

Carbohydrates and Glycaemic Index (GI)

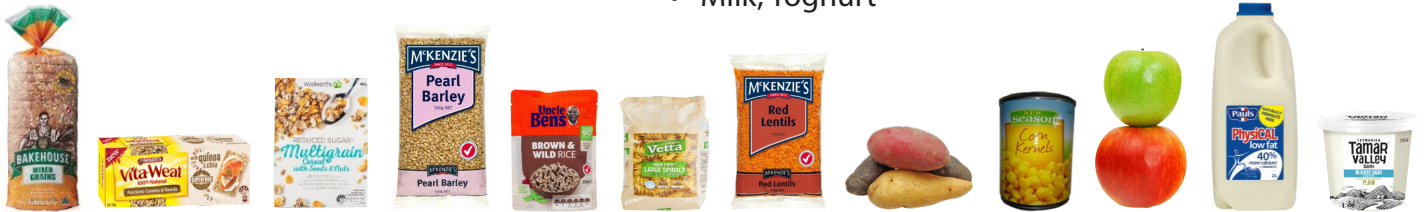
What are carbohydrates?

- Carbohydrates are found in a variety of food and drink, and provide the body with energy.
- Carbohydrates break down into glucose during digestion and increase blood glucose levels.
- Many foods containing carbohydrate also provide dietary fibre, vitamins and minerals.
- The amount and type of carbohydrate you eat will affect your blood glucose levels.

Which foods contain carbohydrates?

Healthy carbohydrate choices:

- Wholegrain bread, Crispbread
- Wholegrain breakfast cereal
- Grains such as Barley, Quinoa
- Pasta, Noodles
- Rice
- Wholegrain flour, Wholemeal flour
- Lentils, Legumes
- Starchy vegetables including Potato, Sweet Potato and Corn
- Fruit
- Milk, Yoghurt



Less healthy carbohydrate choices:

- Biscuits
- Cakes, Pastry
- Sugar, Agave syrup, Rice malt syrup, Coconut sugar
- Jam, Honey, Maple syrup
- Chocolate, Confectionary
- Regular soft drink, Cordial
- Fruit juice
- Potato crisps, Corn chips
- Icecream, Custard



Foods that contain little or no carbohydrate:

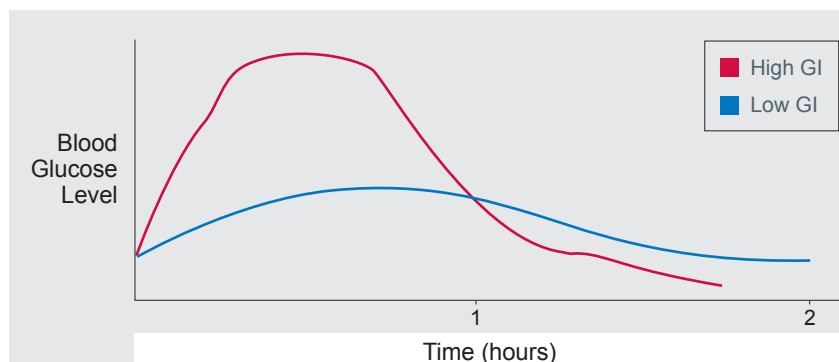
- Meat, Chicken, Fish, Tofu, Eggs, Cheese
- Oil, Avocado, Nuts
- Sugar free drinks, Artificial sweeteners
- Non-starch vegetables including: Lettuce, Tomato, Broccoli, Cauliflower, Zucchini, Eggplant, Bok choy, Okra, Carrots



Carbohydrates and Glycaemic Index (GI)

Glycaemic Index

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

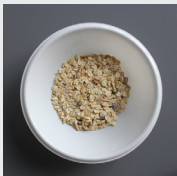





Higher GI carbohydrates increase blood glucose levels more quickly. Choose these less often.

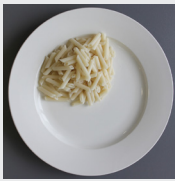


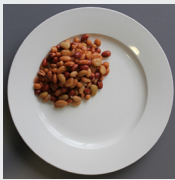


Lower GI carbohydrates increase blood glucose levels more slowly. These are a better choice.

Lower and higher glycaemic index choices

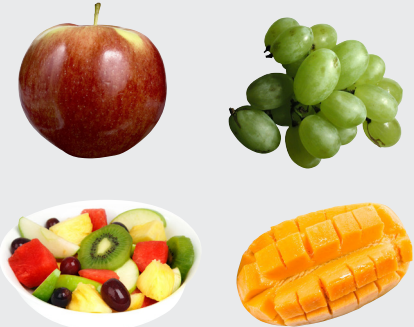


The following food amounts are guides for main meals and may be individualised by your Dietitian. Speak to your Dietitian about what is right for you.

Food	Lower GI	Higher GI
Breakfast cereal  ½ cup muesli or oats  1 cup flake type cereal or 2 cereal biscuits	<ul style="list-style-type: none">• Untoasted muesli• Rolled oats (Porridge)• Wholegrain or Multigrain high fibre cereals• Uncle Toby's Oatbribs or Multigrain Weetbix	<ul style="list-style-type: none">• Instant oats (Porridge)• Sultana Bran• Just Right• Cornflakes• Rice Bubbles• Puffed wheat
Bread  1–2 slices  1–2 wraps or 1 small roti / chapatti	<ul style="list-style-type: none">• Multigrain and seeds• Traditional sourdough• Pumpernickel• Baker's Delight Low GI white• Coles High Fibre Low GI Flatbreads: <ul style="list-style-type: none">• Wholemeal pita• Mission Low GI wrap and White Corn tortilla• Roti / Naan / Chappati made with whole wheat atta or chickpea flour	<ul style="list-style-type: none">• White• Wholemeal• Dark or Light rye• Bagel• Turkish, Focaccia• White pita• Crumpets• English muffins• White or Wholemeal flour based Roti / Naan / Chapatti

Carbohydrates and Glycaemic Index (GI)

Food	Lower GI	Higher GI
Pasta and Noodles  1 cup cooked or 50g dry	<ul style="list-style-type: none"> • Wheat pasta • Vermicelli • Mung bean noodles • Soba noodles • Fresh rice noodles • Udon noodles • Hokkien noodles • Buckwheat noodles 	<ul style="list-style-type: none"> • Corn pasta • Rice pasta • Potato gnocchi • Instant noodles • Dried rice noodles • Canned spaghetti
Rice  1 cup or 50g dry	<ul style="list-style-type: none"> • White or Brown long grain such as Basmati, Mahatma, Doongara • Wild • Moolgiri • Black, Red • Chia and quinoa rice blends • Sushi made from traditional Japanese rice 	<ul style="list-style-type: none"> • Jasmine • White or brown medium grain • Arborio (risotto) • White rice congee
Grains  1 cup cooked	<ul style="list-style-type: none"> • Quinoa, Barley • Bulghur (cracked wheat) • Pearl or Israeli cous cous • Buckwheat, Freekeh • Semolina • Teff 	<ul style="list-style-type: none"> • Polenta • Cous cous
Lentils and Legumes  1 cup cooked or canned	<ul style="list-style-type: none"> • All dried or canned including Kidney beans, Chickpeas, Brown lentils, Baked beans 	
Starchy vegetables  200g potato  1 cob corn or ½ cup or 75g kernels	Potato: <ul style="list-style-type: none"> • Sweet potato orange flesh • Yam • Nicola, Marfona potato Note: Eat skin on potato to lower GI Corn: <ul style="list-style-type: none"> • Corn cob • Corn kernels 	<ul style="list-style-type: none"> • Potato: all other white varieties such as Desiree, New, Pontiac, Sebago • Sweet potato purple skin, Kumara Note: Most other salad and stir fry vegetables contain very little or no carbohydrate and do not have a GI value. Some semi-starch vegetables, for example pumpkin, peas, carrot, parsnip, broad beans and beetroot have a GI value, but rarely increase blood glucose unless eaten in large amounts more than 200g.

Carbohydrates and Glycaemic Index (GI)

Food	Lower GI	Higher GI
<p>Fruit</p>  <p>1 serve of fruit is similar to a fist size or 1 cup chopped</p>	<ul style="list-style-type: none"> • Apple, Pear • Banana, lightly ripe • Nectarine, Peach • Apricot, Plum • Orange, Mandarin, Grapefruit • Berries • Kiwi fruit • Grapes • Pineapple • Paw paw, Mango • Figs <p>Note: Strawberries, raspberries, blackberries and passionfruit have less carbohydrate compared to other fruits and have less effect on blood glucose levels.</p>	<ul style="list-style-type: none"> • Cantaloupe • Watermelon • Lychee (canned in syrup) <p>Note: fresh fruit is the best option.</p> <p>Dried fruit: eat only small amounts occasionally.</p> <p>Canned fruit: choose lower GI fruit canned in natural juice and drain excess juice.</p> <p>Fruit juice: small amounts less than 150ml.</p>
<p>Milk and Yoghurt</p>  <p>1 cup milk and yoghurt</p>	<ul style="list-style-type: none"> • Milk, Yoghurt • Soy milk, soy yoghurt – choose products that have added calcium <p>Note: Choose reduced fat, reduced sugar varieties for heart health.</p>	<ul style="list-style-type: none"> • Rice milk • Oat milk • Sweetened condensed milk
<p>Crispbread</p>  <p>2-4 crispbread</p>	<ul style="list-style-type: none"> • Vita-Weat 9 Grain • Ryvita Multigrain 	<ul style="list-style-type: none"> • Rice and water crackers • Salada, Sao • Corn thins, Rice cakes • Kavli, Cruskits, Matza • Pretzels



Tips to lower the GI



Acidity will lower the GI of a meal.

Add vinegar or lemon juice to meals as a dressing.



Fibre, particularly soluble fibre, can lower GI.

Add psyllium husk to breakfast cereal; add salad vegetables to a sandwich; add lentils to soup; choose high-fibre wholegrain bread and cereal.



Cooking then cooling rice or potato.

Try in a rice or potato salad.



Eating protein as part of a meal can lower the GI.

Combine fish, lean meat, skinless chicken, egg or tofu with a lower GI carbohydrate food and plenty of low carbohydrate vegetables.

Refer to the Baker Institute's 'Plating it up: the portion guide' fact sheet for more information.

Carbohydrates and Glycaemic Index (GI)

Low GI choices in a healthy diet

Spread your intake of carbohydrate food and drinks at meals and snacks throughout the day. Some meal and snack examples are listed below. **Lower GI choices are in bold font.**

Breakfast

- Untoasted **muesli** (1/2 cup) with reduced fat, no added sugar **yoghurt** (100g)
- **Multigrain bread** (2 slices) served with 1 boiled egg, tomato, mushrooms and spinach
- 1 cup cooked **traditional rolled oats** made with reduced fat **milk** and topped with ½ **banana**
- Kellogg's **Guardian** (3/4 cup) with reduced fat **milk**
- Smoothie: reduced fat **milk** (200ml), **berries** (1/2 cup) and reduced fat **yoghurt** (100g)



Lunch / Light meal

- Sandwich: **Multigrain bread** (2 slices), skinless chicken and plenty of salad vegetables
- Soup: **Barley** (1 cup cooked), tomato broth and plenty of low carbohydrate vegetables
- Wrap: **Low GI wrap or wholemeal pita** (1), canned **three-bean mix** (1/2 cup), spinach, cucumber, capsicum
- Warm Salad: **Kidney beans** (150g can), canned tuna and cooked frozen vegetables



Dinner / Main meal

- **Spaghetti** (1 cup cooked) and lean meat bolognese sauce, with a side salad
- Grilled salmon with baked **sweet potato** (200g) and steamed green vegetables
- Skinless chicken and vegetable stirfry with **soba noodles** (1 cup cooked)
- Tofu and low starch vegetable curry served with **basmati rice** (1 cup cooked)



Snacks

- Fruit: **Apple** (1 medium) or **kiwi fruit** (2 small) or **banana** (1 small or half large)
- Reduced fat no added sugar **yoghurt** (200g) or **milk** (250ml)
- **Freedom Foods — Barley + Seven Seeds, Barley + Cranberry and Almond** muesli bar (1 bar)
- **Vita-Weat 9 Grain** (2–4 biscuits) with 1–2 slices of reduced fat cheese
- **The Happy Snack Company Roasted Fav-va Beans or Roasted Chick Peas** (1 pack 25g)



More information

Low GI Diet Shopper's Guide (annual editions) – www.glycemicindex.com



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