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University Hospitals of Leicester

Understanding Glycaemic Index for children with diabetes

Nutrition and Dietetics

Information for Patients

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What is Glycaemic index (GI)

The glycaemic index, or GI for short, is a measure of how quickly carbohydrate is broken down into glucose and absorbed into the blood.

Why use Glycaemic Index?

Choosing lower GI foods can improve blood glucose levels and lower the risk of both high and low blood glucose levels after meals. Choosing low GI foods is better for managing your blood glucose levels and can even improve long term blood glucose control (HbA1C). These foods may also help to make sure the rate of weight gain in children is healthy.

Foods with a high GI are absorbed quickly and can produce a large rise in blood glucose levels. Your insulin cannot work this quickly so high GI foods and drinks are best avoided unless you are using them to treat a low blood glucose (hypo) or to manage exercise.

Foods with a low GI are absorbed slowly and can produce a smaller rise in blood glucose levels; so you may wish to change some foods with a high GI for foods with a low GI.

2 meals containing the same amount of carbohydrate in grams may affect your blood glucose levels differently depending on the glycaemic index.



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While low GI foods may be good in keeping your blood glucose levels stable, some low GI foods such as takeaways and pizzas are not the healthiest choices and can cause high blood glucose levels many hours after eating.

It is important to remember that not all low G.I foods are healthy, and not all high G.I foods are unhealthy!

Carbohydrate	Lower GI Choice	Higher GI Choice
Bread	Multigrain, seeded, granary, rye, wholegrain, pitta, chapatti	White bread, bagel, baguette, gluten free bread
Potatoes	New potatoes with skins, sweet potato, yam	Boiled potatoes, instant mashed potatoes (without added fat and
Pasta	Pasta and noodles	Gluten free pasta
Rice	Basmati rice	Easy cook rice, white rice.
Other Grains	Bulgur wheat, barley, couscous, qui-	
Breakfast Cereals	Porridge oats, muesli, bran cereal with fruit	Corn flakes, Bran Flakes, Cheerios, Coco Pops, Rice Krispies
Pulses and Beans	Butter beans, kidney beans, chick peas, lentils, peas, sweet corn	Swede.
Fruit	Most fruit; apples, grapes, kiwi, plums, raisins, banana, oranges,	Watermelon.
Milk and Dairy	Milk, milkshakes, yoghurt, custard.	Rice milk.

As well as G.I, there are several other reasons which also affect how quickly the carbohydrates you eat turn into glucose in your blood. This includes:

- **Meal size:** A large amount of any type of carbohydrate will take longer to digest than a smaller amount. You might find it useful to split the bolus for meals over a certain size. Speak to your Dietitian about the amount of carbohydrate which is considered large for you.
- **Fat and protein:** The addition of high fat foods (oil, butter, cream, cheese etc.) and high protein foods (meat, fish eggs etc.) as part of a meal slows down the rate of digestion, meaning glucose is released more slowly in to the blood. Some people with diabetes find adding a fat and / or protein source with breakfast is helpful in preventing a post breakfast 'spike' in blood glucose levels.
- **Fibre:** High fibre foods such as whole grain cereals or bread, fruits vegetables, beans or pulses and potato skins are digested very slowly and cause a slower increase in blood glucose.
- **Processed food:** A more processed food is likely cause a higher G.I. For example, easy cook rice has a higher G.I compared with basmati rice, and whole oats have a lower G.I compared to instant porridge due to processing methods.

Top Swaps for including more lower G.I foods in your day...

Breakfast

- Swap to lower GI breakfast cereals, including porridge and oat based cereals.
- Add fruit to breakfast cereal
- Swap white and wholemeal bread for wholegrain or sourdough breads.
- Add avocado, egg, baked beans or peanut butter to wholegrain toast
- If drinking pure fruit juice, have this with a main meal instead of outside a meal time

Lunch

- Use multigrain or wholegrain bread and rolls for sandwiches.
- Use pitta bread, wraps and flat breads in place of white and wholemeal bread.
- Try rice and pasta salads made with low fat sauces as an alternative to sandwiches
- Include fruit packs and vegetable sticks as extras in lunch boxes

Evening meal

- Swap potato for sweet potato and new potatoes
- Use pasta and rice or noodles in place of potatoes
- If eating potatoes, keep the skins on where possible
- Include 2 -3 servings of vegetables with meals.
- Add beans and pulses to stews/casseroles. You can replace some of the meat with beans and pulses.

Snacking

- All types of fruit are great, try making fruit skewers
- Mix fruit and yogurt together for a healthy filling snack.
- Have veg sticks and low fat dips like hummus
- Before bed; try low fat milk, yogurt and yogurt drinks
- Wholegrain crackers or oatcakes with low fat cream cheese
- Breakfast cereal with low fat milk

Further reading

Glycaemic Index: http://www.glycemicindex.com/

Digibete: Strike the Breakfast Spike

https://www.digibete.org/strike-the-breakfast-spike/

Contact details

Department of Nutrition and Dietetics Dietitian Contact details: 0116 258 5400 / 3930 Nurse office Contact details: 0116 258 6796 Hours: 8:30am—4:30pm

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