PATIENT & CAREGIVER EDUCATION

Interferon Beta-1a

This information from UpToDate® Lexidrug™ explains what you need to know about this medication, including what it's used for, how to take it, its side effects, and when to call your healthcare provider.

Brand Names: US

Avonex; Avonex Pen; Rebif; Rebif Rebidose; Rebif Rebidose Titration Pack; Rebif Titration Pack

Brand Names: Canada

Avonex; Rebif

What is this drug used for?

- It is used to treat MS (multiple sclerosis).

What do I need to tell my doctor BEFORE I take this drug?

- If you are allergic to this drug; any part of this drug; or any other drugs, foods, or substances. Tell your doctor about the allergy and what signs you had.

This drug may interact with other drugs or health problems.

Tell your doctor and pharmacist about all of your drugs (prescription or OTC, natural products, vitamins) and health problems. You must check to make sure that it is safe for you to take this drug with all of your drugs and health problems. Do not start, stop, or change the dose of any drug without checking with your doctor.

What are some things I need to know or do while I take this drug?

All products:

- Tell all of your health care providers that you take this drug. This includes your doctors, nurses, pharmacists, and dentists.
- Have blood work checked as you have been told by the doctor. Talk with the doctor.
- Talk with your doctor before you drink alcohol.
- This drug is not a cure for MS (multiple sclerosis). Stay under the care of your doctor.
- It is common to have reactions where the injection was given. This includes redness, pain, itching, and swelling. Sometimes, reactions at the injection site have been severe and have led to treatment in a hospital or surgery. Check with your doctor if you have any reaction that bothers you, is severe, or does not get better in a few days. Call your doctor right away if you have any break in the skin; color changes (blue or black); or swelling, pain, or other signs of skin infection like oozing or heat where the injection was given.
- Very bad health problems like thrombotic thrombocytopenic purpura/hemolytic uremic syndrome (TTP/HUS) have happened with drugs like this one. Sometimes, this has been deadly. This has happened several weeks to years after starting treatment. Call your doctor right away if you feel very tired or weak or have any bruising or bleeding, change in balance, change in eyesight, change in how much urine is passed, dark urine, fever, pale skin, trouble speaking or thinking, weakness on 1 side of the body, or yellow skin or eyes.
- Heart failure has happened with this drug, as well as heart failure that has gotten worse in people who already have it. Tell your doctor if you have heart disease. Call your doctor right away if you have shortness of breath, a big weight gain, a heartbeat that is not normal, or swelling in the arms or legs that is new or worse.

- Liver problems have happened with this drug. Sometimes, this has been severe and has led to a liver transplant or death. If you have questions, talk with the doctor.
- Some of these drugs have albumin (part of the blood) in them and may have viruses that may cause disease. This drug is screened, tested, and treated to lower the chance that it carries an infection. Talk with the doctor.
- Tell your doctor if you are pregnant, plan on getting pregnant, or are breast-feeding. You will need to talk about the benefits and risks to you and the baby.

Avonex syringes or pens:

- If you have a latex allergy, talk with your doctor.

What are some side effects that I need to call my doctor about right away?

WARNING/CAUTION: Even though it may be rare, some people may have very bad and sometimes deadly side effects when taking a drug. Tell your doctor or get medical help right away if you have any of the following signs or symptoms that may be related to a very bad side effect:

- Signs of an allergic reaction, like rash; hives; itching; red, swollen, blistered, or peeling skin with or without fever; wheezing; tightness in the chest or throat; trouble breathing, swallowing, or talking; unusual hoarseness; or swelling of the mouth, face, lips, tongue, or throat.
- Signs of depression, suicidal thoughts, emotional ups and downs, abnormal thinking, anxiety, or lack of interest in life.
- Signs of liver problems like dark urine, tiredness, decreased appetite, upset stomach or stomach pain, light-colored stools, throwing up, or yellow skin or eyes.
- Signs of thyroid problems like change in weight; feeling nervous, excitable, restless, or weak; hair thinning; depression; eye or neck swelling; not able to focus; trouble with heat or cold; menstrual changes; shakiness; or sweating.
- Signs of a urinary tract infection (UTI) like blood in the urine, burning or pain

when passing urine, feeling the need to pass urine often or right away, fever, lower stomach pain, or pelvic pain.

- Chest pain.
- Seizures.
- Severe dizziness or passing out.
- Change in eyesight.
- Swollen gland.
- Low blood cell counts have happened with this drug. If blood cell counts get very low, this can lead to bleeding problems, infections, or anemia. Call your doctor right away if you have signs of infection like fever, chills, or sore throat; any unexplained bruising or bleeding; or if you feel very tired or weak.
- High blood pressure in the lungs has happened with this drug. This can be severe and may need to be treated in a hospital. This may happen years after starting treatment. One patient taking a drug like this one needed a lung transplant. Tell your doctor right away if you have new or worse tiredness, weakness, or shortness of breath.

What are some other side effects of this drug?

All drugs may cause side effects. However, many people have no side effects or only have minor side effects. Call your doctor or get medical help if any of these side effects or any other side effects bother you or do not go away:

- Flu-like signs. These include headache, weakness, fever, shakes, aches, pains, and sweating. Mild pain drugs may help.
- Feeling dizzy, sleepy, tired, or weak.
- Upset stomach.
- Stomach pain.
- Back, muscle, or joint pain.
- Dry mouth.

These are not all of the side effects that may occur. If you have questions about side effects, call your doctor. Call your doctor for medical advice about side effects.

You may report side effects to your national health agency.

You may report side effects to the FDA at 1-800-332-1088. You may also report side effects at https://www.fda.gov/medwatch.

How is this drug best taken?

Use this drug as ordered by your doctor. Read all information given to you. Follow all instructions closely.

All products:

- Some products need to be given into the fatty part of the skin. Some products need to be given into a muscle. Talk with the doctor or pharmacist if you are not sure how to use this drug.
- Take as you have been told by your doctor. This drug is not to be used every day. Be sure you know how to use this drug.
- If you will be giving yourself the shot, your doctor or nurse will teach you how to give the shot.
- Do not use if the solution is cloudy, leaking, or has particles.
- This drug is colorless to a faint yellow. Do not use if the solution changes color.
- Do not give into skin that is irritated, bruised, red, infected, hard, or scarred.
- If stored in a refrigerator, let this drug come to room temperature before using it. Leave it at room temperature for at least 30 minutes. Do not heat this drug.
- Wash your hands before and after use.
- Move the site where you give the shot with each shot.
- Do not shake.

- Throw away any part left over after the dose is given.
- Throw away needles in a needle/sharp disposal box. Do not reuse needles or other items. When the box is full, follow all local rules for getting rid of it. Talk with a doctor or pharmacist if you have any questions.
- Other drugs may be given with this drug to help avoid side effects.

Rebif®:

- Do not give into skin within 2 inches (5 cm) of the belly button.

What do I do if I miss a dose?

Avonex®:

- Take a missed dose as soon as you think about it and go back to your normal time.
- Do not take this drug 2 days in a row.

Rebif®:

- Take a missed dose as soon as you think about it and go back to your normal time.
- Do not take 2 doses within 48 hours of each other.
- If the next dose is less than 48 hours away, call your doctor to find out what to do.

How do I store and/or throw out this drug?

All products:

- Store in a refrigerator. Do not freeze.
- Store in the original container to protect from light.
- Protect from heat.
- Keep all drugs in a safe place. Keep all drugs out of the reach of children and pets.
- Throw away unused or expired drugs. Do not flush down a toilet or pour

down a drain unless you are told to do so. Check with your pharmacist if you have questions about the best way to throw out drugs. There may be drug take-back programs in your area.

Avonex vials:

- If needed, you may store at room temperature for up to 30 days. Write down the date you take this drug out of the refrigerator. If stored at room temperature and not used within 30 days, throw this drug away.
- Use right away after mixing or you may store in a refrigerator for up to 6 hours.

Avonex syringes or pens:

- If needed, you may store at room temperature for up to 7 days. Write down the date you take this drug out of the refrigerator. If stored at room temperature and not used within 7 days, throw this drug away.

Rebif®:

- If needed, you may store at room temperature for up to 30 days. Write down the date you take this drug out of the refrigerator. If stored at room temperature and not used within 30 days, throw this drug away.

General drug facts

- If your symptoms or health problems do not get better or if they become worse, call your doctor.
- Do not share your drugs with others and do not take anyone else's drugs.
- Some drugs may have another patient information leaflet. If you have any questions about this drug, please talk with your doctor, nurse, pharmacist, or other health care provider.
- This drug comes with an extra patient fact sheet called a Medication Guide. Read it with care. Read it again each time this drug is refilled. If you have any questions about this drug, please talk with the doctor, pharmacist, or other health care provider.

- If you think there has been an overdose, call your poison control center or get medical care right away. Be ready to tell or show what was taken, how much, and when it happened.

Consumer Information Use and Disclaimer

This generalized information is a limited summary of diagnosis, treatment, and/or medication information. It is not meant to be comprehensive and should be used as a tool to help the user understand and/or assess potential diagnostic and treatment options. It does NOT include all information about conditions, treatments, medications, side effects, or risks that may apply to a specific patient. It is not intended to be medical advice or a substitute for the medical advice, diagnosis, or treatment of a health care provider based on the health care provider's examination and assessment of a patient's specific and unique circumstances. Patients must speak with a health care provider for complete information about their health, medical questions, and treatment options, including any risks or benefits regarding use of medications. This information does not endorse any treatments or medications as safe, effective, or approved for treating a specific patient. UpToDate, Inc. and its affiliates disclaim any warranty or liability relating to this information or the use thereof. The use of this information is governed by the Terms of Use, available at https://www.wolterskluwer.com/en/know/clinical-effectiveness-terms.

Last Reviewed Date

2023-08-21

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If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Interferon Beta-1a - Last updated on December 12, 2022

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