

Treating gestational diabetes with insulin



Your doctor has prescribed insulin to treat gestational diabetes. Here is some information to help you better understand and follow your treatment.

What is gestational diabetes?

This is an increase in blood sugar levels (glycemia) due, in large part, to the hormonal changes of pregnancy. There is a health fact sheet on this topic (see Useful Resources at the end of this fact sheet).



Why has my doctor prescribed insulin?

Insulin is a hormone produced by the body that controls blood sugar levels. Insulin is prescribed when a sugar-controlled diet and physical activity are no longer sufficient to maintain good blood sugar levels.

About 4 out of 10 women with gestational diabetes need to inject insulin every day to control it. In the vast majority of cases, they can stop injecting within a few hours after giving birth.

What is the difference between the types of insulin?

There are several types of insulin. These are the ones most often prescribed for gestational diabetes.

| Type of insulin | Trade name | Start of action | Action peak | Duration of action |
|---|--------------------|-----------------|---------------|--------------------|
| Rapid-acting (ultra-fast ¹) | NovoRapid (aspart) | 0 to 10 minutes | 1 to 3 hours | 3 to 5 hours |
| | Humalog (lispro) | 0 to 15 minutes | 1 to 2 hours | 3 to 4 hours |
| Intermediate-acting ² | Novolin ge NPH | 1 to 2 hours | 4 to 12 hours | 14 to 18 hours |
| | Humulin N | 1 to 2 hours | 4 to 12 hours | 14 to 18 hours |

¹ **Ultra-fast insulin** will be prescribed if your blood sugar levels after meals are too high. Injecting ultra-fast insulin just before a meal helps absorb the sugars you eat.

² **Intermediate-acting insulin** will be added if, among other things, your blood sugar level is too high on an empty stomach in the morning. It is taken in the evening, before going to bed.

Does insulin affect the baby?

You can take your diabetes treatment without any risk to your baby. Insulin doesn't cross the placenta, so there is no danger to the fetus.

On the contrary, insulin helps to control diabetes and prevent possible complications for you and your baby.

When should blood sugar levels be measured and what values should be targeted?

You should measure your blood sugar levels at least 4 times a day, as shown below, changing the times each day. This table also gives you the blood sugar values you should aim for.



Then record the results in your blood glucose log

| | Breakfast | | Lunch | | Dinner | |
|------------------------|------------|------------|------------|------------|------------|------------|
| | Before | After | Before | After | Before | After |
| Day 1 | x | x | x | | x | |
| Day 2 | x | x | | x | | x |
| Day 1... | x | x | x | | x | |
| Target values (mmol/l) | 3.7 to 5.0 | 5.0 to 7.8 | 3.7 to 5.3 | 5.0 to 7.8 | 3.7 to 5.3 | 5.0 to 7.8 |

Before = before taking the first bite of the meal. **After** = 1 hour after the start of the meal.

If you eat a snack between meals, eat it 2 hours before the next meal.

How much insulin should I take, and when?

Your doctor will prescribe the type of insulin and the dose to be taken. Usually 1 to 5 injections a day are needed, depending on when glycemia is a problem.

A nurse will show you how to inject the insulin. You should be given injection pens. The needles

used are very small and most of the time don't cause any pain.

Insulin requirements and doses usually increase along with pregnancy hormones, up to the 36th week of pregnancy. So you will probably have to adjust your doses (see the table in Appendix 2 of this fact sheet to find out when and how to do this).



What precautions should I take?

Insulin cartridges

- > Unopened cartridges and new disposable pens:
 - keep them in the **refrigerator**
- > Open cartridges or disposable pens already in use:
 - keep them at room temperature
 - use them within 30 days, otherwise change them
- > All of them:
 - **Caution!** Insulin will no longer be effective if it freezes or if it is left in the sun
 - Check the expiry date: “Exp”, “Best before”, or “Discard after”

Injector pen

- > Never lend your injector pen and only use your own.
- > Use a new needle for each injection.
- > Don't keep injector pens in the refrigerator, except new disposable pens.

All needles and cartridges should be disposed of in a medical waste container that you should take back to the pharmacy when full. Ask your pharmacist for one.

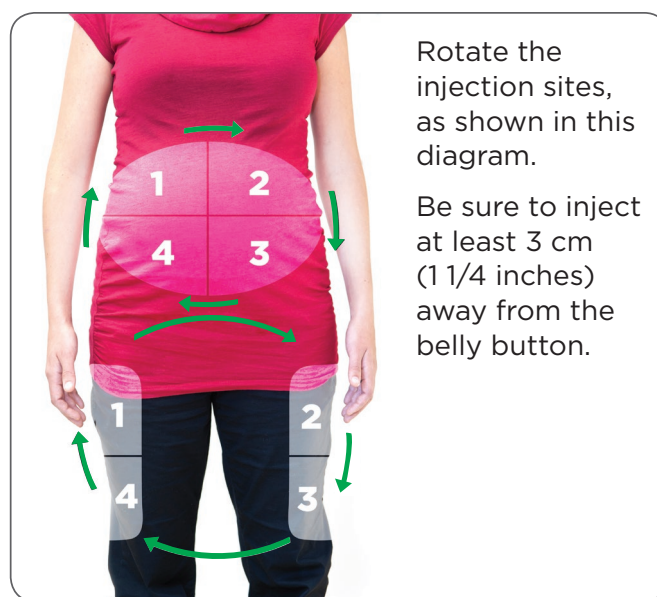
Where should I do the injection?

The best places are:

- abdominal fat, for rapid-acting insulin
- the thigh, for intermediate-acting insulin; however, if you will be doing exercise that stresses your thigh in the next few hours, inject it into your abdominal fat

Avoid:

- places where the skin is tight, red, swollen, or bluish, or if it appears infected
- moles and scars



How should I do the injections?

Preparing and injecting insulin properly is an important factor in controlling blood sugar levels. With a little practice, the injection can be done in less than a minute.

To follow all the steps of the injection, see Appendix 1 of this fact sheet.



IMPORTANT

To control your blood sugar level, follow all the recommendations carefully.

What symptoms should I watch for?

Injecting insulin increases the risk of hypoglycemia (low blood sugar). This usually happens when the injected dose is too high in relation to what you have eaten.

The first symptoms are:

- trembling
- sweating
- urgent hunger
- becoming pale

Other symptoms may also occur: weakness, dizziness, mood swings, or blurred vision.

If you have any of these symptoms, follow this procedure.

- **Check your blood sugar level quickly.** If you have 3.7 mmol/l or less, take 15 grams (3 teaspoons) of sugar, such as in 125 ml (1/2 cup) of fruit juice.



- Wait 15 minutes, then measure your blood sugar level again. You should have more than 4 mmol/l. If not, take another 15 grams of sugar until your blood sugar rises above 4 mmol/l.
- Refer to the table at the back of your blood glucose log for more details on what to do in case of hypoglycemia.



ATTENTION

Physical activity is good for your health, but it can lower your blood sugar levels quickly. Ask your healthcare team for advice or see the fact sheet [Gestational diabetes and physical activity](#).

Who can I contact for help or to ask questions?

Contact the nurse at the CHUM High-Risk Pregnancy Clinic (GARE).



USEFUL RESOURCES

Diabetes Québec:
> 1 800 361-3504
> diabete.qc.ca
Click on English in the top right corner.

To learn more about pregnancy, delivery, or follow-up care, visit our internet site.



Videos, other fact sheets, and more resources are available at:

centredesnaissanceschum.com


The content of this document in no way replaces the recommendations and diagnoses made, or the treatment suggested by your health professional.

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APPENDIX 1: HOW TO DO INJECTIONS

Here are the detailed steps for doing insulin injections.

PREPARATION

- > Wash and dry your hands.
- > Check that the pen contains the correct type of insulin and that there is enough left in the cartridge.
- > If using intermediate-acting insulin, gently mix (without shaking) the cartridge by tilting it upside down and then right side up about 10 times. The colour of the insulin will become even.
 
- > Disinfect the cartridge cap with an alcohol swab.

PREPARING THE INJECTOR PEN

- > Screw the needle into the end of the pen.
- > Remove the cap(s) covering the needle.
- > Remove the air from the needle:
 - select 2 units
 - point the needle upwards and gently tap the cartridge to raise the air bubbles
 - press the push button to release a stream of insulin
- > Select the dose to be injected.



INJECTION

- > Disinfect the skin with an alcohol swab and let it dry.
- > Quickly prick yourself straight into the skin (at 90 degrees) without tilting the needle.
- > Press the push button in completely.
- > Wait 10 seconds before removing the needle.
- > Put the cap back on. Unscrew the needle and dispose of it in the needle container.

CHANGING THE INSULIN CARTRIDGE

Only for reusable pens.

- > When the cartridge is empty, remove it by unscrewing the pen from the center.
- > Insert a new cartridge with the cap down and disinfect the cap.

RECORDING THE DATA

- > Write in your blood glucose log:
 - the type of insulin used
 - the number of units injected



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When and how to adjust your insulin doses

| Type of insulin | Situations that require an adjustment | How to do it |
|--|---|--|
| Rapid-action (such as NovoRapid or Humalog) | 1 hour after a meal, your blood glucose is higher than 7.8 mmol/l, and this happens 2 days in a row OR 3 times in 1 week. | Before the meal in question: <ul style="list-style-type: none"> - increase your insulin dose by 2 units every 2 or 3 days - do this until your blood sugar level returns to normal after the meal in question |
| | Meals where you expect to consume more sugar (carbohydrates), such as at a party, birthday, etc. | Before the meal in question: <ul style="list-style-type: none"> - increase your insulin dose by 2 or 3 units - at your next meal, go back to your normal dose |
| | Sickness, nausea, etc., when you expect to consume less sugar. | Before the meal or meals: <ul style="list-style-type: none"> - decrease your insulin dose by 3 or 4 units - when the situation returns to normal, go back to your usual dose |
| | Missing a meal. | Don't take a dose of insulin. |
| Intermediate-action (such as NPH or Humulin N) | On an empty stomach, your blood sugar level is above 5 mmol/l, and this happens 2 days in a row OR 3 times in 1 week. | At bedtime: <ul style="list-style-type: none"> - increase your dose of intermediate-acting insulin by 2 units every 2 to 3 days - do this until your morning blood sugar level returns to normal |
| | On an empty stomach, your blood sugar level is below 4 mmol/l, and this happens 2 days in a row OR 3 times in 1 week. | At bedtime: <ul style="list-style-type: none"> - decrease your insulin dose by 2 units every 2 to 3 days - do this until your morning blood sugar level returns to normal |

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Questions

Write down any questions you want to ask your care team so you don't forget anything.





Observations - Comments

Write down observations you feel are important: your symptoms, treatments, follow-up, energy level, spirit, etc.





Resource people and contacts

Write down phone numbers, email addresses and websites that could be useful.



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