

# Diabetes and pregnancy

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**Diabetes is a medical condition where there is too much sugar (glucose) in the bloodstream.**

Glucose is the main sugar found in the body, and is essential for good health. It comes from the digestion of starchy or sugary food and is normally regulated very precisely by the body with insulin, a hormone produced by your pancreas.

If insulin is missing or is not being used by your body effectively, glucose absorbed from food cannot be used as an energy source. Its concentration then increases in your blood. Blood glucose concentrations above the normal limits for any length of time can lead to problems, so it is important that diabetes is diagnosed, and treated early.

If you are a woman who has diabetes the decision to have a baby is one that requires thought and careful planning as having diabetes when you're pregnant can put you and your baby at risk of complications. If you have diabetes and want to start a family, there are a number of things to consider.

## Having children is a big decision for anyone

There are around 800,000 births in the UK a year and 2-5% of them involve women with diabetes, however most women who have diabetes have healthy pregnancies and healthy babies.

If you are planning to have a baby or think you are pregnant then it is vital that you speak to your diabetes care team as soon as possible. They will talk to you about a number of items, so that you have a good idea of what to expect so you can get your pregnancy off to the best start.

Preconception care should start from adolescence, and your healthcare team may talk to you about it at your visits. It is really important to use some form of contraception until you decide you want to become pregnant.



# Things to do before you become pregnant or as soon as you learn you are pregnant

Ask your diabetes care team for advice, they may also refer you to a diabetic pre-conception clinic for support before you try to get pregnant. A combined approach between you and your healthcare team is the best way to minimise problems.

## Check your medications

Some medicines should NOT be taken by pregnant women, including some diabetic specific drugs, so you must tell your doctor if you plan to become pregnant or have found out that you are pregnant, as these may damage your baby's development. As some tablets for Type 2 diabetes are not suitable for use during pregnancy you may be switched to insulin injections to control your blood glucose, but you can usually return to tablets after pregnancy. Your doctor will tell you whether or not you need to change your medicine.

Your diabetic treatment regime may remain the same during pregnancy, or your team may adjust it, depending on your needs and preferences. You should be given the opportunity to make informed decisions about your care and treatment, in partnership with your healthcare professionals.

NHS funding for real-time CGM is available to pregnant women with type 1 diabetes. Real-time CGM provides hypo/hyper and predictive alarms which can help you and your baby stay safe during pregnancy. If you have T1Ds speak to your healthcare professional about real-time CGM.

## Taking folic acid tablets

Folic acid (one of the B vitamins) is the only pre-pregnancy vitamin supplement that women who are eating a balanced diet need to take as it can help prevent your baby from developing birth defects, such as spina bifida- so you should take folic acid until you are 12 weeks pregnant.

The normal daily dose for women trying to get pregnant and for pregnant women is 400 micrograms (0.4 mg) a day.

Women with diabetes should take 5mg a day and have this high-dose folic acid prescribed for them.

# Some of the things for you to consider

## Blood glucose control

Blood glucose control is a key factor that may affect your baby so regular glucose checks are essential to keep track of your diabetes.

Your insulin requirement will increase as your pregnancy develops due to increasing demands of your growing baby and as there is a natural tendency for insulin resistance to increase in all pregnancies, so you may also be asked to:

- ✓ Test your glucose levels more frequently
- ✓ Check your blood ketone levels to avoid Diabetic Ketoacidosis (see next page)
- ✓ You will probably be asked to check your glucose levels before ALL meals and between-meals. Glucose checks may also be needed before bed and at night time, so checking up to 7 to 8 times per day may be required to achieve your blood glucose target

## Glucose targets

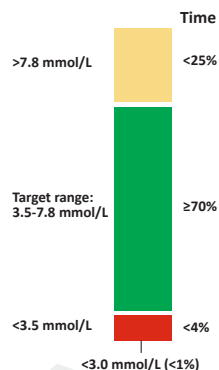
You and your care team should agree ideal (or target) glucose levels that are right for you. If it is safely achievable, women with diabetes who are pregnant should aim for:

### Fingerstick capillary blood glucose (CBG) targets:

- Fasting CBG <5.3 mmol/L
- 1 hour after meals CBG <7.8 mmol/L
- 2 hours after meals CBG <6.4 mmol/L
- And to maintain CBG >4 mmol/L

### Continuous glucose monitoring (CGM) targets

- Sensor glucose 3.5-7.8 mmol/L ≥70% of the time
- Sensor glucose >7.8 mmol/L <25% of the time
- Sensor glucose <3.5 mmol/L <4% of the time
- Sensor glucose <3.0 mmol/L <1% of the time



Your recommended range is: \_\_\_\_\_

Try to keep your blood glucose within this target range, but don't let the odd 'high' or 'low' create needless worry. If you feel this is not achievable speak to your healthcare team who can help you with your individual targets.

## Avoiding Diabetic Ketoacidosis (DKA)

Checking for ketones is to prevent the complication Diabetic Ketoacidosis (DKA). This dangerous complication most commonly happens in people with Type 1 diabetes, although occasionally occurs in people with Type 2 diabetes and gestational diabetes.

DKA happens when there is persistently high glucose in the blood and a lack of insulin. DKA in pregnancy occurs more frequently, more rapidly, and at lower blood glucose levels than in a non-pregnant state and is a very serious complication if it is happens at any stage in pregnancy.

### **Pregnant women with diabetes should test their blood for ketones if:**

Your blood glucose is over \_\_\_\_\_ mmol/L

You are ill for any reason

You are vomiting for any reason

Extra insulin or carbohydrates are needed to correct for ketones. This should be done with consultation from your healthcare team, so seek their advice if the test shows more than a 'small' level of ketones. You should call your healthcare team immediately if your blood ketone level is above \_\_\_\_\_ mmol/L

Speak to your healthcare team about blood ketone testing.

## Avoiding hypos

During the first trimester of pregnancy, the body's need for insulin goes up and down frequently. Hypoglycaemic unawareness and severe hypoglycaemia are more common so it is important that you, your partner, family and friends are aware of the warning signs of a hypo. You should discuss this with your healthcare team so they can offer you education on:

- ✓ The management of hypoglycaemia, including the use of glucagon
- ✓ How to avoid hypoglycaemia during driving
- ✓ On the recognition and prevention of Diabetic Ketoacidosis (DKA)
- ✓ Your individual target blood glucose range
- ✓ Diet and eating regular meals and snacks throughout the day
- ✓ Testing your blood glucose at regular intervals throughout the day
- ✓ Keeping some type of fast acting sugar with you at all times
- ✓ When to adjust your insulin dose

Speak to your healthcare team about hypo unawareness.

## More frequent appointments

You will probably need to visit your healthcare team more than you expect, so it is very important to keep all appointments made for you, so that your care team can monitor your condition and react to any changes that could affect your own or your baby's wellbeing.

## Eating healthily

In general, you should eat the same types and amounts of food you normally eat. If you are eating a balanced diet you should be able to get most of the vitamins you need from the food you eat, so you should not need to take vitamin or mineral supplements. If however you feel that you are unwell or run-down you should discuss this with your healthcare team.

## Cut out alcohol & stop smoking


Drinking alcohol during pregnancy can harm your baby so all 'mums to be' are advised that 'less is best' when it comes to alcohol, but if you have diabetes it will also affect your blood glucose levels and can increase your risk of hypos, so you need to heed the advice given on this even more than an expectant mum without diabetes.

Smoking while pregnant can harm your baby and the effect it has on your baby can last well into childhood and can be permanent. The potential problems caused by diabetes can make smoking even more unhealthy for you. If you smoke and need help to stop your GP, midwife or consultant can recommend ways to stop smoking.

## Physical activity

Physical activity plays a vital role in keeping blood glucose under control at any time. But because pregnancy puts extra stress on your heart and lungs, don't start a vigorous exercise programme during your pregnancy. Gentle activities like swimming and walking are better.

Be assured that by working with your diabetes care team to get the right pregnancy advice, combined with controlling your blood sugar levels, will result in a well controlled pregnancy and help you get your body ready for a healthy baby.



# Types of diabetes

## Type 1 diabetes

This develops when your body can't produce any insulin. It usually begins in childhood, and most women with Type 1 diabetes will be aware of their condition before they become pregnant. People with Type 1 diabetes take insulin in the form of injections or insulin pump and need to closely control their blood glucose. Type 1 diabetes is a chronic condition and currently there is no known cure, however it can be managed with medication, regular monitoring and a healthy lifestyle.

## Type 2 diabetes

This develops when your body can't produce enough insulin, or when the insulin that is produced doesn't work properly. It often occurs in overweight people, and is usually diagnosed in women aged 40 or over. But it can happen at a younger age, particularly if you are black, Asian or from a minority ethnic group. You may be aware that you have Type 2 diabetes before you become pregnant, or you may be diagnosed during your pregnancy. Type 2 diabetes can be treated with tablets to lower blood glucose and, in some cases, with insulin injections.

## Gestational diabetes

This is a type of diabetes that can occur during pregnancy, and it means that either the body isn't releasing enough insulin to meet the demands of pregnancy or that cells aren't responding to it. The result can be that blood sugar levels remain high.

## Reducing the risks if you have pre-existing diabetes

People with Type 1 or Type 2 diabetes may have new problems when they are pregnant, or existing ones that may get worse, however most of the risks associated with diabetes and pregnancy can be greatly reduced with tight blood glucose control.

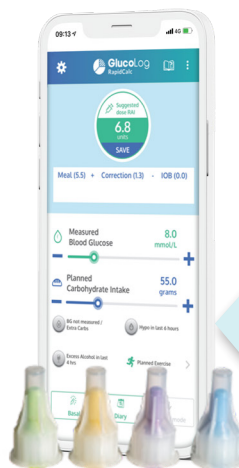
You can discuss concerns or worries about risks with your diabetes team, but remember that the best way to reduce the risk to your own and your baby's health is to establish good glucose control before conceiving and throughout your pregnancy.

## Diabetes Care Management Systems



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