

Multiple Daily Injection (MDI) & Carbohydrate (CHO) Counting Assessment Tool

(for patients using analogue insulin)

The overall aim of this questionnaire is to ensure that you have the knowledge required to support you to manage your diabetes.

The questions are designed to help you and your diabetes team understand which areas of diabetes management you are confident in and which areas you may be less sure of.

Please do not view it as a test or exam. It will simply be used to identify the areas where further information or support may be needed.

**Please complete this questionnaire.
Take as much time as you need.**

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SECTION ONE

Multiple Daily Injection (MDI)

Please tick the correct answer/s

A. Long Acting Insulin

1. What is the name of your long acting insulin?

.....

2. What is the main purpose of your long acting insulin? It provides ...

Choose one answer

- ☐ Insulin to cover carbohydrates eaten at main meals
- ☐ Insulin to cover snacks
- ☐ Continuous insulin cover
- ☐ None of the above

3. How long does your long acting insulin last for?

Choose one answer

- ☐ 4 hours
- ☐ 8 - 15 hours
- ☐ 12 - 24 hours
- ☐ Up to 42 hours

4. When is the best time to give your long acting insulin?

Choose one answer

- ☐ The time does not matter as long as it is given every day
- ☐ Within an hour of eating a meal
- ☐ Whenever you remember
- ☐ Same time once or twice each day

5. How can you check that your long acting insulin dose is correct? The dose is suitable if your blood glucose level ...

Choose all that apply

- ☐ Remains stable even if you miss a meal
- ☐ Matches your target before bed
- ☐ Reduces a lot overnight but matches your target blood glucose in the morning
- ☐ Is stable between bedtime & waking and matches your target blood glucose

B. Quick Acting Insulin

6. What is the name of your quick acting insulin?

.....

7. What is the main purpose of your quick acting insulin? It is used to stop my blood glucose level rising too high when I eat ...

Choose one answer

- ☐ Protein
- ☐ Fat
- ☐ Carbohydrate
- ☐ All of the above

8. When you eat food that contains carbohydrate, what is the best time to inject your quick acting insulin?

Choose one answer

- ☐ 1 hour before eating
- ☐ Just before you start eating
- ☐ After you have finished eating
- ☐ 15 minutes after eating

9. How long does it take for your quick acting insulin to reach it's maximum strength (peak action)?

Choose one answer

- ☐ 10 - 20 minutes
- ☐ 1 - 2 hours
- ☐ 4 - 5 hours
- ☐ 12 - 24 hours

10. How long does it take for your quick acting insulin to finish working?

Choose one answer

- ☐ ½ hour
- ☐ 1 - 2 hours
- ☐ 4 - 5 hours
- ☐ 8 - 12 hours

11. How often, and when, do you check your blood glucose levels?

.....

C. Insulin to Carbohydrate Ratio

12. Do you know what your insulin to carbohydrate ratio is?

- ☐ Yes
☐ No

13. Please write your insulin to carbohydrate ratios below. For example, 1 unit to cover every 10g of carbohydrate, or 1 unit for every Carbohydrate Portion (CP). 1CP = 10g of carbohydrate.

Breakfast =

Lunch =

Evening meal =

14. How do you know if your insulin to carbohydrate ratios are correct?

Choose all that apply

- ☐ Waking blood glucose level matches your target
☐ Following breakfast your blood glucose level matches your target before lunch
☐ Following lunch your blood glucose level matches your target before your evening meal
☐ Following your evening meal your blood glucose level matches your target before bed

15. If your blood glucose levels are regularly high before your next meal and your carbohydrate ratio is 1 unit to cover every 10 grams of carbohydrate / 1CP, what would you change you insulin to carbohydrate ratio to?

Choose one answer

- ☐ 1 unit for every 20g carbohydrate / ½ unit for every 10g carbohydrate (CP)
☐ 1 unit for every 10g carbohydrate / 1 unit for every 10g carbohydrate (CP)
☐ 1 unit for every 8g carbohydrate / 1½ for every 10g carbohydrate (CP)
☐ 1 unit for every 5g carbohydrate / 2 units for every 10g carbohydrate (CP)

D. Correction Dose

16. What is the purpose of your correction dose? (sometimes referred to as correction factor or insulin sensitivity)

Choose all that apply

- ☐ To increase blood glucose level back to your target by next meal
☐ To keep blood glucose level unchanged by next meal
☐ To reduce blood glucose level back to your target by next meal
☐ To stop blood glucose level dropping back to your target by next meal

17. Paul's blood glucose level before lunch is 12.3 mmol/l. His pre meal blood glucose target is 6 mmol/l. His correction dose is 1 unit of quick acting insulin to lower his blood glucose by 3 mmol/l. He's not eating lunch today.

How much insulin would he need to give?

Choose one answer

- ☐ 1 unit
- ☐ 2 units
- ☐ 3 units
- ☐ 4 units

18. Jane finds that her correction dose no longer works because her blood glucose levels do not come back down to target when she's been high. Her current correction dose is 1 unit of quick acting insulin to lower her blood glucose level by 3 mmol/l.

What should she change her correction dose to?

Choose one answer

- ☐ 1 unit lowers blood glucose by 1 mmol/l
- ☐ 1 unit lowers blood glucose by 2.5 mmol/l
- ☐ 1 unit lowers blood glucose by 4 mmol/l
- ☐ 1 unit reduces blood glucose by 5.5 mmol/l

E. Hypoglycaemia

19. Which symptoms may occur when hypoglycaemic (hypo)?

Choose all that apply

- ☐ Sweating
- ☐ Shakiness
- ☐ Thirst
- ☐ Lack of concentration
- ☐ Passing more urine

20. A hypo is when your

Choose one answer

- ☐ Blood glucose level is lower than 2 mmol/l with or without symptoms
- ☐ Blood glucose level is lower than 3.5 mmol/l with or without symptoms
- ☐ Blood glucose level is lower than 4 mmol/l with or without symptoms
- ☐ Blood glucose level is above 5 mmol/l with symptoms

F. Ketones

21. When you are unwell what extra things do you need to consider?

Choose one answer

- ☐ Stop testing your blood glucose levels
- ☐ Test for ketones & increase your blood glucose monitoring
- ☐ Eat & drink less
- ☐ Stop injecting insulin

22. Ketones are formed when...

Choose one answer

- ☐ Too much fat is broken down by the liver
- ☐ Too much insulin is released so the body's cells can't use glucose for energy
- ☐ Fat is broken down rapidly (when there is not enough insulin) and the body cannot use glucose for energy
- ☐ Too much insulin is made by the pancreas

23. When should you check for ketones, especially if unwell?

When your blood glucose level is

Choose one answer

- ☐ Less than 4 mmol/l
- ☐ 13 mmol/l and above
- ☐ 14 mmol/l and above
- ☐ 20 mmol/l and above

24. What action should you take if you have ketones?

Choose one answer

- ☐ Eat more, drink less, give less insulin
- ☐ Eat less, drink more, give usual amounts of insulin
- ☐ Give 10 - 20% of your total daily dose of insulin, increase fluid intake & increase frequency of blood glucose monitoring
- ☐ Give double usual correction dose, increase fluid intake & increase frequency of blood glucose monitoring

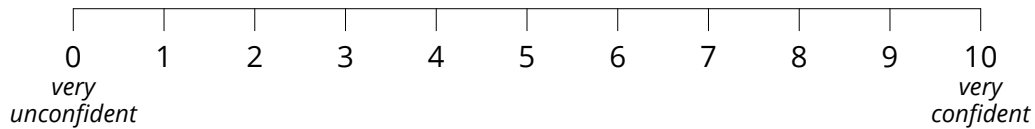
SECTION TWO

Carbohydrate (CHO) Counting

Please tick the correct answer/s

1. On a scale of 0 - 10 (0 being very unconfident and 10 being very confident) how confident are you at calculating carbohydrate in everyday foods that you eat?

Circle on the scale







2. Which of these foods contain carbohydrate, meaning that you would need to count them when taking insulin?

Choose all that apply

- | | | |
|----------------------------------|-------------------------------------|---------------------------------|
| <input type="checkbox"/> Pasta | <input type="checkbox"/> Cornflakes | <input type="checkbox"/> Bread |
| <input type="checkbox"/> Rice | <input type="checkbox"/> Cream | <input type="checkbox"/> Cheese |
| <input type="checkbox"/> Chicken | <input type="checkbox"/> Nuts | <input type="checkbox"/> Milk |
| <input type="checkbox"/> Eggs | <input type="checkbox"/> Tomato | |

3. Which of these foods contains the most carbohydrate.

Choose one answer

| | |
|--|---|
| <p>Penne Pasta</p>  <p>Weight: 208g</p> <input type="checkbox"/> | <p>Grapes</p>  <p>Weight: 160g</p> <input type="checkbox"/> |
| <p>Jam Doughnut</p>  <p>Weight: 71g</p> <input type="checkbox"/> | <p>Beef Burger (with cheese)</p>  <p>Weight: 181g</p> <input type="checkbox"/> |

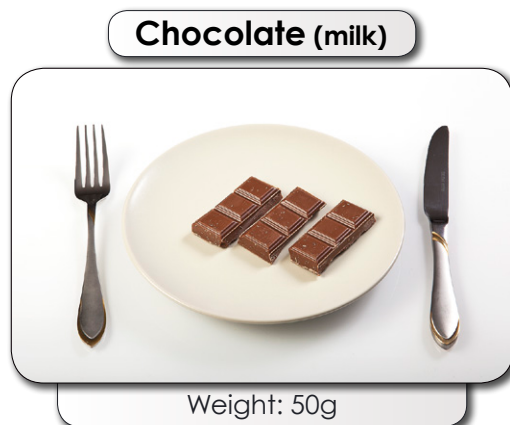
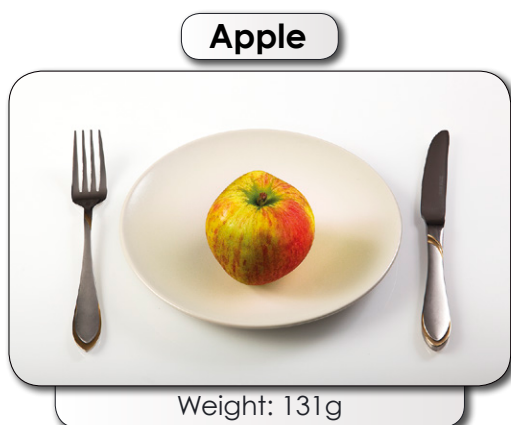
4. If someone requires 2 units of insulin for every 10g (1CP) of carbohydrate and they eat 30g of carbohydrate how much insulin will they need to take; assuming their blood sugar is in target before the meal

Choose one answer

- ☐ 2 units
- ☐ 4 units
- ☐ 6 units
- ☐ 8 units

5. How much carbohydrate do you think are in each of these snacks?

Choose one answer



6. Which meal has the lowest carbohydrate content?

Choose one answer

Chicken Curry with Rice



365g curry, 161g rice

☐

Beans on Toast



44g toast, 293g beans

☐

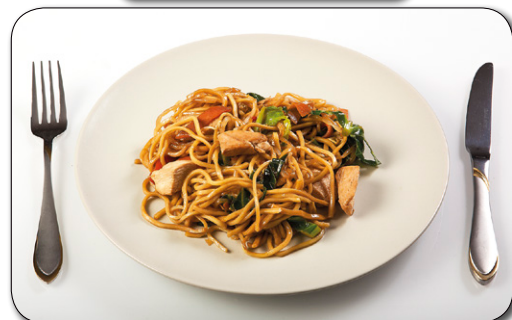
Sausage & Mash



165g sausage, 355g mash

☐

Chicken Stir-fry



Weight: 205g

☐

7. The main role of carbohydrate is to...

Choose one answer

- ☐ Make you gain weight
- ☐ Act as the main energy source for the body
- ☐ Help with growth and repair of the body
- ☐ To supply all the vitamin and minerals your body needs

8. On average, how much does 10g of carbohydrate increase the blood glucose by?

Choose one answer

- ☐ It has no effect on blood glucose
- ☐ 2 - 3 mmol/l
- ☐ 5 - 6 mmol/l
- ☐ 8 - 10 mmol/l

9. How much carbohydrate do you think is in the following foods?

Fill in your answers in the spaces provided

White Bread (medium slice)



Weight: 33g

Peach



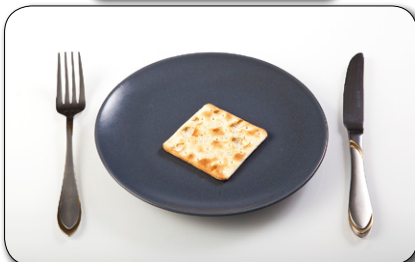
Weight: 138g

Fruit Yogurt Pot (fat free)



Weight: 125g

Cream Cracker



Weight: 8g

Basmati Rice



Weight: 96g

Spaghetti



Weight: 95g

Cheesecake



Weight: 150g

Milk (semi-skimmed)



284ml (half pint)

French Fries



Weight: 160g

Fried Chicken



Weight: 115g

Margherita Pizza



Weight: 170g (deep pan)

Panini



Weight: 100g

10. Looking at the food label opposite, how much carbohydrate is in 50g of cereal (without milk)?



| Nutrition: | | |
|--------------------|----------|-------------------------------------|
| Nutrient | per 100g | per 30g (with 125ml s 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 | 0.1g |

11. If you were to eat half of the lasagne opposite, 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 |

12. Which of these foods would be suitable as a rapid acting carbohydrate for initial treatment of a hypo?

Choose all that apply

- | | | |
|---|---------------------------------------|------------------------------------|
| <input type="checkbox"/> Milk | <input type="checkbox"/> Chocolate | <input type="checkbox"/> Digestive |
| <input type="checkbox"/> Orange Juice | <input type="checkbox"/> Jelly babies | <input type="checkbox"/> Banana |
| <input type="checkbox"/> Tea with sugar | <input type="checkbox"/> Lucozade | <input type="checkbox"/> Glucogel |

13. If you were having a snack of some birthday cake (30g carbohydrate or 3CPs) 3 hours after lunch and your evening meal was not for another 3 hours, what action would you take?

Choose one answer

- ☐ Eat the cake and do nothing else.
- ☐ Decide not to have the cake
- ☐ Take quick acting insulin based on your carb to insulin ratio for the 30g (3CPs).
- ☐ Eat the cake and wait until the evening meal to add the extra insulin on for the cake.

Thank you