Diet and Diabetes: for those not requiring insulin

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Diabetes mellitus (often shortened to diabetes) is a condition where the body is unable to make enough or respond properly to a hormone called insulin. Insulin helps blood glucose (sugar) enter our body cells to be used as energy – without insulin, blood glucose levels rise above normal.

There are lots of different types of diabetes (ask your Diabetes Healthcare Team), but it is likely you have:

**Type 2 diabetes:** when the body either does not produce enough insulin, or the insulin it produces does not work as well as it should (insulin resistance). There are more treatment options for those with type 2 diabetes however, as the pancreas becomes weaker the body requires more support to control blood glucose levels therefore oral medication and/or insulin are often needed.

Lifestyle changes, such as following a balanced diet, increasing physical activity, and weight control are especially important in managing this type of diabetes.

**Diabetes medication**

Many different types of diabetes medications are available; these can be prescribed on their own or in combination as each medication works in a different way to lower blood glucose levels. Some medications act more aggressively than others and can increase the risk of low blood glucose levels (hypoglycaemia or ‘hypo’), these medications include:

- Sulphonylureas e.g. Gliclazide/Glimepiride/Glipizide
- Any insulin e.g. Novomix 30/Humalog Mix 25/Novorapid/Glargine/Detemir/Apidra/Insulatard/Actrapid

If you have been prescribed the above medications, please see separate ‘Why do I sometimes feel shaky, dizzy and sweaty’ leaflet given to you by your diabetes nurse. If you have been prescribed the medications below, your risk of hypo is minimal:

- Biguanides e.g. Metformin
- GLP-1 analogues e.g Byetta/Liraglutide/Bydureon
- SGLT2-inhibitors e.g. Canagliflozin / Dapagliflozin
- DPP-4 inhibitors e.g Linagliptin, Sitagliptin
Diet and diabetes

Whilst there is no ‘special diet’ to follow, understanding how different foods can affect your weight and your blood glucose levels will help you to make healthier food choices.

Most of us eat different foods everyday – it is important to have variety in your diet to get the many different vitamins and minerals we need. A balanced diet should contain food from each of the following food groups:

- **Carbohydrate (CHO)** are important as they provide our bodies with energy needed to function. For examples of CHO see pages 5/6
- **Vegetables** provide essential vitamins, minerals and fibre. They are also low in energy so can be eaten freely even if you are concerned about your weight. For example fresh or frozen peas, carrots, sweetcorn, brussel sprouts and broccoli.
- **Protein** helps with tissue repair and muscle strength. Eating more than you need will lead to weight gain.
- **Fat** provides some essential vitamins, but is only needed in very small amounts in your diet. Too much will lead to weight gain and increases your risk of complications including those from diabetes, heart disease and stroke.

“A varied, balanced diet is important in helping control blood glucose levels – no matter what medication you have been prescribed, following a healthy way of eating is key to good diabetes control.”

Tips to a healthier diet/lifestyle:

- Eat regular meals – aim to have x3 meals per day
- Include carbohydrate at each meal, keeping your carbohydrate portion sizes consistent
- Avoid snacking (unless advised by Diabetes Team)
- Keep physically active
Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Choose wholegrain or higher fibre versions with less added fat, salt and sugar.

Potatoes, bread, rice, pasta and other starchy carbohydrates

Choose unsaturated oils and use in small amounts

Choose lower fat and lower sugar options

Dairy and alternatives

Eat more beans, pulses, fish, eggs, meat and other proteins

Eat at least 5 portions of a variety of fruit and vegetables every day

Fruit and vegetables

Eat less often and in small amounts

Eat less often and in small amounts

Carbohydrate and diabetes

Foods that contain starch and sugar are collectively called carbohydrates; when digested these foods are broken down to glucose and absorbed into the bloodstream. Carbohydrates are important as they provide our bodies with energy needed to function. For people with diabetes, eating large amounts of these foods will increase blood glucose levels because there is not enough insulin working in your body. Even with medication, eating large amounts of carbohydrate will affect blood glucose levels. Having smaller portions of carbohydrate at each meal and keeping your portions to approximately the same size will help control blood glucose levels.

<table>
<thead>
<tr>
<th>1. Starchy CHO</th>
<th>2. CHO as fructose</th>
<th>3. CHO as lactose</th>
<th>4. CHO in snacks</th>
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</thead>
<tbody>
<tr>
<td>These foods often form the basis of meals, for example: <strong>potatoes, rice, breakfast cereals, bread, chapattis, couscous, noodles, pasta.</strong></td>
<td>Whether dried or fresh, fruit contains natural sugar, for example: <strong>apples, oranges, raisins, strawberries, mangos.</strong></td>
<td>Liquid dairy products contain milk sugar (lactose), for example: <strong>milk, yoghurts, ice cream, crème fraîche, fromage frais.</strong></td>
<td>These products often have large amounts of added sugar and fat, for example: <strong>sugar, honey, sugary drinks, sweets, fruit juices, crisps, biscuits, chocolate.</strong></td>
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<td>These are an important part of a balanced, varied diet as they provide ‘slow release’ energy, fibre, vitamins and minerals.</td>
<td>These are an important part of a balanced, varied diet as they provide essential fibre, vitamins and minerals.</td>
<td>These are an important part of a balanced, varied diet as they provide essential vitamins and minerals.</td>
<td>If eaten regularly they may cause weight gain/erratic blood glucose control – avoid these foods where possible.</td>
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Fat and diabetes

Having diabetes is a risk factor for heart disease and other conditions; being overweight increases your risk further. Eating as little fat as possible and choosing ‘healthier’ fats will help with weight control and reduce your risk of complications.

<table>
<thead>
<tr>
<th>Saturated fat (Such as butter, lard, fat on meat and in cakes and pastries)</th>
<th>Polyunsaturated fat (Such as plant-based oils and spreads)</th>
<th>Monounsaturated fat (Such as olive &amp; rapeseed oils &amp; spreads)</th>
<th>Omega-3 (Such as salmon, trout and fresh tuna)</th>
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<td>✗ High energy</td>
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<td>✗ Too much can cause weight gain</td>
<td>✗ Too much can cause weight gain</td>
<td>✗ Too much can cause weight gain</td>
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<tr>
<td>✗ Can increase cholesterol levels</td>
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<td>✗ More than 5g per 100g is high</td>
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<td>✓ Swap to other fats where possible</td>
<td>✓ Swap to monounsaturated fat where possible</td>
<td>✓ Choose reduced fat options e.g. olive oil based spread</td>
<td>✓ Choose oily fish</td>
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<td>✓ Choose reduced fat options</td>
<td>✓ Choose reduced fat options</td>
<td>✓ Do not add any extra fat</td>
<td>✓ Vegetarian sources include linseed/flaxseed</td>
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<td>✓ Limit these foods to treats eaten occasionally</td>
<td>✓ Do not add any extra fat</td>
<td>✓ Use rapeseed/ground nut oil for cooking and olive oil for dressings</td>
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<td>✓ Less than 1.5g per 100g is low</td>
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Protein and diabetes
Where possible choose lean/low fat sources of protein – aim to have x2 small portions daily.

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<tr>
<th>Meat, poultry and eggs</th>
<th>Fish</th>
<th>Milk and dairy</th>
<th>Beans pulses, nuts and seeds</th>
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<tbody>
<tr>
<td>✓ Good source of iron</td>
<td>✓ Oily fish contain omega-3; important for heart health</td>
<td>✓ Good source of calcium</td>
<td>✓ Good vegetarian source of protein</td>
</tr>
<tr>
<td>✓ Oily fish lower in fat</td>
<td>✓ White fish</td>
<td>✓ Contains monosaturated fat; better for heart health</td>
<td>✓ Good source of fibre</td>
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</tbody>
</table>

**Suggestions:**
- Choose lean cuts of meat
- Keep portion sizes to 2-3 oz (50-75g)
- Trim off excess fat
- Remove skin from poultry
- Avoid adding fat - grill/steam/poach/boil instead
- Limit eggs to 1 per day

**Suggestions:**
- Aim for 2 portions a week – include 1 portion of oily fish
- Oily fish include mackerel, sardines, salmon, trout, fresh tuna

**Suggestions:**
- Choose low fat varieties
- Milk and other ‘liquid’ dairy will contain carbohydrates too and will affect your blood glucose level

**Suggestions:**
- Avoid varieties with added salt
- Some beans and pulses will contain carbohydrate but normally will not affect your blood glucose level
- Be aware that the sauces that these foods often come in may contain sugar and will affect your blood glucose level
Alcohol and diabetes

Unless advised by your Doctor, there is no reason to completely avoid alcohol because of your diabetes. Alcoholic drinks do contain varying amounts of alcohol and carbohydrate so will affect your weight and may also affect your blood glucose levels.

There are no ‘safe’ limits, it is recommended that you keep your alcohol intake to less than 14 units per week.

It is also recommended that if you are drinking up to 14 units of alcohol, this should be spread over the week.

Units can be difficult to understand as most people drink by the glass, not by the unit.

If you take any of the medications which increase your risk of hypo, you should take the following precautions if drinking more than 3 units of alcohol:

- Drink with meals **not** on an empty stomach
- Do not skip usual meal/cut down on carbohydrate intake
- Have a small carbohydrate containing snack before bed if drinking in the evening such as 1 slice toast or a small bowl of cereal
Body weight and diabetes

Eating/drinking provides energy which is used to perform everyday activities such as breathing and walking; any energy not used is stored in the body as fat. The more fat stored, the less effective insulin becomes resulting in higher blood glucose levels.

Activity and diabetes

Aim to be active for at least 30 minutes every day – by being more active, less energy needs to be stored. If you do not usually exercise or have any other health conditions, please discuss this with your GP before starting.

Activity can include using the stairs instead of a lift, brisk walking, swimming, dancing and gardening. If you are currently not able to manage 30 minutes in one go, start slowly and gradually increase your activity. Doing so may:

- Improve your response to insulin
- Help control weight
- Reduce your stress levels
- Improve your heart health
- Improve how you look/feel
Measuring your waist and estimating your Body Mass Index (BMI) can help identify if you are at risk of secondary complications. The greater your waist size and/or BMI the greater the risk you are at.

To measure your waist

To measure your waist:
1. Find the top of your hip bone
2. Find your lowest rib
3. Measure in between these points making sure the tape measure is kept level with the floor and not pulled too tight

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<td>Women</td>
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<td>Black, Asian and other minority ethnic groups*</td>
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*these groups are known to have an increased risk of diabetes

To estimate your BMI

Using the table opposite:
1. Find your weight along the top of the table
2. Find your height along the side of the table
3. Follow along the column and row; where they meet is an estimation of your BMI

E.g. For an individual of 175cm, weighing 85kg; BMI = 27.8kg/m^2
### Weight in kilograms

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- **Underweight**
- **Normal**
- **Overweight**
- **Obese**

**Height in centimetres**

**Weight in kilograms**
For further information, please contact:

The Trust provides free monthly health talks on a variety of medical conditions and treatments. For more information visit www.uhb.nhs.uk/health-talks.htm or call 0121 371 4957.

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