

Glycaemic Index in Insulin Pump Therapy

Department of Nutrition & Dietetics



Information for patients,
relatives and carers

Glycaemic index (GI) is a system of ranking carbohydrate foods according to how quickly the carbohydrate is digested and absorbed. Foods are categorised into low, medium and high GI or slow and quick release.

A number of factors will affect the GI of foods, including:

- The structure of the starch e.g. the type of starch in basmati rice is slower release than other types of rice
- The presence of wholegrain and certain types of fibre in the food can lower the GI
- The type of sugar in the food e.g. natural fruit and milk sugars are slower release than other types of sugar
- The presence of increased fat/protein or acid, e.g. vinegar, in the food slows the absorption of the carbohydrate and lowers the GI
- The greater degree of processing the food has undergone is often associated with the food being higher GI

These factors are given for guidance; however, the true GI of a food is determined under laboratory conditions.

If a standard bolus is used for low GI foods, the insulin can work too quickly and doesn't match the rate that the carbohydrate is absorbed. This can result in a hypo an hour or so later, but then a high blood glucose later as the glucose is still being absorbed after the insulin action has tailed off.

You may find by using an multi/dual wave or extended/square wave bolus on your insulin pump you get better blood glucose results when eating a low GI meal with protein and fat. An example of such a meal would be spaghetti Bolognese with parmesan and garlic bread, followed by yogurt or ice cream for dessert.




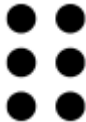
Foods that are particularly low GI, like some root and pulse vegetables, do not always require a full dose of insulin to cover the carbohydrate.

There are several published lists of high, medium and low GI foods. The following table was compiled using several sources and is not an exhaustive list.

Please note: This leaflet is a supplement to the leaflet “Using Different Bolus Options in Insulin Pump Therapy”.

Slow Release or Low GI Foods	Medium Release or Medium GI Foods	Fast Release or High GI Foods
		Glucose
Apples, oranges, pears, peaches, cherries, plums, grapefruit, grapes, apricots, kiwi, bananas	Other fruits e.g. pineapples, raisins, sultanas	Melon
Beans, lentils, chickpeas, peanuts, baked beans		
Pasta and noodles, pearl barley		Popcorn
Basmati rice, brown Rice, bulgar wheat, buckwheat, quinoa	Couscous, semolina, Par-boiled rice, easy cook rice	Other rice, tapioca
Oats, muesli, All Bran, Sultana Bran, porridge	Mini wheats, Shredded Wheat, Weetabix, Oatibix, instant porridge, Sustain	Cornflakes, Rice Krispies, Puffed Wheat, Puffed Rice, Coco Pops, Cheerios
Pumpnickel bread, bread with 'bits' in e.g. multi-grain, soya and linseed breads, granary, oatbran. Chapattis. Tortilla wraps.	Pitta bread, naan bread	White, wholemeal and brown bread, baguettes, bagels
Oat cakes, Rich Tea biscuits	Ryvita, plain digestive biscuits, shortbread, muesli bars	Rice cakes, cream crackers, water biscuits, puffed crispbread, morning coffee biscuits
Fruit loaf	Malt bread	
Milk, low fat yoghurt, low fat ice cream	Ice cream, sorbet	
	New potatoes, boiled potatoes, sweet potato	Jacket potato, mashed potato, chips

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