



## PATIENT & CAREGIVER EDUCATION

# How to Give an Emergency Glucagon Injection to Treat Low Blood Sugar

This information will teach you how to give an injection (shot) of glucagon to treat very low blood sugar in an emergency.

Very low blood sugar is sugar that is lower than 50 milligrams per deciliter (mg/dl). Glucagon will raise the blood sugar to safer levels.

Keep this resource to help you remember the steps on how to give the injection.

## About Low Blood Sugar (Hypoglycemia)

Your body uses sugar called glucose for energy. Glucose comes from the food that you eat. It's stored in your liver and released into your bloodstream when needed. Your blood carries glucose to your cells so that your cells can use it for energy.

Low blood sugar means that there is too little glucose in your bloodstream. If your blood sugar drops too low, you can have symptoms such as:

- Sweating
- Shakiness
- Headaches
- Feeling faint
- A fast, forceful heartbeat
- Weakness

Without treatment, your blood sugar can keep going down. This can lead to symptoms such as:

- Poor coordination
- Confusion
- Not being able to eat or drink safely due to confusion
- Losing consciousness
- Having seizures

## **About Your Glucagon Emergency Kit**

Glucagon is a hormone made in your pancreas. It causes your liver to release sugar.

Because very low blood sugar is dangerous, it needs to be treated right away. Getting an injection of glucagon from your emergency kit will bring up your blood sugar quickly. You will feel better and be safer.

Everything you need to give a glucagon injection is in the emergency kit. It includes a vial and syringe (see Figure 1). The vial has dry glucagon powder in it. The syringe is filled with a liquid to dilute the glucagon. The syringe will already have a needle attached.

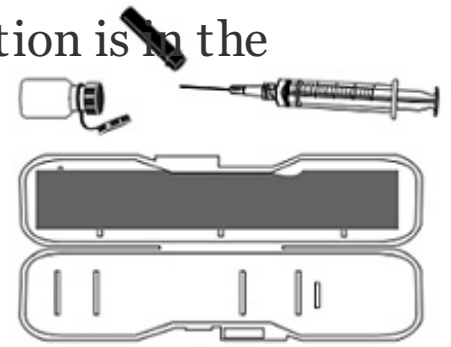


Figure 1. Glucagon emergency kit

Your caregivers should know how to give the glucagon injection, in case your blood sugar falls too low. After practicing in the hospital with your nurse, your caregivers should look at the kit and review how to give the injection.

The kit can be stored at room temperature. Look at the expiration date when you buy the kit. Write it on your calendar so that you can replace it when it is out of date.

### **When to use your glucagon emergency kit**

You need glucagon if your blood sugar level is less than 50 mg/dl and you are:

- Unable to eat or drink safely because you're confused or disoriented
- Unconscious
- Having seizures

If possible, someone will need to check your blood sugar level to

make sure it's low. This is because having high blood sugar can also make you unconscious. In that case, glucagon won't help. Instead, get medical attention right away by calling 911. If you cannot find the blood glucose kit, and the person is showing the symptoms above, skip this step.

## How To Give a Glucagon Injection

1. Open the glucagon kit.
2. Flip off the cap of the vial containing the glucagon powder (see Figure 2)



Figure 2. Opening the glass vial with the glucagon powder

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3. Remove the cap covering the syringe needle.
4. Insert the needle into the rubber stopper on the top of the vial.
5. Push down on the syringe plunger to inject all of the fluid into the glucagon vial (see Figure 3).



Figure 3. Injecting the diluting fluid into the glucagon vial

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6. Without removing the needle from the vial, gently shake or roll the vial to mix it. The easiest way to do this is to hold the vial and syringe in one hand, with the vial on top and the syringe on bottom (see Figure 4). Mix until all the powder is completely dissolved. The solution should be clear and colorless.



Figure 4. Mixing the glucagon powder with the diluting fluid

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7. Draw up the glucagon into the syringe. To do this, hold the vial and syringe so that the vial remains on top and the tip of

the syringe is towards the bottom of the vial (see Figure 5). Pull the plunger of the syringe back to draw the Glucagon into the syringe. Be sure to draw all of the medication in the vial into the syringe.



Figure 5. Drawing the glucagon into the syringe

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8. You will inject the glucagon into the person's thigh or buttock. Clean the injection site with an alcohol swab. If you don't have an alcohol swab, skip this step.
9. Insert the needle into the person's skin in one quick motion at a 90 degree angle (straight up and down, see Figure 6). Use your thumb to push the plunger all the way down until all the medication is injected.

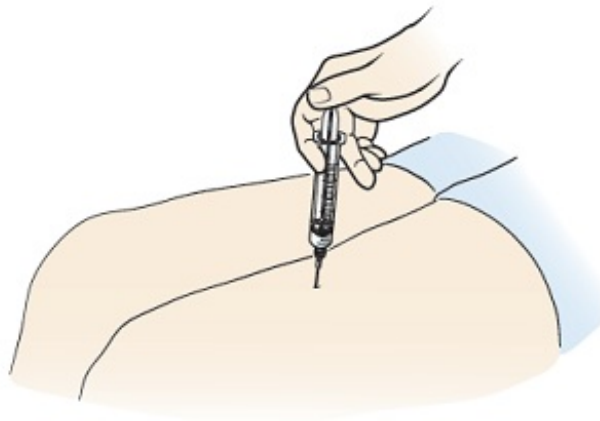


Figure 6. Injecting the glucagon

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10. When the syringe is empty, pull it straight out of the skin.
11. After injecting, turn the person onto their side. They may vomit after the injection and turning them on their side will keep them from choking.

## **After Giving the Glucagon Injection**

### **Call 911 after giving the injection.**

Check your blood sugar, or have someone check it for you after the injection. It should rise to at least 70 mg/dl. Let the emergency medical personnel know the blood sugar result when they arrive.

An unconscious person will usually wake up within 15 minutes after the injection. Once the person is awake and able to drink, give them sips of fruit juice or regular soda. This will help restore the glucose in their liver and prevent the blood sugar from dropping again.

## Side Effects

Most people don't have any side effects. Some people may have nausea and vomiting after getting glucagon.

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

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