducts or mastitis and for this reason inflexible under wire bras are not recommended. However, there are now nursing bras available that have a flexible plastic support, similar to an under wire, designed to flex and change position with your changing shape. These are less likely to cause problems.

Bras designed for pregnant women are also used when breastfeeding. The names maternity bra and nursing bra mean the same thing. When trying on different styles, remember to open and close the bra cup. Most bras open for feeding and some are easier to manage than others. Look for bras where the whole cup folds away, as opposed to rigid 'trapdoor' styles which can also put pressure on a full breast while feeding. Centre front and shoulder clasp styles are available.

The decision to wear a bra to bed depends entirely on personal preference. Some women feel they need the support or a way to hold nursing pads in place, others find a bra uncomfortable. Special sleep bras are available or you can wear a crop top or other soft cup bra in the correct size. It is a good idea to have at least two or three bras. As your breasts may leak milk, they can need changing more frequently than usual. Bras should be hand-washed in mild soap and do not require soaking in bleach or nappy treatment solutions - these will weaken the fabric and may cause skin irritation.

Sex during pregnancy:

Should be individual preference and there is no real contraindication for it except in some situations such as low placenta or a tendency to premature labour. Some positions may be more uncomfortable. Please discuss if you have any concerns.

Pelvic floor in pregnancy

The Pelvic Floor consists of a group of muscles that run in many directions between the lower borders of the pelvic bones. It is bounded in front by your pubic bones, at the back by your tailbone, and runs to either side of the pelvis.

The function of these muscles is to support the pelvic contents, including the bladder and stopping “leaks” when you cough, sneeze, laugh and run (stress incontinence). Women who have one baby are nearly three times more likely to leak urine and wet themselves than women who have not had a baby. The risk of leakage increases with every pregnancy and a caesarean section is not necessarily protective.

Pelvic Floor muscles are weakened during pregnancy due to the increasing weight of the baby, and also the effects of Relaxin hormone, which softens the muscles and ligaments of the pelvic floor in preparation for birth. This weakening may lead to stress incontinence, urinary frequency and varicose veins of the vulva and anus. Doing pelvic floor exercises may minimize these effects. Pelvic Floor Muscles like other skeletal muscles of the body can be made stronger by exercise.

How to perform pelvic floor exercise:

Relax your thighs, buttocks and tummy muscles, and visualize that you are trying to stop a flow of urine. This should be an upward to inward feeling. Do not hold your breath as you do this, but instead gently breathe out. You can give yourself feedback about this exercise by inserting your finger into your vagina and feeling the contraction.

Try to hold the contraction for five seconds and then rest for two seconds. Repeat this until you feel that the contractions are getting weaker, or fatiguing, to determine the number of repetitions that suits you. With practice you can aim to do 6-8 contractions in each set. Repeat the set 3 to 10

times per day. Learn it now and practice it for the rest of your life. Pregnancy and childbirth may be beginning of pelvic floor weakness and associated problems. Make pelvic floor exercises a part of your daily routine. It's never too late to start**.**

Maintain good bladder and bowel habits. Drink at least 6-8 cups of fluid unless otherwise advised. Do not go to the toilet "just in case" as it can result in reduction of the bladder capacity. Empty your bladder completely when you go to the toilet. Make sure you are not constipated. Avoid any downward movement of your pelvic floor, except when opening your bowel. Also keep you weight within normal limits.

Insomnia:

It is a very common problem mainly towards the end of the pregnancy. Avoid tea, coffee and carbonated soft drinks particularly in the evening. A warm bath and hot milk can help. Try different positions and avoid sleeping flat on your back. Many women find lying on their side with a pillow under the belly most comfortable. Even if you can not go to sleep, resting with your feet up is also good.

Heart burn and indigestion:

Pregnancy hormones relax the stomach muscles and the increasing size of the uterus can interfere with the normal working of the stomach and can lead to heart burn and indigestion.

Avoid spicy, fatty foods and eat frequent small, well balanced meals. Cold meal and antacid preparations can help. Sleeping with an extra pillow will elevate your head so the acid is less likely to rise up.

Constipation:

Constipation is more common in pregnancy and related to pregnancy hormone. Eat plenty of roughage i.e. whole meal bread, bran and fruits. Regular exercise can help. Avoid taking strong laxatives.

Perineal massage:

Massaging the perineal area during the last 3-4 weeks of pregnancy help improve the elasticity of the tissues in this area and accustom you to the stretching sensations of second stage as the baby's head emerges. Perineal massage will not necessarily prevent a tear or the need for episiotomy, but it improves the "stretchiness" of perineum and desensitizes the area to pressure and stretching and may reduce the potential for third or fourth degree tears.

Lie on your back and use a mirror to locate the vagina and the perineum (area between the vaginal opening and the anus. Using a vegetable oil (e.g. olive oil) on your thumbs, insert them 3-4 cm inside the vagina and press the perineum towards the rectum (back passage) and sides. Gently stretch the opening until you feel a slight burning or tingling. Maintain pressure for 2 minutes until the area becomes a little numb. Then slowly massage in the oil maintaining the stretch and pressure. Massage for 3-4 minutes.

The massage can also be done with a sweeping motion from side to side, with the fingers either moving together in one direction or in opposite directions, according to your preference. Do this massage once a day during the last 3-4 weeks of your pregnancy.

A device designed for gentle perineal stretching called Epi-No has proven to be useful. Many women have reported good results. The device is used from about 36 weeks onward. If you are interested, please discuss with me.

Itchy skin:

Many women experience itchy skin, especially in the last two months of the pregnancy. The itch can be any where, but it is often on your lower abdomen and on your back.

Try not to scratch. This causes a release of the chemical histamine which in turn causes more itching. Make sure your bath water is not too hot. Lukewarm is best. Unscented bath oils and body lotions can soothe dryness and itching. Calamine lotion (you can buy from the pharmacy) can also help. Some times itching can indicate pregnancy related liver problems and you should always mention it to a health professional if you experience significant itching.

Expected weight increase in pregnancy:

The ideal weight gain varies re is an increase in weight during pregnancy equivalent to about 25 % of the non-pregnant weight i.e. approximately 12.5 kg in the average patient. The increase is due to the growth of the baby, growth of the maternal organs such as uterus, maternal storage of fat and protein and increase in the maternal blood volume and interstitial fluid. Many factors influence weight gain including dietary intake and smoking.

Fetal movements:

Normal fetal movements indicate fetal wellbeing. Babies start moving early in pregnancy but you don't feel them till about 20 weeks of pregnancy as the movement are gentle. After 20 weeks you may feel some movements but not all. From about 24 weeks onwards you should be feeling almost all movements baby makes. These could be kicks, pushes, stretches and hiccoughs. Babies usually move more then 10 times in a 2-3 hour period. Closer to the term, the movements feel less vigorous. It is because the space become limited however, the pattern of activity and frequency should be same as before. If you think your baby has reduced movement or has not moved at all in 3-4 hours, you should contact the delivery suite.

It is important to be familiar with your baby's pattern of movement. Choose a time of the day when you can focus on baby's movement for 1-2 hours. Try to familiarize yourself with the pattern of movement over next few days.

From 23-24 weeks onwards, if there is a significant change in the pattern of movement, a decrease in the number or strength of movements, it takes longer to move or movements have stopped, please ring delivery suite on 9515 8444.

Flying/Travelling during pregnancy:

There are some risks involved in travelling during pregnancy. You should be aware of the risk associated with food and water consumption, air travel and high altitude (causing problems with fetal and maternal oxygenation) and overseas travel especially to tropical regions and developing countries. Medical facilities are limited in remote areas and it may be difficult to get treatment for even minor ailments.

Travel during the last 6 weeks of pregnancy should be avoided. Most airlines allow women to fly until 34 week gestation, however, before booking your ticket, check the airline's policy. Relatively low pressures in the cabin may produce problems of reduced oxygenation in the blood of mother and baby. Shorter flights of less then 2 hours are preferred to longer flights. There is some concern about increased risk of miscarriage due to flying in early pregnancy. Passenger aircrafts are not equipped to deal with obstetric emergencies such as premature labour or delivery. There is also a risk of developing deep vein thrombosis (DVT) due to immobilization, dehydration, low humidity in the aircraft, and excessive alcohol consumption. A pregnant woman has an increased risk of DVT

due to the pregnancy itself.

The risk of DVT may be reduced by walking around and moving your legs and feet to improve circulation and keeping your fluids up. Avoid alcohol. Wearing of compression stockings (TEDs) reduces risk of DVT.

Follow general advice about food and drinks in pregnancy while travelling, avoid dehydration and be careful not to eat food which could be contaminated. Check requirements for vaccination and malaria prophylaxis. Avoid activities at high altitude such as trekking, skiing and scuba diving.

Avoid long land journey. Make frequent stops and drink plenty of water. Always wear a seatbelt going across the lap beneath the tummy and across your hips with the shoulder strap between your breasts and across the shoulders. Sea travel may cause or increase nausea and vomiting.

Please check if you have recommended vaccination and insurance for the area of travel. You can search Australian government advisory site www.smarttraveller.gov.au for further information.

Exercise during pregnancy:

Regular exercise during pregnancy improves muscle tone and promotes well-being.
The body undergoes many changes during pregnancy. Increased weight and change of body shape can alter a woman's sense of balance and co-ordination, so it is important to avoid activities that increase the risk of falls or injury to the abdomen. Contact sports, skiing, horse riding is best avoided particularly after 28 weeks. Walking is excellent and should be included in your daily routine.

A hormone called relaxin released during pregnancy softens the ligaments to prepare the pelvis for birth. However, it also makes all joints less stable and the risk of injury to the joints increases. Also, there is increased blood circulation increasing resting and exercising heart rate. As pregnancy advances, the enlarging uterus pushes the diaphragm upwards crowding the chest and may make breathing difficult. More frequent water and food intake may be necessary when exercising in pregnancy. Pregnancy increases body temperature by about 1 degree centigrade. Prolonged and excessive heating can be harmful to the fetus.

It is important to do warm-up and stretching exercises before any vigorous exercise, followed by a gradual cool down period. Avoid over-stretching and do not over exert. Wear loose cotton clothes and a well-fitting bra and exercise in a well-ventilated area. Avoid hot spas or saunas with high temperature.

Avoid exercising lying flat on your back after 20 weeks as the enlarging uterus can put pressure on the major blood vessels in your abdomen thus interfering with the blood flow to heart and uterus and you may feel faint. Avoid high impact exercise such as jumping and contact sport. Do regular pelvic floor exercise.

There are certain conditions such as pre-term labour, placenta previa etc where exercise may be contraindicated. Please discuss this with me.

Leg pain/varicose veins in pregnancy:

In pregnancy, many women will complain of tiredness, restlessness, heaviness and tension in the legs, tingling sensation and muscular cramps in the calf during the night. Some women will have swollen feet and varicose veins. These can impair a woman's sense of well being. Varicose veins can be unsightly and constitute a risk of phlebitis and thrombosis.

During pregnancy, avoid standing still as much as possible. Do no sit too low down and avoid the hard edges of chairs. Be active and continue your regular exercise such as walking, swimming. If you need to stay in one position for prolonged periods of time, try to move your legs as often as possible. Stand up from time to time and wear medical compression stockings e.g. SIGVARIS. Avoid very hot bath and sunbathing.

At night or when resting during the day, lie comfortably with the leg slightly raised e.g. putting some pillows under your feet. Medical compression stockings (e.g. SIGVARIS) can help you to relieve and prevent leg problems during pregnancy. Class II stockings of calf (CC 2), half thigh (CC 1) and thigh type (CC 1) are most suitable and can be purchased from a pharmacy.

Leg cramps are common and mostly occur at night. There is no satisfactory explanation for why women have more cramps in pregnancy. You can ease the pain by pulling the foot up towards you and stretching the calf muscle, instead of pointing the foot downwards.

Piles/hemorrhoids:

It is common to develop hemorrhoids towards the end of your pregnancy. Typical symptoms are itching and feeling of lumps near the back passage. Sometimes piles bleed but don't assume that the bleeding from the bottom is caused by piles unless you have checked with your doctor. Piles become much worse by constipation.

Keep your bowels regular. Use soft toilet paper and wipe very gently. Try not to strain when going to toilet and don't sit there for too long. Avoid pushing for long periods. Simple hemorrhoids preparation can help.

Information relating to Labour

When and where to call if in labour or any concern about pregnancy:

After 20 weeks of pregnancy **(before 20 weeks, if you need urgent attention, you should present to Accident and Emergency department of a hospital close to you)** for any concern please ring delivery suite on 02 95158441 or 02 9515 8444. I f you are booked at the birth centre, please ring there.

Midwives will inform me about your reason for presentation (for example an early labour) and to discuss management. I will review you based on the need. For example, if there is no concern about your labour and progress, I may not have to see you before you deliver. The midwives keep me informed regularly. **If you are concerned about your care in the delivery suite and wish to speak to me, please inform the midwife and he/she will arrange it. I am very closely involved in the management of your labour and all decisions are made in consultation with me.**

Preterm labour:

About 10% of pregnancies end up in preterm labour and delivery adding to significant fetal morbidity due to prematurity. If you have even mild contractions before 37 weeks of pregnancy or break your water, you should ring delivery suite/birth centre

Pre labour/early labour and pre labour rupture of membrane (breaking of water):

Many women will have irregular painful contractions starting few hours to few days before the labour starts. By definition these are not labour pains. If you present to delivery suite, you will have fetal monitoring and assessment of your well being. You may not necessarily have a vaginal examination. Pre labour can be tiring but simple pain relief, hot bath etc should help you with pain.

About 8-10 % of women will have pre labour rupture of membrane at term. At term, about 90% women with pre labour rupture of membrane will start spontaneous labour within 24 hours of breaking water. As there is an increased risk of infection to the baby and mother, our hospital policy is to induce women within 24-48 hours of rupture membrane. If you break your water (even if unsure), you need to ring the delivery suite. They may advise you to come in for assessment but most likely you would be sent home with a follow up plan and wait for spontaneous labour.

Induction of labor and augmentation of labour:

An induction of labour may be indicated when likely benefits of delivery outweigh the risk of continuing the pregnancy. An induction may be indicated in following circumstances:

- You are overdue by a week or more
- If you have a pregnancy related complication such as diabetes and hypertension
- Pre labour rupture of membrane and risk of infection
- Placental insufficiency leading to growth restriction in baby
- Any other condition where delivery will improve outcome for mother and baby

The most common method of induction is by using a prostaglandin vaginal gel or pessary in the vagina. Prostaglandin is a hormone implicated in cervical ripening and initiation of labour. This may follow artificial rupture of membrane (ARM) and/or intravenous drip of oxytocin hormone. If you are having an induction, you may need admission to the ward overnight

What to expect in the delivery suite:

You will be looked after by midwives in the delivery suite, who will take care of routine management of labour. They will inform me about your arrival, clinical findings and any concerns. I will review you based on the clinical situation. They will also discuss with you, choice of analgesia and will answer all your queries. You are free to mobilize in the room and even can go out side the delivery suite to walk around if in early labour. Intervention e.g. CTG monitoring, IV cannula and drip may be needed based on your case. These will be explained to you by the midwife or me. Feel free to ask questions and take active participation in the management of your labour. Please note an intervention is only recommended if there is a clinical indication i.e. **there is no routine intervention and I believe in an intervention free natural birth. Intervention is indicated when there is clear benefit (in intervening).**

Choice of pain relief/options, Medical and non-medical:

Although degree of pain and its severity (in women) is of similar magnitude in normal labour, there is a wide variation in analgesic requirement and choice of analgesic among women. Duration of labour is also an important factor influencing need for analgesia. For example, a long labour could lead to exhaustion and need for pain relief would be higher.

Pain can often be managed by non-medical techniques e.g., relaxation, breathing, back massage, hypnosis, meditation, bathing, showering, various positions, walking etc.

Nitrous oxide gas and oxygen inhaled through a facemask or mouth piece is a popular and good option. Inhalation should ideally start at the starting of the pain. It could cause mild nausea, dizziness, and tingling in the hands, feet and lips but is generally well tolerated. It does not cause any harmful health effects to mother and baby.

Injection of opioids such as morphine and pethidine are a good pain relief option particularly in early stages of labour. Oral analgesic tablets are useful in very early stages. Opioids could cause nausea, vomiting and drowsiness in mothers and rarely respiratory depression in baby (which is

easily corrected).

Regional anesthesia (epidural or spinal or combined) is the most effective way of pain relief in labour and involves injection of local anesthetic in a lower back area. A thin plastic tube is inserted in a space between vertebrae. This type of anesthetic could last for hours. An anesthetist is present in the hospital 24/7 and will discuss the risks and complication/benefits of regional anesthesia e.g. epidural or spinal if you choose to have it. Regional anesthesia is particularly useful if an instrumental or caesarean delivery is required. The safety of regional anesthesia is well established. The possible complications are lowering of blood pressure, leaking of spinal fluid causing headache, local tenderness, failure to provide adequate pain relief and inability to push effectively in second stage due to loss of sensation. Epidural anesthesia has been associated with prolonged second stage and increased possibility of instrumental delivery and caesarean section.

After delivery:

Soon after the delivery, the baby is checked and weighed by the midwife. Once the placenta is delivered and suturing (if required) is finished, you will be given refreshment and will be transferred to the post natal ward (5 East 1 or 2 or 8 East) where postnatal midwives will take over responsibility of looking after you. You may have a shower before you go to the ward (if you have an epidural, you would not be allowed out of bed for a few hours). You would be encouraged to breast feed as soon as possible after delivery.

There may be pediatric staff present in the room at the time of delivery if it is expected that baby may need help e.g. in case of fetal distress. There may be other professionals in the room if needed for example in case of emergency such as post-partum hemorrhage.

Test/monitoring in Labour

CTG (Cardiotocography) and Doppler:

This test records the baby's heartbeat and uterine contractions and can help to assess if baby is stressed during labour. It is performed to confirm the well being of the baby and may be performed when you present to delivery suite. The heart rate pattern is an important sign of the baby's well being. The heart beat can be checked by ultrasound Doppler (hand held monitor) or electronic fetal heart monitoring (CTG). In electronic heart monitoring, two censors are held in place against the mother's abdomen with belts around her waist and hips to pick up baby's heart beat and also uterine contractions. If the baby is stressed, the CTG graph may show specific signs which may require intervention.

Fetal scalp electrode:

Sometimes, a small electrode (called a scalp clip) may be applied to the baby's head during labour, to detect the fetal heart more accurately (than CTG). This does not cause any short term or long-term harm to the baby except in certain situations where mother has an infection such as Hepatitis B or HIV (it is avoided in these situations).

Fetal blood sampling:

In situations, where fetal distress in labour is demonstrated on cardiotocograph, a confirmatory test for fetal distress may be performed by taking a small drop of blood from baby's scalp. The blood is tested in a special machine to test for biochemical markers of distress. This does not hurt the baby and does not have any short or long-term effects on the baby. If the test is abnormal urgent delivery may be indicated.

Unexpected /emergency situations in labour and possible complications in labour and childbirth:

Most labours and delivery are uneventful. Fetal distress in labour leading to emergency caesarean section or instrumental delivery, significant abnormal bleeding during or after delivery are some of the more frequent emergency situations which can happen and can cause significant anxiety in the patient and her attendants. At times the medical and nursing staff might be busy dealing with the emergency and may not have time to answer all your questions at that time. However, you will always be briefed about the event after the emergency is over. Following is a list of most common complications/unexpected events:

- Failed induction of labour requiring multiple dosage of vaginal gel or if unable to bring on the labour, a caesarean section may have to be performed
- Cervical, vaginal, rectal and anal tear
- prolonged and protected labour requiring multiple examination and intervention, and obstructed labour which may require emergency caesarean section
- Severe life-threatening bleeding which may lead to blood transfusion or operative intervention e.g. hysterectomy
- Placental abruption leading to bleeding or bleeding due to unknown cause
- Umbilical cord anomalies causing fetal distress e.g. tight loop around the neck
- Shoulder dystocia (obstructed shoulder) leading to difficult delivery, and nerve and muscular-skeletal injury to the baby.
- Fetal distress leading to instrumental delivery or emergency caesarean section.

Instrument –assisted delivery:

Most births occur vaginally without intervention. However, in some cases, we may need to use an instrument (forceps or vacuum extraction) to deliver the baby (about 10% of total births). There is no doubt that with the wide spread use of regional anesthesia; incidence of instrumental delivery is increasing. As an instrument assisted delivery poses some risks to the mother and baby for example an increased risk of vaginal tears, decision to deliver by this method is only made in the best interest of both the baby and mother. The most common reasons for considering an instrument assisted delivery are poor descent of the baby's head, fetal distress, maternal exhaustion, inability to push effectively, and abnormal position of the head. Sometimes it is necessary to cut short the labour and pushing due to maternal reasons such as medical conditions in the mother. General risks of instrumental delivery are: bruising and abrasions of the perineum, pelvic floor injury to the mother which may lead to long term prolapse and bladder and bowel problems, bruising of the baby.

Local anesthesia or epidural or spinal block may be required for instrumental delivery. A urinary catheter may be inserted to empty the bladder during delivery. An episiotomy may be given.

Instrument assisted delivery has a higher risk of complications in mother and baby compared to spontaneous vaginal delivery including perineal and pelvic floor trauma and injury to the baby. However fortunately most of these are of a minor nature. A decision to deliver by instruments is only made when the risk to mother or baby is more if waiting for spontaneous delivery in comparison to instrumental delivery.

General risk of instrumental delivery:

- Bruising and tear of tissue which may include cervical tear, rectal, anal Sphincter and pelvic floor damage.
- Bruising of face or scalp or injury to facial nerve of the baby (these usually resolve within days) however significant scalp bleeding can occur in rare Instances

Caesarean section:

There may be an antenatal indication for having delivery by elective caesarean section for example if you have low placenta and an elective booking will be made at around term. There may be an indication to have an emergency or semi-elective C section due to a sudden deterioration in the mother (for example: high blood pressure) or baby (for example growth retardation or fetal distress).

Caesarean sections are usually performed under spinal or epidural anesthesia (you are awake); however, some times particularly in emergency situations a general anesthesia (you are asleep) may be given.

Caesarean section is a major surgery and has risks including bleeding, damage to bladder and bowel, clotting in legs and lungs and wound dehiscence. Also having a caesarean section in this pregnancy has implications for your next pregnancy.

Vitamin K:

Vitamin K is a vitamin important for clotting of blood. New born babies are deficient in Vit K and this can very rarely lead to hemorrhagic disease of the newborn (bleeding inside the organs) on day 2-3 of their life. To prevent this baby will be offered Vit K injection or oral vit K after the birth. I recommend injection. No harm has been shown to the baby

New born screening tests:

Every new born baby is offered a blood test on day 2-4. Few drops of blood are taken from the baby's heel and tested for many congenital disorders such as congenital hypothyroidism, phenylketonuria (PKU), many disorders of protein and fat metabolism, cystic fibrosis and galactosemia. Some babies may require a repeat test if the information from the first test is not clear. For further information visit https://www.schn.health.nsw.gov.au or phone (02) 9845 3659. If the test results are normal, you will NOT be contacted. Your baby is also offered a hearing test while in hospital.

Birth plan/preferences:

Some of you may wish to write your birth plan. Birth Plans have been around for many years. Birth Plans originated to assist women to inform their midwife or doctor of their wishes during labour, particularly if they wanted to avoid certain interventions. The term 'Birth Plan' implies that there is some control over birth and that you are able to plan for it. The reality is that you have little control over labour and birth, making it difficult to formulate a plan. A better term would be 'birth Preferences'.

Birth Plans can be used to help people around you know about your preferences before labour starts. As a tool to help you to explore different issues surrounding labour, birth and afterwards, birth plans can help you formulate ideas on what you would like or not like to happen. You may find it very helpful to work on your birth plan with your partner, so he can be part of the decision-making process and be able to assist you in implementing your plan.

You can gather ideas for writing your Birth Plan from friends, books, childbirth educators, midwives, doctors, hospitals or the Internet.

Every birth plan is very different and the sorts of issues that are important vary from woman to woman.

The following is a large list of issues that you may or may not want to include on your birth plan:

1st Stage of Labour:

- Choice of birth place
- Clothing during labour (own or hospital gown)
- Monitoring of the baby
- Activity during labour
- Eating and drinking in labour
- Students during labour
- Vaginal exams
- Pain medication
- Positions during the first stage of labour
- Use of water / heat
- Self-help techniques
- Caesarean birth options
- Induction/artificial rupture of membrane
- Labour augmentation
- Analgesia/nitrous oxide/epidural

2nd and 3rd Stage of labour:

- Positions during the second stage of labour
- Pushing during the 2nd stage
- People present during the birth
- Natural or managed 3rd stage of labour
- Episiotomy and tears
- Instrumental delivery/vacuum extraction versus forceps
- Immediate contact after birth
- Cutting of the baby's cord after birth
- Baby's first breastfeed

Postnatal Care:

- Vitamin K
- Hepatitis B Immunization
- Rooming in with mother during the postnatal stay
- Newborn Screening Test
- Breastfeeding/bottle feeding
- Preferences if baby has complications

This list is by no means exhaustive. There are many other issues that can be considered. Use this list just as a guide.

When writing a birth plan, it is ideal to make copies for each person who is going to be present during labor. This may include your partner, support people, midwife or doctor. A copy can also be made for your hospital records. Some women choose to have a meeting with their support people and discuss the issues raised on the birth plan. You will also need to discuss the contents of your birth plan with your midwife or doctor.

Birth plans should be written in a way that is flexible. You will not be able to account for every possible variation of labor on your birth plan.

To help make your birth plan more flexible it is better to use words like 'I would prefer' or 'if possible'. Birth Plans indicate the preferences of the woman in labour and provides an outline of how she would like the birth to be.