

Carbohydrate Awareness

Presented by:
Community Dietitian

Diabetes
SMART

ThinkSmart ActSmart LiveSmart



Wirral Community
NHS Foundation Trust

Diabetes Smart is a Healthy Wirral initiative

Group ground rules

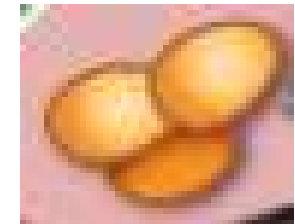
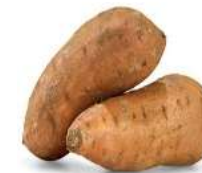
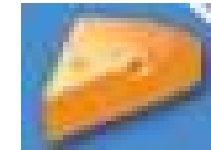
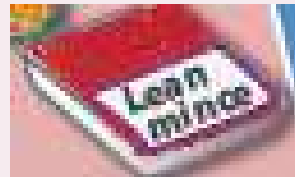
We agree to:

- treat each other with respect
- let everyone's viewpoint be heard
- maintain confidentiality
- keep to the topic being discussed
- join in discussions
- share information and resources with others
- turn mobile phones to silent/turned off

Introductions and Questions

- Share your main question

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Carbohydrate

Sugar and sugary foods/drinks



Starchy foods



Starchy vegetables (parsnip, sweet potatoes, swede, beet root)



Most fruits



Milk



Yoghurt

breaded/battered meat/fish

baked beans

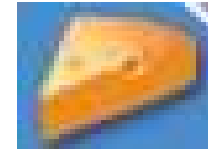


No carbohydrate

Most vegetables



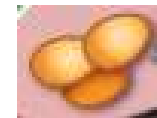
Cheese



Meat



Fish



Eggs









Nuts

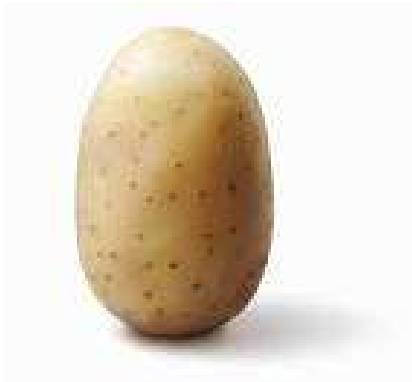
Butter/fat spreads



Oils



Starch	Added/free sugars	Natural sugars	
<p>bread rice potato pasta noodles breakfast cereals oats couscous yams corn lentils and legumes plain biscuits and buns crackers anything made with flour such as pizza, pastry and thickened sauces and soups.</p>  	<p>granulated sugar (brown/white) sweets chocolate jams/preserves sugary soft drinks honey syrops fruit juice jelly cakes* desserts* biscuits*</p>  	<p>Fructose fruit (fresh, dried, tinned and juice)</p> 	<p>Lactose milk dairy foods like yoghurt, fromage frais and ice cream</p> 

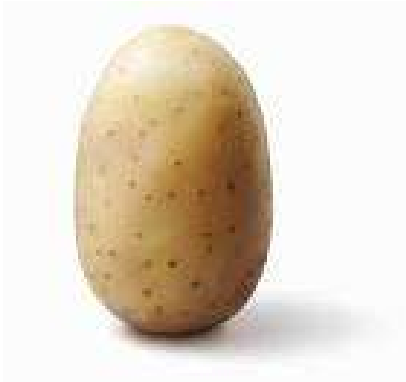


1 potato
(egg-sized)

2 teaspoons
sugar

1 medium
orange

1/3 pint
(200ml) milk



1 potato
(egg-sized)

2 teaspoons
sugar

1 medium
orange

1/3 pint
(200ml) milk

All of these food portions contain 10g of carbohydrate and so would raise blood glucose levels by a similar amount

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1

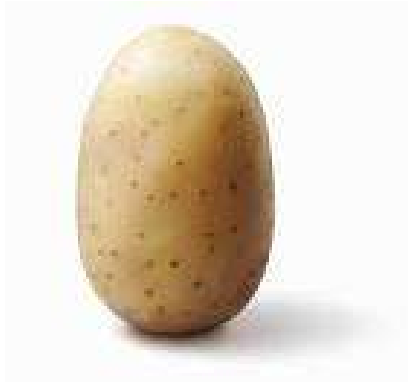


2



Amount of carbohydrate is the key dietary factor affecting blood glucose levels

- Consider **total carbohydrate** rather than just sugar
- Reducing carbohydrate portions can help reduce blood glucose levels



1 potato
(egg-sized)

2 teaspoons
sugar

1 medium
orange

1/3 pint
(200ml) milk

All of these food portions contain 10g of carbohydrate and so would raise blood glucose levels by a similar amount

Potential options if you want to include an **occasional** cake/pudding

- reduce carbohydrate elsewhere
- do more activity after eating it
- modify recipe
- adjust insulin dosage
- informed decision

Sugar

- Does not contain anything beneficial for health
- Adds extra calories
- Bad for dental health

As a general rule, everyone should be eating less sugar.

Starchy and sugary foods



**Quick burst of energy
Hungry again quickly
Low in vitamins, minerals and
fibre**

**Steady supply of energy
Feel full for longer
High in vitamins, minerals, fibre
and some have protein**

Fibre

- Good for digestive health
- Associated with a lower risk of cardiovascular diseases, type 2 diabetes and bowel cancer
- Linked with improving blood glucose levels, blood fat levels and blood pressure
- Keeps you feeling fuller for longer

Even though higher fibre options have health benefits they still contain carbohydrate

Be mindful of portion size.

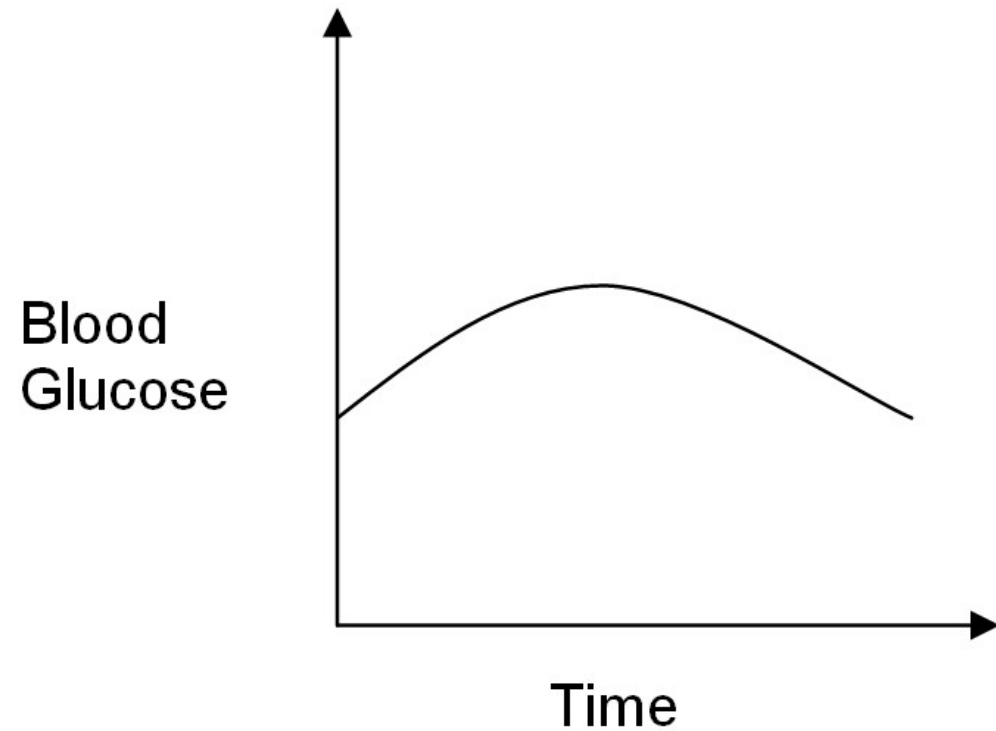
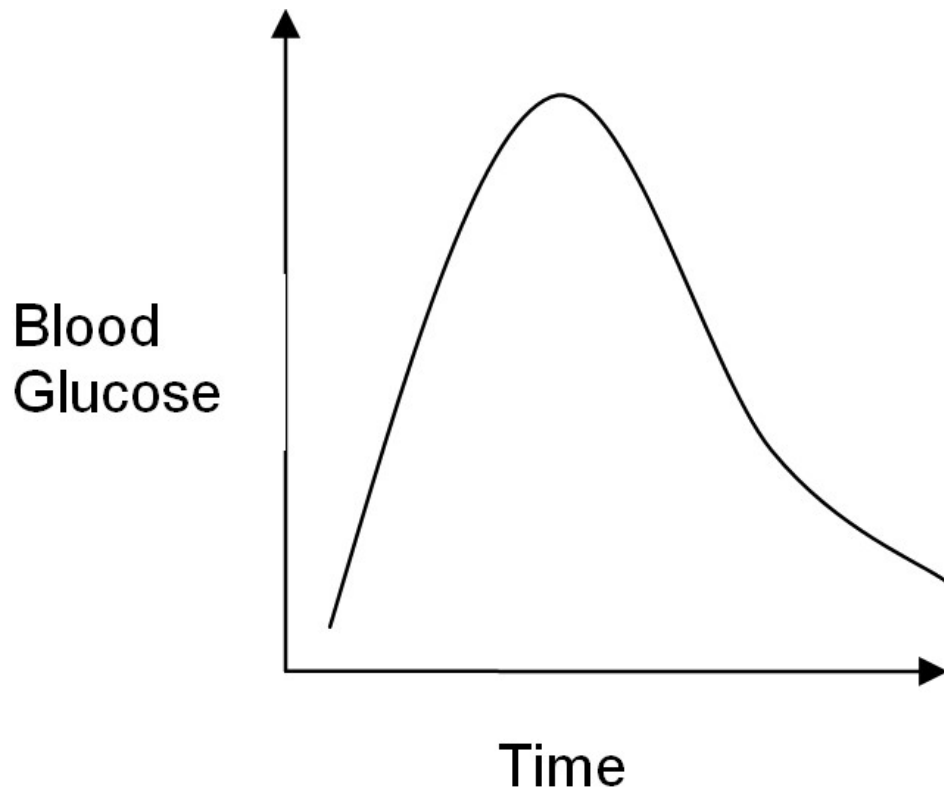
Ways to increase fibre:

- more vegetables/salad
- eat pulses/beans and nuts/seeds
- include some fruit
- skins on potatoes and vegetables
- wholegrain versions of bread: seeded batch, multi-seed, granary, soya and linseed breads
- whole wheat flour,
- whole wheat pasta
- brown basmati or wild rice
- wholegrain cereals e.g. porridge, shredded wheat pillows, wheat biscuits



High GI

Low GI



High GI

long grain white rice
mashed potato
chips
cornflakes
jelly babies
white bread



Lower GI

whole grain bread
new potatoes with skins, sweet potatoes
potatoes
brown basmati rice
Wholegrain pasta
porridge oats
most fruits
dairy foods
pulses
vegetables
nuts



Carbohydrates

**Reference intake (RI) is 230g for women
and 300g for men**

These figures are just a guide and are based on the requirements of an average woman and man (without diabetes).

With type 2 diabetes you may need to reduce the quantity of carbohydrate in your diet to help manage your blood glucose levels (e.g. 130-200g women, 130-230g men, or lower).

Too much or too little carbohydrate?

Too Much

- High blood glucose levels 2 hours after eating (over 8.5 mmol/l in type 2 diabetes, over 9 mmol/l in type 1 diabetes)
- High HbA1c
- Weight gain
- High triglycerides

Too Little

- Hypos

Ways of estimating how much carbohydrate you are having

- Food labels
- Visual Estimation
- Estimation from experience /
10g carb portions
- Carbohydrate Reference
Tables
- Weighing food

Using food labels to work out carbohydrate content

Nutrition

Typical values	100g contains	Each slice (typically 44g) contains	% RI*	RI* for an average adult
Energy	985kJ 235kcal	435kJ 105kcal	5%	8400kJ 2000kcal
Fat	1.5g	0.7g	1%	70g
of which saturates	0.3g	0.1g	1%	20g
Carbohydrate	45.5g	20.0g		
of which sugars	3.8g	1.7g	2%	90g
Fibre	2.8g	1.2g		
Protein	7.7g	3.4g		
Salt	1.0g	0.4g	7%	6g

This pack contains 16 servings

*Reference intake of an average
adult (8400kJ / 2000kcal)

Using food labels to work out carbohydrate content

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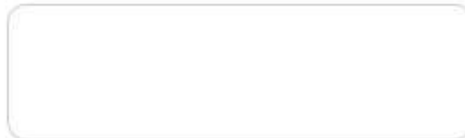
Using food labels to work out carbohydrate content

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Fibre	2.8g	1.2g		
Protein	7.7g	3.4g		
Salt	1.0g	0.4g	7%	6g

This pack contains 16 servings

*Reference intake of an average adult (8400kJ / 2000kcal)

7: Looking at the food label below, how much carbohydrate is in 50g of cereal (without milk)?



Nutrition:

Nutrient	per 100g	per 30g (with 125ml semi skimmed milk)
Energy kCal	357kCal	166kCal
Energy kj	1,511kj	704kj
Protein	10.0g	7.0g
Carbohydrate	68.0g	26.0g
of which sugars	20.0g	12.0g
Fat	5.0g	3.5g
of which saturates	0.9g	1.5g
Fibre	9.0g	2.5g
Sodium	Trace	Trace
Salt	Trace	Trace

7: Looking at the food label below, how much carbohydrate is in 50g of cereal (without milk)?

34g



Nutrition:

Nutrient	per 100g	per 30g (with 125ml semi skimmed milk)
Energy kCal	357kCal	166kCal
Energy kj	1,511kj	704kj
Protein	10.0g	7.0g
Carbohydrate	68.0g	26.0g
of which sugars	20.0g	12.0g
Fat	5.0g	3.5g
of which saturates	0.9g	1.5g
Fibre	9.0g	2.5g
Sodium	Trace	Trace
Salt	Trace	Trace

8: If you were to eat half of the lasagne below, how much carbohydrate would be in the portion?



Nutrition:

Nutrient	per 100g (ovenbaked)	per 400g (ovenbaked pack)
Energy kCal	119kCal	476kCal
Energy kj	498kj	1,991kj
Protein	7.4g	29.6g
Carbohydrate	8.6g	34.4g
of which sugars	2.1g	8.4g
Fat	5.8g	23.2g
of which saturates	2.8g	11.2g
Fibre	1.4g	5.6g
Salt	0.5g	2.1g

8: If you were to eat half of the lasagne below, how much carbohydrate would be in the portion?

17.2g



Nutrition:

Nutrient	per 100g (ovenbaked)	per 400g (ovenbaked pack)
Energy kCal	119kCal	476kCal
Energy kj	498kj	1,991kj
Protein	7.4g	29.6g
Carbohydrate	8.6g	34.4g
of which sugars	2.1g	8.4g
Fat	5.8g	23.2g
of which saturates	2.8g	11.2g
Fibre	1.4g	5.6g
Salt	0.5g	2.1g

If foods do not have a label

- Find a similar food that is packaged
- Use reference table
- Use carbs and calcs book/app to estimate visually

Carbs & Cals
Bestselling Book & Award-winning App for Diabetes & Weight Loss

✓ Type 1 Diabetes ✓ Type 2 Diabetes ✓ Weight Loss

TAKEAWAYS

Many takeaway foods are high in fat and can be lacking in vegetables, so if you are trying to make healthier choices, choose dishes containing vegetables and those which haven't been fried. The portion size served for takeaways is usually much larger than we would serve at home, which makes them suited to sharing.

Chicken Burger	Fried Chicken (battered)	French Fries
44g Carbs 398 Cals 25g Prot 16g Fat 3g SatFat 2g Fibre	12g Carbs 594 Cals 63g Prot 33g Fat 8g SatFat 7g Fibre	54g Carbs 448 Cals 5g Prot 25g Fat 9g SatFat 4g Fibre
168g	255g	160g
Chips	Fish	Margherita Pizza (large, deep pan)
87g Carbs 561 Cals 9g Prot 22g Fat 11g SatFat 8g Fibre	33g Carbs 766 Cals 56g Prot 46g Fat 24g SatFat 2g Fibre	47g Carbs 432 Cals 19g Prot 18g Fat 8g SatFat 4g Fibre
262g	330g	170g
Chicken Curry	Chicken Tikka Masala	Bombay Potatoes
10g Carbs 551 Cals 44g Prot 37g Fat 11g SatFat 8g Fibre	18g Carbs 577 Cals 46g Prot 36g Fat 12g SatFat 5g Fibre	41g Carbs 354 Cals 5g Prot 20g Fat 2g SatFat 6g Fibre
380g	370g	300g

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explore FOOD

<p>Calculate a recipe</p> <p>Go</p>	<p>Calculate a diet</p> <p>Go</p>	<p>Continue a project</p> <p>Go</p>
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26cm Dinner Plate Eating Out | 331

Chicken Green Curry	
	
3g Carbs	6g Carbs
195g	390g
232 Cals	464 Cals
17g Prot	34g Prot
17g Fat	34g Fat
10g SatFat	21g SatFat
5g Fibre	10g Fibre

Beef Massaman Curry	
	
14g Carbs	27g Carbs
200g	400g
338 Cals	676 Cals
21g Prot	43g Prot
21g Fat	42g Fat
11g SatFat	22g SatFat
6g Fibre	12g Fibre

Prawn Pad Thai	
	
48g Carbs	95g Carbs
225g	450g
345 Cals	690 Cals
16g Prot	33g Prot
10g Fat	19g Fat
1g SatFat	3g SatFat
5g Fibre	10g Fibre



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Using reference tables

Bread	Serving Amount	Carbohydrate (g)	
		/serving	/100g
White	1 thin slice	11g	50g
	1 medium slice	15g	50g
	1 thick slice	20g	50g
	1 extra thick slice	30g	50g
Wholemeal	1 thin slice	10g	42g
	1 medium slice	15g	42g
	1 thick slice	20g	42g
Granary	1 medium slice	15g	46g

Using reference tables

How much carbohydrate is there in 3 plums?

(page 6)

Fruit	Serving amount	Carbohydrate (g)	
		/serving	/100g
Apple	1	15g	12g
Stewed apple	140g	11g	8g
Pear	1	15g	9g
Plum	2	10g	8g
Orange	1	10g	6g
Satsuma	2	10g	6g
Grapefruit	½	5g	5g
Banana	1	20g	15g
Grapes	10	10g	15g
Mango	¼	10g	14g
Pineapple	2 slices	10g	10g
Paw paw	¼	10g	9g
Apricots	4	10g	7g
Nectarine	1	10g	8g
Peach	1	10g	7g
Tinned peaches in juice	100g	10g	10g
Tinned fruit cocktail	200ml	14g	7g

Fruit	Serving amount	Carbohydrate (g)	
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Apple	1	15g	12g
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Pear	1	15g	9g
Plum	2	10g	8g
Orange	1	10g	6g
Satsuma	2	10g	6g
Grapefruit	½	5g	5g
Banana	1	20g	15g
Grapes	10	10g	15g
Mango	¼	10g	14g
Pineapple	2 slices	10g	10g
Paw paw	¼	10g	9g
Apricots	4	10g	7g
Nectarine	1	10g	8g
Peach	1	10g	7g
Tinned peaches in juice	100g	10g	10g
Tinned fruit cocktail	200ml	14g	7g

2 plums has 10g carbohydrate
3 plums has 15g carbohydrate

Using reference tables

How much carbohydrate is there in 6 tablespoons of oats?

(page 5)



Breakfast cereals	Serving Amount	Carbohydrate (g)	
		/serving	/100g
Oats rolled	4 <u>tblsp</u>	30g	60g
<u>Oatso Simple Original</u>	1 sachet & milk	25g	14g
Porridge with milk	225g	30g	14g
Fruit muesli	2 <u>tblsp</u>	20g	65g
Muesli no added sugar	2 <u>tblsp</u>	20g	65g
Nut muesli	2 <u>tblsp</u>	18g	61g

How much carbohydrate is there in 6 tablespoons of oats?

Breakfast cereals	Serving Amount	Carbohydrate (g)	
		/serving	/100g
Weetabix	1 bisc	12g	68g
Oatibix	1 bisc	15g	64g
Shredded wheat	1 bisc	15g	69g
All Bran	6 tbsp	20g	48g
Bran or oat flakes	7 tbsp	30g	67g
Cornflakes	6 tbsp	30g	84g
Crunchy Nut Cornflakes	6 tbsp	30g	82g
Frosties	6 tbsp	30g	87g
Fruit 'n Fibre	7 tbsp	30g	69g
Special K	6 tbsp	30g	75g
Sultana Bran	7 tbsp	30g	68g
Cheerios	8 tbsp	30g	75g
Coco Pops	7 tbsp	30g	85g
Puffed Wheat	8 tbsp	30g	72g
Rice Krispies	7 tbsp	30g	87g
Start	7 tbsp	30g	83g
Weetos	8 tbsp	30g	75g
Frosted or Coco Shreddies	5 tbsp	30g	77g
Raisin Wheats	15	30g	69g
Shredded Wheat Bitesize	15	30g	72g
Shreddies	5 tbsp	30g	74g
Oats rolled	4 tbsp	30g	60g
Oats Simple Original	1 sachet & milk	25g	14g
Porridge with milk	225g	30g	14g
Fruit muesli	2 tbsp	20g	65g
Muesli no added sugar	2 tbsp	20g	65g
Nut muesli	2 tbsp	18g	61g

4 spoons of oats contains 30g carbohydrate
6 spoons has 45g carbohydrate

1: Which of these foods contains the most carbohydrate?

Tick the correct answer:

Penne Pasta



Grapes



Jam Doughnut



Beef Burger (with cheese)



1: Which of these foods contains the most carbohydrate?

Tick the correct answer:

Penne Pasta



Grapes



Jam Doughnut



Beef Burger (with cheese)



Penne Pasta = 70g carbohydrate

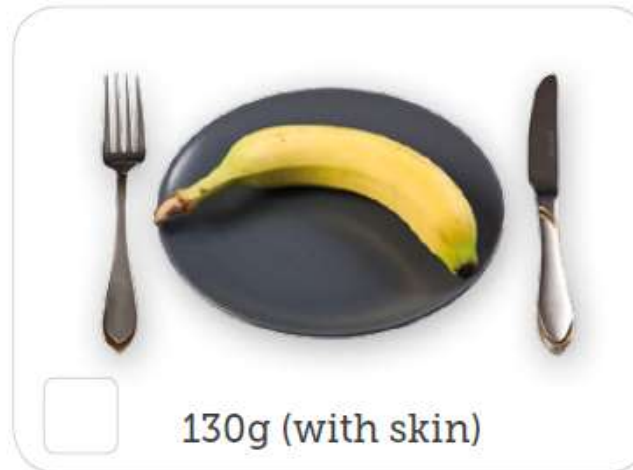
(Grapes = 25g, Jam Doughnut = 35g Beef Burger = 31g)

2: Which two fruits have the same carbohydrate content? Tick the correct answer:

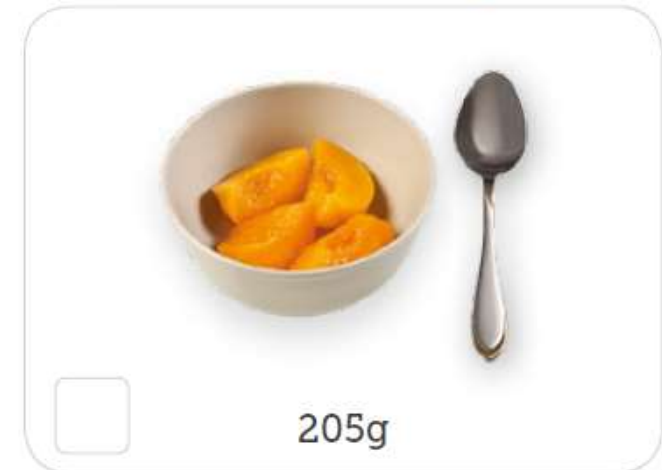
Clementine



Banana



Peach (tinned in juice)



2: Which two fruits have the same carbohydrate content? Tick the correct answer:

Clementine



Banana



Peach (tinned in juice)



Clementine 5g carbohydrate

Banana and Peaches both 20g carbohydrate

3: Which meal has the lowest carbohydrate content?

Tick the correct answer:

Chicken Curry (with rice)



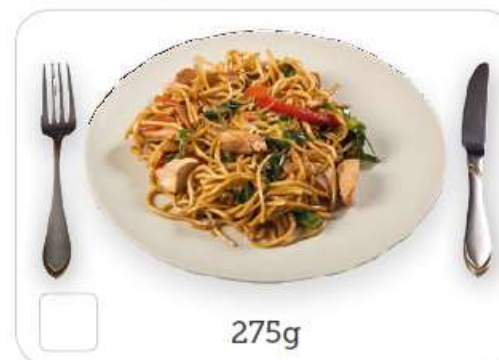
Beans on Toast



Sausage & Mash



Stir-fry (chicken & noodles)

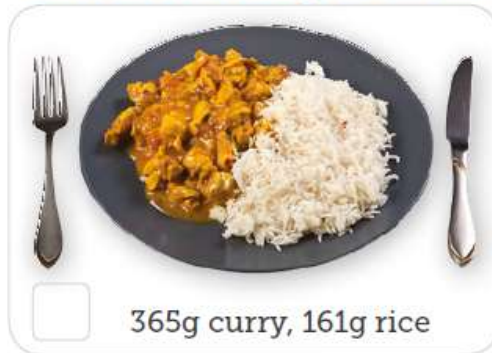


3: Which meal has the lowest carbohydrate content?

Tick the correct answer:

Stir-fry (chicken & noodles) = 43g

Chicken Curry (with rice)



Beans on Toast

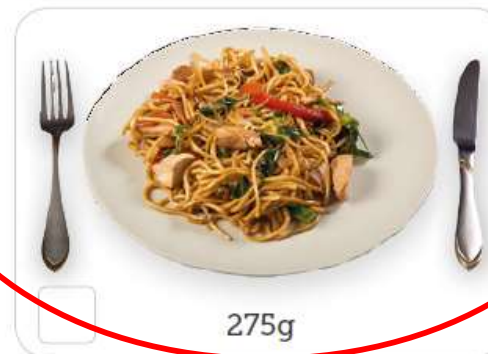


(Beans on Toast = 74g,
Chicken Curry = 57g,
Sausage & Mash =
73g)

Sausage & Mash



Stir-fry (chicken & noodles)



4: Which snack contains the most carbohydrate? Tick the correct answer:

Pineapple (fresh)



Flapjack



Greek Yogurt

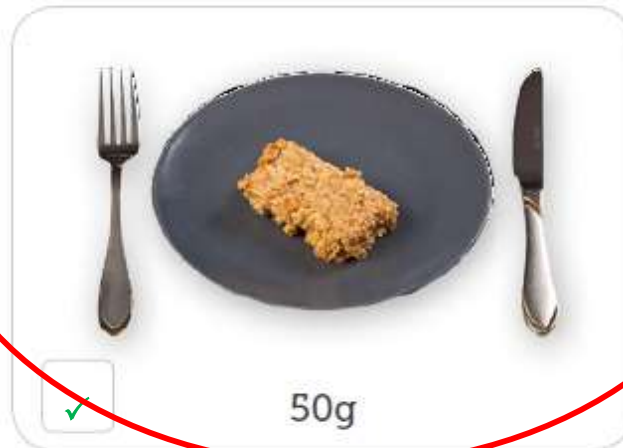


4: Which snack contains the most carbohydrate? Tick the correct answer:

Pineapple (fresh)



Flapjack



Greek Yogurt



Flapjack 31g carbohydrate

Pineapple 8g carbohydrate

Greek yoghurt 6g carbohydrate

Carb counting quiz: HIGHER or LOWER?!

<https://www.youtube.com/watch?v=vjPQSJB> 27M

With thanks to Carbs and Cals

What carbohydrates am I having?

- How much per day
- How much per meal/how is it spread out
- Are the foods and drinks high/low GI (quick/slow releasing)
- Is there anything you want to change?

How much carbohydrate am I having?

Step 1:
write down what you eat and drink for a day



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How much carbohydrate am I having?

	Carbohydrate (g)
Breakfast	
Porridge oats 40g	
Semi skimmed milk	
Sultanas - 1 tablespoon	
Total	
Lunch	
Egg and salad sandwich	
- Egg	
- Salad	
- Olive spread	
- 2 medium slices granary bread	
Apple	
Total	
Evening Meal	
Salmon	
New potatoes x 4	
Broccoli	
Green beans	
Strawberries	
Natural yoghurt	
Total	
Snacks (if eaten)	
Almonds (20g)	
Banana	
Supper (if included)	
Milk (semi skimmed) 200ml	
Daily total	

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How much carbohydrate am I having?

Step 2: does it contain carbohydrate and how much?

Egg and salad sandwich

- Egg
- Salad
- Olive spread
- 2 medium slices granary bread

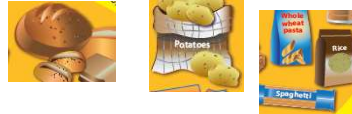
Apple

Carbohydrate



Sugar and sugary foods/drinks

Starchy foods



Starchy vegetables (parsnip, sweet potatoes, swede, beet root)



Most fruits

Milk

Yoghurt



breaded/battered meat/fish

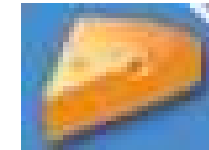
baked beans



No carbohydrate

Most vegetables

Cheese



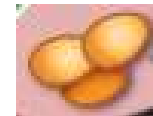
Meat



Fish



Eggs

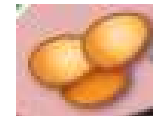


Nuts



Butter/fat spreads

Oils



How much carbohydrate am I having?

Step 2: does it contain carbohydrate and how much?

Egg and salad sandwich

- Egg 0
- Salad 0
- Olive spread 0
- 2 medium slices granary bread $15 \times 2 =$ 30

Apple 15

TOTAL 45

What carbohydrates am I having?

- Repeat this for each meal and add up the total for the day

How much carbohydrate am I having?

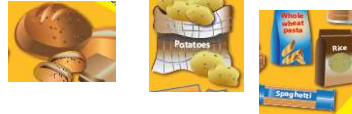
	Carbohydrate (g)
Breakfast	
Porridge oats 40g	24.2
Semi Skimmed milk 200ml	5
Sultanas - 1 tablespoon	9
Total	38
Lunch	
Egg and salad sandwich	0
- Egg	0
- Salad	0
- Olive spread	20
- 2 medium slices granary bread	15
Apple	15
Total	45
Evening Meal	
Salmon	0
New potatoes x 4	40
Broccoli	0
Green beans	0
Handful strawberries	5
Low fat natural yoghurt 125g	8
Total	63
Snacks (if eaten)	
Almonds (1 tablespoon)	1
Small banana	13
Supper (if included)	
Milk (semi skimmed) 200ml	10
Daily total	160

Carbohydrate



Sugar and sugary foods/drinks

Starchy foods



Starchy vegetables (parsnip, sweet potatoes, swede, beet root)



Most fruits



Milk

Yoghurt



breaded/battered meat/fish

baked beans

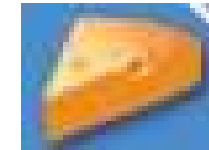


No carbohydrate

Most vegetables



Cheese



Meat



Fish



Eggs

Nuts

Butter/fat spreads

Oils



What carbohydrates am I having?

- How much per day
- How much per meal/how is it spread out
- Are the foods and drinks high/low GI (quick/slow releasing)
- Is there anything you want to change?

Ways to reduce carbohydrate intake

- balanced meals
- replace some starchy carbohydrate with vegetables e.g. spiralised vegetables, cauliflower rice, cauliflower mash, adding vegetables into mashed potato
- adapt recipes
- reduce snacking and choose snacks with under 10g carbohydrate

Ways to reduce carbohydrate intake



~100g carbohydrate



~110g carbohydrate



~45g carbohydrate



~50g carbohydrate



~10g carbohydrate



~15g carbohydrate

SMART Goals

Specific

What will you do?

Measurable

How much...how often?

Achievable

How confident are you that you **can** do it? (at least 7/10)

Realistic

How confident are you that you **will** do it? (at least 7/10)

Time Bound

When will you do it?

Evaluate

How did it go?

Review

What will you do next?

Questions to help you set your Goals

- What is your Goal?
- How important is your Goal to you?
- What makes it important?
- What do you need to achieve it?
- Which bits will you do this week?
- How much? How often? When?
- If you visualise yourself doing this bit of your Goal this week, how confident do you feel, on a scale of 0-10?

Diabetes Smart is a Healthy Wirral Initiative



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Questions

ThinkSmart ActSmart LiveSmart

Further support

You can access the following topic session:

- Healthy Lifestyle
- Physical Activity
- Food labelling
- Keeping well with Diabetes
- Review sessions

Book on 0151 604 7271 or email dietetics.wirralct@nhs.uk

For Resources and support :

www.wchc.nhs.uk/services/diabetes-smart/self-care-resources-and-support/

**Thank you for joining us
today!**



**Please take a moment to
complete a short evaluation...**



Using reference tables to work out gram of carbohydrate per portion

Step 1:

Divide (\div) the reference value by 100

Using reference tables to work out grams of carbohydrate per portion

Step 2:

then multiply (x) by the weight of food

Rice	Serving amount	Carbohydrate (g)	
		/serving	/100g
All varieties raw	10g	10g	100g
	50g	50g	100g
All varieties cooked	30g	10g	30g
	150g	50g	30g
Pilau rice	200g	60g	30g
Risotto	350g	60g	17g
Polenta	125g	19g	15g
Couscous cooked	125g	38g	30g

A serving of rice weighs 160g. Cooked rice has 30g carbohydrate per 100g.

Rice	Serving amount	Carbohydrate (g)	
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Couscous cooked	125g	38g	30g

A serving of rice weighs 160g.

Cooked rice has 30g carbohydrate per 100g.

The amount of carbohydrate in the serving

Step1:

$$30 \div 100 = 0.3$$

Step 2:

$$0.3 \times 160 =$$

48g carbohydrate.

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Diabetes
SMART

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Weighing foods

<https://www.youtube.com/watch?v=MW42qIZSS9k>

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NHS

Wirral Community
NHS Foundation Trust