# Understanding and Managing Treatment-Related Hand-Foot Syndrome (HFS) and Hand-Foot Skin Reaction (HFSR)

Hand-foot syndrome (HFS) and hand-foot skin reaction (HFSR) are both skin toxicities caused by cancer treatments, but they differ in the type of medication, presentation, and timeline. The specific cancer therapy is the key factor in determining which reaction will occur.

**Similarities**

- **Caused by cancer therapy**: Both conditions are side effects of systemic cancer treatments, where medication can affect the rapidly dividing skin cells on the palms of the hands and soles of the feet.
- **Affect hands and feet**: Both HFS and HFSR cause painful inflammation on the palms and soles.
- **Potential for severity**: Symptoms can range from mild tingling to severe blistering and ulceration that interfere with daily activities like walking or holding objects.
- **Management strategies**: Supportive care, including moisturizing, avoiding friction and heat, and sometimes topical steroids or pain medication, can be used to manage both conditions.



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**Differences**

| Feature | Hand-Foot Syndrome (HFS) | Hand-Foot Skin Reaction (HFSR) |
|---|---|---|
| Associated Drugs | Classic chemotherapy drugs, such as fluorouracil (5-FU), capecitabine, and liposomal doxorubicin. | Targeted therapy drugs called multikinase inhibitors (e.g., sorafenib, sunitinib). |
| Appearance | Typically presents as a more widespread, diffuse, and symmetrical redness (erythema) across the palms and soles, often resembling a sunburn. | Lesions are often more localized, focused on areas of pressure and friction, and appear thicker and more calloused (hyperkeratotic). |
| Location Preference | Lesions often appear on the palms of the hands more significantly than on the soles of the feet. | Lesions typically manifest on the feet before the hands and are prominent in pressure areas like the heels and pads. |
| Timeline of Onset | Tends to develop over a longer period, sometimes weeks or months after beginning chemotherapy. | Usually appears earlier in treatment, often within the first two to four weeks of starting a targeted therapy. |
| Underlying Mechanism | The exact cause is unclear, but one theory suggests drugs leak from capillaries in the hands and feet and are excreted through sweat glands, damaging the surrounding tissue. | Believed to be caused by the inhibition of growth factor proteins that are also present in skin cells, leading to disruptions in normal skin growth. |

**What can you do to lessen the severity of hand-foot reaction?**

- Regularly apply an alcohol-free moisturizing cream that contains urea.
- Urea cream (10%–20%) is helpful to use on thickened skin.
- Wear well-fitted shoes as well as socks to avoid excess rubbing on the feet.
- Use gloves when working with your hands.
- Avoid exposure to heat (including hot water) on hands and feet.
- Wear sunscreen with an SPF of 30 or higher daily, or wear long-sleeved shirts and pants.
- Pat your skin dry after washing hands and feet instead of rubbing with a towel.

**Call your care team if you experience any of the following symptoms:**

- You notice blistering of the hands and/or feet.
- You notice that it is painful to do everyday tasks with the hands and/or feet



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**Notes**

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