

A Breakthrough in
WHIM Syndrome

A Therapy That Targets the Underlying
Cause of WHIM Syndrome to

Help Improve Immune Function



Patient portrayals

WHAT IS XOLREMDI® (mavorixafor)?

XOLREMDI is an oral prescription medicine used in people 12 years of age and older with WHIM (warts, hypogammaglobulinemia, infections and myelokathexis) syndrome to increase the number of certain white blood cells (neutrophils and lymphocytes) circulating in the bloodstream.

IMPORTANT SAFETY INFORMATION

Before taking XOLREMDI, tell your healthcare provider if you are pregnant, nursing, or plan to become pregnant. XOLREMDI can harm your unborn baby. You must use a reliable method of birth control (contraception) during treatment and for three weeks after you stop taking XOLREMDI.

Please see the full **Important Safety Information on page 13** and the **[Prescribing Information](#)**.

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(mavorixafor) capsules

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WHIM Syndrome Increases Your Infection Risk

WHIM (warts, hypogammaglobulinemia, infections, and myelokathexis) syndrome is a rare condition where the body's immune system doesn't function properly and has trouble fighting infections.

WHIM syndrome causes low levels of white blood cells in the bloodstream, which can lead to weakened immunity.



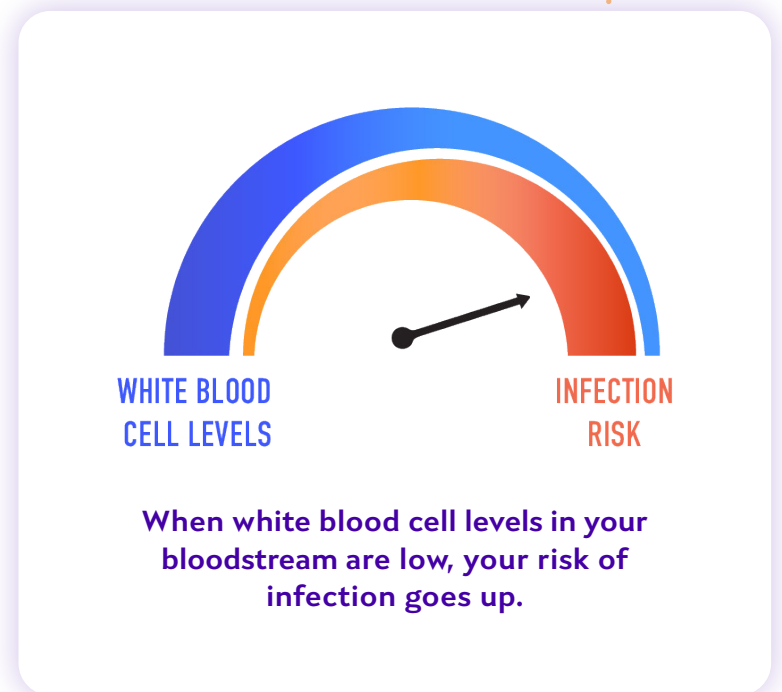
White blood cells are an essential part of the immune system, helping your body defend against bacteria and viruses.



WHIM syndrome causes low levels of white blood cells—including neutrophils and lymphocytes—in the bloodstream, making you especially vulnerable to frequent and possibly serious infections.

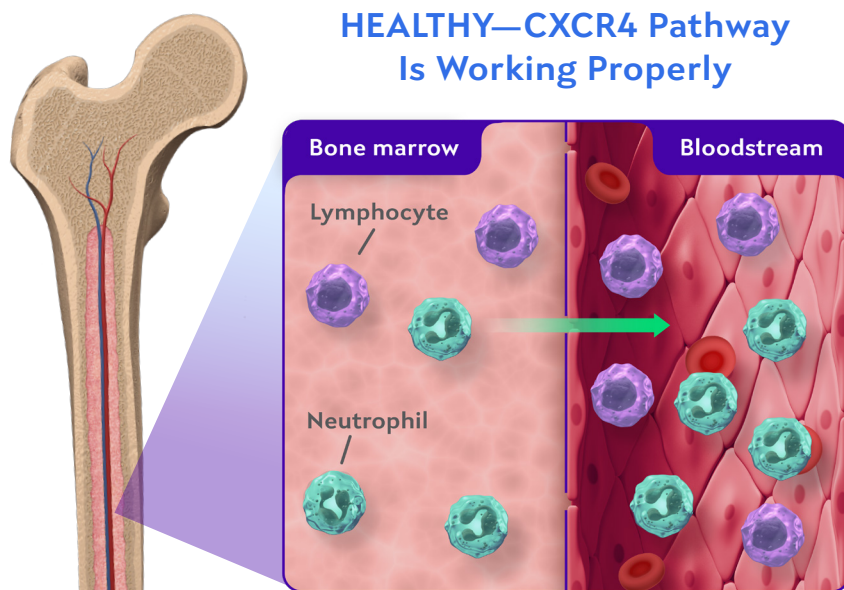


Increasing white blood cell levels in your bloodstream may help improve immune function, helping your body fight infections.

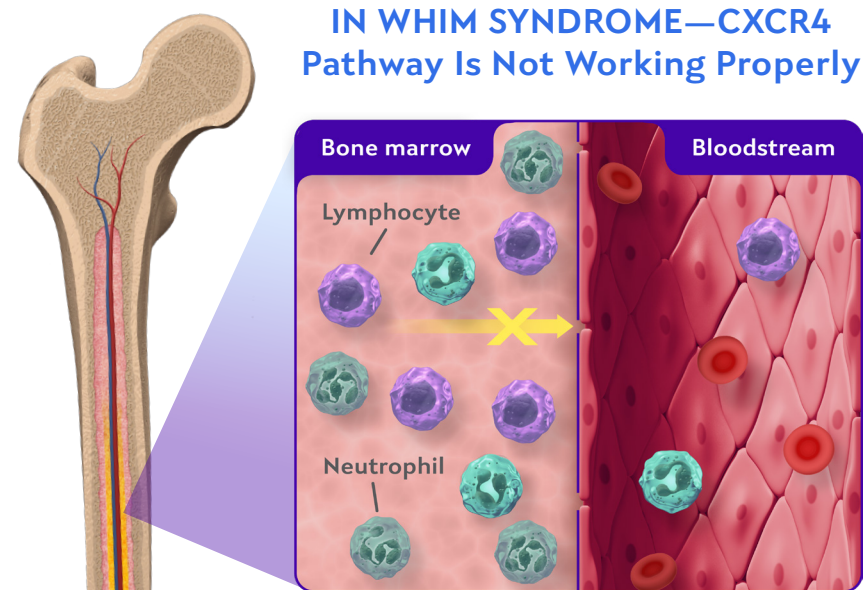


The Underlying Cause of WHIM Syndrome

The CXCR4 pathway helps white blood cells move from the bone marrow into the bloodstream, where they can help fight infections. In WHIM syndrome, this pathway does not work properly, preventing most white blood cells from leaving the bone marrow. **This is the underlying cause of the condition.**



White blood cells, like neutrophils and lymphocytes, move normally into the bloodstream.



Many white blood cells get stuck in the bone marrow.

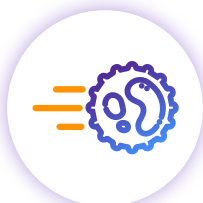
With low levels of white blood cells in the bloodstream, the body is immunocompromised and vulnerable to infections.

XOLREMDI Is the First and Only FDA-Approved Therapy for Use in WHIM Syndrome

XOLREMDI is a once-daily, oral treatment used in people with WHIM syndrome ages 12 years and older to increase the number of certain white blood cells (neutrophils and lymphocytes) circulating in the bloodstream.



XOLREMDI targets the underlying cause of WHIM syndrome, the CXCR4 pathway that is not working properly.



White blood cells that were stuck in the bone marrow can move into the bloodstream, improving the body's ability to fight infections.

XOLREMDI targets the underlying cause of WHIM syndrome to **HELP IMPROVE IMMUNE FUNCTION**

IMPORTANT SAFETY INFORMATION: What should I tell my healthcare provider before taking XOLREMDI?

Before taking XOLREMDI, tell your healthcare provider if you are pregnant, nursing, or plan to become pregnant. XOLREMDI can harm your unborn baby. You must use a reliable method of birth control (contraception) during treatment and for three weeks after you stop taking XOLREMDI. Talk to your healthcare provider about options for effective birth control and the best way to feed your baby while taking XOLREMDI.

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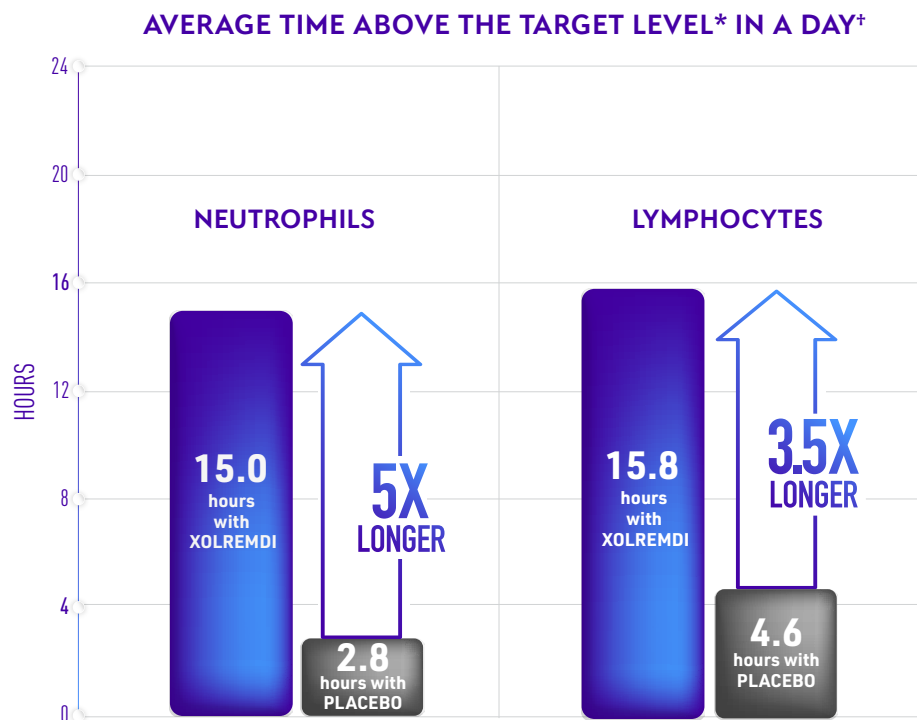
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XOLREMDI Helps Improve Immune Function

Study results showed XOLREMDI raised certain white blood cell levels in the bloodstream

In a clinical study, people taking XOLREMDI had **higher levels of certain white blood cells (neutrophils and lymphocytes) in their bloodstream for significantly longer** than people taking placebo.



When
NEUTROPHILS
and **LYMPHOCYTES**
are **above the target**
level*, the risk
of infection
goes down.

XOLREMDI was evaluated in a 1-year clinical study of 31 people aged 12 years and older with WHIM syndrome. People in the study were randomly assigned into 2 groups: 14 people took XOLREMDI, 17 people took a placebo (sugar pill), and results were compared.

The study results for XOLREMDI are an average of all people studied and differed among individuals. Your experience may be different.

*The target neutrophil level was defined as an absolute neutrophil count (ANC) ≥ 500 cells/ μ L, measured with a blood test. Below this level is considered severe neutropenia. The target lymphocyte level was defined as an absolute lymphocyte count (ALC) $\geq 1,000$ cells/ μ L, measured with a blood test. Below this level is considered lymphopenia.

†The average time above the target level over a 24-hour period was measured 4 times throughout the study.

IMPORTANT SAFETY INFORMATION

Tell your healthcare provider if you have kidney, liver, or heart problems.

Tell your healthcare provider about all the prescription and over-the-counter medicines you take, as well as vitamins and herbal supplements, such as goldenseal and St. John's Wort.

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The Effect of XOLREMDI on Infections and Warts

Additional study results:



Infection Frequency and Severity (called Infection Score)

People who took XOLREMDI had on average a 40% decrease in infection score compared with people who took placebo.



Changes to Warts (called Wart Change Score)

There was no difference in wart change score between people who took XOLREMDI compared with people who took placebo.

The study results for XOLREMDI are an average of all people studied and differed among individuals. Your experience may be different.



IMPORTANT SAFETY INFORMATION

XOLREMDI may affect the way other medicines work, and other medicines may affect how XOLREMDI works. It is especially important to tell your healthcare provider if you are taking a type of pain medicine called opioids or any medications for depression or other mental health disorders, abnormal heart rhythm, high blood pressure, or breast cancer. If you are taking these medications while you are taking XOLREMDI, your healthcare provider may stop XOLREMDI, decide to change your dose, or monitor you more closely.

You should not eat grapefruit or drink grapefruit juice while taking XOLREMDI.

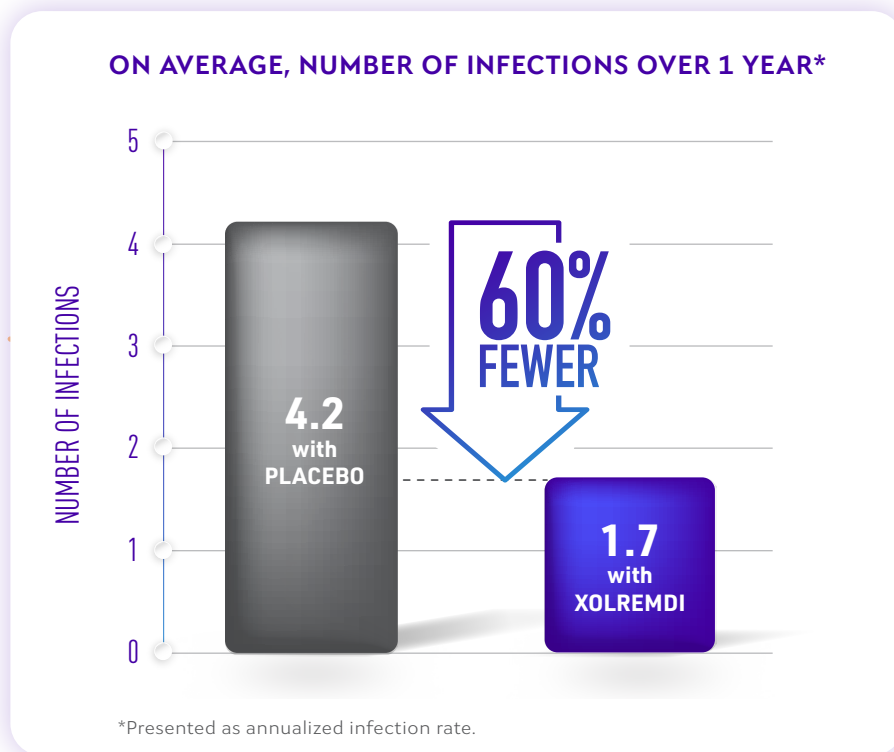
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XOLREMDI Resulted in Fewer Infections

In a clinical study, people taking XOLREMDI had on average 60% fewer infections throughout the year compared with people taking placebo



Over 1 year, people taking **XOLREMDI HAD 1.7 INFECTIONS ON AVERAGE** compared with 4.2 infections for people taking placebo.

The study results for XOLREMDI are an average of all people studied and differed among individuals. Your experience may be different.

IMPORTANT SAFETY INFORMATION: What are the possible side effects of XOLREMDI?

In patients with certain risk factors, XOLREMDI may cause a serious heart rhythm problem (QT prolongation).

The most common side effects of XOLREMDI are low platelet count (thrombocytopenia), rash (including a kind of rash called pityriasis), nasal irritation, nosebleeds, vomiting, and dizziness.

Side Effects

XOLREMDI side effects were evaluated in a 1-year clinical study of 31 people with WHIM syndrome.

The most common side effects* were:

- Low platelet count (thrombocytopenia)
- Rash (including a kind called pityriasis)
- Nasal irritation
- Nosebleeds
- Vomiting
- Dizziness

*Experienced by more than 10% of people taking XOLREMDI and more often than by people taking placebo.

In patients with certain risk factors, XOLREMDI may cause a serious heart rhythm problem (QT prolongation).

These are not all the possible side effects of XOLREMDI. Tell your healthcare provider if you have any side effects that bother you or do not go away.

You are encouraged to report side effects of prescription drugs to the FDA at www.fda.gov/medwatch or by calling **1-800-FDA-1088**. You may also call X4 Pharmaceuticals at **1-866-MED-X4MI (1-866-633-9464)**.

QUESTIONS ABOUT SIDE EFFECTS?

Talk to your
healthcare team.



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What to Tell Your Healthcare Team

Before and while taking XOLREMDI, it's important to discuss any changes in your health or medications with your healthcare team.



Your Health

Tell your healthcare team right away if you are:

- Diagnosed with kidney, liver, or heart issues
- Pregnant or planning to become pregnant
- Nursing or planning to nurse
- Planning a change in your birth control

Do not take XOLREMDI if you are pregnant as XOLREMDI can harm your unborn baby. Birth control is required while taking XOLREMDI and for three weeks after you stop taking XOLREMDI. Talk to your healthcare provider about options for effective birth control and the best way to feed your baby while taking XOLREMDI.



Your Medications

Some medications and supplements should not be taken with XOLREMDI. If you are taking these medications while you are taking XOLREMDI, your healthcare provider may stop XOLREMDI, decide to change your dose, or monitor you more closely.

Give your healthcare team a list of all prescription and over-the-counter medicines, herbs, and dietary supplements you're taking. Update the list if anything changes. Avoid taking supplements that contain goldenseal or St. John's Wort, and avoid eating or drinking anything containing grapefruit. Interactions with XOLREMDI may occur.

It's especially important to tell your healthcare team and pharmacist if you are taking or plan to start medication for:

- Depression or other mental health disorders
- High blood pressure
- Arrhythmia (abnormal heart rhythm)
- Breast cancer
- Pain management (opioids)

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Dosing and Storage

XOLREMDI is a once-daily, oral treatment

Take XOLREMDI every day, as directed.

3 OR 4
CAPSULES



Swallow whole and do not open,
break, or chew capsules*



Once daily,
every morning



After an overnight fast,
30 minutes before food

*Your healthcare provider will prescribe your daily dosage of XOLREMDI based on your weight.

If you miss a dose of XOLREMDI, take your next dose as scheduled the following morning, on an empty stomach. Do not take more than one XOLREMDI dose each day.



REFRIGERATE

36°F to 46°F
(2°C to 8°C)[†]

Storing XOLREMDI

XOLREMDI must be refrigerated at all times and kept in the original container, with the top tightly closed to protect from moisture.

[†]Standard refrigerator temperature.



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Dedicated Support



A patient support program that offers a range of services throughout your **XOLREMDI treatment journey**. Once you have been prescribed XOLREMDI, enroll in X4Connect to access all the program has to offer.

Meet Your Team



X4 Nurse Educators*

Provide one-on-one education and resources about XOLREMDI and living with WHIM syndrome to you and your family. You can connect with an X4 Nurse Educator while you and your healthcare provider are considering XOLREMDI.



X4Connect Care Coordinators

Help you understand insurance coverage and out-of-pocket costs, find financial support, and access XOLREMDI in case of insurance delays.



X4Connect Specialty Pharmacists

Answer questions about your XOLREMDI treatment.

Learn more about X4Connect and how to enroll.

Visit **XOLREMDI.com/X4Connect** or talk to your healthcare provider.

*X4 Nurse Educators are employees of X4 Pharmaceuticals and do not work under the direction of a healthcare professional; they do not offer medical or treatment-related advice. For treatment and medical questions, you should contact your healthcare provider.



Take the Next Step

Talk to your healthcare provider to see if XOLREMDI is right for you

- ✓ Discuss your treatment goals
- ✓ Talk about your current health and lifestyle
- ✓ Ask about resources for financial support

Questions to Ask Your Healthcare Provider:

1. How long will it take for XOLREMDI to begin working?
2. What are the side effects of XOLREMDI I should be aware of?
3. Do you think XOLREMDI could be an option for me?
4. If so, how do I get started with XOLREMDI and enrolled into patient support?



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Important Safety Information and Use

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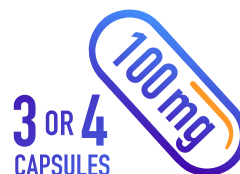
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Talk to Your Healthcare Team About XOLREMDI



The first and only FDA-
approved treatment for
use in WHIM syndrome



A once-daily, oral
medication



Targets the underlying
cause of WHIM syndrome

In a 1-year clinical study of people with WHIM syndrome, compared with placebo,
people taking XOLREMDI experienced:

- An increase in certain white blood cell levels to help improve immune function
- Reduced infection score
- No difference in wart change score
- Approximately 60% decrease in the average number of infections per year

The most common side effects of XOLREMDI are low platelet count (thrombocytopenia), rash (including a kind called pityriasis), nasal irritation, nosebleeds, vomiting, and dizziness.

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**TO LEARN
MORE, VISIT
XOLREMDI.COM**

Keep up with the latest
information about
XOLREMDI and access
helpful resources
and tools.



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