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Hand-Foot Syndrome or Palmar-Plantar Erythrodysesthesia [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 05/2016

Hand-foot syndrome is also called palmar-plantar erythrodysesthesia. It is a side effect of some cancer treatments. Hand-foot syndrome causes redness, swelling, and pain on the palms of the hands and/or the soles of the feet. Sometimes blisters appear. Although less common, hand-foot syndrome sometimes occurs elsewhere on the skin, such as the knees or elbows.

Relieving side effects is an important part of cancer care and treatment. This is called symptom management or [palliative care](#) [3]. Talk with your health care team about any symptoms you experience, including new symptoms or a change in symptoms.

Symptoms of hand-foot syndrome

The symptoms of mild or moderate hand-foot syndrome include:

- Redness similar to a sunburn
- Swelling
- A sensation of tingling or burning

- Tenderness or sensitivity to touch
- Tightness of the skin
- Thick calluses and blisters on the palms and soles

Symptoms of severe hand-foot syndrome include:

- Cracked, flaking, or peeling skin
- Blisters, ulcers, or sores on the skin
- Severe pain
- Difficulty walking or using the hands

Causes of hand-foot syndrome

Some cancer drugs affect the growth of skin cells or small blood vessels in the hands and feet. This is what causes hand-foot syndrome. Once a drug is out of the blood vessels, it damages the surrounding tissues. This causes symptoms that range from redness and swelling to problems walking.

Some drugs are more likely to cause hand-foot syndrome than others. The drugs that may cause hand-foot syndrome include:

- Axitinib (Inlyta)
- Cabozantinib (Cabometyx, Cometriq)
- Capecitabine (Xeloda)
- Cytarabine (Cytosar-U)
- Docetaxel (Docefrez, Taxotere)

- Floxuridine (FUDF)
- Fluorouracil (5-FU, Adrucil)
- Idarubicin (Idamycin)
- Liposomal doxorubicin (Doxil)
- Doxorubicin (Adriamycin)
- Sunitinib (Sutent)
- Sorafenib (Nexavar)
- Pazopanib (Votrient)
- Paclitaxel (Taxol)
- Vemurafenib (Zelboraf)
- Regorafenib (Stivarga)

Not everyone who takes these medications develops hand-foot syndrome. The severity of hand-foot syndrome can vary from person to person. Even people taking the same drug for the same form of cancer may not have the same symptoms.

Managing and preventing hand-foot syndrome

Hand-foot syndrome is usually worse during the first 6 weeks of treatment with [targeted therapy](#) [4]. Drugs for targeted therapy include axitinib, cabozantinib, regorafenib, sorafenib, sunitinib, and pazopanib. With chemotherapy, it usually appears after 2 to 3 months.

If you notice early signs of hand-foot syndrome, or if you notice your symptoms worsening, call your doctors' office. Your health care team may need to alter your treatment or provide you with methods to manage this symptom. The following tips may help:

- Limit the use of hot water on your hands and feet when washing dishes or bathing.
- Take cool showers or baths. Carefully pat your skin dry after washing or bathing.
- Cool your hands and feet. Use ice packs, cool running water, or a wet towel for 15 to 20 minutes at a time. Avoid applying ice directly to the skin.
- Avoid sources of heat, including saunas, sitting in the sun, or sitting in front of a sunny window.
- Avoid activities that cause force or rubbing on the hands or feet during the first 6 weeks of treatment. This includes jogging, aerobics, and racquet sports.
- Avoid contact with harsh chemicals used in laundry detergents or household cleaning products.
- Avoid the use of rubber or vinyl gloves without a liner to clean with hot water. Rubber traps heat and sweat against your skin. Try using white cotton gloves underneath rubber gloves.
- Avoid using tools or household items that require you to press your hand against a hard surface. Some examples include garden tools, knives, and screwdrivers.
- Gently apply skin care creams to keep your hands moist. Avoid rubbing or massaging lotion into your hands and feet. This type of movement can create friction.
- Wear loose fitting, well-ventilated shoes and clothes so air can move freely against your skin.
- Try not to walk barefoot and use soft slippers and thick socks to reduce friction on your feet.
- Consider visiting a podiatrist to remove any thick calluses and thick nails. A podiatrist is a doctor who specializes in conditions of the feet. A podiatrist can also recommend products that reduce friction and pressure on the feet.

Treating hand-foot syndrome

When taking medications known to cause hand-foot syndrome, topical anti-inflammatory medications may help. These include corticosteroid creams such as clobetasol (multiple brand names) or halobetasol (Ultravate). In addition, your doctor may lower your chemotherapy dose or change your chemotherapy schedule. Your doctor may need to temporarily stop your chemotherapy until symptoms of hand-foot syndrome improve.

The following options can be used to treat hand-foot syndrome:

- Topical pain relievers, such as lidocaine (Lidesthesin, Lidoderm, Xylocaine, Xylocitin). These are used as a cream or a patch over painful areas in the palms and soles.
- Topical moisturizing exfoliant creams are available, either over the counter or through your doctor. Those containing urea, salicylic acid, or ammonium lactate are most useful.
- Pain relievers, such as ibuprofen (multiple brand names), naproxen (multiple brand names), and celecoxib (Celebrex)
- Ice packs under the hands and feet while chemotherapy is being given to prevent hand-foot syndrome from paclitaxel, docetaxel, or doxorubicin.

More Information

[Skin Conditions](#) [5]

[Side Effects of Chemotherapy](#) [6]

[Side Effects](#) [7]

Links

- [1] <http://www.cancer.net/navigating-cancer-care/side-effects/hand-foot-syndrome-or-palmar-plantar-erythrodysesthesia>
- [2] <http://www.cancer.net/about-us>
- [3] <http://www.cancer.net/node/25282>
- [4] <http://www.cancer.net/node/24729>
- [5] <http://www.cancer.net/node/25260>
- [6] <http://www.cancer.net/node/24676>
- [7] <http://www.cancer.net/node/25238>

