

INFORMATION FOR PATIENTS

Managing Type 2 diabetes in pregnancy

This information booklet provides general information about what to eat and drink if you have Type 2 diabetes and are pregnant.

Type 2 diabetes is a condition where your body either doesn't produce enough insulin or doesn't use the insulin properly, causing high blood sugar levels. If you already had Type 2 diabetes before becoming pregnant, you'll need specialist care during pregnancy to protect both your and your baby's health.

This booklet will help you to make good choices and provide guidance to help you to regulate the amount of carbohydrates you are eating.

It is important to monitor your blood glucose levels during pregnancy and the recommended targets are as below:

- Fasting (pre-meal) - below 5.3 mmol/L
- 1 hour post-meal - below 7.8 mmol/L.

These targets aim to maintain optimal glucose control and minimize risks to both the mother and the baby.

Why is good blood glucose control important during pregnancy?

Poorly controlled diabetes during pregnancy can increase the risk of:

- High birth weight (macrosomia)
- Premature birth
- Birth defects (especially during the first trimester)
- Low blood sugar in the baby at birth
- Increased risk of stillbirth or miscarriage
- Future obesity and diabetes in your child.

Managing your blood glucose levels can help prevent these complications and support a healthy pregnancy.

Carbohydrates

The main food group that affects blood glucose levels is carbohydrates. Reducing carbohydrate consumption is one way to improve blood glucose control. Different carbohydrate types alter the speed at which blood glucose increases. All foods containing carbohydrates are broken down into glucose (sugar) when digested and enter the bloodstream as glucose. The more carbohydrates you eat with a meal, the higher your blood glucose level may go.

It is therefore important to:

- Eat less carbohydrates at meal or snack time.
- Choose better types of carbohydrate.
- Spread your carbohydrate intake throughout the day.
- Have starchy carbohydrate as part of a healthy balanced meal, include a source of protein with your main meal.

It is still important that you include carbohydrate in your diet as this is your main source of energy.

What are carbohydrate-containing foods?

There are two main sources of carbohydrates, namely starch and sugar.

Starchy carbohydrates

These include potatoes, pasta, noodles, rice, yam, plantain, semolina, maize, breakfast cereals, flour and foods made with flour such as bread, chapattis, pizza, pastries, pancakes, Yorkshire puddings and crackers. These foods are an important source of energy and nutrients.

In addition, there are some starch carbohydrates with **low glycaemic index (GI)**. These foods are higher in fibre; so are absorbed more slowly and with a reduced effect on blood glucose levels. By choosing these types of carbohydrates, your blood glucose levels will rise more slowly and are therefore more likely to be within target. Below are the best types of low GI starchy carbohydrates:

Type of starch carbohydrates	Examples of low GI carbohydrates
Bread, pitta, chapatti	Sourdough/wholegrain/ granary/seeded/rye/ pumpernickel
Rice, grains, pulses	Brown, basmati, pearl barley, quinoa, chickpeas, lentils, beans
Potatoes	Sweet or new potatoes, yams, green bananas and plantain, cassava
Cereals	Oats (porridge), nutty muesli, wheat pillow (Shredded Wheat) and All Bran

Added sugar

Added sugars includes food such as sweets, biscuits, cake, chocolate and any foods where sugar is added and does not occur naturally. Eating foods which are high in sugar could make your blood glucose levels rise more quickly and become out of target:

- Avoid having white / brown sugar, in coffee and tea or adding honey or syrup to foods. Artificial sweeteners can be used.
- Use sugar free or diet fizzy drinks and no added sugar squashes, flavoured water and slimline mixers.

- Ordinary jams and marmalades can be used in small amounts. Reduced sugar varieties are available.
- Have tinned fruit in natural juice instead of syrup or stewed fruit without sugar.
- Choose sugar free jellies, low sugar instant whip, low fat fruit yoghurts or fromage frais, low sugar milk puddings, a small portion of plain ice-cream.
- Limit chocolates and when you do have them, do so with a meal.
- Use reduced sugar milky drinks e.g. Options, High Lights, Ovaltine Light or Horlicks Light.
- Avoid sugar or honey coated breakfast cereals.
- Avoid energy drinks or sweetened juice drinks.
- Choose plain biscuits e.g. Hob Nob, Digestive, Rich Tea, Morning Coffee or ginger nuts, one to two a day. Special diabetic products have no added health benefits. They are often expensive and might cause diarrhoea. Artificial sweeteners used in food and drink in the UK are safe to use in pregnancy in moderation.

Natural sugars

This includes milk and fruit sugars. Milk sugars (lactose). This is found in milk and yoghurt, ice-cream, custard and milky puddings. This is also a good source of calcium. Aim to have three portions per day. One portion is roughly:

- 200ml of milk / milk alternative.
- 125ml yoghurt. Aim for low sugar yoghurts - less 5g sugar / 100g .
- 40g cheese (one small matchbox).
- Try to not exceed more than one portion milk or yoghurt at a time - make sure you spread your three portions throughout the day.
- Fruit sugars (fructose). This is found in all types of fruit, fruit juice and smoothies. Fruit should be limited to one portion per meal or snack. Spread fruit portions across the day. One portion of fruit is roughly:

- 1 small banana
- 1 medium apple / pear / orange / kiwi
- 12 medium grapes
- 2 rings of pineapple
- 2 small fruits e.g. clementines, satsuma
- 1 slice of large fruit e.g. watermelon, melon
- 7 medium strawberries.
- 150ml fruit juice
- 1 dessertspoon of dried fruit.

How much carbohydrate can I have per meal?

Consider the amount of carbohydrate you eat, the more carbohydrate, the higher rise in your blood glucose level.

Aim to have approximately 30-45g carbohydrate at each meal and 10-15g carbohydrate per snack. To estimate which food portions contain 30g of carbohydrate, use the suggested portion sizes as seen in the following table, or look at food labels.

Food portions which supply 30g of carbohydrate:

	30g carbohydrate
Bread	<ul style="list-style-type: none"> • 2 medium cut slices from a large loaf • 1½ thick slices from a large loaf • 1 wrap or tortilla, approx. 26cm / 10 inches • 1 medium pitta bread (60g) • 1 mini size naan bread (round, 60g) • 1 ½ x 10-inch cooked chapatti (65g).
Potatoes	<ul style="list-style-type: none"> • 5-6 egg-sized boiled new potatoes (180g) • 180g mashed potatoes (with milk or butter) • 3-4 egg sized roast potatoes (120g) • 150g mashed sweet potato • 1 small jacket potato (150g cooked) • 7-10 deep fried chips (80g) • 10-15 oven chips (100g) • ½ cup of cooked cassava fufu/garri (eba) • Two ⅓ cups of cooked plantain fufu/amala (yam flour)/banku/kenkey/pounded yam • Three ¼ cup of tuwo (maize/rice) • Two slices of boiled yam.
Rice and other grains (cooked)	<ul style="list-style-type: none"> • 3 tablespoons or 100g cooked rice • 3 tablespoons or 100g cooked couscous • 4-5 tablespoons or 170g cooked quinoa • 5 tablespoons or 200g cooked bulgar wheat • 4-5 tablespoons or 195g cooked polenta.
Pasta (cooked)	<ul style="list-style-type: none"> • 3 tablespoons or 100g cooked.
Noodles (cooked)	<ul style="list-style-type: none"> • 3 tablespoons or 80g cooked egg noodles • 4 tablespoons or 100g cooked rice noodles.
Breakfast cereal	<ul style="list-style-type: none"> • Small bowl (220g) porridge 27g oats made with milk • Large bowl (365g) porridge 45g oats made with water • 35g or 3 tablespoons Bran Flakes, Malted Wheats, no added sugar museli, Special Flakes with berries • 2 wheat biscuits • 2 oat biscuits • 2 wheat pillows.

Another easy way to estimate carbohydrate portion is to use the diabetes plate method - having just ¼ of a plate as starchy carbohydrate per a meal.

To the one quarter plate of carbohydrates, add a quarter plate of protein (chicken, meat, fish, eggs, vegetarian alternatives, cheese, and beans) and a half plate of vegetables/salad.

Aim to choose foods from each group as shown in the following picture to reduce the impact on your blood glucose levels.

Choose high-fibre low glycaemic index (GI) carbohydrates, e.g. seeded or wholegrain bread, brown/long-grain/basmati rice, ideally wholegrain pasta or white pasta cooked firm, and porridge (made from jumbo oats).



Eat protein

Protein foods are important for the growth and development of your baby and your own health. They have very little effect on blood glucose levels and help to keep you full.

Add protein to meals and snacks to help provide enough calories, satisfy appetite and release glucose slowly in your blood. Include at least two servings daily of lean chicken, fish, meat, eggs or cheese, beans, pulses, lentils, nuts and seeds. Soya, tofu or protein substitutes (Quorn, Vegemince) are good vegetarian protein alternatives. Fish is good for your health and the development for your baby.

The general recommendation is to eat at least two portions a week (one portion = 140g), including one to two portions of oily fish, e.g. salmon, mackerel, pilchards, sardines, trout. Avoid fish high in mercury, e.g. swordfish, marlin, shark, and limit tuna to either four medium tins a week or two fresh tuna steaks.

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 small portions (200ml) of semi-skimmed milk are good alternative choices.

It is best not to have too much caffeine a day (limit to 200mg): • 1 mug filter coffee = 140mg • 1 mug instant coffee = 100mg • 1 mug of tea = 75mg • 1 can of cola = 40mg.

Snacks

Make it a healthy snack - aim for low carbohydrate snacks. Try not to exceed 15g carbohydrate for a snack. Snacks can be combined e.g. one rice cake is 5g carbohydrate, therefore two rice cakes with light cream cheese and cucumber will add up to 10g carbohydrates.

Lower carbohydrate snacks are recommended if you feel hungry between meals without the added worry of increasing your blood glucose levels.

15g CHO snacks:

Apple / orange / pear (medium) • Banana (fun size) • Bread / toast x 1 medium slice • Yoghurt low calorie e.g. Muller light • Popcorn unsweetened (handful) • Rye crackers x 2 • Crisp bread x 2 • Cereal bar (Alpen Light / 1 x Go Ahead).

10g CHO snacks:

• Biscuit - 1 Digestive • Biscuit - 2 Rich Tea / malted milk • Breadsticks x 2 (long) • Hot chocolate drink (light option) • Milk 200ml glass • Natural yoghurt • Oatcakes x 2 • Pretzels x 3 • Soya fruit yoghurt • Yoghurt low fat (125ml pot).

5g CHO snacks:

• Fromage Frais 50g (small) • Kiwi • Plum • Raspberries (small handful) • Rice cake 1 plain / savoury • Satsuma • Strawberries - 6.

0g CHO snacks:

• Almonds / cashews • Avocado • Boiled egg • Carrot sticks • Celery / gherkins • Cheese * • Lighter cream cheese / cottage cheese 30g • Cherry tomatoes • Cocktail sausages * • Cooked / cold meats • Cucumber sticks.

* High in saturated fat - be careful.

Other healthy tips

Exercise - regular gentle physical activity is important as it helps to keep you fit and controls weight. It will also help to improve your blood glucose levels. Choose an activity you enjoy and aim to be more active in your day. Walking and swimming are the easiest exercises to do when you are pregnant. A simple activity such as a walking kids to school or during lunchtime can have positive effects.

If you are normally very physically active you can continue doing so as long as it is safe. Check with your doctor first.

Tips:

- Only exercise for as long as you feel comfortable doing it.
- Be aware of the increased risk of hypoglycaemia while exercising if you are on insulin.

Ask for further information from the Diabetes Team. If in doubt as to how much activity you can do, ask your midwife or doctor for advice.

Fat - limit the amount of fat you eat, especially saturates. Where possible choose unsaturated fats or oils, especially monounsaturated fat e.g. olive oil and rapeseed oil in place of saturated varieties e.g. butter, lard and ghee. All fats and oils contain calories and should not be eaten in large amounts.

Tips:

- Grill, steam or oven bake instead of frying or cooking with oil or other fats.
- Choose lower fat dairy foods such as milk, yogurts and cottage cheese.
- Reduce your intake of fried foods, pastries, fatty meats and meat products, and remove the skin from chicken.
- Reduce salt especially if your blood pressure is high. Reduce salt added at the table and only add a pinch to cooking – try using herbs/spices to flavour foods instead.
- Eat less processed foods especially tinned/packet foods, stock cubes, gammon/salty meat and fish, and salty snacks such as crisps and salted nuts.

Nutrients which are particularly important during pregnancy

Folate

Important for preconception and early pregnancy (first 12 weeks). This is found in green vegetables, fortified / whole grain cereals. Supplements are always recommended (5mg/day).

Calcium

Calcium is important during the later stages of pregnancy for baby's bone development and maternal bone health. During pregnancy the body adapts by absorbing more calcium from food. It is still important to eat plenty of calcium rich foods.

The best sources are:

- Dairy products e.g. milk, cheese and yoghurt.
- Unsweetened milk alternatives with added calcium e.g. soya, rice or oat milk.
- Soya beans / nuts.
- Tofu.
- Green leafy vegetables e.g. spinach, broccoli, cabbage, okra.
- Beans.
- Fish where you eat with bones e.g. pilchards and sardines.

Vitamin D

Vitamin D is required to help absorb the extra calcium. We get most of our vitamin D from summer sunlight. Consider taking a vitamin D supplement of 10 micrograms daily. Ask your GP, midwife or pharmacist for advice on supplements. You may also be eligible for free Healthy Start Vitamins, which contain folic acid, vitamin D and C.

Iron

Iron is required for the formation of red blood cells. It is absorbed more efficiently from foods during pregnancy. However, women with low iron stores at the beginning of pregnancy or low dietary intake may need iron supplements to prevent anaemia. Vary your diet and try to include some of the following every day:

Lean meat, pork poultry.

- Eggs.
- Lentils.
- Beans.
- Nuts.
- Wholegrains e.g. brown rice.
- Fortified breakfast cereals.
- Most dark, green leafy vegetables e.g. spinach, kale, watercress.

If your iron level is low, this can make you feel very tired. 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. Tea and coffee can make it harder for your body to absorb iron, therefore avoid these at mealtimes.

Vitamin A

Avoid liver, pate, or cod liver oil, as high levels of vitamin A can harm your unborn child. Avoid supplements containing vitamin A in pregnancy.

Common pregnancy problems

Nausea and vomiting:

- Eat small, frequent meals based on carbohydrates.
- Drink fluids between, rather than with meals.
- Avoid fatty / fried foods or highly spiced meals or snacks.
- Keep room well-ventilated to reduce strong odours.
- Cold food may be better tolerated than hot food.
- Ginger in food and sugar-free drinks, may help to alleviate nausea.

Heartburn

This is common during the last three months of pregnancy. If you do experience heartburn, try to:

- Eat small regular meals and snacks.
- Avoid fatty, spicy, acidic foods and fizzy drinks.
- Sit upright when eating.
- Avoid lying down after eating.
- Elevate your head with pillows when sleeping at night.

Constipation:

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

Meal ideas

Breakfast options:

- 1-2 medium slice wholemeal / granary bread / toast, low fat spread with poached / scrambled egg, mushroom, tomato and cheese. Or
- 1-2 portions wholegrain cereal with milk. Or
- 30g porridge (no sugar) with low fat crème fresh and berries

Mid-morning snack (any of the listed):

- 1 piece of fruit.
- 1-2 plain biscuits.
- Glass milk / small pot yoghurt.
- 2 oatcakes / whole wheat crisp bread with cream cheese / hummus / peanut butter.

Lunch:

- 2 portions wholemeal, granary bread / 1 pitta bread with lean meat, fish, egg or cheese.
- Couscous salad with plenty vegetables (unlimited).
- Piece of fruit OR diet yoghurt.

Afternoon snack:

- 1 piece fruit.
- 2 rice cakes with slice of ham and cucumber / avocado.
- 3 bread sticks with salsa dip / guacamole.

Evening meal:

- 1-3 portions potatoes / brown rice / pasta/ sweet potato with lean meat, fish, poultry, egg and vegetables or salad.

Supper:

- Milky drink (no sugar), or 3 crackers and cheese, or 1 whole meal toast or small bowl wholegrain cereals/porridge.

Frequently asked questions**What should I do if my blood glucose level is high after breakfast?**

Your body is naturally more insulin resistant in the morning, which can contribute to higher blood glucose levels. Think about increasing the protein content and reducing the carbohydrate content of your breakfast (see the 'Food swaps' section for ideas).

I have a baby shower/birthday/christening/ other event coming up before my due date - what can I eat?

Buffet foods, afternoon tea and other celebratory meals are often high in carbohydrates and may contribute to high blood glucose levels on that day. You can still enjoy yourself and consume these foods as a special occasion but do be mindful of your carbohydrate portion sizes; if your blood glucose reading is high then make a note of your celebration to inform your diabetes team. Being more active before and after the meal will help improve your insulin sensitivity and can help lower your blood glucose level after eating. Go for a 30-60 minute brisk walk as a practical example.

I always enjoy a chocolate treat each evening when relaxing. Can I still have some chocolate?

Chocolate contains free sugars which will contribute to your blood glucose level but if eaten in small portions (3 small squares) should provide only a small glucose load. If eaten with a meal it will slow absorption of glucose into the blood stream and help reduce blood glucose spikes. Moderation is the key word (see your low carbohydrate snack list for more ideas).

What can I do about feeling hungry between meals?

Because we advise you to reduce your mealtime carbohydrate portions, hunger pangs are likely as your body may not be used to this reduction in meal size. Taking a 'little and often' approach to eating (by using low carbohydrate snacks in between meals) can help curb hunger and still provide you with the same amount of food you would normally consume - just spread out in smaller portions through the day.

I don't normally eat breakfast and sometimes I can go through until evening time before eating - is this a problem?

We would encourage you to adopt a regular eating pattern e.g. breakfast, lunch, evening meal with 1 or 2 snacks between each meal, to: a) Regulate your appetite and prevent hunger and, b) Regulate the glucose load or portion size consumed at your meals.

By going all day without eating you run the risk of overcompensating at your evening meal by feeling extra hunger and requiring larger portions as a result. Little and often is the key.

I've been craving sugary drinks and sweet foods. Is this my baby asking for these foods because he/she needs it?

Food cravings can be very misleading as they are not actually associated with you being deficient in a particular nutrient and they aren't demands from your baby either. Baby is getting all of their nutrients from your own stores, so eating a healthy diet will provide all you need. Sugar cravings are often associated with insulin resistance and reduced glucose clearance from the blood. If you are 'feeding your cravings' by consuming sugary foods, then you are only creating a vicious cycle and higher blood glucose levels which are then more detrimental. Try and distract yourself from those troublesome cravings and reducing your blood glucose may help keep them at bay.

Suitable food swaps and hints

If you are getting high post-meal blood glucose levels, try reducing carbohydrate portions at mealtimes and swap or reduce your carbohydrate food for either protein and/or fibrous vegetables:

- Try adding in some lean protein such as eggs, lean bacon, quorn, tofu or yoghurt.
- Add in extra vegetables; make sure half of your meal plate is covered by vegetables or salad.
- Make sure only 1/4 of your plate is covered by carbohydrates.
- Add in a small handful of nuts or seeds to sauces, soups or cereals.
- Try higher protein, lower sugar options in sauces, soups or yoghurts.

Useful resources

- <https://www.diabetes.org.uk/>
- <https://www.diabetes.org.uk/guide-to-diabetes/recipes>
<https://www.bda.uk.com/resource/pregnancy-diet.html>
- <http://www.glycemicindex.com/>
- [Recommendations | Diabetes in pregnancy: management from preconception to the postnatal period | Guidance | NICE](#)
- [Recommendations | Type 2 diabetes in adults: management | Guidance | NICE](#)

Contact details

Nutrition and Dietetics Department
Clinic 5, King's Treatment Centre, King's Mill Hospital
Mansfield Road, Sutton- in Ashfield,
Nottinghamshire, NG17 4JL

Further sources of information

NHS Choices: www.nhs.uk/conditions
Our website: www.sfh-tr.nhs.uk

Patient Experience Team (PET)

PET is available to help with any of your compliments, concerns or complaints, and will ensure a prompt and efficient service.

King's Mill Hospital: 01623 672222

Newark Hospital: 01636 685692

Email: sfh-tr.PET@nhs.net

If you would like this information in an alternative format, for example large print or easy read, or if you need help with communicating with us, for example because you use British Sign Language, please let us know. You can call the Patient Experience Team on 01623 672222 or email sfh-tr.PET@nhs.net.

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