



# Treating Warts: Current In-office or At-home Options

From immunomodulators to duct tape, dermatologists and podiatrists reveal their preferred – and desired – treatment for warts.

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With few highly effective and easily affordable treatments, physicians and patients are largely dissatisfied with currently available wart treatments. Doctors and patients resort to improvising with a variety of therapeutic regimens, including everything from FDA-approved drugs for warts or other indications to home remedies featuring kitchen spices, nail polish, and/or duct tape.

“I don’t think there’s a good treatment option available,” said Sandra M. Johnson, MD, a private-practice dermatologist based in Fort Smith, AR. Most of the available treatments work by destroying the skin that contains the virus, a strategy that causes pain and scarring and has high recurrence rates, said Dr Johnson, one of six dermatologists and podiatrists interviewed recently about wart treatment and prescribing habits. The interviewed providers each treat between 100 and 200 patients with warts monthly – many with a single wart, but some with as many as 100 or more.

Like Dr Johnson, Elaine Siegfried, MD, is dissatisfied with the lack of safe, effective, and convenient wart treatments. Dr Siegfried, who is the director of pediatric dermatology at Saint

Louis University and SSM Health Cardinal Glennon Children’s Hospital in St Louis, MO, is so dissatisfied that she actually talks patients out of treating warts. She says she finds all treatments to be equally effective and will not subject patients to painful or expensive treatments that work no better than cheap at-home alternatives or no treatment at all. She said that data supports spontaneous resolution in 60% of patients within 2 years.

## Preferred Treatments

When doctors do treat warts, interviews revealed that for older children and adults, liquid nitrogen is often the first-line treatment of choice. For at-home treatment to be used in conjunction with office treatments, respondents commonly recommend compounded 5-fluorouracil plus salicylic acid, perhaps with occlusion provided by household adhesive tape. “Salicylic acid is very good to peel off the skin, and the 5-fluorouracil counts as a chemotherapeutic agent,” said Dr Johnson.

Alternatively, Dr Johnson recommends that patients apply clear nail polish on every wart every day between office treatments (during

which she freezes the skin before an intralesional injection of Candida skin test antigen). She said that the vast majority of patients need a combination of treatments such as this. “If I stick with cryotherapy and Candida skin test antigen injections and at-home treatment with clear nail polish and that doesn’t work, then I’ll switch to at-home treatment with 5-fluorouracil and salicylic acid.”

Richard Mann, DPM, a private practice podiatrist in Delray Beach, FL, said the only treatment he offers, because of its high rate of success, is surgical excision followed by cauterization with silver nitrate. Others say cidofovir (Vistide), an antiviral, offers the best results.

“Everybody knows that cidofovir is the most effective treatment for warts. It’s common knowledge,” says Stephen K. Tyring, MD, PhD, a member of the dermatology faculty at the University of Texas Health Science Center at Houston. While Dr Tyring finds cidofovir to be the most effective single treatment for warts, like the other respondents, he often uses it along with other therapies.

Rather than sequential step therapy, most patients require combination treatment, said Dr Tyring. Instead of switching from one treatment to another if the first treatment fails, his inclination is to add more treatments. “The more things you have that have different mechanisms, the more likely you’re going to get benefit.”

Most of the respondents said virtually every currently available wart treatment carries concerns and/or limitations. For example, *Candida* or *Trichophyton* antigens produce a nonspecific inflammation that only works occasionally, explained Dr Tyring.

Results of duct-tape occlusion are not reproducible, he added. Somewhat similarly, said Dr Tyring, surgery of any type does not remove the virus that causes warts. When all else fails, he recommends cidofovir — though it is costly.

The doctors said over-the-counter treatments such as salicylic acid and freezing kits offer relatively little efficacy due to their low strength. Similarly, they found natural or home remedies, such as garlic, ginger, frankincense oil, banana peels, or Vicks VapoRub, were rarely effective. “Patients use everything under the sun on their warts, and none of it works,” said Dr Tyring.

### Cost of Treatment

Cost of treatment can range widely depending on the treatment and insurance coverage. For common procedures such as liquid nitrogen, physicians generally charge at least \$100 per visit, according to both Dr Tyring and Dr Johnson. Patients pay varying portions of this cost, depending on their insurance (or lack of it, in which case they pay it all out of pocket).

At one extreme, cidofovir or imiquimod could cost a patient \$500 to \$700 out of pocket. “But cidofovir is worth it,” said Dr Tyring, “because it works. If a patient had to pay out of pocket, it might cost \$500 for cidofovir to be compounded with a 3% petrolatum. But it is worth it because it works, but of course, if you have insurance, then sometimes, the insurance will pay for it.”

At the other extreme, clear nail polish and/or garlic costs a few dollars. Most patients seem to be willing to spend in the sweet spot of \$40 to \$60 out of pocket. There is a gray zone between \$50 to \$100, added Ivan V. Litvinov, MD, PhD, assistant professor,

director of research in the division of dermatology at McGill University Health Centre in Montréal, Québec, Canada, and co-chair, Skin Research Group of Canada. “Then once it’s over \$100, you need help from insurance.”

### Wart Treatment: What Is Ideal?

Optimal wart treatment should be efficacious, cost-effective, and well-tolerated by patients. A minimally acceptable treatment would offer tolerability and at least some reduction in the size or number of warts, said Dr Tyring. “If the patient can’t tolerate it, or it doesn’t result in a reduction in the size or number, then it’s completely unacceptable.”

Dr Johnson added, “Most people who come to the clinic want their warts gone yesterday, without pain or discomfort. Unfortunately, that treatment does not exist.” Most patients are aware of cryotherapy and some over-the-counter treatments, she added, though these treatments rarely satisfy them.

Michael J. Morse, DPM, a podiatrist affiliated with Sibley Memorial Hospital and Washington Hospital Center (both in Washington, DC), noted that for children, who represent a large percentage of patients with warts, treatment must be painless. Dr Siegfried said for young children who don’t want discomfort, she often recommends “active nonintervention,” meaning provide education about the natural history, relative risks, costs and benefits of treatment, and likelihood of spontaneous resolution.

Regardless of patient age, Dr Litvinov said, patients generally prefer creams over injections. One exception, Dr Morse and Dr Johnson noted, is the popularity of Candida antigen injections in older children and adults. According to Dr Johnson, “80% to 90% of patients that come to see me come for intralesional Candida skin test antigen injections.”

Dr Morse uses salicylic acid or cantharidin for the majority of younger children. For patients 10 to 18 years of age, he tends to use laser therapy. “Usually individuals are more excited when I say laser than they are with the other treatments. The laser is the approach that is more wanted or desired.”

### New Products, Minimal Excitement

Responses revealed minimal to no excitement about the prospect of new products for wart treatment. Dr Litvinov said that as a professor in a tertiary academic center, “I already have lots of tools in my toolbox, so I’m not necessarily looking for another treatment.”

Respondents expressed some hope in products that were already FDA approved or commonly used for other purposes, such as cantharidin, which many dermatologists use to treat molluscum contagiosum, or new formulations of existing drugs, such as topical formulation of cidofovir.

Dr Litvinov also noted that if a new treatment comes out, to maximize its chances for success, it should have a defined marketplace niche (like cidofovir for immunosuppressed patients with recalcitrant warts) and multiple purposes (such as topical retinoids, which also reduce wrinkles). ■