

MAKING CHANGES TO INSULIN DOSES

Help keep blood sugar levels in range to feel your best!



Why do we need to make changes to insulin?

Your body is always changing and so are your insulin needs. That's why your insulin doses one week may not work great the next week. To manage your diabetes best, it is important to look at your blood sugar patterns and adjust your insulin between your clinic visits. This handout will show you how to safely make insulin adjustments between clinic appointments.

Become familiar with phrases and words used in this handout:

Basal insulin: This is your background insulin. If you use shots, this is the long-acting insulin (Lantus/Basaglar/Levemir/Tresiba/Semglee/Insulin Glargine/Insulin Glargine-yfgn). If you use a pump, this is the basal rates that are set in your pump using short-acting insulin (Humalog, Novolog, Fiasp, Apidra, insulin aspart, insulin lispro).

Bolus insulin: This is short-acting insulin given for food and high BGs (Humalog, Novolog, Fiasp, Apidra, insulin aspart, insulin lispro).

Fasting blood sugar: Your morning blood sugar after you have been sleeping without eating for a long period of time.

Correction Factor/Insulin Sensitivity Factor/ISF: These words mean the same thing and refer to the number you use to correct a high blood sugar.

Diabetes Educators are available to help with adjustments Monday through Friday from 8:00 a.m. to 4:30 p.m. at (816) 960-8803 or message through the portal to "Diabetes Clinic."

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The Basics



What is my target blood sugar?

- The goal is to stay between 70 and 180 at least 70% of the time.
 - » If a blood sugar is outside of 70 to 180, we call this out of range.

Remember, we don't ever want you to look at your blood sugars as good or bad they are either in range or out of range.

What to think about when making adjustments:

- Is there a pattern to your blood sugar for at least 3 days in a week?
- What time of day is the pattern occurring?
- Do you think activity, food, stress, or other factors are related to the pattern?
- Do adjustments need to be made to insulin or self-management behaviors?

Rules to follow:

- **Make one change at a time.**
- Increase and decrease insulin by about 10% (We will review this later.)
- Wait 3 to 4 days after making a change before looking for a pattern again.

Which insulin do I change?

Basal insulin:

- This is the long-acting insulin for those on shots and basal rates for those on a pump.
- Change this if blood sugar is out of range:
 - » When you wake up.
 - » Between eating if it has been longer than 3 hours since you have dosed for food or a high blood sugar.

Bolus insulin:

- This is your short-acting insulin that is used for dosing carbohydrates or using a correction factor (ISF) for high blood sugars.
- Change this if blood sugar is out of range:
 - » After eating.
 - » After giving a correction.

Where to Start: Adjusting Basal Insulin



1. First, look at your blood sugar when you wake up.

This fasting blood sugar gives you a good idea if your basal insulin is working well.

- If your morning blood sugar is higher than 180 you may need **MORE** basal insulin.
- If your morning blood sugar is less than 70 you may need **LESS** basal insulin.

What to think about before making a change:

If your blood sugar is higher than 180:

- Was your blood sugar before bed higher than the your morning blood sugar?
- Did you eat anything undosed or underdosed before bed?

If your blood sugar is less than 70:

- Did you give a correction before bed or overnight?
- Did you dose for food before bed or overnight?
- Did you do any activity the day before?

If you answered **NO** to all of those questions you will make a change to your basal insulin (see table below). If you answered **YES** to any of those questions, you may need to make adjustments to your bolus insulin or to your behavior before bed and/or overnight.

How to adjust:

If Blood Sugar is greater than 180	
Increase basal insulin by 10%	
Example for MDI (shots) long-acting insulin	
Starting Insulin Dose	Adjusted Insulin Dose
15 units	17 units
8 units	9 units
20 units	22 units
Example for insulin pump basal rates	
Starting Insulin Dose	Adjusted Insulin Dose
1.1	1.2
0.8	0.9
2.0	2.2

If Blood Sugar is less than 70	
Decrease basal insulin by 10%	
Example for MDI (shots) long-acting insulin	
Starting Insulin Dose	Adjusted Insulin Dose
15 units	13 units
8 units	7 units
20 units	18 units
Example for insulin pump basal rates	
Starting Insulin Dose	Adjusted Insulin Dose
1.1	1.0
0.8	0.7
2.0	1.8

Where to Start: Adjusting Basal Insulin (Cont.)



2. Next, look at your blood sugar when dosing for carbohydrates.

- If your blood sugar after eating is higher than your blood sugar before you ate, you may need **MORE** bolus insulin. You will adjust your carb ratio.
- If your blood sugar after eating goes less 70 you may need **LESS** bolus insulin. You will adjust your carb ratio.

What to think about before making a change:

If your blood sugar is higher after you eat:

- Did you dose before eating?
- Did you accurately dose for all of your carbohydrates?

If your blood sugar is less than 70 after you eat:

- Did you eat everything you dosed for?
- Did you dose before eating?
- Did you do any activity before or immediately after dosing for your food?

If you answered **YES** to all of those questions, you will make a change to your carb ratio (see table below). If you answered **NO** to any of those questions, you may need to make adjustments to your dosing behaviors.

How to adjust:

If Blood Sugar is higher after you eat	
Decrease carb ratio by 10%	
Example	
Starting Carb Ratio	Adjusted Carb Ratio
1:15	1:12
1:20	1:18
1:10	1:9

If Blood Sugar is less than 70 after eating	
Increase carb ratio by 10%	
Example	
Starting Carb Ratio	Adjusted Carb Ratio
1:15	1:18
1:20	1:22
1:10	1:12

Changing carb ratios can seem tricky at first. You want to think less is more and more is less. The higher the carb ratio number then less insulin you will get. The lower the carb ratio number the more insulin you will get.

When carb ratios are higher than 25 we will often do more than a 10% increase/decrease and increase or decrease by 5 or more instead. This makes sure your insulin doses actually change when you divide by the new carb ratio.

For example if your carb ratio is 30 and you increase it to 33 divide 50g of carbs

- 50 divided by 30 = 1.6 (you would give 2 units)
- 50 divided by 33 = 1.5 (you would give 2 units)
- 50 divided by 35 = 1.4 (you would give 1 unit)

Where to Start: Adjusting Basal Insulin (Cont.)



3. Then, look at your blood sugar when giving a correction for high blood sugar.

- If your blood sugar stays high 3 hours after giving a correction or stays high after giving multiple corrections, you may need **MORE** bolus insulin. You will adjust your correction factor/insulin sensitivity factor/ISF.
- If your blood sugar goes low 3 hours after giving a correction, you may need **LESS** bolus insulin. You will adjust your correction factor/insulin sensitivity factor/ISF.

What to think about before making a change:

Change a correction factor only if you corrected without a meal, or if you corrected with a meal and you know your carb ratio doesn't need to be adjusted.

If your blood sugar is higher after giving a correction:

- Are you correcting because you forgot to dose your food?

If your blood sugar is less than 70 after you give a correction:

- Had it been less than 3 hours since your last dose of insulin?
- Are you correcting because you forgot to dose for your food?
- Did you do any activity that could be causing a low blood sugar?

If you answered **NO** to all of those questions you will make a change to your correction factor/ISF (see table below). If you answered **YES** to any of those questions you may need to make adjustments to your dosing behaviors.

How to adjust:

If Blood Sugar is higher after you eat	
Decrease carb ratio by 10%	
Example	
Starting ISF	Adjusted ISF
50	45
25	22
35	32

If Blood Sugar is less than 70 after eating	
Increase carb ratio by 10%	
Example	
Starting ISF	Adjusted ISF
50	55
22	28
35	40

Changing your correction factor/ISF can seem tricky at first. You want to think less is more and more is less. The higher the ISF number then less insulin you will get. The lower the ISF number the more insulin you will get..