# Overview and goals of this guide

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# Overview of injections

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Overview and goals of this guide

This guide is a quick reference on how to use medications that are given by injection. It gives step-by-step instructions for preparing and injecting the medication. It also covers safety precautions. The instructions in this guide apply whether you are giving the injection to someone you care for or you are giving the injection to yourself. This guide is not meant to replace instructions from your doctor nor the information included in the medication packaging. Use the instructions in this guide to supplement information from these other sources.

Your doctor or another member of your health care team may offer training on how to give an injection. We encourage you to take advantage of this training if it is available.
This guide has four parts. Each part is briefly described below.

1. **Overview of injections**
   This part of the guide gives basic information about types of injections and parts of a syringe. It also explains how injectable medications differ from those taken by mouth. This may help you to understand why your doctor prescribed an injectable medication.

2. **Steps for injecting medication**
   This section provides the following information:
   - Instructions on how to store the medication
   - Tips for preparing the medication for injection
   - Steps for keeping the injection site clean
   - Steps for giving an injection
   - Tips for making injections less painful
   - Tips for reducing the risk of injection-site reactions
   - Information on how to dispose of injection supplies

3. **References**
   This section lists references that you may want to consult for more information about safely injecting medication.

4. **Injection-site records**
   This section provides forms you can use to monitor your injection sites. Make copies of these forms so you will have more when you need them.
Overview of injections

Why did my doctor choose an injectable medication?

Doctors may prescribe injectable medication for a number of reasons. It may be that no other formulation is appropriate for that medication. It may also be that the effects of the injectable medication last longer and you may not have to use it as often.

Differences between injectable medication and oral medication

When a medication is taken by mouth, it goes through several steps. First the medication is broken down by the digestive system. It is then absorbed into the bloodstream. From there, the medication is delivered to its site of action. Once it produces its effects, it is broken down by the body relatively quickly. Because of the many steps involved, it takes a period of time for an oral medication to produce its effects.

When a medication is injected, it bypasses the digestive system and is absorbed into the bloodstream. Some injectable medications are formulated to slowly release the active ingredients and produce their effects longer, often days or weeks. This may mean you have less frequent injections.
Types of injections

Injections can be given in several ways. The way in which a medication needs to be injected depends on a number of factors, including how the drug is made, how quickly its effects are required and how much liquid its injection administers.

The three main types of injections are:

- Intramuscular (into a muscle)
- Subcutaneous (under the skin)
- Intravenous (into a vein)

Intravenous infusions are typically given by a health care provider in a clinic or a hospital setting.

Parts of a syringe

A syringe has three main parts: a barrel, a plunger and a needle. The barrel holds the medication. The plunger pushes the medication from the barrel through the needle. The needle delivers the medication into the injection site.
Steps for injecting medication

Storage

Some medications must be stored in a specific way. Some require refrigeration, while others can be stored at room temperature. Storage requirements may change at any time. Always check the enclosed instructions each time you receive medication.

Make sure you are familiar with important information about your injectable medications, such as:

- Does the medication need to be refrigerated?
- If refrigeration is not available, how long can the medication be stored at room temperature?
- Can the medication be frozen?
- Should the medication be protected from heat, light or both?
- Once mixed, how should the medication be stored?*
- After mixing, how soon should the medication be used?*
- Does the vial need to be discarded after the first use or is it a multi-dose vial (MDV)?

If you expect to travel with your medications, use these general tips:

- Use special travel bags (from the drug manufacturer) with room for an ice pack, if necessary
- Always carry your medication bag with you in your carry-on bag
- You can take injection systems onto airplanes
- It is best to have medication in original pharmacy-labeled packaging
- Medication/supplies are routinely x-rayed during airport screening; as an option you can ask for visual inspection of these items

Airlines may have other requirements. Call to find out the medication policy of your airline before your trip.

*Only some injectable medications require mixing
Preparation

Wash your hands

Washing your hands properly before an injection helps to prevent infection. The Centers for Disease Control and Prevention recommends the following steps for washing your hands before an injection:

- Hold your hands under clean, warm running water
- Apply antibacterial soap, and rub your hands together to make lather
- Scrub the backs of your hands, your fingertips, your thumbs, under your fingernails and between your fingers
- Continue scrubbing your hands for 15 to 20 seconds
- Time your handwashing by singing the “Happy Birthday” song two times in a row
- Rinse your hands with water
- Dry your hands with a paper towel or an air dryer; use your paper towel instead of your bare hand to turn off the faucet

If soap and clean water are not available, use the following steps to wash your hands:

- Use an alcohol-based antibacterial hand sanitizer
- Apply the hand sanitizer to the palm of one hand
- Rub your hands together
- Rub the hand sanitizer all over your hands and fingers until dry

To reduce the risk of infection, self-injected medications should be handled using aseptic or “clean” techniques. This can help prevent bacteria from getting on your supplies. It also keeps germs out of your medications. This page and the next several pages include information on these techniques.
Prepare your medication for injection

Injectable medications come in many forms, including:

- Prefilled syringe
- Vial of liquid medication with separate syringe
- Dry powder that is mixed with specified liquid
- Pen device

Preparing your medication and syringe properly makes your injection easier and more effective. It also lessens the chance of experiencing an injection-site reaction. These general tips can aid in your preparation.

- Place all supplies on a clean, dry surface, such as a counter or table
- Allow your medication to reach room temperature before injecting; do not microwave
- Check medication for the following: crystals, particles, cloudiness, color and expiration date; if you have any concerns, contact a member of your health care team
- Wipe off tops of vials with alcohol swabs before using
- Carefully follow directions contained in the most recent medication guide, manufacturer’s package insert and prescription label; these sources will provide you with preparation and administration instructions

If instructions include checking for air bubbles and removing them:

- Hold the syringe with the tip pointing up
- Tap the sides of the syringe with your finger so the air bubbles rise to the top
- Gently push the plunger of the syringe until one to two drops of liquid come out of the needle; this means the air bubbles are gone
- Check the syringe to make sure the dose is still correct
Prepare the injection site

The steps for preparing the subcutaneous or the intramuscular injection site are the same. Before giving an injection, make sure to:

→ Choose an injection site that is free of bruises, discoloration, scars, tattoos, hardened areas and stretch marks

→ Clean the area where you plan to inject the medication (the injection site) with alcohol; start at the injection site and work your way outward in a circular motion

→ Apply firm pressure while cleaning the area

→ Let the alcohol dry before giving yourself the injection

→ Rotate injection sites by at least one inch with each new injection

→ Keep a written record to help you remember where you gave the last injection (see pages 14–16 of this guide)
**Injection**

The specific instructions for injecting the medication depend on whether the injection is intramuscular or subcutaneous. Procedures for both types of injections are given below and on page 10.

**Intramuscular injection**

Once the site is clean, follow these steps when giving yourself an intramuscular injection:

- REMOVE the needle cover; DO NOT TOUCH the needle
- STRETCH the skin of the injection site slightly using your thumb and index finger
- RELAX the muscle you will be injecting; this will make the injection less painful
- HOLD the syringe at a 90-degree angle from the injection site
- QUICKLY INSERT the needle in a steady motion; inserting the needle slowly is more painful

The next steps depend on the type of instructions you were given about pulling back on the syringe. If you were not instructed to pull back on the plunger or if you pull back and no blood enters the syringe:

- Carefully inject the medication; continue until the injection is complete (some devices require additional time to ensure all the medication has been administered)
- Gently but quickly remove the needle at the same angle it was inserted
- Immediately place the needle in a Sharps container (see page 11 of this guide)
- Apply pressure to the injection site with a gauze pad
- Bandage the site if necessary

If instructed to check for blood, and blood does enter the syringe:

- Do NOT give the injection; blood in the syringe means that you may have entered a blood vessel
- Remove the needle from the injection site
- Dispose of the needle and syringe (see page 11 of this guide)
- Start over; prepare another injection following the same steps described on the previous page and above
Subcutaneous injection

Once the site is clean, the steps involved in giving yourself a subcutaneous injection are:

→ REMOVE the needle cover; DO NOT TOUCH the needle

→ GENTLY PINCH one to two inches of skin at the injection site

→ HOLD the syringe at a 45-to 90-degree angle from the injection site

→ QUICKLY INSERT the needle in a steady motion; inserting the needle slowly is more painful

The next steps depend on the type of instructions you were given about pulling back on the syringe. If you were not instructed to pull back on the plunger or if you pull back and no blood enters the syringe:

→ Carefully inject the medication; continue until the injection is complete (some devices require additional time to ensure all the medication has been administered)

→ Gently but quickly remove the needle at the same angle it was inserted

→ Immediately place the needle in a Sharps container (see page 11 of this guide)

→ Apply pressure to the injection site with a gauze pad

→ Bandage the site if necessary

If instructed to check for blood, and blood does enter the syringe:

→ Do NOT give the injection; blood in the syringe means that you may have entered a blood vessel

→ Remove the needle from the injection site

→ Dispose of the needle and syringe (see page 11 of this guide)

→ Start over — prepare another injection following the same steps described on page 8 and above
Disposal

Dispose of needles and syringes properly to prevent injury and the spread of disease. Always make sure to dispose of your needles or syringes in a puncture-resistant Sharps container.

Remember these important rules for safely using and disposing of needles and syringes:

- NEVER reuse needles
- NEVER recap needles
- NEVER throw needles or syringes into the garbage
- NEVER flush needles or syringes down the toilet
- NEVER put needles or syringes in recycling bins
- ALWAYS place needles and syringes in a puncture-resistant Sharps container

Contact your doctor or one of these organizations to find needle and syringe disposal options in your area:

- Your local public health department
- Centers for Disease Control and Prevention (CDC): http://www.cdc.gov/needledisposal/
- Coalition for Safe Community Needle Disposal: 800.643.1643 or http://www.safeneedledisposal.org

Keep the Sharps container in a safe place out of the reach of children and animals. Accidental contact with a needle can be dangerous; it can lead to injury, infections and the spread of diseases such as HIV/AIDS, hepatitis, tetanus and syphilis.

Tape the lid of the Sharps container shut when it is about two-thirds full. You can arrange to get another Sharps container when you fill your next prescription.

Dispose of the Sharps container in a designated area in your community. These areas may include drop-off sites and hazardous waste centers. Additionally, there are often pickup, mail-in or destruction services available in communities.
Monitoring of the injection site

When you inject a medication, a reaction may occur at the injection site. Injection-site reactions can include:

- Redness
- Swelling/firmness
- Rash
- Itching
- Stinging
- Pain/tenderness
- Tingling
- Discomfort

The following steps may help reduce or prevent these reactions.

### General instructions for reducing injection-site reactions

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<tr>
<th>Step</th>
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| Preparation      | • Allow the medication to reach room temperature  
                  • Apply ice to the injection site before and after injection to help lessen injection-site reactions  
                  • Check with your doctor about medications you may be able to use before an injection to reduce pain and swelling |
| Method           | • Ensure that you are using the correct injection method for your medication                      |
| Placement        | • Rotate injection sites by at least 1 inch with each new injection  
                  • Avoid injecting into areas that are swollen, red or hard  
                  • Record when and where you inject each time to help keep track  
                  • Do not rub the injection site after injection |
| Supplies         | • Use a new needle for each injection                                                             |

Call your doctor if you notice any of these symptoms:

- Nausea
- Vomiting
- Fever
- Low blood pressure (experienced as dizziness or fainting)
- Allergic-type reactions such as trouble breathing, hives, etc.
- Injection-site reaction that worsens or does not heal within a few days
References


Injection-site records

It is important to take an active role in your health care. This includes paying careful attention to where you inject your medication. Forms for tracking injection sites are included on the following pages.

The illustration on page 15 shows body sites for subcutaneous injections. The illustration on page 16 shows body sites for intramuscular injections. Use the page that fits your type of injection to record your injection sites. You can make notes as shown in the example below.

Make copies of the page before you use it so you always have a blank one for future tracking.

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Body sites for subcutaneous injection

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**Body sites for intramuscular injection**

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- Providing ongoing, personalized support from disease-specific experts
- Helping you manage the details so your condition does not manage you

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