

# Nutrition Therapy for Gestational Diabetes (GDM)

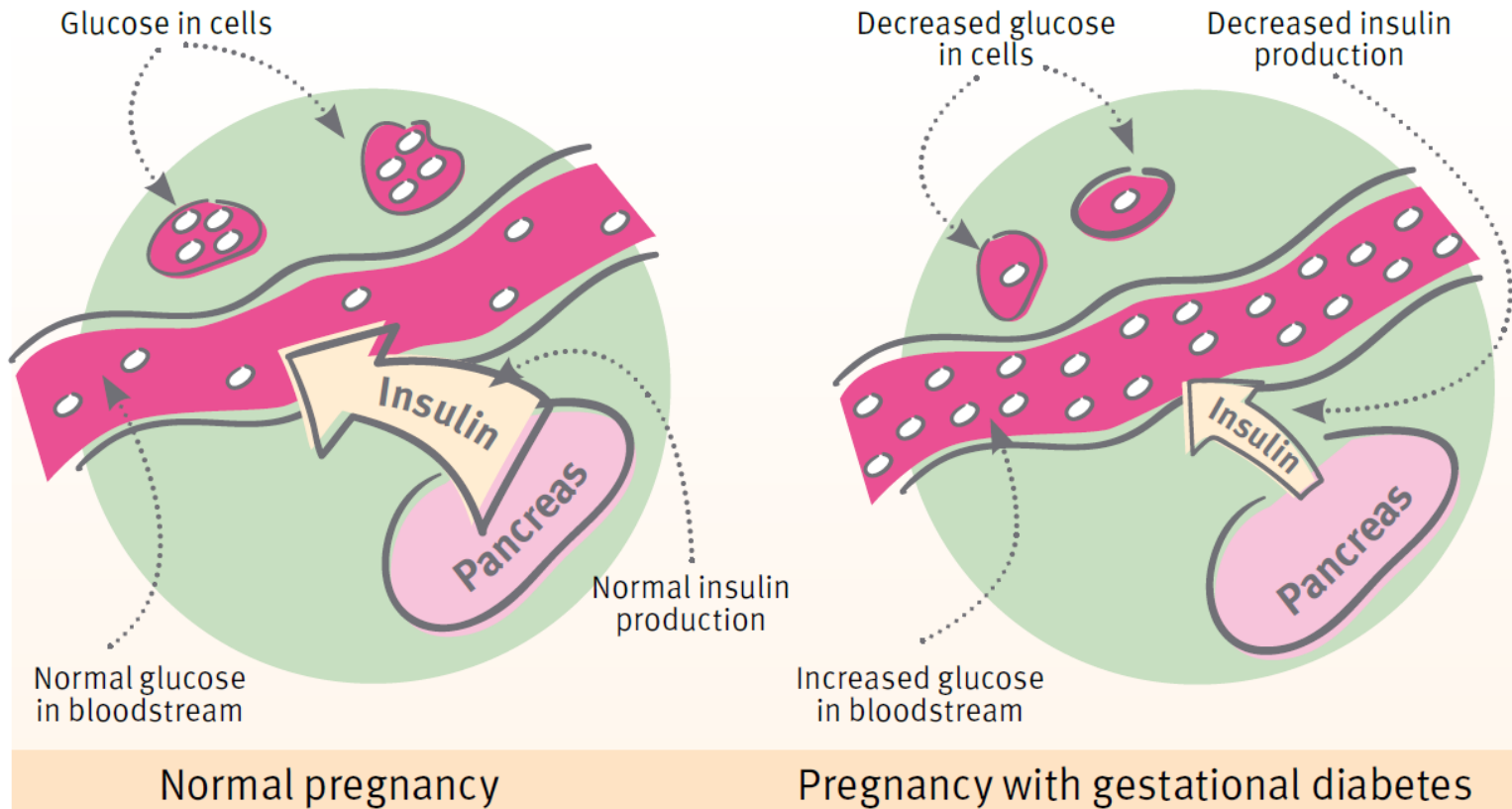
Presented by: Maternity Dietitian

# Session overview

- What is GDM and what role does food play?
- Carbohydrate foods
  - Carbohydrate counting
  - Glycaemic index (GI)
  - Reading labels
- Healthy eating during pregnancy
- Physical activity
- Healthy pregnancy weight gain
- Trouble shooting

# What is GDM?

- **Higher than normal blood glucose (sugar) levels during pregnancy**





# Blood Glucose Monitoring

- You will need to monitor your blood glucose levels four times per day
  - Fasting (before breakfast)
  - 2 hours after each main meal
  - Blood Glucose Targets
- The diabetes educator will explain this in more detail

# What are carbohydrates?

- Main source of energy for your body
- Carbohydrate foods also provide your body with important vitamins, minerals and fibre.

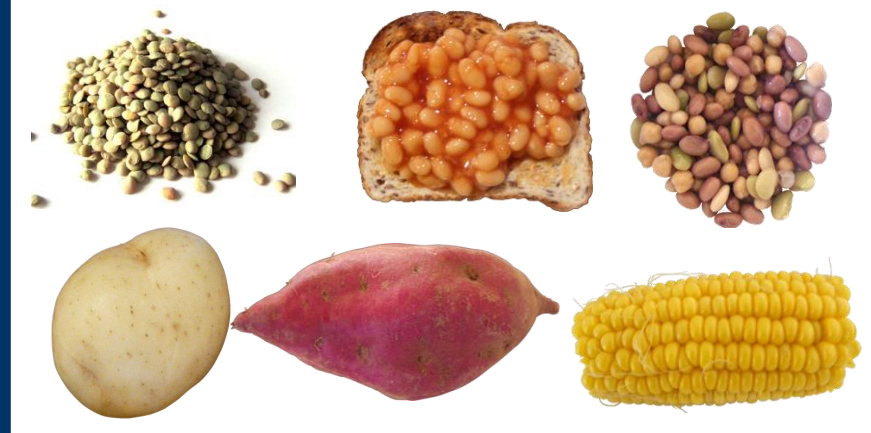
*What are some carbohydrate foods?*

# Foods with carbohydrates

## Cereals and grains



## Starchy vegetables and legumes



## Fruit (fresh, canned, dried, juice)



## Dairy products (not cheese)







# Foods with little or no carbohydrates

## Meats, fish, eggs, cheese



## Non-starchy vegetables



## Berries, passionfruit, lemon, lime



## Avocado, nuts, oils, fats





# Do I need to stop eating carbohydrates?

**NO!**

- **Too little** carbohydrate can increase the risk of complications and of having a small baby
- **Too much** carbohydrate at a meal or snack will cause your blood glucose levels to be high
- You need to:
  - Include carbohydrate at each meal and snack
  - Spread out carbohydrate foods over the day
  - Monitor your carbohydrate portions





# Monitoring carbohydrate portions

- Different foods contain different amounts of carbohydrate
- Carbohydrates can be counted in portions (15g of carbohydrate) which you can mix and match over the day to help to manage your blood glucose levels.



# What is 1 carbohydrate portion?

## Cereals and grains

1 portion = 1 regular thin slice bread or  $\frac{2}{3}$  cup cereal flakes or  $\frac{1}{4}$  cup raw oats or muesli or  $\frac{1}{2}$  cup cooked pasta/noodles or  $\frac{1}{3}$  cup cooked rice or 2–3 plain biscuits/crackers.



Bread



Crackers



Cereal



Rice



Pasta

## Starchy vegetables and legumes

1 portion = 1 medium potato or  $\frac{1}{2}$  cup mashed sweet potato/potato or  $\frac{1}{2}$  cup/cob of corn or  $\frac{1}{2}$  cup legumes (e.g. baked beans).



Potato/sweet pot



Corn



Legumes  
(e.g. Baked beans)

## Fruit (Fresh, canned, or dried)

1 portion = medium apple/orange/pear or  $\frac{1}{2}$  large banana or 2 or 3 plums/apricots/kiwifruit or  $\frac{3}{4}$  cup diced or tinned fruit or 15–20 grapes/cherries or 1 tablespoon dried fruit or 125ml juice.



## Dairy products (not cheese)

1 portion = 1 cup milk (cow or soy) or  $\frac{1}{2}$  tub fruit yoghurt (100g) or 1 tub natural or diet yoghurt (200g) or  $\frac{1}{2}$  cup custard.



Milk



Yoghurt

**1 portion**  
**=**  
**15g carbohydrate**



# How many portions should I have?

- As a guide to get you started:
  - **At main meals:** aim for 3-4 carbohydrate portions.
  - **At snacks:** aim for no more than 1-2 carbohydrate portions.
- Separate meals and snacks by at least 2 hours.

## IMPORTANT

Eating foods with no carbs or a small amount between meals and testing can affect your reading. It is best not to eat or drink anything between finishing your meal and testing your blood glucose, but water is ok.

# Let's try carb counting

## **Breakfast**

2 slices of multigrain toast

***plus***

Avocado, scrambled eggs, mushrooms and spinach

***plus***

250mL glass of milk

# Let's try carb counting

## Breakfast

2 slices of multigrain toast

*plus*

Avocado, scrambled eggs, mushrooms and spinach

*plus*

250mL glass of milk

**= 3 carbohydrate portions**

# Let's try carb counting

## **Breakfast**

1<sup>1</sup>/<sub>3</sub> cups of low GI cereal flakes

***plus***

250mL of milk

***plus***

1 medium apple



# Let's try carb counting

## Breakfast

1<sup>1</sup>/<sub>3</sub> cups of low GI cereal flakes

*plus*

250mL of milk

*plus*

1 medium apple

= 4 carbohydrate portions

# Let's try carb counting

## Lunch

Sandwich (2 pieces multigrain bread) with meat and salad

*plus*

1 small banana

# Let's try carb counting

## Lunch

Sandwich (2 pieces multigrain bread) with meat and salad  
*plus*

1 small banana

**= 3 carbohydrate portions**

# Let's try carb counting

## Lunch

2 small chappati

*plus*

Meat and vegetable curry (no starchy vegetables)

*plus*

1 medium orange

# Let's try carb counting

## Lunch

2 small chappati

*plus*

Meat and vegetable curry (no starchy vegetables)

*plus*

1 medium orange

**= 3-4 carbohydrate portions  
(depends on size of chappati)**

# Let's try carb counting

## Dinner

150-200g piece of meat

*plus*

½ cup mashed sweet potato

*plus*

1 cob of corn, broccoli and cauliflower



# Let's try carb counting

## Dinner

150-200g piece of meat

*plus*

½ cup mashed sweet potato

*plus*

1 cob of corn, broccoli and cauliflower

**= 3 carbohydrate portions**

# Let's try carb counting

## Dinner

1<sup>1</sup>/<sub>3</sub> cups basmati rice

***plus***

Meat and vegetable stir fry

# Let's try carb counting

## Dinner

$1\frac{1}{3}$  cups basmati rice

*plus*

Meat and vegetable stir fry

**= 4 carbohydrate portions**



# Snack ideas

Each snack is 1 carbohydrate portion (have up to 2 per snack)

- 1 medium piece of fruit
- 2 small fruit (plums, kiwi fruit)
- 1 tub diet yoghurt **or** ½ tub low fat yoghurt
- 1 glass of milk
- 2-3 multigrain crackers **or** 2-3 plain biscuits
- 1 slice of thin raisin toast
- 1 slice of soy and linseed toast



# What if I am still hungry?

- Add extra of the low or no carbohydrate foods into your meals.
- For example:
  - Add more meat/chicken/fish/eggs at meals
  - Add more salad or non-starchy vegetables at meals
  - Cheese on crackers or toast
  - Nuts in addition to morning tea/afternoon tea snack
  - Extra berries or passion fruit with yoghurt or cereals

# Activity 1

- Write down what you had for breakfast today or dinner last night.
- What are the carbohydrate foods?
- How many carbohydrate portions did you have?
- Share with the rest of the group



# What about sugar?

- It's okay to still include small amounts of sugar e.g. 1 teaspoon of sugar in coffee, a thin spread of jam on bread.
- **Avoid** foods with lots of added sugar (softdrink, cakes, lollies, chocolate, fruit juice, fruit drinks)
- If you consume a lot of sugar then changing to an artificial sweetener or artificially sweetened foods will have less of an affect on blood glucose e.g. diet soft drink or cordial

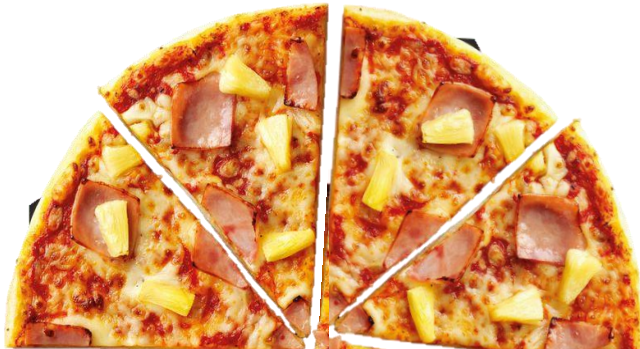
# What about takeaway or extras?



**Big Mac Meal = 10 carb portions**



**2 Tim Tam = 2 carb portions**



**3 Slices Pizza = 4-5 carb portions**



**Sml Noodle Box = 5 carb portions**

# Checking labels

## NUTRITION INFORMATION

Servings per package: 24

Serving size: 30 g (2 biscuits)

	Quantity per serving	Quantity per 100g	Check the serving size!
Energy	447 kJ	1490 kJ	
Protein	3.7 g	12.4 g	
Fat, total	0.4 g	1.3 g	
— saturated	0.1 g	0.3 g	
Carbohydrates	20.1 g	67.0 g	
— sugars	1.0 g	3.3 g	
Sodium	81 mg	270 mg	
Dietary fibre	3.3 g	11.0 g	

Use the  
*'per 100g'*  
to compare  
foods

Contains oats, wheat and soy as indicated in bold type.

Ingredients: Wholegrain wheat (97%), raw sugar, salt, barley malt extract, vitamins (niacin, thiamin, riboflavin, folate), mineral (iron).

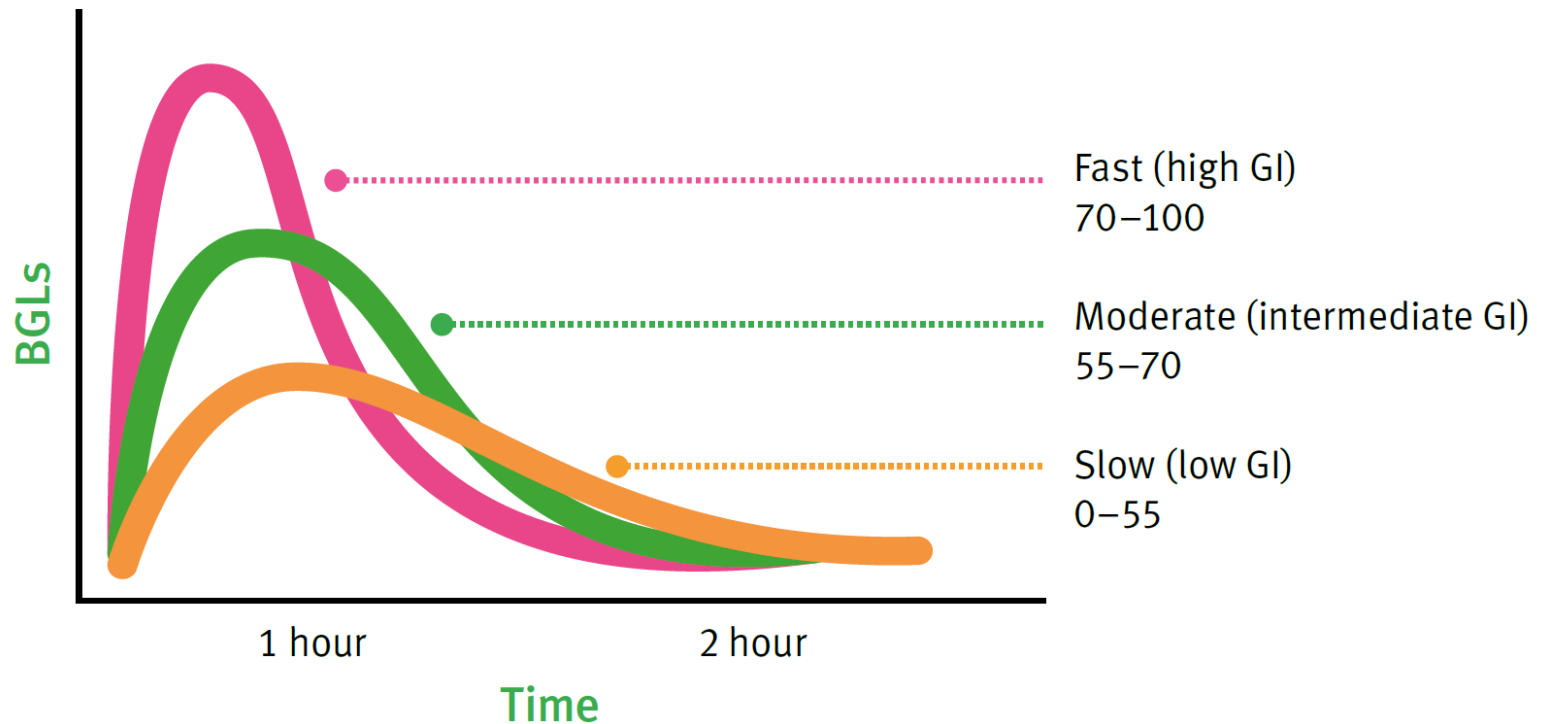
All Weet-Bix™ Original contains cereals containing gluten. All Weet-Bix™ Original pack sizes (except for 30g and 1.12kg) contain cereals containing gluten and may contain soy.



# Glycaemic Index (GI)

A measure of how quickly or slowly your body digests and absorbs the carbohydrate in the foods you eat.

- **Choose** low GI carbohydrate
- Limit high GI carbohydrate





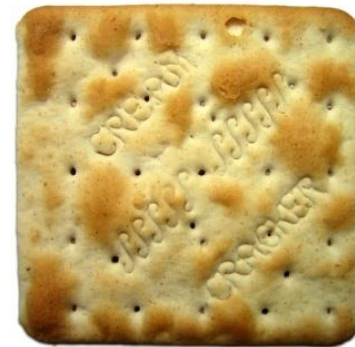
# Choose low GI



VS



VS



**TIP**

If you make your own breads or chappati, swap to besan (chickpea) or multigrain flour instead of white flour.

**Choose more often**

**Choose small portions, less often**



# Choose low GI



VS



- Doongarra rice 'Clever Rice'
- Low GI brown or white rice
- Basmati rice

- Calrose rice
- Long grain white rice
- Medium grain white rice
- Jasmine rice
- Brown rice



VS



**Choose more often**

**Choose small portions, less often**





# Choose low GI



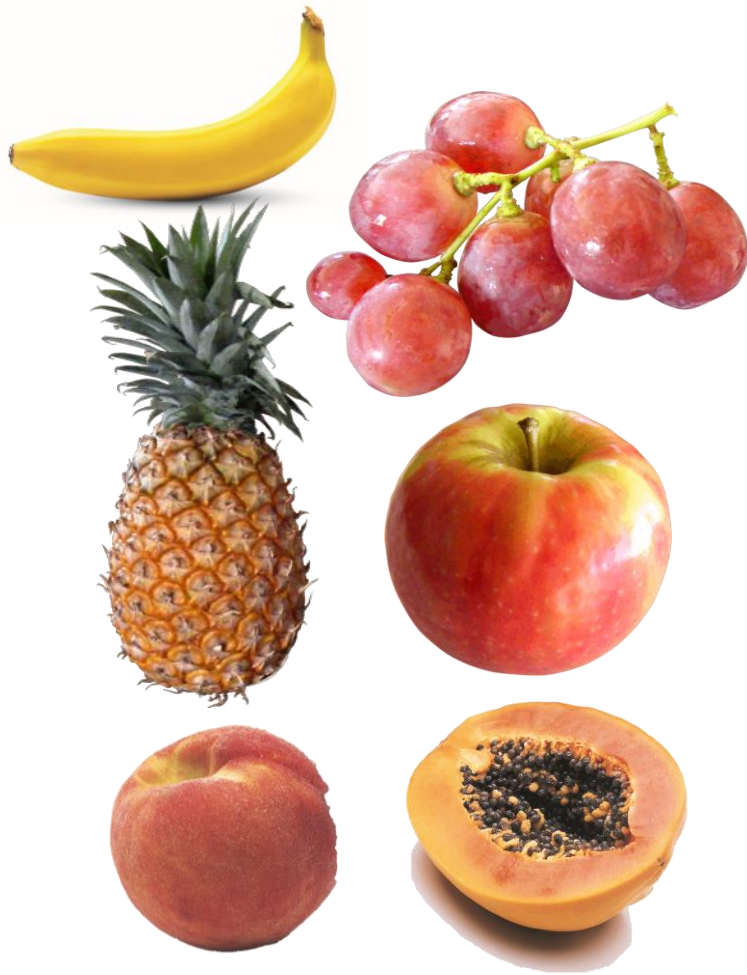
VS



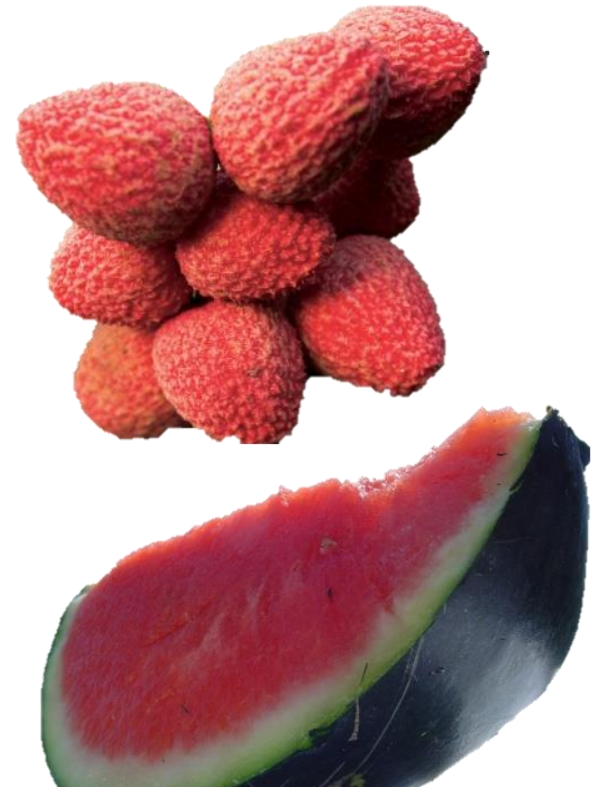
**Choose more often**

**Choose small portions, less often**

# Choose low GI



VS



**Choose more often**

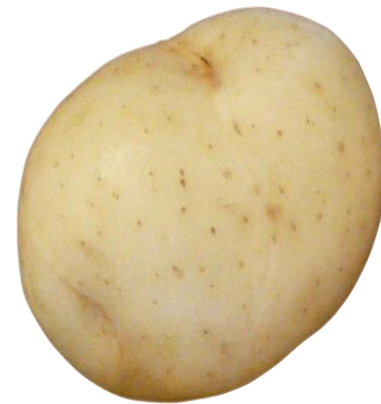
**Choose small portions, less often**



# Choose low GI



VS



**Choose more often**

**Choose small portions, less often**

# Healthy Eating during Pregnancy

Enjoy a wide variety of nutritious foods from these five food groups every day.  
Drink plenty of water.

Grain (cereal) foods,  
mostly wholegrain  
and/or high cereal  
fibre varieties

Vegetables and legumes/beans





Fruit

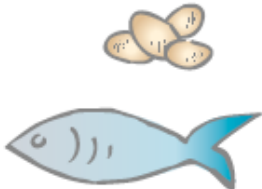

Milk, yoghurt, cheese and/or alternatives, mostly reduced fat

Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans





Food group	Number of food serves per day	1 serve equals ...
 Vegetables and legumes/beans	5	<ul style="list-style-type: none"><li>1/2 cup cooked green or brassica or cruciferous vegetables</li><li>1/2 cup cooked orange vegetables</li><li>1/2 cup cooked, dried or canned beans, chickpeas or lentils (no added salt)</li><li>1 cup raw leafy green vegetables</li><li>75g starchy vegetables (e.g. 1 small or 1/2 medium potato, sweet potato, taro, sweet corn or cassava)</li><li>75g other vegetables (e.g. 1 small-medium tomato)</li></ul>
 Fruit	2	<ul style="list-style-type: none"><li>1 piece medium sized fruit (e.g. apple, banana, orange, pear)</li><li>2 pieces smaller fruit (e.g. apricot, kiwi fruit, plums)</li><li>20 grapes or cherries</li><li>1/2 cup 100% juice</li><li>1 cup diced, cooked or canned fruit</li><li>30g dried fruit (e.g. 1 1/2 tbsp sultanas, 4 dried apricot halves)</li></ul>
Grain (cereal) foods, mostly wholegrain, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley	8 1/2	<ul style="list-style-type: none"><li>1 slice of bread</li><li>1/2 medium bread roll or flat bread</li><li>1/2 cup cooked rice, pasta, noodles, polenta, quinoa, barley, porridge, buckwheat, semolina, cornmeal</li><li>2/3 cup breakfast cereal flakes</li><li>1/4 cup muesli</li><li>3 crisp breads</li><li>1 crumpet or 1 small English muffin or scone</li><li>1/4 cup flour</li></ul>

Food group	Number of food serves per day	1 serve equals ...
 <p>Lean meat and poultry, fish, eggs, nuts and seeds, and legumes/beans</p>	3½	<p>65g cooked lean red meats (e.g. beef, lamb, pork, venison or kangaroo) or ½ cup lean mince or 2 small chops or 2 slices roast meat</p> <p>80g cooked poultry (e.g. chicken, turkey)</p> <p>100g cooked fish fillet or 1 small can fish, no added salt, not in brine</p> <p>2 large eggs (120g)</p> <p>1 cup (170g) cooked dried beans, lentils, chickpeas, split peas, canned beans</p> <p>170g tofu</p> <p>⅓ cup (30g) unsalted nuts, seeds or paste, no added salt</p>
<p>Milk, yoghurt, cheese and/or alternative (mostly reduced fat)</p> 	2½	<p>1 cup (250ml) milk</p> <p>½ cup (125ml) evaporated unsweetened milk</p> <p>40g (2 slices) hard cheese (e.g. cheddar)</p> <p>200g yoghurt or custard</p>
Discretionary serves for taller or more active women	0–2½	<p><i>Additional serves from the five food groups or</i></p> <p>3–4 sweet biscuits</p> <p>30g potato crisps</p> <p>2 scoops ice-cream</p> <p>1 Tbsp (20g) oil</p>



## Breakfast

- ✿ ½ cup of uncooked rolled oats or muesli with ½ cup low fat milk **OR**  
2 slices of multigrain bread with avocado, tomato, an egg or peanut butter
- ✿ 1 piece fruit or ½ cup of fruit juice

## Morning snack

- ✿ 1 piece of fruit **OR**
- ✿ A tub of low fat fruit yoghurt

## Lunch

- ✿ 2 slices of multigrain bread or 1 bread roll with fillings
- ✿ 1 piece of fruit or 1 tub of low fat yoghurt

## Afternoon snack

- ✿ 4 multigrain cracker biscuits with a low fat spread or tomato and cheese **OR**
- ✿ 1 glass of low fat milk with 2 tsp milo

## Main meal

- ✿ 100–150g of lean meat, chicken, fish or eggs (note: no carbohydrate in protein foods)  
1 cup sweet potato, sweet corn, or potato  
Add plenty of non-starchy vegetables  
½ cup of tinned fruit with ½ cup of low fat yoghurt or custard

**OR**

- ✿ a maximum of 1 cup cooked basmati rice, add vegetables and meats as desired with no other carbohydrate in the meal

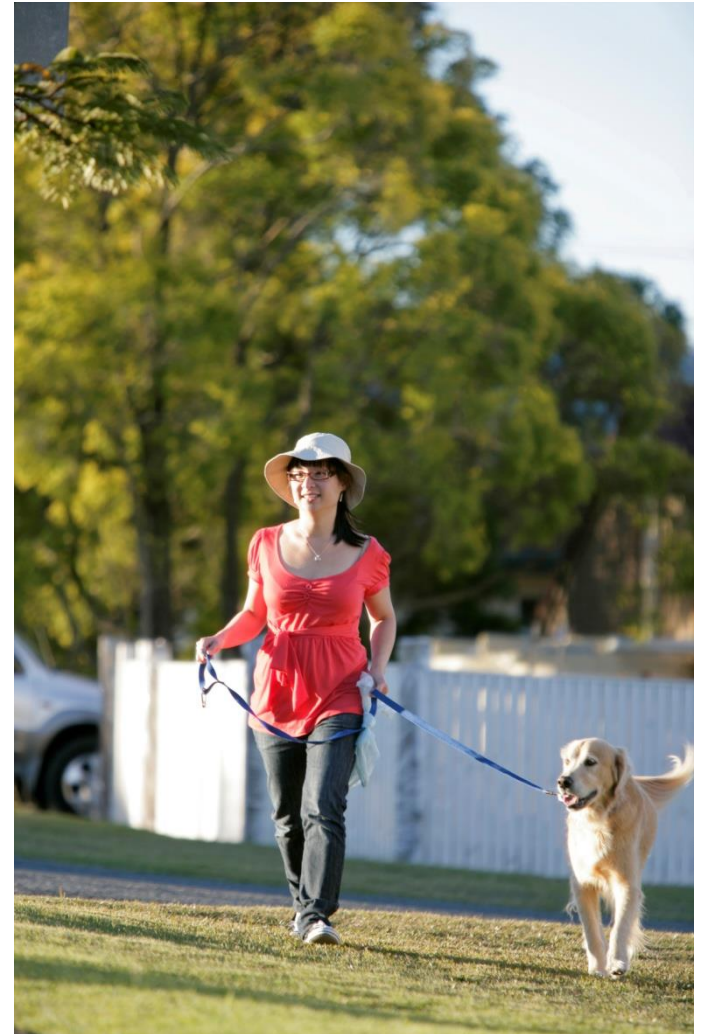
**OR**

- ✿ a maximum of 1 and ½ cups pasta or noodles, add vegetables and meats as desired with no other carbohydrate in the meal



# Keep active

- Physical activity helps to lower your blood glucose levels
- Aim for at least 30 min of activity per day
- Doing 10-15min of activity after meals will help use up some glucose from that meal
- Try to avoid sitting for long periods or sleeping straight after meals
- Ask your doctor, midwife or physiotherapist about safe exercise







# Activity 2

- Consider:
  - How many carb portions
  - Physical activity
  - GI
  - Timing of meals



# Healthy pregnancy weight gain

- Depends on pre-pregnancy weight
- Managing GDM may slow weight gain down
- We will help you if you are not gaining enough weight or gaining weight too quickly.

If your pre-pregnancy BMI was:	You should gain:
Less than 18.5kg/m <sup>2</sup>	12.5 to 18kg
18.5 to 24.9kg/m <sup>2</sup>	11.5 to 16kg
25 to 29.9kg/m <sup>2</sup>	7 to 11.5kg
Above 30kg/m <sup>2</sup>	5 to 9kg



# What happens after pregnancy?

- Repeat glucose tolerance test at 6-12 weeks
- You now have an increased risk of type 2 diabetes
- You can lower your risk by:
  - Continued healthy eating
  - Regular physical activity
  - Getting back to a healthy weight
  - Breastfeeding your baby



# Troubleshooting

- If you have a high reading after meals it's important to work out why
  - Did I eat too much carbohydrate or a larger meal than usual?
  - Did I have high GI foods?
  - Was I active enough?
  - Did I have my snack too close to a main meal?
  - Was I stressed or unwell?

# What next?

Complete all monitoring, bring your book and meter to appointments.

Questions?



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