



PLANTAR WARTS (VERRUCAS)

What are the aims of this leaflet?

This leaflet has been written to help you understand more about plantar warts. It tells you what they are, what causes them, what can be done about them, and where you can find out more about them.

What are plantar warts?

Warts are localised thickenings of the skin, and the term *plantar warts* is used for those that occur on the soles of the feet (the *plantar surface*). They are also known as *verrucae*.

What causes plantar warts?

Warts are a form of infection with a virus called the *human papilloma virus*. There are many different strains of this virus, and plantar warts are usually due to just a few of these strains. Infection of the cells of the outermost layer of the skin (the epidermis) with this virus results in this top layer of skin growing and thickening, creating the non-cancerous skin growth that is a wart.

Plantar warts are caught by contact with virally-infected skin scales: these are usually encountered on such surfaces as the floors of public locker rooms, shower cubicles and the tiled areas around swimming pools. However, the virus is *not* highly contagious, and it is unclear why some people catch plantar warts while others do not. The virus enters the skin through tiny breaks in the skin surface, and moistness and maceration of the skin on the feet probably make infection with the wart virus easier.

Are plantar warts hereditary?

No.

What are the symptoms of plantar warts?

Some plantar warts are uncomfortable, particularly if they are on a weight-bearing area when it may feel like having a stone in your shoe. *Mosaic warts* (see below) are usually painless.

What do plantar warts look like?

Plantar warts can occur anywhere on the soles and toes, and they often involve the weight-bearing areas. They vary in size from just a few millimetres to more than one centimetre. Each has a rough surface that protrudes slightly from the skin surface, surrounded by a horny collar. Close inspection of a plantar wart may reveal small black dots (which are blocked blood vessels). An individual may have one or many verrucas, sometimes associated with warts elsewhere on the body. The term *mosaic wart* is used when many small plantar warts pack together into a small area (resembling mosaic tiling).

How will plantar warts be diagnosed?

Usually this is easy, and based simply on the appearance. However, sometimes it may be hard to tell a plantar wart from a corn. One helpful point is that plantar warts interrupt the fine skin ridges on the sole, whereas corns do not. Your doctor may need to pare down the area to be certain of the diagnosis: he/she will be looking for the small black dots which confirm the diagnosis of a viral wart. No other investigations are needed.

Can plantar warts be cured?

Yes, but no single treatment can be guaranteed to be effective in every case. The highest cure rates are in young people who have not had their warts for very long. However, most verrucas will go away by themselves in due course, so it is very reasonable to leave them alone if they are not causing trouble.

How can plantar warts be treated?

When considering treatment of plantar warts, the following facts should be taken into account:

- Warts usually go away by themselves, and, when this happens, no scarring occurs.
- Successful treatment of a viral wart does not prevent further warts developing.
- Some warts can be very stubborn: treatment does not always work and may be quite time-consuming.
- Treating plantar warts can be painful, especially when liquid nitrogen is used, and can occasionally leave a scar which, on the sole, can be uncomfortable.

Thus, sometimes it may be sensible to leave a plantar wart alone and allow it to resolve spontaneously. However, if treatment is necessary, your doctor will usually start with the least painful options, especially for children.

Most plantar warts that require to be treated can be dealt with satisfactorily at home or in your general practitioner's surgery, rather than by a dermatologist.

Some of the more commonly used treatments are:

- **Salicylic acid preparations.** A reasonable start is self-treatment at home with one of the many commercial preparations that contain salicylic acid, a chemical that helps remove the hard outer layer of the wart. In order to improve their effectiveness, before applying them the wart should be pared down or filed with sandpaper or an emery board. Soaking the wart in warm water for at least 5 minutes will soften it and help with treatment, which should take place daily, for at least 12 weeks. Treatment should be used every night - to the wart only and not to the surrounding normal skin . but if the area becomes too tender, you should stop treatment for a day or two. The success rate is good for those who persist.
- **Formaldehyde preparations.** Mosaic warts (see above) in particular may respond to a gel containing formaldehyde. If you have large numbers of small plantar warts, it may be worth soaking the whole affected area for 10 minutes at night in a weak formaldehyde solution, as instructed by your doctor.
- **Cryotherapy.** (See patient information leaflet on *Cryotherapy*). Freezing the warts with liquid nitrogen, using either a cotton wool bud or a spray, may be the next option. A trained nurse, a podiatrist or your own general practitioner can do this. If the wart is particularly thick, they may pare it down before freezing it. Cryotherapy is, ideally, repeated every three to four weeks. It is painful and may lead to blistering afterwards, and so it may not be suggested by your doctor for small children. A number of freezings may be necessary. Cryotherapy can be combined with the use of a salicylic acid preparation. An aerosol containing a mixture of dimethyl ether and propane is available as Wartner[®] over-the-counter at chemist shops for use at home.
- **Duct tape.** There is evidence that the application of this waterproof adhesive tape to warts helps to clear them. It can be purchased from DIY shops. A piece of duct tape the size of the wart should be cut out and applied to the wart, and left in place for 6 days. If it should fall off, replace it with a new piece. After 6 days, remove the tape, soak the wart in warm water, and then gently scrape off dead skin with an emery board or a pumice stone. Leave the tape off overnight and replace with a fresh piece the following morning for a further 6 days. Repeat this cycle, covering the wart for 6 days and exposing the wart for 1 day each week. It is important that you pare away the dead skin from the wart each time the tape is removed. Continue this process until the wart goes, or for a maximum of 8 weeks, whichever is the sooner. Sometimes skin irritation can be caused by the glue in the tape, and occasionally the wart will become sore and may bleed if the paring of the wart is too vigorous.

If plantar warts do not clear with the treatments described above, one of the following techniques may then be considered:

- **Removal under a local anaesthetic.** The usual technique is to scrape the plantar wart away using a sharpened spoon-like instrument (a

curette), and then to cauterize the remaining raw area. However, all surgical procedures leave scars and these may be painful on the sole. Furthermore, the wart may recur.

- Other possible treatments that a specialist may consider include injections of **bleomycin** into the wart, although this is not a licensed treatment for plantar warts. **Laser treatment** is also sometimes used for multiple or mosaic plantar warts, or those that have not done well with other treatments: there is a risk that pain and scarring may follow.

What can I do?

If you have a plantar wart:

- Never try to cut it out or burn it off yourself.
- Wear comfortable shoes that do not press on it. Do not share your shoes or socks with anyone else. Special pads to relieve pressure on plantar warts can be bought at a chemist's shop.
- Keep your feet clean and dry, and change your socks daily.
- Do not go barefoot in public places. Plantar warts should be covered with waterproof plasters or rubber verruca socks if you go swimming.
- Do not pick at your plantar warts. When you pare your wart down, dispose of the dead skin carefully. The sand paper or emery board will also have living wart virus on it, and so do not use it for any other purpose, or you may spread the virus.
- When paring or filing down warts, take care not to damage the surrounding skin, as doing so might result in the warts spreading.
- If you have children, check their feet periodically for viral warts.

Where can I get more information about plantar warts?

Useful information about plantar warts can be found on the following websites:

www.aad.org/pamphlets/warts.html

www.emedicine.com/emerg/topic641.htm

www.emedicinehealth.com/articles/20312-1.asp

www.lib.uiowa.edu/hardin/md/plantarwarts.html

This leaflet aims to provide accurate information about the subject and is a consensus of the views held by representatives of the British Association of Dermatologists; its contents, however, may occasionally differ from the advice given to you by your doctor.

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