

Carb Smart

Dietary advice for people with Type 2 Diabetes



Information for patients

Dietetics Service - Diabetes



PROUD TO MAKE A DIFFERENCE

SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST



This leaflet provides ideas for healthy and well-balanced meals with a focus on the type and amount of carbohydrate foods (carbs) recommended for people with Type 2 diabetes.

It follows on from 'Carbohydrate and Diabetes' leaflet which explains which foods are carbohydrates.

How will this benefit me?

Eating in this way will help to keep blood glucose at a healthier level, even after meals. It will also ensure you get the important nutrients from your diet that are needed to help keep you well.

Is this approach suitable for me?

This advice is suitable for most people with Type 2 diabetes. The amount of carbohydrate suggested may be a lot less than you usually eat, so reducing the portions of carbohydrate foods gradually can help you adjust to this.

The amount of carbohydrate a person needs varies according to their activity level, so the suggested portion sizes may need to be adjusted for people who have very active jobs or do a lot of exercise.

For some people the Carb Smart diet may help them to lose weight, however the main aim of this diet is to improve blood glucose levels and general health. If you are interested in finding out more about other approaches which focus on weight loss please discuss this with your diabetes team. One option is a **very low carbohydrate diet**. This involves avoiding most carbohydrate foods, so is stricter than this Carb Smart advice. If you are interested in finding out more, please discuss this with your diabetes team; you can look at meal ideas and review your medication.

Considerations for those on gliclazide tablets or insulin injections

These treatments for diabetes can cause hypoglycaemia (a blood glucose of 4 mmol/l or below). If you are eating smaller portions of carbs and are taking gliclazide or insulin, you will need to follow this advice to reduce the risk of hypos:

- **Get advice from your diabetes team about the doses of your medications before you begin to reduce your portions of carbohydrate foods.**
- Check your blood glucose as advised.
- Have hypo treatment with you at all times.
- Keep your portion sizes of carbohydrates similar day to day.
- Don't go more than 5 hours between meals.
- If you are more active than usual, you may need a small carbohydrate snack between meals on these days.

Considerations for those on SGLT2 inhibitor/ flozin tablets (e.g. dapagliflozin, empagliflozin)

Carb Smart advice is suitable for people taking SGLT2 tablets. It is important not to skip meals and to include some starchy carbohydrate with meals. Please follow the advice provided by your diabetes team or GP on how to take this tablet. **SGLT2 medication should be stopped if you are unwell or if following a very low carbohydrate diet** (see page 2).

Get Carb Smart

Carbs can be enjoyed as part of healthy balanced meals when you have diabetes. To prevent carbs causing high blood glucose levels follow the four steps to being Carb Smart.

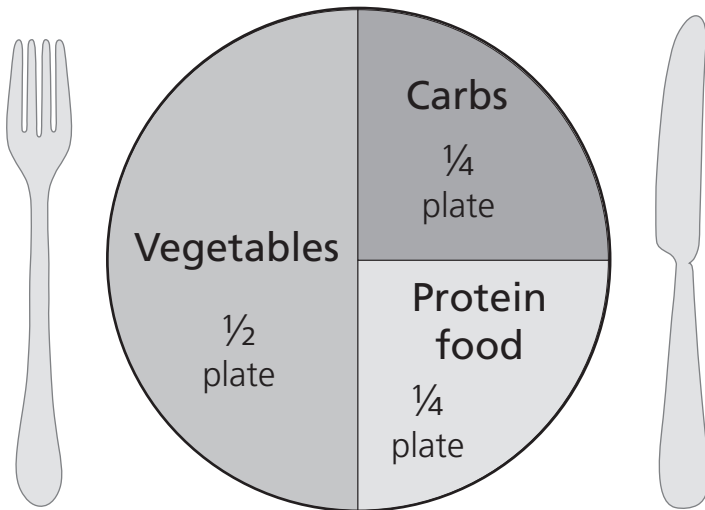
Step 1: Type - Choose types of carbs that are digested slowly.

Step 2: Amount - Keep to small portions of carbs.

Step 3: Timing - Only eat carbs at your three main meals and avoid snacking between meals.

Step 4: Be active after meals - Keep moving!

A balanced meal



Step 1: Type of carbohydrate

All carbs are broken down into glucose and raise the level of glucose in the blood, but this happens at different speeds depending on the type of carb eaten. This is known as the glycaemic index (GI). **High GI** carbs are digested quickly and cause a rapid rise in blood glucose. **Low GI** carbs are digested more slowly, giving a more gentle rise in blood glucose. Therefore low GI carbs are a better choice.

Smart Swaps

High GI carbs - choose less often		Low GI carbs - choose more often
Bread: White bread Wholemeal bread Brown bread	swap for	Multigrain, granary, seeded bread Wholemeal pitta bread Rye or pumpernickel bread Sourdough bread
Rice and Grains: Instant, long grain, jasmine and sticky rice	swap for	Basmati or brown rice Pearl barley, quinoa or bulgar wheat Wholewheat noodles
Cereals: Cornflakes, rice crispies Quick cook porridge Frosted/honey cereals	swap for	Jumbo oats Nutty muesli Shredded wheat
Potatoes and other starches: Baked, mashed, boiled potatoes without skins	swap for	New potatoes with skins Sweet potato with skins Caribbean breadfruit Green banana

Fruit: Tropical fruit, dried fruit, fruit juice and smoothies	swap for	Berries Small whole fruits with skins - apple, pear, plums and other stoned fruits, orange etc.
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More tips for reducing the rise in blood glucose after meals

- Choose high fibre and less processed foods as much as you can. For example choose coarse grain flour such as whole wheat flour for making chapattis.
- Avoid overcooking pasta and rice as this causes them to be digested more quickly.
- Avoid eating carbs on their own, as this causes blood glucose to rise quickly. Instead pair them up with a protein food or healthy fat such as yoghurt, avocado or nuts. For example have egg or peanut butter on toast, add chicken to pasta in tomato sauce, swap instant noodles for a vegetable soup with lentils, have some cottage cheese with an oatcake or have a few nuts with a piece of fruit. Consider what other food pairings could work for you?
- Eat slowly and consider eating the protein and vegetable part of your meal first and the carbs last.
- Acidity may slow down the digestion of carbs. Use vinegar on salads or add pickled vegetables to meals.
- Turn your carbs into 'resistant starch'. This happens when you reheat cooked and chilled carbs such as a leftover pasta meal, toast or defrost frozen bread products or soak oats overnight in water or milk. Resistant starch is digested more slowly and so reduces the glucose rise after meals.
- Add beans and pulses to soups, salads, stews and curries. These include a type of fibre that slows down the digestion of carbs.
- Add plenty of vegetables to meals including green leafy vegetables such as cabbage, kale, spinach, salad leaves, rocket etc

Step 2: Amount of carbohydrate

As shown on page 4, carbohydrates make up just part of a healthy, balanced meal. With the Carb Smart approach your meal should include:

- At least half a plate of vegetables or salad.
- A protein food. Choose good quality protein food such as lean meat, poultry, fish, eggs, cheese, hummus, beans and pulses, tofu, QuornTM, nuts, nut butters and seeds.
- A small portion of healthy unsaturated fat for example olive oil, rapeseed and ground nut oils, avocado, nuts or seeds.
- Flavour ! Use herbs, spices etc such as garlic, ginger, chilli, cinnamon, lemon juice and vinegar for flavour and to help cut down on salt.
- A carb portion which covers around a quarter of a standard sized dinner plate (plate diameter 10inch/25cm). This is around a fist size or cup size portion.

Another way of working out your carb portions is to count the grams of carbohydrate in the meal. Aim for **UP TO 40g** of carbohydrate at each meal time. The portion size guide on page 8 explains more.

You may choose to eat less than this, but try and be consistent day to day when possible. If you occasionally eat a lot less on some days, your blood glucose will be lower. If you are on gliclazide or insulin this can increase your risk of a hypo. If you eat a lot more carbs on some days your blood glucose may be higher than usual so it is helpful to avoid large portions most of the time.

Carb portion size guide

	Food	Carbs
Bread	1 wholemeal pitta bread	30g
	1 slice seeded medium bread	15g
	1 slice granary thick bread	20g
	2 seeded oatcakes	15g
	1 wholegrain chapatti (20cm diameter, 100g)	40g
	1 slice of sourdough bread (50g)	25g
Wholegrain Pasta, Rice and Grains	Fist-sized amount or 1 cup (when cooked)	40g
Cereals	40g raw oats	30g
	40g nutty muesli	30g
Potatoes and starchy vegetables	1 boiled new potato with skin (egg sized, 60g)	10g 15g
	Half a small sweet potato with skin (80g)	30g
	Plantain (100g boiled)	30g
	Yam (90g boiled)	
Fruit	Cup of berries - blueberries, blackberries, strawberries, raspberries	10g 10g
	Portion of fresh fruit (tennis ball size)	

If you want more information on how to work out how much carbohydrate is in your food from food labels, websites, apps etc, please ask about attending a Carb Smart session with a Specialist Diabetes Dietitian.

Smart Swaps

These swaps can help to increase your vegetable portions whilst reducing the amount of carbs you have at meal times.

Sometimes instead of ..	Try these low carb swaps
Spaghetti or noodles	Spiralised vegetables such as courgette, carrot or butternut squash spaghetti
Pasta or lasagne sheets	Leeks, courgette or aubergine Lentil or bean pasta
Rice	Broccoli or cauliflower rice
Mashed potato (e.g. on cottage/shepherd's pie)	Cauliflower mash or celeriac mash
Chips	Celeriac or pumpkin cut into chips and oven baked
Tortilla wraps (e.g. for fajitas) or taco shells	Lettuce leaves using little gem or iceberg lettuce
Burger buns	Grilled large flat mushrooms
Pizza base	Cauliflower pizza base
Breadcrumbs on meat/fish	Ground almonds

Step 3: Timing

Spread carb foods out over three meals a day with 4 to 5 hours in between. If your meals are well balanced, then you should not feel hungry often between meals. Most people with diabetes do not need to snack between meals.

The appetite does vary from day to day, so sometimes you may feel more hungry between meals. Often a drink or a small portion of a low carb snack is enough to satisfy the hunger. If hunger is ignored, you can get over hungry and end up overeating later, causing more ups and downs in glucose levels.

Check in with yourself that it is really hunger and not another feeling such as boredom, frustration, stress etc. For many people, eating is linked to their emotions. Please ask for more support if you find this is affecting your efforts to improve your health.

Low carb snack ideas - please ask if you would like more ideas.

- Raw veg e.g. carrot, pepper, radish, mushrooms, cucumber
- Green vegetables e.g. rocket, lettuce, sugar snap peas
- Cold meat, a hard-boiled egg, tofu pieces or cottage cheese etc
- Small handful of plain nuts, seeds or roasted beans
- Celery with peanut butter
- High protein yoghurt

Healthy carb snacks for active days

If you have a day when you are more active than usual then you may want an extra carbohydrate snack. Choose low GI carb snacks and keep to a small portion. Combine them with protein foods to fill you up more. Suggestions include 1 seeded rye crispbread with hummus, 1 sliced apple or pear with individual cheese portion, 1 slice of seeded bread with cold meat, 125ml yoghurt with added seeds.

Step 4: Active after meals

Keep active for 10 to 15 minutes within the first hour after eating. This will help your blood glucose return to a healthy level after meals. For example go for a short walk or do active tasks like tidying up the kitchen after your meal and then sit down later.

Moving more at any time of day will also improve blood glucose levels. In general avoid sitting or lying down for long periods during the day. Aim to break up sitting time by getting up every 30 minutes and moving around for at least a few minutes.

Walk more at every opportunity. Aim to walk for at least a total of 30 minutes every day and gradually increase this if you can. You can break this up into small chunks. Some people find an activity tracker helpful to monitor their step count.

Meal ideas

Breakfast

- Two scrambled eggs with mushrooms and wilted spinach on 1 to 2 slices of seeded bread
- Peanut butter or tahini on oatcakes with a pear
- Jumbo oats with milk, small chopped apple and a small handful of seeds such as chia seeds or ground flaxseed. Made into a hot porridge or soaked overnight for a cold breakfast.
- Natural/plain yoghurt with a handful of nuts or seeds and berries
- Tofu scramble with avocado and tomatoes

Light meals

- Vegetable sticks - carrots, celery, peppers, tomatoes with hummus or cream cheese and 1 wholemeal pitta bread.
- Mixed salad with tinned or smoked mackerel or feta cheese with olives, and 2- 3 small boiled new potatoes with skins on. add oil and vinegar as a dressing.
- Half tin of baked beans with poached egg and tinned or grilled tomatoes. 1 slice of granary bread optional.
- Mexican kidney bean and vegetable soup followed by a piece of fruit.
- Red lentil pasta salad with chicken and cold roasted vegetables, Add a tomato salsa style dressing.

Main meals

- Stir-fried vegetables with shredded cooked meat, tofu or Quorn™ (use soy sauce or Hendersons relish™ rather than sweet chilli or sweet and sour) and a teacup sized portion of cooked basmati or brown rice
- Dahl with wholegrain basmati rice and salad.

- Mixed salad with grilled meat and a small baked sweet potato or wholegrain chapatti.
- Steamed vegetables served with pasta or new potatoes and baked fish fillet (add extra flavour by marinating with garlic, lemon juice, herbs and spices)
- Curried meat and vegetables with rice and peas
- Omelette with sliced potatoes, peppers, onions, tomatoes, mushrooms and bacon
- Mixed bean and vegetable curry with cauliflower rice
- Chickpeas and roast aubergine, courgette, peppers and onions with bulgar wheat or barley
- Jerk chicken with green banana or plantain (handful sized portion) with salad.
- Pearl barley risotto with grilled fish and green salad.

My Meal Ideas

Write down any ideas you have for new meals or changes to meals

Can I still drink alcohol?

Many alcoholic drinks such as beers, ciders and alcopops are high in carbohydrate so they will increase glucose levels. The more you drink the higher the level will rise so keep to one or two drinks most of the time.

The low alcohol versions contain the same amount of carbohydrate or sometimes more, so they will also increase glucose levels depending on how much you drink. Low alcohol drinks do usually have a food label on them so this will provide more information.

Wine and spirits do not contain carbohydrates. Use low sugar mixers with these such as 'diet coke', 'slimline tonic' and 'no added sugar' cordials.

Which yoghurts should I choose?

There are so many yoghurts in the shops, it can be confusing to know which ones to buy. Full fat/whole milk, natural/plain yoghurt or kefir are good choices. These have around 3 to 5 grams fat per 100g (3% to 5% fat) and have no added sugars. Greek yoghurt around 5% fat is also a good choice.

The fat in the yoghurt helps to slow down the digestion of carbohydrates that may be eaten with it such as fruit or cereal. Often these yoghurts also contain live bacteria so are labelled as 'live' or 'bio' yoghurt. This is good for healthy bowels and general health.

Yoghurts labelled as 'high protein' can also be a good choice as they are filling and provide extra protein to the diet. Greek and Skyr yoghurt are high in protein. These can be plain or flavoured varieties.

Further information to accompany this leaflet:

- To follow the advice in this leaflet, you need to know which foods are carbohydrates. You can find this information in the 'Carbohydrates and Diabetes' leaflet from Sheffield Teaching Hospitals.
- You may also find these leaflets from Sheffield Teaching Hospitals useful: 'Low Carb Snacks', 'Boost Protein', 'Boost Fibre', 'Pick and Mix Healthy Oats Ideas'.
- More information on healthy diet can be found on the Diabetes UK website www.diabetes.org.uk. You can get free booklets such as 'Enjoy Food Guide' and Eating Well with Diabetes from the website or by phoning 0345 123 2399.
- More information on carbohydrate amounts in food, Carb and Calorie Counter - Chris Cheyette and Yello Balolia. Available as a book or app.

Contact details

Sheffield Diabetes Dietitians

- Sheffield Diabetes Centre: **0114 271 4445**



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