

Carbohydrates and Glycaemic Index (GI)

Carbohydrates

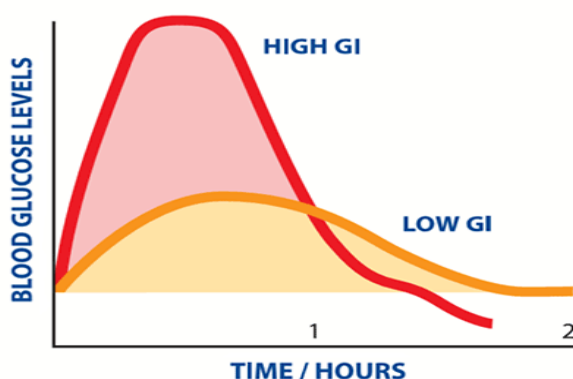
- Carbohydrate is found in a variety of food and drink and provides the body with fuel (energy)
- Many foods containing carbohydrate also provide fibre, vitamins and minerals
- Carbohydrate breaks down into glucose during digestion and is absorbed into the blood stream
- The type and quantity of carbohydrate you eat will affect your blood glucose levels

Which Foods Contain Carbohydrates?

| Healthy Carbohydrate Choices | Less Healthy Carbohydrate Choices |
|---|--|
| <ul style="list-style-type: none"> ✓ Wholegrain Bread ✓ Wholegrain Breakfast Cereal ✓ Grains e.g. Barley, Quinoa ✓ Pasta, Noodles ✓ Rice ✓ Wholegrain & Wholemeal Flour ✓ Lentils and Legumes ✓ Starchy Vegetables - Potato, Sweet Potato, Corn ✓ Fruit ✓ Milk, Yoghurt | <ul style="list-style-type: none"> ❖ Biscuits ❖ Cakes, Pastry ❖ Sugar, Jam ❖ Honey, Maple Syrup ❖ Chocolate, Confectionary ❖ Regular Soft Drink, Cordial ❖ Fruit Juice ❖ Potato Crisps, Corn Chips ❖ Ice-cream, Custard |

Glycaemic Index

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 the preferred choice

Summary of Lower and Higher Glycaemic Index Choices

Remember that both the GI and the quantity of carbohydrate foods consumed will affect your blood glucose levels. **Lower GI choices are preferable.**

| Food | ✓ Lower GI | ❖ Higher GI |
|---|---|--|
| <p>Bread</p>  | <ul style="list-style-type: none"> ✓ Multigrain ✓ Traditional Sourdough ✓ Pumpernickel ✓ Fruit & Grain ✓ Baker's Delight Low GI White ✓ Wholemeal Pita ✓ Goodness Superfoods Barley Wraps | <ul style="list-style-type: none"> ❖ White ❖ Wholemeal ❖ Dark & Light Rye ❖ Bagel ❖ Turkish & Foccacia ❖ Crumpets ❖ English Muffins |
| Suggested Serve Size | | |
| <p>Breakfast Cereal</p>  | <ul style="list-style-type: none"> ✓ Untoasted Muesli ✓ Rolled Oats (Porridge) ✓ Kellogg's All-Bran, Guardian ✓ Uncle Toby's Oatbrits ✓ Multigrain Weetbix | <ul style="list-style-type: none"> ❖ Sultana Bran, Lite n Tasty ❖ Instant Oats (Porridge) ❖ Just Right ❖ Cornflakes ❖ Rice Bubbles ❖ Puffed Wheat |
| Suggested Serve Size | | |
| <p>Pasta & Noodles</p>  | <ul style="list-style-type: none"> ✓ Wheat Pasta ✓ Vermicelli, Mung Bean Noodles ✓ Soba Noodles ✓ Rice Noodles | <ul style="list-style-type: none"> ❖ Canned Spaghetti ❖ Corn & Rice Pasta ❖ Potato Gnocchi ❖ Udon Noodles ❖ Instant Noodles |
| Suggested Serve Size | | |
| <p>Rice</p>  | <ul style="list-style-type: none"> ✓ Basmati Long Grain ✓ Mahatma Long Grain ✓ Wild ✓ Moolgiri ✓ SunRice Doongara CleverRice ✓ SunRice Low GI Brown Rice ✓ Black ✓ Red ✓ Chia and Quinoa Rice Blends | <ul style="list-style-type: none"> ❖ Jasmine ❖ Medium Grain – White & Brown ❖ Arborio (risotto) ❖ White Rice Congee ❖ Sushi Rice |
| Suggested Serve Size | | |

| Food | ✓ Lower GI | ❖ Higher GI |
|---|---|---|
| Grains  | <ul style="list-style-type: none"> ✓ Quinoa ✓ Bulghur (cracked wheat) ✓ Barley ✓ Pearl / Israeli Cous Cous ✓ Buckwheat, Freekeh ✓ Semolina | <ul style="list-style-type: none"> ❖ Polenta ❖ Cous Cous |
| Suggested Serve Size | | |
| Lentils & Legumes  | <ul style="list-style-type: none"> ✓ All Dried and Canned e.g. Kidney Beans, Chickpeas, Brown Lentils, Baked Beans | |
| Suggested Serve Size | | |
| Starchy Vegetables   | <ul style="list-style-type: none"> ✓ Potato: Carisma, Nicola ✓ Sweet Potato (orange flesh) ✓ Corn ✓ Yam <p>Note: Eat skin on potato to help lower GI. Most salad, stir fry, green & coloured vegetables contain very little or no carbohydrate and do not have a GI value.</p> | <ul style="list-style-type: none"> ❖ Potato: Desiree, New, Pontiac, Sebago ❖ Sweet Potato (purple skin & kumara) <p>Note: Some semi-starchy vegetables (e.g. pumpkin, peas, carrot, parsnip, broad beans and beetroot) have a GI value, but rarely elevate blood glucose levels unless consumed in large quantities.</p> |
| Suggested Serve Size | | |
| Fruit   | <ul style="list-style-type: none"> ✓ Apple, Pear ✓ Banana ✓ Nectarine, Peach ✓ Apricot, Plum ✓ Orange, Mandarin, Grapefruit ✓ Berries ✓ Kiwi Fruit ✓ Grapes ✓ Pineapple ✓ Paw Paw, Mango ✓ Figs | <ul style="list-style-type: none"> ❖ Cantaloupe ❖ Watermelon ❖ Lychee (canned in syrup) <p>Note: Although fruit juice and dried fruit have a lower GI, consume only small amounts occasionally. Fresh fruit is preferable. Lower GI fruit canned in juice can be consumed if excess juice is drained.</p> |
| Suggested Serve Size | | |

| Food | ✓ Lower GI | ❖ Higher GI |
|--|--|---|
| <p>Milk & Yoghurt</p>  | <ul style="list-style-type: none"> ✓ Milk & Yoghurt ✓ Soy Milk & Yoghurt ✓ Almond Milk <p>Note: Choose reduced fat, reduced sugar varieties for heart health and weight management</p> | <ul style="list-style-type: none"> ❖ Sweetened Condensed Milk ❖ Rice Milk ❖ Oat Milk |
| Suggested Serve Size | | |
| <p>Savoury Biscuits</p>  | <ul style="list-style-type: none"> ✓ Vita-Weat 9 Grain ✓ Ryvita Multigrain ✓ Ryvita Pumpkin Seeds & Oats | <ul style="list-style-type: none"> ❖ Rice Crackers ❖ Salada, Sao ❖ Corn Thins & Rice Cakes ❖ Kavli, Cruskits, Matza ❖ Water Crackers ❖ Pretzels |
| Suggested Serve Size | | |

Health Benefits of Lower GI Foods:

- They result in a slower rise in blood glucose levels after eating
- They result in a lower “peak” or rise in blood glucose levels
- They provide a feeling of fullness for longer and therefore may assist weight control

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 husks 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 (e.g. a rice or potato salad) can lower the GI.
- Eating protein as part of a meal can lower the GI. Combine a serve of fish, lean meat, skinless chicken, egg or tofu with a serve of a lower GI carbohydrate food and plenty of low carbohydrate vegetables. Refer to the “Plate Model” resource for more information.

Low GI Symbol

Look for the Low GI symbol on packaged foods.

Note that some food manufacturers choose not to have their products GI tested.



Low GI Choices in a Healthy Diet

Spread your intake of carbohydrate food and drink 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 **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 & plenty of salad vegetables
- ✓ Soup: **Barley** (1 cup cooked), tomato broth & plenty of low carbohydrate vegetables
- ✓ Wrap: **Multigrain Wrap** (1), canned **three-bean mix** (1/2 cup), spinach, cucumber & capsicum
- ✓ Salad: **125g tin of kidney beans**, mixed with canned tuna & plenty of salad vegetables

Dinner / Main Meal

- ✓ **Spaghetti** (1 cup cooked) & lean meat Bolognese sauce, with a side salad
- ✓ Grilled salmon with baked **sweet potato** (200g) & steamed green vegetables
- ✓ Skinless chicken & vegetable stir-fry with **soba noodles** (1 cup cooked)
- ✓ Tofu & Vegetable curry (no potato) served with **basmati rice** (1 cup cooked)



Snacks

- ✓ Fruit: **Apple** (1 medium size) or **kiwi fruit** (2 small size) or **banana** (1 small size)
- ✓ Reduced fat **yoghurt** (200g) or **milk** (250ml)
- ✓ **Superfoods Fibreboost 1st Cereal Bar** (1 bar)
- ✓ **Vita-Weat 9 Grain** (2-4 biscuits) with 1-2 slices of reduced fat cheese



For More Information

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