



THE LATEST ON

MULTIPLE SCLEROSIS

AN IMMUNE SYSTEM RESET

New research explains how stem cell transplants treat—and possibly cure—MS. In MS, immune cells mistakenly attack your nerve cells. For a stem cell transplant, you take powerful medicines that wipe out almost all your immune cells. Then the new stem cells generate a brand-new immune system that won't attack you. Some immune cells, called memory T cells, survive the powerful drugs. But they are too damaged to trigger MS attacks. Other immune cells regenerate over time. The thymus gland, which trained your young immune system to fight illness, is typically dormant in adults. But after a stem cell transplant, it comes out of retirement and teaches your new immune system how to protect you.

SOURCE: Science Translational Medicine

3.5 in 1,000

A U.S. person's odds of developing MS—that's less than half of a percent.

SOURCE: Multiple Sclerosis Association of America

6 in 7

Number of people with MS who have the relapsing type.

SOURCE: MS Society

A COMMON BOND

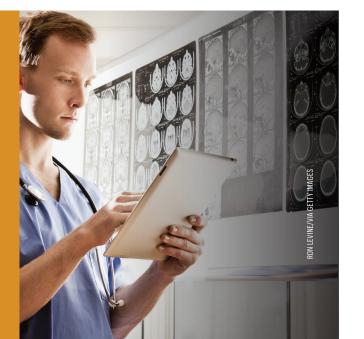
In MS, anti-inflammatory T cells don't do their job. Then, unchecked inflammation leads to brain lesions. Know what other illness causes T cells to act up and trigger inflammation? COVID-19. The two conditions might respond to the same new medicine. When researchers tested an experimental antibody treatment in someone with COVID, the nasal spray put lazy T cells to work and brought lung inflammation down. When they tried it in someone with MS, T cells got busy again and, this time, eased brain inflammation. It's early still, but the twin findings could one day lead to a drug that gets approved for both conditions.

SOURCE: Proceedings of the National Academy of Sciences

BRAIN BOOSTER

MS is a demyelinating disease. It erodes nerve-cell coverings called myelin, which leads to inflammation, nerve damage, and MS symptoms. Scientists may have just gotten one step closer to regrowing myelin. A protein in the brain called fractalkine produces the type of brain cells that generate myelin. Researchers suspected that boosting fractalkine levels could prompt the body to replace damaged nerve-cell coverings. In lab experiments, when they injected mice with powerful protein, their brains upped the generation of myelin-producing cells. It's a long road from there to a new treatment, but the researchers hope it could one day stop or even reverse MS progress.

SOURCE: Stem Cell Reports





NEUROLOGIST IRIS MARIN COLLAZO DISCUSSES HOW DOCTORS CHOOSE A COURSE OF TREATMENT

By Sonya Collins

Reviewed by Brunilda Nazario, MD, WebMD Chief Physician Editor, Medical Affairs

You have many options available to treat your MS. Before doctors make a recommendation on what might be the best fit for you, they weigh many factors, including your disease severity, your overall health, and your personal preferences. Iris Marin Collazo, MD, a neurologist and director of the Multidisciplinary Clinic for Patients with MS at Mayo Clinic in Jacksonville, FL, explains.

Q. What factors do doctors consider before they recommend a treatment for a patient with MS?

Every patient with MS is different, so you have to take a patient-centered approach. You need to consider the type of MS, whether it's relapsing-remitting, primary progressive, or secondary progressive. You also have to consider other conditions the patient may have. You can treat more than one condition with certain drugs. The patient's prognosis is important, too. For patients who have higher odds of relapse or new lesions, you might want to be more aggressive and go with higher-efficacy drugs.

Q. What patient preferences do you consider before you recommend a medication?

We have to consider whether they can accept the risk of the side effects that come with that medication. Also, whether they are planning to get pregnant influences our recommendation. We need to make sure they are comfortable with the route of administration, too. There are oral medications, drugs you inject yourself, and IV infusions you go to a clinic to receive. They also need to be willing to follow through with all of the monitoring and testing that treatment requires.

Q. How do you know whether the treatment is working?

With relapsing MS, we should know within 6 months whether the medication is working. With progressive, we might have to wait at least a year. Within 3 to 6 months of starting the medication, I do a new neurological exam, order a new MRI, and ask the patient about side effects and generally how they are doing. That's when they might say whether they are still having relapses or whether they feel that they are still progressing. We compare how they are now to how they were before they started the medication.

Q. What are some of the reasons that people with MS might change medications?

If the medication isn't controlling the disease, you would try a different one. If a patient is unable to tolerate the medication, that would be a reason to switch. A patient who can't take it as prescribed—for example, if they can't remember to take the pill every day or twice a day—might need to try something else. We may also switch if their labs come back abnormal or if they are planning to get pregnant.

JTO COURTESY OF MAYO CLIN

TREATMENTS FOR MS

OPTIONS FOR MANAGING YOUR DISEASE

Bv Rachel Reiff Ellis Reviewed by Brunilda Nazario, MD, WebMD Chief Physician Editor, Medical Affairs

Multiple sclerosis is a disease of the brain and spinal cord. When you have it, your immune system attacks the protective sheath (the myelin) that covers your nerve fibers, disrupting communication between your brain and the rest of your body.

"At a very basic level, it's a part of a person's own immune system getting triggered to produce cells that create lesions, which in turn causes symptoms," says Jai S. Perumal, MD, an associate professor of clinical neurology at Weill Cornell Medicine in New York City.

The symptoms you have depend on where your lesions are. Spinal cord lesions tend to affect walking, for example, whereas lesions on your optic nerve cause problems with vision.

MS doesn't have a cure, but there are many treatments. They focus on relieving attack symptoms, slowing down the progression of your disease, and preventing relapses.

TREATMENT FOR ATTACK SYMPTOMS

When you're experiencing acute MS symptoms, the most common treatment is for your doctor to prescribe

"Steroids will bring down the inflammation right away," Perumal says. "It helps healing."

If your body can't tolerate steroids, your doctor will try intravenous immunoglobulins (IVIG). In very severe relapses that don't respond to steroids, your doctor can try plasma exchange, a procedure that removes the liquid portion of part of your blood (plasma), separates out the blood cells to remove harmful antibodies, and mixes blood cells with a protein solution and puts them back into your body.

"For most part, patients who have an MS relapse respond well to steroids and even if they may not notice an effect right away, sometimes a few days later it kicks in," Perumal says.



SLOW DISEASE PROGRESSION

Most of the response from your body's immune system happens in the early stages of MS. Treatment with diseasemodifying treatments (DMTs) as early as possible can lower your rate of relapse and slow the formation of new lesions.

There are over 20 different DMT options. Some are injectable, some are medications you take by mouth, and others are infusions.

"Some medications are what we call immune-modulating, which don't suppress the immune system that much, and other treatments do suppress the immune system," Perumal says. "But all of these drugs control the immune system from causing damage by acting on one or more steps where the immune system gets triggered and crosses into the brain and causes problems."

These medications come with some health risks, so your doctor will monitor you both for side effects and to see if the treatment is working.

"Optimal, early treatment is the best weapon we have

against long-term disability or consequences from MS," Perumal says. "So don't put off treatment-start early. Talk to a neurologist who specializes in MS and has kept up with the treatments so that they can really discuss the whole thing with you and find the best fit in terms of treatment for you."

OTHER THERAPIES

- + Physical therapy to strengthen and
- + Muscle relaxants for
- + Muscle strengthening **meds** to increase walking speed.
- Medications for sexual function, depression, pain, fatigue, or bladder/bowel issues.

HOW I FOUND MY BEST MS TREATMENT PLAN

FROM MEDICAL TO MENTAL, HERE'S HOW I MANAGE MY CONDITION

By Julie James

Reviewed by Brunilda Nazario, MD, Chief Physician Editor, Medical Affairs

In 2019, I was in my early 40s and having a rough year after my husband died the year before. I started to notice I couldn't lift the front part of my foot normally when running or taking a long walk. I'd had on-and-off symptoms for years that were written off, but I finally told my doctor something was not right. They found an injury in my lower spine and sent me to physical therapy, but it didn't get better. I kept pushing for answers and they scanned farther up my back. That's when they saw the white spots or lesions and sent me to a neurologist.

After my diagnosis, I had a round of steroids to get the immediate flare under control. But the long-term goal of MS treatment is not to progress. I'm in the fourth year of my infusions and my scans have shown no new MS activity or lesions.

A DOCTOR WHO LISTENS

The first step to your best treatment plan is finding the right doctor. After MRI scans of my spine showed the lesions, I was referred to a neurologist who everyone said was amazing. He might have been amazing, but he wasn't amazing for me. We didn't click.

Fortunately, while waiting for that appointment, I'd been to see another neurologist. She's the one who told me definitively, "You have MS." I started crying and then I started apologizing for crying. She sat with me for an hour,

letting me ask questions and interrupt her when I didn't understand. She asked me about my life ambitions, what I do for work, my relationships, and activity level. She reassured me and presented treatment options to move forward. I started B-cell therapy infusions twice a year right from the

MANAGING SIDE EFFECTS

The infusions work by killing immune B cells. Infections are a common side effect, and I started getting sinus infections.

At one point, my doctor said if it kept happening, we might need to take a different approach to treatment with daily medications. Fortunately, we got the sinuses under control with a nasal spray, and I've been able to stick with the infusions.

A HOLISTIC APPROACH

There's the medical side of treatment with scans and infusions, and there's the mental side of it. When I had the original flare-up, I was dealing with trauma from my losing my husband and other life stresses.

Once I got my diagnosis, I knew that I couldn't let it get the best of me. You have to mentally take it on. Don't get me wrong, it sucks. But I was happy to know what it was so that I could educate myself and my support system and tackle it. I'm 45 now and listening

FIRST PERSON SCAN ME . Read about How B-Cell Therapy Affects MS. Use camera to active the QR code.



JULIE'S TIPS

- + Take time to let the diagnosis hit you.
- + MS is a shock, but you will have support.
- + Be open about days when your body isn't as strong as others and let people help.

to my body more than I ever had before. Some days my body doesn't cooperate, but I am blessed with a treatment that's working. You can't change your diagnosis, so the question to ask yourself is: How do you move forward in the best way for yourself?

MY MS **JOURNEY**

HANDLING FLARES TO HONORING MY NEEDS

By Nicole White

Reviewed by Brunilda Nazario, MD, Chief Physician Editor, Medical Affairs

My MS was missed for many years. In 2019, at the age of 42, I was hospitalized for stroke symptoms and treated with 10 days of steroids. Due to my young age, the neurologist pressed for more testing. His persistence led to my multiple sclerosis (MS) diagnosis.

RECOGNIZE A FLARE

Early on, I had three exacerbations or flares, with my first one being the most damaging. For probably a month beforehand, I had tingling in my fingers. I kept saying my fingers felt frostbitten even though I had never had frostbite. I was an elementary school principal, and it was the start of a school year. It was a very stressful time, but I was used to operating at a high level of stress.

On top of the tingling fingers, I was very fatigued and severely depressed.

But I didn't connect what was happening to me with my MS diagnosis. I chocked it up to being tired and overstressed. But within weeks, my mind was cloudy, and I was moving and talking slowly. I called my neurologist, and he told me to go to the ER. By the time I got there, I couldn't move my legs. My entire body went numb. The MRI scan showed I had active lesions.

CONSERVE ENERGY. LOWER STRESS

My MS was aggressive, and it took time to get on an effective treatment plan. I've since made lifestyle changes to lower my stress, understand my body, and get healthier. Now at 46, I still have symptoms and some of my skill sets have decreased. While my MS is still active, I am feeling a lot better and haven't had a flare in a little over a year.

To manage your MS and avoid flares, in addition to honoring your treatment regimen, it's important to understand what causes inflammation, how to conserve your energy, and how to manage your stress. You have to take time to rest. For me, emotions are a big trigger. The more emotional distress I endure, the more symptoms I have. If I need to deal with people or situations that add stress or upset me, I have to also give myself the time and space for self-care and recovery.

TAKE NOTES

Another key is knowing your body. The tingling in my fingers was a flare symptom that had been going on for weeks. Keep a diary of symptoms and listen to what your body is telling you. If you notice small things, like changes in your speech, write that down.

A diary can help you track time and catalog new symptoms or the return of old symptoms. Of course, not everything you notice in your body will be related to MS. But there's no way to be sure. Pay attention and keep a catalog of it all, so you and your doctors can catch those early signs of a flare.

occupational therapy (OT), physical therapy (PT), speech therapy, and mental health therapy. All these approaches can give you tools to prolong wellness and safety.

Make sure the people around you—your friends and family—know how to support you. Connecting with the MS community also helps. Internalizing their positive inspiration and building your own awareness will help you make sound decisions. Holding off flares is all about understanding how MS manifests in your body and managing your life in the best way that you can.

HONOR YOUR NEEDS AND RESOURCES Therapies are a big help, too. This includes



NICOLE'S TIPS

- + Be your own advocate.
- + MS is invisible and sometimes it's a fight. Find your voice and fight for what your body needs.
- + Empower your family and friends to understand how to support you. Don't tackle this alone.

WHAT TO EXPECT FINANCIALLY

Bv Rachel Reiff Ellis Reviewed by Brunilda Nazario, MD, WebMD Chief Physician Editor, Medical Affairs

There's no way around it—MS can be an expensive disease to manage. The best way to handle the financial aspect of MS is to prepare financially for the unexpected and make informed choices throughout the journey.

WHAT YOU'RE PAYING

The actual amount people spend on MS care per year varies depending on the treatments you take, daily life needs, and the type of insurance you have, says Bari Talente, executive vice president for advocacy and healthcare access at the National MS Society (NMSS). But based on NMSS research, the average family should plan for it to cost around \$88,000 a year.

"Direct medical costs such as doctor's appointments and medications are the biggest contributor to the high cost," she says. And the most expensive of the medications are disease-modifying therapies (DMTs).

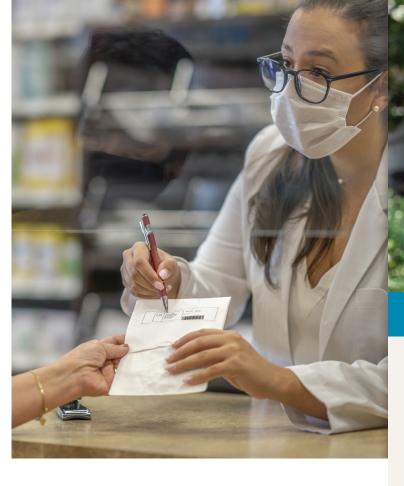
INSURANCE INTEL

Do a deep dive into your coverage, and be sure you understand what's in your plan and what isn't.

"It's essential that someone who is newly diagnosed with MS check with their insurance company regarding what out-of-pocket costs such as copays and cost-sharing can be expected with MS treatments," Talente says.

Find out if your insurance company requires prior authorization before insurance will pick up the cost, for

"Additionally, some insurance companies require 'step



drugs do not work before covering the drug the provider prescribed," she says. "[These strategies] often delay access to treatment, which may lead to a worse prognosis, disease relapse, or further disability, so it's important to clarify if an insurer uses these practices as soon as possible."

at include:

- **Benefits:** What are the covered benefits and associated costs? Are there restrictions or limits on any benefits or services?
- Access to providers: Are your preferred providers considered in-network, including hospitals and pharmacies? What will the cost be if a provider is not in the network?
- Access to medications: Are your medications covered by the plan? What tiers are your medications on? What is the costsharing amount? If you use financial assistance from a third party, will that count toward your deductible?

RESOURCES THAT CAN HELP

NMSS's Get Covered web page has comprehensive content on things to consider when seeking health insurance coverage as well as resources for finding care without insurance. They also provide places to go for assistance with medication costs.

"[The RX Help] web page has a focus on disease-modifying therapies as well as a small section of other commonly used medications for people with MS," Talente says.

Find these self-service guides at: NationalMSSociety.org/GetCovered and NationalMSSociety.org/RXHelp.

therapy, or having a patient try other drugs and prove that these

Talente says when comparing plans, the main categories to look

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

KESIMPTA can cause serious side effects such as:

SEE WHAT
ONCE-MONTHLY*
KESIMPTA CAN DO

FOR YOUR RMS

Once monthly after 3 weel

Indication

injection?

Rachel W. has taken KESIMPTA and has

What is KESIMPTA (ofatumumab)

KESIMPTA is a prescription medicine

forms of multiple sclerosis (MS) including

relapsing-remitting disease, and active

It is not known if KESIMPTA is safe or

used to treat adults with relapsing

clinically isolated syndrome (CIS),

secondary progressive disease.

Important Safety Information

Who should not take KESIMPTA?

Do NOT take KESIMPTA if you have

active hepatitis B virus (HBV) infection.

effective in children.

- Infections. Serious infections can happen during treatment with KESIMPTA. If you have an active infection, your healthcare provider (HCP) should delay your treatment with KESIMPTA until your infection is gone. KESIMPTA taken before or after other medicines that weaken the immune system may increase your risk of getting infections. Tell your HCP right away if you have any infections or get any symptoms including painful and frequent urination, nasal congestion, runny nose, sore throat, fever, chills, cough, or body aches.
- HBV reactivation. If you have ever had HBV infection, it may become active again during or after treatment

with KESIMPTA (reactivation). If this happens, it may cause serious liver problems including liver failure or death. Before starting KESIMPTA, your HCP will do a blood test to check for HBV. They will also continue to monitor you during and after treatment with KESIMPTA for HBV. Tell your HCP right away if you get worsening tiredness or yellowing of your skin or the white part of vour eves.

Check out how the KESIMPTA Sensoready® Pen works! Scan here.

 Progressive Multifocal Leukoencephalopathy (PML). PML may happen with KESIMPTA. PML is a rare, serious brain infection caused by a virus that may get worse over days or weeks. PML can result in death or severe disability. Tell your HCP right away if you have any new or worsening neurologic signs or symptoms. These may include weakness on one side of your body, loss of coordination in arms and legs, vision problems, changes in thinking and memory, which may lead to confusion and personality changes.

 Weakened immune system. KESIMPTA taken before or after other medicines that weaken the immune system could increase your risk of getting infections.

Before you take KESIMPTA, tell your HCP about all your medical conditions, including if you:

- Have or think you have an infection including HBV or PML.
- · Have ever taken, currently take, or plan to take medicines that affect your immune system. These medicines

could increase your risk of getting an infection.

RACHEL W.

On KESIMPTA® since 2020

Kesimpta (ofatumumab) 20 mg (njection

- · Have had a recent vaccination or are scheduled to receive any vaccinations.
- O You should receive any required 'live' or 'live-attenuated' vaccines at least 4 weeks before you start treatment with KESIMPTA. You should not receive 'live' or 'live-attenuated' vaccines while you are being treated with KESIMPTA and until your HCP tells you that your immune system is no longer weakened.
- O Whenever possible, you should receive any 'non-live' vaccines at least 2 weeks before you start treatment with KESIMPTA.
- O Talk to your HCP about vaccinations for your baby if you used KESIMPTA during your pregnancy.
- · Are pregnant, think that you might be pregnant, or plan to become pregnant. It is not known if KESIMPTA will harm your unborn baby. Females who can become pregnant should use birth control (contraception) during treatment with KESIMPTA and for 6 months after your last treatment. Talk with your HCP about what birth control method is right for you during this time.
- Are breastfeeding or plan to breastfeed. It is not known if KESIMPTA passes into your breast milk. Talk to your HCP about the best

Please see additional Important Safety Information on back cover and accompanying Consumer Brief Summary on the following page.

Consumer Brief Summary



The risk information provided here is not comprehensive. This information does not take the place of talking with your doctor about your medical condition or treatment.

To learn more about KESIMPTA (ofatumumab) injections, talk to your doctor or pharmacist. For more information and to obtain the FDA-approved product labeling, call 1-888-669-6682 or visit www.kesimpta.com.

What is the most important information I should know about KESIMPTA?

KESIMPTA can cause serious side effects, including:

Infections. Serious infections can happen during treatment with KESIMPTA. If you have an active infection, your healthcare provider should delay your treatment with KESIMPTA until your infection is gone. KESIMPTA taken before or after other medicines that weaken the immune system may increase your risk of getting infections.

Tell your healthcare provider right away if you have any infections or get any symptoms including painful and frequent urination, nasal congestion, runny nose, sore throat, fever, chills, cough, or body aches.

- Hepatitis B virus (HBV) reactivation. Before starting treatment with KESIMPTA, your healthcare provider will do blood tests to check for HBV. If you have ever had HBV infection, the HBV may become active again during or after treatment with KESIMPTA. Hepatitis B virus becoming active again (called reactivation) may cause serious liver problems including liver failure or death. You should not receive KESIMPTA if you have active hepatitis B liver disease. Your healthcare provider will monitor you for HBV infection during and after you stop using KESIMPTA. Tell your healthcare provider right away if you get worsening tiredness or yellowing of your skin or white part of your eyes during treatment with KESIMPTA.
- Progressive Multifocal Leukoencephalopathy (PML).

 PML may happen with KESIMPTA. PML is a rare, serious brain infection caused by a virus that may get worse over days or weeks. PML can result in death or severe disability. Tell your healthcare provider right away if you have any new or worsening neurologic signs or symptoms. These may include weakness on one side of your body, loss of coordination in arms and legs, vision problems, changes in thinking and memory which may lead to confusion and personality changes.

Weakened immune system. KESIMPTA taken before or after other medicines that weaken the immune system could increase your risk of getting infections.

What is KESIMPTA?

KESIMPTA is a prescription medicine used to treat adults with relapsing forms of multiple sclerosis (MS) including:

- clinically isolated syndrome
- relapsing-remitting disease
- active secondary progressive disease

It is not known if KESIMPTA is safe or effective in children.

Do not use KESIMPTA if you:

• have active hepatitis B virus infection.

Before using KESIMPTA, tell your healthcare provider about all of your medical conditions, including if you:

- have or think you have an infection, including HBV or PML. See "What is the most important information I should know about KESIMPTA?"
- have ever taken, currently take, or plan to take medicines that affect your immune system. These medicines could increase your risk of getting an infection.
- have had a recent vaccination or are scheduled to receive any vaccinations.
- O You should receive any required 'live' or 'liveattenuated' vaccines at least 4 weeks before you start treatment with KESIMPTA. You should not receive 'live' or 'live-attenuated' vaccines while you are being treated with KESIMPTA and until your healthcare provider tells you that your immune system is no longer weakened.
- Whenever possible, you should receive any 'non-live' vaccines at least 2 weeks before you start treatment with KESIMPTA.
- Talk to your healthcare provider about vaccinations for your baby if you used KESIMPTA during your pregnancy.
- are pregnant, think that you might be pregnant, or plan to become pregnant. It is not known if KESIMPTA will harm your unborn baby. Females who can become pregnant should use birth control (contraception) during treatment with KESIMPTA and for 6 months after your last treatment. Talk with your healthcare provider about what birth control method is right for you during this time.
- are breastfeeding or plan to breastfeed. It is not known if KESIMPTA passes into your breast milk. Talk to your healthcare provider about the best way to feed your baby if you take KESIMPTA.

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements.

Know the medicines you take. Keep a list of them to show your healthcare provider and pharmacist when you get a new medicine.

How should I use KESIMPTA?

See the detailed Instructions for Use that comes with KESIMPTA for information about how to prepare and inject a dose of KESIMPTA and how to properly throw away (dispose of) used KESIMPTA Sensoready® pens or prefilled syringes.

- Use KESIMPTA exactly as your healthcare provider tells you to use it.
- KESIMPTA is given as an injection under your skin (subcutaneous injection), in your thigh or stomach-area (abdomen) by you or a caregiver. A caregiver may also give you an injection of KESIMPTA in your upper outer arm.
- Your healthcare provider will show you how to prepare and inject KESIMPTA the right way before you use it for the first time.
- Do not inject into areas where the skin is tender, bruised, red, scaly or hard. Avoid areas with moles, scars or stretch marks.
- The initial dosing is 20 mg of KESIMPTA given by subcutaneous injection at Weeks 0, 1, and 2. There is no injection at Week 3. Starting at Week 4 and then every month, the recommended dose is 20 mg of KESIMPTA administered by subcutaneous injection.

If you miss an injection of KESIMPTA at Week 0, 1, or 2, talk to your healthcare provider. If you miss a monthly injection, give it as soon as possible without waiting until the next scheduled dose. After that, give your KESIMPTA injections a month apart.

What are the possible side effects of KESIMPTA?

KESIMPTA may cause serious side effects, including:

See "What is the most important information I should know about KESIMPTA?"

- Injection-related reactions. Injection-related reactions is a common side effect of KESIMPTA. Injecting KESIMPTA can cause injection-related reactions that can happen within 24 hours (1 day) following the first injections and with later injections. Talk with your healthcare provider if you have any of these signs and symptoms:
- o **at or near the injection site:** redness of the skin, swelling, itching and pain or
- o **that may happen when certain substances are released in your body:** fever, headache, pain in the muscles, chills, and tiredness.
- Low immunoglobulins. KESIMPTA may cause a decrease in some types of antibodies. Your healthcare provider will do blood tests to check your blood immunoglobulin levels.

The most common side effects of KESIMPTA include:

- upper respiratory tract infection, with symptoms such as sore throat and runny nose, and headache. (See "What is the most important information I should know about KESIMPTA?")
- headache

These are not all the possible side effects of KESIMPTA. Call your doctor for medical advice about side effects.

You may report side effects to FDA at 1-800-FDA-1088.

How should I store KESIMPTA?

- Store KESIMPTA in a refrigerator between 36°F to 46°F (2°C to 8°C).
- Keep KESIMPTA in the original carton until ready for use to protect from light.
- If needed, KESIMPTA may be stored for up to 7 days at room temperature, up to 86°F (30°C).
- Write the date taken out of the refrigerator in the space provided on the carton.
- If stored below 86°F (30°C), unused KESIMPTA may be returned to the refrigerator and must be used within the next 7 days. If this KESIMPTA is not used within those 7 days, then discard the medicine.
- Do not freeze KESIMPTA.
- Do not shake KESIMPTA.

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

General information about the safe and effective use of KESIMPTA.

Medicines are sometimes prescribed for purposes other than those listed in a Medication Guide. Do not use KESIMPTA for a condition for which it was not prescribed. Do not give KESIMPTA to other people, even if they have the same symptoms that you have. It may harm them.

You can ask your pharmacist or healthcare provider for information about KESIMPTA that is written for health professionals.

What are the ingredients in KESIMPTA?

Active ingredient: ofatumumab

Inactive ingredients: Sensoready pen and prefilled syringe: arginine, disodium edetate, polysorbate 80, sodium acetate trihydrate, sodium chloride, and Water for Injection. Hydrochloric acid may be added.



KESIMPTA offers a powerful combination of benefits:



SUPERIOR AT REDUCING

the rate of relapses vs AUBAGIO®†



PROVEN SAFETY

in 2 head-to-head studies[†]



LESS THAN ONE MINUTE A MONTH,

when ready to take¹

Scan to hear stories from patients like Maggie.



MS, multiple sclerosis.

*Once monthly after 3 weekly starter doses. †In 2 studies vs AUBAGIO (teriflunomide). †Typical injection time when ready to take. Maggie S. has taken KESIMPTA and has been compensated for her time.

· way to feed your baby if you take KESIMPTA.

Tell your HCP about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements.

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- · Your HCP will show you how to prepare and inject KESIMPTA the right way before you use it for the first time.
- Do not inject into areas where the

Novartis Pharmaceuticals Corporation East Hanover, New Jersey 07936-1080

skin is tender, bruised, red, scaly or hard. Avoid areas with moles, scars, or • Low immunoglobulins. KESIMPTA stretch marks.

KESIMPTA may cause serious side effects including:

- · Injection-related reactions. Injection-related reactions are a common side effect of KESIMPTA. Injecting KESIMPTA can cause injection-related reactions that can happen within 24 hours (1 day) following the first injections and with later injections. Talk with your HCP if you have any of these signs and symptoms:
 - o at or near the injection site: redness of the skin, swelling, itching, and pain or
 - that may happen when certain substances are released in your

muscles, chills, and tiredness.

may cause a decrease in some types of antibodies. Your HCP will do blood tests to check your blood immunoglobulin levels.

The most common side effects of **KESIMPTA** include:

- Upper respiratory tract infection, with symptoms such as sore throat and runny nose, and headache.
- · Headache.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

Please see additional Important Safety Information and the accompanying body: fever, headache, pain in the Consumer Brief Summary inside.

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