Patient Information

Department of Nutrition and Dietetics

Diabetes: Reducing Carbohydrates

This dietary advice sheet is for people with Type 2 Diabetes who would like to lose weight or improve the management of their diabetes by reducing the amount of carbohydrate in the diet.

What is diabetes?
Type 2 Diabetes is a condition where the amount of glucose (sugar) in the bloodstream becomes too high because the body cannot control it properly. The pancreas produces insulin which is a hormone which usually keeps blood glucose within the normal range. Insulin controls blood glucose levels by allowing glucose to enter the cells so it can be used as fuel by the body. If people have Type 2 Diabetes, either their insulin does not work as well as it should, or there is not enough insulin being produced.

There are three ways in which blood glucose control can be improved – by altering diet, by increasing exercise, and by taking medication, either in the form of tablets or insulin injections.

Controlling blood glucose
After eating or drinking anything containing carbohydrate, blood glucose levels will rise. Reducing carbohydrate intake can lead to better blood glucose control and potentially reducing doses of medication or insulin.

Replacing carbohydrate-rich foods with lower calorie foods such as vegetables and salad can also help you lose weight.
Carbohydrate

Carbohydrate-containing foods fall into two main groups;

1. **Sugary carbohydrates**: - this includes foods and drinks containing added sugar such as fizzy drinks, cakes, biscuits, sweets and chocolate as well as the natural sugar found in fruits and milk products.
   - Foods containing added sugar should be chosen less often as they have little nutritional benefit other than carbohydrate and calories.
   - Drinks such as fizzy drinks, fruit juices and smoothies contain carbohydrates; aim to choose drinks containing little carbohydrate such as tea, coffee, water, no added sugar squash and diet/zero fizzy drinks.
   - Fruits contain carbohydrate called fructose. We recommend that fruits are spread out throughout the day, aiming to have just one portion at a time such as one medium fruit such as an apple or small banana; 2 small fruits such as plums, satsumas or apricots or 1 handful of berries or grapes. Fruit contains added benefits in vitamins, minerals and fibre.
   - Milk contains carbohydrate called lactose. We recommend that you have the equivalent of \( \frac{2}{3} \) to 1 pint of milk daily due to the added benefits of calcium and protein. \( \frac{1}{3} \) pint milk can be swapped for 125g yoghurt or 25g/1oz cheese. Aim to choose any yogurts containing little added sugar, use food labels to help guide you on better choices.

2. **Starchy carbohydrates**: - these include potatoes, sweet potatoes, pasta, noodles, rice, yam, plantain, semolina, maize, breakfast cereals, flour and foods made with flour such as bread, chapattis, pizza, pastries, pancakes and crackers. These foods are an important source of energy and nutrients. We recommend choosing starchy carbohydrates which are broken down by the body more slowly; for example oats, seeded or granary bread, basmati rice, sweet potato and wholegrain crackers.

Foods which don’t directly affect blood glucose levels

The following foods do not contain carbohydrate, and so will not immediately affect blood glucose levels.
Vegetables and salads contain vitamins, minerals, are low in calories and high in fibre. These are a good food to have lots of, especially if you are trying to lose weight because they will fill you up. A few vegetables contain a higher carbohydrate content including parsnip, mushy peas and sweetcorn: try to have only a small portion of these.

Protein It is important to include moderate amounts in a balanced, healthy diet. Protein rich foods include meat, fish, eggs, lentils, chickpeas, beans and. There are health benefits to including more plant protein in your diet such as beans, chickpeas, lentils, tofu and soya. These foods are low in fat and high in fibre, so they are good for your heart and digestive health. If you eat meat, choose lean meats and take the skin and fat off meat to reduce the saturated fat. These foods can be quite filling, so if you are trying to reduce your intake of carbohydrates, it may help to include a portion of protein at each meal time. A suggested portion size is about the size of your palm.

Fats Try to reduce all fats such as oil and high fat foods in your diet if you are trying to lose weight. There are two types of fat. Unsaturated oils such as olive and rapeseed oil are best for heart health and your cholesterol levels, but use only a small amount of these in cooking. Saturated fats are found in butter, cream, cheese, fatty meat and coconut oil. Try to minimise your intake of these foods as they can make it more difficult for your insulin to work, and so indirectly lead to higher blood glucose levels.

How much carbohydrate?
Aiming to reduce portion sizes of carbohydrates from the size that they currently are can have a significant effect on your blood glucose levels. If you want a more specific guide, you could aim to have only ¼ plate of starchy carbohydrate at a meal time, or aim for 30g carbohydrate portions.
### Food

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount which supplies 30g of carbohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread</td>
<td>2 medium cut slices from a large loaf&lt;br&gt;1½ thick slices from a large loaf&lt;br&gt;1 wrap or tortilla, around 26cm / 10 inches&lt;br&gt;1 medium pitta bread (60g)&lt;br&gt;1 mini size naan bread (round, 60g)&lt;br&gt;1½ x 10 inch cooked chapatti (65g)</td>
</tr>
<tr>
<td>Potatoes</td>
<td>3 egg-sized boiled potatoes, or the equivalent mashed or roast (180g)&lt;br&gt;1 small jacket potato (150g cooked)&lt;br&gt;10-12 oven chips (100g)</td>
</tr>
<tr>
<td>Rice (cooked)</td>
<td>3 tablespoons or 100g cooked</td>
</tr>
<tr>
<td>Pasta (cooked)</td>
<td>3 tablespoons or 100g cooked</td>
</tr>
<tr>
<td>Noodles (cooked)</td>
<td>3 tablespoons or 80g cooked</td>
</tr>
<tr>
<td>Cereals</td>
<td>3 heaped dessertspoons (25g) porridge oats&lt;br&gt;Small bowl (220g) porridge made with milk&lt;br&gt;Large bowl (365g) porridge made with water&lt;br&gt;40g or 4 tbsp Bran Flakes, All bran, fruit &amp; fibre&lt;br&gt;2 shredded wheat, Weetabix or Oatibix</td>
</tr>
</tbody>
</table>
Food labels
These can be useful if choosing a ready prepared or packaged food. Look at the Carbohydrate content for the serving size you are going to eat. This could be very different from the suggested serving size on the packet. Make sure you look at ‘carbohydrate’ or ‘total carbohydrate’ rather than ‘of which sugars’.

![Nutrition Table]

Examples of breakfast, light meals and main meals

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Carbohydrate</th>
<th>Protein</th>
<th>Vegetables, salad or fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>porridge oats</td>
<td>25g</td>
<td>½ pint</td>
<td>Fresh or frozen berries</td>
</tr>
<tr>
<td>Bran Flakes</td>
<td>40g</td>
<td>milk</td>
<td></td>
</tr>
<tr>
<td>Medium slices</td>
<td>Reflections</td>
<td>1-2 eggs</td>
<td>Tinned or fresh tomatoes and mushrooms</td>
</tr>
<tr>
<td>wholegrain bread</td>
<td>from a large loaf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Patient Information

Light meal

<table>
<thead>
<tr>
<th>Carbohydrate</th>
<th>Protein</th>
<th>Vegetables, salad or fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 medium slices of wholegrain bread from a large loaf</td>
<td>Ham, or egg</td>
<td>Lots of salad</td>
</tr>
<tr>
<td>1 wholemeal tortilla wrap or 3 tbsp wholegrain couscous</td>
<td>Tuna or houmous</td>
<td>Salad and/or coleslaw</td>
</tr>
</tbody>
</table>

Main meal

<table>
<thead>
<tr>
<th>Carbohydrate</th>
<th>Protein</th>
<th>Vegetables, salad or fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 egg-sized potatoes (180g)</td>
<td>Grilled chicken, fish or meat</td>
<td>Large serving of boiled or steamed vegetables</td>
</tr>
<tr>
<td>3 tbsp. rice (100g cooked) or 1-2 chapattis (65g)</td>
<td>Chicken, prawn or egg curry or dahl</td>
<td>Salad or vegetables</td>
</tr>
</tbody>
</table>

Snacks – choosing lower carbohydrate snacks can be beneficial to your blood glucose levels

Lower carbohydrate alternatives for starchy foods

Carrot and swede or turnip mash

celeriac – Cut into wedges or 1 cm cubes and roast in a little oil, or boil and then mash

cauliflower rice – blitz a cauliflower in a food processor (or chop it into rice-sized pieces with a knife), then microwave or steam until tender

Vegetable noodles – use a spiralizer with courgette, carrot or other vegetables
Patient Information

Beware of Hypos (Hypoglycaemia)
If you are on insulin injections, or a medication called Gliclazide or Glimepiride, you may need to reduce the dose of your diabetes medication when you reduce your carbohydrate intake. You should test your blood glucose levels regularly.

Please contact your Dietitian, Diabetes Specialist Nurse or GP if you have any hypos (a blood glucose reading less than 4 mmol/l), or an increasing number of blood sugar readings which are less than 5 mmol/l.

Alcohol

Drink alcohol in moderation only. Alcoholic drinks contain varying amounts of carbohydrate. Sweet ciders, fortified sweet wines and alcopops are high in carbohydrate and best avoided. The maximum alcohol intake recommended for health is 14 units of alcohol per week. 1 unit = a pub measure (25ml) of spirit, half a pint of normal strength beer or a small glass (125mls) of wine.

Your action plan
List below any changes you can make to improve your blood glucose control:

😊 __________________________________________

😊 __________________________________________

😊 __________________________________________

Useful sources of information

- ‘Carbs and Cals’ by Chris Cheyet and Yello Balolia is available as a book and as an app on the www.carbsandcals.com website, on Amazon and from Diabetes UK. This shows photographs of foods and the carbohydrate and calorie content of different portion sizes.
- Myfitnesspal.com is a free app for phones and ipads to help in calculating carbohydrate intake and increasing physical activity.
Patient Information

- Carbohydrate reference tables are available from your Dietitian, or from Diabetes UK as a download from their website (www.diabetes.org.uk).

Useful contacts

Diabetes UK
Careline: 0345 123 2399
Email: helpline@diabetes.org.uk
Website: http://www.diabetes.org.uk

Diabetes UK is a useful source of additional information about diabetes which you can read, order or download. They also have books to buy, details of local diabetes groups and general news/articles about diabetes.

Dietitian / Health Professional:
Contact Number:

This information was produced by Coventry and Rugby Dietitians, University Hospitals Coventry & Warwickshire NHS Trust.
Contact number: 024 7696 6161

The Trust has access to interpreting and translation services. If you need this information in another language or format please contact 024 7696 6161 and we will do our best to meet your needs.

The Trust operates a smoke free policy.

To give feedback on this leaflet please email feedback@uhcw.nhs.uk

Document History
Department: Dietetics
Contact: 26161
Updated: December 2021
Review: December 2023
Version: 5
Reference: HIC/LFT/1834/14