NHS
Barnsley Hospital
NHS Foundation Trust

Department of Dietetics & Nutrition

Eating well for you, being healthy for two:

A guide to Gestational Diabetes

Lifestyle Advice Sheet

Barnsley Hospital
Quality in Care

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What is Gestational Diabetes?

Gestational diabetes is the name given to diabetes that occurs during pregnancy and results in too much glucose (sugar) in the blood.

In gestational diabetes your body may not produce enough insulin. At the same time the body can become resistant to the action of insulin. This is due to the presence of pregnancy hormones and an increase in weight as your baby develops.

Insulin is a hormone produced by the pancreas in response to food being eaten. It helps the movement of glucose from the blood into the cells of your body. The glucose is then used to produce energy.

The glucose in your blood comes from foods that contain carbohydrate (sugars and starches). The amount and type of carbohydrate eaten will affect the level of glucose in your blood. Although you may not feel any symptoms of high blood glucose it is very important that your blood glucose level is controlled.

If your blood glucose levels are too high for too long it will encourage your baby to grow bigger than it should, this in turn can lead to difficulties during labour. You may also experience symptoms of high blood glucose levels including the need to pass urine more frequently, feeling thirsty; feeling tired and this may lead to the chance of developing infections such as thrush.

By keeping good control of your blood glucose levels you will minimise the risk of developing these problems. The information provided in this booklet is based on the recommendations for Diabetes and Pregnancy from NICE (National Institute for Health and Care Excellence published in 2015).

Blood glucose targets

You will be given and shown how to use a blood glucose monitor, to help you track the levels of glucose in your blood.

- Blood glucose levels should be measured at least four times a day, first thing in a morning before eating and drinking and then one hour after all meals eaten.
- It is important that you wash your hands before testing to ensure that there are no sugars on your hands prior to the test.
- Try not to use your thumb and first finger, as these may get sore from testing and are used for writing and picking up items etc.
- Bring your meter with you to your appointments.
- If you have a meter reading above target after a meal, please make a note of what you had to eat in your blood glucose monitoring book so that this can be discussed at your next appointment.

The blood glucose targets are as follows:

Time of test	Blood glucose target
First thing on getting up (Fasting)	Less than 5.3 mmol/l
One hour after meals	Less than 7.8 mmol/l

How can I control my blood glucose levels?

Your blood glucose levels are influenced by what you eat and how active you are.

You will learn through blood glucose monitoring how different foods affect your blood glucose levels. It may be that your monitoring indicates a need for an oral medication (Metformin) or insulin in addition to dietary changes.

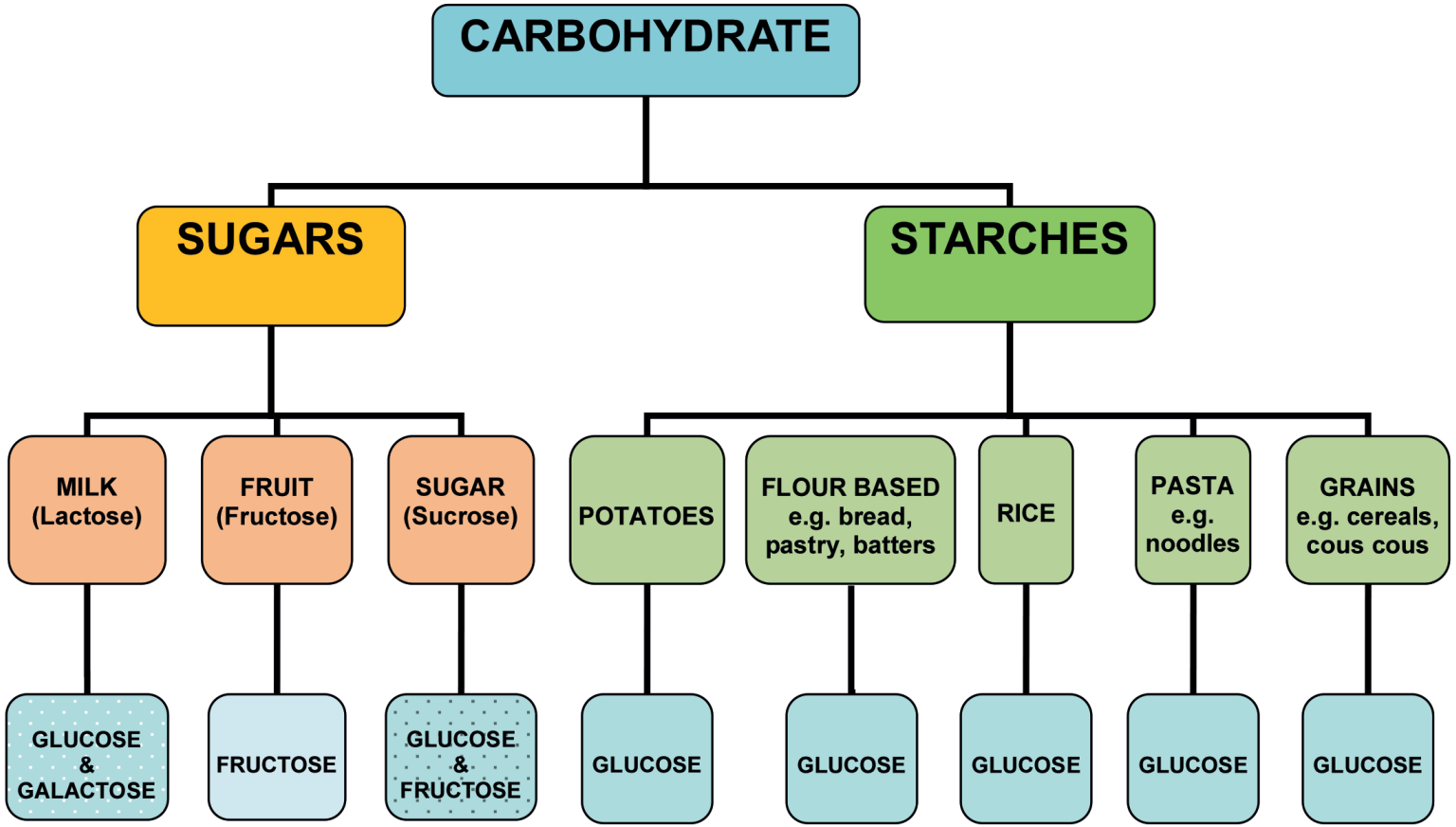
If you feel unwell during pregnancy, monitor your blood glucose regularly and seek advice from your Diabetes team or GP.

What should I eat?

It is important to eat a healthy diet especially during pregnancy to ensure that a nutritionally balanced diet is achieved for both you and your baby.

Carbohydrates

Foods that contain carbohydrate (see the diagram that follows) provide the body with energy and will directly affect your blood glucose levels. Being careful with the type and portion sizes of these foods will help you to keep your blood glucose levels under control.


CARBOHYDRATE
SUGARS
STARCHES
MILK (Lactose)
FRUIT (Fructose)
SUGAR (Sucrose)
POTATOES
FLOUR BASED e.g. bread, pastry, batters
RICE
PASTA e.g. noodles
GRAINS e.g. cereals, cous cous
GLUCOSE & GALACTOSE
FRUCTOSE
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Sugars

Lactose – this is the sugar that is naturally present in milk and it does not matter whether it is full fat or fully skimmed. Milk and products made from milk are also good sources of calcium.

It also applies to foods made with milk such as yoghurts of which there are different types – try to choose those with a low sugar content (less than 5g of sugar per 100g of yoghurt) such as diet or low calorie yoghurts or choose a natural plain yoghurt and add a portion of fruit.

Fructose – this is the sugar that is present in all fruit. These provide a variety of vitamins and minerals and important to keep in the diet. A portion of fresh fruit is 80g in weight (for dried fruit it is only 30g). A general portion guide to fresh fruit is measured in the palm of your hand. Fruit can be fresh, frozen or tinned in natural juice.

Try to spread fruit throughout the day by having one portion of fruit at a time.

- A small banana
- An apple/orange
- A small handful of grapes
- 2 satsumas or plums
- 2 slices of mango
- 3 heaped tablespoons of tinned fruit in juice

Be careful with fruit juices, a portion is 125mls and may be better drunk at lunch or evening meals due to the difficulties of insulin resistance first thing in a morning.

Sucrose – this is what we call sugar. Try to avoid in drinks and sprinkled on cereals. Artificial sweeteners can be used instead e.g. Canderel (Aspartame), Hermesetas, Splenda (Sucralose) Stevia, Sweetex, Truvia.

Remember that sugar is also used as an ingredient for a large range of foods including cakes, biscuits, puddings, jam, marmalade, lemon curd, sweets, chocolates and soft drinks. Diet carbonated drinks and no added sugar cordials (squash) can be used. Look for products with a low sugar content **(5g or less of sugar per 100g product)**.

Starch

Foods such as bread (all types), potatoes, rice, pasta and breakfast cereals are made from starch, which is digested by the body to produce glucose that is absorbed by the body into the blood. The more starch you eat the greater the rise in blood glucose levels so try to:

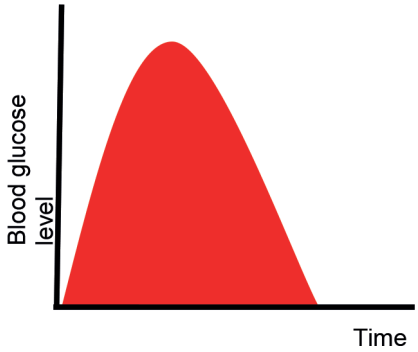
1. Be careful with the portion size that you have of starchy foods.

2. Try to have one source of carbohydrate at each meal. There are several examples of meals that contain two or more sources of starch including: fish and chips with bread and butter, spaghetti bolognaise with garlic bread, meat pie with potatoes – so plan meals carefully. Try to add more salad or vegetables to your meals.

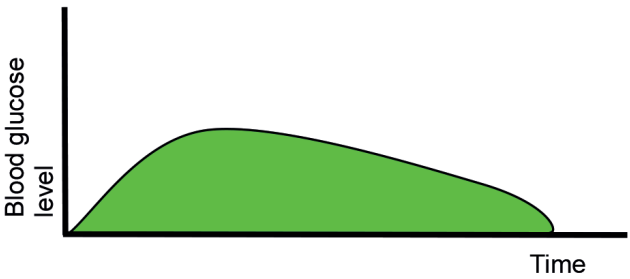
3. Try to eat three regular meals - this will keep your blood glucose steady throughout the day. Do not go for long periods of time without eating.

4. Glycaemic Index (GI) is related to the rate at which carbohydrates are digested and absorbed by the body.

Foods with a high GI value tend to be digested quickly and increase blood glucose levels rapidly. Care needs to be taken with these foods and some avoided.



Foods with a low GI value tend to be digested slower and so can help to stabilise blood glucose levels and help you feel fuller for longer.



Although foods with a low GI are good to use, it is still important to watch portion sizes.

The table that follows will give you a guide to the GI values for foods and may be useful when planning meals.

Low 55 or below	Medium 56 - 69	High 70 or above
Apples Oranges Banana Pears Grapes Plums	Fruit juice Melon Dried fruits	Glucose Dextrose tablets Lucozade Sucrose (sugar)
Date and Walnut loaf Malt loaf	Cakes Biscuits - Digestive, Rich Tea, Arrowroot	Doughnut Fruit teacake Scone
Peas, Beans & Lentils Pearl barley		
Noodles Pasta (durum wheat)	Chapatti Pitta breads	Crumpet Naan bread
Sweet potatoes Yam	New potatoes Potato crisps	Baked potato Mashed potato
Basmati rice Quinoa	Couscous	Rice (easy cook)
All Bran Muesli (No Added Sugar) Porridge Sultana Bran	Shredded Wheat Weetabix	Bran Flakes Cheerios Cornflakes Cocopops Rice Krispies
Granary bread Linseed & soya bread Mixed grain bread Seeded bread	Oatcakes Rye crispbreads Cream Crackers Rye breads	Brown bread White bread Wholemeal bread Bagels
Milk Custard Yoghurt	Ice cream Dark chocolate	Honey

When having a high GI food try adding a low GI food to even the GI value of the meal to medium e.g. Baked or Jacket potato with baked beans as a quick meal. Adding fibre in the way of salad or vegetables can help to reduce the GI values.

Weight Management

Calorie requirements increase very little throughout pregnancy. You need an extra 200 calories in the last 3 months of pregnancy and this is usually met by a natural increase in appetite.
If you have gained a lot of weight during your pregnancy, or you were overweight at the start, it is important to try to minimise any further weight gain. This will help improve your blood glucose control. Consider the following dietary changes:

- All fats and oils are high in calories - use less of your usual fat. Spread butter or margarine thinly, or change to a low fat spread (less than 40% fat). Monounsaturated oils such as olive oil, rapeseed oil and peanut oil and products made with these oils will help look after your heart and are healthier than butter or lard.

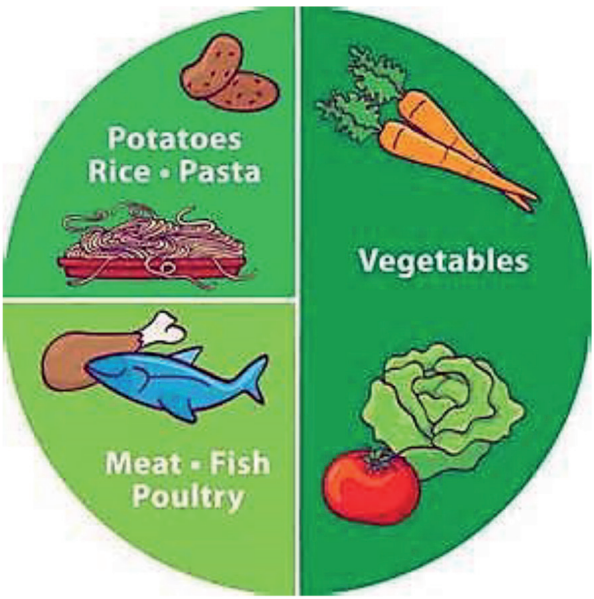
- Cook food without adding extra fat e.g. by grilling, poaching, steaming, baking or using a microwave. Trim the fat off the meat and take the skin off poultry before it is cooked.

- Eat fewer takeaways and pies, pastries and chips as these foods have a high fat content. Eat less biscuits, cakes, desserts, chocolate and ice creams.

- Dairy foods are an important source of calcium and protein. However, they can be high in fat. Try semi- skimmed or skimmed milk instead of full fat milk. Use "diet" yoghurts, low fat plain Greek style yoghurts or fromage frais instead of full fat varieties or cream. Use small amounts of cheese and choose lower fat varieties or reduced fat versions.

- Some low fat products are useful when trying to cut down on fat, for example low fat spreads, cheese and salad dressings. Others are not so useful such as low fat crisps, sausages, cakes and biscuits. These foods can still contain large amounts of fat and some are high in sugar. As a guide when buying prepared food, a lower fat food is one that contains less then 3g of fat per 100g of food.

Try to use a standard plate of around 26cm (10 inches) in diameter and use the diagram below to help with the proportion of food groups on your plate.



Food Labelling - Traffic Light System

This can be useful when reading labels for processed foods. It can indicate whether a food is low, medium or high in fat, saturated fat, sugar and salt.

However remember that both nutritional claims and traffic light labels do not give the total carbohydrate content.

Foods

Nutrient (per 100g)	Low under	Medium	High over	High per portion
Fat	3.0g	3.0g - 17.5g	17.5g	Over 21g
Saturated Fat	1.5g	1.5g - 5.0g	5.0g	Over 6.0g
Total Sugars	5.0g	5.0 - 22.5g	22.5g	Over 27g
Salt	0.3g	0.3 - 1.5g	1.5g	Over 1.8g

Drinks

Nutrient (per 100ml)	Low under	Medium	High over	High per portion
Fat	0.75g	0.75g - 2.5g	2.5g	Over 3.0g
Saturated Fat	1.5g	1.5g - 5.0g	5.0g	Over 6.0g
Total Sugars	2.5g	2.5g - 11.25g	11.25g	Over 13.5g
Salt	0.3g	0.3 - 0.75g	0.75g	Over 0.9g

Alcohol

The recommendation is not to drink alcohol when you are pregnant.

Smoking

Smoking is harmful to you and your baby. Your G.P or midwife can provide information on support services to help you stop smoking.

Caffeine

It is advised that you have less than 200mg of caffeine per day. The amount of caffeine in food and drink will vary, but as a guide see the list below:

1 mug of instant coffee (50mg each)
1 mug of filter coffee (140mg each)
1 mug of tea (75mg each)
1 can of diet cola (40mg)
1 (50g) bar of plain chocolate (25mg).
1 (50g) bar of milk chocolate (15mg)

Supplements

Folic Acid - you should take 400µg of folic acid each day prior to conception and until the 12th week of your pregnancy along with foods that are rich in folic acid such as green vegetables, brown rice, fortified bread and breakfast cereals. Although you may be past this point in your pregnancy now it is important to consider this when planning any future pregnancies. Your medical team can give more advice.

Vitamin D - supplements (10µg or 400 international units) are recommended in pregnancy. This is particularly important if you are of Asian origin, have little exposure to the sun or follow a vegetarian diet as these are the main sources of vitamin D. Your medical team can give you more advice.

Pregnant women can become deficient in iron, so include iron-rich foods such as red meat, pulses, wholemeal bread, green vegetables and fortified breakfast cereals. Although liver is rich in iron, avoid eating liver and liver products such as liver pate during your pregnancy, as they are very high in vitamin A.

It is important to avoid large intakes of Vitamin A while you are pregnant, so please check with your medical team before taking any multivitamin supplement, including fish liver oil. It is also important to check with your doctor before taking any herbal supplements.

Physical Activity

Being as active as you can will help you to control your blood glucose levels. Physical activity helps to make your body more sensitive to insulin; it can help to reduce your blood glucose levels; and prevent unnecessary weight gain. NICE (2015) recommends 30 minutes of gentle physical activity per day.

Your blood glucose levels will be at their highest one hour after you have eaten, so doing some physical activity during this hour can help to lower the blood glucose levels at this time.

Increase your level of physical activity gently. If you are unsure about what you can do safely, check first with your doctor or midwife. It may be worth trying:-

- Doing housework or gardening (remember to wear gloves for gardening).
- Taking the stairs not the lift.
- Walking to the shops, even if you get the bus back.
- Walking the children to school and walking home the long way round.

Your local leisure centre may offer exercise classes or antenatal swimming sessions for pregnant women. This can be a great way to meet new friends.

Food safety in pregnancy

There are certain foods you should not eat while you are pregnant as they can contain:

Listeria - is a bacterium that can cause a miscarriage, stillbirth, or severe illness in a new born baby.

These foods include:

- Soft mould-ripened cheese, such as Camembert, Brie, Chèvre (or other cheese with a rind) and blue-vein cheeses.
- Pâté (meat, fish and vegetable).
- Raw or uncooked ready-prepared meals.

Mercury - can affect the development of the your baby's nervous system.

It is also recommended that you completely avoid shark, swordfish and marlin, and limit the amount of tuna to no more than 2 tuna steaks (170g raw weight / 140g cooked) or four medium sized tins of tuna (140g drained weight per can) per week.

Include fish such as mackerel, sardines, pilchards, herrings, salmon, kippers and tuna. These fish contain Omega 3 fatty acids, which can protect against heart disease. Try to limit this to no more than two portions a week.

Also take care to:

- Always wash your hands before preparing food or before eating.

- Wash you hands or utensils again after handling raw meat or fish and food containing raw or partially cooked eggs.

- If not using eggs stamped with the Red Lion, which have a very low risk of salmonella, then it is important to avoid eating raw eggs, food that contain raw or partially cooked eggs and ensure that eggs have been cooked until both the white and yolk are solid.

- Make sure any meat you eat is well-cooked, particularly minced meat and sausages. This is important especially if you are eating out at restaurants, friends' houses or at a barbeque.

- Always wash fruit and vegetables before you use them.

- Store food in the fridge correctly, raw meat and fish at the bottom, with cooked or ready to eat foods at the top.

- Follow "use by" and "best by" dates on food packages and do not eat out of date foods

- Avoid eating shellfish such as oysters, prawns, mussels and crab unless they are part of a hot meal and you know that they have been thoroughly cooked.

What happens after the baby is born?

Once your baby is born, your blood glucose levels will return to normal. Your baby's blood glucose level will be checked to ensure that they are in the normal range.

Gestational diabetes is one of a number of risk factors for developing Type 2 diabetes later in life.

It is recommended that you have:

- A fasting blood glucose test 6 weeks after the birth of your baby at your GP practice.

- An annual blood test at your GP practice to ensure that you have not developed type 2 diabetes.

To reduce the risk of developing Type 2 diabetes keep up the dietary and physical activity changes recommended in this booklet.

If you are overweight try to lose weight after the baby is born. Breastfeeding can be a positive step to aid weight loss.

If you are diagnosed with Type 2 diabetes there is support through your GP including a diabetes education programme available in the Barnsley area.

Online information is available from Diabetes UK (https://www.diabetes.org.uk).

References

NICE (National Institute for Health and Care Excellence) 2015 **Diabetes in pregnancy: management from preconception to the postnatal period (https://www.nice.org.uk/guidance/ng3).**

If you require this information in alternative format, please contact the **Patient Advice and Complaints Team on 01226 432330.**

Если Вы хотели бы эту информацию на другом языке или другом формате, типа большой печати, пожалуйста звоните 01226 432330

Jeśli potrzebujesz te informacje w innym języku czy w innej postaci, na przykład dużym drukiem, proszę dzwonić na numer 01226 432330

如果您想索取這些資料的中文譯本或以其他形式編制的版本（如大字體），請 致電01226 432330

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