

Carbohydrates and Glycaemic Index

What are Carbohydrates?

Carbohydrates are found in a variety of foods and provide the body with fuel (energy). Many foods containing carbohydrate also provide fibre, vitamins and minerals. The *quantity* and *type* of carbohydrate foods you eat will affect your blood glucose levels.

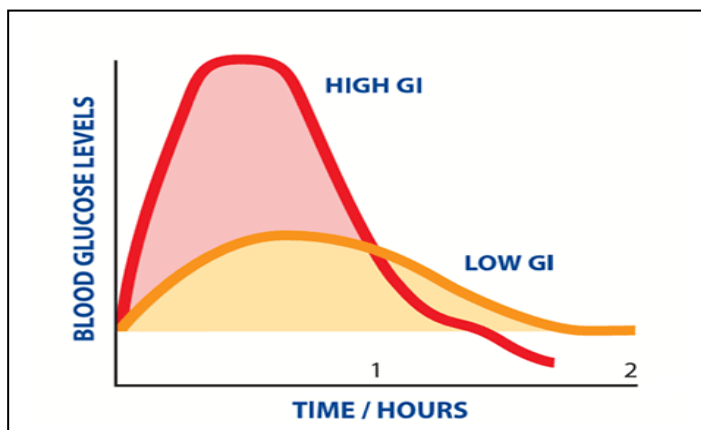
Which Foods Contain Carbohydrates?

- Bread
- Rice
- Pasta & Noodles
- Cereals & Grains
- Legumes & Lentils
- Starchy Vegetables: Potato, Sweet Potato & Corn
- Fruit & Fruit Juice
- Milk, Yoghurt & Ice Cream
- Biscuits & Cakes
- Honey, Sugar & Glucose
- Chocolate & Lollies
- Regular Soft Drink, Cordial & Jelly

Glycaemic Index

Carbohydrates break down into glucose during digestion and are absorbed into our blood stream.

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



Lower GI Carbohydrates

Increase blood glucose levels more **slowly**
These are the preferred choice

Higher GI Carbohydrates

Increase blood glucose levels more **quickly**
Choose these less often



Health Benefits of Lower GI Foods:

- They result in a slower rise in blood glucose levels after eating
- They provide a feeling of fullness for longer and therefore may assist weight control
- They can improve blood cholesterol levels (in conjunction with general healthy eating)

Glycaemic Index Quick Reference Table

The following table provides a **summary** of Lower GI and Higher GI choices.

Food Category	✓ Lower GI	❖ Higher GI
Bread 	<ul style="list-style-type: none"> ✓ Multigrain ✓ Sourdough ✓ Pumpnickel ✓ Mountain Bread Wraps ✓ Fruit & Grain ✓ Low GI White / Tip Top EnerGI 	<ul style="list-style-type: none"> ❖ White ❖ Wholemeal ❖ Bagels & Turkish Bread ❖ Pita ❖ Crumpets
Breakfast Cereals 	<ul style="list-style-type: none"> ✓ Untoasted Muesli ✓ Rolled Oats (Porridge) ✓ Kellogg's All-Bran, Guardian Special K Advantage, Sustain ✓ Uncle Toby's Oatbribs ✓ Rice Bran / Oat Bran 	<ul style="list-style-type: none"> ❖ Coco-Pops ❖ Quick Oats (Porridge) ❖ Cornflakes ❖ Rice Bubbles ❖ Puffed Wheat ❖ Sultana Bran ❖ Just Right
Rice 	<ul style="list-style-type: none"> ✓ Basmati (brown and white) ✓ Doongara ✓ Wild 	<ul style="list-style-type: none"> ❖ Jasmine ❖ Brown
Pasta & Noodles 	<ul style="list-style-type: none"> ✓ Wheat Pasta (white & wholemeal) ✓ All Noodles (not instant) 	<ul style="list-style-type: none"> ❖ Canned Spaghetti ❖ Potato Gnocchi ❖ Corn & Rice Pasta ❖ Instant Noodles
Grains 	<ul style="list-style-type: none"> ✓ Bulghur ✓ Pearl Cous Cous ✓ Buckwheat ✓ Barley ✓ Quinoa 	<ul style="list-style-type: none"> ❖ Semolina ❖ Cous Cous ❖ Polenta
Legumes & Lentils 	<ul style="list-style-type: none"> ✓ All Dried and Canned e.g. Kidney Beans, Chickpeas Brown Lentils, Baked Beans 	<ul style="list-style-type: none"> ❖ Broad Beans
Starchy Vegetables 	<ul style="list-style-type: none"> ✓ Nicola Potato ✓ Sweet Potato ✓ Corn <p><i>Note: Most other low-starch salad, stir fry, green & coloured vegetables do not contain significant carbohydrate and do not have a GI value.</i></p>	<ul style="list-style-type: none"> ❖ Potato – White, Pontiac, Sebago <p><i>Note: Some semi-starch vegetables like pumpkin, parsnip, beetroot, peas & swede do have a GI value, but rarely elevate blood glucose levels unless consumed in large quantities.</i></p>
Fruit 	<ul style="list-style-type: none"> ✓ Orange, Grapefruit, Lemon Mandarin, Tangelo ✓ Nectarines, Peaches, Plums, Apricot, Kiwi, Apples ✓ Grapes, Cherries, All Berries ✓ Firm Banana, Mango 	<ul style="list-style-type: none"> ❖ Watermelon ❖ Lychee (canned) <p><i>Note: Although fruit juice & dried fruit have a lower GI, only consume small amounts and preferably choose fresh fruit.</i></p>
Milk & Yoghurt 	<ul style="list-style-type: none"> ✓ Dairy Milk & Yoghurt ✓ Ice Cream & Custard ✓ Soy Milk & Yoghurt <p><i>Note: For heart health, choose low fat varieties</i></p>	<ul style="list-style-type: none"> ❖ Sweetened Condensed Milk ❖ Rice Milk
Dry Biscuits 	<ul style="list-style-type: none"> ✓ Vita-Weat ✓ Ryvita 	<ul style="list-style-type: none"> ❖ Rice Cakes / Crackers ❖ Puffed Corn Thins ❖ Water Crackers
Extra's 	<ul style="list-style-type: none"> ✓ Arnott's Snack Right Biscuits ✓ Low Fat Ice Cream & Custard 	<ul style="list-style-type: none"> ❖ Plain Sweet Biscuits ❖ Sorbet & Fruit-based Gelato

Remember: Consuming large quantities of any carbohydrate food, regardless of the G.I. will affect blood glucose control. Therefore, choose appropriate portion sizes.

Incorporating Low GI Choices

Try to include a lower glycaemic index food at each meal and/or snack time. Lower GI carbohydrate foods are best spread throughout the day, rather than large amounts at any one meal or snack time. Some examples are below. **Lower GI** choices are in **bold** font.

Breakfast

- ✓ 1-2 slices **grain, sourdough** or **fruit & grain bread**
- ✓ ½ cup untoasted **muesli** with 100g low fat **yoghurt**
- ✓ ¾ cup Kellogg's **Guardian** or **Sustain** with low fat **dairy/soy milk**
- ✓ 1-2 poached eggs on 1-2 slices **grain toast**. Add grilled spinach or mushrooms if desired
- ✓ Smoothie made with 200ml low fat **milk**, ½ cup **berries** and 100g low fat **yoghurt**



Lunch / Light Meal

- ✓ Sandwich made with 2 slices **grain bread** and either lean ham, diced chicken breast, tuna or salmon, or a boiled egg and plenty of salad vegetables
- ✓ Minestrone soup with **legumes** and/or **pasta** and plenty of lower starch vegetables
- ✓ 1 **mountain bread** wrap with **three-bean mix**, spinach, cucumber and capsicum
- ✓ Tuna and **pasta** (1-2 cups cooked) salad with plenty of baby rocket leaves, cherry tomato, cucumber or other salad vegetables
- ✓ 1 small can **baked beans** with 1 slice **grain toast**
- ✓ "Left over" **pasta** (1-2 cups cooked) or **basmati rice** (1 cup cooked) with salad or lower starch vegetables



Dinner / Main Meal

- ✓ Lean steak or skinless chicken with a medium **corn cob** and 2-3 serves of lower starch vegetables
- ✓ **Spaghetti** (1-2 cups cooked) and Bolognese sauce served with a green side salad
- ✓ Grilled fish with roasted **sweet potato** (1/3 medium size) and salad vegetables
- ✓ Lean meat stir-fry with **noodles** (1-2 cups cooked) and lower starch vegetables
- ✓ Vegetable and **legume** curry served with **basmati rice** (1 cup cooked)



Additional Tips:

- ✓ Acidity will lower the GI of a meal. Try adding a splash of vinegar or lemon juice in dressings or sauces.
- ✓ Adding fibre, particularly soluble fibre can lower GI. Try adding psyllium husks to breakfast cereals, or legumes & lentils to soups, casseroles or salads.
- ✓ The addition of protein to a meal can lower the GI of a meal. Try including a small serve of fish, lean meat or skinless chicken alongside the carbohydrate serve, as well as plenty of fibre rich vegetables.
- ✓ You can look for the Low GI Symbol on some packaged foods, however not all food manufacturers choose to have their products tested for GI.



Snacks

- ✓ 1 large **citrus fruit** or 2 small **stone fruit** or 1 **apple/pear** or 1 lightly ripe small **banana**
- ✓ 1 small tub of low fat **yoghurt**
- ✓ 1 slice of **fruit & grain toast** with a scrape of margarine
- ✓ 2-4 **grain biscuits** (e.g. Vita Weat) with low fat dip



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