

**Medication Guide**  
**Betaseron<sup>®</sup> (bay-ta-seer-on)**  
**Interferon beta-1b**  
**(in-ter-feer-on beta-one-be)**

Please read this leaflet carefully before you start to use Betaseron<sup>®</sup> and each time your prescription is refilled since there may be new information. The information in this medication guide does not take the place of talking with your doctor or healthcare professional.

**What is the most important information I should know about Betaseron?**

Betaseron will not cure multiple sclerosis (MS) but it has been shown to decrease the number of flare-ups of the disease. Betaseron can cause serious side effects, so before you start taking Betaseron, you should talk to your doctor about the possible benefits of Betaseron and its possible side effects to decide if Betaseron is right for you. Potential serious side effects include:

- **Depression.** Some patients treated with interferons, including Betaseron, have become seriously depressed (feeling sad). Some patients have thought about or have attempted to kill themselves. Depression (a sinking of spirits or sadness) is not uncommon in people with multiple sclerosis. However, if you are feeling noticeably sadder or helpless, or feel like hurting yourself or others, you should tell a family member or friend right away and call your doctor or health care provider as soon as possible. Your doctor may ask that you stop using Betaseron. Before starting Betaseron, you should also tell your doctor if you have ever had any mental illness, including depression, and if you take any medications for depression.
- **Liver problems.** Your liver may be affected by taking Betaseron and a few patients have developed severe liver injury. Your healthcare provider may ask you to have regular blood tests to make sure that your liver is working properly. If your skin or the whites of your eyes become yellow or if you are bruising easily, you should call your doctor immediately.
- **Risk to pregnancy.** If you become pregnant while taking Betaseron you should stop using Betaseron immediately and call your doctor. Betaseron may cause you to lose your baby (miscarry) or may cause harm to your unborn child. You and your doctor will need to decide whether the potential benefit of taking Betaseron is greater than the potential risks to your unborn child. A pregnancy registry has been established to monitor pregnancy outcomes of women exposed to Betaseron while pregnant. Providers are encouraged to obtain information on line at [www.BetaseronPregnancyRegistry.com](http://www.BetaseronPregnancyRegistry.com) and register patients by calling 1-800-478-7049.
- **Allergic reactions.** Some patients taking Betaseron have had severe allergic reactions leading to difficulty breathing and swallowing; these reactions can happen quickly. Allergic reactions can happen after your first dose or may not happen until after you have taken Betaseron many times. Less severe allergic reactions such as rash, itching, skin bumps or swelling of the mouth and tongue can also happen. If you think you are having an allergic reaction, stop using Betaseron immediately and call your doctor.
- **Injection site problems.** Betaseron may cause redness, pain or swelling at the place where an injection was given. A few patients have developed skin infections or areas of severe skin damage (necrosis). If one of your injection sites becomes swollen and painful or the area looks infected and it doesn't heal within a few days, you should call your doctor.
- **Seizures** - Some patients have had seizures while taking Betaseron, including some patients who have never had seizures before. It is not known whether the seizures were related to the effects of their MS, to Betaseron, or to a combination of both. If you have a seizure while taking Betaseron, you should stop taking Betaseron and call your doctor right away.
- **Heart problems** - While Betaseron is not known to have direct effects on the heart, a few patients who did not have a history of heart problems developed

heart muscle problems or congestive heart failure after taking Betaseron. Some of the symptoms of heart problems are swollen ankles, shortness of breath, decreased ability to exercise, fast heartbeat, tightness in chest, increased need to urinate at night, and not being able to lay flat in bed. If you develop these symptoms or any heart problems while taking Betaseron, you should call your doctor right away.

For more information on possible side effects with Betaseron, please read the section on **“What are the possible side effects of Betaseron?”** in this Medication Guide.

**What is Betaseron?**

Betaseron is a type of protein called beta interferon that occurs naturally in the body. It is used to treat relapsing forms of multiple sclerosis. It will not cure your MS but may decrease the number of flare-ups of the disease. MS is a lifelong disease that affects your nervous system by destroying the protective covering (myelin) that surrounds your nerve fibers. The way Betaseron works in MS is not known.

**Who should not take Betaseron?**

**Do not take Betaseron if you:**

- Have had allergic reactions such as difficulty breathing, flushing or hives to another interferon beta or to human albumin.

**If you have any of the following conditions or serious medical problems, you should tell your doctor before taking Betaseron:**

- Depression (a sinking feeling or sadness), anxiety (feeling uneasy, nervous, or fearful for no reason), or trouble sleeping
- Liver diseases
- Problems with your thyroid gland
- Blood problems such as bleeding or bruising easily and anemia (low red blood cells) or low white blood cells
- Epilepsy
- Heart problems
- Are pregnant, breast feeding, or planning to become pregnant

You should tell your doctor if you are taking any other prescription or nonprescription medicines. This includes any vitamin or mineral supplements, or herbal products.

**How should I take Betaseron?**

Betaseron is given by injection under the skin (subcutaneous injection) every other day. Your injections should be approximately 48 hours (two days) apart, so it is best to take them at the same time each day, preferably in the evening just before bedtime. You may be started on a lower dose when you first start taking Betaseron. Your doctor will tell you what dose of Betaseron to use, and that dose may change based on how your body responds. You should not change your dose without talking with your doctor.

If you miss a dose, you should take your next dose as soon as you remember or are able to take it. Your next injection should be taken about 48 hours (two days) after that dose. **Do not take Betaseron on two consecutive days.** If you accidentally take more than your prescribed dose, or take it on two consecutive days, call your doctor right away.

You should always follow your doctor's instructions and advice about how to take this medication. If your doctor feels that you, or a family member or friend may give you the injections, then you and/or the other person should be trained by your doctor or healthcare provider in how to give an injection. Do not try to give yourself (or have another person give you) injections at home until you (or both of you) understand and are comfortable with how to prepare your dose and give the injection.

**Always use a new, unopened, vial of Betaseron and syringe for each injection. Never reuse vials or syringes.**

It is important that you change your injection site each time Betaseron is injected. This will lessen the chance of your having a serious skin reaction at the spot where you inject Betaseron. You should always avoid injecting Betaseron into an area of skin that is sore, reddened, infected or otherwise damaged.

At the end of this leaflet there are detailed instructions on how to prepare and give an injection of Betaseron. You should become familiar with these instructions and follow your doctor's orders before injecting Betaseron.

### What should I avoid while taking Betaseron?

- **Pregnancy.** You should avoid becoming pregnant while taking Betaseron until you have talked with your doctor. Betaseron can cause you to lose your baby (miscarry).
- **Breast feeding.** You should talk to your doctor if you are breast feeding an infant. It is not known if the interferon in Betaseron can be passed to an infant in mother's milk, and it is not known whether the drug could harm the infant if it is passed to an infant.

### What are the possible side effects of Betaseron?

- **Flu-like symptoms.** Most patients have flu-like symptoms (fever, chills, sweating, muscle aches and tiredness). For many patients, these symptoms will lessen or go away over time. You should talk to your doctor about whether you should take an over the counter medication for pain or fever reduction before or after taking your dose of Betaseron.
- **Skin reactions.** Soreness, redness, pain, bruising or swelling may occur at the place of injection (see "What is the most important information I should know about Betaseron?").
- **Depression and anxiety.** Some patients taking interferons have become very depressed and/or anxious. There have been patients taking interferons who have had thoughts about killing themselves. If you feel sad or hopeless you should tell a friend or family member right away and call your doctor immediately. (see "What is the most important information I should know about Betaseron?").
- **Liver problems.** Your liver function may be affected. If you develop symptoms of changes in your liver, including yellowing of the skin and whites of the eyes and easy bruising, call your doctor immediately. (see "What is the most important information I should know about Betaseron?")
- **Blood problems.** You may have a drop in the levels of infection-fighting white blood cells, red blood cells, or cells that help you form blood clots. If drops in levels are severe, they can lessen your ability to fight infections, make you feel tired or sluggish or cause you to bruise or bleed easily.
- **Thyroid problems.** Your thyroid function may change. Symptoms of changes in the function of your thyroid include feeling cold or hot much of the time or change in your weight (gain or loss) without a change in your diet or amount of exercise you are getting.
- **Allergic reaction.** Some patients have had hives, rash, skin bumps or itching while they were taking Betaseron. There is also a rare possibility that you can have a life-threatening allergic reaction. (see "What is the most important information I should know about Betaseron?").
- **Seizures** - Some patients have had seizures while taking Betaseron, including patients who have never had seizures before. It is not known whether the seizures were related to the effects of their MS, to Betaseron, or to a combination of both. If you have a seizure while taking Betaseron, you should call your doctor right away. (See "What is the most important information I should know about Betaseron?")
- **Heart problems** - While Betaseron is not known to have any direct effects on the heart, a few patients who did not have a history of heart problems developed heart muscle problems or congestive heart failure after taking Betaseron. Some of the symptoms of heart problems are swollen ankles, shortness of breath, decreased ability to exercise, fast heartbeat, tightness in chest, increased need to urinate at night, and not being able to lay flat in bed. If you develop these symptoms or any heart problems while taking Betaseron, you should call your doctor right away. (See "What is the most important information I should know about Betaseron?")

Whether you experience any of these side effects or not, you and your doctor should periodically talk about your general health. Your doctor may want to monitor you more closely and ask you to have blood tests done more frequently. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

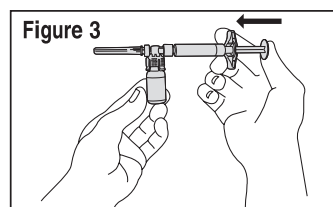
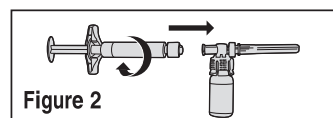
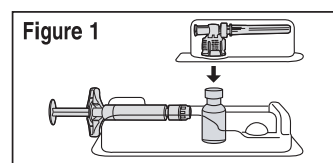
### General Information About Prescription Medicines

Medicines are sometimes prescribed for purposes other than those listed in a Medication Guide. This medication has been prescribed for your particular medical condition. Do not use it for another condition or give this drug to anyone

else. If you have any questions you should speak with your doctor or health care professional. You may also ask your doctor or pharmacist for a copy of the information provided to them with the product. Keep this and all drugs out of the reach of children.

### Instructions for Preparing and Giving Yourself an Injection of Betaseron

1. Find a clean, flat working surface that is well-lit and collect all the supplies you will need to give yourself an injection. You will need one tray containing Betaseron. Make sure the tray contains:
  - A pre-filled diluent syringe
  - A vial of Betaseron
  - Two (2) alcohol prep pads
  - A blue vial adapter with a 30 gauge needle attached (in the blister pack)
  - A puncture-resistant sealable container to dispose of used syringes/needles
2. Check the expiration date on the tray label to make sure that it has not expired. **Do not use it if the medication has expired.**
3. Wash your hands thoroughly with soap and water.
4. Open the tray by peeling off the label and take out all the contents. Make sure the blister pack containing the vial adapter is sealed. Check to make sure the plastic cap on the diluent syringe is firmly attached.
5. Turn the tray over, place the Betaseron vial in the well (vial holder) and place the prefilled diluent syringe in the U-shaped trough.

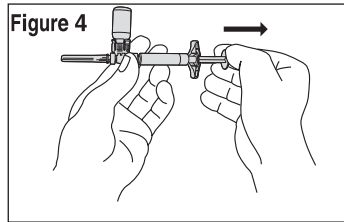


### Reconstituting Betaseron

1. Remove the Betaseron vial from the well and take the cap off the vial.
2. Place the vial back into the vial holder. Use an alcohol prep pad to clean the top of the vial. Move the prep pad in one direction. Leave the alcohol prep pad on top of the vial until step 4.
3. Peel the label off the blister pack with the vial adapter in it, but do not remove vial adapter. The vial adapter is sterile; avoid touching the vial adapter.
4. Remove the alcohol prep pad from the top of the Betaseron vial. Keeping the vial adapter in the blister pack, place the adapter on top of the Betaseron vial and push down on the adapter until it pierces the rubber top of the Betaseron vial and snaps in place (**Figure 1**). Remove the blister packaging from the vial adapter.
5. Twist the plastic cap from the diluent syringe. Discard the plastic cap.
6. Remove the vial with the vial adapter attached from the tray. Be careful not to pull the vial adapter off the top of the vial.
7. Connect the syringe to the vial adapter by turning clockwise and tighten carefully. This will form the syringe assembly (**Figure 2**).
8. Slowly push the plunger of the diluent syringe all the way in. This will transfer all of the diluent in the syringe to the Betaseron vial (**Figure 3**). Continue to hold the plunger in during the mixing process; otherwise the plunger may return to its original position after you release it.
9. Gently swirl the vial to completely dissolve the white cake of Betaseron. Do not shake. Shaking can cause Betaseron to foam; even gently mixing the solution can cause foaming. If there is foam, allow the vial to sit undisturbed until the foam settles.
10. After the cake is dissolved, look closely at the solution to make sure the solution is clear and colorless and does not contain particles. If the mixture contains particles, or is discolored, do not use. Verify that the vial is not cracked or damaged. Do not use cracked or damaged vials. Repeat the steps to prepare your dose using a new tray of Betaseron, prefilled syringe, vial adapter and alcohol prep pads. Contact Bayer HealthCare Pharmaceuticals at 1-800-788-1467 to obtain replacement product.

## Preparing the Injection

You have completed the steps to reconstitute your Betaseron and are ready for the injection. The injection should be given immediately after mixing and allowing any foam in the solution to settle. If you must delay giving yourself the injection, you may refrigerate the solution and use within three hours of reconstitution. Do not freeze.

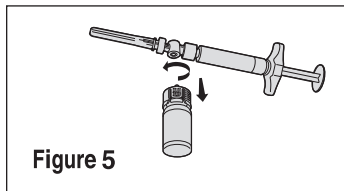


1. With your thumb still pushing the plunger, turn the syringe assembly so that the vial is on top. (The syringe is horizontal.)
2. Slowly pull the plunger back to withdraw the entire contents of the Betaseron vial into the syringe. (Figure 4).

NOTE: The syringe barrel is marked with numbers from 0.25 to 1.0 mL. If the solution in the vial cannot be drawn up to the 1.0 mL mark, discard the vial and syringe and start over with a new tray containing a Betaseron vial, prefilled diluent syringe, vial adapter and alcohol prep pads.

3. Turn the syringe assembly so that the needle end is pointing up. Remove any air bubbles by tapping the outer wall of the syringe with your fingers. Slowly push the plunger to the 1.0 mL mark on the syringe (or to the amount prescribed by your doctor).

NOTE: If too much solution is pushed into the vial, repeat steps 1, 2, and 3.



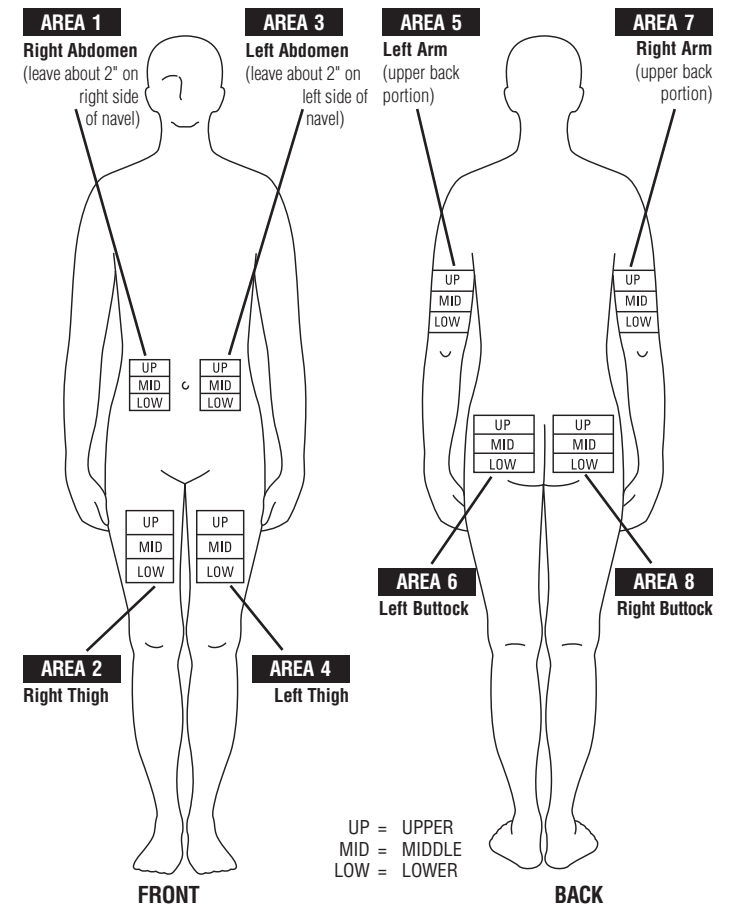
4. Turn the syringe assembly so that the vial is at the bottom. Remove the blue vial adapter and the vial from the syringe by twisting the vial adapter as shown in Figure 5. This will remove the vial adapter and the vial from the syringe, but will leave the needle on the syringe (Figure 5).

## Picking an Injection Site

Betaseron (Interferon beta-1b) is injected under the skin and into the fat layer between the skin and the muscles (subcutaneous tissue). The best areas for injection are where the skin is loose and soft and away from the joints, nerves, and bones. Do not use the area near your navel or waistline. If you are very thin, use only the thigh or outer surface of the arm for injection.

You should pick a different site each time you give yourself an injection. The diagrams show different areas for giving injections. You should not choose the same area for two injections in a row. Keeping a record of your injections will help make sure you rotate your injection sites. You should decide where your injection will be given before you prepare your syringe for injection. If there are any sites that

are difficult for you to reach, you can ask someone who has been trained to give injections to help you.

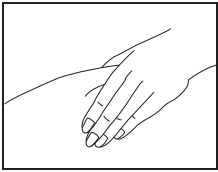


Do not inject in a site where the skin is red, bruised, infected, or scabbed, has broken open, or has lumps, bumps, or pain. Tell your doctor or healthcare provider if you find skin conditions like the ones mentioned here or any other unusual looking areas where you have been given injections.

Using a circular motion, and starting at the injection site and moving outward, clean the injection site with an alcohol wipe. Let the skin area dry before you inject the Betaseron.

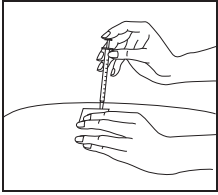
Remove the cap from the needle.

Hold the syringe like a pencil or dart in one hand.



Gently pinch the skin around the site with the thumb and forefinger of the other hand.

While holding your skin, stick the needle straight into the skin at a 90° angle with a quick, firm motion. Once in your skin, slowly pull back on the plunger. If blood appears in the syringe it means that you have entered a blood vessel. Do not inject Betaseron. Withdraw the needle and repeat the steps to prepare your dose. Choose and clean a new injection site. You should not use the same syringe; discard it in your puncture-proof container.



If no blood appears, slowly push the plunger all the way in until the syringe is empty.

Remove the needle from the skin; then place a dry cotton ball or gauze pad over the injection site. Gently massage the injection site for a few moments with the dry cotton ball or gauze pad.

Throw away the syringe in the disposal container.

### **Disposing of syringes and needles**

Used needles and syringes may be placed in a container made specially for disposing of used syringes and needles (called a "Sharps" container), or a hard plastic container with a screw-on cap or metal container with a plastic lid labeled "Used Syringes". Do not use glass or clear plastic containers. You should

always check with your healthcare provider for instructions on how to properly dispose of used vials, needles and syringes. You should follow any special state or local laws regarding the proper disposal of needles and syringes.

**DO NOT throw the needle or syringe in the household trash or recycle.**

Always keep the disposal container out of the reach of children.

### **How Should I Store Betaseron?**

Betaseron should be stored at room temperature 25°C (77°F). Excursions of 15 to 30°C (59 to 86°F) are permitted. Do not freeze.

This Medication Guide has been approved by the U.S. Food and Drug Administration.

Manufactured by:



**Bayer HealthCare  
Pharmaceuticals**

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Montville, NJ 07045

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Part Number 6800503

Revision Date 5/10