

DNT 15

Diabetes Numeracy in School
Ann Linehan, DNP, MSN, RN

Nutrition

T1. 1. If you ate the entire bag of chips, how many total grams of carbohydrate would you eat?

| Nutrition Facts | |
|--|----------------------|
| Serving Size 1oz. (28g/About 10 chips) | |
| Servings Per Container 3.5 | |
| Amount Per Serving | |
| Calories 140 | Calories from Fat 60 |
| % Daily Value* | |
| Total Fat 6g | 10% |
| Saturated Fat 0.5g | 4% |
| Cholesterol 0mg | 0% |
| Sodium 150 mg | 7% |
| Total Carbohydrate 18g | 6% |


A = 36 B = 18 C = 63 D = 54

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T2. 1/2 cup of potatoes counts as 1 carbohydrate choice. How many choices does 2 cups of potatoes count as?




Choose
One:
A = 1
B = 2
C = 3
D = 4

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T3 You ate 1 and 1/2 cups from the food labeled below.
How many grams of carbohydrate did you eat?

| Nutrition Facts | |
|----------------------------|--------------|
| Serving size: | ¼ cup |
| Servings per container | 10 |
| Amount per Serving | |
| Calories | 150 Calories |
| Total Fat | 7g |
| Total Carbohydrates | 18 grams |
| Dietary Fiber | 3g |
| Sugars | 3g |
| Protein | 3g |


Choose one:
A = 18 B = 36 C = 30 D = 180

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T4 You have to eat 6 grams of carbohydrate for each 30 minutes you plan to walk. You are planning to walk for one hour. You have a bag with 12 crackers. Each cracker contains 10 grams of carbohydrate. How many crackers do you need to eat before your walk?




open ended question

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T5 Your target blood sugar is between 60 and 120

A = Select the value(s) that are in the target range

B =


C =

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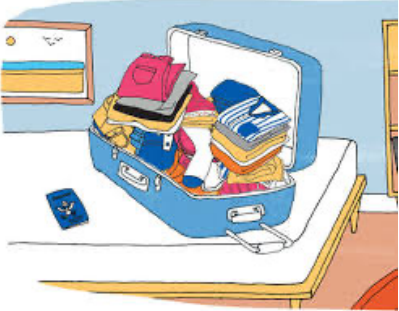
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T6 You test your blood sugar 4 times a day.
How many strips do you need to take with you on a 2-week vacation?




Choose One:
A = 8 B = 28 C = 56 D = 64

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T7 You test your blood sugar 3 times a day. You purchase a prescription of 50 strips on March 5th. Of the dates below, by when will you need to buy new strips?


Choose One:
A = March 21
B = April 21
C = May 21
D = June 21

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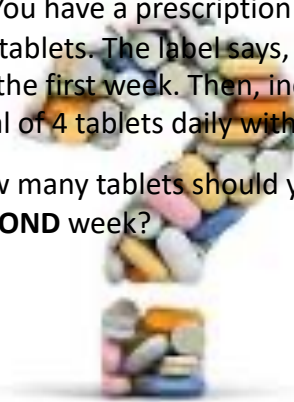
T8 You have a prescription for metformin extended release 500 mg tablets. The label says, "Take 1 tablet with supper each night for the first week. Then, increase by 1 tablet each week for a total of 4 tablets daily with supper."

How many tablets should you take with supper each night the **SECOND** week?

Choose one:
A = 1 B = 2 C = 3 D = 4

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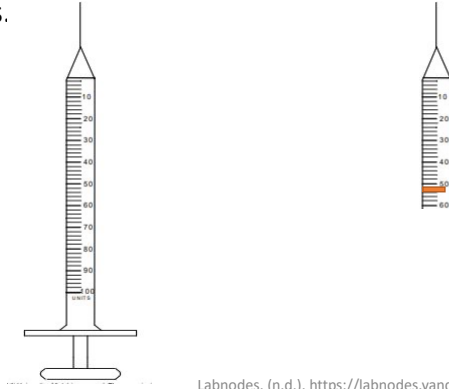
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T9 Your insulin dose is increased to 54 units and you begin using a larger syringe that holds 100 units. On the syringe below, circle the line/marking that shows you have drawn 54 units.



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Please round down to the nearest whole number.

T10 You are given the following instructions: "Take 1 unit of insulin for every 7 grams of carbohydrate you eat." How much insulin do you take:




98g of CHO at supper

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T11 You are told to follow the sliding scale shown here. The sliding scale indicates the amount of insulin you take based upon your blood sugar levels.

How much insulin would you take for a blood sugar of 295?


| If Blood sugar is: | Units of Insulin |
|--------------------|------------------|
| 130-180 | 0 |
| 181-230 | 1 |
| 231-280 | 2 |
| 281-330 | 3 |
| 331-380 | 4 |

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T 12 & T 13 You check your blood sugar just before eating. You take 1 unit of insulin for every 10 grams of carbohydrates you eat. You are also given the sliding scale shown below. The sliding scale indicates the amount of insulin you should add to your usual dose based upon your blood sugar levels:

If your blood sugar is greater than 120 points at breakfast, lunch or supper, add 2 units of insulin.


If your blood sugar is greater than 150 points at breakfast, lunch or supper, add 4 units of insulin.

If your blood sugar is greater than 180 points at breakfast, lunch or supper, add 6 units of insulin.

| Insulin Dose Schedule | | | |
|---|-----------|-------|--------|
| 1 unit of Insulin /10 grams carbohydrate at meals | | | |
| If Blood sugar is: | Breakfast | Lunch | Supper |
| > 120 | + 2 | + 2 | + 2 |
| > 150 | + 4 | + 4 | + 4 |
| > 180 | + 6 | + 6 | + 6 |

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T12 Your blood sugar is 284 and you ate 40 grams of carbohydrate at breakfast. How much total insulin do you need to take?

284 mg/dl
 40 grams
 = ? units

Insulin Dose Schedule

1 unit of Insulin / 10grams carbohydrate at meals


| If Blood sugar is: | Breakfast | Lunch | Supper |
|--------------------|-----------|-------|--------|
| > 120 | + 2 | + 2 | + 2 |
| > 150 | + 4 | + 4 | + 4 |
| > 180 | + 6 | + 6 | + 6 |

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T13 Your blood sugar is 380 and you will eat 60 grams of carbohydrate at supper. How much total insulin do you need to take?

380 mg/dl
 60 grams
 = ? units

Insulin Dose Schedule

1 unit of Insulin / 10grams carbohydrate at meals


| If Blood sugar is: | Breakfast | Lunch | Supper |
|--------------------|-----------|-------|--------|
| > 120 | + 2 | + 2 | + 2 |
| > 150 | + 4 | + 4 | + 4 |
| > 180 | + 6 | + 6 | + 6 |

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T14 & T15 You have been asked to start taking 32 units of NPH insulin tonight at bedtime. This insulin will work during the night and will lower your blood sugar first thing in the morning. You were given the following instructions:

- Your goal is to have the morning (fasting) blood sugar below 120.
- Check your blood sugar every morning before breakfast.
- Start with 32 units of NPH tonight. Increase the dose by 2 units every other day until your blood sugar is at or below 120.
- Your fasting blood sugar must be above 120 for 2 mornings in a row in order for you to increase the insulin dose by 2 units.
- Once your blood sugar is staying below 120, stop increasing the nighttime insulin.

You begin with 32 units of NPH insulin last night. How much NPH insulin will you take on each of the following nights?

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T14 Morning of day 1, your blood sugar is 164. How much insulin will you take that night?


T15 Morning of day 2, your blood sugar is 136. How much insulin will you take that night?

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Take Aways:

- Diabetes is a complex CHRONIC disease.
 - Diet, Exercise, Illness, Mental Health
- Diabetes Numeracy is a multi step process.
 - Portion calculations, Carbohydrate calculations, Prescription orders, Formula calculations.
- Each Step should be documented
 - Carbs in each food ate, Total CHO, Amount of insulin given, How it was given (via pen, pump), site it was given, etc..
- Use a calculator!
- Use your resources! – School Nutrition should be posted!
- Talk it out – out loud
- Show and educate each time
- Questions or concerns, ask another adult to follow your math!

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**Diabetes Formula to Cover for Carbs
& Correct to Target**


Step 1 Current BG – Target (from order) = **XXX**

XXX ÷ Correction Factor (from order) = **Y**

Step 2 Count Carbs (CHO) to be eaten
CHO ÷ Insulin to Carb ratio (from order) = **Z**

Step 3 **Y + Z = units of insulin to be given**

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Objectives:
After viewing this module you will be able to:


- Calculate appropriate carbohydrate amounts in serving sizes.
- Calculate appropriate insulin doses for students with diabetes.

Evaluation
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