



COMMON WARTS

Treatment guidance

HYDR  ZID[®]

Common warts

Common warts, also known as verruca vulgaris, are superficial viral infections of the skin caused by human papilloma virus (HPV).

Common warts may vary in appearance, but frequently occur as multiple, hyperkeratotic cauliflower-like papules on the skin. They most often range from 1-10 mm in diameter.¹

The surface of the common wart has small black dots, sometimes invisible to the naked eye, representing blood clots in the capillaries of the wart. These capillaries can contribute to the diagnosis of a common wart, as this clinical observation is not seen in differential diagnoses such as callosities or soft tissue sarcomas. In addition, the patient's fingerprint will not be visible on the surface of a common wart as is the case for callous skin, for instance.² This observation can also contribute to the diagnosis of a common wart.²

Common warts occur in places where the skin has been exposed to abrasions or other microtrauma, as the virus is inoculated into the skin through the epithelial tissue and penetrates further down into the deeper epithelial layers.³

HPV is resistant and spreads through both direct and indirect contact, leaving a large proportion of everyday objects as reservoirs of infection. Particularly in case of periungual warts, located around nails and nail walls, there is an increased risk of spread to the patient's lips, oral cavity and tongue if the patient is a nailbiter.⁴

In addition, visible common warts are perceived as socially unacceptable, as described in several studies. The fear of passing on infection may result in social isolation for the common wart patient, thus affecting the patient's mental health.^{1,5}

Due to their long incubation time of 1-6 months, hand warts must be treated as soon as possible after being discovered in order to break the chain of infection and reduce the infection of others.



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What is Hydrozid®

- Hydrozid® is an innovative CE-marked medical device that combines traditional cryosurgery with modern aerosol technology. Its patented, unique application system provides a safe and effective method for treatment of common warts. Hydrozid® is also approved for treatment of an additional 10 indications in Danish clinical practice.
- Hydrozid® is a portable light-weight canister containing the gas norflurane, which exposes the verruca to a consistent treatment temperature as low as -54°C to -58°C by means of a concentrated jet. The consistent treatment temperature of less than -50°C lasts for up to 4.5 minutes after treatment start and thus ensures a unique cold potential within cryosurgery.⁶ The temperature required to destroy benign cells is between -20°C and -30°C .¹⁴
- The varying reaction of skin cells to the low temperatures of cryosurgery enables the treatment of epidermal cells without damaging subcutaneous connective tissue, fibres or immune cells.⁷
- Hydrozid® treatment is based on the methods of freeze-thaw cycles and temperature control. Rather than continuous treatment exposure, studies have shown that repeated exposures to freezing followed by thawing (a freeze-thaw cycle) enhance the effect by up to 100%.¹⁵ These cycles afford the therapist more control of the treatment temperature and its effect on the treated area, which helps prevent overtreatment.
- Treatment with cryosurgery can prevent the spread of the infection.^{1,13} Cryosurgery also has a unique immune-stimulating effect, meaning that the treatment of common warts may contribute to the formation of antigens in the immune system,¹³ thus causing non-treated warts to be rejected and disappear.^{1,13} Immunocompromised patients are less susceptible to obtaining this immune-stimulating effect.¹³



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- It is not necessary to anaesthetise the treated area prior to treatment. The cryosurgery functions as a local anaesthetic in itself.¹⁶
- The treatment is approved for patients from 5 years and up.
- All treatment with Hydrozid® should be adapted to the individual patient.



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Inform the patient before treatment

Provide the patient with the Hydrozid® patient instructions.

The patient instructions give relevant advice and information in brief about the treatment process.

The patient instructions are available free of charge at <https://shop.hydrozid.eu> or by email: info@hydrozid.com.

Application template

When treating common warts, use one of the accompanying application templates to protect the surrounding healthy tissue during treatment.

The application templates have holes in 6 different sizes (3-10 mm in diameter). If the wart is larger than 10 mm in diameter, treat it as described in the treatment section *Treatment of common warts larger than 10 mm in diameter, mosaic warts*.

The treatment margins may become blurred during treatment as the formation of ice crystals covers the actual delimitation between the wart and the surrounding healthy tissue. The application template can thus help focus on the limits of the wart during treatment.

You can also use the application templates' size indications to compare the size of the

wart after each procedure to assess the effect of treatment.

The application templates can be used to treat more common warts on the same patient, after which they must be discarded to avoid cross-infection.⁹



Application template

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Treatment steps using Hydrozid®

After unpacking – do not remove the tip of the application tube. It must remain in place during treatment.

1. Release the locking mechanism under the activation arm, from left to right. The canister is now ready to use.



2. Hold the application template in place above the wart with your non-dominant hand.

Hold the Hydrozid® canister in your dominant hand as vertically as possible. Push lightly on the trigger until you hear a hissing noise and the gas is released. If you push the trigger too hard, the sound will be more like when dispensing a deodorant spray, which releases unnecessary amounts of gas with a risk of damaging surrounding healthy tissue. Also, this is not an economical use of the gas.



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3. Spray at a distance of 2-3 centimetres from the wart, for up to 6 seconds. A film of white ice crystals will now form in the treated area. Start counting when ice crystals start forming on the change. After (up to) 30 seconds, the ice crystals are no longer white, indicating that the thawing period has ended. The first freeze-thaw cycle is now completed.



A distance of 2-3 centimetres corresponds to about 2 finger widths.

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4. Then repeat another freeze-thaw cycle. The recommended number of freeze-thaw cycles is up to 4-6 cycles. The total treatment time is up to 24-36 seconds.

The therapist assesses the patient and the treated area between each freeze-thaw cycle and must regard the treatment times as recommendations. Treatment for a longer period than recommended is associated with more frequent and more intense side effects.⁹

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Treatment of 2-4 warts

If the patient has 2-4 warts, the treatment can be streamlined, as it is possible to treat 2-4 warts within the same period of time as it takes to treat one (4 x 6 seconds - 6 x 6 seconds). The therapist assesses the patient and the treated area between each freeze-thaw cycle.

As a natural consequence of the low gas temperature, the tip of the canister will crystallise during prolonged treatment like this and impede the free flow of gas.

When treating multiple common warts, it is therefore advisable to have an additional canister close to hand to replace the canister first used, until its tip has returned to room temperature and is ready to be used for treatment.

Treatment steps using Hydrozid®

After unpacking – do not remove the tip of the application tube. It must remain in place during treatment.

1. Release the locking mechanism under the activation arm, from left to right. The canister is now ready to use.
2. Hold the application template in place above the first wart with your non-dominant hand. Hold the canister in your dominant hand as vertically as possible. Push on the canister until you hear a hissing noise and the gas is released. If you push the canister too hard, the sound will be more like when dispensing a deodorant spray, which releases unnecessary amounts of gas with a risk of damaging surrounding healthy tissue.
3. Spray at a distance of 2-3 centimetres from the first wart, for up to 6 seconds. Start counting when ice crystals start forming in the treated area. While the ice crystals thaw and the thawing period passes, continue treating the second wart.
4. Treat the second wart using the same procedure. While the ice crystals thaw and the thawing period passes for warts 1 and 2, continue treating the third wart.

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5. Treat the third wart using the same procedure. While the ice crystals thaw and the thawing period passes for warts 1, 2 and 3, continue treating the fourth wart.
6. Finish by treating the fourth wart for 6 seconds using the same procedure.

When the thawing period for the fourth wart has passed, the first freeze-thaw cycle is complete. Now you can start a new freeze-thaw cycle on the first wart, followed by the three others.

The recommended treatment time is 4-6 freeze-thaw cycles for common warts, corresponding to 24-36 seconds of treatment.

The therapist assesses the patient and the treated area between each freeze-thaw cycle and must regard the treatment times as recommendations. Treatment for a longer period than recommended is associated with more frequent and more intense side effects.⁹

Treatment of multiple common warts (mosaic warts) and common warts larger than 10 mm

The adjacent growth of several warts, separated by small connective tissue septa, is referred to as mosaic warts.¹

For mosaic warts or warts with a diameter larger than 10 mm, follow the treatment steps

Treatment steps using Hydrozid®

After unpacking – do not remove the tip of the application tube. It must remain in place during treatment.

1. Release the locking mechanism under the activation arm, from left to right. The canister is now ready to use.

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2. Hold the canister in your dominant hand as vertically as possible. Push lightly on the canister until you hear a hissing noise and the gas is released. If you push the canister too hard, the sound will be more like when dispensing a deodorant spray, which releases unnecessary amounts of gas with a risk of damaging surrounding healthy tissue.
3. Spray at a distance of 2-3 centimetres from the centre of the common wart/mosaic wart and continue by constant spraying in circular motions to the edge of the delimitation of the common wart/mosaic wart. A film of white ice crystals will now form in the treated area. The six-second treatment time starts when ice crystals start forming on the common wart/mosaic wart. The entire common wart/mosaic wart must be covered by the ice crystals.
4. After (up to) 30 seconds, the ice crystals are no longer white, indicating that the thawing period has ended. The first freeze-thaw cycle is now completed.
5. Then repeat another freeze-thaw cycle. The recommended number of freeze-thaw cycles is 4-6 cycles. The total treatment time is between 24-36 seconds.

The therapist assesses the patient and the treated area between each freeze-thaw cycle and must regard the treatment times as recommendations. Treatment for a longer period than recommended is associated with more frequent and more intense side effects.⁹



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Cryosurgery may cause a stinging or burning sensation during treatment. The treated area may appear red, tender and swollen immediately after treatment.

Within 24 hours after the completion of treatment, inflammation develops in response to cell death.¹ This process contributes further to destroying the change and is a natural reaction in the inflammatory phase of the wound healing process.

Wounds and possibly blisters may subsequently occur in the treated area.¹⁵ In such cases, the treated area must be protected with a plaster.

After treatment, the patient must keep the treated area clean by washing it daily with water and non-perfumed soap.

The patient should avoid exposing the treated area to sunlight for 10-14 days until the treated area is fully healed.

If repeated treatment is deemed necessary, a treatment interval of 1-2 weeks is advisable. The intensity and number of treatments depend on the patient's individual clinical response and is assessed by the therapist.

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Hydrozid® must only be used by trained healthcare professionals.

Even though the effect of short freezing times as recommended in this material does not result in scarring,⁴ Hydrozid® must be used with care to avoid damaging the dermis.

Exercise special caution when applying Hydrozid®:

- near cutaneous nerves, tendons and nails.¹²
- in children.¹³
- in persons with impaired arterial or venous circulation¹⁰ (e.g. diabetes patients).
- in persons with thin and/or sensitive skin (e.g. elderly with ageing skin, systemic scleroderma, persons treated with inhaled steroids for a prolonged period of time, etc.)¹².
- in persons with dark skin types. Even though the effect of short freezing times as recommended in this material rarely results in pigmentation changes in the treated area, hypopigmentation/hyperpigmentation may occur. This change is seen in persons with dark skin types in particular.¹²

Do not use Hydrozid®:

- on open skin lesions or eczematous skin to avoid subcutaneous emphysema¹¹.
- in patients with cryoglobulinemia, Raynaud's disease, cold urticaria, blood dyscrasias and Pyoderma gangrenosum¹⁴.
- in case of uncertain diagnosis of the type of lesion (biopsy for skin carcinoma)¹⁴.
- on healthy skin.

IF YOU HAVE ANY QUESTIONS OR, CONTRARY TO EXPECTATIONS, EXPERIENCE CHALLENGES WHEN USING HYDROZID®

Please contact Hydrozid® by email: info@hydrozid.eu

Hydrozid® was developed by the Danish-owned family enterprise BIBAWO Medical A/S, Denmark, and is currently used in more than 20 countries around the world.

In Denmark, Hydrozid® is approved for the following therapeutic indications: acrochordon, actinic keratosis, cervical contact bleeding, condyloma acuminatum, gingival melanin hyperpigmentation, seborrheic keratosis, lentigo, molluscum contagiosum, verruca plana (flat warts), verruca plantaris (plantar warts), and verruca vulgaris (common warts).

Learn more about Hydrozid® on www.hydrozid.eu

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