



# SEBORRHEIC KERATOSIS

Treatment guidance

## Seborrheic keratosis

Seborrheic keratosis, also known as “Seborrheic warts”, “barnacle”, or “senile wart”, develops into an epidermal wart due to benign proliferation of the surface epithelium.<sup>1</sup>

While the cause of this development is yet unknown, it is common and increases with age.<sup>1</sup> The prevalence is higher among persons with light skin tones but is equally prevalent among men and women.<sup>2</sup>

Seborrheic warts vary in appearance and may resemble a flat raisin, from skin-coloured to brownish black and between a few millimetres to 3 centimetres in diameter. Larger elements may also occur. They are frequently located on the torso but also occur on the scalp, face and extremities.<sup>1</sup>

Seborrheic warts are often asymptomatic but may become irritated and inflamed spontaneously or due to friction from clothing. Just as the lesion may itch, be considered unsightly or catch on clothing. Seborrheic warts do not have malignant potential and can be easily removed.<sup>1</sup>


▼ <b>What is Hydrozid®</b>	Treatment	Side effects, healing process and treatment outcome	Precautions and contraindications
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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 seborrheic keratosis.
- ▶ Hydrozid® contains the gas norflurane and exposes the lesion to temperatures as low as  $-54^{\circ}\text{C}$  to  $-58^{\circ}\text{C}$  by means of a concentrated jet.<sup>3,4</sup> The consistent treatment temperature of less than  $-50^{\circ}\text{C}$  lasts for up to 4,5 minutes after treatment start and thus ensures a unique cold potential within cryosurgery. The temperature required to destroy benign cells using cryosurgery is between  $-20^{\circ}\text{C}$  and  $-30^{\circ}\text{C}$ .<sup>5,6</sup>
- ▶ The varying reaction of skin cells to the low temperatures of cryosurgery enables treatment of epidermal cells without damaging subcutaneous connective tissue, fibres and immune cells.<sup>7</sup>



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 <b>What is Hydrozid®</b>	Treatment	Side effects, healing process and treatment outcome	Precautions and contraindications
--------------------------------------------------------------------------------------------------------------	-----------	-----------------------------------------------------	-----------------------------------

-  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%.<sup>9</sup> These cycles afford the physician more control of the treatment temperature and its effect on the treated area, which helps prevent overtreatment and any consequential side-effects.<sup>9</sup>
-  It is not necessary to anaesthetise the treated area prior to treatment. The cryosurgery functions as a local anaesthetic in itself.<sup>10</sup>
-  Hydrozid® treatment is approved for patients from 5 years and up.

What is  
Hydrozid®



**Treatment**

Side effects,  
healing process and  
treatment outcome

Precautions and  
contraindications

## 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](mailto:info@hydrozid.com).

## TREATMENT

### Application template

When treating seborrheic 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 seborrheic wart is larger than 10 mm in diameter, treat the seborrheic wart as described in the treatment section Treatment of seborrheic warts larger than 10 mm.

The treatment margins may become blurred during treatment as the formation of ice crystals covers the actual delimitation between the seborrheic wart and the surrounding healthy tissue. The application

template can thus help focus on the limits of the seborrheic wart during treatment.

You can also use the application templates' size indications to compare the size of the seborrheic wart after each procedure to assess the effect of treatment.

The application templates can be used to treat multiple seborrheic warts on the same patient, after which they must be discarded.



application template

What is  
Hydrozid®



**Treatment**

Side effects,  
healing process and  
treatment outcome

Precautions and  
contraindications

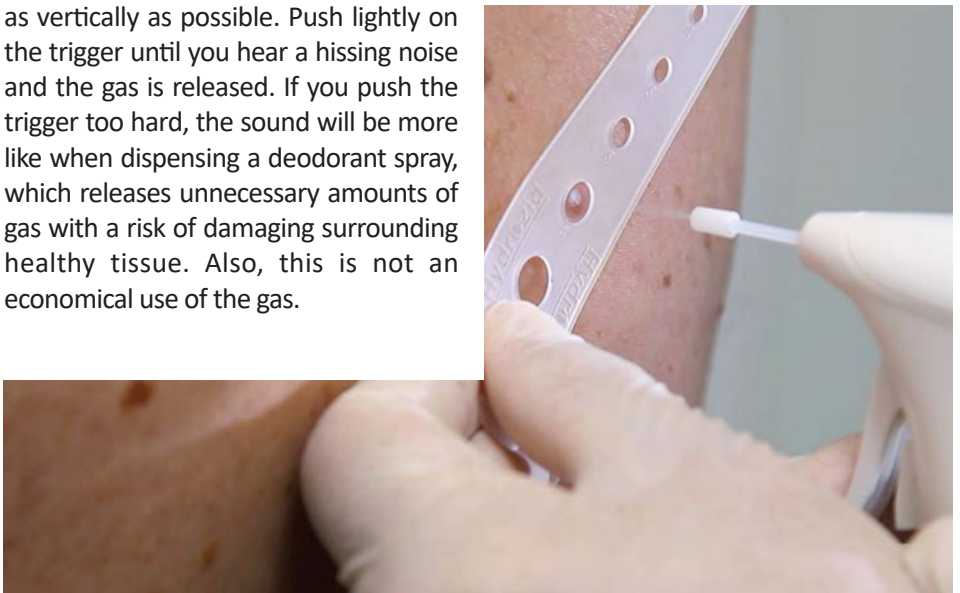
## TREATMENT STEPS

### Treatment of 1 slightly thickened seborrheic wart

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 seborrheic 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.



What is  
Hydrozid®



**Treatment**

Side effects,  
healing process and  
treatment outcome

Precautions and  
contraindications

**3.** Spray at a distance of 2-3 centimetres from the seborrheic 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 seborrheic wart. 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.



**4.** Then repeat another freeze-thaw cycle. The recommended number of freeze-thaw cycles is 2-3 cycles. The total treatment time is between 12-18 seconds.

The physician 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.<sup>11</sup>



What is  
Hydrozid®



### Treatment

Side effects,  
healing process and  
treatment outcome

Precautions and  
contraindications

## Treatment of 1 strongly thickened seborrheic wart

### Combination treatment – cryosurgery and curettage

Cryosurgery is known for its multifarious qualities for treating dermatological lesions.

In addition to the ability of the low temperatures to reduce oedema and bleeding tendencies, cold also has an analgesic effect on skin.<sup>12</sup>

If a seborrheic wart is strongly thickened, and to ensure a satisfactory treatment outcome, use curettage to remove the seborrheic wart.

Seborrheic warts that may be candidates for curettage include elements with a diameter of less than 2 centimetres, without the following characteristics:<sup>13</sup>

- located in a risk area (e.g. ear, nose and around eyes and lips)
- recurrence in a previously treated area
- in immunosuppressed individuals
- occurrence in a chronic wound

### Treatment steps

Apply Hydrozid® using the same procedure as described in treatment steps 1-4 above in the section *Treatment of 1 slightly thickened seborrheic wart*.

Then perform curettage.

Avoid excessively deep curettage due to the cosmetic result. It is an advantage to use a reusable curette as the disposable curette is sharper and entails a risk of deep curettage without being able to sense the delimitation of the seborrheic wart.<sup>13</sup>



What is  
Hydrozid®



### Treatment

Side effects,  
healing process and  
treatment outcome

Precautions and  
contraindications

## Treatment of seborrheic warts larger than 10 mm

For seborrheic warts with a diameter larger than 10 mm, follow these treatment steps:

After unpacking – do not remove the tip at the end 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 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.
3. Spray at a distance of 2-3 centimetres from the centre of the seborrheic wart and continue by constant spraying in circular motions to the edge of the delimitation of the seborrheic 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 seborrheic wart. The entire seborrheic 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. Then repeat another freeze-thaw cycle. The recommended number of freeze-thaw cycles is 2-3 cycles. The total treatment time is between 12-18 seconds.

The physician 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.<sup>11</sup>

What is  
Hydrozid®



### Treatment

Side effects,  
healing process and  
treatment outcome

Precautions and  
contraindications

## Treatment of 2-4 slightly thickened seborrheic warts


If the patient has 2-4 seborrheic warts, the treatment can be streamlined, as it is possible to treat 2-4 seborrheic warts within the same period of time as it takes to treat one (2 x 6 seconds - 3 x 6 seconds). The physician 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 Hydrozid® canister will crystallise during prolonged treatment like this and prevent the free flow of the gas for a few seconds and up to minutes at a time. When treating multiple seborrheic warts, it is therefore advisable to have an additional Hydrozid® 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.

Prepare the canister and place the application template as described in treatment steps 1 and 2 in the above-mentioned section.

Next treatment steps:

1. Spray at a distance of 2-3 centimetres from the first seborrheic wart, for up to 6 seconds. Start counting when ice crystals start forming on the seborrheic wart.
2. While the ice crystals thaw and the thawing period passes, continue treating the second seborrheic wart.
3. Treat the second seborrheic wart using the same procedure. While the ice crystals thaw and the thawing period passes for seborrheic warts 1 and 2, continue treating the third seborrheic wart.
4. Treat the third seborrheic wart using the same procedure. While the ice crystals thaw and the thawing period passes for seborrheic warts 1, 2 and 3, continue treating the fourth seborrheic wart.
5. Finish by treating the fourth seborrheic wart for 6 seconds using the same procedure.



What is  
Hydrozid®

**Treatment**

Side effects,  
healing process and  
treatment outcome

Precautions and  
contraindications

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

The recommended treatment time is 2-3 freeze-thaw cycles for each seborrheic wart, corresponding to 12-18 seconds of treatment. The physician assesses the patient and the treated area between each freeze-thaw cycle.

What is  
Hydrozid®



**Treatment**

Side effects,  
healing process and  
treatment outcome

Precautions and  
contraindications

## Side effects, healing process and treatment outcome

Cryosurgery may cause a stinging or burning sensation during treatment. Treatment in the area around temples, forehead or scalp may trigger headache in the patient after completed treatment.<sup>2</sup>

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 as a natural reaction in the wound healing process. This process contributes further to destroying the seborrheic wart.

Wounds and possibly blisters will subsequently occur in the treated area.<sup>7</sup>

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

To reduce the risk of pigment changes, the patient should avoid exposing the treated area to sunlight for 10-14 days until the treated area is fully healed.

When repeated cryosurgery treatments are needed, it is due to the ability of keratinocytes to insulate the underlying epidermis<sup>2</sup> and thus serve as a thermal insulator that can reduce the effect of cryosurgery. The recommended treatment interval for seborrheic warts after the first treatment is 1-2 weeks but should always be adjusted to the individual patient.

The number of treatments depends on the patient's individual clinical response and is assessed by the physician.

What is  
Hydrozid®

Treatment

Side effects,  
healing process and  
treatment outcome

▼  
**Precautions and  
contraindications**

## Precautions and contraindications

**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,<sup>10</sup> Hydrozid® must be used with care to avoid damaging the dermis.

### **Exercise special caution when applying Hydrozid®:**

- near cutaneous nerves, tendons and nail beds<sup>14</sup>
- in hair-bearing areas. Cryosurgery may result in alopecia areata in exceptional cases
- in persons with impaired arterial or venous circulation<sup>14</sup> (e.g. diabetes patients).
- in persons with thin and/or sensitive skin (e.g. elderly with ageing skin, systemic scleroderma, persons treated with inhaled/systemic use of steroids for a prolonged period of time, etc.)<sup>14</sup>
- 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.<sup>14</sup>

### **Do not use Hydrozid®:**

- on open skin lesions or eczematous skin to avoid subcutaneous emphysema<sup>2</sup>
- in patients with cryoglobulinemia, Raynaud's disease, cold urticaria and blood dyscrasias and Pyoderma gangrenosum.<sup>5</sup>
- in case of uncertain diagnosis of the type of lesion (biopsy for skin carcinoma)<sup>5</sup>
- 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](mailto:info@hydrozid.eu)

# NOTES

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](http://www.hydrozid.eu)

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