

Healthy Eating for Gestational Diabetes

What is Gestational Diabetes?

Gestational Diabetes is a type of diabetes that usually starts later in pregnancy. It happens when the body is unable to control blood sugar (glucose) levels and is thought to be a result of the hormones produced during pregnancy blocking the action of insulin in the body.

How Does Gestational Diabetes Affect My Baby?

If your blood glucose levels are too high, the excess passes to your baby who in turn produces extra insulin to cope with this. This extra insulin can make your baby grow bigger than normal, potentially making delivery more difficult.

What is the Treatment for Gestational Diabetes?

The aim of treatment is to keep your blood glucose levels carefully controlled. If a healthy eating pattern and regular exercise does not control your blood glucose, injections of insulin may be necessary or tablets (Metformin).

Will I Always Have Diabetes?

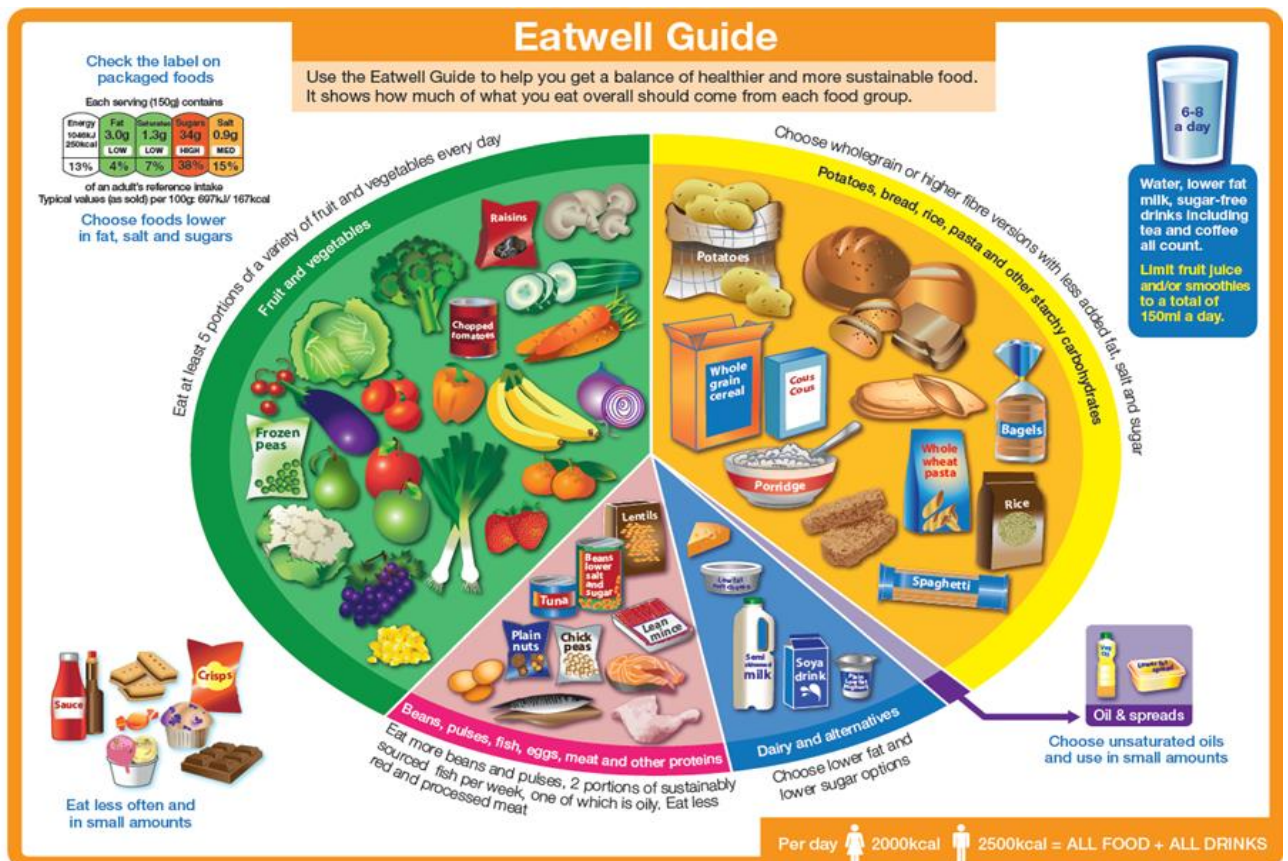
This type of diabetes generally disappears after the baby is born. For a small minority, diabetes continues after pregnancy. You will have a test after your baby is born to determine whether you still have diabetes.

Women who develop gestational diabetes are at risk of developing Type 2 Diabetes, especially if they are overweight. Losing weight after you have had your baby, if you need to, is the best way to decrease the risk of developing diabetes later in life.

Healthy Eating if You Have Gestational Diabetes

The diet for gestational diabetes is based on healthy eating following the Eatwell Guide.

The Eatwell Guide below shows how much of what you eat should come from each food group. Having a balanced meal, i.e. a meal containing starchy foods, protein, a small amount of fat, and vegetables or fruit can help control blood sugars.



What Changes Do I Need to Make to My Diet?

- Eat regular meals and don't skip meals. Having a regular breakfast, lunch and evening meal helps keep the amount of glucose in your blood stream stable
- Include 1-2 portions of starchy (carbohydrate) foods as part of a balanced meal:
 - * bread i.e. wholegrain bread, granary bread
 - * new potatoes
 - * cereals, i.e. All Bran, Sultana Bran, porridge
 - * pasta, basmati rice, sweet potato, yam, noodles

These give you energy and help keep your blood sugars stable. Try to choose "slow release" starchy foods as often as possible when planning meals (see page 5).

- Reduce your intake of foods and drinks with a high sugar content (see page 6).
- Include some protein food at each meal: try and have a variety such as fish, eggs, poultry, meat, pulses, yoghurt and cheese
- Have starchy food and protein together at each meal
- Limit fruit to three portions spaced over the day and have at least two portions of vegetables
- Restrict the amount of fat in your diet, particularly saturated (animal) fat (see pages 6 - 7)
- Eat three portions of calcium-rich foods daily, as milk, cheese, yoghurt, tinned sardines with bones, green leafy vegetables, almonds and dhal. If you use milk alternatives such

as soya/rice/oat/nut/coconut milk, try to find calcium enriched versions

- There is no need to buy special 'diabetic' foods. They are expensive, high in fat and may cause diarrhoea if eaten in large quantities
- Avoid all alcohol while you are pregnant
- Choose drinks such as water, tea, coffee (no sugar), no-added sugar squashes, diet fizzy drinks
- If you do not eat fish and/or dairy products you may need an iodine supplement - check with your GP before taking any supplement (www.bda.uk.gm/foodfacts/iodine.pdf)

Portion Sizes

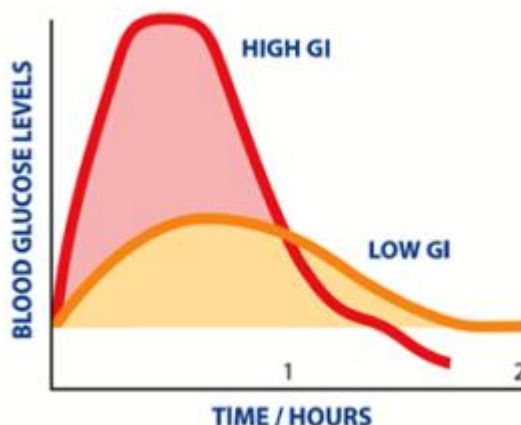
Table 1 below gives examples of portion sizes - **remember one serving may contain more than one portion of carbohydrate.**

Table 1 – Portion sizes of carbohydrate containing foods.

Starchy Carbohydrate 1 portion =	2 egg sized potatoes, 1-2 tablespoons cooked rice/pasta 1 slice bread, ½ medium pitta bread, 30g breakfast cereal eg muesli/All bran, 110g porridge (cooked weight)
Protein 1 portion =	85g meat, poultry or oily fish, 120g fish without battered , 2 eggs 4 tbsp. pulses, 1 small can baked beans, 100g quorn/tofu 30g nuts
Fruit and Vegetables 1 portion =	80g fruit = 1 medium orange, 1 small Banana, 1 apple/2 small fruits e.g. kiwi, plums 10 grapes, 2-3 heaped tbsp. vegetables Small bowl salad
Dairy 1 portion =	200mls milk (dairy or alternative) 150g yoghurt 30g cheese 2 scoops ice-cream

The Glycaemic Index - What is it?

The glycaemic index (GI) is a system of ranking carbohydrate foods according to their effect on blood glucose levels. Each time you have a sugary or starchy food or drink, the blood glucose level in your body rises. Some of these foods are quickly digested and cause quick sudden rises in your blood glucose levels - these are high GI foods ('fast release'). Low GI foods ('slow release') cause a slow, steady rise in blood glucose levels. This can be seen in the graph below:



How to Use GI

Introducing more 'slow release' or low GI foods into meals can help to control rises in blood glucose levels after meals and may improve overall control of diabetes. Low GI foods help to maintain even blood glucose levels between meals and help you feel full for longer.

High fibre and wholegrain carbohydrate foods tend to take longer to digest and so have a lower GI. Processing, refining and cooking foods tends to make the carbohydrate easier to break down (digest) and so increases the GI.

The GI value of a food is tested on the food when eaten in isolation. However, we generally eat food in combination with other foods.

GI needs to be taken in the context of varied balanced eating and incorporated into a healthy diet. For instance, jacket potato will be absorbed much more slowly if protein is added, e.g. tuna/baked beans/cheese.

Also, some high GI foods, such as wholemeal bread and jacket potatoes, are good sources of fibre and therefore healthier choices than, say, white bread and will have less effect on blood glucose if eaten with protein rich foods. See page 5, Table 2, for a table of foods divided in groups depending on their GI index.

See www.glycemicindex.com for more information

Table 2 – The GI content of carbohydrate containing foods

	Best Choice Low GI (slow release) choose most often	Good Choice Medium GI (moderate) choose sometimes	High GI (fast release) choose rarely
Breads	Pumpernickel, granary, multi-grain, tortilla wrap, wholegrain, rye bread, chapatti	Crumpets, rye crispbread, pitta bread, hot dog rolls, croissant, taco shells	White bread, brown bread, baguette, crispbread, bagels, many gluten free breads, Melba toast, naan bread, pikelets, English muffins
Potatoes	Sweet potato	New potato, boiled potato	Mashed potato, chips/fries, jacket potato
Rice / Grains	Basmati rice, whole granary brown rice, semolina, bulgar wheat, quinoa, pearl barley	Wild rice, couscous, Arborio rice, polenta	Short-grain rice, white rice, sushi rice, jasmine rice, instant rice, tapioca
Pasta & Noodles	White or wholemeal pasta, egg pasta, fresh rice, noodles	Gnocchi, udon noodles, rice vermicelli	Gluten free pasta, corn pasta, canned spaghetti
Breakfast cereals	Rolled oats/ porridge, All Bran, Sultana Bran, Fruit 'n Fibre, no added sugar, muesli	Instant porridge, shredded wheat, Sustain, Weetabix, Special K, wheat flakes,	Coco pops cornflakes and crunchy nut, puffed wheat, crisped rice, Cheerios
Dairy & Alternatives	All dairy milk, soya milk, low fat ice-cream, low fat custard, low fat /low sugar yoghurt	Ice-cream, cream, oat milk	Rice milk
Fruit	Apples, apricots, cherries, grapefruit, grapes, kiwi, mango, oranges, peaches, pears, plums, strawberries	Banana (firm), melon, dried fruit, pineapple	Banana (over-ripe), watermelon, dried dates
Starchy vegetables	Corn, cassava, yam, peas, parsnip		Swede
Snacks	Rich tea biscuit, nuts, fruit loaf, tea cake	Shortbread, flapjack, digestive biscuits, popcorn (plain/salted)	Waffles, Morning Coffee biscuits, water biscuits, rice cakes, cream crackers, pretzels
legumes	All beans, (cannellini, red kidney, butter), baked beans, lentils, split peas, chick peas		

How Can I Eat Less Sugar?

- Foods which contain a lot of sugar will usually cause a sudden rise in blood glucose, particularly if eaten on an empty stomach. It is best to eat a smaller amount and replace them with lower sugar alternatives.
- If you wish to eat a food with a higher sugar content, then have a small portion at the end of a meal rather than in between meals. This will slow down the rate at which the sugar is absorbed into your blood stream and may help to avoid a peak in blood glucose.
- Use 'sugar free' drinks, 'diet' fizzy drinks, 'no added sugar' squash, soda water, mineral water. Avoid coke, Lucozade and milk shakes with added sugar.
- Use sweeteners, e.g. Hermesetas, Canderel, Sweetex, Splenda instead of sugar.
- Ensure that jams and marmalades, including reduced-sugar versions, are spread thinly.
- Have low sugar breakfast cereals, e.g. Weetabix, Shredded Wheat, porridge, no added sugar muesli and **avoid** sugar coated breakfast cereals e.g. frosted flakes, sugary puffs and chocolate-flavoured cereals.
- Choose plain biscuits e.g. Rich Tea, digestives, Garibaldi, fig roll, and oatcakes. Avoid high sugar foods e.g. cakes, biscuits, sweet puddings and chocolate.
- Choose a small amount of plain cake, fruit scone, fruit breads, currant teacakes and hot cross buns.
- Choose low sugar diet yoghurts and fromage frais e.g. Shape, Skyr, Light & Free, Liberte, Weight Watchers, Muller Light.
- Choose sugar free jelly, reduced sugar instant whip or tinned fruit in natural juice.

How Can I Eat Less Fat?

It is important to cut down on the fat you eat, particularly saturated (animal) fat, as this type of fat is associated with heart disease and can stop insulin working as efficiently. All fats are high in calories and should be restricted if you are gaining weight too quickly or were overweight at the start of your pregnancy.

Pregnancy is not the time to lose weight, but your weight gain might need to be controlled under these circumstances. You will be advised by your health care team.

- Choose monounsaturated fats e.g. olive or rapeseed oil or spreads, or polyunsaturated e.g. sunflower, corn or soya oil or spreads as an alternative. Avoid lard, dripping, suet and coconut oil. If you use butter, use sparingly
- Grill, bake, poach, casserole, steam or microwave food instead of frying. If you need to use oil in cooking, measure it out with a teaspoon so as to use less
- Choose lean cuts of meat and trim the fat off. Remove skin from poultry. Cut down

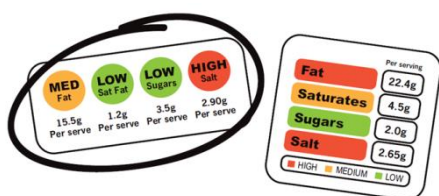
on corned beef, beef burgers and sausages. Try using less meat in casseroles and stews by replacing some with extra vegetables and pulses

- Switch to low-fat dairy products; semi-skimmed or skimmed milk instead of full cream milk
- Watch out for hidden sources of fat. Pies, pastries, chips, mayonnaise, crisps and cream all add extra fat to your diet
- Oven chips have less fat and can be used occasionally
- Cheese contains a lot of fat so try and choose lower fat varieties, e.g. cottage cheese, Edam and reduced-fat cheddar and just use small amounts. Use as part of your meal rather than as a snack

Food Labels

What Should I Look for in the Label?

Some foods also have colour coding on the front of the packet (traffic light labelling system). This tells you at a glance if the food has a high (red), medium (amber) or low (green) amounts of fat, saturated fat, sugar or salt.



The more 'greens' on the label, the healthier the choice. However, the traffic light labelling system only includes sugars and does not take into account the total amount of carbohydrate.

It is important to consider the total amount of carbohydrate alongside sugar content as it will affect your blood glucose. For example, the table below shows the back of pack nutrition label for dry white pasta.

Table 3 – A label from a pack of dry white pasta

Nutrient	Per 100g	Per portion (75g)
Energy	1526kJ (360kcal)	1145kJ (270kcal)
Fat	1.4g	1.1g
Saturates	0.3g	0.2g
Carbohydrate	73.0g	54.8g
Sugars	2.4g	1.8g
Fibre	2.6g	2.0g
Protein	12.5g	9.4g
Salt	0.1g	0.1g
Reference intake of an average adult (2000kcal)		

Some people may find that 75g of carbohydrate increases blood glucose beyond the target of 7.8mmols/L and a smaller portion is required (see page 4 for more guidance on portion sizes). When reading the food labels on the back of the pack, always look at the 'per 100g' column. Try to choose from the 'low' category or lower end of the 'medium' category and avoid foods in the 'high' category. Table 4 below shows the amount of sugar which would be considered low, medium or high in 100g of food.

Table 4 – Low, medium and high sugar content of foods

per 100g	Low	Medium	High
Sugars	5g or less	>5g - ≤22.5g	More than 22.5g

(Adapted from 'Traffic Lights' - Food Standards Agency)

How Can I Eat More Fibre?

Fibre from foods such as granary bread and high-fibre cereals help to keep your digestive system healthy, prevent constipation (which can be a problem in pregnancy) and also help to control your appetite.

In addition, 'soluble' fibre which is found in fruit, vegetables, pulses and oats, helps to control blood glucose by slowing down the rate at which food is digested.

When you eat more fibre, you will need to drink more fluid to prevent constipation. Try to include at least 8-10 cups of fluid a day.

What About Alcohol?

The Chief Medical Officer (CMO) guidance is that pregnant women should not drink any alcohol at all.

If you are pregnant or planning pregnancy, the safest option is not to drink alcohol. This is to keep the risks to your baby to a minimum. The more you drink the greater the risk to your baby.

Weight Gain During Pregnancy

- Pregnant women should aim to gain the following amount of weight over the whole pregnancy:

- 11-16kg if you were normal weight for your height pre-pregnancy (BMI 18.5-24.9 kg/m²)

- 7-11kg if you were overweight pre-pregnancy (BMI 25-29.9 kg/m²)

- 5-9kg if you were very overweight pre-pregnancy (BMI more than 30kg/m²)

(Institute of Medicine, 2009)

- Pregnancy is not the time to try and lose weight if you are overweight, but on the other hand, it is better not to gain too much weight. Further information is available on the NHS Choices website.

Exercise

Regular exercise will help to control your blood glucose levels. Try to walk for 15-30 minutes daily. See NHS Choices website -'exercise in pregnancy' for more information.

Healthy Eating Ideas

Breakfast

- Wholegrain breakfast cereal or porridge with milk
- 1-2 slices wholegrain or high protein bread (e.g. Hi-lo bread, Lidl high protein rolls, LivLife Seriously Seeded) with two poached eggs

Light Meals

- Wholegrain sandwich with lean meat/fish and salad
- Small jacket potato with protein filling e.g. low sugar baked beans, cottage cheese, tuna
- Crunchy peanut butter on wholegrain/high protein bread
- Tinned sardines on toast

Main Meal Ideas

- Lean roast meat or poultry, casseroles and stews
- Shepherd's pie with extra vegetables
- Spaghetti Bolognese made with lots of vegetables
- Vegetable or bean curry with rice
- Fish and potato pie
- Chicken or prawn stir fry with noodles/rice

Desserts

- Diet yoghurt low sugar diet yoghurts e.g. Shape, Skyr, Light and Free, Liberte, Weight Watchers, Muller Light
- Sugar-free instant whip or jelly
- 2 scoops of ice-cream
- Fresh fruit

Between Meal Snacks (if necessary)

- Fresh fruit with low-fat Greek yoghurt
- Small cubes of hard cheese
- 1-2 plain biscuits (e.g. Rich Tea)
- Diet yoghurt
- Hummus on oat cakes
- Vegetable sticks with salsa/hummus/low fat cheese
- Mixed nuts

Food Safety Advice

Some foods can contain bacteria such as listeria and salmonella, which can be harmful to an unborn baby, these and suitable alternatives are listed in Table 4 below:

Foods Which are Best Avoided	Suitable Alternatives
Soft mould-ripened cheeses like Brie, Camembert and Blue-veined cheeses (can be eaten if cooked thoroughly until piping hot all the way through)	Hard cheeses like Cheddar, Stilton and Edam. Cottage cheese, cheese spreads, mozzarella, feta, halloumi, goats cheese, ricotta (just make sure they're made from pasteurised milk)
Paté (any type, including vegetable)	Peanut butter, yeast extracts, meat pastes
Undercooked meat, poultry and ready meals	Well-cooked meat, poultry and ready meals

- Too much vitamin A can be potentially harmful around the time of conception and during pregnancy. Avoid high dose vitamin supplements like fish liver oils and avoid eating liver and liver products such as paté and faggots.
- Some eggs are produced under a food safety standard called the British Lion Code of Practice. Eggs produced in this way have a logo stamped on their shell, showing a red lion. Lion Code eggs are considered very low risk for salmonella and safe for pregnant women to eat raw or partially cooked. You can eat raw hen eggs or food containing lightly cooked hen eggs (such as soft boiled eggs, mousses, and soufflés and fresh mayonnaise) provided that the eggs are produced under the Lion Code.
- Some fish have been found to have high levels of mercury which can harm a baby's developing nervous system. Avoid eating shark, swordfish and marlin.
- Limit fresh tuna steak to two per week and cans of tuna to four medium cans (160g) a week. Eat oily fish no more than twice a week
- Peanuts and foods containing peanuts can be included as part of a healthy balanced diet

General food hygiene is important. You can safeguard yourself and your family by:-

- Storing raw and cooked meats separately
- Washing fruit, salad and vegetables well
- Using one chopping board for preparation of raw meat and poultry and a separate one for other foods
- When cooking or reheating foods, make sure they are piping hot throughout. This is especially important if you use a microwave
- Washing your hands before and after preparing food, especially after handling raw meat and poultry
- Storing food at the correct temperature
- Cleaning kitchen worktops and surfaces with an antibacterial spray

Further Information

www.nhs.uk/conditions/pregnancy-and-baby

www.nhs.uk/conditions/gestational-diabetes

www.diabetes.co.uk/gestational-diabetes

www.nhs.uk/start4life/healthy-eating

www.food.gov.uk (Food Standards Agency)

More information on food safety can be obtained from: -

Department of Health leaflet “While You Are Pregnant - Safe Eating and How to Avoid Infection from Food and from Contact with Animals” (available from your midwife).

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