NHS
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Patient information

Dietary advice for diabetes during pregnancy (gestational diabetes)

Gestational diabetes is a type of diabetes that develops during pregnancy and usually goes away after giving birth. You are not alone: 5 in every 100 pregnancies have gestational diabetes.

This booklet aims to provide you with guidance and information to help modify your diet and manage your gestational diabetes, enabling you to make the choices that are right for you.

Diet has a key role in managing gestational diabetes, as well as making sure you get all the nourishment that you and your developing baby need. The right balance of a variety of foods is particularly important at this time.

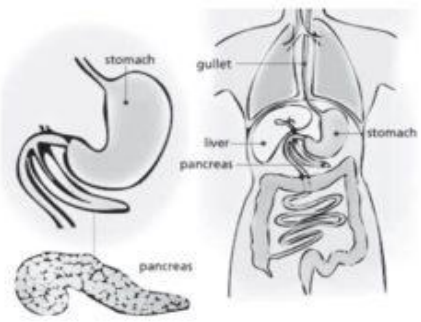
Sometimes changing your diet alone is enough, but you may also need to take medication. This will be discussed with the midwife and the team when you attend the clinic appointment.

What happens in the body without diabetes?

Before we look at what diabetes is, it's useful to think about what happens in the body that doesn't have diabetes.

When we eat, our food enters the stomach and is broken down into many things, including glucose (sugar) – used in our cells as the body's main source of fuel.

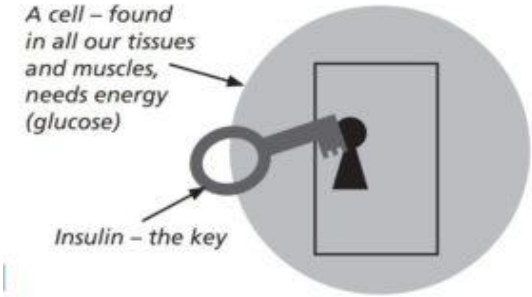
The glucose then enters the bloodstream. The rise in blood glucose triggers the release of insulin (a hormone produced by the pancreas – the diagram below shows where the pancreas is located).



Putting you first

Insulin is like a key. It opens the door on the cell, allowing the glucose to flood in and be used as energy to fuel the body.

The level of glucose in the bloodstream then returns to normal (4–7mmol/L) and the insulin has done its job. This process happens each time we eat, making sure that our body gets the energy we need and that our blood glucose level is nicely controlled.



What happens in gestational diabetes?

An increase in pregnancy hormones and other factors interferes with the action of insulin. It is this effect, combined with the increased demand on the pancreas (from the growing baby) to produce more insulin, that causes the sugar from the foods you eat to remain in the bloodstream. This increases your blood glucose above normal levels, which is not healthy for you or your baby.

Why keep to blood glucose level targets?

If your blood glucose levels are above target, the glucose can cross your placenta causing your baby to grow larger than normal, increasing the chance of complications in labour and delivery. It also increases the risk of your baby being overweight or obese and/or developing Type 2 diabetes in later life.

Treatment for gestational diabetes aims to achieve near normal blood glucose levels:

Table 1

Time	**Blood glucose target**
Fasting (upon waking)	Below 5.3mmol/L (or below)
1 hour after finishing main meals	Below 7.8mmol/L (or below)
2 hours after finishing main meal (if you forgot to measure it after 1h)	Below 6.4mmol/L (or below

Summary of diet advice

Table 2

Summary	Explanation
Eat regularly	• Aim for three meals each day and include a starchy carbohydrate food at each meal e.g. bread, cereal, pasta, rice and potatoes. Choose high fibre, low glycaemic index (low GI) varieties. See '**Glycaemic Index'** section.
Avoid added sugars	• Found in sugary foods and drinks. • For examples and alternatives please see '**food swaps'** in Table 3.
Portion control	• For a tighter blood glucose control and an easier medication adjustment it is recommended to eat similar portions of carbohydrates. The diet should be balanced to avoid excessive weight gain. See '**Carbohydrate'** section.
5-a-day	• **Vegetables** and pulses help reduce the rise of blood glucose levels following a meal due to high fibre content. There is no limit on the number of portions of vegetables to have daily, but the recommendation is at least two portions (each portion is 3 tablespoons cooked or raw). • **Fruits** contain naturally occurring sugars called fructose which impact blood sugar levels. - Aim to have no more than 2 'handful-size' fruit portions daily and spread intake throughout the day. Fresh, frozen, or tinned in natural juice are all suitable. - Avoid fruit juice and smoothies due to concentrated sugar contents causing rapid rise in blood glucose levels.
Dairy	• Good source of calcium. Aim to have two to three portions a day. A portion equates to a small matchbox size of hard cheese, 1/3 pint or 200mls of milk and 125g pot of yoghurt (choose plain/Greek/natural). • Milk and yoghurt contain naturally occurring sugar called lactose which impact on blood sugar levels. Therefore, spread intake throughout the day and avoid flavoured milk/yoghurts due to added sugars.
Protein	• Protein foods include meat, poultry, fish, eggs, seafood, tofu, nuts, seeds, peas, beans and pulses (e.g., chickpeas, lentils, peas). • Including protein foods within a meal can help to reduce the post-meal rise in blood sugar levels.
Fat	• Adding foods high in fat to meals can help to reduce the post-meal rise in blood sugar levels. • Fat sources are cooked oily fishes (limit tuna to four medium cans per week or two steaks, eat oily fish, e.g., salmon, mackerel, sardines, no more than twice per week), olive oil, olives, nuts, avocado, hummus, pumpkin seeds, flaxseed, and chia. You can as well have cream, cheese, butter or mayonnaise. • However, consider limiting these foods if you are avoiding excessive weight gain (high calorie content).
Hydration	• Drink at least eight glasses of fluid (2 litres) daily to help avoid constipation and to ensure you are well hydrated. Choose sugar-free options only. No more than two mugs of instant coffee (one mug of filter coffee) or three cups of tea a day.
Other	• Avoid "diabetic" food products as they can contain added sugars, are expensive and can have laxative effects.

Food swaps – remember that portions still need to be considered!

Table 3

Avoid (high sugar/low in fibre)	Instead choose (low sugar/high fibre)
Sugar (any type), fructose and sugar alcohol sweeteners including sorbitol, mannitol and xylitol e.g., *Sucron®, Half Spoon®*	No-calorie artificial sweeteners in tablet, liquid or granulated form e.g. *Stevia®, Truvia®, Splena®, Canderel®, Sweetex®, Hermesetas®, Flix®, Natrena®, Sweet'N Low®, NutraSweet®*
Jam, marmalade, lemon curd, honey, corn, maple or golden syrup, high fructose corn syrup, agave nectar, treacle	Reduced sugar varieties of jams, marmalades, and pure fruit spreads. Spread thinly.
Tinned fruit in syrup or light syrup	Tinned fruit in natural juice (drained) or water. No more than two portions of any fruit a day and spread throughout the day.
Cakes, biscuits and pastries	Semi-sweet biscuits, rice cakes, crispbreads, wholegrain crackers, oat cakes and unsweetened popcorn.
Chocolate, sweets, sugary puddings and flavoured yoghurts	Fruit, sugar-free gum, homemade milk puddings with sweeteners, sugar free whips, sugar free jelly and plain, natural, or Greek yoghurt.
Non-diet fizzy drinks, fruit juice, ordinary squash, Hi-Juice, or low sugar varieties e.g., Ribena® light and Lucozade® light	Low calorie, sugar-free, diet and/or slim line variety fizzy drinks and sugar-free squash.
Sugary or honey-coated breakfast cereals e.g., Granola®, Crunchy Nut®, Sugar Puffs®, Frosties®, Frosted Shreddies®, Coco Pops®	Plain cereal e.g., porridge, All Bran®, Shredded Wheat®, Shreddies®, Weetabix®, Oatibix®, no-added sugar muesli/granola.
Drinking chocolate, Horlicks®, Ovaltine®	Cocoa made with mild and suitable sweetener or low-calorie instant drinks e.g. Carnation Hot Chocolate Light®, Cadbury Highlights®, Options®, Galaxy Light Style® or supermarket brands of 40 calories chocolate drinks.

Carbohydrates

All carbohydrate foods need to be taken into account; it is not just sugar in the diet that affects blood glucose levels. All carbohydrates are broken down to sugar (glucose) when ingested. 'Carbohydrates' include:

Starchy foods (digested to glucose)	**Naturally occurring sugars**	**Added sugars**
Cereals like wheat, oats and rice and their flour: • Bread • Pasta • Rice • Cereals • Oats / Quinoa, etc. Starchy roots like: • Potatoes • Sweet potatoes • Casava	• Fruit (fructose) • Milk and yoghurt (lactose)	• Sweets • Chocolate • Sugary drinks • Cakes / biscuits • Desserts / puddings etc.

Keep portion size of carbohydrate similar at each meal:

Everyone is individual in blood glucose response to carbohydrate foods and tolerance levels can change during pregnancy. Keep in mind that the weight of the food does not equal the amount of carbohydrate it contains.

- **Main meals.** Aiming for around 40g of carbohydrates at each meal.

Some women may be able to tolerate more than 40g of carbohydrates. You may wish to trial starting with 40g carbohydrate and increasing amount by 10g at a time, check blood sugar levels one-hour post meal and if above 7.8mmol/L to decrease back to previous amount.

If you see that your one hour after breakfast reading is out of target you might try to split your breakfast carbs in two intakes, e.g. have 1 slice whole-grain bread with no-sugar-added peanut butter or cheese/ham for breakfast (~15g carbs) and then have another ~15-20g carb snack 2-3 hours later (e.g. 200ml plain Greek yoghurt with 80g fresh berries).

- **Snacks.** If you are hungry between meals have no-carb or low-carb snacks, aiming for no more than 10-15g carbs. See 'Low carbohydrate snack ideas' diet sheet.

- Avoid eating any carbs after 7.00pm for a more accurate fasting reading in the morning.

Methods of carb counting:

Carbs and cals

- Order the book online or use the mobile phone application
-Photos of foods and the amount of carbs they contain
-Have a look at the website: www.carbsandcals.com

Handy measures

10g carbs is approximately equal to: 1 medium tablespoon of cooked rice or pasta / 1 x egg-sized potato / 1 x ice-cream scoop mashed potato / 200ml or grams of milk or yoghurt;
1 slice bread = 15g carbs

Reading food labels

-Look for Total Carbohydrates (not just *"of which is sugar"*) and consider your portion – will you have the portion/serving recommended or will you weigh out a specific portion?
-Amount of carbs per 100g ÷ 100 x weight

Glycaemic index

Glycaemic index (GI) is a measure of how quickly carbohydrates are broken down into glucose and how quickly the blood glucose levels rise in response.

Carbohydrates with a low GI are broken down more slowly and cause a slower release of glucose into the bloodstream and a gentle rise in blood sugar. Carbohydrates with a high GI are broken down quickly causing a rapid rise in blood glucose levels.

Choose lower GI carbohydrates more often. These tend to be higher in fibre. For example, porridge, granary bread, granary crackers, brown or basmati rice, wholegrain cereals, new potatoes with skins and wholegrain pasta.

Pair your carbohydrates

Adding foods containing fibre, protein or fat to carbohydrates can lower the overall GI of the meal and cause a gentler rise in blood sugar. It is more important to include a low GI food with each meal than avoiding foods with a high GI.

Foods that do not increase your blood glucose levels are meat, poultry, fish, seafood, cheese, eggs, nuts, seeds, beans (except baked beans due to the sugary sauce), pulses, lentils, vegetables, and salad. So, when reducing your carbohydrate portion at meals you can increase your intake of these foods.

Nuts, seeds, avocado, unsweetened nut spread, and cheese are high in fat. Restrict your portion size of these if you are gaining more than the recommended weight.

Stay active

Just a mild 30 minutes' walk after eating can help lower your blood glucose.

For further information

- visit diabetes.org.uk
- consider purchasing **Carbs and Cals 'Gestational Diabetes'** book online or in store. Alternatively, you could request your local library to order a copy.

Clinical research

West Suffolk NHS Foundation Trust is actively involved in clinical research. Your doctor, clinical team or the research and development department may contact you regarding specific clinical research studies that you might be interested in participating in. If you do not wish to be contacted for these purposes, please email info.gov@wsh.nsh.uk. This will in no way affect the care or treatment you receive.

If you would like any information regarding access to the West Suffolk Hospital and its facilities, please visit the website for AccessAble (the new name for DisabledGo) https://www.accessable.co.uk/organisations/west-suffolk-nhs-foundation-trust

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