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## Cyclophosphamide

Cyclophosphamide is a potent drug that is primarily used in the treatment of cancer. It belongs to the class of cytotoxic drugs called alkylating agents; these interfere with the growth and replication of malignant cells.

Cyclophosphamide is found to be useful in the treatment of some skin diseases, particularly autoimmune skin diseases or those associated with some sort of immune disorder. These include:

- [Wegener granulomatosis](#)
- [Dermatomyositis](#)
- Systemic [lupus erythematosus](#)
- [Behcet disease](#)
- [Cicatrical pemphigoid](#)
- [Pemphigus vulgaris](#)
- [Paraneoplastic pemphigus](#)
- [Mycosis fungoides](#)

Cyclophosphamide is available as 50mg tablets or in vials containing powder to be reconstituted for intravenous injection. The trade name in New Zealand is Cycloblastin™.

### How to use cyclophosphamide

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For the treatment of skin diseases, cyclophosphamide is usually used in combination with corticosteroids. Cyclophosphamide should only be used by a doctor experienced in its use, as the risk of toxicity is high and side effects potentially dangerous. It is essential that treatment with the drug is not more disabling than the disease it is being used to treat. Patients receiving cyclophosphamide require close supervision and monitoring throughout treatment.

Prior to starting treatment with cyclophosphamide a routine baseline assessment should include:

- complete blood cell count
- liver function tests
- renal function tests.

Regular monitoring of these should continue throughout treatment.

Both oral and intravenous cyclophosphamide is used in treating skin disorders. Intravenous pulse administration of cyclophosphamide is often used in the treatment of pemphigus. This involves monthly administration of IV cyclophosphamide and is perceived to decrease the overall dosage and toxicity.

To prevent urinary toxicity such as haemorrhagic cystitis patients need to be adequately hydrated and pass urine frequently. Patients should be instructed to increase fluid intake 24 hours before, during and at least 24 hours after receiving cyclophosphamide and to pass urine frequently. Drinking 2 to 3 litres of water daily.

### Contraindications

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Cyclophosphamide should not be used under the following circumstances:

- evidence of haemorrhagic cystitis, acute systemic or urinary infection, drug- or radiation-induced

- urothelial toxicity
- severe bone marrow impairment
- presence of infections (as a result of immunosuppression induced by cytotoxic treatment) which could lead to fatal complications.

## Precautions

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**Pregnancy:** women should not receive cyclophosphamide until pregnancy is excluded as it crosses the placenta and can cause fetal abnormalities. Cyclophosphamide should only be used in childbearing women if reliable contraceptive methods are being followed throughout treatment and for about 3 months after stopping the drug.

**Breastfeeding:** cyclophosphamide passes into breast-milk and may cause serious adverse reactions in the nursing infant. Breastfeeding is not recommended during cyclophosphamide therapy.

## Side Effects

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One of the major and dose-limiting side effects of cyclophosphamide is bone marrow toxicity. A fall in white blood cells is often seen 1–2 weeks after therapy but usually recovers within 3–4 weeks.

Other common side effects include:

- nausea and vomiting
- anorexia
- abdominal discomfort or pain
- diarrhoea
- haemorrhagic cystitis (see precautions regarding increasing fluid intake)
- hair loss usually occurs about 3 weeks after start of therapy

Cyclophosphamide may cause temporary or permanent sterility in women and in men, depending upon the dose and duration of therapy. Libido and sexual capability are usually not affected.

## Drug Interactions

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Cyclophosphamide is often used in combination with other cytotoxic drugs or immunosuppressant agents thus additive toxicity is likely to occur.

Other drugs that interact with cyclophosphamide to increase its toxicity include:

- allopurinol
- barbiturates
- digoxin

### Related information

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#### References:

- Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.

#### On DermNet NZ:

#### Other websites:

- Medsafe information about medicines: [Cycloblastin](#)

#### Books about skin diseases:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.  
If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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