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[Skin Reactions to Targeted Therapy and Immunotherapy](#)

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

Compared with [chemotherapy](#) [3], targeted therapy and immunotherapy are more specific treatments. This means they may cause different side effects from those usually linked with chemotherapy. The side effects usually linked with chemotherapy include infections, weakness, and changes in blood counts. In contrast, patients receiving targeted therapy or immunotherapy may develop skin, hair, nail, and/or eye problems.

What is targeted therapy?

Targeted therapy is a treatment that targets faulty genes, proteins, or the tissue environment that contributes to cancer growth and development.

Depending on the type, some targeted therapies can cause specific side effects to the skin, hair, and nails. These side effects are caused by the drugs' effect on the healthy growth of these tissues.

The following are examples of the types of targeted therapies that may affect the skin. However, other types of targeted therapy may affect the skin as well. If your doctor prescribes any targeted therapy, ask about what side effects to expect and how they will be treated.

- **Drugs that target EGFR.** A common type of targeted therapy is directed against a molecule known as epidermal growth factor receptor (EGFR). EGFR fuels the growth of cancer cells. It also plays a role in the normal growth of the skin, hair, and nails. That

means rashes and changes to the hair and nails may occur during treatment with these drugs.

Most patients taking drugs that target EGFR develop a rash on the face and upper body. It usually occurs within the first few weeks of taking these medications. You may notice redness or a warm sensation like sunburn before a rash begins. After several days, tender pimples and pus bumps appear, and the surrounding skin feels slightly tender. Rashes tend to be mild to moderate. However, some people have severe rashes that cause major physical and cosmetic discomfort.

The skin can also become very dry and itchy, interfering with daily activities and sleep. Skin on the fingertips may crack. The skin may also become more sensitive to sunlight. Vigorous scratching can result in breaks that may make the skin more prone to infections. Inflammation around the nails can make grooming, dressing, and other activities painful or difficult.

- **Drugs that target VEGF.** Another type of targeted therapy that may cause skin problems includes drugs that block vascular endothelial growth factor (VEGF). This is a protein that helps make new blood vessels. They may also be called [angiogenesis inhibitors](#) [4] because they block the formation of blood vessels. When these drugs affect the blood vessels in the hands and feet, they can cause skin problems.

Your doctor can help you manage these side effects so treatment can continue. Managing these side effects can also help avoid big changes to your skin, hair, and nails. It is important to note that the skin side effects linked with these drugs are not allergic reactions or infections.

Common skin-related side effects of specific targeted drugs

Drug	Types of cancers for which drug may be prescribed	Side effects
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<p>Afatinib (Gilotrif) Cetuximab (Erbix) Erlotinib (Tarceva) Gefitinib (Iressa) Osimertinib (Tagrisso) Panitumumab (Vectibix)</p>	<ul style="list-style-type: none"> • Colorectal • Head/neck • Lung • Pancreas 	<ul style="list-style-type: none"> • Acne-like rash on face and upper body • Inflammation around fingernails • Dry, itchy skin • Fingertip cracking • Hair loss on scalp • Increased, curly or coarse hair on face and eyelashes • Increased sensitivity to sunlight
<p>Lapatinib (Tykerb)</p>	<ul style="list-style-type: none"> • Breast 	<ul style="list-style-type: none"> • Sores on lips, mouth, or throat • Dry skin • Red, painful, numb, or tingling hands and feet • Rash
<p>Sorafenib (Nexavar) Sunitinib (Sutent)</p>	<ul style="list-style-type: none"> • Renal cell cancer (a type of kidney cancer) • Gastrointestinal stromal tumor (GIST) • Hepatocellular cancer (a type of liver cancer) 	<ul style="list-style-type: none"> • Hand/foot skin reactions (tender, thickened areas sometimes with blisters on palms and soles) • Redness and flaking on scalp and eyebrows • Warm, burning sensation on face along with redness • Dry, itchy skin • Hair loss on scalp

<p>Vemurafenib (Zelboraf)</p>	<ul style="list-style-type: none"> • Melanoma 	<ul style="list-style-type: none"> • Red rash on face and upper body • Bumpy, rough rash on arms and thighs • Hand/foot skin reactions (tender, thickened areas sometimes with blisters on palms and soles) • Skin growths, including non-dangerous skin cancers • Increased sensitivity to sunlight
<p>Everolimus (Afinitor) Temsirrolimus (Torisel)</p>	<ul style="list-style-type: none"> • Renal cell cancer (a type of kidney cancer) • Pancreatic neuroendocrine tumor (a type of pancreas cancer) • Subependymal giant cell astrocytoma (SEGA), a benign brain tumor associated with tuberous sclerosis [5] 	<ul style="list-style-type: none"> • Mouth sores (like canker sores) • Bumpy rash on upper body • Acne-like rash
<p>Vandetanib (Caprelsa)</p>	<ul style="list-style-type: none"> • Medullary thyroid cancer 	<ul style="list-style-type: none"> • Rash or acne • Dry, peeling, or itchy skin • Blisters or sores • Skin redness

What is immunotherapy?

Immunotherapy, also called biologic therapy, is a type of cancer treatment designed to boost the body's natural defenses to fight the cancer. It uses materials either made by the body or in a

laboratory to improve, target, or restore immune system function.

Many side effects are similar to those of an allergic reaction. They depend on the specific drug a person receives but may include skin, hair, nail, or eye problems.

Common skin-related side effects of immunotherapy

Drug	Types of cancers for which drug may be prescribed	Side effects
Alemtuzumab (Campath)	<ul style="list-style-type: none"> • Chronic lymphocytic leukemia (CLL) 	<ul style="list-style-type: none"> • Mouth sores
Ipilimumab (Yervoy)	<ul style="list-style-type: none"> • Melanoma 	<ul style="list-style-type: none"> • Bumpy red rash • Itching • Pale skin patches and gray hair
Nivolumab (Opdivo)	<ul style="list-style-type: none"> • Renal cell cancer (a type of kidney cancer) • Non-small cell lung cancer (NSCLC) • Melanoma 	<ul style="list-style-type: none"> • Hair loss • Yellowing of skin and eyes • Itchy red rash • Blistering skin
Ofatumumab (Arzerra)	<ul style="list-style-type: none"> • CLL 	<ul style="list-style-type: none"> • Sudden reddening of the face, neck, or chest • Pale skin • Small, flat, round, red spots under the skin • Rash • Hives

Pembrolizumab (Keytruda)	<ul style="list-style-type: none"> • NSCLC • Melanoma 	<ul style="list-style-type: none"> • Change in skin color • Yellowing of skin and/or eyes • Hair loss • Blistering skin • Itchy red rash • Flushing, or skin redness
Rituximab (Rituxan)	<ul style="list-style-type: none"> • Non-Hodgkin lymphoma (NHL) • CLL 	<ul style="list-style-type: none"> • Redness, tenderness, swelling, or warmth of part of the skin

Managing and relieving skin problems

Although rashes, dry skin, and nail and hair reactions are rarely severe, they often cause major discomfort. Patients may even want to stop cancer treatment because of these reactions. So, it is important to talk with your doctor about what to expect. You should also tell your doctor as soon as you start feeling or seeing any side effects. There are early and effective treatments for these reactions.

The following suggestions may help avoid reactions and help relieve them if they do happen:

- Before you begin treatment, talk with your doctor about the side effects. You may wish to talk with a dermatologist. A dermatologist is a doctor who specializes in skin conditions. Ask what to do if a rash or other problems appear. This may include how to get a prescription filled or the best way to see the doctor.
- At the first sign of a reaction, tell your doctor or a dermatologist familiar with these reactions. Signs of a reaction include a warm or burning sensation, pimples, nail cracks, or dry skin.
- Avoid the sun, and use a sunscreen with a sun protection factor (SPF) of at least 15. If the sunscreen causes a burning sensation, you can try sunscreens that contain zinc oxide or titanium dioxide.
- Remember to use enough sunscreen. Apply more than half a teaspoon of sunscreen to

each arm, the face and neck. Apply just over 1 teaspoon to the chest and abdomen, back, and each leg. Also, re-apply sunscreen every 2 hours when outdoors, more often if sweating or swimming.

- Use a broad-brimmed hat if going outside and avoid being in direct sunlight between 10 AM and 4 PM.
- Use a mild soap in the shower, and avoid soaps with strong scents. Shower with lukewarm water and avoid long, hot showers. Also, avoid laundry detergent with strong perfumes.
- Apply a cream-based moisturizer within 5 minutes of showering or bathing to all of the skin. Use hypoallergenic moisturizers that do not have perfumes or preservatives, such as Vanicream, Aveeno, CeraVe, Cetaphil, and Eucerin.
- Avoid anti-acne skin products containing alcohol or retinoids, because they can dry out your skin.
- Your doctor may prescribe medicated creams for the skin to effectively relieve symptoms of rash. If the rash is severe or covers a large area of the body, oral corticosteroids, such as prednisone or dexamethasone (multiple brand names) may be needed.
- Antibiotics, usually taken 2 to 4 weeks in pill form, are an effective therapy for rashes and nail tenderness.
- Whenever there is discharge of pus, your doctor may want a sample for a culture to determine the appropriate antibiotic treatment.
- For the hand/foot skin reaction to sorafenib and sunitinib, use creams containing urea called Carmol 20 or Carmol 40, salicylic acid (Salex cream kit). Strong corticosteroids such as fluocinonide (multiple brand names), clobetasol (multiple brand names) are also options. Gel insoles may also help. In addition, do your best to protect against injury or putting too much weight on hands and feet, especially during the first 2 months of treatment. Thick, comfortable socks and shoes can be helpful.
- For itching in one specific area, called localized itching, apply a cream containing a corticosteroid or a numbing medicine, such as lidocaine 2% or cooling creams containing pramoxine (multiple brand names) or camphor/menthol (multiple brand names) several

times a day. For more generalized itching or itching that affects sleep, talk with your doctor about taking an antihistamine pill, such as cetirizine (Zyrtec) or diphenhydramine (Benadryl), as needed.

More Information

[Side Effects](#) [6]

[Understanding Targeted Treatments](#) [7]

[Understanding Immunotherapy](#) [8]

Links

[1] <http://www.cancer.net/navigating-cancer-care/side-effects/skin-reactions-targeted-therapy-and-immunotherapy>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/24723>

[4] <http://www.cancer.net/node/24376>

[5] <http://www.cancer.net/node/19686>

[6] <http://www.cancer.net/node/25238>

[7] <http://www.cancer.net/node/24729>

[8] <http://www.cancer.net/node/24726>