

Gestational Diabetes

Patient Information

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What is gestational diabetes?

This is a form of diabetes that usually starts later in pregnancy. It happens when the body cannot control its own blood glucose (sugar) levels properly and is thought to arise due to the effect of pregnancy hormones, which block the action of insulin. The condition can be safely managed and is usually temporary.

Insulin is a hormone that is produced by the pancreas. It helps move glucose (from food and drinks consumed) to your cells and muscles so that you can use it for energy.

How does gestational diabetes affect my baby?

If your blood glucose is too high your baby may start to make insulin in order to cope with it. This extra insulin can make your baby grow larger and make labour and delivery more difficult. The extra insulin may also cause your baby to have a low blood glucose when he/she is born (hypoglycaemia). This can result in the need for your baby to have an early feed and to be fed more often. In some cases, this may result in your baby being monitored in the special care baby unit for the first few hours of life.

The diabetes team will help you to manage your gestational diabetes effectively to reduce the likelihood of problems occurring. This will mean more frequent visits to the Antenatal Clinic and extra scans to monitor the growth of your baby.

What is the treatment for gestational diabetes?

For some women blood glucose levels can be controlled by diet and physical activity alone. Eating a healthy diet and taking regular and gentle exercise may be the only 'treatment' required. However, some women may require tablets (Metformin) or insulin therapy in order to normalise their blood glucose levels. These will be discussed later in this booklet.

What can you do to help keep your blood glucose normal?

You can make changes in your lifestyle. Having a healthier diet and taking regular exercise will help you to control your blood glucose levels.

Your blood glucose equipment

How to obtain a blood sample:



Testing your blood glucose (blood sugar)

It is important to reduce your blood glucose to normal in order to reduce the risk of your baby responding to your high blood glucose levels by gaining excess weight. This could potentially cause problems for your baby prior to, and immediately following, delivery.

Please try not to worry, you will be taught how to test your blood glucose by a member of the diabetes team. You will be provided with a blood glucose meter and any equipment that is necessary to help you undertake this important part of your treatment. You will have a diary in which to record your blood glucose readings. You will have regular contact with the diabetes nurse for the duration of your pregnancy who will discuss your blood glucose levels with you and advise you regarding when and where to test.

Your blood glucose levels should be **less than 6 mmol/l** just before meals, and they should be **less than 7.5 mmol/l** 2 hour(s) following meals.

If, despite sensible dietary habits and keeping yourself active you are unable to achieve these blood glucose targets, then further treatment may be necessary.

What sort of diet is recommended?

You should try to eat a healthy diet, one which can be enjoyed by all the family. However, very high fibre, low fat diets are not suitable for children under five years.

Try to make sure that you:

- Have small, frequent meals (see suggested meal plan later on in booklet). Spreading your food evenly throughout the day helps to lower your blood glucose levels.
- Include small portions of fibre-rich starchy foods at each meal such as: wholegrain breakfast cereal, bread, chapattis, potatoes, rice or pasta. Pasta and foods made from oats (like porridge and oatcakes) and rye (such as Ryvita and rye bread) are especially good.
- Eat plenty of fruit and vegetables: aim for at least five portions of fruit and vegetables each day. One portion = a small banana, a handful of grapes, an apple, an orange, three plums or a bowl of strawberries, a small glass of unsweetened fruit juice (only have one glass per day), a bowl of salad, 3 tablespoons of vegetables.
- Cut down on sugar: you need to have a low intake of sugar, to prevent your blood glucose levels from rising too high. See the suggestions (later on in the booklet), for reducing your sugar intake.
- Cut down on fat: too much fat in your diet is not good for your heart in the long term. See the suggestions (later on in the booklet), for lowering your fat intake. However, some fats are healthier for your heart than others.

Saturated fat e.g. butter, fatty meats, cheese. These are the least healthy fats so try to limit them.

Polyunsaturated fat e.g. sunflower margarine, sunflower oil, corn oil, oily fish. These can be included as they can protect your heart, but still need to be eaten in moderation. Limit oily fish to 2 portions per week.

Monounsaturated fat e.g. olive oil margarine, olive oil, rapeseed oil. These are the healthiest fats, as they can protect your heart, but they still need to be eaten in moderation.

- **Include some protein food at each meal:** try and have a variety such as fish, eggs, poultry, meat, pulses (these include lentils and baked beans), milk, yogurt and cheese.

If you are a vegetarian or vegan, discuss the best choice of protein foods with your dietitian.

- **Ensure that you have an adequate calcium intake:** you need to make sure that you have at least one pint (600mls) of milk each day.

If you do not like milk each of the following contain the same amount of calcium as 1/3 pint (200mls) of milk.

1oz (30g) cheese (see food safety section)

4oz (120g) cottage cheese

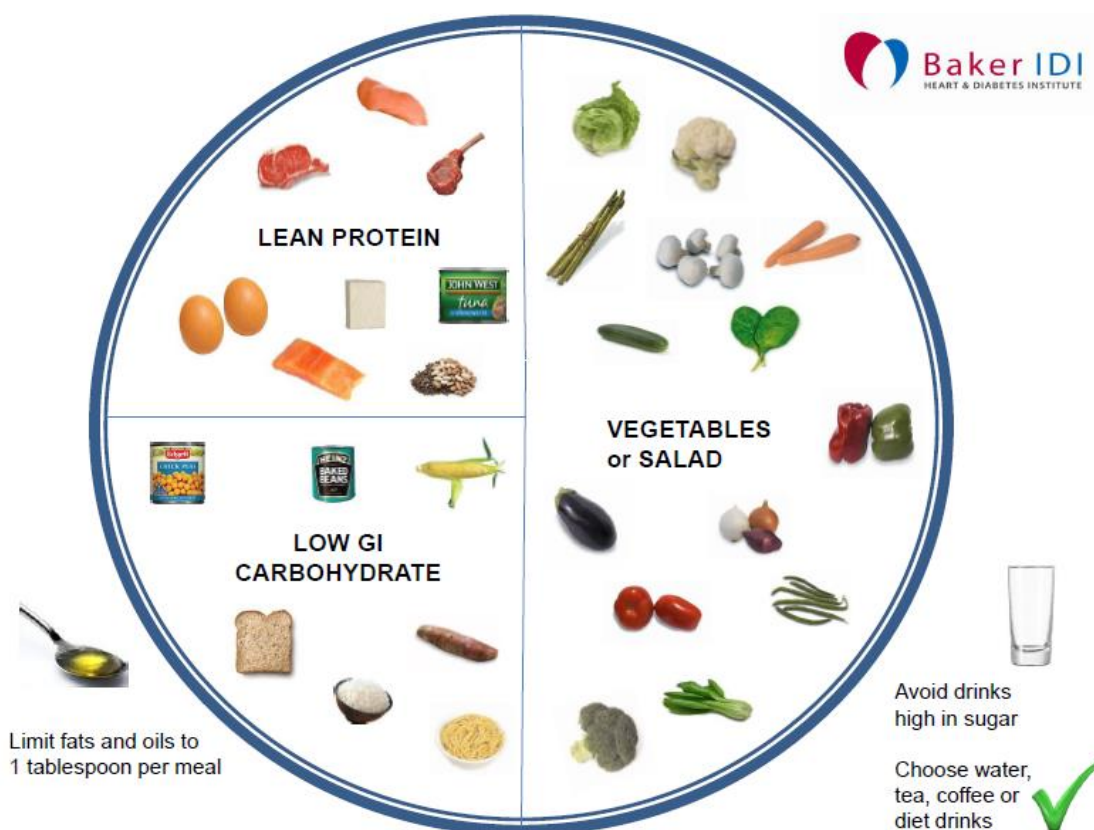
1 pot of low sugar yoghurt e.g. Muller Light, Shape, Weight Watchers.



- **Diabetic Foods:** diabetic foods and foods sweetened with products such as sorbitol, lactitol, mannitol and polyols, are not recommended for anyone with diabetes. They do not have any proven health benefits, can have a laxative effect and are expensive.

Please note foods sweetened with Aspartame, Saccharin, Sucralose, Cyclamate and Acesulfame Potassium can be included in your diet but try to use a variety of brands so you do not exceed an acceptable intake for any one sweetener.

Suggested portion sizes



Suggested meal plan

- Breakfast:** Grapefruit or small glass of unsweetened orange juice.
Wholegrain breakfast cereal or porridge with milk.
Whole grain bread or toast with margarine or butter, thinly spread.
- Light Meal:** Wholemeal bread, crisp bread, chapattis, crackers, potatoes, rice or pasta.
Salad or vegetables.
Lean meat, poultry, fish, cheese, egg or beans.
Fresh fruit or low sugar yoghurt.
- Main Meal:** Potatoes, rice, pasta, bread or chapattis.
Vegetables or salad.
Lean meat, poultry, fish, cheese, egg or beans.
Low sugar milk pudding, sugar free instant desserts or tinned fruit in natural juice and sugar free jelly.
- Evening:** Tea, coffee or sugar free milky drink. Toast, cereal, plain biscuit or crackers.
- Snacks:** If you need to eat snacks between meals, choose fruit or vegetables (such as celery or carrot sticks) particularly if you are overweight.

Try to avoid foods from the sugary foods column and replace with low sugar alternatives.

Sugary Foods	Low Sugar Alternatives
<p>Sugar Glucose, Sucrose, Dextrose.</p>	<p>Low calorie artificial sweeteners e.g. Aspartame, Saccharin, Acesulfame Potassium, Cyclamate, Sucralose in moderation. Brand names: Canderel, Sweetex, Hermesetas Gold, Splenda.</p>
<p>Sugary fruit cordials e.g. orange squash, sugary fizzy drinks e.g. lemonade or cola.</p>	<p>Diet, low calorie & sugar free varieties e.g. diet cola, low calorie or no added sugar fruit squash.</p>
<p>Drinking chocolate</p>	<p>Low sugar instant chocolate drinks.</p>
<p>Chocolate and sweets</p>	<p>Fresh fruit snacks. Sugar free mints.</p>
<p>Honey, syrup, treacle, jam, marmalade.</p>	<p>Reduced sugar or low sugar jam & marmalade. Pure fruit spreads.</p>
<p>Sugar coated and sweetened breakfast cereals e.g. Sugar Puffs, Frosties, Crunchy Nut Cornflakes.</p>	<p>Plain breakfast cereals e.g. Weetabix, Branflakes, Shredded Wheat, porridge, no added sugar museli.</p>
<p>Sweet biscuits, chocolate biscuits, fancy cakes and sweet pastries.</p>	<p>Plain biscuits e.g. rich tea, digestive, Garibaldi, ginger biscuit, fig roll, in moderation. Small amounts of plain cake, fruit scones, fruit breads, currant teacakes etc.</p>
<p>Tinned fruit in syrup.</p>	<p>Fresh fruit, tinned fruit in natural juice, small amounts of dried fruit.</p>
<p>Ordinary jelly.</p>	<p>Sugar free jelly.</p>
<p>Fruit yoghurts containing sugar.</p>	<p>'Diet' yoghurts, e.g. Shape, Muller Light, Weight Watchers and 'Diet' or 'Light' supermarket own brands.</p>
<p>Condensed milk. Tinned milk puddings. Ready to eat custard. Desserts, whips and mousses containing sugar.</p>	<p>Evaporated milk. Homemade milk puddings or custard made with a sweetener. Tinned low sugar milk pudding. Sugar free whips.</p>

Try to avoid foods from the high fat foods column and replace with low fat alternatives.

High Fat Foods	Low Fat Alternatives
<p>Fried Foods</p> <p>Butter, full fat margarine.</p> <p>Full fat cheese e.g. cheddar. (please see food safety page) Cream cheese</p> <p>Full cream milk. Powdered milks containing vegetable fat. Coffee whiteners.</p> <p>Cream, ice-cream.</p> <p>Mayonnaise, salad dressing.</p> <p>Chips, roast potatoes. Yorkshire puddings, dumplings.</p> <p>Biscuits, rich cakes, sweet pastries.</p> <p>Meat pies and pastries, sausage rolls, burgers, sausage, meat spreads. Fatty meat e.g. belly pork, chopped ham and pork.</p> <p>Many instant pasta meals e.g. super noodles, pot noodles. Pasta in creamy sauces.</p> <p>Many frozen or chilled ready meals e.g. chicken kiev.</p> <p>Many types of take away meals. e.g. fish and chips, Chinese meals, curries.</p>	<p>Grilled, microwaved, boiled or baked foods.</p> <p>Low fat spread high in unsaturated fats e.g. sunflower oil or olive oil margarines.</p> <p>Cottage cheese, light soft cheeses, reduced fat 'cheddar' type cheese, Edam, Gouda.</p> <p>Semi-skimmed or skimmed milk. Dried skimmed milk.</p> <p>Plain / natural yoghurt or fromage frais.</p> <p>Low calorie or low fat mayonnaise or salad dressing.</p> <p>Oven chips, boiled, mashed or jacket potatoes.</p> <p>Plain biscuits and plain cakes in moderation. Fruit scone, currant teacake.</p> <p>Use lean cuts of meat and cut off the fat or skin. Try meat substitutes e.g. Tofu, Quorn. Soya mince or pulse vegetables e.g. beans and lentils.</p> <p>Pasta with low fat sauce e.g. tomato sauce.</p> <p>Low fat ready meals.</p> <p>Home cooked or low fat ready meals are usually better.</p> <p>Check the label – try and choose ready meals with less than 20g fat per serving</p>

What tablet treatment is available?

Metformin tablets, 500mg strength. These can be used safely to control blood glucose levels within pregnancy. You may only need them once or twice a day with certain meals but the maximum is two tablets, three times a day.

Side effects

There is no risk from hypoglycaemia with this treatment. Some women experience a degree of gastrointestinal symptoms (feeling sick, diarrhoea) that they find problematic. This can be generally alleviated by taking the tablets after food. Occasionally we find that the tablets do not reduce blood sugars to an acceptable level. In these instances progression to insulin therapy is necessary. Once your baby is delivered, the metformin will be stopped.

Your insulin equipment

Insulin is usually injected into the fleshy part of the stomach or thigh and some people use the upper outer part of their arms. In pregnancy the stomach provides a good fleshy area in which to inject. As the needle is very short, the insulin goes into the fat just beneath the skin – it does not enter the stomach cavity and is nowhere near your baby.

Here is an example of a pregnant woman using her insulin pen device to deliver an insulin injection:



With good technique insulin injections are virtually pain-free.

Once your baby is delivered the insulin therapy will be stopped. Your diabetes nurse will advise you how to safely dispose of any equipment that you no longer require.

Using insulin treatment

This involves giving between one and four injections a day, usually just before eating a meal and/or before going to bed at night. The insulin type (s) will be explained to you and you will be taught how to self-inject the insulin you require. You will also be provided with an insulin pen device, needles and a sharps disposal box to help you manage your insulin treatment in a safe and confident manner.

When you first start insulin treatment, your diabetes nurse or doctor will advise you, how much insulin to take and at which times of the day. The doses of insulin are then usually

increased every two to three days until your blood glucose readings are within your target range. Do not worry if you start out on a tiny dose (e.g. two to four units once or four times a day) but find the insulin doses getting higher as you progress through your pregnancy. This is quite normal and every woman will have her own specific insulin requirements. What is most important is to get your blood glucose levels down to your desired targets in order to minimise/prevent possible risks to your baby and birthing plan.

With information and support you will learn how to adjust your insulin doses yourself, every two to three days, until your blood glucose is within the target range discussed with your diabetes team.

Note to drivers: if you need to commence insulin therapy you should inform the DVLA and your insurance company and re-notify them six weeks after delivery if you are still on this treatment. Please see information leaflet 'Safe Driving and the DVLA' at: www.trend-uk.org/resources.php. There is specific guidance about hypoglycaemia and driving, which will be discussed by your diabetes team, and it can also be found within the safe driving document as detailed above.

Hypoglycaemia

This occurs when your blood glucose falls too low – usually below 4 mmol/l, for women on insulin treatment. (Women not on insulin can have a blood glucose level of 3.5 mmol/l quite normally).

This may be caused by:

- Being late with a meal
- Missing a meal or snack
- Not taking enough carbohydrate (starchy) food
- Taking more exercise than normal without eating extra carbohydrate
- Taking too much insulin
- If you have experienced extremes in temperature, either hot or cold

Symptoms vary from one person to another but can include the following:

- Feeling weak or faint
- Shaky or trembling
- Cold, clammy and sweaty
- Hungrier than normal or experiencing hunger pangs
- Unable to think properly

Treating hypoglycaemia (hypo)

If you feel that you are going 'hypo' take either three glucose tablets, or a cup of fresh orange juice, or jelly babies x 3, or fruit pastilles x 4, or 1 glass of ordinary sugary drink e.g. cola, or 2 teaspoons of sugar immediately.



You should start to feel better within about 10 minutes after which time you should then have some longer acting carbohydrate such as a piece of toast, fruit, biscuits, a scone or a cereal bar. This will help to make sure your blood glucose does not drop too low again. It may be advisable to carry a snack with you if you are away from home.



Driving and hypos

See the safe driving guidelines by TREND-UK as detailed previously.

Labour and delivery

Many women do go into labour spontaneously. It may however, be recommended that your labour be induced. This will depend on you and your baby's health and will usually be around 39 weeks. During labour you and/or your midwife will check your blood glucose every hour. If your blood sugars are found to be above 7mmol/L you will be advised to have insulin via a drip. This will help to keep your blood sugars within a normal range and reduce the occurrence of low blood sugars in your baby once delivered. Charts for insulin are attached to your hand held notes at 34 weeks gestation, in case you need this in labour. The drip will be discontinued after delivery. You will also discontinue the metformin and/or insulin that you required during your pregnancy.

A caesarean section may be advised if there are any problems during labour with you or your baby. Generally, the rate of caesarean section is higher for women with diabetes or gestational diabetes, but this does not automatically mean that you will need one.

Following delivery you will be able to hold your baby next to your skin; this helps the two of you to bond. Skin-to-skin contact keeps baby calm and warm and leads to the first feed usually within an hour of the birth. We encourage all mothers to offer a first breastfeed. In view of your diabetes we advise you to start off feeding your baby every three hours. This also helps to reduce the risk of hypoglycaemia in your baby who will be monitored to ensure that he/she is not developing this condition.



Breastfeeding and gestational diabetes

Gestational diabetes will not affect your ability to breastfeed. Breastfeeding provides all the nutrition your baby needs for the first six months and gives protection against many infections including ear, chest and urine infections and tummy upsets. You will receive information about feeding your baby and the support available locally. All mothers are supported whatever their feeding choice.

There is a local breastfeeding support group. The Breast Feeding Team can be contacted on 01942 777903 Monday to Friday 9:00am to 5:00pm
07742234496 7days at week 9:00am to 8:00pm

Follow-up after your pregnancy

You will be given an appointment to return to the Antenatal Clinic for a glucose tolerance test (GTT) 6 weeks after the birth of your baby. You will also be advised to return to the Antenatal Clinic the following week for a post-natal check and to discuss the results of the GTT. Following the birth of your baby your blood glucose levels generally revert to normal. However, you have a 50% risk of developing diabetes in the next five years. Adopting a healthy lifestyle by maintaining a healthy diet, taking regular physical exercise and being the right weight for your height, will help to reduce your risk. Most importantly, enjoy your beautiful baby!

Discharge information

Your GTT appointment date/time is:

It is important to attend for your review. If the GTT is abnormal the diabetes team will wish to outline the future plan of surveillance and care. If the GTT is normal you will be advised how to reduce the likelihood of developing diabetes in the future. Annual blood tests (GTT or fasting glucose) with your GP will be discussed at this review. It is advised that you contact your GP each year to arrange this test.

In the future, if you are considering a further pregnancy you should start folic acid 400 micrograms daily, as advised for all women planning a pregnancy, to reduce the chances of spinal cord problems such as spina bifida. If you have developed diabetes and are planning a pregnancy, you should have a higher dose of folic acid (5mg) and a review with the diabetic pregnancy team prior to conception.

You are likely to develop gestational diabetes again during any future pregnancies, and will be offered testing for this around 12 weeks pregnant. It is important to remember however, that being the right weight for your height, maintaining a healthy diet and taking regular physical exercise may reduce your risk.

Useful contact numbers

Diabetes specialist nurse	01942 822188
Antenatal clinic appointments at Leigh	01942 264242
Antenatal clinic appointments at Thomas Linacre Centre	01942 774700
Mr Essilfie Secretary	01942 264821
Mr Verma Secretary	01942 264684

Please use this space to write notes/reminders.

Comments, Compliments or Complaints

The Patient Relations/Patient Advice and Liaison Service (PALS) Department provides confidential on the spot advice, information and support to patients, relatives, friends and carers.

Contact Us

Tel: 01942 822376 (Monday to Friday 9am to 4pm)

The Patient Relations/PALS Manager
Wrightington, Wigan and Leigh NHS Foundation Trust
Royal Albert Edward Infirmary
Wigan Lane
Wigan WN1 2NN

Ask 3 Questions

Become more involved in decisions about your healthcare. You may be asked to make choices about your treatment. To begin with, try to make sure you get the answers to three key questions:

1. What are my options?
2. What are the pros and cons of each option for me?
3. How do I get support to help me make a decision that is right for me?



How We Use Your Personal Information

For details on how we collect, use and store the information we hold about you, please take a look at our “how we use your personal information” leaflet which can be found on the Trust website: www.wwl.nhs.uk/patient_information/Leaflets/default.aspx

This leaflet is also available in audio, large print, braille and other languages upon request. For more information please ask in department/ward.

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