



[Authoritative facts](#) about the skin from the [New Zealand Dermatological Society Incorporated](#).

[Home](#) | [Treatments](#)

## Hydroxyurea

Hydroxyurea (trade name in New Zealand "Hydrea") is a cytotoxic agent. It is also known as hydroxycarbamide. It is sometimes used to treat plaque [psoriasis](#), usually at a dose of 500 mg to 1 g orally daily. It is less effective for pustular psoriasis, guttate psoriasis or [psoriatic arthritis](#).

Hydroxyurea is more frequently prescribed for patients with chronic myeloid leukaemia, cervical cancer and a variety of other malignancies and myeloproliferative disorders. It is also used in sickle cell disease and in [HIV infection](#).

### Mechanism of action

---

Hydroxyurea is converted to a free radical nitroxide. In psoriasis, it is thought to work by reducing the replication of DNA within the basal cell of the epidermis. A response is noted in about half of treated patients, sometimes in those resistant to other therapies such as [methotrexate](#), [acitretin](#) or [phototherapy](#). Improvement usually begins about two weeks after starting treatment, and is maximum after about eight weeks.

In resistant cases, hydroxyurea can be cautiously combined with other antipsoriatic drugs. Care should be taken if combined with methotrexate as both drugs may suppress bone marrow function increasing toxicity.

Hydroxyurea should not be taken in pregnancy as it is likely to cause fetal abnormalities. It should not be taken by a breast feeding mother. Its safety in children is unknown.

### Side effects

---

- Bone marrow toxicity is monitored by regular blood counts (´CBC´ or ´FBC´). Should toxicity occur, the dose is usually reduced. Up to a third of patients develop some toxicity, which may occur at any time during a course of treatment:
  - Leucopaenia (reduced white cell count)
  - Anaemia (reduced red cell count)
  - Thrombocytopaenia (reduced platelet count)
  - Pancytopaenia (reduction in all blood cell types)
  - Macrocytosis (larger red blood cells than normal) occurs in all patients as the red cells carry more haemoglobin and become rounder, and the bone marrow produces "megaloblasts". This is not a problem, and recovers when the medication is stopped.
- Liver toxicity is rare, and hydroxyurea can be safely used in patients with liver problems caused by methotrexate. However, mild hepatitis has occasionally been reported.
- Kidney toxicity does not seem a problem in psoriasis, but has been reported in patients with leukaemia treated with hydroxyurea.
- A generalised yellow–grey skin pigmentation and generalised [hair thinning](#) may occur but are uncommon.
- Painful leg ulcers similar to [pyoderma gangrenosum](#), and a [dermatomyositis](#)–like rash have been reported in patients with leukaemia.
- Drug–related [lupus](#) is rare and may result in [photosensitivity](#) with muscle or joint pains.
- An increase in the risk of [skin cancers](#) has been reported.
- The risk of other malignancies due to hydroxyurea arising in patients with psoriasis is unknown but is

thought to be extremely low.

- Hydroxyurea interferes with DNA synthesis and could therefore be unsafe in pregnancy. Conception should be avoided in both male and female patients treated with hydroxyurea although there have been no reports of problems.
- An overdose could be fatal; the blood count should be carefully monitored and a blood transfusion given if necessary. The fingers, toes and mouth can become red, swollen and sore.

#### Related information

---

##### On DermNet NZ:

- [Psoriasis](#)

##### Other websites:

- [Medsafe](#) data sheet for Hydrea

##### Books about skin diseases:

See the [DermNet NZ bookstore](#)

**Author:** Amanda Oakley MBChB FRACP DipHealInf Department of Dermatology, Health Waikato.

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.

Created 2001. Last updated 26 Dec 2006. © 2008 NZDS. Disclaimer.