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Hand-Foot Syndrome

Hand-foot syndrome is a side effect of some cancer treatments. Hand-foot syndrome can cause redness, swelling, and pain on the palms of the hands and the soles of the feet.

Learn what to expect and watch for, and when to get help if your cancer treatment side effects include hand-foot syndrome.

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What is hand-foot syndrome?

Hand-foot syndrome is a skin reaction to a medicine, such as those for cancer treatment. The skin on the palms of your hands and soles of your feet becomes red, swollen, sore, or even starts to peel or crack. It can feel like a sunburn and sometimes hurts when you walk or touch things.

Hand-foot syndrome sometimes develops on the knees or elbows, but less commonly than on the hands and feet.

Hand-foot syndrome – or HFS – is also called:

- Palmar-plantar erythrodysesthesia
- Acral erythema
- Hand-foot skin reaction
- Toxic erythema of chemotherapy

What causes hand-foot syndrome?

The cause of this syndrome isn't known for sure. However, hand-foot syndrome happens with certain cancer medicines that travel through the bloodstream to reach all parts of your body. These are called **systemic treatments**. Some systemic treatments can affect the growth of skin cells or small blood vessels.

Your hands and feet have many tiny blood vessels close to the surface of the skin. Using your hands and feet puts pressure on them, like when you walk and grip or grab things. That pressure can make medicines leak out of the tiny blood vessels into the tissue under your skin. That's why symptoms usually show up on the palms of your hands and the soles of your feet rather than other parts of your body.

Once a medicine leaks out of the bloodstream, it can damage the surrounding tissues under the skin. This causes swelling and irritation with symptoms that range from redness and swelling to problems walking.

Is hand-foot syndrome an allergy?

No. Hand-foot syndrome is not an allergic reaction. The skin problems with hand-foot syndrome usually develop slowly over days to weeks after your treatment starts. They **are not** signs of a medication or drug allergy. In contrast, allergic reactions are different because they tend to start suddenly, usually within minutes to hours after getting the medicine.

Is hand-foot syndrome contagious?

No. Hand-foot syndrome might look like a rash that can spread to others, but it is not contagious. You can't catch it from someone else, and no one can catch it from you. It's a side effect of certain medicines—not an infection.

What cancer treatments can cause hand-foot syndrome?

Not all systemic cancer treatments cause hand-foot syndrome, but some are more likely to cause it.

Chemotherapy (chemo) medicines that can cause hand-foot syndrome include:

- Capecitabine (Xeloda)
- Liposomal doxorubicin (different from doxorubicin)
- Fluorouracil (5-FU)
- Gemcitabine
- Cytarabine (cytosine arabinoside)
- Azacitidine and decitabine

Targeted therapy medicines that can cause hand-foot syndrome, are used alone or combined with other treatments like chemo. These drugs that block the growth of new blood vessels that help cancer grow include:

- Bevacizumab (Avastin)
- Sorafenib (Nexavar)
- Sunitinib (Sutent)
- Regorafenib (Stivarga)
- Pazopanib (Votrient)
- Axitinib (Inlyta)

When does hand-foot syndrome usually develop?

HFS usually starts during the first 2 to 6 weeks of treatment with the medicines that can cause it. At first, the skin may just feel tingly or warm, but it can get worse over time if not treated. The symptoms can come and go depending on your treatment dose and schedule.

What are the symptoms of hand-foot syndrome?

If your treatment is known to cause hand-foot syndrome, your cancer care team will tell you before treatment starts. They will tell you about the early signs, how to track them, and when to report them so they can be managed before getting worse. They may start you on a special skin care regimen.

At each treatment visit, your care team will follow-up on any symptoms that are new or that you have reported to them. Early symptoms include:

- Dry skin
- Redness
- Tingling or itching
- Mild pain or numbness
- Mildly decreased sensitivity to touch, hot, and cold

If not reported and treated, symptoms can get worse, including:

- Increased redness (like a sunburn) with swelling
- Cracked and peeling skin
- Blisters
- More decreased sensitivity to touch, heat, and cold

Can I lose my fingerprints from hand-foot syndrome?

Sometimes the skin on your hands and fingers can peel so much that fingerprints temporarily disappear. This might make it hard to use devices that use fingerprint access, such as phones, tablet devices, car locks, or other devices. It's rare for fingerprints to be lost permanently since skin usually recovers in the weeks to months after treatment ends.



How hand-foot syndrome can affect daily life

Symptoms can stay mild or can get worse. They can become more painful and affect how your hands and feet function. Your daily activities, quality of life, and sense of safety can be affected. In severe cases:

- Skin can become drier, cracked, and can leak or ooze fluid.
- Blisters can open up and become sores.
- Open wounds, sores, and cracks in the skin can become infected.
- Loss of sensitivity can lead to problems walking, handling things, falls, burns, wounds, and other injuries.

Important: Some people already have some nerve damage or decreased feeling in their hands and feet from other conditions. If they get a cancer medicine that can cause hand-foot syndrome, they have a higher chance of getting it because their skin and nerves are already more sensitive. This includes people who have:

- Diabetes
- [Peripheral neuropathy¹](#)
- Circulation problems, like peripheral vascular disease

How to manage hand-foot syndrome

Your cancer care team will help manage symptoms of hand-foot syndrome. To do that, they need to know the symptoms you're having. Be sure to keep in touch with them as you track symptoms at home. Report all symptoms, if they have changed, and what helps and doesn't help at each visit or as directed by your care team.

Medicines to treat hand-foot syndrome

When early symptoms of hand-foot syndrome show up, your doctor may prescribe medicines to help relieve or control symptoms. Some may be available over-the-counter, so be sure to ask your doctor if you will need a prescription. They might prescribe:

- Creams or lotions that contain urea or steroids to help relieve redness and burning sensations
- Oral steroids (pills) along with a cream or lotion, or if the cream or lotion doesn't help
- Pain medicines
- Skin-cooling gloves or socks
- Special soaks for hands and feet

If hand-foot syndrome is severe, your cancer care team might recommend reducing the cancer treatment dose or taking a short break from your cancer treatment.

Sometimes people with hand-foot syndrome can also be helped by getting a referral to a podiatrist (foot doctor) or a dermatologist (skin doctor).

Managing hand-foot syndrome at home

Things you do at home can make symptoms better or worse. Focusing on safety and controlling or relieving symptoms of hand-foot syndrome is the goal. Here are some examples.

- If your doctor gave you a special skin care regimen to follow when treatment starts, use it as directed.
- Use a gentle, non-drying, alcohol-free lotion as recommended by your cancer care team to help soothe the skin.
- Avoid activities that put excess pressure or friction on your hands and feet such as chopping food, going for long walks or runs, and working with garden or repair tools.
- To prevent injury, get help when handling sharp, hot, or cold objects.
- Take a break from getting professional manicures and pedicures. Take care to avoid further injury when clipping and filing fingernails and toenails.
- Limit time spent in very warm or hot water, such as bathing and washing dishes. Avoid hot tubs and extra hot baths and showers.
- Avoid exposing hands and feet to the sun. Wear protective clothing and ask your cancer care team for sunscreen recommendations.
- Avoid long periods of activity with hands and feet if possible. Rest your hands and feet whenever you can.
- Avoid tight shoes, gloves, and clothing or coverings that might rub on your hands or feet. Wear well-fitting shoes. Add insoles for extra padding and protection.
- If blisters develop, do not pop them or try to break them because they can become infected. If a blister breaks on its own, contact your cancer care team.
- Keep skin clean, cool, and dry. If cold helps relieve your symptoms, try using flexible, reusable ice packs or frozen bags of peas or corn. Sometimes elevating arms and feet can relieve some discomfort.
- Tell your care team if your hands or feet start to hurt or peel.

How to choose a lotion for hand-foot symptoms

Ask your cancer care team to recommend creams and lotions that you can use at home. Buy them ahead of time when possible. While your care team can give you specific suggestions, they will likely suggest creams or lotions that are:

- Alcohol-free, fragrance-free, menthol-free, and dye-free
- Thick and moisturizing (like a balm or ointment)
- Made for very dry or sensitive skin

Your doctor may recommend applying the product and then wearing cotton socks or gloves to help lock in moisture.

What can I expect if my treatment can cause hand-foot syndrome?

Preventing hand-foot syndrome is not possible, but preventing it from getting worse is. Although hand-foot syndrome can be uncomfortable, it can be managed.

Most people recover from hand-foot syndrome when treatment is adjusted or finished. The best ways to get relief from hand-foot syndrome and avoid long-term skin damage are to track your symptoms, report them early, and use any medicines to manage it as directed by your doctor.

Hair, Skin, and Nail Problems²

Cancer and cancer treatment can cause changes to your skin, nails, and hair (including hair loss). Learn what to look for and how to manage your symptoms.

Managing Cancer-related Side Effects³

Learn more about common side effects that can be caused by cancer and cancer treatment and what you can do to manage them.

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/side-effects/pain/peripheral-neuropathy.html
2. www.cancer.org/cancer/managing-cancer/side-effects/hair-skin-nails.html
3. www.cancer.org/cancer/managing-cancer/side-effects.html

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