

bolus insulin

— what is bolus insulin

Bolus insulin, aka **SHORT-ACTING INSULIN**, helps your body absorb the glucose from the food you eat and can be used to adjust your blood glucose throughout the day.

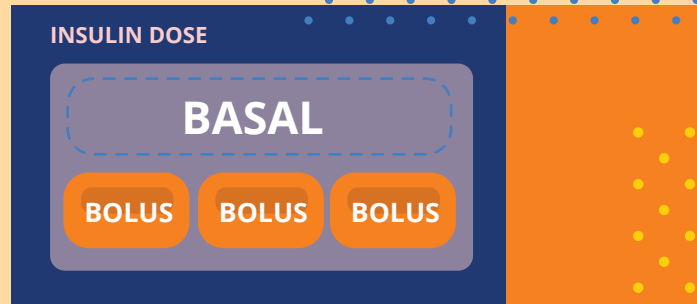
Build a habit of taking a dose before every snack or meal, and when you need to correct a high!

— calculate your bolus dose

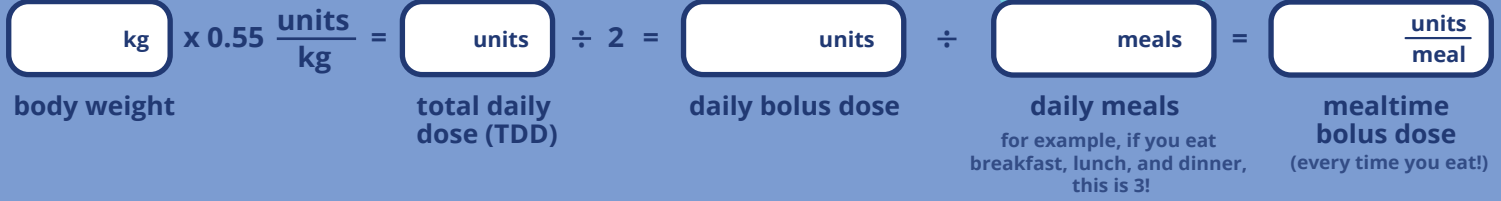
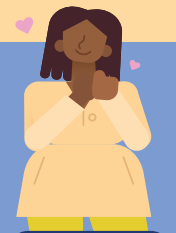
It's okay if you're not sure whether your bolus doses are 50% of your daily insulin, or you're feeling lost about where to start.

Use these formulas to calculate your mealtime bolus doses that you can adjust over time. For example, you might take a bit less for smaller meals and a bit more for larger meals.

It's super important that you test 2 hours and 5 hours after each meal when starting out to make sure the dose is right for you!



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— if you count carbohydrates

You can fine-tune your bolus doses based on what you're eating for each meal, especially the amount of carbohydrates or carbs. The carb content of different foods are listed in grams (abbreviated as g) on food labels, on menus, or in apps with databases of lots of foods.

If you're unsure how to read nutritional labels or work out your portion sizes, check out the Nutrition and Type 1 worksheet!



The easiest way to use carb counting to calculate your insulin dose is this formula:

$$\begin{array}{c} \text{carbs in} \\ \text{this meal} \\ \text{grams} \end{array} \div \begin{array}{c} \text{insulin carb} \\ \text{ratio (ICR)} \\ \frac{\text{grams}}{\text{unit}} \end{array} = \begin{array}{c} \text{bolus dose} \\ \text{for this meal} \\ \text{units} \end{array}$$

— calculate correction bolus doses

Ideally, you want your blood glucose between 4 TO 7 millimoles per litre (mmol/l) BEFORE meals. If it's higher than that when you measure before a meal (or if you are above 10 millimoles per litre between meals), you may need a correction dose of bolus insulin to keep everything balanced!

If you're unsure where to start with correction doses, use this table to see how much to take:

BLOOD GLUCOSE (mmol/litre)	CORRECTION DOSE OF BOLUS INSULIN (units)
4 - 7	+0
7 - 10	+1
10 - 13	+2
13 - 16	+3
above 16	+4



10 grams per unit is an average starting Insulin to Carb Ratio (ICR), which says that 1 unit of insulin can help you process 10 grams of carbs.

If you're more insulin-sensitive, your ICR might be higher (e.g. 12-15), and if you're more insulin-resistant, your ICR might be lower (e.g. 4 - 8).

Because everyone's body is different, you can calculate your own personal ICR and insert it here instead!

estimate your personal ICR

$$\begin{array}{c} 500 \\ \text{grams} \end{array} \div \begin{array}{c} \text{units} \\ \text{total daily} \\ \text{dose (TDD)} \end{array} = \begin{array}{c} \frac{\text{grams}}{\text{unit}} \\ \text{your personal} \\ \text{insulin carb} \\ \text{ratio (ICR)} \end{array} *$$

* round this to the nearest whole number



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— check your bolus dose

Use this log to track your blood glucose levels before and after one meal every day. Don't forget to make notes about what you're eating and how much carb is in the meal, because bolus doses are tricky to fine-tune! When testing your bolus try to have meals that are pretty simple (not too big, not too fancy, not too fatty) those special meals can always be tricky to bolus for even when your regular bolus dose is working great.

sample

DAY	glucose before eating (mmol/L)	carb bolus dose (units)	correction bolus dose (units)	glucose 2 hours after eating (mmol/L)	glucose 5 hours after eating (mmol/L)	MY NOTES
mon lunch	5.4	4	0	14	9	6oz Chicken and cup of brown rice (45g carb) Ended up about 3 mmol/L too high will try increasing by one unit
tues lunch	9.2	5	1	10.1	6.8	Tuna sandwich on thick brown toast (50g carb). This seemed to work.
wed lunch	7.5	5	0	12	5.8	Chicken and cup of white rice (45 g carb). Worked again! This bolus is probably good.
thurs breakfast	13.1	4	4	9.6	3.1	Two slices of toast on the run (30g). Probably too much for that meal and too much correction when I was running around all morning
fri						
sun						
sat						



— fill out your own

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DAY	glucose before eating (mmol/L)	carb bolus dose (units)	correction bolus dose (units)	glucose 2 hours after eating (mmol/L)	glucose 5 hours after eating (mmol/L)	MY NOTES
mon						
tues						
wed						
thurs						
fri						
sun						
sat						

— don't forget to check your notes section to see if there were differences depending on what you ate...

Bolus doses take some careful experimentation to figure out what your body needs, and that's okay!

**

Did you snack between meals?

Did you notice differences based on how many carbs you ate?

Were any meals bigger or smaller than normal?



— check your bolus dose

Use this chart to help you go through the steps to calculate your mealtime bolus doses, and figure out how you may need to adjust them...

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