



تجمع الرياض الصحي الثاني
Riyadh Second Health Cluster
شركة الصحة القابضة



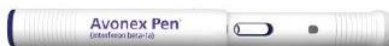
Patient's Guide for Multiple Sclerosis Medications

Interferons are a class of drugs used to treat a variety of diseases, such as hepatitis, multiple sclerosis (MS), and various cancers. Interferons are frequently used in the context of MS treatment to control relapsing-remitting MS, which is the most common type of the illness.

The body normally produces interferons as a defense against viral infections and other risk. They play an important role in controlling the immune system and stopping the spread of viruses and other dangerous substances.



Interferons of various types, such as Avonex, Betaseron, and Rebif, are used to treat MS. These drugs are often injected, either intramuscularly or subcutaneously, into a specified area of the muscle.



What are the benefits?

Interferons act by decreasing inflammation in the central nervous system, slowing the progression of MS and reducing the frequency and severity of relapses.

They also reduce the quantity of immune cells that pass the blood-brain barrier and attack nerve fibers.

Before using interferons:

- Inform your doctor if you are allergic to interferon beta-1a, any other interferon drug (Betaseron, Extavia, Plegridy, Rebif), any other medications, human albumin, natural rubber, latex, or any of the chemicals in intramuscular interferon beta-1a injection.
- Inform your doctor about any other prescription and nonprescription drugs, vitamins, nutritional supplements, and herbal items you are now taking or intend to use. Your doctor may need to



adjust the dosage of your drugs or closely monitor you for adverse effects.

- Inform your doctor if you have or have ever had an autoimmune disease other than MS, blood issues such as anemia, low white blood cell count, or easy bruising or bleeding; mental illness like depression or other mood disorders or mental illness; seizures; or heart, liver, or thyroid disease.
- Inform your doctor if you are pregnant, want to become pregnant, or are currently nursing. There is presently no evidence that early pregnancy interferon beta usage causes birth abnormalities, miscarriage, or low child birth weight. Data collection on birth outcomes should be encouraged and supported in order to better examine any possible risk of poor outcomes.

What dietary restrictions should you observe?

Continue to eat normally unless your doctor instructs you differently.

Possible side effects of interferons:

- Swelling, redness, and soreness where the injection was administered. Don't give yourself another shot if the position becomes tough.
- You should be aware that you may experience flu-like symptoms such as headache, fever, chills, sweating, muscular pains, nausea, vomiting, and fatigue a day after your injection. To get rid of these symptoms, your doctor may advise you to inject your medicine before sleep and take an over-the-counter pain and fever reliever. These symptoms normally fade or disappear over time.
- Problems with your mood. You may experience depression, worry, irritability, guilt, difficulty focusing, disorientation, and difficulty sleeping or

eating. Inform your doctor as soon as possible about these symptoms.

Despite the risks, interferons are an effective therapy choice for many patients with relapsing-remitting multiple sclerosis. They have been found to decrease the frequency and severity of relapses, slow down disease progression, and enhance overall quality of life in people with MS

Using interferons:

- ❖ **Interferon Beta-1A (Avonex).** You inject it into your muscle once a week. People who begin taking it early in the course of multiple sclerosis may be able to continue longer before any physical problems appear or worsen.



- ❖ **Interferon Beta-1A (albumin)(Rebif).** This medicine is administered to you three times each week as an injection underneath your skin.



❖ Interferon Beta-1B (Betaseron, Extavia).

Every other day, this one is administered as an injection underneath the skin.



Missed Dose:

If you forget to take a dosage of this medication, take it as soon as possible. If your next dosage is coming up, ignore the missing dose and resume your usual dosing regimen. Do not take two doses.



Avonex: If you forget to take a dosage, take it as soon as possible. The following week, resume your usual schedule. Do not use this medication on consecutive days.

 **Rebif:** If you forget to take a dosage, take it as soon as possible. Skip the next day and provide your usual dose 48 hours later. The following week, resume your usual schedule. Do not use this medication on consecutive days.



Kesimpta (Ofatumumab)

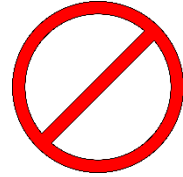
KESIMPTA is approved to treat relapsing types of multiple sclerosis (MS) in adults, including clinically isolated syndrome, relapsing-remitting disease, and active secondary progressive illness.

What is this drug used for?

B cells, which are immune system cells, are considered to be responsible for much of the damage in MS.

Ofatumumab (Kesimpta) kills B cells, leaving fewer to damage the myelin sheath that surrounds neurons. The medication minimizes the amount of inflammation shown on MRI images. Doctors might notice this inflammation as lesions, or nerve injury.

Who should not take Kesimpta?



Do not use this medicine If you have active hepatitis B virus infection.

Before using Ofatumumab

(Kesimpta), Tell your doctor:



- If you have an infection, such as HBV or PML.
- If you have previously taken, are now taking, or plan to take immune-suppressing medications. These medications may raise your chances of developing an illness.
- If you have recently had or are scheduled to get any vaccines. You should have any necessary 'live' or 'live-attenuated'



immunizations at least 4 weeks before starting kesimpta therapy.

You should not get 'live' or 'live-attenuated' vaccinations while taking kesimpta and until your healthcare professional confirms that your immune system has recovered.

Whenever possible, you must receive any 'non-live' vaccinations at least 2 weeks before starting kesimpta therapy.

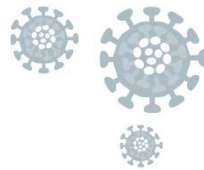
- If you are or intend to get pregnant. Females who are pregnant should take birth control (contraception) during kesimpta therapy and for 6 months after the final medication.



- If you are or plan to be a nursing mother.
Kesimpta transferring into breast milk is still not known.
- Inform your doctor about all of the medications you use, including prescription and over-the-counter medications, vitamins, and herbal supplements. Be aware of the medications you use.

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

- Serious infections might occur when using KESIMPTA. If you have an active infection, your doctor should postpone your KESIMPTA medication until the infection has cleared.



- Taking KESIMPTA before or after other immune-suppressing medications may raise your risk of infection.
- Contact your doctor as soon as you notice any illnesses or symptoms, such as painful and frequent urination, nasal congestion, runny nose, sore throat, fever, chills, cough, or body pains.
- **Reactivation of the Hepatitis B virus (HBV).** Your healthcare professional will do blood tests in order to check for HBV before commencing therapy with KESIMPTA. If you have already been infected with HBV, the virus may become active again during or after treatment with KESIMPTA. Reactivation of the Hepatitis B virus can result in significant liver issues, including liver failure or death.

- **Immune system is weakened.** KESIMPTA used before or after other immune-suppressing medications may raise your risk of infection.

Kesimpta may cause side effects including:

- ❖ **Reactions to injections.** KESIMPTA often causes injection-related reactions. Redness of the skin, swelling, itching, and soreness are injection-related symptoms that can occur within 24 hours (1 day) of the first injections and with subsequent injections.
- ❖ **Fever, headache, muscular discomfort, chills, and exhaustion.**
- ❖ **Immunoglobulin deficiency.** Some kinds of antibodies may be reduced with KESIMPTA. Your doctor will do blood tests to determine your immunoglobulin levels.

- ❖ Upper respiratory tract illness characterized by sore throat, runny nose, and headache.

What are side effects that I need to Call doctor right away?

- If your sleepiness worsens or if you notice yellowing of your skin or the white portion of your eyes while taking KESIMPTA.
- If you are experiencing any new or worsening neurologic signs or symptoms. These symptoms may include weakness on one side of your body, lack of coordination in your arms and legs, visual issues, changes in thinking and memory that can cause confusion, and personality changes.



Despite the risks, **Ofatumumab** (**Kesimpta**) is an effective therapy choice for many patients with relapsing-remitting multiple sclerosis. They have been found to decrease the frequency and severity of relapses, slow down disease progression, and enhance overall quality of life in people with MS.

How is this drug taken?

You'll give yourself one dosage every week for the first three weeks, then skip a week. After that, you can go down to one dosage every month



How should I store Kesimpta?

- ✚ Refrigerate this medication between 36°F and 46°F (2°C and 8°C).
- ✚ To protect against light, keep this medicine in its original container until ready to use.
- ✚ Do not store it in the freezer
- ✚ Don't shake it.

Keep Kesimpta and all medicines out of the reach of children.



Missed Doses:

If a KESIMPTA injection is missed, it should be given as quickly as possible, rather than waiting until the next planned dosage. Following dosages should be given at the prescribed intervals.



Gilenya

Gilenya is a prescription medication used to treat relapsing types of multiple sclerosis (MS) in adults and children 10 years of age and older, including clinically isolated syndrome, relapsing-remitting disease, and active secondary progressive illness.



What is this drug used for?

In multiple sclerosis, the body's defenses (the immune system) mistakenly target the sheath that surrounds the nerves in the brain and spinal cord. Gilenya limits the harm caused by immune system-related white blood cells in multiple sclerosis by preventing them from traveling from lymph nodes to the brain and spinal cord.

Before using Gilenya:

- Inform your doctor if you are allergic to it or have any other allergies.
- Share your medical history with your doctor or pharmacist, especially if you have: heart issues, stroke/mini-stroke, high blood pressure, breathing problems, a present or recurring infection, diabetes, fainting, certain eye problems, or liver illness.
- Discuss your immunization history with your doctor and inquire whether you need any more shots before beginning treatment with this medicine.



For the next two months following the last dosage of this medicine, don't get a live vaccination. Contact with

persons who have just received live vaccinations should be avoided.

- Tell your doctor about all the products you use (including prescription drugs, nonprescription drugs, and herbal products).



- If you are pregnant or want to become pregnant, inform your doctor. Gilenya should not be used if you are pregnant. Gilenya has the potential to damage an unborn child. Before you begin using this medicine, your doctor must order a pregnancy test.



How to use Gilenya?

Your doctor will do medical/laboratory tests (to check for adverse effects) and Ophthalmology check prior to beginning Gilenya.

As instructed by your doctor, take this medication by mouth with or without food. **Your heart rate will be monitored for at least 6 hours after the first dosage to ensure it is not getting too slow.**



Missed Dose:

It's important to strictly adhere to the suggested course of therapy. Ask your doctor what to do if you missed a dosage. To catch up, do not double the dose.

Gilenya may cause side effects including:

- Flu virus infection with symptoms such as fatigue, chills, sore throat, aching joints or muscles, and fever
- Sinusitis causes pressure or discomfort in the cheekbones and forehead.
- Severe headaches are frequently accompanied by nausea and vomiting.
- Low white blood cell count (lymphocytes, leucocytes)
- Coughing up phlegm, chest pain, and fever (all symptoms of lung disease)
- A slow heartbeat (bradycardia), as well as an irregular heart rhythm
- Anxiety and depression

- PML (Progressive Multifocal Leukoencephalopathy)



What are side effects that I need to Call doctor right away?

if you have any very serious side effects, including:

- ❖ Chest discomfort and shortness of breath.
- ❖ Significant dizziness/fainting.
- ❖ Slow, irregular, pounding, or rapid pulse.
- ❖ Unusual tiredness/weakness, eye pain/light sensitivity, visual alterations (such as blurred vision, blind spots/shadows in the center of your vision, and color changes).

- ❖ **Mental changes (such as unexpected disorientation), seizures, and severe headaches are also possible.**

Despite the risks, [Gilenya](#) is an effective therapy choice for many patients suffering from relapsing-remitting MS. They have been found to decrease the frequency and severity of relapses, slow down disease progression, and enhance overall quality of life in people with MS.



Tecfidera

Tecfidera (dimethyl fumarate) is a drug that is used to treat multiple sclerosis (MS). It has been authorized for the treatment of relapsing types of MS. It works by decreasing inflammation and the activity of the immune system.

Before taking tecfidera:

- Inform your doctor if you have low white blood cell counts, an infection, or any other medical issues.
- Inform your doctor if you are pregnant or want to get pregnant, as well as if you are nursing or intend to breastfeed. It is unknown if tecfidera goes into breast milk.



- Taking prescription or OTC medications, vitamins, or herbal supplements



Side effects of Tecfidera:

The most common side effects with Tecfidera are:

- ❖ Flushing (reddening of the skin)
- ❖ Gastrointestinal disorders (such as diarrhoea, nausea, and stomach discomfort).



These adverse effects often begin early in treatment, generally within the first month, and may persist occasionally throughout treatment.



What are side effects that I need to Call doctor right away?

+ If you develop an allergic response (such as welts, hives, swelling of the face, lips, mouth, or tongue, or trouble breathing), consult your doctor.

+ PML is a rare kind of brain illness.

+ A drop in your white blood cell count

+ if you experience any of the following symptoms of a liver issue while being treated:

1. Severe tiredness.
2. Loss of appetite.
3. Pain on the right side of your stomach.
4. Dark or brown (tea-colored) urine.

5. Yellowing of your skin or the white area of your eyes.

 Herpes zoster infections (shingles), including infections of the central nervous system.

Tecfidera is an effective therapy choice

for many patients with relapsing-remitting MS, despite the possible adverse effects. They have been found to decrease the frequency and severity of relapses, slow down disease progression, and enhance overall quality of life in people with MS.

How to use Tecfidera?

Tecfidera is often used orally, with or without.

TECFIDERA taken with meals may help minimize flushing.

The drug is normally given twice daily, with at least 12 hours between doses. The particular dose and treatment regimen will be determined by the needs of the individual patient as well as the severity of their MS.

To prevent flushing, gradually raise the dose (120 once daily for one week, then 120 twice daily for one week, then 120 AM and 240 PM for one week, then 240 twice daily afterwards).





Missed Dose:

If you forget to take a dose of this medication, take it as soon as possible. If your next dosage is approaching, skip the missing dose and resume your usual dosing regimen. Do not double doses.



Cladribine (Mavenclad)

Cladribine is a prescription medication that is used to treat persons with relapsing types of multiple sclerosis (MS), including relapsing-remitting illness and active secondary progressive disease.

Before you take Cladribine, tell your doctor about all of your medical conditions, including:

- If you have an infection.
- If you have taken, are taking, or intend to take medications that may affect your immune system or blood cells, or if you are receiving other MS therapies. Certain medications might raise your chances of developing an illness.
- If you have recently had or are scheduled to get any vaccines. You should not get live or live-attenuated vaccinations in the 4 to 6 weeks' prior

Cladribine treatment, or during Cladribine treatment, unless advised otherwise by your healthcare professional.

- If you have heart failure.
- If you have or have had cancer.
- If you have liver or kidney problems.



- If you are currently nursing or want to start

It is unknown if Cladribine goes into breast milk.
Do not breastfeed during Cladribine treatment days or for 10 days after the final dosage.



The most common side effects of Cladribine include:

- Headache.
- Nausea.
- Back pain.
- Joint pain and stiffness.
- Difficulty falling asleep or staying asleep.
- Depression.
- Hair loss.
- Tingling, itching, or burning sores on gums, lips, or mouth.

Some adverse effects may develop that might not demand medical treatment. These adverse effects might go away as your body adapts to the medication.

What are side effects that I need to Call doctor right away?

- Back aching.
- Moving Difficulties.
- Muscle tenseness.
- Having difficulty sleeping.
- Vision distortion.
- Mucus-producing cough.
- Discouragement.
- Dizziness.
- Heartbeat is slow.
- Concentration issues.
- Confusion.



- Cold sores or blisters that cause pain on the lips, nose, eyes, or genitals.
- Seizures.
- Vomiting.

Cladribine, despite its possible adverse effects, is an effective treatment choice for many persons with relapsing-remitting MS. They have been found to lower the frequency and severity of relapses, slow down disease progression, and enhance overall quality of life in MS patients.

How do I take Cladribine?

Cladribine is taken as a pill in two treatment courses, twelve months apart:

- In the first course, Cladribine pills are taken for up to five consecutive days in the first month and for up to five consecutive days in the second month
- In the second course, Cladribine pills are taken for up to five consecutive days in the first month and for up to five consecutive days in the second month.

The quantity of pills you need to take will be determined by your weight. This therapy is repeated a year later. Other medications should not be used within 3 hours of taking a Cladribine pill.



Pregnancy planning:

Women of reproductive age must use effective contraception during Cladribine treatment

and for at least 6 months following the final dosage to avoid getting pregnant.

Furthermore, men using cladribine should avoid conceiving with their partner and use contraception for 6 months following the last dosage since cladribine may pass into semen.



Missed doses:

If you miss a dosage of this medication, skip it and resume your usual dosing plan. Do not take two doses.

This will lengthen the duration of the therapy cycle. If you miss two doses in a row, the treatment cycle will be extended by two days.



Tysabri (Natalizumab)

Tysabri is a medication used to treat individuals who have multiple sclerosis (MS) that has not been well managed by another disease-modifying treatment or is quickly worsening.

Multiple sclerosis is a nerve disease in which inflammation destroys the protective sheath around neurons and causes nerve damage.

Tysabri is used to treat relapsing-remitting multiple sclerosis (MS), a kind of MS in which the patient has attacks (relapses) between periods of stable symptoms (remissions).

What should I tell my doctor before receiving each dose of TYSABRI?

Before receiving TYSABRI, it is important to tell your doctor:

- ❖ If you have a medical condition that might affect your immune system, such as HIV infection, leukemia or lymphoma, organ transplant, or others, or if you have any new or worsening medical issues that have lasted several days.



- ❖ If you are or intend to get pregnant. If you use TYSABRI while pregnant, your newborn infant may have low platelets and, in certain situations, low red blood cells (anemia). It is unknown if TYSABRI can cause birth abnormalities.

- ❖ If you are currently nursing or want to start.

TYSABRI can go into your breast milk.

- ❖ Regarding all of the medications and supplements you use, particularly those that might affect your immune system. If you are unsure, see your doctor.



Progressive Multifocal

Leukoencephalopathy (PML):



Tysabri could elevate your risk of developing progressive multifocal leukoencephalopathy (PML), a rare viral brain infection. Tysabri should not be given to individuals with a history of PML or who have tested positive for JC virus antibodies.



Having the JC virus increases your chances of developing PML. Blood tests will be performed to seek for the virus that is causing it. If you are at risk for PML, you will be tested for early symptoms.

Tell your doctor right away if you have any new or worsening symptoms that have lasted for several days, regardless of whether you are currently taking this medication or have stopped using it within the previous 6 months, such as:

- ✓ Suddenly occurring changes in your brain (such as disorientation or difficulties concentrating).
- ✓ Difficulties moving muscles.
- ✓ Seizure, speech difficulties.
- ✓ Alterations in eyesight.

What are the possible side effects of TYSABRI?

The most common side effects of TYSABRI are:

- ❖ Headache, feeling fatigued, urinary tract infection, joint pain, lung infection, depression, discomfort in your arms or legs, diarrhea, vaginitis, rash, nose and throat infections, nausea, stomach region pain.

If you experience any side effect that bothers you or does not go away, tell your doctor

What are side effects that I need to Call doctor right away?

- Infections caused by herpes.
- Damage to the liver. Yellowing of the skin and eyes (jaundice), darkening of the urine, nausea, feeling fatigued or weak, or vomiting.
- Allergic reactions. Serious adverse responses are most common within 2 hours of starting the infusion, although they can occur at any time after taking TYSABRI.
- Immune system weakened. TYSABRI may raise your chances of developing a rare or deadly infection.
- Platelet count is low. TYSABRI may lower the quantity of platelets in your blood. Symptoms

include easy bruising, small dispersed red, pink, or purple patches on your skin, heavier menstrual cycles than usual, bleeding from your mouth or nose that is new or takes longer than usual to cease, and bleeding from a cut that is not healing properly.

Despite the risks, Tysabri is an effective therapy choice for many patients suffering with relapsing-remitting MS. They have been found to decrease the frequency and severity of relapses, slow down disease progression, and enhance overall quality of life in people with MS

Taking Tysabri:

Tysabri is normally taken via IV once every four weeks.

The medicine is administered slowly over an hour, and patients are watched for any potential adverse effects both during and after the infusion.



Missed dose:

It is very important to take this medicine exactly as prescribed. If you miss a dosage, contact your doctor or pharmacist as soon as possible to be given a new dosing plan.



Ocrevus (Ocrelizumab)

Ocrevus is a prescription medication used to treat the following conditions in adults:

- Relapsing types of multiple sclerosis (MS), including clinically isolated syndrome, relapsing-remitting illness, and active secondary progressive disease.
- Adults with primary progressive MS.

What should I tell my doctor before receiving each dose of Ocrevus?

Before using Ocrevus, tell your doctor if you:

- Have a record of your medical history, especially any recent, previous, or recurring diseases (such as TB, herpes, or hepatitis B).

- Have cancer or have significantly impaired immune systems.
- Have a history of inflammatory bowel disease or colitis.
- Have recently had a vaccine or have any immunizations scheduled. Any necessary "live" or "live-attenuated" vaccinations should be given at least 4 weeks before you begin ocrevus therapy. While taking ocrevus, you shouldn't get any "live" or "live-attenuated" vaccinations.
- Any "non-live" vaccinations are ideal to receive at least two weeks before beginning OCREVUS therapy. Speak with your healthcare practitioner if you would like to get any non-live (inactivated) vaccinations, such as the seasonal flu shot, while you are receiving OCREVUS treatment.



- You are pregnant or intend to get pregnant.

Because of the possibility of damage to an unborn baby, you should not become pregnant while using Ocrevus.

- You are nursing or want to breastfeed. It is unknown whether OCREVUS gets into your breast milk.



This medication may cause dizziness. Do not drive, operate equipment, or do anything else that requires attentiveness until you are sure you can do it safely.

What are the possible side effects of Ocrevus?

- ❖ Cold symptoms such as a stuffy/runny nose and cough are possible. If any of these side effects persist or worsen, notify your doctor or nurse right away.

- ❖ This medication may increase your chances of getting an infection or make an existing illness worse.



- ❖ It is uncommon for this medicine to cause a severe allergic response. However, get medical attention immediately if you detect any of the following signs of a severe allergic reaction: rash, itching/swelling (particularly of the face/tongue/throat), extreme dizziness, or difficulty breathing.

These infusion responses might occur up to 24 hours following the infusion. If you have any of the above-mentioned signs or symptoms after each infusion, contact your healthcare practitioner immediately. Infusion responses could have your healthcare practitioner stopping or slowing the rate of your infusion.

What are side effects that I need to Call doctor right away?

- If you have odd growths, a lump in your breast, or nipple discharge. More information can be got from your doctor.
- If you have any major side effects, such as severe diarrhea, stomach/abdominal discomfort, or black/bloody stools, contact your doctor immediately.
- This medication could higher your chances of developing progressive multifocal leukoencephalopathy (PML). If you notice any of these new or worsening side effects, get healthcare instantly:
 - Clumsiness.

- A sudden alteration in your mind (for example, perplexity or difficulties focusing).
 - Difficulties moving muscles.
 - Seizures, speech difficulties.
 - vision alterations.
- If you notice any of the following signs of a severe allergic reaction: rash, itching/swelling (particularly of the face/tongue/throat), severe dizziness, difficulty breathing.



Despite the risks, **Tysabri** is an effective therapy choice for many patients suffering with relapsing-remitting MS. They have been found to decrease the frequency and severity of relapses, slow down disease progression, and enhance overall quality of life in people with MS.

Taking Ocrevus:



Ocrevus is usually given as an intravenous infusion every six months. The drug is administered gradually over many hours, and patients are closely monitored for any potential adverse effects both during and after the infusion.



Missed Dose:

It is important to take this medicine exactly as prescribed. If you miss a dosage, contact your doctor immediately so they can provide a new dosing plan.

It's important to remember that each medicine has its own set of possible side effects and risks, and the optimal option for you will depend on a variety of variables, including the kind and severity of your MS as well as your general health and medical history.

Your doctor can assist you in weighing the advantages and disadvantages of each medicine so that you can make informed decisions about your treatment plan.

Other therapies, such as physical therapy, occupational therapy, and counseling, may be advised in addition to medicine to help control symptoms and improve quality of life for people with MS.

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إدارة التشخيص الصحي

Patient Education Department

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