

HEALTHY EATING FOR GESTATIONAL DIABETES

What is gestational diabetes?

Gestational diabetes occurs in pregnancy due to changes in your hormone levels. These changes can make the level of glucose (a type of sugar) in the blood too high. A higher than normal level of glucose in the blood while you are pregnant can cause problems for the baby, such as growing too large, early birth, distress during birth and low blood glucose levels after birth.

Why is your diet important in gestational diabetes?

Following a healthy eating plan will assist you to:

1. Provide adequate nutrition for you and your growing baby
2. Manage weight gain during your pregnancy
3. Manage your blood glucose levels.

1. Adequate nutrition for you and your baby

It is important to eat a variety of healthy foods to meet your and your baby's nutritional needs. The recommendations for women with gestational diabetes are similar to those for all pregnant women, with some additional guidelines.

General pregnancy recommendations

Food groups	Daily serves recommended in pregnancy	Examples of one serve
Fruit	2	1 medium apple, orange 1 cup diced/canned fruit 2 small apricots, plums or only occasionally: 1½ tablespoons sultanas ½ cup fruit juice
Vegetables	5	½ cup cooked or 1 cup raw/salad vegetables
Wholegrain breads and cereals	8½	1 slice bread ½ medium roll ¼ cup muesli ½ cup cooked porridge ⅔ cup cereal flakes ½ cup cooked rice, pasta, noodles, quinoa, barley
Milk, yoghurt, cheese and alternatives	2½	1 cup milk or alternatives (for example soy milk) with at least 100mg calcium per 100ml 2 slices cheese 200g plain yoghurt
Lean meat or alternatives	3½	65g cooked meat 80g cooked chicken 100g cooked fish 2 large eggs 170g tofu 30g nuts, seeds 1 cup cooked legumes/beans such as lentils and chickpeas

Avoid: high risk listeria foods, alcohol, raw/under-cooked eggs, meat or poultry, tahini or hummus

Limit: high mercury fish, caffeine, unhealthy fats such as fatty meats and fried foods, added sugars and salt. Refer to [MHVL Healthy eating in pregnancy](#) for more information.

2. Managing weight gain in pregnancy:

Gaining too much weight can make it harder to manage your blood glucose levels and increase your risk of having a bigger baby. Gaining too little weight can increase your risk of having a smaller baby and needing to deliver your baby early.

The amount of recommended weight gain in your pregnancy depends on your pre-pregnancy weight and body mass index (BMI).

To work out your pre-pregnancy BMI:

$\text{BMI} = \text{pre-pregnancy weight (kg)} \div (\text{height (m)} \times \text{height (m)}) = \text{kg/m}^2$

For example, weight = 60kg height = 1.6m (160cm)

$\text{BMI} = 60 \div (1.6 \times 1.6) = 23.4 \text{kg/m}^2$.

You may also like to use a BMI calculator available on NSW Health website

<https://www.health.nsw.gov.au/heal/Pages/bmi.aspx>

Recommended weight gain in pregnancy

If your pre-pregnancy BMI was:	Weight gain guide (single pregnancy)	Weight gain guide (twin pregnancy)
less than 18.5kg/m ²	12.5 – 18kg	Speak to your dietitian/doctor
18.5 – 24.9kg/m ²	11.5 – 16kg	17 – 25kg
25 – 29.9kg/m ²	7 – 11.5kg	14 – 23kg
more than 29.9kg/m ²	5 – 9kg	11 – 19kg

3. Managing blood glucose levels

The following recommendations are guidelines to help manage your blood glucose levels.

There are two key factors to consider when managing your diabetes with diet:

- Type of carbohydrate.
- Amount of carbohydrate.

**You should not avoid carbohydrates to manage your blood glucose levels.
Your carbohydrate needs are actually greater during your pregnancy.
Choosing the right types and amounts is what matters most.**

What are carbohydrates?

Carbohydrates are:

- starches and naturally occurring sugars found in foods
- broken down to glucose during digestion
- found in a variety of healthy foods and provide the body with fuel (energy), fibre, vitamins and minerals. It is important to include these foods in your diet.

Food group	Carbohydrate containing foods	Little or no carbohydrates
Wholegrain breads and cereals	Bread, pasta, rice, noodles, breakfast cereals, other grains such as semolina, couscous	
Fruit	All fruit, including dried fruit and juices	Avocado
Milk, yoghurt, cheese and alternatives *choose mostly low fat	Dairy, soy, oat, sweetened almond milks Yoghurt	Cheese, including vegan options Unsweetened almond milk
Vegetables	Potato, sweet potato, pumpkin, corn, peas, legumes (beans and chickpeas) and lentils	All other cooked and salad vegetables
Lean meats or alternatives	Legumes and lentils	Meat, chicken, fish, eggs, tofu, nuts and seeds

Sugar

Carbohydrate foods that don't contain much nutrition include sugar (sucrose), soft drinks, cordials, lollies, cakes, biscuits and chocolate. It is best to limit these foods to avoid high blood glucose levels and for your general health.

Small amounts of sugar (any type: white, brown, jaggery) or honey, for example one teaspoon in a hot drink, should not increase blood glucose levels much.

Intense or artificial sweeteners

Intense or artificial sweeteners are many times sweeter than sugar which means they can be used in much smaller amounts. They contain either no or little carbohydrate. The ones available in Australia have been thoroughly tested and approved by Food Standards Australia New Zealand (FSANZ). They are considered safe alternatives to sugar during pregnancy.

Sweeteners include Aspartame (Equal) (951), Sucralose (Splenda) (955) and Stevia (960) and are found in artificially sweetened products such as diet/zero soft drinks.

What about fats?

While fats do not affect your blood glucose level in the same way as carbohydrates, it is recommended to eat healthier fats such as oily fish, olive oil, nuts, seeds and avocados.

What type of carbohydrate foods should I eat?

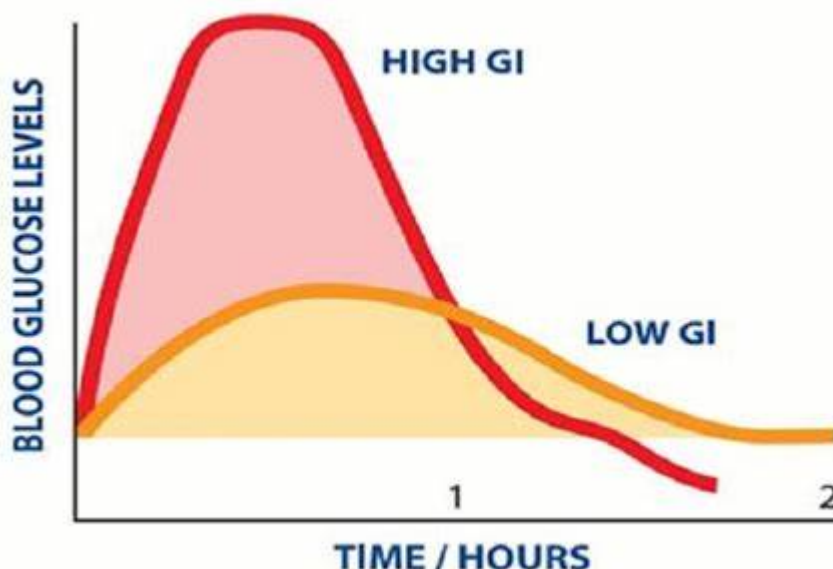
The Glycaemic Index (GI) is a measure of how quickly or slowly a carbohydrate food digests and increases blood glucose levels.

Foods are tested and ranked on a GI scale of 0 – 100.

A lower GI carbohydrate food will increase your blood glucose level more slowly.

A higher GI carbohydrate food will increase your blood glucose level more quickly.

The graph below shows how a high and low GI food affects your blood sugar level over a two hour period.



Lower GI carbohydrates are the preferred choice for managing your diabetes and can help to avoid the need to use insulin.

Use the table on the next page for a summary of lower GI and higher GI choices. If you often choose higher GI foods, try swapping them for options in the lower GI column.

Refer to the [Supermarket Shopping Guide](http://www.baker.edu.au/health-hub/fact-sheets/shopping-guide) for brand names of recommended products.
(www.baker.edu.au/health-hub/fact-sheets/shopping-guide)

Note: This guide is not specific to pregnancy; please continue to follow standard food safety recommendations for pregnancy.

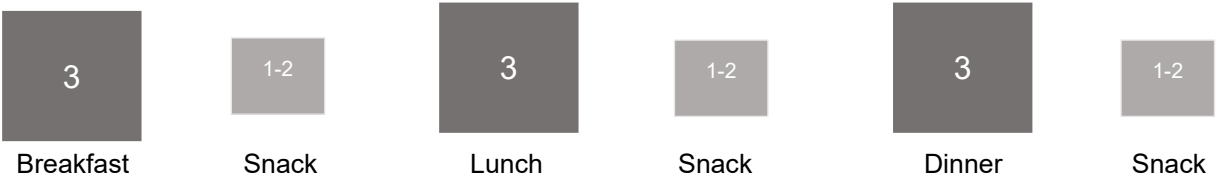
Glycaemic Index of Carbohydrate foods

Food category	Lower GI	Higher GI
Bread	<ul style="list-style-type: none"> ✓ Multigrain, sourdough, sourdough rye ✓ Pumpernickel ✓ Wholemeal pita/Lebanese bread ✓ Whole-wheat or wholegrain chapati ✓ Fruit and grain ✓ Low GI white bread ✓ Corn tortilla wraps 	<ul style="list-style-type: none"> * White, wholemeal * Bagels and Turkish * Crumpets * Dark and light rye * White Lebanese bread * Naan
Breakfast cereals	<ul style="list-style-type: none"> ✓ Untoasted muesli ✓ Rolled oats, steel cut oats (porridge) ✓ Wholegrain cereals ✓ Carman's Crispy Deluxe gluten free muesli ✓ Up & Go 	<ul style="list-style-type: none"> * Coco-Pops, Rice Bubbles, Froot Loops * Instant oats (porridge) * Rice porridge * Cornflakes, Puffed wheat
Rice	<ul style="list-style-type: none"> ✓ Long grain brown or white such as basmati, mahatma, doongara ✓ SunRice Low GI white and brown ✓ Wild, red or black rice 	<ul style="list-style-type: none"> * Jasmine brown or white * Medium grain brown or white
Pasta and noodles	<ul style="list-style-type: none"> ✓ Wheat pasta (white and wholemeal) ✓ All noodles 	<ul style="list-style-type: none"> * Potato gnocchi * Corn and rice pasta
Grains	<ul style="list-style-type: none"> ✓ Barley, Buckwheat ✓ Bulgur, Cracked wheat ✓ Freekah ✓ Quinoa, semolina, pearl couscous 	<ul style="list-style-type: none"> * Couscous * Polenta * Millet
Legumes and lentils	<ul style="list-style-type: none"> ✓ All dried and canned, such as kidney beans, chickpeas, brown lentils, baked beans 	
Starchy vegetables	<ul style="list-style-type: none"> ✓ Nicola, Carisma and baby Carisma potato ✓ Sweet potato (orange) ✓ Cassava, taro, yam ✓ Butternut pumpkin ✓ Corn, peas 	<ul style="list-style-type: none"> * White potato * Sweet potato (purple) * Pumpkin (varieties other than butternut)
Fruit	<ul style="list-style-type: none"> ✓ Apples, apricot, banana, berries ✓ Cherries, grapefruit, grapes ✓ Orange, kiwifruit, mandarin, mango ✓ Nectarines, peaches ✓ Pear, plums ✓ Passionfruit, pomegranate, guava 	<ul style="list-style-type: none"> * Rockmelon, watermelon * Lychee (canned) <p>Note: although fruit juice and dried fruit have a lower GI, consume only small amounts. Fresh fruit is preferable.</p>
Milk and yoghurt	<ul style="list-style-type: none"> ✓ Dairy milk and yoghurt ✓ Soy milk and yoghurt 	<ul style="list-style-type: none"> * Sweetened condensed milk * Oat and rice milk
Dry biscuits	<ul style="list-style-type: none"> ✓ Vita-Weat 9 grain ✓ Ryvita multigrain 	<ul style="list-style-type: none"> * Rice crackers and cakes * Puffed corn thins/crispbreads * Water crackers, Sao/pretzels
Extras	<ul style="list-style-type: none"> ✓ Uncle Toby's Breakfast Bakes ✓ Carman's Super Berry muesli bar ✓ Low fat ice cream and custard ✓ Milo/Ovaltine 	<ul style="list-style-type: none"> * Plain sweet biscuits * Cakes

What amount of carbohydrate should I eat?

You should eat carbohydrates at each meal and snack. Aim to eat three moderately sized meals and three small snacks each day. The amount of carbohydrates recommended below is needed to meet your daily requirements in pregnancy.

Always aim to eat three portions of carbohydrate (45g) at each main meal and one to two portions (15–30g) for snacks. The diagram below represents the spread of portions across the day. This is a total of approximately 180 – 225g carbohydrate per day.



See the next page for examples of carbohydrate portions. Not all foods listed are low GI; where possible eat low GI carbohydrates.

Using a metric measuring cup (250ml) to serve your carbohydrate foods can help you count your carbohydrate portions correctly. For example 1 cup cooked rice/pasta = 3 carbohydrate portions.

Carbohydrate food portions

	1 portion (approximately 15g carbohydrate)	
Breads	1 slice bread/fruit bread 1 small chapatti (15cm in diameter) ½ medium wrap ½ English muffin 2 tablespoons bread crumbs 1 small dinner roll	½ bread roll 1 mountain bread ⅔ small naan bread 1 round crumpet ⅓ large pita/Lebanese bread
Cereals	½ cup cereal 1½ Weet-Bix	¼ cup muesli/raw oats ½ cup cooked oats
Pasta and noodles	½ cup cooked wholemeal pasta ½ cup cooked noodles	⅓ cup cooked white pasta 1 small lasagne sheet
Rice and grains	⅓ cup cooked rice/couscous/bulgur/quinoa	
Legumes	½ cup cooked chickpeas/kidney beans/canned 3 beans mix	¾ cup cooked lentils ½ cup canned baked beans
Starchy vegetables	1 small potato ½ cup corn kernels 1 small corn cob 1½ cup green peas ⅔ cup peas and corn	½ cup mashed potato ½ cup boiled sweet potato/taro/yam ¼ cup boiled cassava 1 cup boiled pumpkin
Fruit	1 medium apple, orange, pear, peach ½ large banana, 1 small banana 1 cup berries/cherries ½ cup grapes 2 small mandarins/kiwi ½ mango 1½ cups melon/pineapple 2 medium nectarines/plums 8 passionfruit 250g punnet strawberries	3 medium apricots 6 dried apricots/prunes 4 roasted chestnuts 3 small dates, 1 large medjool date 1 tablespoon sultanas 2 guava 1 whole pomegranate/grapefruit 250ml coconut water ½ cup fruit juice, tinned fruit, fruit salad
Milk	250ml milk (all types, excluding unsweetened almond milk)	
Yoghurt	200g plain yoghurt 1 scoop frozen yoghurt	100g fruit yoghurt
Other dairy	2 small scoops low fat ice cream	⅓ cup low fat custard
Biscuits	6 small Salada/Savoy 2 Ryvita 4 Vita-Weat 3 Sao 10 rice crackers	3 cups air popped popcorn 1 small muesli bar 1/2 cup tortilla chips 3 multigrain corn thins or rice cake
Flour	2 tablespoons white/wholemeal	

Note: The “little or no carbohydrate” foods from page 3 = 0 carbohydrate portions

What if I still feel hungry?

If you still feel hungry add foods that are low in carbohydrate to your meals and snacks. Look at the table on page 3 for the list of “Little or no carbohydrates” foods. You can also check the table on page 1 for serve recommendations for each food group.

What can I drink?

- Choose mainly water, plain mineral and soda water-add fresh lemon or lime for flavour.
- Low fat milk provides a good source of calcium and protein.
 - Remember that milk contains carbohydrate and needs to be included in your daily carbohydrate serves.
- Tea, coffee, diet soft drink and diet cordials can be consumed in moderation.

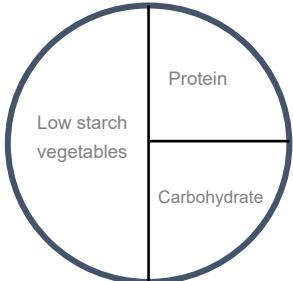
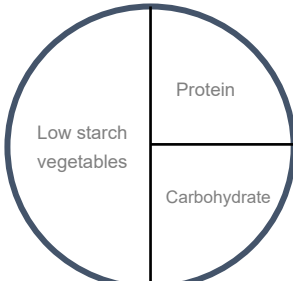
What if my blood sugars are still high?

In some instances you may be eating the right amount and type of carbohydrate but will still have high blood glucose levels.

If this occurs it is important not to avoid carbohydrates as severe dietary restriction may result in an increased risk of pregnancy complications.

Some women need a little extra help to manage blood glucose levels and may require insulin.

Sample meal plan

	Option 1	Option 2 - with Vegetarian ideas
Breakfast (3 portions carbohydrate)	½ cup untoasted muesli or 1 cup Guardian/All Bran + 250ml low fat milk Tea/coffee – with small amount low fat milk, no sugar (ideally). Equal ok.	2 slices grain/sourdough toast spread with avocado or nut butter + tub of low fat yoghurt Tea/coffee – with small amount low fat milk, no sugar (ideally). Equal ok.
Morning Snack (1-2 portions carbohydrate)	1-2 slices wholegrain bread with low fat cheese & one boiled egg	1 serve fruit + 4 Vita-Weat with low fat cheese and 1 boiled egg
Lunch (3 portions carbohydrate)  <i>A plate example</i>	1 medium bread roll or 2 slices of bread or ⅔ cup cooked basmati rice plus plenty of salad or low starch vegetables (½ plate as per diagram) plus 1 serve of lean meat or tuna or salmon or skinless chicken or egg plus 1 serve fruit	2 slices of bread or 1 medium bread roll or ⅔ cup cooked basmati rice plus plenty of salad or low starch vegetables (½ plate as per diagram) plus 2 eggs or 170g tofu plus 1 serve fruit
Afternoon Snack (1-2 portions carbohydrate)	1 muesli bar (e.g. Carman's Original Fruit Free)	1 slice wholegrain bread + ½ cup baked beans
Dinner (3 portions carbohydrate)  <i>A plate example</i>	1 cup cooked basmati rice or 1-1½ cups cooked pasta or 2 medium potatoes plus plenty of salad or low starch vegetables (½ plate) plus 1 serve of lean meat or skinless chicken or tofu	⅓ cup cooked basmati rice or ⅓ - 1 cup cooked pasta or 2 small potatoes or 2 small chapatti plus ¾ cup cooked lentils or ½ cup cooked chickpeas/kidney beans plus plenty of salad or low starch vegetables (½ plate)
Evening Snack (1-2 portions carbohydrate)	250ml low fat milk + 30g unsalted nuts	250ml low fat milk/soy milk + 30g unsalted nuts

After your pregnancy

Am I at risk of developing type 2 diabetes?

Your blood glucose levels will usually return to normal after the birth of your baby. Gestational diabetes is a risk factor for developing Type 2 diabetes later in life. Eating healthy foods, controlling body weight and regular exercise can reduce this risk. For more information on how to reduce your risk, discuss with your general practitioner or health professional.

Breastfeeding

Exclusive breastfeeding is recommended during the first six months of life and longer where possible. It provides the best start for your baby and can decrease your baby's risk of developing obesity, diabetes and heart disease. Breastfeeding can also help you return to your pre-pregnancy weight and may also reduce your risk of developing type 2 diabetes.

It is recommended you continue to take a supplement containing 150 micrograms of iodine each day until you stop breastfeeding. It is also recommended you give your baby a Vitamin D supplement of 400 units each day for at least the first six month while you are breastfeeding.

If you require support with breastfeeding you can contact lactation consultants at:

Mercy Hospital for Women
Phone: 03 8458 4677

Werribee Mercy Hospital
Phone: 03 8754 3407

Other breastfeeding support services:

- The Australian Breastfeeding Association 24 hour helpline, Phone: 1800 686 268
- Maternal and Child Health Helpline, Phone: 13 22 29
- Private Lactation Consultants: www.lcanz.org

Useful websites

The Baker Heart and Diabetes Institute https://www.baker.edu.au/	Dietitians Australia https://dietitiansaustralia.org.au/
Glycemic Index Database https://glycemicindex.com/	Gestational Diabetes Recipes https://gestationaldiabetesrecipes.com/
Diabetes Australia https://www.diabetesaustralia.com.au <i>Note: recipes are not specific to pregnancy</i>	Diabetes Victoria https://www.diabetesvic.org.au/ <i>Note: recipes are not specific to pregnancy</i>



For more information

If you have any questions or need further advice, please contact us:

Monday to Friday, 8:00am to 4:00pm

Department: Dietetics

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