Patient information

Insulin Pump Therapy: Session Two Other Factors to Consider

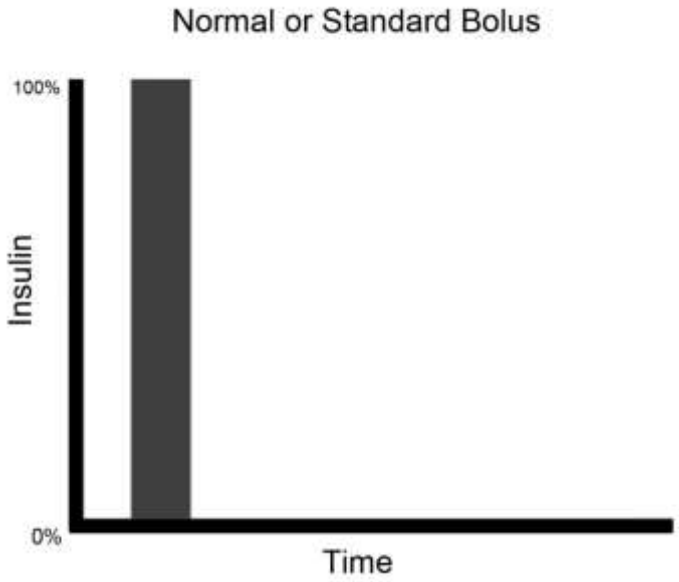
Therapies Department

Now that you are able to start identifying and counting carbohydrates it is important to know what other factors affect your insulin bolus and how to alter your pump to manage this.

Choosing Your Bolus

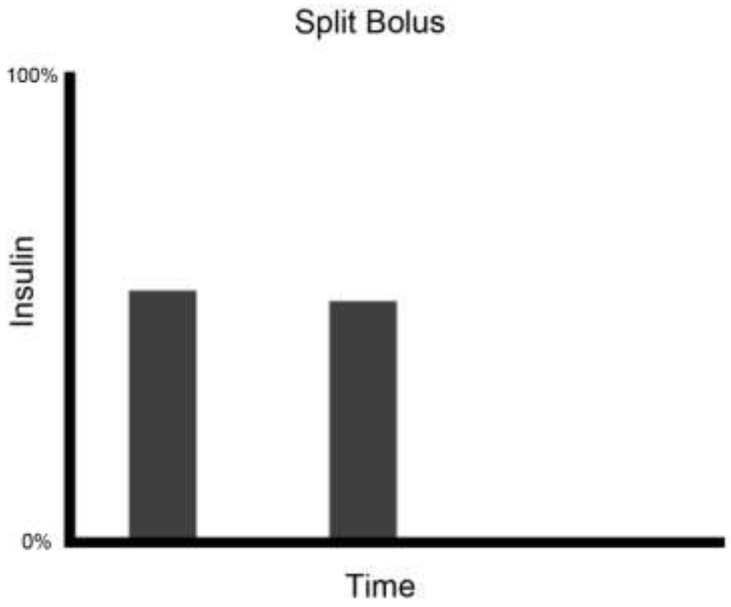
A normal or standard bolus, similar to an insulin injection, may not be appropriate for all meals and snacks when using an insulin pump. A pump user needs to understand the different types of bolus' doses that your pump can deliver and appreciate the situations where it is appropriate to use them.

Standard food bolus - the complete insulin dose is usually given at the beginning of the meal or snack. This type of bolus works well with small snacks or, high glycaemic index foods. If you are eating 50g of carbohydrate or more you normally will need to use one of the bolus types listed below.

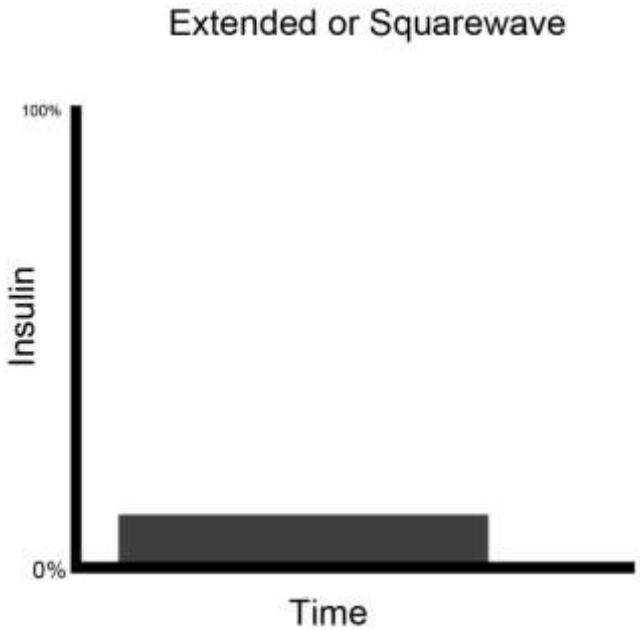


Split bolus – An older technique which can be useful if you are eating a meal containing several courses. Some of the insulin is given before or just after the meal and again 15-60 minutes later. e.g. five units with meal, five units 60 minutes later.

Unfortunately it is easy to forget to deliver the second bolus so find a way of reminding yourself.

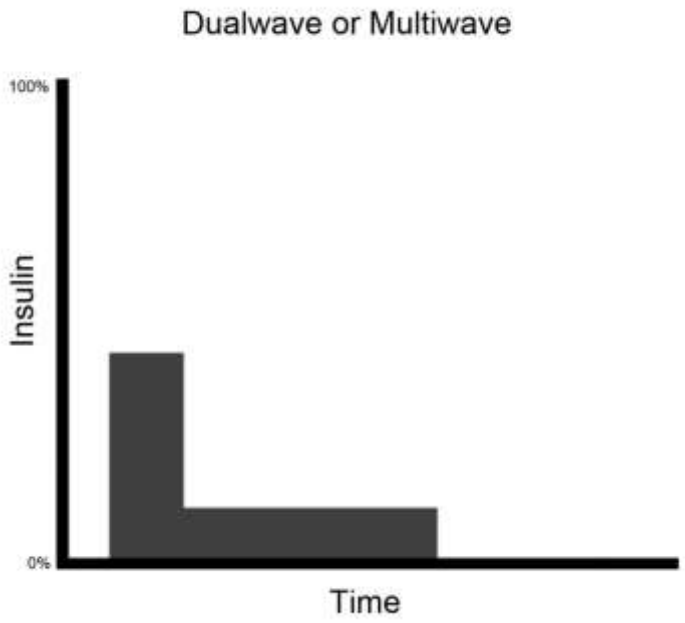


Extended or squarewave bolus - the bolus delivery is extended over a longer time period. Most foods will require a certain amount of insulin to be given initially therefore consider if a Dualwave/Multiwave may be more suitable.



Dualwave/multiwave/combo - this type of bolus can often help you achieve the best possible post meal blood glucose levels as it closely mimics normal physiology. It is a combination of the normal and extended/squared bolus.

Some of the insulin is delivered at the start of a meal; the remainder is given as an extended bolus. You can decide how much insulin is given immediately and how much is given as an extended bolus and for how long e.g. 30% immediately and 70% over two hours.



Fat

Fat in foods slows the rate of digestion therefore will have an impact on blood glucose levels. For overall health high fat foods (especially saturated fat) should be limited as they are high in calories and contribute to weight gain and coronary heart disease.

Fat can make blood glucose levels rise more slowly therefore one single bolus may reduce blood glucose level too quickly and cause a high reading later as the meal is digested.

High fat meals require a split or extended bolus or dualwave/multiwave/combo.

Examples:

- Fried meals such as fish and chips.
- Most takeaway meals.
- Pizza.
- Pastry.
- Dishes containing lots of cheese.
- Burgers/sausages/pork belly etc.

Protein

No adjustments need to be made to insulin when protein is taken in moderation however large quantities of protein may affect blood glucose levels a few hours after eating. Protein may delay the rise in blood glucose levels if eaten in large quantities.

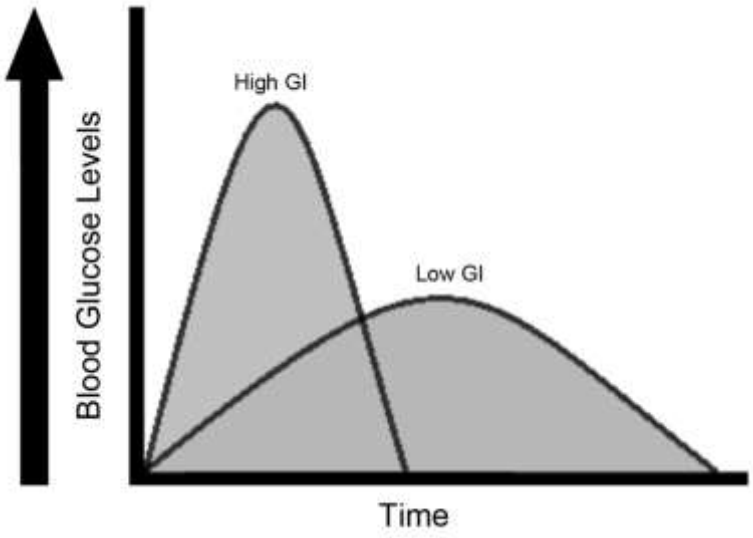
Protein meals may require a split or extended food bolus.

Examples:

- More than 100-120g (3-4oz) of meat
- Restaurant meals based on large protein rich foods e.g. eggs, chicken, meat, fish.
- Buffets or BBQ's.

Glycaemic Index

The Glycaemic index (GI) refers to how quickly a carbohydrate is digested and absorbed as glucose into your bloodstream. Food broken down very quickly has a high GI and food broken down more slowly has a low GI.



It is important to consider the GI of food in pump therapy as, if you deliver a standard bolus for a low GI meal you may find your blood glucose levels fall too quickly soon after the bolus as the food has not yet been absorbed. You will be provided with a separate GI food list by your dietitian as a guide.

Meals that have a high glycaemic index will usually require a standard bolus

Meals that have a medium or low glycaemic index may require an extended or mulitwave/dualwave/combo bolus

It is important to remember that often we don't eat foods in isolation therefore a low GI food e.g. beans, with a high GI food e.g. potato, will make medium GI.

Low GI foods can be beneficial in controlling blood sugar levels however it is important to remember that not all low GI foods are healthy e.g. chocolate, and not all high GI foods are unhealthy e.g. potatoes. Understanding the GI of your food will let you know how to bolus for them appropriately.

Meal size

A larger amount of any type of carbohydrate will take longer to digest than a smaller amount; this is sometimes referred to as the glycaemic load.

You may therefore find that meals and snacks which contain 50g of carbohydrate or more require a dualwave/multliwave/combo.

Alcohol

If you drink alcohol it is important to understand the effect this can have on your blood glucose levels and the precautions you should take to avoid having a hypo.

Your need to consider:

1) Effect of alcohol on blood glucose levels.
2) Alcoholic drinks that contain carbohydrate.
3) How to avoid alcohol related hypos.

Some alcoholic drinks contain carbohydrate such as cider, lager, beers and alcopops. With these products for the first two pints or alcopops bolus for half the carbohydrate content.

Thereafter due to the risk of hypos no further insulin is required if more of these products are consumed.

Remember don't drink on an empty stomach, take extra carbohydrate without a bolus after alcohol consumption and carry hypo treatment. If you find that your glucose levels are high after drinking alcohol or you get hypoglycaemia the next day talk to the insulin pump team for further advice.

Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further Information

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