

## Verrucae

Verrucae are benign tumours. They are caused by infection of skin cells (the epidermis) by Human Papilloma Virus (HPV). There are more than 200 known types of HPV, but on the feet and hands they're usually HPV-1, HPV-2 and HPV-4. They are the same as warts, except that on the feet they generally get pushed inwards by being walked on. In Australia they are called papillomas.

**Does this mean I have a weak immune system?** In short, no. People with weak immune systems do often have verrucae, but then they generally pick up other infections too. Plenty of people with normal immune systems get verrucae. Our immune systems are very good at getting rid of infections, but the HPV has a number of tricks to avoid detection. Firstly, the outer layer of your skin (the epidermis) doesn't have any blood vessels (it is avascular) which means the immune system doesn't encounter the virus. Secondly, HPV suppresses the local immune response (it activates T suppressor cells and modifies Langerhan cell function). Thirdly, the infected cells don't look abnormal to the immune system (the virally infected cells have reduced surface markers and avoid cell damage, so there's no antigen presentation) which means your immune system doesn't notice it.

**Treatment approach number one: do nothing!** There is lots of evidence to tell us that they go away on their own - sometimes in a few months, mostly within two years and in adults sometimes 5-10 years. If they're not painful or bothering you, then it really is fine to leave them be.

**Treatment approach number two: home treatment.** You can buy over-the-counter treatments from the pharmacy. Generally these are mild salicylic acid treatments. If you have an issues with delayed healing or an altered immune system, or have diabetes, please seek advice first.

Another home treatment well worth trying is to rub it regularly with a bit of sandpaper, a nail file, a foot file or a pumice stone. Of course, don't use this implement on healthy areas of your feet or your nails as the virus may spread. Filing the area can keep the hard skin over the verruca more comfortable. If you can file it to the point of having very small areas of bleeding, then this can be particularly helpful because it'll help the immune system notice the virus.

If there is too much callus overlying your verruca to easily file it back yourself then we can gently debride the area with a scalpel. Having an appointment at Penn Farm Podiatry doesn't mean you have to have an aggressive treatment plan. We will work with you to find a solution that fits best.

**Treatment approach number three: destruction of verrucoid tissue.** At Penn Farm Podiatry, your podiatrist can put a strong acid on your verucca or freeze it. Acid treatments generally require weekly appointments and a dressing that needs to be kept dry. Cryotherapy (freezing) is generally more convenient as it doesn't need to be kept dry after each treatment, and appointments are about three weeks apart. Sometimes we will use a combination of the two treatments. Both approaches will require several appointments, but we will discuss this with you.

**Treatment approach number four: verruca needling.** The aim of this treatment is to make the virus visible to the immune system, so your body can begin to attack it. The principle is similar to that of an inoculation. Under local anaesthetic, a sterile needle is pushed through the verruca into the tissues just under the skin many times. This destroys the verruca as well as introducing the virus to your immune system. HPV is actually quite a weak virus and generally the immune system can deal with it effectively once it knows it is there. Even if you have several veruccae, only one needs to be treated.

**Treatment approach number five: surgical excision.** We can refer you for a surgical opinion. This effective treatment is more invasive and can cause scarring - it's generally recommended in cases when other options haven't worked.