

## Methotrexate

A Patient Education Monograph prepared for the American Uveitis Society  
by Dara Khalatbari,<sup>1</sup> Rex M. McCallum,<sup>2</sup> and Glenn J. Jaffe<sup>1</sup>  
Departments of <sup>1</sup>Ophthalmology and <sup>2</sup>Medicine/Division of Rheumatology  
Duke University Medical Center  
Durham, NC, USA

January 2003

**NOTE:** The opinions expressed in this monograph are those of the author(s) and not necessarily those of the membership of the American Uveitis Society, its leadership, or the Editorial Board of UveitisSociety.org. All medical decisions should be made in consultation with one's personal physician.

### Introduction

Methotrexate (meth-o-TREX-ate) is the generic name of an [immunosuppressive](#) medication that belongs to a family of medicines known as [antimetabolites](#). Since the 1950's, methotrexate has been used for the treatment of certain cancers. Today, *much lower doses* of methotrexate are often used to treat a variety of [inflammatory diseases](#) such as rheumatoid arthritis and [uveitis](#). Brand names for methotrexate include Rheumatrex, Folex, Mexate, Trexall, and Abitrexate.

### Chemistry

Methotrexate, formerly known as amethopterin, is a [folic acid analog](#) whose chemical name is (N-{{(2,4-diamino-6-pteridinyl)-methyl}methylamino}benzoyl}-L-glutamic acid).

### How it works

Methotrexate reduces [inflammation](#) in your body. It interferes with the growth of your body's cells by blocking a particular enzyme needed by the cells to live. Rapidly growing cells, such as those of the [immune system](#) that cause [inflammation](#), are most affected. Side effects may develop, however, because the medicine can also interfere with normal body cells.

### History of usage

#### *Non-eye diseases*

Methotrexate was initially introduced in 1958 for the treatment of leukemia. Since then, lower doses of methotrexate have also been shown to be effective in the treatment of several inflammatory diseases such as rheumatoid arthritis, psoriasis, systemic lupus erythematosus, and Reiter's syndrome. Much higher doses of the medicine are used to treat certain cancers.

***Eye diseases***

Methotrexate has been used to treat a variety of inflammatory diseases of the eye. It is most often used in the treatment of severe or resistant cases of uveitis, but it may also be used in selected cases of scleritis and vasculitis. In patients treated with methotrexate, the medicine has been shown to preserve or improve vision, decrease signs and symptoms of inflammation, spare the use of corticosteroids, and allow the performance of surgical procedures, such as the removal of cataracts, to proceed safely. In clinical studies, methotrexate has been shown to be especially effective in the treatment of uveitis associated with sarcoidosis.

**How it is given**

Methotrexate is available only with your doctor's prescription. In the treatment of eye diseases, it is typically given at doses ranging from 7.5mg to 25 mg ONCE A WEEK. It is usually given by mouth, though your doctor may decide to give it as a shot in order to increase its effect or avoid side effects such as nausea. A vitamin named folic acid (1 mg/day) is usually given with methotrexate to minimize nausea and other side effects.

Methotrexate is given as long as there are no significant side effects and inflammation of the eye is controlled. Once inflammation has been controlled for 6-12 months, your doctor may decide to slowly reduce the dosage.

Once started, you should not stop taking methotrexate without first consulting you doctor.

**Possible side effects and drug interactions**

Before you begin treatment with methotrexate, you and your doctor should discuss the benefits and risks of the medicine.

Tell your doctor if you have ever had any unusual or allergic reaction to methotrexate or other related medications.

Methotrexate should never be used in pregnancy or if you are trying to conceive. Women of childbearing age **MUST** use a reliable method of birth control while on methotrexate. Breast-feeding is generally not recommended while on methotrexate. In addition, a period of time should pass after you finish methotrexate therapy before pregnancy is attempted. This applies to **BOTH** men and women.

The most common side effects are nausea, vomiting, upset stomach, loss of appetite, and irritation or ulcers of the mouth. Hair loss, rash, and/or diarrhea may also develop. Children or elderly adults may be more sensitive to methotrexate.

Side effects that are more rare include a temporary lowering of the number of white blood cells in your blood, increasing the chance of infection, a lowering of the number of platelets, affecting proper blood clotting, severe lung inflammation and liver damage.

## **Methotrexate**

As methotrexate may interact with certain medications, tell your doctor if you are taking any other prescription or over-the-counter medications before starting methotrexate. Specific drug interactions have been shown between methotrexate and cholestyramine, probenecid, and trimethoprim.

Patients on methotrexate therapy should not drink any alcohol because of potential liver damage.

### **Monitoring**

It is very important that you follow-up regularly with your doctor to ensure that this medicine is working properly and to check for unwanted effects. In addition, your doctor will need to check [blood counts](#) and [liver function tests](#) about every 1 to 2 months while you are on the medicine.

### **Conclusions**

Methotrexate is a useful immunosuppressive drug for the treatment of selected eye diseases, especially severe uveitis. Though close monitoring is required while taking this medicine, common side effects tend to be mild and severe side effects are rare. Nevertheless, you should talk carefully to your doctor about the potential benefits and risks of this medicine before starting.

Copyright © 2003 [The American Uveitis Society](#). All rights reserved.