

Healthy Eating for Gestational Diabetes



the women's
the royal women's hospital

What is Gestational Diabetes?

Gestational diabetes is a type of diabetes that occurs during pregnancy, and usually goes away after the baby is born. It is a condition where the level of glucose (a type of sugar) in the blood is too high, and occurs due to hormonal changes during pregnancy.

Gestational diabetes can be managed with a healthy diet, physical activity, monitoring of blood glucose levels and, if required, medication such as insulin.



Keeping your blood glucose at a healthy level

Everyone needs some glucose in their blood because it provides the brain and muscles with energy. But constantly high levels of glucose during pregnancy can cause complications, such as your baby growing too large. Therefore it is important to know how to maintain blood glucose levels within a healthy range.

How does food affect your blood glucose levels?

Glucose comes from **carbohydrate** foods after they are broken down during digestion and absorbed into the blood.

Carbohydrate is important:

Carbohydrate foods are an important part of a healthy, balanced diet. However, it is important to choose the right **amount** as well as the right **type** of foods containing carbohydrate, to maintain your blood glucose levels in the normal range.

Which carbohydrate foods should you choose?

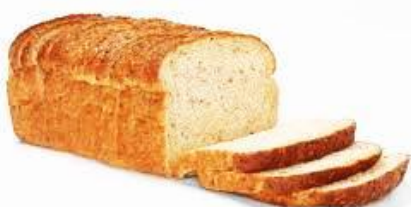
The following foods contain carbohydrate as well as other nutrients such as vitamins, minerals and fibre. They should be eaten at each meal. Your Dietitian can help you to choose the right amount for you.

A guide to how much carbohydrate food you need is on page 5.

Sample meal ideas are on page 6.

Choose from:

Wholegrain or sourdough breads, chapatti, roti, wraps, injera, grain-based crispbread



High fibre breakfast cereals, including oats



Rice, pasta, noodles



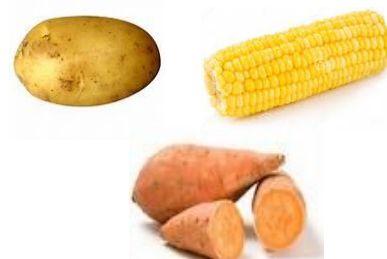
Grains, eg. barley, quinoa, burghul, semolina



Legumes, eg. lentils, chick peas, baked beans, kidney beans



Starchy vegetables, eg. potato, sweet potato, corn



Fruit, including fresh, dried and tinned



Milk, yoghurt (dairy or soy)



Which carbohydrate foods should be limited or avoided?

- ↓ Lollies, sweets
- ↓ Regular cordial, juice, soft drink
- ↓ Regular jelly
- ↓ Honey, jam, syrups (eg. Maple, Golden syrup)
- ↓ Biscuits, cakes, slice
- ↓ Pastries: sweet or savoury
- ↓ Ice cream
- ↓ Chocolate
- ↓ Chips / crisps
- ↓ Savoury biscuits, eg Shapes, Ritz
- ↓ Takeaway foods (eg hamburger, pizza)



What about sugar?

Small amounts of sugar do not greatly affect blood glucose levels.

For example, 1 teaspoon of sugar in a hot drink, or the amount found in a nutritious food such as plain or fruit-flavoured yoghurt.

However, larger amounts of sugar will have a more significant effect on blood glucose levels and you may need to consider using an artificial sweetener.



What about alternative sweeteners?

Alternative sweeteners such as Stevia, Splenda, Equal and Nutrasweet are all considered safe for use in pregnancy.

Foods and drinks containing little or no carbohydrate:

Eat freely:

✓ **Non-starchy vegetables:**

For example: broccoli, cauliflower, eggplant, cabbage, spinach, green beans, okra, peas, salad vegetables, bok choy, choy sum, zucchini, Brussels sprouts, asparagus, mushrooms.



✓ **Lower carbohydrate fruits:**

Berries, lemons, limes, passionfruit



✓ **Herbs, spices, garlic, chilli, ginger, some condiments (eg. mustard, vinegar)**



✓ **Water, mineral / soda water, diet drinks, herbal tea**

Eat in moderation:

Choose from these foods at each meal (and at snacks if you are hungry). These foods have important nutrients and will help keep you full. They have *little* or *no* carbohydrate, and may slow down the effect of carbohydrate foods on your blood glucose.



- ✓ Meat, chicken, fish
- ✓ Tofu, soya chunks
- ✓ Eggs
- ✓ Cheese
- ✓ Avocado, olives
- ✓ Nuts, seeds
- ✓ Nut butters



What should you eat at main meals?

- ✓ Aim to eat 3 main meals per day: breakfast, lunch, dinner
- ✓ Include the following at each main meal:

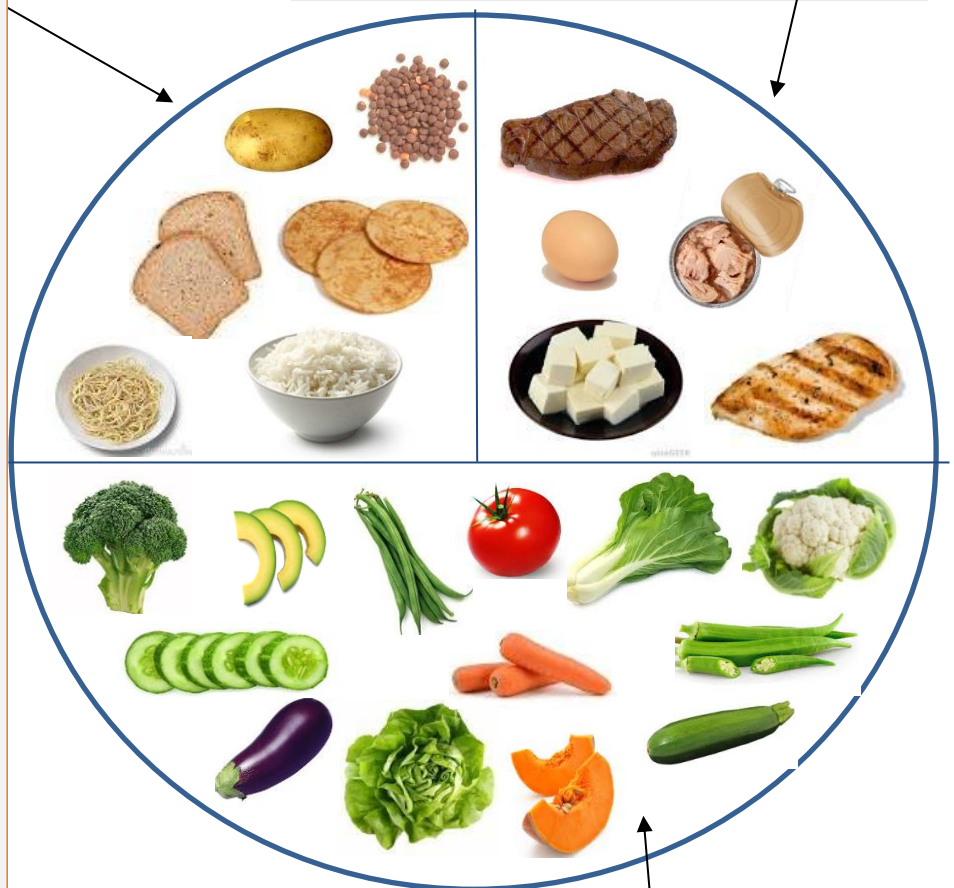
Carbohydrate food amounts (as a guide):

Choose from the following:

- * 1 cup cooked rice (try Clever Rice low GI / basmati)
- * 1 cup cooked pasta (try high fibre / pulse)
- * 2-3 thin slices of bread (grain / sourdough)
- * 2-3 hand-sized chapatti / roti
- * 1 larger roti (dinner plate size)
- * 1 wholemeal Lebanese bread (dinner plate size)
- * ½ large injera **OR** 1 small injera
- * 1 ½ cups cooked legumes
- * 1 cup cooked lentils + ½ cup basmati rice
- * 1 cup cooked lentils + 1 small chapatti
- * 1 cup cooked lentils + ½ Lebanese bread
- * 1 cup chickpeas + ½ cup basmati rice
- * 1 cup cooked rice noodles
- * 1 cup cooked quinoa or burghul
- * ¾ cup cooked polenta, semolina or cous cous
- * 1 large potato (~250g)
- * 1 ½ cups cooked sweet potato (~ 250g)

Protein food: lean meat, skinless chicken, fish (inc tinned), tofu, egg, soy products, reduced fat cheese, legumes (NB: also contains carbohydrate)

Choose the amount that keeps you full for 2 hours.



Unlimited amount of **non-starchy vegetables** or **salad**.

- ✓ Use fresh or frozen vegetables
- ✓ Add salad to sandwiches or on grainy crackers
- ✓ Include vegetables at breakfast: eg, tomato, spinach, mushrooms
- ✓ Add vegetables to pasta sauces, curries, stir-fries, casseroles
- ✓ Grate carrot or zucchini into cake mix
- ✓ Make a smoothie with washed baby spinach, milk and frozen berries
- ✓ Wash salad vegetables well

Suggested Meal Plan: Breakfast Ideas

2/3 cup muesli **or**
1 cup Low GI flake
cereal (see list)

+ ½ cup of
reduced fat milk

OR

Porridge made from:
½ cup oats (trad/steel-cut)
+ ½-1 cup reduced fat milk

OR

2-3 slices of grain bread + marg
+ reduced fat cheese **or** cooked
egg **or** vegemite **or** peanut
butter **or** avocado **or** tinned fish

OR

Any of the
Lunch and
Dinner
options
listed below.

Suggested Meal Plan: Lunch and Dinner Ideas

1 cup cooked basmati rice

+ meat/chicken/fish/soya
chunks curry

+ steamed/curried non-starchy
vegetables



OR

2-3 small chapatti

+ meat or chicken curry

+ steamed/curried non-starchy
vegetables



OR

½ cup basmati rice

+ 1 cup dhal or chickpea curry

+ steamed /curried non-starchy
vegetables



7 wontons (meat or fish or
chicken) in broth

+ non-starchy vegetables



OR

1 cup cooked rice / noodles

+ meat / chicken/ fish/ tofu

+ non-starchy vegetables



OR

1 wholemeal Lebanese bread

+ cooked meat/chicken/fish

+ salad or non-starchy
vegetables



1 medium corn cob and 1 small
potato

+ cooked meat or chicken or fish
or egg

+ steamed non-starchy
vegetables

OR

OR

1-2 slices of grain-bread

+ 2 cups of vegetable & legume
soup

1 cup cooked spaghetti

+ Bolognese meat sauce

+ salad **or** steamed non-
starchy vegetables



OR

2 slices grain bread
or 1 grain roll

+ lean meat or chicken or tinned
fish or cooked egg

+ salad

+ 1 piece of fruit



What should you eat between meals? Choose 1 -2 of the following if you are hungry

1 medium piece of fruit, eg. apple, pear	2 smaller pieces of fruit, eg. kiwi fruit, mandarins
Small tub yoghurt (~200g) <i>*look for less than 10g sugar/100g on the label</i>	1 wholegrain muesli bar (eg. Carman's or Freedom Foods) <i>*look for less than 15g sugar/100g on the label</i>
1 slice of grain-bread + avocado or a boiled egg	1 cup of milk (plain, or as a milky coffee or add 1 tsp Milo)
¼ - ½ cup of mixed nuts	4 grain crackers (eg Vitaweat) + cheese & tomato
2-3 small dates (fresh or dried)	1 slice raisin toast + cream cheese / cottage cheese
1 cup roasted chick peas (eg The Happy Snack Co)	Vegetable sticks (eg. carrot, celery, snow peas) + dip

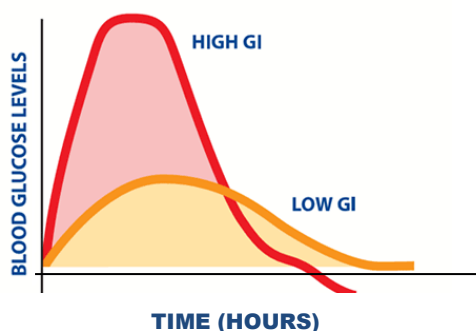
What is the Glycemic Index? (GI)

Glycaemic Index is a measure of how quickly or slowly a carbohydrate food digests and increases blood glucose levels.

Foods with a *low glycaemic index (GI)* tend to be digested and absorbed *slowly*, causing a *gradual rise* in blood glucose levels. Ideally, low GI foods should be eaten at each meal as they help to maintain even blood glucose levels.

Limit foods with a *high glycaemic index* as they tend to be digested and absorbed more *quickly*, and are more likely to cause high blood glucose levels.

Some low GI foods are listed in this document, but please also refer to the separate GI information sheet.



What fruit can I eat?

The Australian Dietary Guidelines recommend that pregnant women have 2 serves of fruit per day.

Some fruits will raise your blood glucose levels more than other types. However, fruit is a healthy food you can eat every day, because of the fibre, vitamins and antioxidants. Most fruits have a low or moderate GI.

1 serve of fruit = roughly what fits in your hand.

For example:

- 1 medium-sized fruit, such as apple, pear, orange, or peach **OR**
- 2 small fruits, such as kiwi, mandarins or plums; **OR**
- 1 handful of grapes or cherries; **OR**
- 1 medium banana; **OR**
- ½ mango **OR**
- 1 cup of cut-up pieces, eg. melons or fruit salad
- 1 tablespoon dried fruit, eg sultanas



Should I eat a supper / pre-bed snack to help my fasting blood glucose levels stay in the healthy range (less than 5mmol/L)?

For some women, eating a small, healthy snack before bed can help their blood glucose levels (BGLs) stay under 5mmol/L when tested the next morning.

If your BGL before breakfast is over 5mmol/L, try to eat supper. It may work, but it may not!

So what should I eat for a healthy supper before bed?

Any of the snacks listed on page 7 are suitable (choose 1 – 2 of these). However, some women find that eating a snack that contains both protein and carbohydrate works best. For example:

*1 cup of milk or buttermilk	*1 small tub or bowl of plain or fruit-flavoured yoghurt	*1-2 slices of cheese with 2-4 grainy crackers
*1 hard-boiled egg with 1 slice of grainy toast	*1 small handful of nuts + 1 small piece of fruit	*½ cup cooked chickpeas with spices

If you are not usually hungry before bed or overnight, and your BGLs are under 5mmol/L before breakfast, you may not need supper.



I want to eat out. What should I choose?

Many food outlets add a lot of oil, fats, sugar and salt to increase flavour. Regularly eating out may give you higher blood glucose levels and lead to excess weight gain. Choose a hot meal rather than salad or sushi to reduce your risk of listeria infection. For example:

*Stir-fried meat / chicken / tofu with vegetables and 1 cup rice noodles (size of 1 large fist) in soy/oyster sauce	*Pho with plenty of vegetables, meat/ chicken/ tofu, plus 1 cup noodles (1 large fist)
*Roast meat with a variety of cooked vegetables and a spoon of gravy (if desired)	*2 hand-sized slices of pizza – ask for extra vegetables on top
*Toasted sandwich (ask for grainy bread) with cheese & tomato	*Curry of meat/ chicken/vegies (try a 'dry' curry, or lift the meat & vegetables out of creamy sauce) with 1 cup basmati rice (1 large fist)
*Pasta (1 cup) with tomato-based sauce including meat / chicken / vegetables	

How do I find out the carbohydrate content of foods not listed on page 5?

Suitable websites and phone apps:

- www.calorieking.com.au

- Calorie King app (iphone)

- Easy Diet Diary app (iphone and Android)

Speak with your dietitian for more information about carbohydrate amounts.

Websites for meal ideas & recipes:

www.gisymbol.com

www.glnc.org.au

www.nomoneynotime.com.au



Glycaemic Index

The glycaemic index, also known as 'GI', ranks carbohydrate foods based on their effects on blood glucose levels.

Slowing down the rate of digestion and absorption of carbohydrate may help keep your blood glucose levels in target. Ways to do this include:

- Choosing a lower GI food at each meal and snack
- Choosing foods with a lower glycaemic 'load' (lower carbohydrate content)
- Including foods that have protein and / or healthy fats at each meal and snack, such as egg, nuts, avocado, peanut butter, tahini, lean meat, skinless chicken, fish, tofu
- Adding acid via vinegar or lemon juice, or eating fermented foods such as sauerkraut or kimchi

For more information and recipe ideas, go to www.gisymbol.com

LOWER GI (Choose 1 each meal)	HIGHER GI (Limit these)
BREADS	
<p><u>Grainy varieties</u> Multigrain/wholegrain breads (any brand) Burgen breads (any type) Bakers Life 85% Lower Carb bread (Aldi) Macro Linseed & Sunflower Low Carb loaf (Woolworths)</p> <p><u>White varieties</u> Bakers Delight Hi Fibre Low GI Wonder Active High Fibre Low GI + Protein Country Life Gluten-free Low GI White Sourdough (authentic / made using fermented starter)</p> <p><u>Flat breads, wraps</u> Chapatti/roti (<i>atta: multigrain, besan, barley, bajra</i>) Multigrain wraps Simson's Pantry Low Carb wraps Mission Foods Low GI or Low Carb wraps Mission Foods White Corn tortilla Wholemeal pita bread Injera (made using fermented starter)</p>	<p><u>White and brown varieties</u> White bread Wholemeal bread Naan Lebanese bread Turkish bread English muffin Bagel Baguette Ciabatta</p>

BREAKFAST CEREALS

Rolled oats Muesli Sanitarium Weet-Bix Uncle Toby's Vita Brits Kellogg's Sultana Bran Kellogg's All Bran Wheat Flakes Kellogg's Guardian Kellogg's Special K (<i>original</i>) Kellogg's All Bran varieties	Instant oats Corn Flakes Kellogg's Crunchy Nut Corn Flakes Kellogg's Coco Pops Kellogg's Rice Bubbles Puffed Wheat Rice porridge Shredded Wheat
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LOWER GI		HIGHER GI	
RICE / PASTA / GRAINS			
<u>Rices</u> Basmati rice Wild rice Red rice SunRice Low GI Clever Rice SunRice Low GI brown rice SunRice long-grain rice Coles brown rice & chia seeds Coles Mexican style rice Uncle Ben’s instant rices <u>Pasta</u> All regular wheat types (try pulse pasta or high fibre, eg Vetta High Fibre, San Remo Pulse Pasta)	<u>Noodles</u> Rice noodles Soba noodles Mung bean noodles Udon noodles Rice vermicelli Slendier konjac noodles <u>Grains</u> Couscous Quinoa Semolina Barley Burghul / Bulgur Buckwheat Coles 7 Ancient grains	<u>Rices</u> Jasmine rice Brown rice Medium grain Sona Masuri rice Ponni rice Surti Kolam rice Sushi rice Arborio rice Sungold parboiled rice Broken rice Glutinous rice	<u>Pasta</u> Rice pasta Corn pasta <u>Grains/Cereals</u> Tapioca Millet Polenta

STARCHY VEGETABLES

<u>Legumes</u> Chickpeas, lentils, kidney beans, baked beans, red beans,	<u>Other</u> Corn (<i>on cob, kernels</i>) Sweet potato (<i>orange</i>) Nicola potato	White Potato Instant potato Sweet potato (<i>purple skin</i>)
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FRUIT

Apple Apricot Grapefruit Mango Nectarine Paw paw Pineapple Peach Pear Raisins / sultanas / dates	Banana Berries Cherries Grapes Kiwi fruit Orange Plum Prunes Rockmelon	Watermelon (see below) **May need to limit your serve rather than avoid completely; try 2 x hand-sized slices, or 1 cup of cut-up pieces **
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DAIRY PRODUCTS

Milk (<i>dairy, soy, oat, almond</i>) Yoghurt	Rice milk
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CRACKERS/ BISCUITS/ BARS/ SNACKS

Carmen's muesli bars Vitaweat crisp-breads Ryvita crisp-breads Be Natural nut bars Freedom Foods breakfast bars Arnott's Shredded Wheatmeal	Pretzels Arnott's Milk Arrowroot Rice cakes Rice crackers Corn Thins Water crackers
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Low GI carbohydrate foods



Rice

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Pasta & Couscous



Bread & wraps



Woolworths and Coles Bakery Low GI
white or multigrain loaves and rolls

Bakers Delight Low GI
white loaves and rolls



Milk & yoghurt: dairy or soy based (any brand)



For more Australian low GI products go to:
www.gisymbol.com/low-gi-products

Legumes: all types (any brand; tinned or dry)



Grains



quinoa



barley



oats



burghul / bulgur / cracked wheat

Fruit: all types (apart from watermelon*)



***Watermelon has a high GI but is still nutritious and hydrating.**

Limit your serve of watermelon to:

1 cup of cut-up pieces **OR** 2 hand-sized slices

Vegetables *



*** Apart from potato, sweet potato/yam and corn, vegetables are low in carbohydrate – this means they don't have a glycaemic index (GI)**

Healthy snack ideas

Choose 1 or 2 of these if you are hungry between meals



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- 1 serve of fruit =**
- * 1 medium piece of fruit (eg apple, orange, banana, peach)
 - * 2 small pieces of fruit (eg kiwi, mandarin, plum)
 - * 1 cup of grapes or berries or cut-up pieces (eg melon)
 - * 1 large date (eg Medjool)



1 serve of vegetables or legumes =

- * Unlimited amount of raw vegetable sticks + 2 tablespoons tzatziki or avocado dip
- * 1 small corn cob
- * 1 cup or 1 packet roasted chick peas or faba beans
- * pickles and/or pickled onions
- * 1 small tin or ½ cup legumes (eg baked beans, edamame)



1 serve of dairy (reduced fat or regular) =

- * 1 cup milk – plain, or add a teaspoon of Milo / Ovaltine, or in a milky coffee
- * 1 cup milk blended with 1 serve of fruit to make a smoothie
- * ¾ cup or 1 tub (150g – 200g) yoghurt (on the label look for less than 10g sugar in the 'per 100g' column)
- * 40g or 2 slices of cheese or single pre-packaged portion of cheese (eg Babybel)





1 boiled egg



¼ cup mixed nuts & seeds



1 small tin (~100g) fish



3 - 4 wholegrain crispbreads + tomato / cheese/ egg / tinned fish / avocado / vegemite / peanut butter



2 cups microwaved or air-popped popcorn

1 - 2 slices of wholegrain bread + tomato / cheese/ egg/ tinned fish / avocado
OR: 1 – 2 slices of raisin bread + cream cheese / peanut butter



1 muesli bar

On the label, look for less than 15g sugar in the 'per 100g' column

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DAILY FOOD AND ACTIVITY RECORD

Day / Date:							
Breakfast							
Mid-Morning							
Lunch							
Mid-Afternoon							
Dinner							
Evening							
Exercise							
Notes							

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