Royal Free London
NHS Foundation Trust

Gestational diabetes (diabetes developed during pregnancy)

Information for patients

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This booklet aims to explain to you what care to expect during the rest of your pregnancy and the postnatal period now that it has been identified that you have gestational diabetes. It will not answer every question you may have, so please write any concerns down and ask your midwife or doctor.

In all cases, a doctor or a nurse will explain the treatment options for gestational diabetes to you and answer any questions you may have. In most cases it will be possible for a friend or relative to accompany you for all or part of the appointment. Please ask your nurse or doctor.

What is gestational diabetes?

Gestational diabetes is a type of diabetes that arises during pregnancy. It is usually diagnosed during the second half of pregnancy and occurs when the body does not produce enough insulin to counterbalance the effects of hormones produced by the placenta.

These hormones make the body more resistant to the effect of insulin and as a result blood glucose levels rise higher than normal. If it is diagnosed in early pregnancy, it is possible that diabetes has been present since before pregnancy.

The diagnosis of gestational diabetes is made if the result of a glucose tolerance test (GTT) is:

- 5.6 mmol/l or greater when fasting, or
- 7.8 mmol/l or greater after two hours.

How will it affect my baby?

Your baby will not be born with diabetes. However, if uncontrolled, high levels of glucose in your blood will cross the placenta and get into the baby's blood. This will stimulate your baby to make more insulin to bring its glucose levels down.

As insulin stimulates growth as well as controlling blood glucose levels, the baby may grow larger than normal, which in turn can make delivery more difficult and stressful. If blood glucose levels remain uncontrolled, there is also an increased risk of stillbirth.

What is the treatment?

We have a multidisciplinary team who will review you on a regular basis to provide advice and support throughout your pregnancy. The team consists of a consultant diabetologist (a doctor specialising in diabetes), consultant obstetrician, diabetes specialist midwife, diabetes specialist nurse and a diabetes specialist dietitian.

Treatment to control your blood glucose levels involves:

Blood glucose testing

Your diabetes specialist midwife or nurse will provide you with a blood glucose monitor so you can monitor your blood glucose levels at home. The aim will be to keep your blood glucose levels within the following targets:

- Fasting or before meals: Between 3.5-5.3 mmol/l
- One hour after meals: Less than 7.8 mmol/l

You will need to test four times a day: before breakfast and one hour after breakfast, lunch, and dinner.

Diet

Your diabetes specialist dietitian will give you advice to enable you to maintain a healthy diet while reducing your sugar intake. Please see information on ‘nutrition and related issues’ on page six.

Medication

Despite your best efforts with your diet, your blood glucose may not stay within target levels. It may be recommended that you are treated by either or both of the following:

- Metformin tablets: These help to reduce insulin resistance as described. Please see page 15 for information on starting metformin.
- Insulin injections: Between 10-30 per cent of women with gestational diabetes require insulin.

The aim of keeping your blood glucose within target levels is to optimise the outcomes for both you and your baby.

Ultrasound scans

After you have been diagnosed with gestational diabetes, you will be advised to have an ultrasound scan to measure the growth of your baby and the amount of fluid around the baby every four weeks. This will help your diabetes team to plan appropriate care with you.

Planning for birth

Your due date is an estimated delivery date for your baby. Women who have diabetes may require this date to be reviewed. This decision will be based on your blood glucose levels, and the growth and size of the baby.

If your blood glucose levels are well controlled with diet, and/or you are on metformin, you will be advised to give birth by 40 weeks plus six days. If you have not gone into labour by then, you will be offered an induction.

If your diabetes has been treated with insulin you will usually be offered an induction of labour before or by your due date.

You will have the opportunity to discuss your individual plan with your consultant towards the end of your pregnancy based on you and your baby’s progress.

When you are in labour your blood glucose levels will be monitored as follows:

If your diabetes has been controlled by diet/metformin, your blood glucose should be checked once at the beginning of established labour. If it is above 8.0 mmol/l you will require further monitoring and maybe an intravenous infusion of glucose and insulin.

If you have been treated with insulin during pregnancy, you are likely to require an intravenous infusion of glucose and insulin during labour. This will be planned and discussed with the diabetes team beforehand. While this is in progress, your blood glucose will be monitored hourly.

If the plan is for an elective caesarean section, your medication requirements and blood glucose monitoring will be discussed on an individual basis.

After the baby is born

Your baby will stay with you unless extra neonatal support is required. If your baby is well, skin to skin contact will be encouraged as soon as the baby arrives.

You will be advised to stay in hospital for 24 hours after the birth to ensure your baby maintains its blood glucose levels and is feeding well.

Your baby's blood glucose levels may drop after they are born. This occurs because during your pregnancy, your baby will have been producing their own insulin at a rate to match the glucose received from you. Once born, the baby needs to regulate their insulin production according to the amount they feed on.

You are therefore advised to feed your baby within 30 minutes of birth, and then every two to three hours for the first 24 hours until their blood glucose levels are stable.

Your baby's blood glucose level will be monitored before the second feed at two to four hours after birth and following this if necessary.

It has been shown that among other benefits, breastfeeding reduces the chances of your baby becoming obese and/or developing diabetes in later life.

You will be encouraged to breastfeed; however, you will be supported with whichever feeding method you choose. Extra feeds and/or intravenous glucose may be required until the blood glucose levels become stable.

If your baby is admitted to the neonatal unit, you will be encouraged to carry out as much of your baby's care as you are able to.

For further information please see 'breastfeeding and diabetes' on page 16.

Nutrition and related issues

Diet and lifestyle

Healthy eating and regular exercise are an important part of managing diabetes in pregnancy because they help to:

- Control blood glucose levels
- Supply the baby's growing needs
- Achieve a healthy weight gain in pregnancy.

This section of the booklet provides information on how to improve your diet. You will be seen by a diabetes specialist dietitian to support you with your changes and answer any further questions you may have.

Control your blood glucose levels with dieting

To help control blood glucose levels through diet, you should:

Eat regular meals
Have at least three meals a day and snacks at regular intervals. This will help to prevent excessive changes or fluctuations in your blood glucose levels.

Snacks are not essential to maintain blood glucose levels but are encouraged. They can help spread your intake across the day and stop you feeling hungry. You are encouraged not to leave very large gaps in between mealtimes as this can often result in a bigger meal. Please see ‘suitable snacks’ for snack ideas on page 14.

Please be aware that your waking blood glucose level can be affected by late night meals or midnight snacking.

If you have a small appetite, are nauseous or suffering from heartburn, you may find smaller more frequent meals more comfortable.

Be carbohydrate aware
All carbohydrates are converted to glucose by the process of digestion and enter the bloodstream as glucose. The larger the portion, the more the blood glucose will rise. You will be advised to:

- Eat less carbohydrates
- Choose better types of carbohydrates
- Spread carbohydrates throughout the day
- Pair your carbohydrates with a source of protein.

Carbohydrates include both starch and sugar:

Cereal starch

- breakfast cereals
- bread
- rice
- pasta
- chapatti/roti
- paratha
- dosa
- millet
- semolina
- maize
- oats
- rye
- couscous
- flour etc.

Vegetable starch

- potatoes
- yam
- sweet potatoes
- plantain, cassava

- gari
- fufu
- banku
- kenkey
- other root vegetables
- beans
- pulses.

Natural sugar

- fruit and fruit juices
- milk
- yoghurt
- mousse
- custard
- ice-cream.

Added sugar

- sugar
- honey
- jaggery
- sweets
- drinks
- chocolate
- biscuits
- cakes
- desserts
- jams

By choosing carbohydrates that are slow releasing, your blood glucose levels will rise more slowly and are therefore more likely to be within target.

Try choosing foods such as:

- Rye, granary, or multi-seeded breads
- Oat-based or wholegrain cereals
- Wholegrain/brown or basmati rice
- Chapattis or roti made with wholemeal or medium flour
- Sweet potato, new potatoes, or potatoes with their skins
- Wholemeal pasta
- Yam (not pounded)
- Cassava (not pounded)
- Coarse couscous, cracked/bulgar wheat
- Quinoa
- Unripe/green/'black' plantain.

Remember, the larger the portion, the more the blood glucose will rise.

Fruit and vegetables

Fruit contains naturally found fruit sugar. Eat at least five servings of fruit and vegetables per day. They contain valuable vitamins and minerals such as vitamin C and folic acid required for pregnancy.

A portion of fruit or vegetables is:

- One piece of fruit, e.g., medium sized apple or a small banana
- One slice of large fruit, e.g., watermelon, melon or two rings of pineapple
- Two small fruits, e.g., satsumas, nectarines, or plums
- A cupful of berries
- One tablespoon of dried fruit
- Three tablespoons of vegetables
- One small bowl of salad.

Try and make your vegetables the biggest portion on your plate. They will keep you full without raising your blood glucose levels.

Limit foods high in sugar

Eating foods which are high in sugar, such as jam, marmalade, honey, sweets, chocolates, cakes, sweet biscuits, jaggery, barfi, kheer, gulab jamun, halva, jellaba and sweet pickles, will make your blood glucose levels rise very quickly and out of target.

Excess sugar can also contribute to you gaining excess weight. Sugar is ‘empty calories’ and provides no nutritional benefit to you or your baby.

Try to avoid:

- Adding sugar, jaggery (gur), honey or glucose to food and drinks
- Fizzy drinks, squashes and energy drinks containing sugar
- Syrup, honey, treacle, jams, marmalade, dextrose, fructose, maltose, corn, and glucose syrup found in processed foods.

Be aware of other names for sugar on the food label: Sucrose, glucose, dextrose, fructose, lactose, maltose, honey, invert sugar, syrup, corn sweetener and molasses.

If you are missing your treats, consider making your own and experiment using less sugar.

If you need to sweeten drinks and foods, try using an artificial sweetener. These are safe to use during pregnancy in reasonable amounts.

Protein foods

Protein foods are important for the growth and development of your baby and your own health. On their own they have very little effect on blood glucose levels and help to keep you full. This makes them a good food group to pair with carbohydrate foods as they can slow the release of glucose into your blood, e.g., having an egg with your toast in the morning.

Include at least two servings daily of lean chicken, fish, meat, eggs or cheese, beans, pulses, lentils, nuts, and seeds.

Fish is good for your health and the development of your baby, so it is good to eat it regularly. The general recommendation is to eat at least two portions (one portion is about 140g) per week, including one or two portions of oily fish, e.g., mackerel, sardines, salmon,

herrings, trout, or pilchards. Oily fish is also beneficial to heart health, but do not have more than two portions a week.

Avoid fish which tend to have higher levels of mercury, e.g., swordfish, shark and marlin. Try to limit tuna, which can also have relatively high amounts of mercury, to up to four medium-sized cans or two tuna steaks a week. It is also advisable to avoid raw shellfish to reduce the risk of food poisoning, which can be particularly unpleasant during pregnancy.

Fluid intake

Try to drink at least eight glasses of fluids each day – predominately water, 'no added sugar' squashes, diet drinks, herbal teas, low calorie hot chocolate drinks and semi-skimmed milk being good alternative choices.

Alcohol

A baby's liver is one of the last organs to develop fully and does not mature until the last half of pregnancy. Your baby cannot process alcohol as well as you can and too much exposure to alcohol can seriously affect your baby's development, especially in the first trimester. The safest option is not to drink at all when pregnant.

For pregnant women, getting drunk or binge drinking (drinking more than 7.5 units of alcohol on a single occasion) can be harmful to your baby. So, if you choose to drink alcohol during pregnancy, it is advisable to stick to a maximum of one to two units once or twice

a week. Alcohol can also make hypoglycaemia (hypos) or low blood sugar more likely if you treat your gestational diabetes with insulin or glibenclamide.

Caffeine

It is best not to have more than 200mg of caffeine a day, e.g.:

- one mug of instant coffee = 100mg
- one mug of filter coffee = 140mg
- one mug of tea = 75mg
- one can of cola = 40mg

Fat in foods

A small amount of fat is essential to provide us with important vitamins. Although fat does not directly influence your blood glucose levels, eating in excess will contribute to you gaining weight.

Try to minimise your fat intake through the following:

- Use low fat cooking methods such as dry frying, steaming, baking, grilling, and poaching.

- Use lean cuts of meat, trim the fats off meat and remove the skin from poultry. Use alternatives such as beans, pulses, peas, and lentils.
- Try reduced fat and low-fat spreads, especially those made from sunflower/olive oils and fat-free or low-fat salad dressings, mayonnaises, and sauces.
- Use low fat dairy products, such as semi-skimmed milk.
- Cut down on snack foods such as biscuits, crisps, pastries, cakes, and Indian savouries such as Bombay mix.
- In place of takeaways choose low-fat sandwiches, lean meat kebabs, grilled/baked fish, and low-fat chips.

Calcium

Calcium is essential for the bones and teeth of you and your baby.

Good sources of calcium are:

- 25g (1oz) cheese
- one small pot of yoghurt
- 200mls (⅓ pint) of skimmed or semi-skimmed milk.
- green leafy vegetables such as broccoli, cabbage, okra
- soya beans
- tofu
- unsweetened milk alternatives with added calcium, such as soya, rice, or oat milk
- fish where you eat the bones such as sardines and pilchards.

Iron

Iron is an essential mineral, with several important roles, e.g., it helps to make red blood cells, which carry oxygen around the body. Good sources of iron are:

- lean meat
- eggs
- lentils
- beans
- soybean flour
- nuts
- green leafy vegetables such as watercress and curly kale
- dried fruit such as apricots (1 tbsp)
- wholegrains such as brown rice

If your iron level is low, this can make you feel very tired and may lead to anaemia. If the iron level in your blood becomes low, your GP or midwife will advise you to take iron supplements. These are available as tablets or a liquid.

Vitamin C can help your body absorb iron. Your iron tablets can be taken with good sources such as a small orange, handful of strawberries and blackcurrants, or red and green peppers, broccoli, Brussels sprouts, and potatoes.

Folic acid and diabetes

Women with pre-existing diabetes who are planning to become pregnant should be advised to take folic acid (5 mg/day) until 12 weeks of pregnancy to reduce the risk of having a baby with a neural tube defect. This dose can be prescribed by your doctor.

Diabetic products

Diabetic products such as chocolates and biscuits are not recommended. They are often high in fat and can cause a laxative effect.

Symptoms in pregnancy

The following tips will help to ease these symptoms:

Nausea and vomiting

- Eat small, regular carbohydrate-based meals, e.g., dry bread, crackers, cereal, plain potato, rice, or pasta.
- Drink fluids between, rather than with, meals.
- Avoid fatty and highly spiced meals and snacks.
- Keep rooms well ventilated to reduce strong odours e.g., cigarette smoke, and take plenty of fresh air.
- Cold rather than hot foods may be better tolerated.
- Ginger, in food and sugar-free drinks, may help to alleviate nausea.

Heartburn

- Eat small, regular meals.
- Avoid fatty, spicy, acidic foods and fizzy drinks.
- Having milk and yoghurt may ease burning pain.
- Avoid lying down after meals.
- Elevate your head with pillows when sleeping at night.

Constipation

- Ensure a good fluid intake of up to 8-10 glasses a day.
- Eat more high fibre foods such as granary bread, and porridge.
- Have potatoes with their skin on.
- Increase your fruit and vegetable consumption (tinned, fresh, frozen, and dried). Try mixing dried fruit with nuts or seeds.
- Include peas, beans, lentils, and nuts in your diet.
- Gentle exercise can also encourage a healthy bowel.

How much weight should I expect to put on?

The average weight gain during pregnancy (starting from a healthy pre-pregnancy weight) is 10-12kg (1½-2 stone). A large weight gain can make it more difficult to control your blood glucose levels. Keeping active and reducing your intake of fatty and sugary foods will help.

Pregnancy is not the time to try drastic methods to lose weight. If you were overweight at the start of your pregnancy, you may find the dietary changes you made will mean your weight increases more slowly or stays the same due to healthier eating. Your weight will be monitored when you attend clinic.

Please discuss any concerns you have with your diabetes specialist dietitian who will be present at your clinic appointments.

Being diagnosed with gestational diabetes can mean a lot of changes to your diet. These positive changes mean you are eating not for two, but twice as well!

Physical activity

Regular gentle physical activity such as walking, or swimming helps to keep you fit and controls your weight. It will also help to improve your blood glucose levels and the effects can last for several hours after the exercise.

Choose an activity you enjoy and aim to be more active in your day. A simple activity such as a walk at lunchtime can have positive effects.

If in doubt as to how much activity you can do, ask your midwife or doctor for advice.

Portion guidance and meal planning

Breakfast

- One bowl of porridge (30g of rolled oats) with 150mls semi-skimmed milk. Sprinkle with cinnamon.
- One to two slices of granary/seeded toast with a topping such as boiled, poached, or scrambled egg, sliced meat, marmite, mushrooms, tomatoes, or cheese.

Lunch

- Sandwich or roll (granary/seeded bread) with either lean meat, egg, tinned fish, cottage cheese or cheddar cheese.
- Two to three wholegrain crispbreads with salad, cottage cheese, or cheese spread, and vegetables.
- One to two slices of granary/seeded toast with an omelette.
- Small jacket potato with beans, cheese, or tuna and salad.
- Medium whole meal pita bread with houmous and salad.
- One thin, hand-sized chapatti with dhal and vegetables.
- Soup with one to two slices of granary bread or two to three wholegrain crispbreads.
- Large salad with meat or fish, cheese or nuts and seeds plus one to two tablespoons of couscous, pasta, rice, two egg-sized potatoes or one slice of bread or two to three crispbreads.

Main meal

- Roast or grilled meat with vegetables with two to three new potatoes.
- A small portion of pasta (approximately 75g uncooked/180g cooked) with meat and salad/vegetables. Homemade tomato or cream sauce.
- Vegetable/meat/fish curry or stew with small portion of brown rice (approximately 80g uncooked/180g cooked) and vegetables.
- Casserole with meat, vegetables, and pulses and two to three egg size potatoes.
- Curry with two thin, hand-sized wholemeal chapattis.

Desserts

- one portion of fresh fruit or half a tin of fruit in natural juice
- one pot of yoghurt
- sugar free jelly
- no added sugar instant whip
- 40g dark chocolate (70 per cent cocoa).

Suitable snacks

Although it is not essential to snack when you have diabetes, there may be times when you want to, for example when feeling a bit peckish, nauseated, to prevent hypoglycaemia (patients on insulin only) or during labour.

Here are some snack ideas:

- One piece of fruit
- One bowl of salad
- One oat/nut based
- Cereal bar
- Two rice cakes
- Two tablespoons of dry cereal
- Two to three tbsp pretzels
- One tablespoon of dried fruit
- One cup of plain popcorn
- One small slice of malt loaf
- One glass of semi-skimmed milk
- One pot of yoghurt
- Nuts
- Two wholegrain crackers with low fat
- Cheese spread and/or a slice of meat
- One slice of granary bread with marmite / sliced meat
- Vegetable sticks and houmous
- Olives
- Two oat biscuits
- Handful of seeds

Additional information

The information provided in this section of the booklet targets specific issues with diabetes in pregnancy. This should be read in conjunction with the “Have a healthy diet in pregnancy” information, which is available on the NHS website. This guide will provide further information on nutrition, food safety and hygiene and breastfeeding. Access via www.nhs.uk/pregnancy/keeping-well/have-a-healthy-diet.

Why is my blood glucose level high?

Potential lifestyle causes:

Was my carbohydrate portion bigger than normal?

Did I eat a bigger portion of carbohydrate? Have I had multiple carbohydrate sources, e.g., a sandwich, fruit, and yoghurt? All of these contain carbohydrates – individually they will not raise levels, but together they may make a bigger portion.

Did I choose the slowest releasing carbohydrate?
Eating foods such as white rice, white bread, white wraps can raise your blood glucose levels more quickly. You are advised to ensure your carbohydrate foods are always the slow releasing options listed above – see the ‘be carbohydrate aware’ section of this booklet on page seven.

Did I forget to have a source of protein with my carbohydrate?
Having protein with your carbohydrate food will slow down the release of glucose and will also fill you up, e.g., have meat/fish/beans with your pasta rather than pasta alone, or an egg with toast rather than toast alone.

Have I been less active today?
If you are normally an active person you may see a rise in your blood glucose levels when you are less active. A simple walk, using the stairs or cleaning up

after dinner is enough to improve your blood glucose levels.

Why is my fasting level raised?
If you ate late or had a midnight snack, this may cause fasting levels to rise. However, if you did not, you may require medication, and this will be discussed with you at your next appointment.

Why is my blood glucose level high after breakfast?
In the morning your body is at its most resistant to insulin. Therefore, you may need to reduce your carbohydrate portion and introduce a protein source, e.g., instead of having two slices of toast, consider one slice of toast and an egg.

If you are still hungry have a snack mid-morning or eat your breakfast in two halves, so one half in the morning, then the other half at mid-morning.

How to start metformin

Metformin is prescribed to pregnant women with diabetes when dietary changes do not achieve the recommended blood glucose levels. If you have been advised to start metformin, please continue with the dietary changes that you have made.

Start by taking one tablet (500mg) with your breakfast and one tablet with your evening meal.

If no side effects occur, after three days increase to taking two tablets (1000mg) with your breakfast and two tablets with your evening meal.

Metformin can cause abdominal side effects for some women (e.g., nausea, wind, diarrhoea). The chance of these side effects occurring can be reduced by taking the tablets with food and increasing the dose slowly. Always take the tablet(s) in the middle of a meal and never on an empty stomach.

If you start to experience significant side effects after a dose increase, cut back to the previous dose and continue with this. Do not stop all together without discussing this with your doctor or nurse.

Taking a slow-release preparation of metformin (e.g., Glucophage® SR) has shown to reduce side effects on your body.

Metformin is unlicensed for use in pregnancy (as are many medications). However, trial experience suggests that it is safe for the baby, and its use is recommended by national guidelines (NICE 2015).

If you have any questions on literature advising against the use of metformin in pregnancy, please speak to your team.

Breast feeding and diabetes

This information should be read in conjunction with the UNICEF leaflet 'Off to the best start'. This leaflet can be provided by your midwife or via this link: https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/breastfeeding-resources/off-to-the-best-start/

It aims to address information on how diabetes may affect breastfeeding. It may not answer every question you have, so please write any concerns down and discuss these with your midwife.

Can I breastfeed if I have diabetes?

Yes, breastfeeding is especially recommended if you have diabetes.

What are the advantages to breastfeeding?

Breastfeeding has many health benefits for both you and your baby. It is recommended that to maximise these effects, you should breastfeed for at least the first six months. The longer the better. Research has shown that:

There is less likelihood of the baby developing:

- diabetes in childhood
- stomach upsets
- ear infections
- chest infections
- eczema
- asthma
- cancer
- type 1 diabetes

Also, colostrum (first breast milk produced from late in pregnancy) helps to stabilise the baby's blood glucose levels in the initial hours following birth.

For mothers, the benefits of breastfeeding include:

- A tendency to lose the weight gained during pregnancy more quickly than mothers who formula feed.
- The womb shrinking back to a normal size more quickly.
- A lower risk of breast cancer and some forms of ovarian cancer.
- If you have gestational diabetes, breastfeeding for more than six months will half your chance of developing type two diabetes .

Prepare for breastfeeding: express colostrum

Colostrum is the first yellow coloured milk that mothers
produce for their baby after birth, sometimes referred to as ‘liquid gold’. It is rich in antibodies and high in protein, vitamins, and minerals. Even one feed of colostrum is valuable for mother and baby health.

Some mothers find that they leak colostrum while they are pregnant. This does not affect the milk supply after the baby is born.

You may wish to consider hand expressing colostrum before the birth of your baby. This can be done from 37 weeks of pregnancy. Colostrum collected before the birth of your baby can be stored in the freezer safely for up to three months.

If you would like further information, please speak to your midwife, or leave a message for the infant feeding team who will call you back:

Barnet Hospital
Telephone: 020 8216 5141
Royal Free Hospital
Telephone: 020 3758 2000, extension 36169

Remember to bring any expressed colostrum with you when you come into hospital for the birth. Please ensure this is labelled with your details. It can be stored and then defrosted for use after your baby is born if required.

What happens when my baby is born?

It is very important that your baby has skin-to-skin contact with you as soon as possible after the birth. This helps your baby to keep warm and feed early.

Why is an early feed important?

When the mother’s blood glucose levels are increased during pregnancy, the baby may have a temporary lowering of its blood glucose levels after the birth. This is because the baby may have been triggered to make higher levels of insulin which can last for 24-48 hours.

It is therefore especially important that your baby has skin-to-skin contact and a feed soon after they are born, ideally within 30 minutes. This will help to stabilise and maintain your baby’s blood glucose levels and help keep them warm.

What happens if my baby does not want to feed right away?
Not every baby is interested in feeding straight after being born. If help is required, we will assist you to hand express some colostrum if you have not done this prior to birth. The colostrum can be given by cup, pipette, or syringe instead.

How often should I feed my baby?

During the first few days, your baby will need feeding every two to three hours unless they wake to feed earlier.

How will I know if my baby's blood glucose level is okay?

Whenever a mother has diabetes in pregnancy, we take a blood sample from the baby's heel at about four hours of age. This is normally before the second feed.

If your baby's blood glucose levels are low (below 2.6 mmol/l) before the feed, we will need to take another measurement after feeding to ensure the levels have risen again. If the level stays low, we may recommend giving expressed milk and/or formula milk from a cup. This is usually a temporary measure.

Once your baby's blood glucose levels have stabilised, we will not need to measure them again. It is important to continue to feed your baby regularly, ensuring baby feeds around eight times in a 24-hour period.

Introducing solids

This is not recommended before the baby is six months old.

For the future

Will the diabetes go?

Usually it does go following pregnancy, and if you required tablets or insulin for your gestational diabetes, this will normally be stopped immediately when the baby is born.

To ensure that it has gone:

- Your blood glucose should be checked the day after giving birth. If it is over 8 mmol/l you should be reviewed by the diabetes team.
- You will be offered either a fasting blood glucose test or a glucose tolerance test at six weeks following the birth of your baby. You then need to make an appointment to see your GP to discuss the results.

Future pregnancies

If you have had diabetes with one pregnancy, you are likely to have diabetes in future pregnancies, so it is important to let your midwife or GP know about your pregnancy early on. This will ensure that you can have a glucose tolerance test (GTT) at an appropriate time (between 16-18 weeks of pregnancy) and be monitored as necessary.

Achieving and maintaining a healthy body weight (BMI of 20-25kg/m2) before your next pregnancy can reduce the risk of developing diabetes again. Your dietitian can

give you further advice about diet and weight management if required.

My future health

Women who have had diabetes in pregnancy have a 30-50 per cent risk of developing type two diabetes during their lifetime (compared to 10 per cent risk in the general population).

This is more likely for women from ethnic groups that have a naturally higher rate of diabetes such as those from African, Afro-Caribbean, and Asian backgrounds.

It is recommended that you have a fasting blood glucose test repeated yearly to screen for diabetes. It is important after the birth of your baby that you continue with healthy eating practices and regular exercise to achieve and maintain a healthy body weight to minimise the risk of developing diabetes in the future.

To reduce the risk of further episodes of gestational diabetes, or of developing diabetes later in life, it is suggested that you:

- maintain a healthy diet
- achieve and maintain a healthy weight
- exercise regularly.

Further questions

With your diagnosis comes a lot of information and changes to take on in a short space of time. We understand this can be overwhelming at times. Please rest assured you are not alone and will be attending regular appointments with our joint diabetes antenatal team to support you through your pregnancy.

We are all here to help answer any questions or concerns you have along the way. You may find it helpful to write these down ready for your appointments with us.

Notes

References and useful links

Diabetes UK
www.diabetes.org.uk/diabetes-the-basics/gestational-diabetes

NICE GUIDANCE: (NG3) Diabetes in pregnancy: Management from preconception to the postnatal period
www.nice.org.uk/guidance/ng3/chapter/1-Recommendations/

UNICEF: 'Off to the best start' leaflet
www.unicef.org.uk/babyfriendly/baby-friendly-resources/leaflets-and-posters/off-to-the-best-start/

More information

For more information about the maternity and diabetes services at the Royal Free London, please visit our website: www.royalfree.nhs.uk/services/diabetes-services-adults/

Your feedback

If you have any feedback on this leaflet or for a list of references for it, please email: rf-tr.communications@nhs.net

Alternative formats

This leaflet is also available in large print. If you need this leaflet in another format – for example Braille, a language other than English or audio – please speak to a member of staff.

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