

PATIENT INFORMATION ON CYCLOPHOSPHAMIDE

(Brand names: Cycloblastin, Endoxan)

This information sheet has been produced by the Australian Rheumatology Association to help you understand the medicine that has been prescribed for you. It includes important information about:

- **how you should take your medicine**
- **the possible side effects**
- **what tests you must have to monitor your condition and to detect unwanted effects**
- **other precautions you should take.**

Please read it carefully and discuss it with your doctor.

Important things to remember

- While taking cyclophosphamide you should see your rheumatologist or other specialist regularly to make sure the treatment is working and to minimise any possible side effects.
- You should have regular blood and urine tests as directed by your rheumatologist.
- If you are concerned about any side effects you should contact your rheumatologist as soon as possible.

For more information about
RHEUMATOID ARTHRITIS see the
Arthritis Australia website
[www.arthritisaustralia.com.au/index.php/
arthritis-information/information-
sheets.html](http://www.arthritisaustralia.com.au/index.php/arthritis-information/information-sheets.html).

What is cyclophosphamide?

Cyclophosphamide (brand name Cycloblastin, Endoxan) is a medicine used to treat severe inflammatory illnesses such as complicated systemic lupus erythematosus (SLE/lupus), polymyositis (muscle inflammation), scleroderma and vasculitis (inflamed blood vessels) like Wegener's granulomatosis.

It is also used in rheumatoid arthritis when there are serious complications involving organs other than the joints such as the lungs, eyes or skin. While cyclophosphamide can be very effective for rheumatoid arthritis, it is used infrequently because more effective and safer medicines have become available.

Cyclophosphamide is also used to treat some cancers.

Cyclophosphamide is an immunosuppressive medicine, which means that it works by reducing the activity of the immune system. In rheumatoid arthritis, this action helps to reduce inflammation and thus reduce pain and swelling. In other diseases such as vasculitis or myositis, it reduces inflammation in other areas such as blood vessels and muscles.

What benefit can you expect from your treatment?

When used to treat inflammatory illnesses, cyclophosphamide does not work straight away. It may take several weeks before there is some relief of symptoms.

It may take several months for the full effect to be seen.

Other medicines may be given to improve your symptoms while waiting for cyclophosphamide to work.

If you stop cyclophosphamide treatment for more than a few weeks there is a risk that your condition may worsen. Continue with your treatment unless advised by your doctor or unless side effects develop.

How is cyclophosphamide taken?

Cyclophosphamide can be taken by mouth as tablets or it can be given via a vein as an infusion. For long-term treatment it is normally taken in tablet form. There is only one strength of the tablet (50mg) available in Australia.

What is the dosage and when should it be taken?

The dose depends on the disease being treated and on the person's weight.

The oral (tablet form) dose is usually 75mg to 200mg per day. If you need to take a dose requiring half a tablet (e.g. 75mg), it is important not to break the tablets. An alternative way of taking your dose is to take 1 tablet one day and 2 tablets the next day and continue to alternate.

Cyclophosphamide can inflame the lining of the bladder so it is important to drink plenty of fluid to 'flush out the bladder'. Eight to 10 glasses of water a day is recommended.

The tablets should be taken in the morning and should not be taken before going to bed.

Tablets should be taken whole - do not break, crush or chew the tablets.

Can other medicines be taken with cyclophosphamide?

Cyclophosphamide may be used with other arthritis medicines, including:

- steroid medicines such as prednisolone
- simple pain medicines such as paracetamol.

Are there any side effects?

You might experience side effects with your treatment. Tell your doctor if you are concerned about possible side effects.

A reduction in dose may minimise side effects so that you can continue to take this treatment. Your doctor will advise on any dose changes that are necessary.

Most common possible side effects

- Many people experience *nausea (feeling sick) and vomiting*. These effects may be worse with the tablets compared with the injection. Antinausea tablets can be used if needed.
- *Hair thinning* can occur. This is not permanent and hair will grow back when the medicine is stopped.
- Other common side effects include *mouth ulcers* and *skin rash*.

Less common and rare possible side effects

- *Blood counts*: Cyclophosphamide rarely causes a drop in the number of white blood cells, which are needed to fight infection. It can also cause a drop in the number of platelets, which help stop bleeding.

Regular blood tests aim to pick these problems up early when they occur. However, if you develop a sore mouth, mouth ulcers, easy bruising, nosebleeds, bleeding gums,

breathlessness, infection or fever; tell your doctor straight away.

- *Infections:* There is a slight increased risk of developing some infections, especially herpes zoster (chicken pox and shingles). You should try to avoid contact with people who have these infections. If you have an infection or persistent fever, tell your doctor straight away.
- *Bladder inflammation:* This medication can inflame the lining of the bladder. If you notice blood in your urine (pinkish coloured urine) tell your doctor straight away.
- *Cancers:* There is an increased risk of developing bladder cancer with cyclophosphamide. You will therefore be asked to have regular urine tests. There may also be an increased risk of other cancers such as skin (see *Precautions*) and lymph gland tumours.
- *Fertility:* Cyclophosphamide can reduce fertility in both men and women. This occurs more often in people of later child bearing age or taking high doses for long periods of time. Your doctor will discuss this with you before you start taking cyclophosphamide. Precautions such as storage of sperm or eggs may be considered.

What precautions are necessary?

Urine tests

- Regular urine tests are required to monitor the effect on the bladder.

Blood tests

- Since your white blood cells and platelets may be affected by cyclophosphamide, you **must** have regular blood tests during your treatment. This is very important, as you may not get symptoms of these problems.

- As well as monitoring for side effects, blood tests help to monitor your condition to determine if the treatment is effective.
- You will need to have full blood tests every 2 to 4 weeks for the first few months of treatment and then every 1 to 3 months after that.
- Your general practitioner will be informed about the schedule for your blood tests.
- It is important to see your general practitioner if you have been asked to do so as they have an important role to play in monitoring your condition.

Use with other medicines

- Cyclophosphamide can interact with other medicines. You should tell your doctor (including your general practitioner, rheumatologist and others) about all medicines you are taking or plan to take. This includes over the counter or herbal/naturopathic medicines. You should also mention your treatment when you see other health professionals.
- Cyclophosphamide ***should be used carefully*** if taken at the same time as:
 - anti-epileptic medicines such as carbamazepine and phenytoin
 - heart and blood pressure medicines such as verapamil and diltiazem
 - anti-fungal treatments such as ketoconazole, voriconazole and posiconazole
 - anti- HIV (AIDS) medicines such as efavirenz, ritonavir, nevirapine, tipranavir, atazanavir and saquinavir
 - other antibiotics such as rifampacin, ciprofloxacin, clarithromycin, erythromycin and norfloxacin
 - warfarin (used to thin the blood).

- If you are taking cyclophosphamide you should not take St John's wort. This is an ingredient in some complementary medicines recommended for depression, which you can buy without a prescription.
- You should avoid eating grapefruit or drinking grapefruit juice while taking this medicine, as it can affect the level of cyclophosphamide in the body.
- If you are on cyclophosphamide it is recommended that you are not immunized with 'live' vaccines such as MMR (measles, mumps and rubella), OPV (oral polio virus) or yellow fever. Talk to your doctor before receiving any vaccines.
- If you are planning a family or if you become pregnant while taking cyclophosphamide, you should discuss this with your doctor as soon as possible.
- Some women taking cyclophosphamide may stop having periods, but they can still become pregnant. You must use effective contraception while taking this medicine.

Skin checks

- When taking cyclophosphamide it is important to use a sunscreen and avoid prolonged sun exposure. A yearly skin check is recommended.

How to store cyclophosphamide

- Store cyclophosphamide tablets at room temperature, away from heat, moisture and light (e.g. not in the bathroom).
- Keep all medicines out of reach of children.

Use in pregnancy and breastfeeding

- Cyclophosphamide should not be taken during pregnancy or while breastfeeding. If you are a woman of child bearing age you should use effective contraception throughout your treatment and for 6 months after stopping the treatment.
- Men taking cyclophosphamide should also use effective contraception.

Questions?

If you have any questions or concerns write them down and discuss them with your doctor.

Your doctor's contact details

If you are taking cyclophosphamide you should see your rheumatologist regularly to make sure the treatment is working and to minimise any possible side effects.

The information in this sheet has been obtained from various sources and has been reviewed by the Australian Rheumatology Association. It is intended as an educational aid and does not cover all possible uses, actions, precautions, side effects, or interactions of the medicines mentioned. This information is not intended as medical advice for individual problems nor for making an individual assessment of the risks and benefits of taking a particular medicine. It can be reproduced in its entirety but cannot be altered without permission from the ARA.

The NHMRC publication: *How to present the evidence for consumers: preparation of consumer publications* (2000) was used as a guide in developing this publication.