



Nitrogen mustard – a preparation to be applied to the skin

What are the aims of this leaflet?

This leaflet has been written to help you understand more about nitrogen mustard. It tells you what it is, how it works, the skin conditions that can be treated with it, and the way it should be handled. It also gives details of some of its common side effects.

What is nitrogen mustard and how does it work?

Nitrogen mustard has several different names: it is also known as chlormethine hydrochloride, mechlorethamine, mustine and Mustargen. One of its brand names is 'Caryolysine'.

If nitrogen mustard is given into a vein, it slows the proliferation of harmful cells. First used in this way to treat lymphoma (a form of cancer of the lymph nodes), it was later found to be effective in certain diseases of the skin when it was applied topically, in other words when applied to the surface of the skin, where it interacts with cells of the immune system.

Nitrogen mustard is not dangerous provided the instructions on its use are adhered to strictly (see below). It is toxic if handled incorrectly and should be always kept away from children and pets. It should be stored in a secure place, away from heat, sources of ignition, such as fires and cigarettes, and oxidising agents such as bleach (which make things rusty); and also away from food, drink and animal foodstuff.

Which skin conditions are treated with nitrogen mustard?

Topically applied nitrogen mustard has been used for more than 40 years to treat a cutaneous lymphoma (a rare form of skin cancer) known as mycosis fungoides, and continues to be safe and effective for some cases of this condition. It has also been used for the treatment of a rare condition called Langerhans cell histiocytosis.

How long will I need to apply nitrogen mustard to my skin before it has an effect?

Nitrogen mustard does not work immediately. It may be one or two months before you notice any benefit.

How often should I apply nitrogen mustard to my skin?

Nitrogen mustard is usually applied once daily to begin with, but, as your skin condition improves, your dermatologist will ask you to reduce the frequency of application.

How is nitrogen mustard used to treat skin conditions?

There are different presentations of nitrogen mustard. This patient information leaflet explains only how to use **Caryolysine**, so please make sure your dermatologist has provided you with **Caryolysine** if you are to follow the instructions detailed below.

Caryolysine comes in ampoules containing a 2 ml solution of 10 mg of chlormethine hydrochloride (nitrogen mustard). Use it as follows:

1. Fill a plastic cup with 48 ml of tap water.
2. Break a Caryolysine ampoule at its weakest point (the neck), holding the lower part of the ampoule with one hand and its upper part with the other. You will need a brisk movement, and you should keep the ampoule as vertical as possible as you break it. Protect your hands with a piece of cotton wool while you break the glass ampoule.

3. Empty all the contents of the ampoule carefully into the water-filled plastic cup, and promptly discard the broken ampoule into your sharps box. Never leave this solution unattended.
4. Apply the solution as soon as you have prepared it, to all of your skin from your neck to your toes - but excluding the genital area and using it sparingly in skin folds.
5. Let your skin dry on its own.
6. You should apply the medicine yourself and not have any one to help you (you may need gauze attached to a brush with a long handle to reach your back).
7. When it is full, hand your sealed sharps box in to the hospital pharmacy.
8. After treatment, the plastic cup you have used should be washed.
9. If you apply the nitrogen mustard in the evening, then you should have a bath/shower in the morning - and vice versa.

Is there anything I should avoid while I am on nitrogen mustard treatment?

You should avoid, as far as possible, exposing your skin to sunlight. If you have a partner, please ask your dermatologist's advice about direct contact with him/her while you are using the nitrogen mustard.

What are the possible side effects of nitrogen mustard when it is used on my skin?

Nitrogen mustard causes dermatitis in about 40% of patients. This may be due to an allergy but can also be an irritant reaction. This can be minimised by using an emulsifying ointment (a soap substitute) every day. The rash may develop about a month after starting treatment. The rash is easily treated and you will then notice an overall improvement in your skin. Your dermatologist may then be able to restart the treatment, but at very low concentrations.

A few patients treated with topical nitrogen mustard have developed minor skin cancers after many years but most of them had also used other forms of

treatment that increase the risk of skin cancer. However you should keep an eye on your skin and report any new growth or pigmented lesion or changes in existing skin lesions.

Nitrogen mustard has not been found in the blood of patients using it on their skin, and will not affect your blood count.

Does nitrogen mustard affect pregnancy?

Nitrogen mustard must not be used during pregnancy and breastfeeding. It should not be handled by pregnant women.

Can I take my medicines while I am on the topical nitrogen mustard treatment?

Yes. There will be no interaction between your tablets and applications of nitrogen mustard to your skin.

What should I do if my skin gets very itchy and sore while using I am using the nitrogen mustard?

You might have developed an allergy, or the nitrogen mustard might be irritating your skin. You should stop using it and see your dermatologist, who will have already arranged an appointment to see you after 4 weeks of treatment. Neither of these events is uncommon or dangerous.

What should I do if nitrogen mustard comes into contact with my eyes, or is accidentally ingested or inhaled?

- Wash your eyes immediately with large amounts of water or a 2 % solution of sodium bicarbonate, for at least 15 minutes.
- Wash out your mouth thoroughly with water, and drink water as well.
- Move into fresh air if you have inhaled the nitrogen mustard and then seek medical attention promptly.

Where can I find out more about nitrogen mustard?

This information sheet does not list all of the possible side effects of nitrogen

mustard. If you want to know more, or if you are worried about your treatment, you should speak to your dermatologist. It will also be useful to look at the drug information sheet that comes with the nitrogen mustard.

(While every effort has been made to ensure that the information given in this leaflet is accurate, not every treatment will be suitable or effective for every person. Your own dermatologist will be able to advise in greater detail)

**THIS PATIENT INFORMATION LEAFLET WAS PRODUCED BY THE
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