



Can I have a healthy baby?
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Introduction



You and your partner have the opportunity to prepare for a healthy baby.

To give yourself and your baby the best start you can, you need a review of your diabetes and general health. A diabetes and pregnancy team or a doctor experienced in the care of pregnant women with diabetes should do this well before you conceive, as an essential part of your 'family planning'.

In this booklet we focus on the needs of those women who have Type 1 or Type 2 diabetes during pregnancy.

A third type of diabetes, Gestational diabetes (GDM), presents *during* pregnancy and usually goes away after the baby is born. Women who develop GDM are at high risk of developing Type 2 diabetes later in life but the risks can be reduced. A separate booklet is available for women with GDM.

Encourage your friends and family to read this booklet and help them to understand your diabetes and your pregnancy. Contact your diabetes specialist or diabetes educator with further questions.

Read on for information about pregnancy with diabetes:

1. Preparing For Your Healthy Baby
2. Nutrition In Pregnancy
3. Activity In Pregnancy
4. Your Baby
5. Pregnancy & You
6. Insulin Changes In Pregnancy
7. Tests During Pregnancy
8. Labour and Birth
9. Breastfeeding
10. The Future

Can I expect a healthy baby?

Yes. Women with diabetes have an equal chance of having a healthy baby if you become pregnant at a time when your diabetes is controlled and general health is good. It is highly recommended that women with diabetes plan their pregnancies.

If you are already pregnant, NOW is the time to get your body on track. Don't panic! Your diabetes and pregnancy team will work with you towards the best outcome for you and your baby. Unplanned pregnancies are common and present an extremely difficult time for many women as they consider their options.

The first eight weeks are when a baby's major organs develop so it is important to gain tight control of blood glucose levels as soon as possible.

What can I do to prepare for a healthy baby?

You may find it helpful to bring together your team of diabetes and pregnancy health professionals, or attend a pre-pregnancy counselling session at a specialised diabetes and pregnancy clinic, 6-12 months before attempting to conceive.

All large teaching hospitals in Australia and New Zealand have a diabetes service, which provides information sessions regarding pregnancy. Similarly, most women's hospitals will have a specialised diabetes and pregnancy clinic. You may also contact the diabetes educator and dietitian at your hospital, or the Women's hospital in your capital city, with questions.

Members of your diabetes and pregnancy team who will help **you** plan your healthy pregnancy will generally include:

- Endocrinologist / Diabetes specialist
- Specialist Obstetrician
- Midwife
- Diabetes Educator
- Dietitian

Blood glucose levels

Research has shown that optimum blood glucose control (4-7 mmol/L) at the time of conception and during the first 2 months of pregnancy is a major factor in preventing miscarriage and birth defects in your baby. Your diabetes and pregnancy team will explain to you that persistently high blood glucose levels (HbA1c over 7%) increase the risk of abnormal development of your baby dramatically. Risk rises progressively as the HbA1c rises over 7%. Work with your team to obtain the best blood glucose that you can.

Helpful Hint: Take your blood glucose monitoring equipment to an appointment with your diabetes educator or diabetes specialist to check that it is working accurately and is up to date.

What can I do to prepare for a healthy baby?



“It is important to share the experience of pregnancy with your partner. He will be feeling the same elation and anxieties as you. By sharing them, your lives and your pregnancy will be much happier and easier.”

Insulin Pumps

An increasing number of people with diabetes are using insulin pumps rather than multiple daily injections. 'Pumps' continuously deliver a small amount of quick-acting insulin, and allow the wearer to 'dial up' the dose they need when they eat. Pumps are worn constantly, with a small plastic cannula, inserted with a needle under the skin. The cannula is changed twice a week.

Insulin pumps have proved beneficial for many women wanting to tighten their diabetes control prior to pregnancy. Pumps can also be used during pregnancy. For further information, ask your diabetes team or read www.pumpoz.com.

Diabetes tablets: Type 2 diabetes

If you are taking tablets to control your diabetes before pregnancy, it is important that you discuss your plans to become pregnant with your GP or diabetes specialist. Your doctor is likely to advise blood glucose control with insulin injections in early pregnancy.

Other Medications

Every medication that you are taking, including those for lowering cholesterol and blood pressure, must be reviewed prior to pregnancy or as soon as possible after you find out you are pregnant. Many medications will need to be ceased for the duration of your pregnancy.

Folic Acid (Folate)

Folate is a vitamin that is very important to prevent certain birth defects of the brain and spine. Most women can meet their daily requirements from a varied diet including green leafy vegetables, fruit, breads and cereals, nuts and legumes. We also recommend that women of childbearing age take a folate supplement. Women with diabetes are at special risk and should take a 5mg Folate supplement from at least one month prior to pregnancy and throughout the first trimester (3 months of pregnancy).

What can I do to prepare for a healthy baby?

Rubella (German measles) & Chicken Pox

Your doctor will arrange blood tests to check your immunity to Rubella and also to Chicken Pox. Contracting Rubella when you are pregnant may lead to blindness and abnormalities in your baby. If you are not immune, you should be vaccinated before becoming pregnant.

Smoking and Alcohol

Smoking increases the risk of damage to blood vessels in the heart, brain, feet and kidneys, especially in people with diabetes. Additionally, smoking harms the development of your unborn baby. Ask your team about strategies to quit, or call the QUITLINE on 13 18 48 / NZ 0800 778778. Recreational drugs and alcohol should also be avoided as they increase the risk of miscarriage and damage to your baby.

Contraception

Contraception enables you to plan the timing of your pregnancy around your general health, blood glucose control and social circumstances. There is no single method of contraception perfect for everyone. There are several new forms of contraception that have become available in recent years. Different methods suit different couples and you should discuss the advantages and disadvantages of each with your doctor. The current forms of oral contraceptive pills have a minimal effect on diabetes control and the same warnings apply as for all women.

If you decide not to have any more children, your partner could consider a vasectomy or you, a tubal sterilisation. Neither interferes with control of diabetes, sexual performance or any other aspect of health.

Blood Pressure

If you have high blood pressure, you should consult with your doctor before pregnancy, especially if you are taking medication. High blood pressure increases the chance of certain problems in pregnancy for you and your baby, and needs special attention. Sometimes it is necessary to change your medication before becoming pregnant.

Complications Screening

Before conceiving or as soon as possible after, it is important to be tested for all complications of diabetes: kidneys, eyes, and nerves.

Your doctor will ask you to supply a urine sample to assess the amount of protein passing through your **kidneys** as well as the presence of a urinary tract infection (UTI). Your diabetes specialist can test for **nerve** damage, particularly in your feet, using simple physical examinations such as a tuning fork, a "monofilament" that measures pressure sensation, or a sharp object to test your pain sensation. Make an appointment to see an Ophthalmologist who will give you eye drops and look at the back of your **eyes** to check for growth of irregular blood vessels which is common in Type 1 diabetes, and treatable.

What can I do to prepare for a healthy baby?



Diabetic retinopathy (damage to the back of the eye) needs to be treated and stabilised prior to conception. Your eyes may worsen during pregnancy but most commonly, after the birth, they return to the stage they were at pre-pregnancy.

ACTION: Thinking about having a baby?

1. Visit your GP for: Referral, Blood tests, Contraception advice
2. Meet your Diabetes & Pregnancy Team
3. Folate supplements
4. Stop smoking if applicable

Hard work but worth it!

Achieving very tight blood glucose control before conceiving, then maintaining it through the early stages of pregnancy as your body undergoes tremendous changes, can be extremely stressful and demanding for many women. For others, everything seems to fall into place when they become pregnant and it is smooth sailing.

This is likely to be a very challenging period of your life. Be sure to seek the support and understanding that you need from people close to you and health professionals.

Summary of pregnancy with pre-existing diabetes

Pre Pregnancy (3 months)	<ul style="list-style-type: none"> • Meet your Diabetes & Pregnancy team • Folate • Contraception • HbA1c < 7% (measure of blood glucose levels over previous 3 months) • Tests: Rubella, Complications etc.
Conceive	
Confirm Pregnancy	Visit GP / Team <ul style="list-style-type: none"> • Blood tests • Book Prenatal (genetic) screen • Review/Decrease insulin • Refer to Birth Hospital • Ultrasound • GlucaGen script and training for partner • Adequate diet for pregnancy
12 - 14 weeks	Prenatal Screen <ul style="list-style-type: none"> • Book anatomy scan • Review / Decrease insulin
19 weeks	Ultrasound anatomy <ul style="list-style-type: none"> • Visit doctor for results • Review / Increase insulin
24 weeks	Antenatal Visits <ul style="list-style-type: none"> • HbA1c
28 weeks	Antenatal Visits
30 weeks	Antenatal Visits <ul style="list-style-type: none"> • Monitor baby's heart rate via CTG
36 weeks	Antenatal Visits <ul style="list-style-type: none"> • Discuss mode of birth • HbA1c • Growth Ultrasound (possible)
Birth	
Lactation/Breastfeeding	Midwife/ doctor <ul style="list-style-type: none"> • Reduce insulin • Hypo food



Nutrition and activity for pregnancy

Nutrition for Pregnancy



Pregnancy is a good time to update your nutrition knowledge. The dietitian at your hospital is available to discuss eating during pregnancy. Your diet is an integral part of your diabetes management and general health. The food you eat must provide suitable nourishment for both you and your baby, whilst assisting to stabilise blood glucose levels. There are several aspects of your diet that require special attention in the lead up to and during your pregnancy: energy, protein, iron, calcium and folate. It is also important to minimise your risk of exposure to infections such as Listeriosis and Toxoplasmosis as these infections can harm your developing baby. Be sure to see a dietitian to discuss the most appropriate foods for you during your pregnancy.



What exercise can I do?

Women with diabetes benefit from regular exercise in pregnancy, too. Physical activity is a way to relax and spend time with friends, as well as an essential tool for diabetes control. Pregnancy is not the time to begin a vigorous new exercise routine but swimming, for example, is a great activity to support your abdominal muscles during pregnancy.

Enjoy walking or swimming by incorporating activity into your daily routine.

Start with 10 minutes, 2 or 3 times a day. For example:

- Walk your dog (or a friend's)
- Meet friends for lunch after a swim
- Walk along the beach
- Walk your children to school
- Take the family to the park for a ball game

ACTION:

I can

andduring my pregnancy

Your baby

Your baby

Glucose can freely cross the placenta to the baby during pregnancy but insulin does not. Your baby stores the extra glucose and may grow more rapidly than babies of women without diabetes. Your baby will produce its own insulin from about 15 weeks gestation. High blood glucose levels in you, the mother, will result in high blood glucose levels in your baby. This stimulates your baby's pancreas to make extra insulin, which can make your baby grow bigger and faster than necessary. A large baby, born at term or prematurely, may have low blood glucose levels at birth as it continues to make extra insulin for a day or two. Your baby could also have trouble with feeding, breathing and other medical problems.

Maintaining your blood glucose levels during pregnancy and labour will dramatically reduce the risk of all these problems. However, some babies still have problems, just like babies of women without diabetes.

Your low blood glucose levels don't affect your baby, like they do you. When your blood glucose level drops low it only affects your brain cells, not your baby's. Your baby is able to maintain his/her own blood glucose, by releasing glucose from his/her own liver if the amount of glucose you have is too low.

Rarely, congenital (structural) abnormalities in babies do occur. Damage to the heart, spine and kidneys may occur during early developmental stages of pregnancy, often before you realise you are pregnant.

To reduce your chance of miscarriage, and of your baby developing abnormalities, health professionals stress the importance of testing and keeping blood glucose within the normal healthy range 4 - 7mmol/L and HbA1c <7% for three months prior to conception and throughout your pregnancy.

Will my baby be born with diabetes?

No. Your baby will not be born with diabetes.

The chance of your children developing Type 1 diabetes in the future is only 5% and is actually greater (7%) if the father has Type 1 diabetes.

How will pregnancy affect me?



How will pregnancy affect me?

Changes to Hypoglycaemia (Low blood glucose)

Insulin requirements change in early pregnancy (more p.12) and this can lead to severe hypos. Also, many women notice that their early warning signs for hypos such as feeling shaky or sweating change or disappear completely in pregnancy. This means that hypos often happen fast and without enough warning for you to treat the early symptoms.

GlucaGen

Your partner and family are invited to meet with your diabetes educator for an information session on when and how to use GlucaGen in an emergency.

GlucaGen is an intramuscular injection that can be used to reverse hypoglycaemia in someone who has lost consciousness. It assists your body to release glucose stored in your liver and raise your blood glucose levels quickly

ACTION:

1. Get in the habit of carrying a supply of hypo food such as glucose tablets or jelly beans with you at all times.
2. Check your GlucaGen is in date and ask your doctor for a script if required.

"No matter what your diabetes control, once you know you have a life growing inside you, your focus changes. Be prepared to actually WANT to do lots of blood tests, eat properly and exercise. Also, to be fussed over by your partner, told to sit down and relax. It sounds great, but sometimes, occasionally, you may resent it. Don't worry, it's normal."

Infection / Flu

Just as prior to pregnancy, illnesses such as the 'flu' and infections can cause your blood glucose levels to rise. During pregnancy, you will need to be particularly careful if this occurs.

How will pregnancy affect me?

Helpful Hints for Infection or Flu:

- Check your blood glucose levels more frequently when you are unwell.
- Take your insulin. (You may need to **increase** your dose when unwell to control blood glucose levels and prevent ketones.)
- Check your urine or blood for ketones.
- Call your doctor or diabetes team if:
 - your urine has more than one plus (+) of ketones
 - your blood ketone reading is more than 0.6 mmol/L
 - you are vomiting or unable to eat or drink
 - you are worried about high blood glucose levels
- See your doctor to establish the cause of the illness.

If you are vomiting so much that you cannot keep food or fluids down, call your doctor or diabetes team immediately.

Ketoacidosis and high blood glucose levels

Body cells that are unable to use glucose for energy breakdown fats instead to form ketones, which you can detect in your blood or urine. For people with Type 1 diabetes, high blood glucose and ketones can lead to a serious condition called ketoacidosis, requiring hospitalisation. Ketoacidosis may occur when you are unwell, forget your insulin or don't take enough insulin. Frequent testing of blood glucose and increasing insulin doses when you are sick, can prevent this. Ketones should be monitored by testing your urine (urine testing strips are available where you buy blood testing strips) or by testing your blood (using a new type of monitor which can test for both glucose and ketones in your blood).

Complications

Certain complications of long-term diabetes are aggravated by pregnancy, eg. renal damage (kidneys) and retinopathy (eyes). Your doctor will request a baseline screening prior to pregnancy to establish if any complications are present; if present, they need to be closely monitored throughout your pregnancy. In most cases, any deterioration of eyes or kidneys during pregnancy resolves after your baby is born. If complications are advanced, it is important to have an individual assessment of your capacity to carry a child, as pregnancy does put additional stress on your body.

How will pregnancy affect me?



Morning Sickness

During the first 12 weeks of pregnancy, some women feel sick first thing in the morning, some in the evenings; others feel sick all day long and may vomit.

Helpful Hints for Morning Sickness:

- Keep your fluids up - sip on drinks such as flat lemonade, diluted cordial, fruit juice or icy poles.
- Eat small, frequent meals - talk to your diabetes team about changing insulin doses to cater for this.
- Avoid strong food odours and rich, fatty foods
- Snack on something like dry toast or plain biscuits before getting out of bed, if mornings are a problem.
- Salty foods may help - try potato crisps or salty crackers.
- Some women find ginger (tea, biscuits, tablets) to be useful.
- Always take your insulin, but you may need to lower your dose.

Pre-eclampsia

Pre-eclampsia is a very important complication of pregnancy, which is diagnosed if you develop high blood pressure, swelling and protein in the urine. It occurs more frequently in women with diabetes and is a major cause of premature birth.

Pre-eclampsia may be dangerous for you and your baby. Your doctor or team will check your blood pressure and urine, and look for swelling in your face, hands and feet at each visit.

In women at high risk, medication to reduce the risk of pre-eclampsia may be prescribed. This may include low dose aspirin.

ACTION: Visit or phone your diabetes & pregnancy team regularly.

Insulin changes during pregnancy

Insulin changes during pregnancy

Targets for blood glucose levels during pregnancy:

Before breakfast	2 hours after each meal
Less than 5.5 mmol/L	4 - 7.0 mmol/L

Insulin requirements change constantly throughout pregnancy, as your baby grows and placental hormones take effect. You need to be prepared to adjust your insulin doses on a daily or at least weekly basis. It is important that you understand the action of each of your insulins so you can adjust your doses effectively.

Early Pregnancy

Many women find it extremely challenging to maintain optimal blood glucose levels in this early stage of pregnancy as your body is undergoing so many hormonal and physical changes.

Women with Type 2 diabetes are advised to discuss their medication with their diabetes team. Some women will need to change their diabetes tablets to insulin injections during pregnancy.

Insulin needs for women with Type 1 diabetes often decrease in the early stages of pregnancy: between 6 and 16 weeks gestation. This may cause severe 'hypos' (low blood glucose) to occur, sometimes without warning. Preventing a hypo is better than treating one. An important tip is to not miss any meals and snacks. It is essential that you make a habit of carrying hypo food such as glucose tablets or jelly beans and a carbohydrate snack with you at all times so that you can treat a hypo quickly.

ACTION:

1. Check you have a GlucaGen script and current supply, and your partner knows how to use it!
2. Carry jelly beans or sweets in your handbag, glove box and sports bag at all times.
3. Keep a jar of lollies and dry biscuits by your bed.
4. Make a plan with your team - times and number of blood glucose tests you do each day or week.

What tests will I have during pregnancy?



Mid pregnancy

From 20 weeks gestation, your insulin needs begin to rise, until you may need 2 or 3 times your pre-pregnancy dose. The placental hormones interfere with the way your insulin normally works, directing food to your baby. It is normal to need more insulin to allow food to pass into your own body cells.

Birth

Once your baby is born, your insulin requirements will go back to normal on delivery of the placenta or within an hour of the birth. Breastfeeding may cause your insulin needs to decrease again. (More p.18).

What tests will I have during pregnancy?

Throughout your pregnancy, your health team will order tests to check your general health and the well being of your baby.

Blood Tests

- **Rubella & Chicken Pox-** Your doctor may order a blood test to assess your immunity to Rubella (German Measles) and Chicken Pox before you become pregnant and at your 1st pregnancy visit.
- **Haemoglobin** level to make sure you are not anaemic
- **Liver and Thyroid Function Tests**
- **HbA1c** - blood glucose average over the last 3 months. It is critical to aim for less than 7% to ensure the risk of your baby being born with abnormalities is just the same as women without diabetes.

ACTION: Ask your doctor for the results of all your blood tests when you are planning pregnancy and during your pregnancy so that you can track your own progress.

Blood Pressure

If you have high blood pressure, you should consult with your doctor before pregnancy, especially if you are taking medication. High blood

What tests will I have during pregnancy?

pressure increases the chance of certain problems in pregnancy for you and your baby, and needs special attention. Sometimes it is necessary to change your medication before becoming pregnant.

Cardiotocography (CTG)

After 32 weeks, fetal heart rate monitoring may be offered to women with diabetes. Two discs sit on your abdomen to record an electronic trace of your baby's heart rate and to detect any contractions. The frequency of CTGs will vary according to how your blood glucose is controlled, how well your baby is growing and your overall health. It takes approximately 30 minutes to have your baby's heart rate recorded on the graph. Some women are advised to have CTGs 2 or 3 times a week in late pregnancy.

Ultrasound scans

Ultrasound scans are used to identify fetal abnormalities and assist risk calculations for genetic disorders in your baby. You may be offered an ultrasound at:

11-13 weeks: 1st Trimester screen (to check for genetic abnormalities)

17-19 weeks: Anatomy scan (to check for physical abnormalities)

You may be asked to have further scans to monitor your baby's growth and general condition.

Urine tests

You will be asked to give a urine sample at each visit during your pregnancy. This is tested for ketones and protein. Protein may indicate that the pregnancy has affected your kidneys, or that you are developing a pregnancy complication called 'pre-eclampsia' (see page 11).

Blood glucose after meals

Together with your regular monitoring of blood glucose levels throughout the day, you will be asked to do tests 2 hours after each meal. You will probably not have had to do this before. These extra tests will help you and your doctor gain a more thorough understanding of your blood glucose levels and adjust your insulin to attain optimum control of your diabetes.

"Overall, being pregnant is a wonderful, magical experience. Even though there are many 'downs', enjoy this time. It's a gift that women living with diabetes in the past feared, and were advised against. Thank goodness times have changed."

Will I have a normal birth?



Many women with diabetes carry their baby to full term (40 weeks) and go into labour on their own. Some women are advised to have their baby early for various reasons including diabetes control becoming difficult or the baby being particularly large.

Most women with diabetes have a vaginal birth, though it is slightly more common for women with diabetes than for women in the general population to have a caesarian section. If your doctor is concerned about you not being able to have a vaginal birth (ie. suspects your baby is large), he/she will discuss this with you and make a plan for your baby's birth towards the end of your pregnancy.

Induction of Labour

You may be offered an Induction of Labour, which means helping your body to start labour at an earlier time. An induction can be performed several ways; sometimes a combination of two or more ways:

- a) Gel induction - a pessary type gel is inserted into your vagina, to assist the cervix to 'ripen' and open. This in turn tells your uterus to start contracting. Some women need 2 or 3 gels before labour begins.
- b) Oxytocin - an Intravenous (IV) line ('drip') is inserted into a vein in your arm and this hormone is slowly delivered into your blood to assist your uterus to start contracting. The IV may be used alone or with a Gel induction.
- c) Balloon induction - a catheter-like device is inserted into your vagina and air is pumped into the device, which gently puts pressure on your cervix. This pressure assists dilation and may encourage your uterus to begin contracting.
- d) Break waters - the bag of fluid around your baby is gently broken using an "amnihook", which looks like a long crochet hook. The gush of fluid may encourage your uterus to start contractions.

Will I have a normal birth?

Caesarean Sections

A Caesarean section may be necessary for both you and your child. In Australia and New Zealand, approximately 40% of women with diabetes have Caesarean sections, which is just slightly more than the general population.

Birth by Caesarean section is not a decision taken lightly as there are risks for you involved in any major surgery. The medical decision to perform a Caesarean section should be discussed with you in detail. Your doctor will explain the risks involved.

Diabetes management during labour

Control of blood glucose levels during labour helps your baby to have better blood glucose levels at birth. The mother's blood glucose levels immediately prior to the birth have an important effect on the baby's health. Mother and baby will have the same blood glucose level at the time of birth. The baby will be producing its own insulin so that once outside its mother there is a risk that too much insulin is being produced and the baby may experience hypoglycaemia. 'Normal' blood glucose in the mother during labour decreases the risk of your baby having low blood glucose at birth. When an induction or Caesarean section are planned, discuss with your doctor a plan (insulin / tablet dose) for the night before.

ACTION: Speak with your diabetes team prior to labour about pain relief options, diabetes management and any other questions or concerns you may have.

Women who have Type 1 diabetes are usually managed with an insulin and dextrose (sugar) intravenous (IV) drip throughout labour, which allows small amounts of insulin to run into your blood continuously. This way, your blood glucose levels can be adjusted and maintained within the normal range much more simply. Whilst in labour, you will be asked to test your blood glucose frequently to adjust the insulin dose.

Alternatively, your doctor may suggest using fast acting insulin injections, also adjusted regularly throughout labour according to your blood tests.

Some women with Type 2 diabetes may stop insulin during labour. Your doctor will assess your need for insulin in labour on an individual basis.

You are welcome to take to hospital your own equipment and you are encouraged to continue your own testing and insulin injections whenever possible.

Will I have a normal birth?



The arrival

A paediatrician or midwife may want to examine your baby in the room with you after the birth. If your blood glucose levels have been stable during pregnancy and labour, and your baby has no problems, your baby will go with you to your ward.

If your baby is born large or premature, or is having breathing problems, your doctor may recommend your baby be observed in your hospital's Special Care Nursery for a day or two.

Kangaroo care is a phrase developed in Australia which means holding your baby 'skin to skin'. This has been found to assist in developing bonds between mother and baby, whilst giving your baby the opportunity to suckle and assists your baby with temperature control. Ask your midwife about 'Kangaroo care', particularly if you and your baby need to be separated.

Special Care Nursery

- Open 24 hours a day. You are welcome to visit at **any** time.
- Breastfeeding can still be successful. Ask your midwife about expressing within the first 4 hours. Your breasts make milk on a supply and demand basis. If you express, your breasts will keep producing milk to give to your baby, whether by spoon, tube or breast.
- Nursery staff often have instant cameras, so ask for a photo of your baby if you are separated from your baby.
- Visitors are limited to the nursery to assist in noise and infection control.
- Visitors may need to be accompanied by a parent for security reasons.

ACTION:

1. Ask your midwife or diabetes team for a tour of your special care nursery
2. Find out what rules they have regarding visitors
3. Ask about "Kangaroo care"

Will I be able to breastfeed my baby?

Blood tests on the Baby

Your baby will be tested for LOW blood glucose within the first 24 hours after birth. Your baby's blood glucose level needs to be above 2.5 mmol/L. Your baby may have produced extra insulin to compensate for excess glucose from you passing across the placenta during the pregnancy. Your baby's pancreas usually needs 24 to 48 hours to adapt and return to normal insulin production.

Breastfeeding within 30 - 60 minutes of birth can reduce the risk of your baby experiencing low blood glucose levels. Regular feeds, 3 to 4 hourly, on the first day, will also assist your baby to maintain blood glucose levels above 2.5 mmol/L. Blood glucose below these levels for an extended period may effect your baby's brain development.

Your baby will have blood glucose tests, normally before each alternate feed (to check for LOW glucose) until the levels are consistently within the normal range. If your baby's blood glucose level is less than 2.5mmol/L when tested, your doctor may suggest your baby have supplementary feeds. Talk to your midwife about using your own milk.

This does not mean your baby will develop diabetes in the future.

ACTION: Talk with your midwife or lactation consultant about breastfeeding and preventing low blood glucose levels in your baby at birth.

Will I be able to breast feed my baby?

Yes. Your baby's blood glucose will benefit from an early breastfeed (within 30 minutes of birth) to prevent hypoglycaemia. There are also many other proven benefits to your child's health to be gained through breastfeeding. Talk to your midwife or doctor about strategies to enhance successful breastfeeding.

Breastfeeding takes a lot of energy from you; some say as much as walking 25km per day! Be ready to drop your insulin doses back to the amount you were on before the pregnancy and make sure you understand the potential blood glucose changes.

ACTION:

1. Set up a comfortable area where you will sit to feed your baby with snacks on hand in case you feel low.
2. Test your blood glucose before and after a feed to see how your levels drop.

Will I be able to breastfeed my baby?



If you don't have your baby with you, ask your midwife about expressing within the first 4 hours of your baby's birth. Your breasts make milk on a supply and demand basis. If you express, your breasts will keep producing milk to give to your baby, whether by spoon, tube or breast.

If you plan not to breastfeed for long, just 6-8 weeks of breastfeeding gives many benefits to your baby including immunity from infections.

The initiation of breast milk or 'milk coming in' (usually on day 3) may be delayed for 24 to 48 hours in some women with Type 1 diabetes.

As your blood glucose levels may fall rapidly during and following breastfeeding, just like any other physical activity, you may need to:

- Snack prior to or whilst breast feeding eg. Fruit, crackers, sandwich.
- Treat yourself immediately should a 'hypo' occur.
- Drink at least 2 litres of fluid each day.
- Develop a routine for feeding your baby, so you are able to have your meals on time and reduce your risk of hypos.
- Controlling blood glucose levels will help ensure a good milk supply.
- Avoid nursing pads with plastic backing.
- Rub expressed milk into your nipples after each feed to help prevent nipple soreness and heal cracked nipples.
- Test your blood glucose after a feed, especially during the night, to avoid nocturnal hypos.
- If you are having trouble with breastfeeding, your baby is losing weight, is continuously unsettled or has few wet nappies, phone your hospital's Lactation Midwife for advice anytime, even after your baby is born.

ACTION:

1. Talk to your team about setting new blood glucose goals and insulin adjustments (**4-10mmols/L**) during breast feeding.
2. Talk to your midwife about successful breastfeeding strategies.
3. Ask about storing breast milk to complement feeds if necessary.

The future?



Pregnancy is a time to update your family about your diabetes and how you can manage it well. It is vital to achieve optimal blood glucose control to prevent long-term complications of diabetes. High blood glucose levels over a period of time will effect the eyes, kidneys, nerves and blood vessels, and may lead to blindness, kidney failure, foot problems and heart disease.

Keep yourself healthy with the lifestyle and diabetes management techniques you have now developed and enjoy your new child!

ACTION:

1. Talk to your GP or diabetes specialist about regular screening for diabetes complications.
2. Make a date with the diabetes & pregnancy team or doctor when planning your next baby!
3. Review your Family Planning and contraceptive techniques, whether you intend to have another child or not.

Further reading recommended by women with diabetes:

Alison Nankervis, MD and Josephine Costa, Diabetes and Pregnancy, Miranova, Melbourne, 2001.

Anna Knopfler, Diabetes and Pregnancy, Macdonald & Co, Cambridge, 1989.



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For more information:

Australasian Diabetes in Pregnancy Society
www.adips.org

Diabetes Australia - Victoria
www.dav.org.au
1300 136 588

Reality Check young adults with diabetes
www.realitycheck.org.au
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CONTACT YOUR DIABETES CENTRE FOR MORE INFORMATION:



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