



Resource

Methotrexate

Methotrexate is ranked as the Gold Standard disease modifying anti-rheumatic drug (DMARD) to control inflammatory arthritis.

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Name of Drug	How the drug is taken	How it works	Blood tests
Methotrexate (MTX)	Liquid, tablet, syringe	Reduces over activity of the immune system	Yes – regularly

The overactive immune system in JIA can cause swelling, pain, heat and redness. Methotrexate may

help to dampen down this process, but how it achieves this is not fully understood.

Drugs which affect the immune response will suppress the disease process.

Background

- Methotrexate (MTX) was introduced in 1947 and was initially used to treat leukaemia and other forms of cancer
- From the 1980s methotrexate was used to treat adults with rheumatoid arthritis (RA) but in very much lower doses after clinical trials had demonstrated its benefits
- From the 1990s methotrexate in very low doses has been used in children and young people with JIA
- Research into RA in adults has found the earlier the treatment starts with a DMARD to control inflammation the better the long term outcome. This approach is increasingly being used in JIA
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How does methotrexate work?

- It is vital to remember that methotrexate is prescribed as a ONCE weekly dose in order to avoid any possible overdose. It is recommended to take methotrexate on the same day each week.

It is available as:

- A subcutaneous injection (just under the skin) via a pre-filled pen device
- A liquid form
- tablets

Advice and guidance will always be given to young people and parents about how and when to take or give the weekly methotrexate dose. In addition, the rheumatology team will advise on the dose and frequency of folic acid. See below for the full explanation of folic acid supplementation.

Injectable pens or syringes need to be kept below 25°C and protected from light.

What are the possible side effects?

As with any medication, methotrexate has a number of possible side effects, although it is important to remember that these are only potential side effects. They may not occur at all.

Side effects may include:

- Nausea (feeling sick), vomiting, diarrhoea
- mouth ulcers, skin rash, hair loss (thinning)
- changes in blood measurements, inflammatory markers and liver function

- breathlessness, cough, fever
- symptoms of infection, bruising, bleeding
- photosensitivity (an increased sensitivity to sunlight)
- mood swings (not common)
- any other concerns not listed

More information on side effects can be found in the patient information leaflet for methotrexate, which will come with your medicine.

Remember to report any concerns about possible side effects to the doctors, pharmacists or nurses.

Methotrexate with other medicines

Methotrexate interferes with the absorption of B vitamins, such as folic acid, from the diet. Because of this, a supplement of folic acid must not be taken on the same day as methotrexate.

Folic acid is:

- needed for normal cell division, especially in infancy and pregnancy
- needed in the production of red blood cells
- must be taken on a separate day from the weekly methotrexate

To avoid a reaction with methotrexate, the antibiotics co-trimoxazole and trimethoprim should not be taken.

Remember to take care when using any other medications or complementary therapies (even if bought 'over the counter' for colds or flu). Remember to check with a doctor, nurse or pharmacist that they are safe to take with methotrexate and any other medication taken.

Methotrexate and Pregnancy

- Methotrexate may harm the growing baby and cause birth defects. It is therefore important to avoid pregnancy when taking methotrexate
- Contraception is important and oral contraceptives are allowed to be taken with methotrexate
- Teenage boys and men should not father a child whilst they are taking methotrexate.

If you are thinking of starting a family talk to your consultant or clinical nurse specialist about when it is safe to start a pregnancy (generally 3-6 months from your last dose). This advice applies to both men and women.

Methotrexate and Alcohol

If drinking alcohol, it is important to discuss how to drink safely while on methotrexate with the specialist team, as both alcohol and methotrexate are processed by the liver. If the liver is working too hard, this will show up on the liver function tests. The following tips may help:

- Discuss with your rheumatology team about drinking safely
- Your consultant/clinical nurse specialist will advise you about safe alcohol consumption
- Know what 1 unit looks like (Visit the NHS Choices website for details on what one unit of alcohol looks like: <http://www.nhs.uk/Livewell/alcohol/Pages/alcohol-units.aspx>). The size and strength of your drink determines the number of units
- The higher the alcohol by volume (ABV) the higher the level of alcohol, for example, an ABV of 13 = 13% pure alcohol
- Limit the amount of alcohol by drinking drinks with a lower alcohol content
- Avoid binge drinking
- Have alcohol free days
- Avoid having blood tests the day after drinking the night before as this can affect blood monitoring

Methotrexate and immunisation/vaccination

Most live vaccines [measles, mumps, rubella (MMR), oral polio (NOT injectable polio), BCG, oral typhoid and yellow fever] will not be given to anyone already taking methotrexate (the chickenpox vaccine is sometimes given, though advice on this may vary between rheumatology teams and dependent on individual cases). If methotrexate has not yet been started it is important to seek advice on how long a gap to leave after having a live vaccine.

- The annual flu vaccination and 'pneumovax' protection against pneumonia is permitted (see below)
- If possible the 'pneumovax' vaccination should be given before starting methotrexate

Flu vaccine is now available in two forms, an injection and a nasal spray. Unlike the injection, the nasal spray is a live vaccine. There is limited research evidence around live vaccines in people with a lowered immune system (due to their medication). It is therefore important to discuss with the healthcare team which of these options would be best.

Vaccination of close family members can help to protect someone with a lowered immune system.

Methotrexate and Chickenpox

- Before methotrexate is started a blood test to check for immunity to chickenpox is advisable. Ideally, a chickenpox vaccination would be given before starting methotrexate, but this would cause a delay in commencing treatment. The consultant or clinical nurse specialist will discuss

whether such a delay is acceptable.

- Anyone taking methotrexate who comes into contact with chickenpox (for example, being in the same room for 5 minutes or more) should seek advice from their doctor.

Tips regarding methotrexate

How to reduce methotrexate related nausea

- To help the feeling of nausea, one of the more common side effects of methotrexate, it is recommended that methotrexate is taken (or given) after the evening meal so that nausea will, therefore, be less on waking. The most appropriate day for the individual needs to be considered.
- Folic acid is important as explained above, but it also helps to reduce the nausea
- Anti-nausea medication may also help.
- Stay safe on methotrexate and remember to have regular blood tests and check-ups as advised by your consultant and clinical nurse specialist

Protecting your child from sunburn

- Remember to use sunscreen before going into the sun, as well as a T shirt and hat
- Reapply sunscreen frequently as recommended

Travelling and methotrexate

- Going by air (flying)
 - Inform the airline if a young person or your child has injectable methotrexate to get advice about carrying it on the flight
 - Injectable pens or syringes need to be kept below 25°C and protected from light. These may need to be carried in hand luggage, together with a letter of authorisation to carry needles from your healthcare team.
 - It is a good idea to take a copy of the prescription to show authorities
- Live vaccines (see above 'Methotrexate and immunisation/vaccination') must be avoided. It is important to check whether any required vaccines are 'live' before booking a holiday

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