

Eating Well With Gestational Diabetes

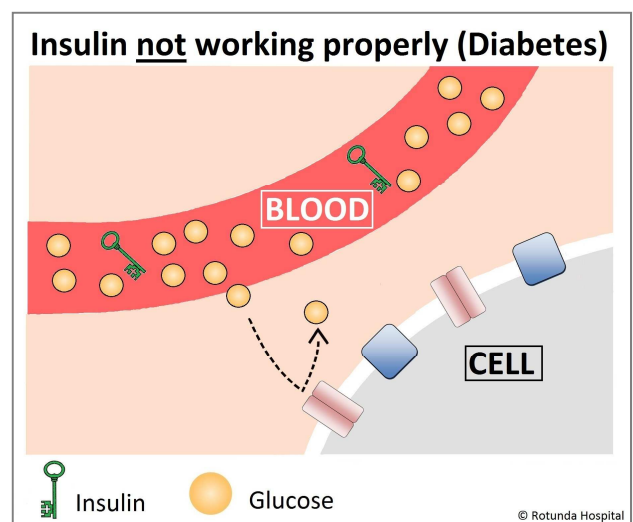
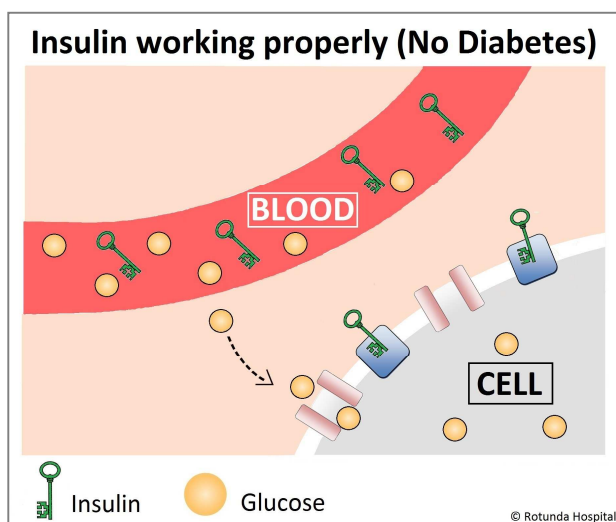
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What is gestational diabetes?

Gestational diabetes (GDM) is a condition where there is too much **glucose** (sugar) in your blood. It is a form of diabetes that develops during pregnancy and usually goes away after your baby is born.

Most of the glucose in your body comes from foods called **carbohydrates** (e.g. bread, cereal). All carbohydrates break down into glucose after you eat them.

A hormone called **insulin** normally controls the amount of glucose in your blood. It acts like a key to open the cells in your body so that glucose can enter and be used for **energy** (fuel).



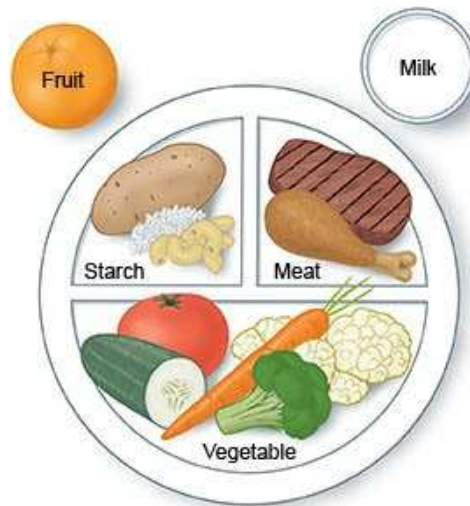
High levels of **pregnancy hormones** released by the placenta (usually during the 2nd and 3rd trimester) **work against your insulin** so your body needs to make more insulin than normal to manage your blood glucose levels.

GDM occurs when you can't make enough extra insulin to manage your blood glucose levels. Without enough insulin, the level of glucose in your blood rises higher than normal after eating carbohydrate.

Managing your gestational diabetes

For most women with GDM, blood glucose levels can be managed with healthy lifestyle changes.

HEALTHY EATING



PHYSICAL ACTIVITY

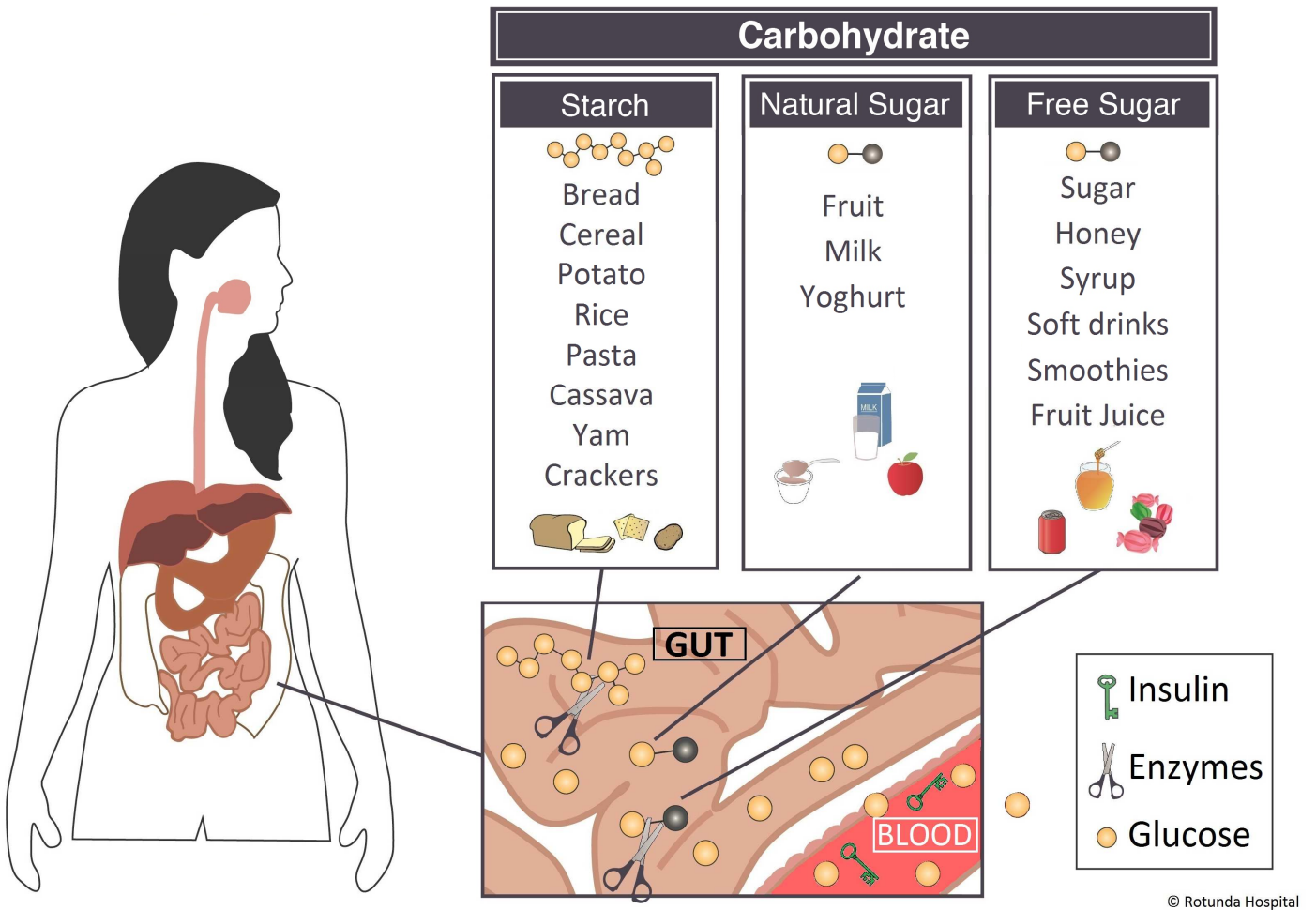


This booklet will **help you to plan a healthy lifestyle** for pregnancy to help manage your blood glucose levels.

Carbohydrate

Foods you eat contain three basic nutrients: protein, fat and carbohydrate. **Carbohydrates** have the largest effect on your blood glucose level as they all **break down into glucose** after you eat them (this is normal).

Carbohydrates are found in many of the foods we eat:



Even though you have GDM **you still need to eat carbohydrates** to get enough energy for you and your baby. The key to managing your blood glucose levels with GDM is to:

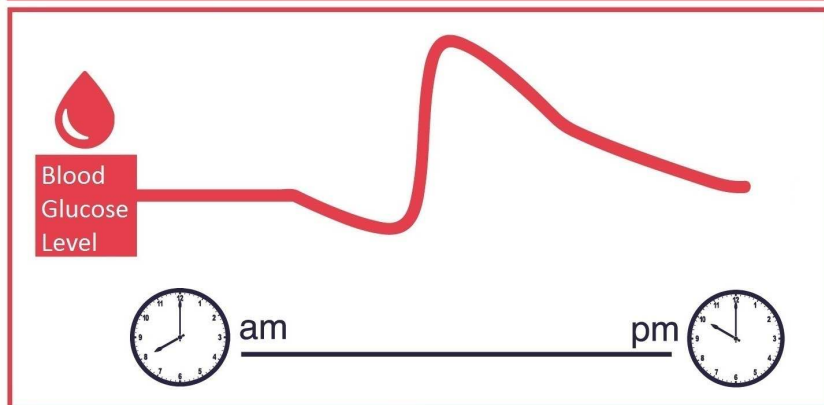
1. Choose the **right type** of **carbohydrate** foods
2. Eat **regular meals** and **snacks**
3. Watch your **carbohydrate portion size**

Step 1: Eat regular meals and snacks

To give you a **steady supply of energy** and help to **manage blood glucose** levels you should aim to spread your carbohydrate intake over:

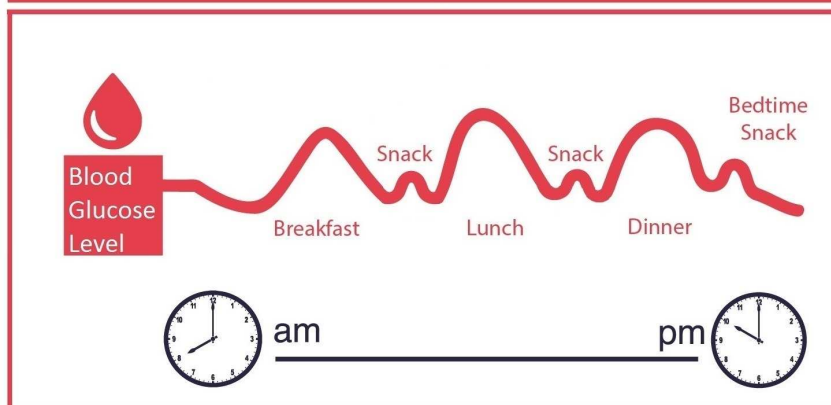
- **3 regular meals** (for example, 4-5 hours apart)
- and **2-3 small snacks** (if needed) between your meals.

Blood glucose level when eating 1 large meal with too much carbohydrate.



VS

Blood glucose level when eating regular meals without too much or too little carbohydrate.



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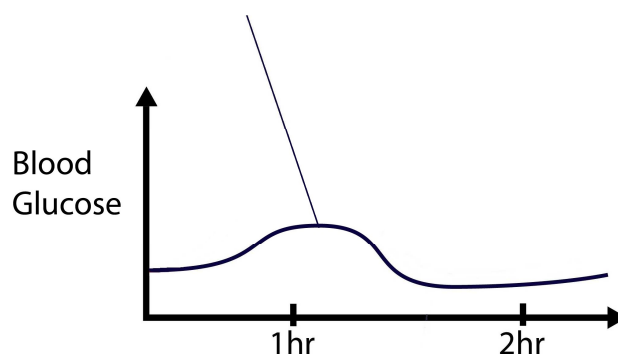
It is best to **avoid very long gaps** between your meals. Including an **evening snack** (within 30 minutes of bedtime) **with carbohydrate and protein** can also be helpful in managing hunger overnight and reduce high morning blood glucose levels.

Step 2: Choose the right type of carbohydrate

Unprocessed carbohydrate foods, which are **low in sugar** and **high in fibre** often release glucose more slowly. This may help to manage your blood glucose levels. They also have a higher nutritional value, which is important for a healthy pregnancy.

Try to choose these foods at most of your meals:

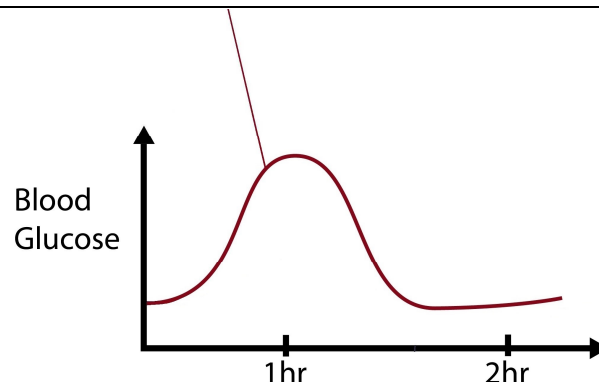
BETTER carbohydrate choices	
Bread	Wholegrain, granary, multiseed, stoneground (e.g. McCambridge®), rye, "Low GI" breads (<i>Aim less than 15g carbohydrate per slice</i>). Pita, chapatti or roti made from chickpea or whole-wheat flour.
Cereals	Jumbo porridge oats, All Bran® (sticks) or Shredded Wheat®.
Grains	Whole-wheat pasta, white pasta, egg noodles, basmati rice, brown rice, whole barley, quinoa, wholemeal couscous
Potato	Boiled new or baby potatoes (with skin). Sweet potatoes, yams, cassava.
Snacks	Rye crispbread with seeds (e.g. Ryvita®) and oatcakes. Popcorn (preferably unsalted).
Fruit	Good choices include: Apple, pear, peaches, plums, berries, fresh figs, kiwi and oranges (<i>Only 1 at a time and not at breakfast</i>).
Milk & Yoghurt	Plain, Greek, natural, "diet" and no added sugar flavoured yoghurts (<i>Aim less than 12g carbohydrate per serving</i>). Whole, low-fat and skimmed milks. Milk alternatives (soy, nut and oat milks) with <u>no added sugar</u> (<i>aim for 5g total carbohydrate per 100ml, or less</i>).





Highly **processed** carbohydrates (often “white” carbohydrates) often produce a faster, higher rise in your blood glucose levels. They also have lower nutritional value.

Try to limit or avoid these foods:

Carbohydrate choices to LIMIT	
Bread	White and wholemeal bread. White bagel and bread rolls White crackers, pastries, pizza, yorkshire pudding. White scones, cakes, biscuits.
Cereals	All other breakfast cereals including: quick-cook oats, muesli, Weetabix [®] , Shreddies [®] , Ready-Brek [®] , Coco-Pops [®] , Cornflakes [®] , Rice Krispies [®] , Branflakes [®] .
Grains	Easy-cook/ long grain rice or jasmine rice. Pot noodle.
Potato	Mashed potato, chips, potato croquettes, waffles.
Snacks	Crisps, corn snacks
Fruit	Tinned fruit in syrup, dried fruits, fruit juices and smoothies. Fruits with higher amounts of sugar: Bananas, grapes, mango, pineapple and melon.
Milk & Yoghurt	Yoghurts with added sugar or fruit compote. Yoghurt drinks (Yop [®] , Yazoo [®]). Flavoured milk and milkshakes. Milk alternatives (soy, nut and oat drinks) with added sugar.



Choose alternatives to high sugar foods:

	 Limit high sugar foods	 Choose low sugar foods	Notes
Sugar	Sugar (brown and white). Honey, syrups and treacle.	Artificial sweeteners (Canderel®, Nutrasweet®, Splenda®)	
Jams	Jams, marmalade, chocolate spread.	Fruit only or low-sugar jams (Folláin®, Kelkin®, St. Dalfour®).	<i>Not suitable at breakfast.</i>
Drinks	Full sugar fizzy drinks, hot chocolate.	Diet fizzy drinks, no-added sugar squash, water, tea, coffee.	<i>Max. 2-3 cups of tea or coffee per day.</i>
Sweets and desserts	Sweets, chocolates, biscuits, muffins, cakes. Desserts with added sugar. Sugar-coated breakfast cereals.	Sugar-free gum, mints and boiled sweets. No-added sugar jelly and desserts. Rich Tea, Goldgrain, Oat biscuits (Nairns™), Marietta.	<i>Limit biscuits to 1-2/day and at most twice per week.</i>
Soups & sauces	Ready-made sauces, meals and soups. Baked beans and tinned spaghetti (<i>often have high levels of sugar and salt</i>).	Home-made soups, sauces and curry (e.g. with tinned tomatoes or passata, garlic, ginger, herbs, spices). Reduced sugar baked beans.	

Read the ingredients label: Look for foods with no added: *sugar, glucose, maltose, dextrose, honey, syrup, fructose or fruit juice.*

Some **medications** for heartburn/reflux or constipation may also contain sugar. Speak with your pharmacist for advice on sugar-free options.

‘Diabetic’ foods like sweets, biscuits and cakes are **not recommended**. The sweeteners used in these foods may cause stomach cramps. They can also be expensive and high in calories and fat, which may lead to weight gain.

Step 3: Watch your carbohydrate portions

The foods listed below all contain similar amounts of carbohydrate (10-15g) in one serving (or “choice”). As a general guide, most women will need to eat:

- ✓ **1-2 carbohydrate “choices”** at breakfast (max 30g carbohydrate)
- ✓ **3-4 carbohydrate “choices”** at other main meals (45-60g carbohydrate)
- ✓ and **1 carbohydrate “choice”** at snacks (10-15g carbohydrate).

Food	Serving size
Starch (Contains 1 carbohydrate “choice” or 15g of carbohydrate)	
All Bran® (sticks)	30g
Shredded Wheat®	1 biscuit (22g)
Porridge (jumbo oats)	20g / ¼ cup/ 2 tbsp (oats)
Bread	
Bread (e.g. wholegrain, stoneground or low GI)	1 medium slice (30-35g)
Pitta bread (wholemeal)	1 small (30g) or ½ large (60g)
Tortilla wrap or chapati	½ of 8” wrap (full weight 60g)
Seeded rye crisp breads (e.g. Ryvita)	2 crackers
Wholegrain/seeded oat crackers	3 crackers
Potatoes	
New or baby potato (boiled)	100g or 3 baby potatoes
Sweet potato	75g (boiled) or 50g (baked)
Potato wedges (homemade)	50g (cooked)
Yam (1 slice) or plantain (unripe)	45g (boiled)
Cassava	50g (raw)
Pasta, rice and noodles	
Pasta, rice (brown /basmati) or egg noodles	50g (cooked) or 20g (uncooked)
Couscous (semolina)	70g (cooked) or 20g (uncooked)
Tapioca flour	1 heaped tblsp (15g)
Fruit (Contains 1 carbohydrate “choice” or 15g of carbohydrate)	
Apple, orange or pear	1 medium fruit
Kiwi, mandarin or plum	2 small fruit
Berries	1 cup/ handful
Milk and Yoghurt (Contains 1 carbohydrate “choice” or 10g of carbohydrate)	
Yoghurt	125g pot
Cow’s milk	200ml glass

Milk alternatives (e.g. soy, nut, oat drinks) with no added sugar contain varying amounts of carbohydrate. Aim for 5g total carbohydrate per 100ml, or less.

Carbohydrate-free foods

The following foods contain little or no carbohydrate and do not cause blood glucose levels to rise. Bulking up meals and snacks with these foods will help to satisfy your appetite.

Vegetables:

- Aubergine
- Asparagus
- Avocado
- Bean sprouts
- Bok choy
- Broccoli
- Brussels sprouts
- Cabbage
- Carrots
- Cauliflower
- Celery
- Courgette
- Cucumber
- Salad greens
- Mushrooms
- Olives
- Onions
- Peppers
- Radish
- Sugar snap peas
- Tomatoes

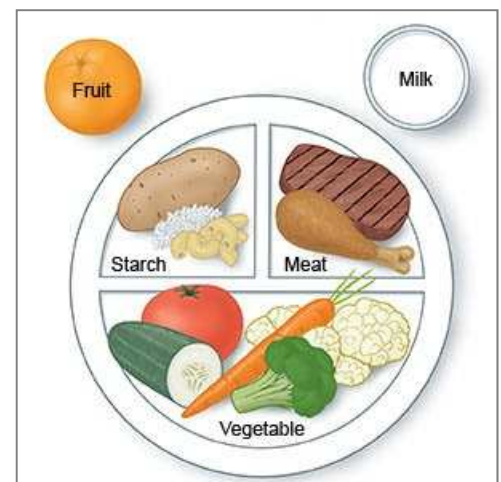
Some vegetables contain carbohydrate (e.g. peas, beans and sweetcorn), but this is broken down very slowly into glucose. If you plan on eating more than ½ cup (125g) of these foods at one time, you should count this as 1 carbohydrate “choice”.

Protein foods:

- Meat, fish, chicken (lean cuts with no breadcrumb/batter)
- Eggs
- Cheese
- Nuts, nut-butters (sugar-free) and seeds
- Tofu

Fats and oils:

- Butter
- Vegetable spreads
- Vegetable and olive oils



GDM checklist for healthy eating

Healthy eating for GDM means getting enough nourishment from a variety of foods to help baby's growth and development.



1. Eat **regular meals** with the **right amount** and **type** of **carbohydrate** to provide you and your baby with **energy**.



2. Include **protein** (meat, fish, chicken, eggs, cheese, legumes e.g. beans, lentils) at **all meals** and **snacks** to support a healthy pregnancy and help manage blood glucose levels.



3. Eat **2-3 fruit** (1 at a time) and plenty of **vegetables** each day for **vitamins** and **fibre**.

✓ Base your meals on vegetables/salad and eat a range of colours to get a variety of nutrients.



4. Eat **3-5 servings** of **dairy** or **milk alternatives** (unsweetened) each day for **protein** and **calcium**.

✓ Choose low-fat options and avoid any soft, mold-ripened or un-pasteurised cheeses.



5. Eat **healthy fats** (nuts, seeds, avocado and plant oils).

✓ Avoid fast food, processed meats, cakes and biscuits.

✓ Eat oily fish (salmon, trout, mackerel, sardines) 1-2 per week or take a fish oil supplement (*not cod liver oil*) for **omega-3** to support baby's brain development.

✓ Omega-3 is also found in Soya, walnut & rapeseeds.



6. Get enough **vitamin D** (eggs, salmon, mackerel, sardine and fortified milks) to help your body absorb calcium.

✓ You should also take a **daily vitamin D supplement** of 5-10 µg. Pregnancy multivitamins contain 10 µg (*not cod liver oil*).

Putting it all together: Your sample meal plan

Use the **sample meal-plan** below and the list of **carbohydrate “choices”** on **page 8** to help plan your meals.

Meals should be adjusted to suit your individual needs. Talk to your dietitian about a plan that is right for you.

Breakfast: (1-2 carbohydrate choices)

- ✓ 1 Shredded Wheat[®] /30-40g All-Bran[®] sticks
+ 150-200ml milk
- or 40g porridge (jumbo oats) (made on water) + boiled egg
- or 30g porridge (jumbo oats) made with 200ml milk
- or 1 slice wholegrain toast + 1 pot diet yoghurt (see list on pg. 5)
- or 2 slices wholegrain toast + egg/cheese, avocado and tomato
- or 1 slice wholegrain toast + ½ can baked beans (low sugar)

Hormones can make managing blood glucose levels at breakfast harder than after other meal. Eating a small meal at this time can help.

Morning snack: (1 carbohydrate choice)

- ✓ 2 Ryvita[®] crackers + 30g light cheese
- or 1 pot of yoghurt (see list on pg. 5) with 3 spoons of berries.
- or 200ml milk (small glass)
- or 1 piece of fruit + small handful of nuts or nut butter (no sugar)
- or 1 slice of bread + turkey/chicken/cheese + salad.
- or popcorn (15g bag) + handful of nuts.

Lunch: (3-4 carbohydrate choices)

- ✓ 2-3 wholegrain bread or 1-1½ wrap or 100-150g cooked rice/pasta or 200-300g boiled potatoes
- ✓ **and** meat or fish or chicken or eggs or cheese or beans
- ✓ **and** vegetables or salad or homemade soup
- ✓ **and** 1 fruit/1 milk/1 yoghurt (see list on pg. 5)

Afternoon snack: (1 carbohydrate choice)- See morning snack ideas

Dinner: (3-4 carbohydrate choices)

- ✓ 2-3 wholegrain bread or 1-1½ wrap or 100-150g cooked rice/pasta or 200-300g boiled potatoes
- ✓ **and** meat or fish or chicken or eggs or cheese or beans
- ✓ **and** vegetables or salad or homemade soup
- ✓ **and** 1 fruit/1 milk/1 yoghurt (see list on pg. 5)

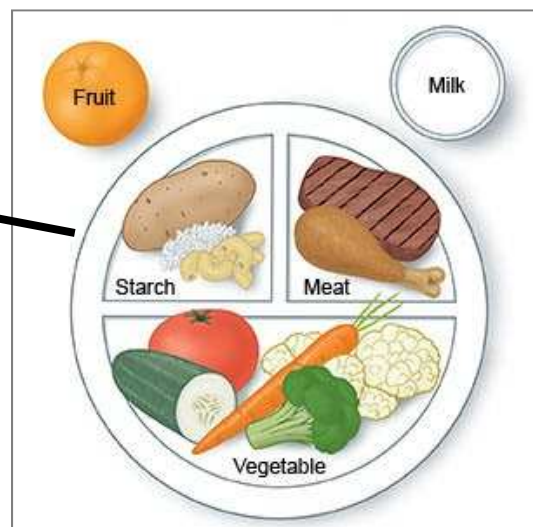
Supper: (1 carbohydrate choice and protein)

- ✓ 1 slice of bread/ 2 Ryvita®/ 3 oat crackers
+ cheese/ egg/ peanut butter

You should not go hungry. If you feel hungry or notice any weight loss, ask to speak with your dietitian to make sure you are getting enough nourishment.



**1 fist-size portion
= 2 carbohydrate
choices**



Weight gain for pregnancy

Gaining too much weight while pregnant can affect your pregnancy, labour and your baby's future health. The amount of weight you need to gain from the 2nd trimester onwards depends on your BMI (Body Mass Index) at the start of pregnancy.

BMI under 25: Expect to gain about **0.4 - 0.5kg each week**

BMI over 25: Expect to gain about **0.2kg each week**

It is important to check your weight when following this plan. If you feel you may be gaining too much or too little weight, ask to speak with your dietitian for some extra guidance. Losing weight at any stage **during pregnancy** is not recommended. **The best time to lose weight is before or after pregnancy.**

Physical activity and gestational diabetes

Regular physical activity is an important part of a healthy pregnancy and helps lower your blood glucose levels. Walking, swimming, pilates, yoga, antenatal and gentle exercise classes are all good options. If you are unable to do any of these activities, regular upper-arm exercises can be effective in reducing blood glucose levels.

Aim to build up to at least **30 minutes of suitable exercise** most days of the week. This can be broken into 2 x 15mins or 3 x 10mins during the day. For example, including a 10-15 minute walk after meals can be beneficial in keeping blood glucose levels within target.

It is very important that you do not overdo it, especially if you are not used to regular exercise. Always get your doctor's advice before starting a new activity, especially if you have any health problems, pains or discomfort.

Monitor your progress: food and activity diary

You may find it useful to keep a food and activity diary to track your progress, especially in the first few weeks.

Each day, write down your meals, snacks and activity you have done. Note the positive changes you have made and anywhere there might still be room for improvement. Feel free to bring this diary with you to your diabetes clinic visits and discuss with your dietitian.



What happens after your baby is born?

Women who develop GDM during pregnancy are at higher risk of developing **type 2 diabetes** in the future. It is important to **attend your GP every year to test for diabetes**.

To help delay or even prevent the development of type 2 diabetes you should also continue to eat a healthy diet, take daily physical activity and lose some weight if you are overweight. Ask your GP to refer you to a dietitian if you would like extra support managing your weight. You may be able to attend a dietitian in the community or book onto a free weight management course.

Breastfeeding is encouraged for all women with gestational diabetes. It can protect you and your baby against developing diabetes, obesity and other illnesses later in life. It is also the healthiest way to feed your baby.

Developed by the Diabetes Dietitians and Diabetes Midwives at The Rotunda Hospital, in collaboration with dietetic colleagues at The National Maternity Hospital, The Coombe Women and Infants University Hospital and Cork University Maternity Hospital.

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