

Women's & Children's Hospital

Healthy Eating for Gestational Diabetes



**Government
of South Australia**

SA Health



**Women's
& Children's
Hospital**

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What is Gestational Diabetes?

Gestational Diabetes is diagnosed when high blood glucose (sugar) levels are found during pregnancy. It is a temporary form of diabetes and usually goes away after the baby is born.

Gestational Diabetes occurs when the hormones made by the placenta during pregnancy stop insulin from working properly. Insulin is a hormone that allows glucose to pass from the blood into the body's cells where it can be used for energy. If insulin is not working properly, then blood glucose will rise.

High blood glucose levels in the mother usually passes into the baby and can cause the baby to grow bigger than normal. This may make delivery harder. It can also lead to low blood glucose in your newborn baby. When gestational diabetes is well controlled, these risks are greatly reduced.

This booklet provides you with information on healthy eating to help keep your blood glucose within the normal range for the rest of your pregnancy. For most women this can be done by:

- > following a healthy diet (as recommended for all pregnant women),
- > spreading your food intake over the day (particularly carbohydrate foods),
- > avoiding foods which contain large amounts of sugar,
- > checking blood glucose levels,
- > regular physical activity.

Why diet is important?

The most important part of treatment for gestational diabetes relates to **food** and your **eating pattern**. Diet is important to:

- > meet the nutrition needs of you and your baby
- > help keep your blood glucose levels in the normal range and reduce problems for your baby.

Healthy eating during pregnancy

It is important for women who are pregnant to eat a balanced diet. This will help your baby to grow strong and healthy. When pregnant you need to meet your own nutritional needs and also those of your baby. The types of food you eat is more important than the amount of food. Calcium, iron, protein and folate are examples of nutrients which are more important during pregnancy.

You can use the Australian Guide to Healthy Eating to help you understand what foods you need. As shown in the diagram, foods are divided into five groups:

1. Bread, cereals, rice, pasta, noodles
2. Vegetables, legumes
3. Fruit
4. Milk, yoghurt, cheese
5. Meat, fish, poultry, eggs, nuts, legumes

Each group provides different nutrients. Try to choose a variety of foods from each of the food groups.

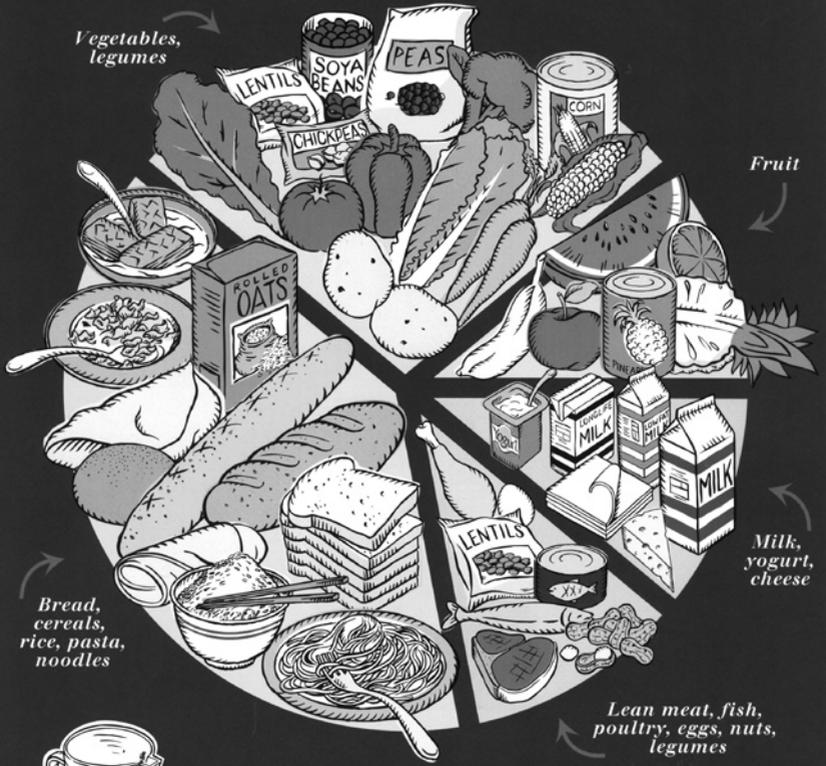
Some foods do not fit into the five food groups. These are not essential for your body. These 'extra' foods, pictured outside the five food groups (bottom right corner) should be chosen only sometimes or in small amounts. It is even more important to avoid or limit these foods when you have gestational diabetes.

For more information on nutrition during pregnancy please refer to the SA Health booklet, *What should I eat? Nutrition for pregnancy and breastfeeding* – Women's and Children's Hospital.

www.wch.sa.gov.au/services/az/other/nutrition/nut_resources.html

THE AUSTRALIAN GUIDE TO HEALTHY EATING

Enjoy a variety of foods every day



Drink plenty of water

Choose these sometimes or in small amounts



FUNDED BY THE AUSTRALIAN GOVERNMENT DEPARTMENT OF HEALTH AND AGEING,
PREPARED BY THE CHILDREN'S HEALTH DEVELOPMENT FOUNDATION, SOUTH
AUSTRALIA, AND DEAKIN UNIVERSITY, VICTORIA, 1998.

Healthy eating when you have Gestational Diabetes

When you have gestational diabetes, large amounts of carbohydrate foods eaten at the same time can cause high blood glucose levels. This is because carbohydrates are broken down into glucose in your body. This glucose is used by the body as your main source of energy.

To help prevent high blood glucose levels you will need to:

- > satisfy your hunger and maintain a healthy weight by eating small amounts often,
- > spread your intake of food evenly over the day. It is better to have three small meals and three snacks than to eat three large meals.

The next few pages have more information on carbohydrate foods and how to eat well to help prevent high blood glucose levels.

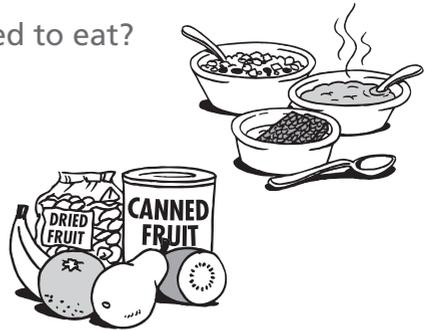
Carbohydrate foods

Many foods contain carbohydrates, for example bread, milk, fruit, lollies and soft drinks.

Which carbohydrate foods do I need to eat?

Healthy carbohydrate foods including:

- > Bread and breakfast cereals
- > Pasta, rice and noodles
- > Potato, sweet potato, corn
- > Legumes, such as baked beans, red kidney beans and lentils
- > Fruit (fresh, dried, tinned, juice)
- > Milk, yoghurt, custard



It is important to eat these healthy carbohydrate foods as they are a good source of vitamins, minerals, fibre and energy. These foods are important for you and your baby. They **should be eaten regularly** throughout the day but need to be counted so that you do not eat too much carbohydrate at once.

Which carbohydrate foods do I need to avoid?

High sugar carbohydrate foods including:

- > Regular soft drinks and cordial
- > Lollies, regular jelly

These high sugar carbohydrate foods should **not be eaten** for the rest of your pregnancy. They will raise your blood glucose levels very high, very quickly.

- > Table sugar
- > Jam, honey



Research shows that a **small amount** of these carbohydrate foods, as part of a healthy eating plan, should not raise your blood glucose levels too much. Use only a half to one teaspoon per main meal. When using these small amounts, these carbohydrate foods do not need to be counted. It is best to avoid larger amounts, but if you do eat larger amounts of these foods they must be counted as part of your carbohydrate serves for the day.

High fat carbohydrate foods including:

- > Sweet cakes and biscuits
- > Chocolate
- > Takeaway foods e.g. Pizza, burgers, chips, etc.

These high fat carbohydrate foods can be **eaten sometimes**, in small amounts only. You will need to count these foods in your carbohydrate serves for the day.

How much carbohydrate?

Remember, large amounts of carbohydrate foods eaten at one time will cause the blood glucose level to rise. This includes foods high in added sugar and also healthy carbohydrate foods if too much is eaten at once. Spreading carbohydrate foods over the day will help prevent this.

To help you to eat the right amount of carbohydrate, you can count the number of carbohydrate serves that you eat during the day. As a guide, aim for about three serves at each meal and one serve at each snack. A serve is approximately 15grams of carbohydrate.

2–3 carbohydrate serves at each meal

1–2 carbohydrate serves at each snack

1 serve = approximately 15 grams of carbohydrate

The foods listed in the tables on pages 8–9 all contain one serve of carbohydrate.

What type of carbohydrate?

All carbohydrate foods are broken down into glucose when eaten and will raise blood glucose levels. However, different types raise the blood glucose levels at different rates.

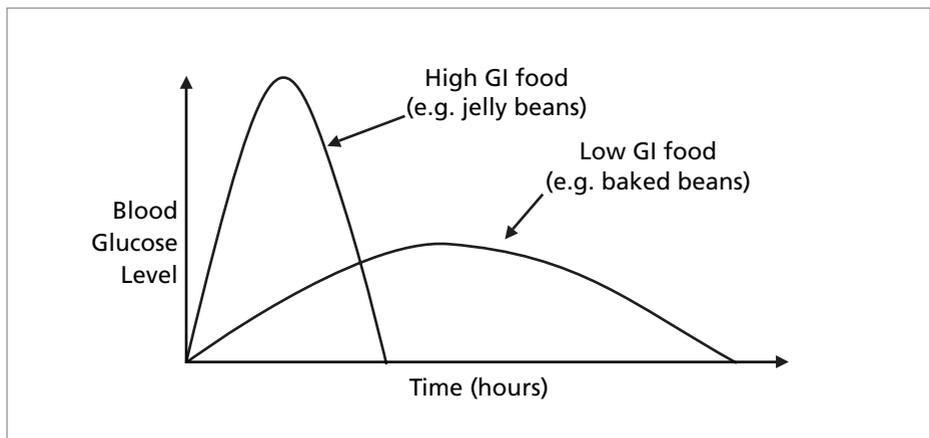
The **Glycemic Index (GI)** of a food tells you how quickly and how high your blood glucose levels rise after eating that food (see diagram below).

- > Foods with a low GI produce a slower, lower rise in blood glucose levels.
- > Foods with a high GI produce a fast, high rise in blood glucose levels.
- > Low GI foods will help to keep you fuller for longer.

Aim to include 1 low GI food at each meal.

The foods listed in the tables on pages 8–9 show you the low GI or better choices to make when planning your meals and snacks.

For more information visit www.glycemicindex.com



Breads and cereals

Carbohydrate serves (1 serve)	Better choices
Bread > 1 slice of bread or fruit bread > 1/2 bread roll > 1/2 english muffin > 1 round crumpet	> Choose wholegrain/multigrain breads, fruit bread or 'low GI' white breads.
Breakfast cereals > 1 1/2 Weetbix or Vita Brits > 1/4 cup oats, muesli, All Bran > 1/2 cup flake type cereal	> Choose wholegrain cereals e.g. porridge, Weetbix, Vita Brits, Guardian, muesli, All Bran.
Rice/pasta > 1/2 cup cooked pasta/noodles > 1/3 cup cooked rice or cous cous	> Choose Basmati, Doongara or brown rice as these are lower GI. > All types of pasta and noodles are good choices.
Biscuits/crackers > 4 Vita-Weats > 6 water crackers/Jatz/Salada > 10 rice crackers/Sakatas > 2-3 plain sweet biscuits/Milk Coffee/Digestives/Yo-Yo/Marie > 2 rice cakes	> Choose grainy crackers e.g. Vita-Weats > Choose higher fibre plain sweet biscuits e.g. Digestives.

Milk and milk products

Carbohydrate serves (1 serve)	Better choices
> 1 cup (250ml) milk/soy milk	> Milk and milk products are low GI choices.
> 1 tub (200g) natural yoghurt > 1/2 tub (100g) fruit or flavoured yoghurt > 1 tub (200g) artificially sweetened or 'diet' yoghurt > 1/2 cup (100ml) custard	> Best choices are low fat varieties.
> 1 scoop plain ice-cream > 1 paddle pop > 6 squares plain milk chocolate	> Ice-cream and chocolate should only be eaten in small amounts.

Vegetables and legumes

Carbohydrate serves (1 serve)	Better choices
Vegetables <ul style="list-style-type: none"> > 1 Potato (boiled/baked) > 1/2 cup mashed potato > 1 medium sweet potato, yam > 10–15 hot chips 	<ul style="list-style-type: none"> > Choose sweet potato as it has a lower GI than regular white potato.
<ul style="list-style-type: none"> > 1/2 cup corn kernels > 1 small corn cob 	<ul style="list-style-type: none"> > Corn is low GI.
Legumes <ul style="list-style-type: none"> > 1/2 cup/small tin (130g) of baked beans > 2/3 cup cooked or canned kidney/haricot beans, chickpeas > 3/4 cup cooked or canned lentils 	<ul style="list-style-type: none"> > All legumes are good choices and are low GI.

Fruit

Carbohydrate serves (1 serve)	Better choices
<ul style="list-style-type: none"> > 1 medium apple, banana, peach, pear, orange > 2 medium kiwifruit, mandarin, or nectarine > 3 small apricots or plums > 1 1/2 cups watermelon, rockmelon or honeydew melon > 20–25 grapes > 15–20 cherries 	<ul style="list-style-type: none"> > Most fruits have a low GI and are good choices, but limit to 1 serve at a time. > Choose fresh fruit instead of fruit juice.
<ul style="list-style-type: none"> > 3/4 cup of tinned fruit salad (in natural juice, drained) 	
<ul style="list-style-type: none"> > 6 dried apricot halves > 1 tablespoon sultanas/raisins 	
<ul style="list-style-type: none"> > 150ml apple juice > 200ml orange juice (unsweetened) 	

Label reading

Reading food labels is useful for working out the carbohydrate serves of foods not listed in this booklet.

Nutrition Information Panel

Muesli		
NUTRITION INFORMATION		
Serving Size: 50g (3/4cup)		
	Per Serve (50g)	Per 100g
Energy	890kJ	1780kJ
Protein	4.5g	9g
Fat	7.8g	15.6g
Carbohydrate		
Total	28.8g	57.6g
Sugars	14.2g	28.4g
Dietary Fibre	4.3g	8.6g
Sodium	60mg	120mg

INGREDIENTS: Cereals (49%) [wheat, oats], fruit (17%) [apricot, apple, raisins, sultanas, cranberries], seeds and nuts (16%) [almonds, pepitas, cashews, hazelnuts, coconut], raw sugar, honey, sunola oil, Maltodextrin, cinnamon, minerals (calcium), emulsifier (471), vitamins (natural Vitamin E, Folate.

Carbohydrate

- > Total = all carbohydrate including sugars.
- > Sugars = indicates how much of the total carbohydrate comes from sugars.

**Sugars will include all added sugars as well as naturally occurring sugars.
Fruit and milk contain naturally occurring sugars.**

Working out carbohydrate serves from a label

On the Nutrition Information Panel, look at **Total Carbohydrate** in the per serve column. Remember, one serve is about 15 grams of carbohydrate so to work out the number of carbohydrate serves, use this guide:

5–10g total carbohydrate	= ½ serve
11–19g total carbohydrate	= 1 serve
20–25g total carbohydrate	= 1½ serves
26–34g total carbohydrate	= 2 serves

In the Muesli example (page 10):

3/4cup of muesli = g of carbohydrate = serves.



'Free' foods

The foods below have very little or no carbohydrate. These can be eaten freely without affecting your blood glucose levels.

- > All salads and vegetables (except potato, corn, sweet potato and legumes).
- > Fruit – lemon, lime, passionfruit, rhubarb or small serve of berries.
- > Herbs, spices and sauces used in cooking.
- > Drinks – water, soda water, small amounts of diet cordial/soft drink, tea and coffee.

Remember:

- > Avoid foods with a higher risk of listeria.
- > Tea, coffee and cola drinks contain caffeine. Large amounts of caffeine can harm your baby. It is best to drink no more than two to three cups of tea, coffee or cola drinks a day.

For more information on nutrition during pregnancy please refer to the SA Health booklet, *What should I eat? Nutrition for pregnancy and breastfeeding* – Women's and Children's Hospital.

www.wch.sa.gov.au/services/az/other/nutrition/nut_resources.html

Artificial sweeteners

Artificial sweeteners are found in diet food products, e.g. diet cordial/soft drink, sugar free lollies. They can be used safely in small amounts during pregnancy.

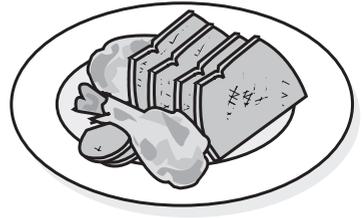
Research shows that a **small amount of table sugar** as part of a healthy eating plan should not raise your blood glucose levels too much. If using table sugar instead or artificial sweetener it is best to use a small amount only i.e. a half to one teaspoon of sugar as part of each main meal.

Fat

While fat does not directly affect your blood glucose levels, if eaten in large amounts it can cause extra weight gain. This may be hard to lose once the baby is born and may also make controlling your blood glucose level harder.

A few tips:

- > Limit the amount of fat you eat, in particular saturated fat (butter, fatty meats, pastries).
- > Use small amounts of 'healthy' fats such as canola, olive, or sunflower oils, and polyunsaturated margarines.
- > Choose lean meats and remove skin from chicken.
- > Choose low fat dairy products.
- > Limit takeaway food.



Protein

Protein is needed for the growth of your baby and your body's own needs. Good protein foods include lean meat, skinless chicken, fish, eggs, reduced fat cheese and nuts.

These foods will not directly affect your blood glucose levels.

Legumes are a part of this group, but they also contain carbohydrate, so they will need to be counted in your carbohydrate serves.

A little extra protein is needed in the second half of your pregnancy. Most people will eat more protein than they need, so having a protein food at lunch and dinner each day will easily meet your needs.

Remember:

- > Avoid foods with a higher risk of listeria.

For more information on nutrition during pregnancy please refer to the SA Health booklet, *What should I eat? Nutrition for pregnancy and breastfeeding* – Women's and Children's Hospital.

www.wch.sa.gov.au/services/az/other/nutrition/nut_resources.html

Physical activity

Regular activity is an important part of a healthy lifestyle and healthy pregnancy.

Moderate activity (meaning a slight but noticeable increase in your breathing and heart rate) can help with your blood glucose control, e.g. walking/swimming.

Pregnancy is not the time to begin a tough new exercise regime.

Remember:

- > Always check with your doctor if you are not sure before you start an exercise program.

Medication and insulin

Gestational diabetes is usually managed with healthy eating, regular physical activity and blood glucose monitoring. Some women's bodies require a little extra help to manage blood glucose levels. Medication, such as tablets or insulin injections, may be needed.

Your doctor will review this and let you know if this is needed.

Remember:

- > If your doctor starts you on medication, it is still important to eat a healthy diet and continue with regular physical activity.

What happens after my baby is born?

Usually, blood glucose returns to normal within six weeks after birth. Your doctor will check your blood glucose after your baby is born to make sure it has returned to normal.

Women who have had gestational diabetes during one pregnancy have a higher chance of developing gestational diabetes in the next pregnancy. In addition, women who have had gestational diabetes are much more likely to develop type 2 diabetes later in life.

To help delay or even prevent the development of type 2 diabetes it is important for you to:

- > have regular checks for diabetes in the following years
- > maintain a healthy weight
- > encourage the whole family to enjoy a healthy diet and healthy lifestyle.

Sample meal plan

Note: this is a sample meal plan only. Use tables on pages 8–9 to develop your own meal plan.

Breakfast (all 2–3 carbohydrate serves)

- | | |
|--|---|
| > 1 cup special K/ 2 Weetbix/ 1/2 cup muesli (2 serves) with 1 cup skim milk (1 serve) | > 2 slices wholegrain toast with toppings (2 serves) |
| > 1 English muffin (2 serves) with 1/2 cup baked beans (1 serve) and 1 egg | > 200g low fat yoghurt (2 serves) with 3/4 cup of tinned fruit in natural juice (drained) (1 serve) |

Lunch (all 2–3 carbohydrate serves)

- | | |
|---|---|
| > 1 wholegrain sandwich/roll/wrap (2 serves) with egg/tuna/low fat cheese + salad | > 1 cup of lentil soup (1 serve) with 2 slices of wholegrain bread (2 serves) |
| > 2/3 cup of basmati rice (2 serves) with 2/3 cup beans (1 serve) or 3/4 cup lentils (1 serve) or lean meat/fish/chicken (100g) and salad/vegetables (other than potato and corn) | > 4 Vita-Weats (1 serve) with 1 small tin tuna and 1 piece of fruit (1 serve) |

Dinner (all 2–3 carbohydrate serves)

- | | |
|---|--|
| > 100g lean meat/chicken/fish with 1 boiled potato (1 serve), 1/2 cup corn (1 serve) and a side of other vegetables/salad | > 1 1/2 cups cooked pasta (3 serves) with tomato based sauce and garden salad |
| > 1 cup basmati rice (3 serves) with stir fried lean chicken/beef/fish (100g) and vegetables (other than potato and corn) | > 2 tortillas (2 serves) with lean mince and salad followed by 1/2 cup low fat custard (1 serve) |

Morning tea/ afternoon tea/ snacks (all 1–2 carbohydrate serves)

- | | |
|---|---|
| > 1 medium piece of fruit (1 serve) | > 200g low fat yoghurt (2 serves) |
| > 4 Vita-Weats (1 serve) with low fat cream cheese | > 1 slice fruit toast (1 serve) with thin scrape of margerine |
| > 1 cup skim milk (1 serve) | > 2 Digestives biscuits (1 serve) |
| > 200ml skim milk with 2 tsp milo/nesquik (1 serve) | > 10 rice crackers (e.g. sakatas) with low fat dip |

Key points

- > Good nutrition for gestational diabetes includes the same foods as with any pregnancy.
- > Be aware of your carbohydrate foods including how many serves you are eating.
- > Make sure you eat carbohydrate foods regularly throughout the day and don't skip meals.
- > Avoid high sugar foods.
- > Include low Glycemic Index (GI) foods.
- > Regular physical activity is helpful in controlling blood glucose.

More information

Women's and Children's Hospital

- > Nutrition for pregnancy and breastfeeding resource
www.wch.sa.gov.au/services/az/other/nutrition/nut_resources.html

Children, Youth and Women's Health Service (CYWHS)

- > Parenting and Child Health – Health Topics – Diabetes in pregnancy
www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=304&id=1576
- > Pregnancy – Pregnancy Topics – Gestational diabetes
www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=438&np=462&id=2784

Diabetes Australia

Phone: 1300 136 588

- > www.diabetesaustralia.com.au/en/Living-with-Diabetes/Gestational-Diabetes/
- > www.diabetesaustralia.com.au/PageFiles/1419/GLYCAEMIC_INDEX.pdf
- > www.diabetesaustralia.com.au/PageFiles/1419/HEALTHY_EATING_GESTATIONAL.pdf

Diabetes ACT

- > www.diabetes-act.com.au/UserFiles/File/fact_sheets/16_Gestational_diabetes.pdf
- > www.diabetes-act.com.au/UserFiles/File/fact_sheets/19_Healthy_eating_gestational.pdf
- > www.diabetes-act.com.au/UserFiles/File/fact_sheets/17_Glycemic_Index.pdf

Diabetes Outreach Country Health SA

- > www.diabetesoutreach.org.au

Dietitians Association of Australia (DAA)

- > www.daa.asn.au

The original nutritional and educational content of this booklet has been reviewed by specialist Dietitians at the Children, Youth and Women's Health Service (CYWHS), SA Health. Information in this booklet should not be used as an alternative to professional advice.

Food product information contained in this booklet was up to date at the time of revision. If you are not sure about a food, check with the manufacturer.

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Non-English speaking: for information in languages other than English, call the interpreting and Translating Centre and ask them to call The Department of Health. This service is available at no cost to you, contact (08) 8226 1990.



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