



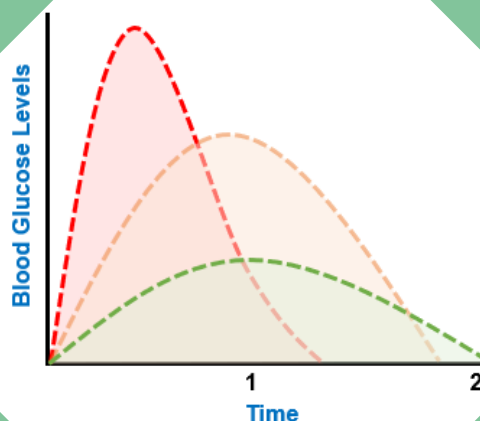
Frimley Health
Paediatric
Diabetes Team



Frimley Health
NHS Foundation Trust

Type 1 Diabetes and The Glycaemic Index

A guide to carbohydrate
choices and their impact
on blood glucose



Information for patients,
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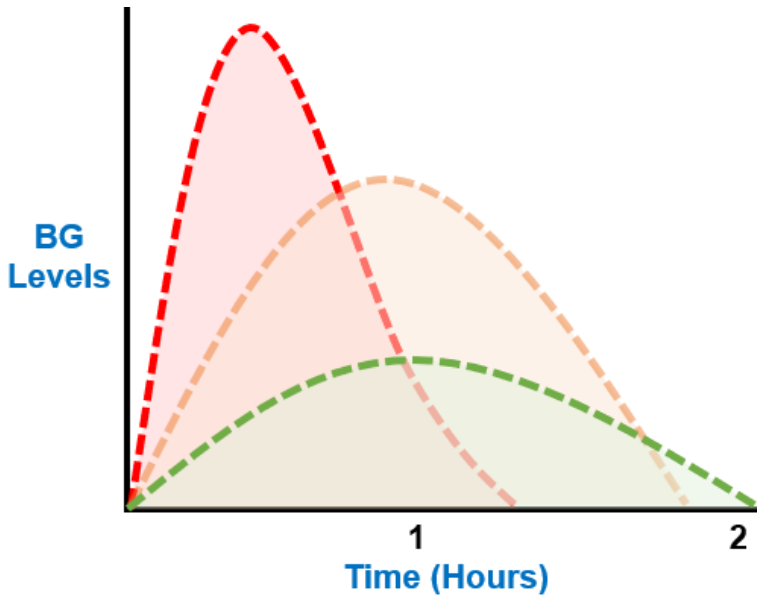
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What is the Glycaemic Index?

The Glycaemic Index (GI) is a way to rank foods based on how quickly a food will raise blood glucose (BG) levels after consumption.



Foods with a **high GI** are digested quickly and therefore lead to a quick, sharp rise in BG levels.

Foods with a **medium GI** lead to slightly faster and a higher rise in BG levels compared to low GI foods.

Foods with a **low GI** are digested slowly and lead to a gradual, steady rise in BG levels.

Are high GI foods unhealthy?

Not necessarily! For example, **potato crisps** have a medium GI whilst **baked potatoes** have a high GI. However, a baked potato is usually healthier than crisps because it's lower in fat and salt. Similarly, some low GI foods like chocolate and ice cream aren't always the healthiest choices. **The key is to use GI in the context of balanced eating.**

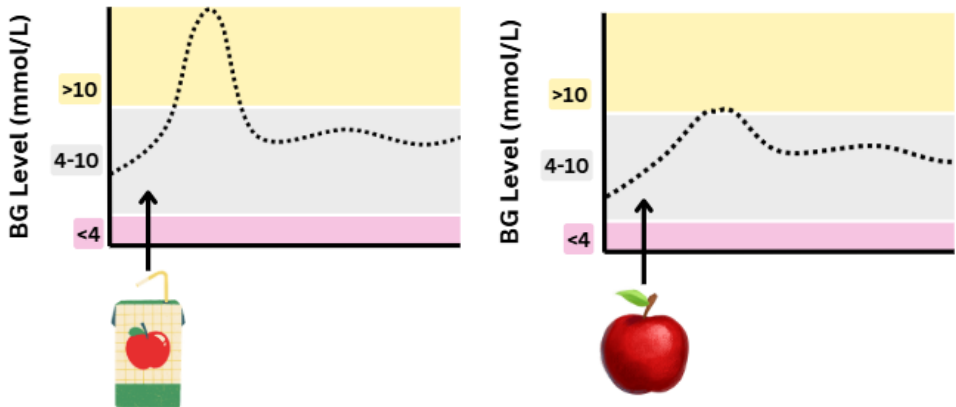


Factors Affecting the GI Index

Several factors can influence the GI of a food:

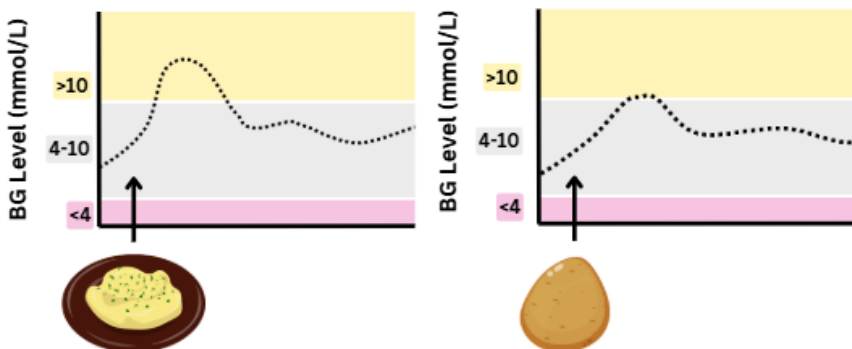
1. Food Form: Liquid vs. Solid

Liquids are digested and absorbed more quickly than solids, leading to a faster spike in BG levels. [E.g. apple juice vs whole apple:](#)



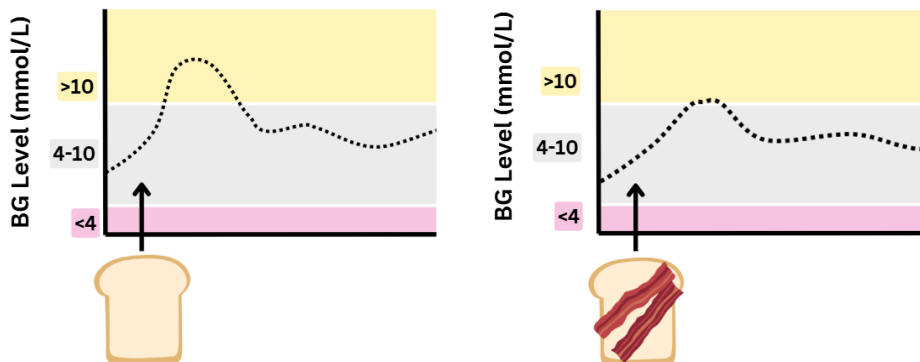
2. Cooking Method

The way food is prepared affects how quickly it is digested. Mashed potatoes are in a more digested form than boiled potatoes simply due to the mechanical process of mashing! This means it's easier for the body to absorb. [E.g. mashed potato vs. jacket potato.](#)



3. Fat & Protein Content

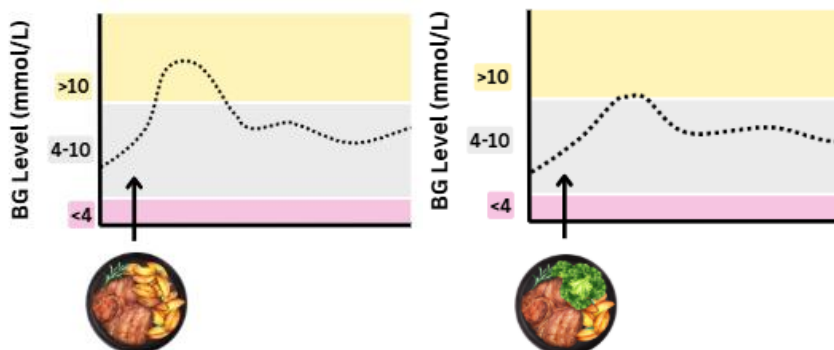
Fat (e.g. oil, butter, cream, cheese) and protein (e.g. meat, fish, eggs) **slow down digestion**. This means glucose enters the bloodstream more gradually. E.g. plain toast vs. toast and bacon.



High fat intake can increase insulin resistance.

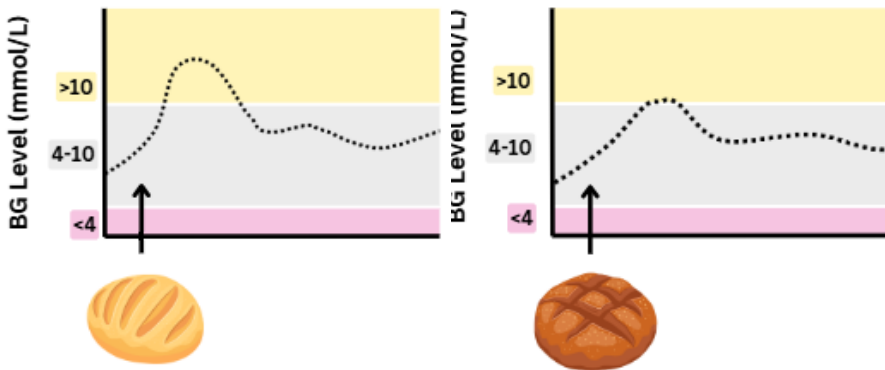
4. Fibre Content

Fibre slows digestion and glucose absorption and supports a healthy digestive system. E.g. Meat and potato vs. meat, half portion of potato wedges and a portion of broccoli.



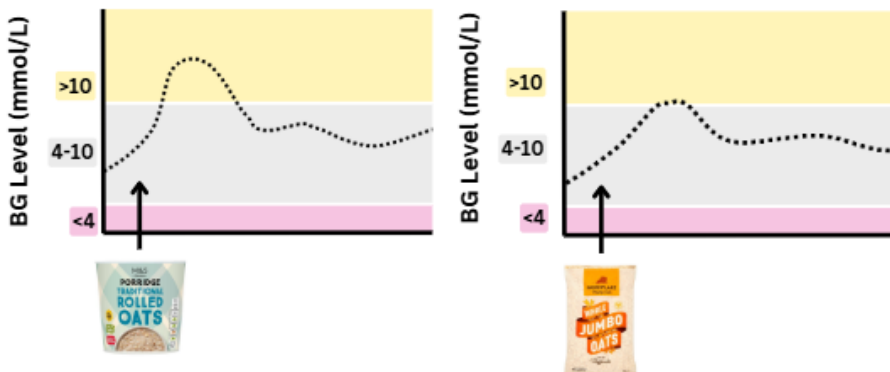
5. Type of Starch

Different types of starch digest at different speeds. Whole grains typically have more fibre and a lower GI than refined grains. e.g. [white bread vs wholegrain bread](#).



6. Degree of Processing

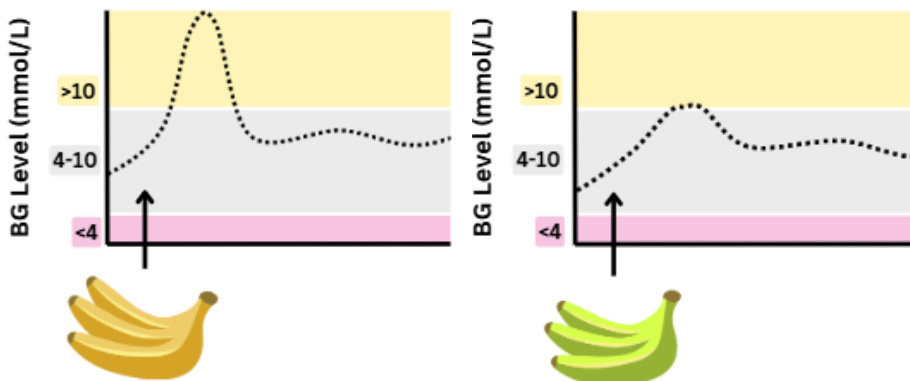
More processed foods tend to have a higher GI. Even different brands of the same cereal can vary! Less processed options, like jumbo oats, digest more slowly (so, stay fuller for longer) and promote better BG control. E.g. [Instant rolled oats vs Jumbo oats](#)



7. Ripeness

Ripe fruit has a higher sugar content and a higher GI. As fruit ripens, starch turns into sugar, which is absorbed more quickly by the body.

E.g. Very ripe banana vs. less ripe banana.



Practical tips for meal and snack planning

Whilst the GI measures how individual foods affect BG levels, it's important to consider the overall impact of a meal or snack, especially since we often eat a mix of foods together. Here are some practical tips:

- **Watch portion sizes:** The carbohydrate content in a meal or snack plays a key role in how it affects BG levels. Meals that are carb-heavy or contain a large portion of carbs compared to protein and vegetables will cause a more sustained increase in BG levels (higher for a longer period). Aim for balanced meals with an appropriate portion of carbs, protein, and veggies.
- **Pair carbohydrates with lean proteins and healthy fats:** This helps slow the absorption of carbs and can prevent sharp spikes in BG levels. Examples of good protein and fat sources include beans, lentils, fish, and chicken.
- **Focus on whole foods:** Choose whole, unprocessed foods like fresh fruits and vegetables. These provide essential nutrients and generally have a lower glycemic impact.
- **Include fibre-rich grains:** Opt for whole grains such as brown rice, barley, quinoa, and whole wheat pasta. Fibre helps regulate BG levels and improve digestion.
- **Avoid added sugars:** Choose foods that don't contain added sugars. Many packaged foods and drinks may have hidden sugars that can spike BG levels.
- **Keep a food diary:** Tracking meals, snacks, and BG levels can help you see how different foods and meal combinations affect your child's BG, making it easier to fine-tune their meal planning.
- **Avoid processed and refined carbs:** These can cause rapid increases in BG and often have little nutritional value. Opt for whole grains or other less-refined carb sources.



Lower GI Swap Suggestions

Breakfast

- Swap to lower GI cereals, porridge, oat-based cereals.
- Swap white bread for wholegrain/sourdough.
- Mash avocado on wholegrain toast.
- Add egg, baked beans or peanut butter to toast.
- Try making chia puddings instead of cereal

Lunch

- Use pitta bread, wholegrain wraps and flat breads in place of white bread/wraps.
- Try rice and pasta salads as an alternative to sandwiches.
- Make homemade cereal bars that use fruit, seeds and oats in place of bought snack bars in lunch boxes.
- Include fruit packs and vegetable sticks as extras in lunch boxes.

Main Meals

- Swap potato for sweet potato and new potato.
- Use pasta, rice or noodles in place of potato.
- Include 2-3 servings of vegetables with meals.
- Mash vegetables into potato (e.g. cauliflower!)
- Add beans and pulses to stews/casseroles, you can replace some of the meat with beans and pulses.

Snacks

- Opt for 'natural' or 'greek style 'yoghurt' in place of flavoured 'yoghurt'
- Try almonds/walnuts instead of sugary granola bars
- Try cucumber or celery sticks with hummous instead of crisps
- Mix fruit and yogurt together for a healthy filling snack.



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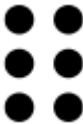
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