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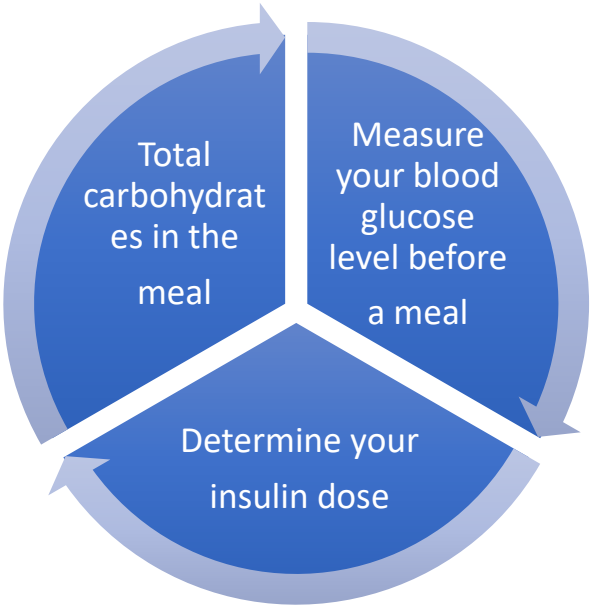
Calculating insulin dosage using carb counting

What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

To achieve the goal of regulating the blood glucose level within the normal limits, we need to know the following:



What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

We need to set the following basic elements:

- Insulin ratio: carbohydrates to determine the insulin required for this meal

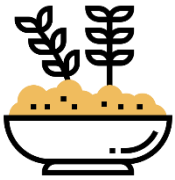
- Insulin sensitivity factor (correction factor) helps to calculate the units of insulin required to correct the glucose level.

- The target glucose level which is the level required to be reached to correct the level of glucose in the blood, and often ranges from 110-150 mg / dl.

And every one has his own target. Specified. By his treated consultant based on his diabetic control status

What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

1- Insulin: carbohydrates ratio



It is the amount of carbohydrates you eat covered by one unit of insulin

Everyone has their own calculations that is determined by their diabetic consultant or dietitian.

What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

1- Insulin: carbohydrates ratio

It means that Ahmed needs one unit of insulin for every 12g of carbohydrates

Insulin: carbohydrates ratio for Ahmed = 1:12g

Practical example

Ahmed ate a meal, total carbohydrates = 60gm

Question: How many units of insulin is needed to cover this amount of carbohydrates?

Knowing that the ratio of insulin = 1:12 gm.

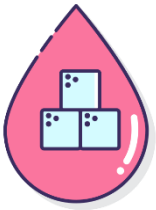
What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

Answer: Calculate meal insulin (Bolus insulin) = total carbohydrates ÷ carbohydrate percentage, **60 ÷ 12 = 5 units of insulin per meal.**

2- Insulin sensitivity factor (correction factor)

- This factor is determined by the doctor, educator or clinical dietitian based on a special calculating process

- Everyone has their own sensitivity factor



- We take advantage of this factor to calculate the corrective dose to calculate the amount of insulin required to correct the blood glucose level in the event of a hypo or hyperglycemia

What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

2- Insulin sensitivity factor (correction factor)

practical example

Example 1: In the event of a hyperglycemia:

Before lunch, Ahmed measured the glucose level and found it to be **300 mg/dl**

His meal contains **60 grams** of carbohydrates

It needs **5 units** of insulin

Sensitivity factor = 45 mg/dl

Required blood sugar = **110 mg/dl**

What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

2- Insulin sensitivity factor (correction factor)

In case of hyperglycemia, is it enugh to take 5 units or more?

To complete the corrective dose calculation, we use the following equation:

$$\frac{\text{Target Blood glucose level} - \text{Blood glucose before meal}}{\text{Correction factor (insulin sensitivity)}}$$

$$\frac{110 - 300}{45} = 4 \text{ units of insulin}$$

What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

2- Insulin sensitivity factor (correction factor)

Continue Example 1:

Total insulin units for meal and correction =

5 + 4 = 9 units Ahmed should take **9** units instead of **5** units in order to bring his blood sugar level to normal side

Example 2: In the event of hypoglycemia:

Before lunch, Ahmed measured the Blood glucose level and found it to be **80 mg/dl**

His meal contains **60** gm of carbohydrates, and he needs 5 units of insulin, sensitivity factor = **45. Mg/dl**, required blood sugar = **110 mg/dl**

What are the steps involved in mastering insulin dose calculation using Advanced Carbohydrate Calculator?

2- Insulin sensitivity factor (correction factor)

In the event of hypoglycemia, he should take 5 units or less?

$$\frac{80 - 110}{45} = 0.6\ units$$
$$= \ approximately\ 1\ unit\ of\ insulin$$

Total insulin units for meal and correction = **5-1 = 4 units**

Ahmed should take **4** units instead of **5** units in order to keep his blood glucose in normal ranges.

Audit and review:

Audit and review:

The content of this booklet has been reviewed by the clinical nutritionist specialists at dietary unit at King Fahad Hospital of the University.

Clinical Nutrition in Diabetes Unit

Health Awareness Unit

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