

## Patient information

# Food and Diabetes for Insulin Therapy

### Therapies Directorate

#### What is Diabetes?

#### There are two main types of Diabetes:

- Type One.
- Type Two.

In Type 1 the body stops producing the hormone called insulin and in Type 2 there is a gradual reduction in the insulin produced. Insulin is a hormone in the body that normally keeps the level of glucose in the blood under control.

#### Diabetes can be managed by:

- Taking the replacement insulin and medications as prescribed.
- Eating a balanced diet according to your medication.
- Getting the balance right between activity, food, and medication.

#### How do I eat healthily for diabetes?

- Eat regular meals containing starchy carbohydrate foods - you should not need to snack in-between meals.
- Reduce your intake of sugar and sugary foods.
- Aim to have at least five portions of fruit and vegetables each day.
- Aim to have oily fish twice a week.
- Limit your fat intake.
- Aim to keep a healthy weight.
- Reduce your salt intake.
- Stay within the healthy limit for alcohol.

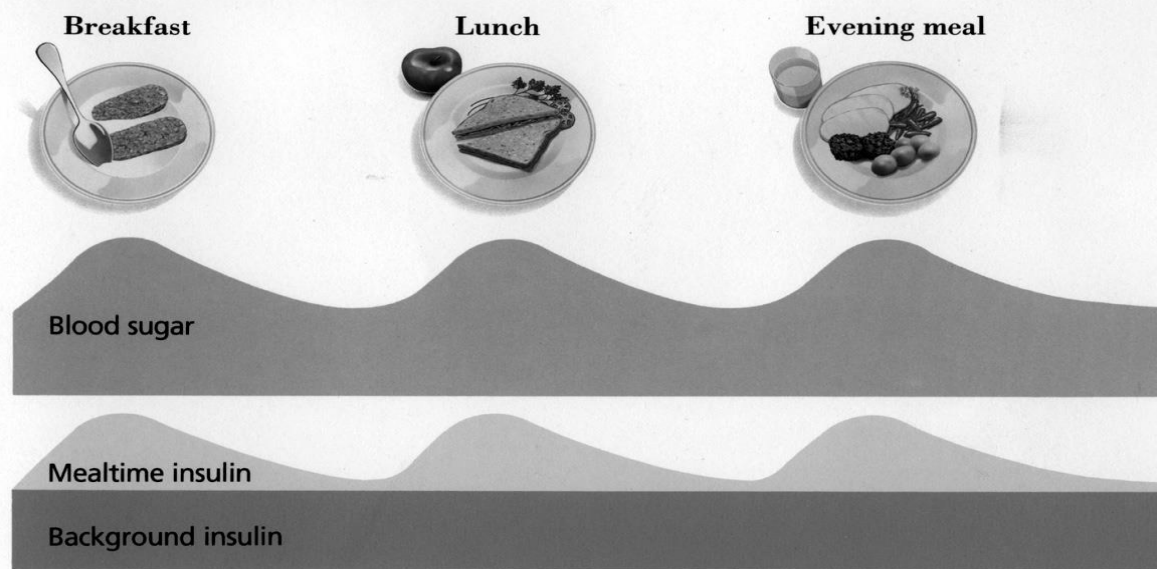
#### Carbohydrates

There are two types of carbohydrates: starches and sugars. When carbohydrate foods are digested glucose is released into the blood. Eating recommended amounts and types of carbohydrate at the right time of the day can help to maintain your blood glucose level.

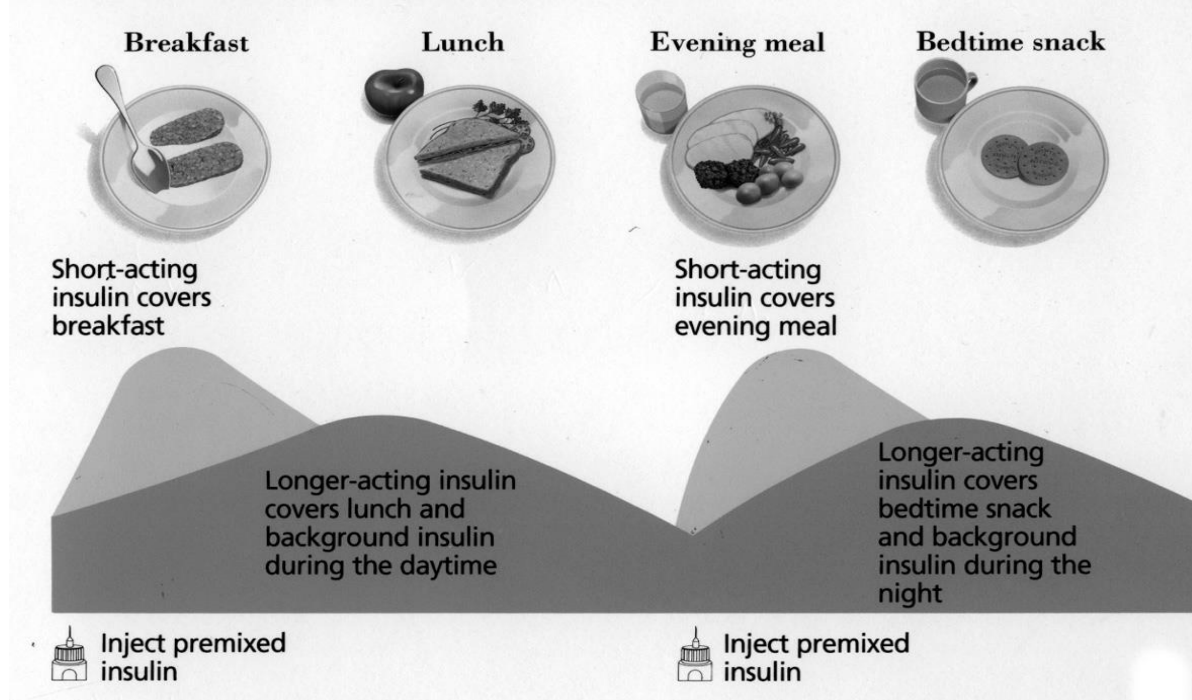
Depending on your insulin regimen you will need to eat a recommended amount of carbohydrate foods three or four times a day. This will be discussed with your dietitian.

These are the charts for the most common insulin regimens, and they show the correct timing of meals according to when your insulin is active. It is the total amount of carbohydrate (both starches and sugars) that determines your blood glucose level.

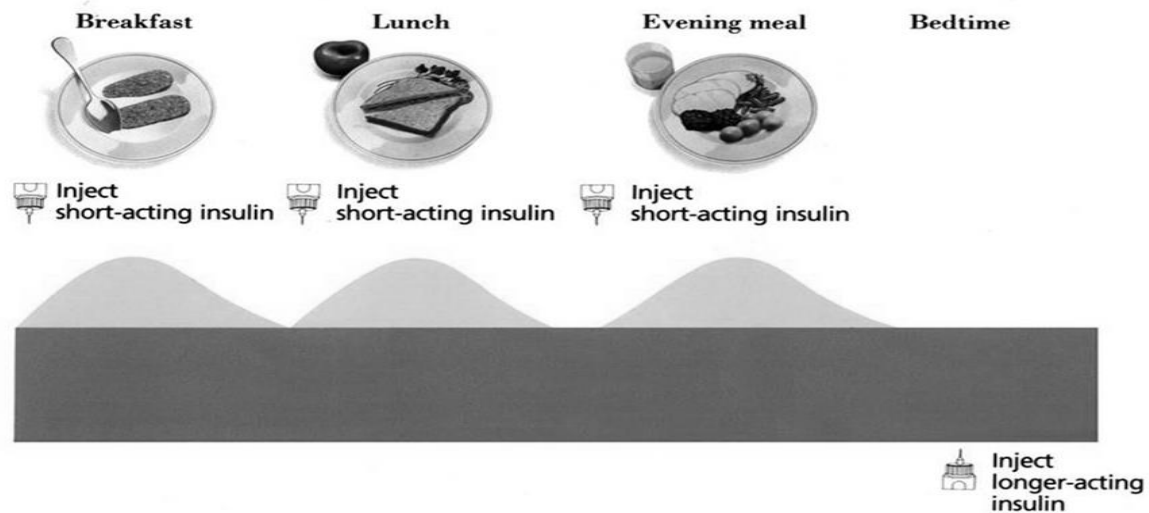
## Daily requirements



## Twice daily premixed insulin



## Basal-bolus regimen using Lantus



Regulating carbohydrate intake at mealtimes will help control blood sugar levels. That means that you should aim to take similar amounts of carbohydrate foods at each breakfast, each midday meal and each evening meal.

The foods listed below will release approximately the same amount of glucose into your blood. The amount you should eat will be discussed with your dietitian.

- One small slice of bread.
- Half a large thick slice of bread.
- Half a bread roll/wrap/small pitta bread / burger bun.
- Two crackers/plain biscuits.
- One Weetabix/Shredded wheat.
- One teacup of breakfast cereal.
- One small potato.
- Half a teacup cooked rice/pasta /noodles / mash.
- A small square pastry.
- A small tin baked beans.
- A portion of fruit –see section on fruit.
- A small glass fruit juice.
- One third of a pint of milk.
- A small pot of yoghurt.
- Small cup low sugar milk pudding.
- One scoop ice cream.
- An individual packet of crisps.

Some sugars found in foods and drinks are digested quickly by the body and cause rapid rise in blood glucose levels.

It is helpful to control blood glucose levels by replacing high sugar foods with low sugar or sugar-free foods.

**Replace high sugar foods with the following alternatives where possible.**

High Sugar Foods	Alternatives
Sugar, glucose, fructose, Reduced sugar sweeteners, e.g., Spoonful, Halfspoon	Artificial sweetener, e.g., Canderel, Splenda, Hermesetas, or Sweetex
Fizzy drinks, (lemonade, cola, tonic, some flavoured waters)	Sugar free/diet/slimline/low calorie drinks/soda water/ sugar free tonic / sugar free flavoured water
Sweets, toffees, liquorice, chocolate, chewing gum	Sugar free sweets /chewing gum, sugar free jelly
Jam, marmalade, honey, syrup, pure fruit spreads	Reduced sugar, jams/marmalade
Hot chocolate drinks / Horlicks, Ovaltine made with water	Low calorie chocolate drinks: cocoa made with sweetener, Options, Highlights, Duo's

**Where there is not a sugar free alternative try to use low sugar option. Remember to use the carbohydrate list on the previous page.**

High Sugar Foods	Alternatives
Tinned fruit in syrup	Fresh fruit, small portions of dried fruit, tinned fruit in natural juice, stewed fruit with sweetener
Fruit juice, compote	1 small glass of unsweetened fruit juice at a time
Yoghurts, fromage frais	Natural low-fat yoghurt, diet yoghurts: Shape, Ski Light, Muller Light, diet fromage frais
Sweet puddings, desserts, Instant desserts, custard, ice-cream	No added sugar/reduced sugar desserts: Angel Delight, Instant whip, low sugar rice pudding/ low sugar custard (tinned or made with sweetener), plain ice-cream
Sweet, cream-filled/ chocolate biscuits	One to two plain biscuits: Marie, Rich tea, Morning coffee, Hob nobs, Garibaldi oatcakes
Cakes, pastries	Currant loaf, tea cakes, scones, malt loaf, low sugar cakes

There is no need to buy special diabetic foods, they are expensive, high in fat and do not have extra benefit to diabetes control.

## Sweeteners

Intense sweeteners, e.g., Hermesetas, Sweetex, Canderel, Splenda, Truvia & Stevia do not affect blood glucose levels. These are safe to be used as a replacement for sugar.

Other sweeteners like Fructose and Sorbitol are not recommended as they are higher in calories and may have a laxative effect.

## Fruit and Vegetables

Fruits and vegetables are beneficial to health for many reasons. They are high in soluble fibre, a good source of essential vitamins and minerals that can help protect against some of the complications of diabetes, heart disease and cancer. They are also low in fat therefore ideal as a snack.

Try to have at least five portions of fruit and vegetables each day.

Fruit contains natural fruit sugar therefore should **be counted as part of your carbohydrate portions** and spread out evenly throughout the day.

### What is a portion of fruit?

One small fruit, e.g., apple.

- One fun sized/small banana.
- Two small fruits, e.g., Satsuma's / plums.
- One dessert spoon of dried fruit.
- Two tablespoons of tinned fruit (in juice, not syrup).
- Small handful of soft fruits, e.g., grapes / strawberries.
- One small glass of unsweetened fruit juice

### What is a portion of vegetables?

- Two tablespoons of fresh/frozen/tinned.
- One bowl of salad.

## Fibre in the diet

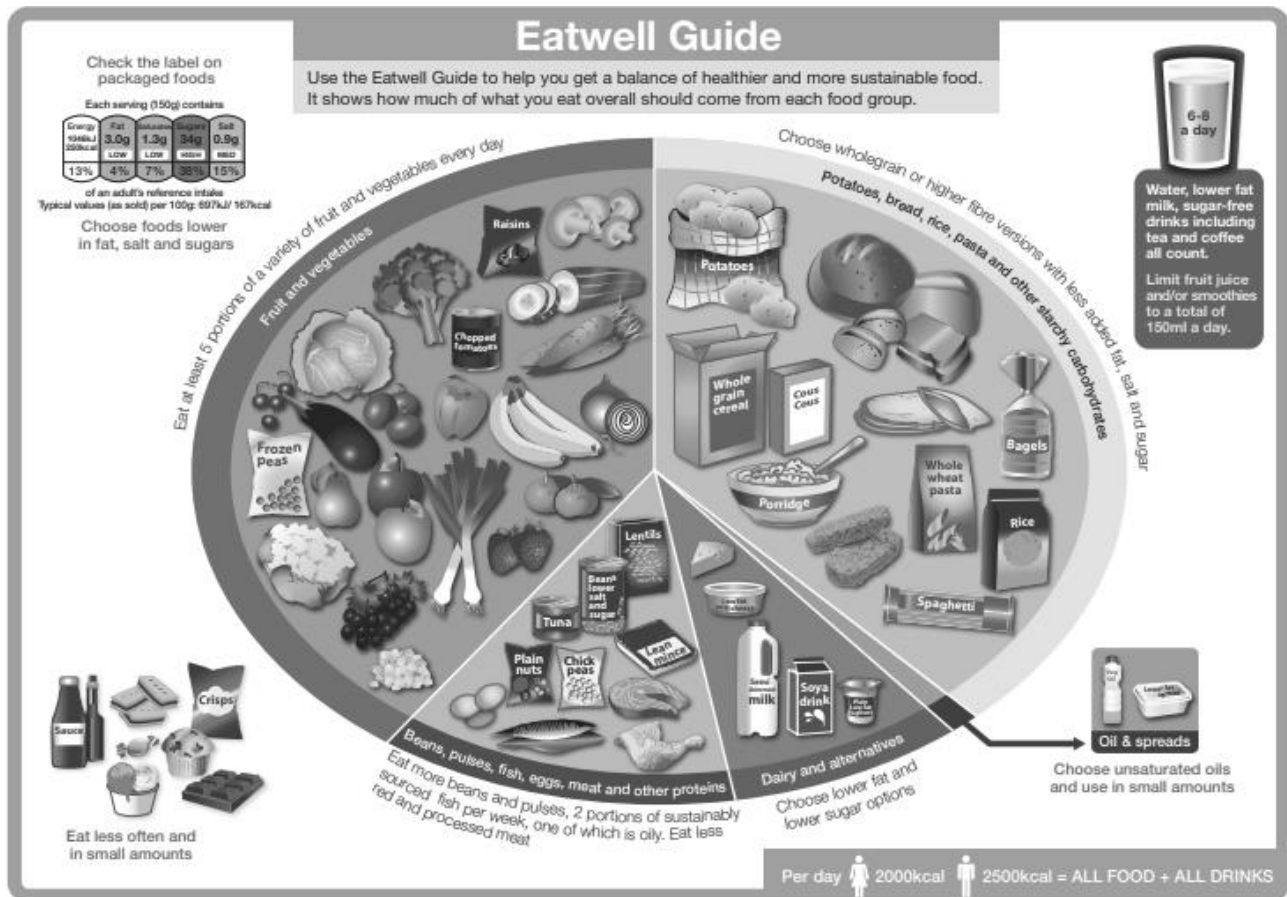
There are two types of fibre in the diet, soluble and insoluble.

Soluble fibre can be beneficial for people with diabetes as it can help to slow down the rise in blood glucose after a meal and lower levels of cholesterol in your blood.

Foods that are high in soluble fibre are oats, pulses (peas, beans, and lentils), fruit and vegetables.

Insoluble fibre that is found in wheat cereals, wholemeal flour, brown pasta and rice, has little effect on the blood sugar level but helps to maintain regular bowel function and keep you fuller for longer.

## Balanced Diet



### Fruit and Vegetables

- Try to have at least five portions a day. Include a wide variety. For fruit use the carbohydrate list

### Starchy Foods

- These are cereals, bread, pasta, rice and potatoes. Include portions of these at each meal –**use the carbohydrate food list**

### Protein Foods

- Choose lean meat, poultry, fish and meat free alternatives. Aim to eat foods from this group at two meals per day, making it the smallest portion on your meal plate.

### Dairy Foods and Alternatives

- Choose lower fat and lower sugar dairy foods. - **use the carbohydrate food list**
- Two to three servings a day

### Oils and Spreads

- Choose unsaturated types and use sparingly.

## Sugary and Fatty Foods

- Keep these foods to a minimum and use low fat and sugar free / low sugar foods when possible.

## Drinks

- Drink six-eight glasses of fluid per day -water, sugar free fizzy drinks/squash, tea, and coffee.

## Fats

Food contains different types of fat. One of the most important things you can do to reduce the risk of complications in diabetes is to reduce the total amount of fat you eat.

All fats contain the same amount of energy, and when you do eat fat, choose the healthier types, i.e. polyunsaturated (PUFA) and monounsaturated fats (MUFA), rather than saturated fats.

Saturated Fats	MUFA's	PUFA's
Butter, lard, dripping, suet, ghee Palm oil, coconut oil Full fat dairy products Fat on meat and meat products Hard margarine Hidden fats in pies, cakes, biscuits	Olive oil Rape seed oil, walnut oil, ground nut oil. MUFA spread e.g.: Olive Spread Nuts Avocado	Corn oil Sunflower oil Soya oil

Use less	Replace with
Butter, butter mixes, hard margarine, lard, suet, dripping.	Small amounts of low-fat spread, e.g., Gold, Flora Light, Low fat olive oil-based spreads, e.g. Bertolli and supermarket own brand olive spreads, Sunflower spreads, e.g. Flora, Vitalite.
Full fat cheese, e.g., cheddar, stilton, brie, cream cheese	Cottage cheese, low fat cheese spread, reduced fat cheese, lower fat cheeses, e.g., Edam, Gouda
Savoury snacks such as crisps, nuts and samosas, salted nuts	Fruit and vegetables

Chips, potato wedges, roast potatoes	Low fat oven chips / roast potatoes, potato wedges made with very little oil, jacket potatoes and potatoes mashed with milk.
Full cream milk, evaporated milk condensed milk, full fat yoghurt/fromage frais, cream, cream substitutes	Skimmed, 1% fat milk, semi-skimmed milk, low fat natural yoghurt or diet yoghurt.
Mayonnaise, salad cream, salad dressings	Salad dressings - minimal amount of olive oil or sunflower oil, low fat salad dressing; low fat / light / extra light mayonnaise
Fatty meats, e.g. belly pork, breast of lamb, processed meats, e.g. sausages, burgers, luncheon meat, salami, corned beef, black pudding	Lean meat, e.g., chicken, turkey, beef, lamb, pork - take off excess fat/skin.
Fried food	Food grilled, baked, stewed, roasted, and steamed

## Oily fish

One type of fat called omega-3 fatty acid is particularly beneficial for people with diabetes, as it helps to protect the heart.

It can be found in the natural oil of certain fish such as: mackerel, salmon, fresh tuna, pilchards, sardine, trout and herring. You should aim to have oily fish twice a week. If these are tinned, they should be in brine or tomato sauce, not oil.

## Salt

Too much salt in your diet may increase your blood pressure and increase your risk of developing heart disease. Most of the salt we eat is from processed food, so it is important to reduce your intake of processed foods and other high salt foods. Try to use less salt at mealtimes - this includes 'sea salt' and salt substitutes. Taste your food first and either add salt at the table or in cooking, but not both. Herbs and spices create different flavours, which can help when you reduce the salt on your food.

## Alcohol

Alcohol in moderation should not affect your overall diabetes control unless you have been advised to not drink alcohol by your healthcare team.

### A unit of alcohol is:

- Half a pint of bitter or lager.



- One pub measure of spirits, sherry/liqueur- 25 ml.
- One small glass of wine - 125 ml.

#### **Recommendations for safe intake:**

- 14 units per week for both men and women, spread across 3 days or more.
- You should try to have at least two or three 'alcohol free' days each week.
- Always choose sugar free/diet mixers: slimline tonic, diet lemonade/cola.
- Try not to drink strong beers/lagers.

**Remember, alcohol is high in calories.**

**If you drink more alcohol than recommended, then your blood sugars will be affected.**

- Alcohol can cause your blood sugar to fall low as in a hypoglycaemic attack, the risk of this can be minimised by eating more carbohydrate with and after taking alcohol.
- Alcoholic drinks that contain carbohydrate can initially cause a rise in blood sugars.

**If you notice that your alcohol intake is having an impact on your glucose levels, you should discuss this with your diabetes care team.**

#### **Activity**

Being active is an important part of a healthy lifestyle.

**The UK Chief Medical Officers' Guidelines recommend each week adults do:**

- At least 150 minutes moderate intensity activity, 75 minutes' vigorous activity, or a mixture of both (e.g., walking, cycling, running, gardening, dance classes)
- Strengthening activities on two days (e.g., resistance training)
- Reducing extended periods of sitting

**Your blood glucose levels can be affected by**

- Different types of exercise.
- The amount of insulin in your body.
- Length of time activity lasts.

Regular exercise can increase your insulin sensitivity and alter the amount of insulin that you need to take. It is important to monitor your blood glucose levels before, during and after exercise to see how they are affected. **This should be discussed further with your diabetes team as changes to your insulin doses may be required when undertaking activity.**

## What can I do?

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## 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

### Diabetes Dietitians:

**The Royal Liverpool University Hospital:**  
**Tel: 0151 706 3050 or 706 2120**  
**Textphone Number: 18001 0151 706 3050**

**Liverpool Diabetes Partnership (LDP)**  
**Tel: 0151 529 2130**

**Diabetes UK**  
**10 Parkway**  
**London**  
**NW1 7AA**  
**Email: [info@diabetes.org.uk](mailto:info@diabetes.org.uk)**  
**Website: [www.diabetes.org.uk](http://www.diabetes.org.uk)**

**Diabetes UK Careline:**  
**Tel: 0345 123 2399 (operates a translation service)**  
**Monday - Friday between 9am and 5pm**  
**Recorded information on diabetes-related topics is available on this number 24 hour a day.**

**Lifestyle Changes:**  
**Smokefree Liverpool**  
**[www.smokefreeliverpool.co.uk](http://www.smokefreeliverpool.co.uk)**  
**Tel: 0800 061 4212 | 0151 374 2535**  
**Text QUIT to 66777**

**Author: Nutrition and Dietetic Service**  
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