Royal Prince Alfred Hospital – Diabetes Centre
Gestational Diabetes Mellitus

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What Is Gestational Diabetes?
Gestational diabetes (GDM) is a temporary form of diabetes that occurs during pregnancy. Diabetes is a condition where the body cannot easily move glucose from the blood into the cells (i.e. muscle, liver, brain) to use as energy. This means the glucose level in your blood rises.

What Is Insulin?
Many foods that you eat are turned into glucose which is then released into your blood stream, causing your blood glucose levels to rise. Insulin is a hormone that is needed by your body to process the glucose in your blood. It helps the glucose move from your blood into your muscles to use as energy. Once insulin processes the glucose your blood glucose level returns to normal.

What Causes Gestational Diabetes?
In pregnancy your placenta makes hormones to help your baby grow but these hormones also make it harder for the insulin produced by your pancreas to work. This is known as ‘Insulin Resistance’. In pregnancy, to try and overcome the insulin resistance, you need to produce 2-3 times the amount of insulin you normally would. If you do not make enough extra insulin to process the blood glucose from the food that you eat, your blood glucose levels will rise and you will develop gestational diabetes.

This picture shows the change in your insulin needs during pregnancy:

Who Is At Risk?
Gestational diabetes occurs in 8-9% of all pregnancies, however, you are at higher risk of getting gestational diabetes if you:
- Are over 35 years of age
- Are of certain ethnic background i.e. Asian, Indian, Polynesian, Mediterranean, Middle Eastern, Aboriginal or Torres Strait Islander
- Have previously had gestational diabetes
- Have a family history of diabetes
- Have had a baby greater than 4kg at birth
- Are overweight or obese
- Have Polycystic Ovarian Syndrome (PCOS)
- Certain medicines eg prednisone and other steroids, antipsychotic medications

How Is It Diagnosed?
Your doctor/midwife will normally arrange for you to have a OGTT (oral glucose tolerance test) between 24 and 28 weeks. This test involves you drinking a sweet drink and having some blood taken to check your blood glucose levels over time. If you are considered at higher risk for gestational diabetes your doctor/midwife may do these tests earlier in your pregnancy.

Gestational diabetes is diagnosed if any of your glucose levels are equal to or above:
- 5.1 mmol/L before you take the drink (fasting)
- 10.0 mmol/L after 1 hour
- 8.5 mmol/L after 2 hours
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What Are The Effects On Your Baby?
As the glucose in your blood easily passes through the placenta to your baby, if there is too much glucose in your blood, too much glucose will be delivered to your baby. When your baby is exposed to higher glucose levels it will produce a greater amount of insulin to try and control the glucose. Too much insulin produced by your baby leads to your baby storing this extra glucose as fat, especially around its tummy. This can mean your baby grows too big. This is NOT healthy as a large baby can make your delivery more complicated.

Sometimes babies can be too small if the baby does not get enough nutrition from the placenta. This is more common if you are having problems with high blood pressure. Women with gestational diabetes are more likely to experience high blood pressure in pregnancy and/or another serious complication called pre-eclampsia.

If your baby has had higher blood glucose/ insulin levels, its blood glucose level may drop too low after you give birth. The risks to your baby are reduced if your blood glucose levels are well controlled.

How Is Gestational Diabetes Managed?
The aim of managing gestational diabetes is to keep your glucose levels in the normal range. You will be cared for by a team of professionals at the Endocrine Antenatal Clinic which is run on a Thursday morning. This team includes obstetricians, midwives, endocrinologists, diabetes educators and dietitians. In most cases you will not need to be admitted to hospital but you will be seen more frequently than other pregnant women who do not have diabetes.

There are several things you will need to do to look after yourself:

Food: You will need to see a dietitian to discuss your diet. A healthy eating pattern will help you to manage your blood glucose levels and meet the nutritional needs for you and your baby. It is best to eat smaller amounts, more often during the day. Carbohydrate foods (bread, rice, pasta, potato, fruit, milk) should be included in moderation at your meals and snacks. Concentrated sources of sugar such as soft drinks, juice, jam, sugar and lollies should be avoided. You should also reduce your intake of high fat (and fried) foods. It is often most difficult to control your glucose levels in the mornings after breakfast. If this is the case you may try eating slightly less carbohydrate at this time. Your dietitian will advise you of suitable amounts to eat.

Activity: Regular activity can help control your glucose levels. It helps your body use up glucose faster and also may help reduce insulin resistance. It also keeps you fit and healthy during your pregnancy and helps prepare you for your baby’s birth. You should aim to do 30 minutes of gentle exercise each day. This can be broken up throughout the day eg. 2 x 15minute walks. You may find it more helpful to include some walking after your meals to control your blood glucose levels. Please talk to your obstetrician if you have any health conditions that may put you at risk if you exercise.

Monitoring: You will be asked to buy a blood glucose meter suitable for use in gestational diabetes. You will need to test your glucose levels four times each day. You will need to continue this throughout your pregnancy as your glucose levels will continue to change due to rising hormones. A member of your diabetes team will give you more information about this.

For up to 50% of women, a change in diet alone is not enough to control your glucose levels. If this is the case, insulin injections will be required to keep your glucose levels down. Although there are tablets that are used in other types of diabetes to control glucose levels, at present these are not considered advisable to use in pregnancy, and they may not control the blood glucose levels sufficiently. If you do need insulin during your pregnancy it will nearly always be stopped as soon as you have your baby, and the placenta is delivered.

Insulin Will Not Harm Your Baby But High Blood Glucose Levels May
Will having gestational diabetes change my delivery plan?
Most women with GDM will have a normal vaginal delivery, however the obstetricians will advise you if you need a caesarean section. A delivery plan will be discussed close to your delivery date. If you have been on large doses of insulin or your glucose levels are very high in labour it may be necessary to have an insulin infusion during your delivery.

If you are planning on having your baby at the Birth Centre this may still be possible if the diabetes management team and Birth Centre staff feel your risk of complications is low (i.e. good glucose control, nil insulin requirements, baby not too large).

When your baby is delivered your blood glucose levels will usually return to normal. Your glucose levels, as well as your baby’s, will be checked. If your levels are normal you can then stop testing. If they remain raised this will be followed up post-natally.

After your baby is delivered he/she will be examined by a doctor and his/her glucose levels and breathing will be monitored. Your baby's glucose level will be checked by taking a pinprick blood test from the heel about every four hours for the first 24 hours after birth. Usually your baby will go to the ward with you but occasionally your baby may need to spend 24-48 hours in the nursery if there are any problems with their glucose levels or breathing.

Your baby will not be born with diabetes but they will inherit your increased risk of developing diabetes later in life.

What about the future?
For most women, gestational diabetes “goes away” once your baby is born. It is important to check this by having another GTT about 6-12 weeks after delivery. If this test is normal you should still have regular GTTs performed every 2-3 years. Your risk of having gestational diabetes in future pregnancies is very high (about 70%).

Once you have had gestational diabetes you have a 50% chance of developing type 2 diabetes within 10 years of the pregnancy. For this reason it is very important you maintain a pattern of healthy eating and regular exercise in order to maintain a healthy weight. This is the best known way to reduce your risk of getting diabetes.

If you have any further questions, please ask a member of your healthcare team.

Your Responsibility in Your Management:
On completion of today’s group session please ensure you:

1. Go to Level 5 Antenatal Clinic immediately to book a follow-up appointment for the Diabetes Clinic (held on a Thursday morning) √
2. Have any blood tests requested either at the pathology centre at the hospital’s main entrance or on level 3 in the RPA Medical Centre □
3. Buy a Roche Accuchek Performa blood glucose meter and commence blood glucose testing □
4. If you have Medicare, your NDSS registration number (which entitles you to subsidized blood glucose meter test strips) should be available in 24-48 hours (form faxed today). You should be able to call for the registration number (contact NDSS Infoline 1300 136 588). The NDSS card should arrive within 1-2 weeks □
5. If you wish to contact the Diabetes Centre please ensure that you have your RPAH Medical Record number readily available as you will be asked for this □