InDependent Diabetes Trust

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Diabetes & Pregnancy

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Information Leaflet
Updated 2025

A charity supporting and listening to people who live with diabetes

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Introduction

Most women with diabetes are aware that pregnancy means that they face greater risks to their own health and that of their baby than women without diabetes. For women considering having a baby, it is important to have information and advice before conception and throughout pregnancy. It is also important to know that breastfeeding and weaning affect blood glucose control.

This booklet aims to cover these aspects for women with existing diabetes. We have a separate booklet that covers gestational diabetes which is diabetes that develops during pregnancy and usually disappears once the baby is born. (This can be ordered from IDDT with the details at the end of this booklet.)

Can having Type 1 diabetes during pregnancy affect the baby?

Most women with Type 1 diabetes have healthy babies but hormones produced during pregnancy can make it harder to keep your blood sugar levels within target range. High blood sugars can affect your baby's development and possibly cause the following:

- birth defects
- make babies larger and increase the risk of a difficult birth
- the risk of miscarriage and stillbirth. Shortly after birth, some babies might need admission to the neonatal care unit for problems such as low blood sugar levels and jaundice and may need support with heart and breathing problems.

Studies have shown that in pregnant women with pre-existing diabetes, the following are added risks compared to women without diabetes, despite taking folic acid:

- pre-eclampsia
- babies being born prematurely (before 37 weeks)
- more births by Caesarean section
- congenital abnormalities
- babies being born with dangerously low blood glucose levels.

Research suggests that even near perfect control of blood glucose levels during pregnancy is not sufficient to guarantee protection of mother and child.

Pre-conception planning

To reduce the risks to your baby's health, it is important to tell your diabetes team you are planning to have a baby so they can help you plan.

Entering the pregnancy with good control increases the chances of a healthy baby because important organs of the foetus develop during the early part of pregnancy - the brain, the spine, the heart, the kidneys and the gastrointestinal system. Therefore, getting better control later in the pregnancy does not change what has already developed. However, it is important to remember that just because a woman does not have good control she is bound to have a baby that is affected.

For the above reasons, a planned pregnancy with good blood glucose control at the time of conception is the ideal situation although it is estimated that as many as two thirds of pregnancies are unplanned. A planned pregnancy also means that taking a high dose (5mg per day) folic acid can be given which can reduce the risk of spina bifida and other defects. Many diabetes clinics now offer 'pre-conception counselling' for couples intending to have a baby to try to ensure that the mother's blood glucose control is good at conception and folic acid can be prescribed from the outset of the pregnancy.

Important note: at this stage it is worth checking the safety of any drugs you are taking. Commonly prescribed for people with diabetes are ACE-inhibitors for the treatment of blood pressure and/or to slow down the progression of kidney disease and also statins to reduce cholesterol levels. Both these classes of drugs are potentially toxic for the foetus and should be stopped.

Pregnancy in women with diabetes

Blood glucose control throughout pregnancy

Blood sugar control is important throughout pregnancy but for different reasons. In the early stages of pregnancy it is important for the healthy development of the foetus and in the later stages, it is important to avoid hyperglycaemia because of the impact on the baby's metabolism.

Excess glucose in the mother's circulation easily passes through the placenta to the baby and it is as if it is eating sweets all the time. This stimulates insulin production in the baby, insulin is a potent growth hormone and so fat is deposited. This can result in a large baby which can lead to complications at delivery because the baby will not easily fit through the birth canal. After delivery the baby still produces large amounts of insulin which can result in the new born baby being hypoglycaemic. The hypoglycaemia can be dealt with by the paediatrician.

Review - very tight versus tight control for diabetes in pregnancy

Pregnancies complicated by pre-existing insulin dependent diabetes are high risk for a number of poor pregnancy and neonatal outcomes. The objective of this review was to assess the effects of very tight glycaemic control compared with tight control in women with Type 1 diabetes.

Main results: Two trials involving 182 women were involved. The two trials were difficult to compare. Maternal hypoglycaemia was more common among women whose diabetic control was very tight compared to tight control based on one trial. There was no difference detected in perinatal outcome between the groups.

Reviewers' conclusions: There appears to be no clear evidence of benefit from very tight glycaemic control for pregnant diabetic women. Since very strict control may have a substantial impact on lifestyle, this suggests caution in advising such a tight degree of control.

Continuous Glucose Monitoring (CGM)

Until recent years, blood glucose levels in pregnancy were measured by a finger prick blood test and a blood glucose meter. People still use this method but it is now recommended that pregnant women with diabetes use continuous glucose monitoring in those with Type 1 and Type 2 diabetes. This means that glucose levels can be closely tracked so that outcomes are improved for both mother and baby. Using a CGM can lower the risk of complications that are associated with high blood sugar levels during pregnancy. It provides real-time data and can alert users to high or low glucose levels, helping them and their healthcare team make timely adjustments to treatment.

Closed-loop systems

Closed-loop systems are being increasingly used to help manage Type 1 diabetes during pregnancy, with studies showing they can improve glucose control and reduce complications. These systems use a combination of a continuous glucose monitor (CGM) and an insulin pump to automatically adjust insulin delivery. This leads to a higher percentage of time spent in the target blood sugar range compared to traditional methods. It is important to use a system specifically approved for pregnancy and receive proper training to maximise benefits and safety.

The first trimester – the first 3 months

Low blood sugars are more common during the first 3 months of pregnancy because the baby begins to feed off the mother's glucose stores. In addition to this, the hormones are working hard to create the placenta and this can make it hard to control blood sugars. So it is important to blood test frequently and be prepared for unexpected hypos. Sometimes during this period the symptoms of hypos may change and you may not always recognise them, so it is advisable to warn friends and work colleagues about the signs of hypos. If you don't already have glucagon for emergencies, then it may be a good idea to discuss this with your doctor. Glucagon is an emergency hormone that is injected if you have a severe hypo and are unconscious so cannot eat or drink. It works by making the liver release its own stores of glucose.

Morning sickness

Morning sickness is common in 70% of pregnant women. It is worse on an empty stomach and some women find that eating a cracker or something similar may help. It may also help to make sure that you have a bedtime snack with protein and carbohydrate. Sometimes eating smaller and more frequent meals helps.

If morning sickness is a real problem, you should discuss this with your healthcare team. If it is so severe that you are vomiting up to 10 times a day, then you should call your doctor because there is a risk of ketoacidosis (very high blood sugars that are out of control).

The doses of insulin you need may change frequently because of the body's hormone activity during this time. It may also be necessary to change your insulin regime – your meal times and injection times.

The second and third trimesters [4 to 9 months]

During this time insulin requirements usually increase and could be as high as two or three times your normal daily amount. This is because the placenta produces a hormone that makes it more difficult for the insulin to work. So frequent testing and dose adjustments when necessary are essential. Once the baby is born, insulin requirements quickly drop back to normal.

During this time the doctors will continue to monitor your blood glucose levels, blood pressure and kidney function. Some women with and without diabetes develop high blood pressure and oedema (fluid retention causing swelling) during the latter part of their pregnancy. If this is left untreated it can lead to pre-eclampsia which puts both mother and baby at risk.

Lifestyle – diet and exercise

Diet

A healthy diet is important for all pregnant women - eating the right kind of food in the correct amounts is one of the best ways to control blood sugar levels. Generally you should eat more fruit, vegetables and whole grains that are high in nutrition but low in fats and calories but fewer animal products and sweets. However, no one diet is suitable for everyone and you should discuss the diet that is suitable for you with a dietitian.

Note: IDDT has 2 booklets that may be helpful – Diabetes Everyday Eating and Diet and Diabetes and if you would like copies, call 01604 622837 or email enquiries@iddtinternational.org

Exercise

It is important to keep physically active during pregnancy – moderate exercise will not harm you or your baby. Recreational exercise such as swimming or brisk walking is known to be beneficial.

The exercise pregnant women take should reflect their previous exercise regime. For example, it would not be appropriate for a woman who has done no exercise for many years to suddenly start running long distances in pregnancy. However, if women exercised regularly before pregnancy, they should be able to continue with no adverse effects. If women have not exercised routinely they should begin with no more than 15 minutes of continuous exercise three times per week, increasing gradually to daily 30-minute sessions.

Exercise is important for all pregnant women:

- it helps to prevent some of the discomforts during pregnancy – back pain, muscle cramps, constipation and sleep difficulties
- it prepares you for labour by increasing muscle strength and the endurance developed by regular exercise reduces the stress on your ligaments and joints during delivery
- Physical exercise generally lowers blood sugar levels for two reasons - it causes glucose to be transported to the cells where it is needed for energy and it also reduces blood sugar levels by increasing the body's sensitivity to insulin.

If you have any questions, you should talk to your midwife or GP.

Managing Type 1 diabetes during pregnancy

Hyperglycaemia

If you have Type 1 diabetes, pregnancy can put you at greater risk of more low blood sugars (hypos or hypoglycaemia), which may be more severe. You may experience hypo unawareness which is when you are unable to notice that you have low blood sugar levels.

Diabetic Ketoacidosis (DKA)

Hyperglycaemia, high blood glucose levels are also a risk and can lead to DKA (diabetic ketoacidosis). DKA is more common in pregnancy.

DKA happens when there is a severe lack of insulin which means the body can't use glucose for energy and starts to break down fat instead. When this process happens chemicals called ketones are released. If left un-checked the ketones can cause the blood to become acidic. Ketones can cause serious problems during pregnancy.

Although DKA usually happens when blood sugar levels are high, during pregnancy DKA can happen even when blood sugar levels are within normal range. Make sure you have a blood ketone meter and test strips and seek immediate help if your ketone levels are raised or you are experiencing symptoms of DKA or feeling unwell.

Labour

Many women with diabetes go into natural labour and delivery is normal but this depends largely on the baby's size and position. Women with diabetes tend to have bigger babies and so if the baby is large it may have problems moving safely through the birth canal. This is one of the reasons the

healthcare team monitor the health and size of the baby very closely. If the baby is large then labour may be induced.

The decision to induce labour is usually taken after 36 weeks and this will depend on the baby's size, the maturity of its lungs, the health of the placenta and the mother's health.

If the baby is too large or the health of mother and baby is at risk then a Caesarian section will be carried out. This is much more common in women with diabetes than in women without diabetes.

Caesarian Section

Women with diabetes are more likely to give birth by Caesarean section as their babies tend to be larger, labour tends not to progress as smoothly and/or if the mother's safety is at risk. If the mother to be has diabetes complications this can make vaginal delivery of the baby more dangerous for both mother and baby. However, giving birth by Caesarean section has disadvantages:

- Diabetes increases the chances of infection and can slow down wound healing so making surgery such as a Caesarian section more risky.
- Caesarean section means a longer stay in hospital, greater chance of transfusions and a slower recovery.

If a woman has had one Caesarean section does it mean that this will happen with the birth of subsequent children?

Studies have suggested that in women who have already given birth by Caesarean Section, about half of them that attempted vaginal birth succeeded but in women without diabetes 60 – 80% of them had successful vaginal births after a Caesarean.

Breast Feeding

A great deal is published about pregnancy and women with diabetes but what about after the birth? There is limited research looking at the effects of breast feeding on diabetic mums and the control of their diabetes.

There is no reason why women with diabetes should not breast feed like any other mum. Breast milk production uses a lot of glucose/carbohydrate from the mother's supply so it is important to avoid hypoglycaemia by lowering insulin doses as necessary. There is evidence that the high energy needs of lactation mean that a mother is likely to require 40-50g carbohydrate per day compared with pre-pregnancy amounts. Extra carbohydrate may be required before going to bed while the baby is still having night feeds. However, once breastfeeding stops, insulin doses and carbohydrate intake will need to be changed.

Research has also shown:

- in both breastfeeding and non-breastfeeding mothers with Type 1 diabetes, glucose levels were lower during the first week after delivery.
- Insulin requirements remained lower than before pregnancy throughout the 2 months after the baby is born, whether the mothers were breastfeeding or not.
- Hypoglycaemia does not occur more frequently during or immediately after breastfeeding.

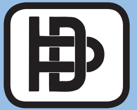
Weaning

The advice about weaning is usually given on the basis of common sense. If you have been doing a lot of regular exercise and then you stop, your blood sugars will go up unless you either eat less or increase insulin doses. The same applies when milk production ceases when the child is weaned.

The general advice for diabetic mums is that weaning should be done gradually so that adjustments in diet and insulin can be slow and smooth. Natural weaning where the child outgrows his/her need for breast feeding, is the easiest to allow the mother's body to adjust. But if there is an active decision to wean the baby, then reducing breastfeeds by no more than one feed per week seems to be the general advice. This enables blood glucose control to be more easily managed.

Getting emotional support

There is a lot to look forward to if you are pregnant, although having to manage diabetes on top of pregnancy is a lot to think about, so ask for help if you need it. You can speak to your midwife and explain how you feel. It can also be helpful if you have someone you can take with you to appointments to support you.



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For further information about all our FREE leaflets contact us:

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