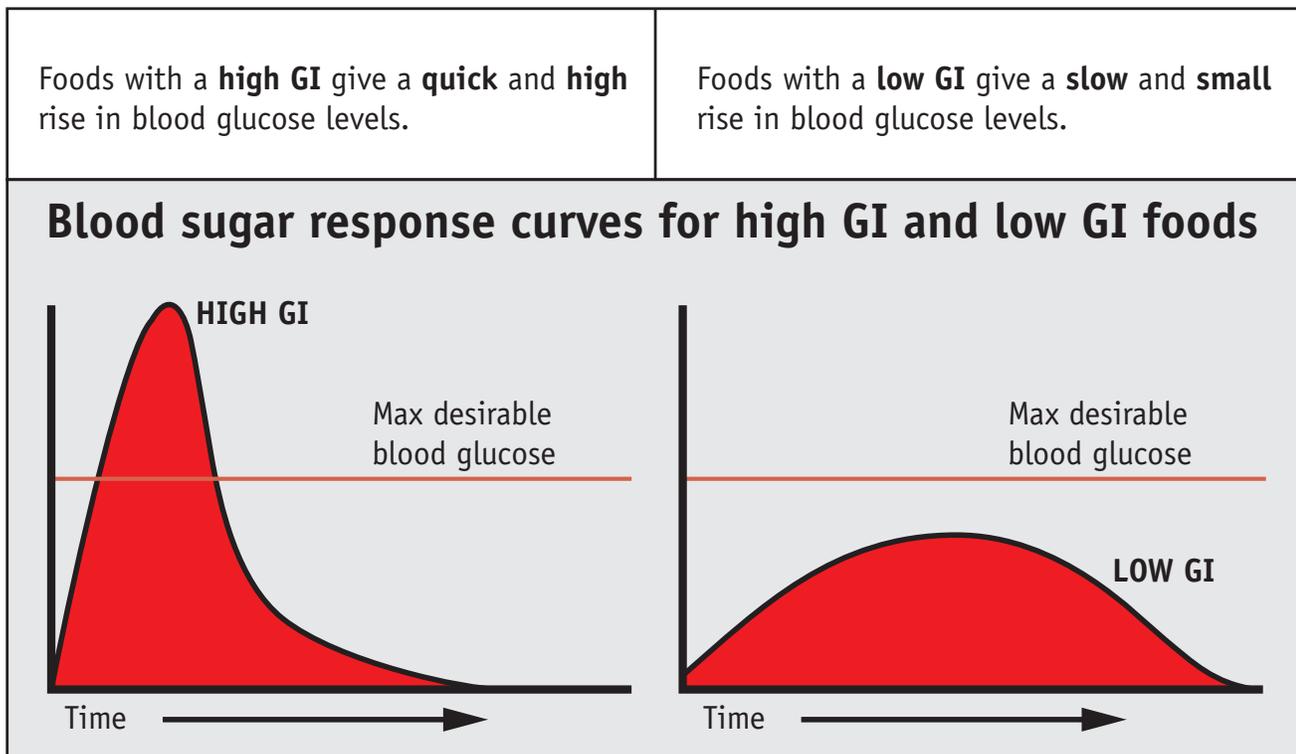


## Glycemic Index and Diabetes

Carbohydrates are the starches and sugars in the foods you eat. **The glycemic index (GI)** is a scale that ranks **carbohydrate-rich** foods based on how **quickly** and how **high** they raise blood glucose levels.



### Eating foods with a low GI may help you to

- Control your blood glucose and blood cholesterol level
- Control your appetite
- Reduce your risk of heart disease

## Grains / Starchy Foods

<b>Low GI Foods (55 or less)</b>  Use most often	<b>Medium GI Foods (56-69)</b>  Use more often	<b>High GI Foods (70 or more)</b>  Use less often
<b>Breads</b> <ul style="list-style-type: none"> <li>• 100% Stone ground whole wheat (e.g. Country Harvest)</li> <li>• Cobs® higher fibre white</li> <li>• Cobs® Capeseed</li> <li>• Corn tortilla</li> <li>• President Choice (PC)® Blue Menu™ multigrain English muffin</li> <li>• Pumpernickel (rye kernel)</li> <li>• Sprouted grain (e.g. Silver Hills™, Healthy Way™, Stonemill Bakehouse™)</li> </ul>	<b>Breads</b> <ul style="list-style-type: none"> <li>• Cobs® Country Grain</li> <li>• Chapatti or Roti</li> <li>• Rye</li> <li>• Sourdough rye</li> <li>• Whole wheat tortilla</li> <li>• Whole wheat pita</li> <li>• Whole wheat*</li> </ul>	<b>Breads</b> <ul style="list-style-type: none"> <li>• Kaiser roll</li> <li>• Mantou (Chinese steamed buns)</li> <li>• White bread</li> <li>• White bagel</li> </ul>
<b>Cereals</b> <ul style="list-style-type: none"> <li>• All-Bran Original™</li> <li>• All-Bran Buds with psyllium™</li> <li>• Alpen™ whole grain museli</li> <li>• Oat bran</li> <li>• Oats, steel cut</li> <li>• Oats, large flake</li> <li>• PC® Blue Menu™ steel cut oats (quick cooking)</li> <li>• Red River™</li> </ul>	<b>Cereals</b> <ul style="list-style-type: none"> <li>• Cream of wheat*</li> <li>• Grapenuts™*</li> <li>• Kellogg's Raisin Bran™</li> <li>• Kellogg's Special K™*</li> <li>• Oats, quick cooking*</li> <li>• PC® Blue Menu™ Bran Flakes</li> <li>• PC® Blue Menu™ Fibre First Multi-Bran</li> <li>• Shredded Wheat™</li> <li>• Weetabix™*</li> </ul>	<b>Cereals</b> <ul style="list-style-type: none"> <li>• Cheerios™</li> <li>• Corn flakes</li> <li>• Corn Chex™</li> <li>• Grapenut™ flakes</li> <li>• Instant oats</li> <li>• Instant cream of wheat</li> <li>• Rice Krispies™</li> <li>• Rice Chex™</li> </ul>
<b>Rice</b> <ul style="list-style-type: none"> <li>• Parboiled rice</li> <li>• Uncle Ben's converted rice™</li> </ul>	<b>Rice</b> <ul style="list-style-type: none"> <li>• Basmati rice, white or brown</li> <li>• Brown rice</li> <li>• Wild rice</li> </ul>	<b>Rice</b> <ul style="list-style-type: none"> <li>• Instant rice</li> <li>• Glutinous rice</li> <li>• Jasmine rice</li> <li>• Short grain rice (e.g. sushi rice, Arborio rice)</li> <li>• Sticky rice</li> </ul>

\* These medium GI foods are at the high end of the range (more than 65).

<b>Low GI Foods</b> Use most often	<b>Medium GI Foods</b> Use more often	<b>High GI Foods</b> Use less often
<b>Pasta and Noodles</b> <ul style="list-style-type: none"> <li>• Bean thread noodles</li> <li>• Pasta (cooked al dente)</li> <li>• Mung bean noodles</li> </ul>	<b>Pasta and Noodles</b> <ul style="list-style-type: none"> <li>• Buckwheat noodles (Soba)</li> <li>• Rice noodle</li> <li>• Rice vermicelli</li> <li>• Udon</li> </ul>	<b>Pasta and Noodles</b> <ul style="list-style-type: none"> <li>• Chinese Northern white noodles</li> <li>• Plain steamed glutinous rice roll</li> </ul>
<b>Other Grains</b> <ul style="list-style-type: none"> <li>• Appam or Idiappam (string hoppers)</li> <li>• Barley</li> <li>• Buckwheat/Kasha</li> <li>• Bulgar (cracked wheat)</li> <li>• Quinoa</li> <li>• Wheat kernels</li> </ul>	<b>Other Grains</b> <ul style="list-style-type: none"> <li>• Cornmeal*</li> <li>• Couscous</li> <li>• Taco shells*</li> </ul>	<b>Other Grains</b> <ul style="list-style-type: none"> <li>• Millet</li> </ul>
<b>Starchy vegetables</b> <ul style="list-style-type: none"> <li>• Cassava</li> <li>• Plantain, green</li> <li>• Sweet potato</li> <li>• Taro</li> <li>• Yams</li> </ul>	<b>Starchy vegetables</b> <ul style="list-style-type: none"> <li>• Breadfruit, raw</li> <li>• Potato, new or white</li> <li>• Plantain, ripe</li> <li>• Sweet corn</li> </ul>	<b>Starchy vegetables</b> <ul style="list-style-type: none"> <li>• Baking potato (Russet, Idaho)</li> <li>• Mashed potato</li> <li>• Instant mashed potatoes</li> <li>• French fries</li> </ul>
<b>Others</b> <ul style="list-style-type: none"> <li>• Chickpeas (garbanzo beans)</li> <li>• Chana dal</li> <li>• Kidney beans</li> <li>• Lentils</li> <li>• Soy beans (Edamame)</li> <li>• Split peas</li> <li>• Baked beans</li> <li>• Dhokla (steamed cake made with wheat and chickpea flour)</li> </ul>	<b>Others</b> <ul style="list-style-type: none"> <li>• Black bean soup</li> <li>• Green pea soup</li> <li>• Arrowroot biscuits</li> <li>• Digestive biscuits</li> <li>• Oatmeal cookies</li> <li>• Social tea biscuits</li> <li>• Walker's Highland oatcakes™</li> <li>• Breton™ wheat crackers*</li> <li>• PC® Blue Menu™ snack crackers (variety)</li> <li>• Ryvita™</li> <li>• Crispbread</li> <li>• Stoned wheat thins*</li> <li>• Popcorn</li> </ul>	<b>Others</b> <ul style="list-style-type: none"> <li>• Graham wafers</li> <li>• Melba toast</li> <li>• Pretzels</li> <li>• Rice cakes</li> <li>• Rice crackers</li> <li>• Soda crackers</li> <li>• Vanilla wafers</li> </ul>

GI values are expressed as a percentage of the value of glucose. GI of glucose = 100

## **A Few Helpful Tips:**

### **Limit use of processed foods. More processed grain products usually have higher GIs.**

- Eat breads with larger pieces of grain rather than bread made mostly with refined flour.
- Use steel cut oats or large flake oats rather than quick or instant oats.
- Include barley, bulgur (cracked wheat), buckwheat, quinoa and legumes (dried peas and beans) more often.
- Use whole fruit and vegetables rather than juices.

### **Avoid over-cooking.**

Usually the more a starch is cooked, the more easily it breaks down into glucose, raising blood glucose more quickly.

Example: pasta cooked al dent (firm) has a lower GI than soft cooked pasta.

### **Monitor the amount of carbohydrates eaten at each meal and snack.**

- Eating large amounts of low GI foods can still make blood glucose levels too high.
- Checking your blood glucose before and after meals allows you to see if you are eating the right amount or type of carbohydrate. Aim to keep your blood glucose between 5 and 10 two hours after meals.

### **Introduce low GI foods gradually.**

- Since many low GI foods are high in fibre, introduce them gradually and drink plenty of fluids to avoid discomfort and gas.

# Lower GI Menu Ideas

## Healthy Start

Use a low GI bread or cereal. Add some low fat milk or yogurt and fruit to kick start the day.

- Large flake oats with low fat milk and raisins
- Museli with yogurt and fresh berries
- All Bran cereal with low fat milk and sliced banana
- Sprouted grain toasts with peanut butter and a fresh apple
- French toast with fresh berries and yogurt
- Poached egg on multigrain toast with a fresh orange
- Homemade oat bran muffin, low fat cheese and fresh fruit



## Lunch Break

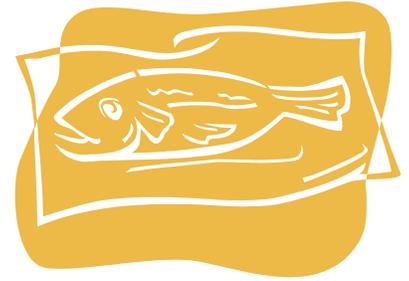
Soups and sandwiches offer quick lunch solutions all year round. Add a green salad or raw vegetables.

- Try one of the following soups with whole grain bread or roll:  
Minestrone, split pea, lentil, barley with vegetable and beef
- Sandwich made with sprouted grain bread. Fill with tuna, salmon, lean meat or chicken; add lettuce, sprouts, tomatoes and/or cucumber.
- Pasta salad with vegetables, tossed in a low fat dressing. Mix in shrimp or chicken.
- Fresh fruit salad with yogurt or cottage cheese (no salt added) and stoned wheat thins
- Small whole grain bagel topped with light cream cheese and canned salmon
- Baked beans on multigrain toast and salad
- Burrito made with whole wheat tortilla, black bean, low fat cheese, low fat sour cream, diced cucumber and tomato

## Savory Suppers

Base your meal on a low GI starch. Add plenty of vegetables and keep protein portions moderate.

- Grilled fish with Basmati rice and vegetables
- Stir-fry chicken, shrimp or tofu, Chinese vegetables and noodles
- Meatloaf made with rolled oats and grated vegetables (carrots and zucchini). Serve with new potatoes.
- Vegetable lasagna made with low fat cheese
- Chili made with kidney beans and lean ground meat. Serve with green salad.
- Lean meat, chicken or fish kabobs with corn on the cob and grilled vegetables
- Roast meat or chicken with baked sweet potato and steamed vegetables



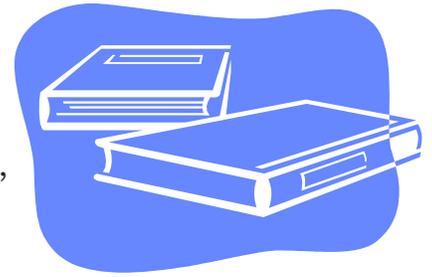
## Super Snacks

To keep your energy level up between meals, try the following nutritious snacks.

- Low fat milk and low GI cereal
- Low fat yogurt and fresh fruit
- Low fat milk and oatmeal cookies
- Muffin made with oats or oat bran and fruit
- Grainy bread and peanut butter
- Stoned wheat thins or Ryvita™ with low fat cheese
- Low fat popcorn
- Whole wheat pita and hummus

## Resources

- The Low GI Handbook: The New Glucose Revolution Guide to the Long-Term Benefits of Low GI Eating. By Jennie Brand-Miller, Kaye Foster-Powell, Thomas M.S. Wolever. Da Capo Press, July 2013
- The Low GI shopper's Guide to GI Values 2014: The Authoritative Source of Glycemic Index Values for more than 1200 Foods. By Jennie Brand-Miller, Fiona Atkinson, Kaye Foster-Powell. Da Capo Press, December 2013 (2015 version will be released on December 30, 2014)
- The New Glucose Revolution Low GI Vegetarian Cookbook: 80 Delicious Vegetarian and Vegan Recipes Made Easy with the Glycemic Index. By Jennie Brand-Miller, Kate Marsh and Kaye Foster-Powell. Da Capo Press, September 2006.
- The official website for the glycemic index and international GI database, University of Sidney, Australia: [www.glycemicindex.com](http://www.glycemicindex.com)
- Canadian Diabetes Association: [www.diabetes.ca](http://www.diabetes.ca)



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