Treating Basal and Squamous Cell Skin Cancer

If you’ve been diagnosed with basal or squamous cell skin cancer, your doctor will discuss your treatment options with you. It’s important that you think carefully about your choices. You will want to weigh the benefits of each treatment option against the possible risks and side effects.

Which treatments are used for basal and squamous cell skin cancers?

Based on the type and stage of the cancer and other factors, your treatment options may include:

- Surgery
- Other forms of local therapy
- Radiation therapy
- Systemic chemotherapy
- Targeted therapy

Different approaches might be used to treat basal cell carcinoma, squamous cell carcinoma, actinic keratosis, and Bowen disease. Fortunately, most of these cancers and pre-cancers can be cured with fairly minor surgery or other types of local treatments.

(Other skin cancers, such as melanoma, lymphoma of the skin, Merkel cell carcinoma, Kaposi sarcoma, and other sarcomas are treated differently and are covered elsewhere.)

Which doctors treat basal and squamous cell skin
cancers?

You might have different types of doctors on your treatment team. Most basal and squamous cell cancers (as well as pre-cancers) are treated by dermatologists – doctors who specialize in treating skin diseases. If the cancer is more advanced, you may be treated by another type of doctor, such as:

- **A surgical oncologist**: a doctor who treats cancer with surgery
- **A medical oncologist**: a doctor who treats cancer with chemotherapy or other medicines
- **A radiation oncologist**: A doctor who treats cancer with radiation therapy

You might have other health specialists on your treatment team as well, including physician assistants (PAs), nurse practitioners (NPs), nurses, and other health professionals. See Health Professionals Associated With Cancer Care for more on this.

**Making treatment decisions**

It’s important to discuss all of your treatment options, including their goals and possible side effects, with your doctors to help make the decision that best fits your needs. Some important things to consider include:

- The type and location of your skin cancer
- The likelihood that treatment will cure your cancer (or help in some other way)
- Your age and overall health
- Possible side effects of treatment, such as scars or changes in your appearance, and your feelings about them

You might feel that you need to make a decision quickly, but it’s important to give yourself time to absorb the information you have just learned. It’s also very important to ask questions if there is anything you’re not sure about. (See What Should You Ask Your Health Care Professional About Basal and Squamous Cell Skin Cancers?)

**Getting a second opinion**

Before treatment, you might want to consider getting a second opinion, especially if you’re unsure about which option might be best for you. This can give you more information and help you feel more certain about the treatment plan you choose. If you aren’t sure where to go for a second opinion, ask your doctor for help.
Thinking about taking part in a clinical trial

Clinical trials are carefully controlled research studies that are done to get a closer look at promising new treatments or procedures. Clinical trials are one way to get state-of-the-art cancer treatment. Sometimes they may be the only way to get access to newer treatments. They are also the best way for doctors to learn better methods to treat cancer. Still, they are not right for everyone.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials. You can also call our clinical trials matching service at 1-800-303-5691 for a list of studies that meet your medical needs, or see Clinical Trials to learn more.

Considering complementary and alternative methods

You may hear about alternative or complementary methods that your doctor hasn’t mentioned to treat your cancer or relieve symptoms. These methods can include vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

*Complementary methods* refer to treatments that are used *along with* your regular medical care. *Alternative treatments* are used *instead of* a doctor’s medical treatment. Although some of these methods might be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be dangerous.

Be sure to talk to your cancer care team about any method you are thinking about using. They can help you learn what is known (or not known) about the method, which can help you make an informed decision. See Complementary and Alternative Medicine to learn more.

Help getting through cancer treatment

Your cancer care team will be your first source of information and support, but there are other resources for help when you need it. Clinic- or hospital-based support services can be an important part of your care. These might include nursing or social work services, financial aid, or spiritual help.

The American Cancer Society also has programs and services – including rides to treatment, lodging, support groups, and more – to help you get through treatment. Call our National Cancer Information Center at 1-800-227-2345 and speak with one of our
Surgery for Basal and Squamous Cell Skin Cancers

Surgery is a common treatment for basal cell and squamous cell skin cancers. Different surgical techniques can be used. The options depend on the type of skin cancer, how large the cancer is, where it is on the body, and other factors. Most often the surgery can be done in a doctor’s office or hospital clinic using a local anesthetic (numbing medicine). For skin cancers with a high risk of spreading, surgery sometimes will be followed by other treatments, such as radiation or chemotherapy.

Excision

This is similar to an excisional biopsy (see Tests for Basal and Squamous Cell Skin Cancer), but in this case the diagnosis is already known. For this procedure, the skin is first numbed with a local anesthetic. The tumor is then cut out with a surgical knife, along with some surrounding normal skin. The remaining skin is carefully stitched back together, which will leave a scar.

Curettage and electrodesiccation
In this treatment, the doctor removes the cancer by scraping it with a long, thin instrument with a sharp looped edge on one end (called a curette). The area is then treated with an electric needle (electrode) to destroy any remaining cancer cells. This process is often repeated once or twice during the same office visit. Curettage and electrodessication is a good treatment for superficial (confined to the top layer of skin) basal cell and squamous cell cancers. It will leave a scar.

**Mohs surgery (microscopically controlled surgery)**

Mohs surgery is sometimes used when there is a high risk the skin cancer will come back after treatment, when the extent of the skin cancer is not known, or when the goal is to save as much healthy skin as possible, such as with cancers near the eye or other critical areas such as the central face, ears or fingers.

The Mohs procedure is done by a surgeon with special training. First, the surgeon removes a very thin layer of the skin (including the tumor) and then checks the removed sample under a microscope. If cancer cells are seen, another layer is removed and examined. This is repeated until the skin samples are free of cancer cells. This is a slow process, often taking several hours, but it means that more normal skin near the tumor can be saved. This can help the area look better after surgery.

Mohs can often offer better outcomes than some other forms of surgery and other treatments. But it’s also usually more complex and time-consuming than other methods. In recent years, skin cancer experts have developed guidelines for when it’s best to use this technique based on the type and size of skin cancer, where it is on the body, and other important features.

**Lymph node surgery**

If lymph nodes near a squamous or basal cell skin cancer are enlarged, the doctor might biopsy them to check for cancer cells (see [Tests for Basal and Squamous Cell Skin Cancer](#)).

Sometimes, many nodes might be removed in a more extensive operation called a lymph node dissection. The nodes are then looked at under a microscope for signs of cancer. This type of operation is more extensive than surgery on the skin and is usually done while you are under general anesthesia (in a deep sleep).

Lymphedema, a condition in which excess fluid collects in the legs or arms, is a possible long-term side effect of a lymph node dissection. If it’s severe enough, it can
cause skin problems and an increased risk of infections in the limb. Elastic stockings and compression sleeves can be used to help people with this condition.

Skin grafting and reconstructive surgery

After surgery to remove a large basal or squamous cell skin cancer, it may not be possible to stretch the nearby skin enough to stitch the edges of the wound together. In these cases, healthy skin can be taken from another part of the body and grafted over the wound to help it heal and to restore the appearance of the affected area. Other reconstructive surgical procedures can also be helpful in some cases.

- References
  See all references for Basal and Squamous Cell Skin Cancer

Local Treatments Other than Surgery for Basal and Squamous Cell Skin Cancers

Several techniques other than surgery can be used to treat basal and squamous cell skin cancers that have not spread to lymph nodes or other parts of the body. Some of these treatments are described as types of surgery since they destroy a targeted area of body tissue. But these techniques don’t use scalpels or cut into the skin.

Cryotherapy (cryosurgery)

Cryotherapy is used most often for pre-cancerous conditions such as actinic keratosis and for small basal cell and squamous cell carcinomas.

For this treatment, the doctor applies liquid nitrogen to the tumor to freeze and kill the cells. This is often repeated a couple of times in the same office visit. After the dead area of skin thaws, it will swell, blister and crust over.
The wound may have fluid draining from it for a while and take a month or two to heal. It will leave a scar, and the treated area may have less color after treatment.

**Photodynamic therapy (PDT)**

PDT can be used to treat actinic keratoses. But its exact role in treating basal and squamous cell skin cancers, if any, still needs to be determined.

This treatment uses a special liquid drug that is applied to the skin. The drug collects in the tumor cells over several hours or days, where it is converted to a different chemical that makes the cells very sensitive to certain types of light. A special light source is then focused on the tumor(s), which kills the cells.

PDT can cause redness and swelling on the skin where it is used. Another possible side effect of PDT is that it can make a person’s skin very sensitive to sunlight for some time, so precautions may be needed to avoid severe burns.

To learn more about this technique, see [Photodynamic Therapy](#).

**Topical chemotherapy**

Chemotherapy uses drugs that kill cancer cells. Topical chemotherapy means that an anti-cancer medicine is **put directly on the skin** (usually in a cream or ointment) rather than being given by mouth or injected into a vein.

**5-fluorouracil (5-FU):** The drug most often used in topical treatment of actinic keratoses, as well as some basal and squamous cell skin cancers, is 5-FU (with brand names such as Efudex, Carac, and Fluoroplex). It is typically applied to the skin once or twice a day for several weeks.

When put directly on the skin, 5-FU kills tumor cells on or near the skin’s surface, but it can’t reach cancer cells deeper in the skin or those that have spread to other organs. For this reason, 5-FU is generally used only for pre-cancerous conditions such as actinic keratosis and for some very superficial skin cancers.

Because the drug is only applied to the skin, it doesn’t spread throughout the body, so it doesn’t cause the same side effects as **systemic chemotherapy** (treatment that affects the whole body). But it does make the treated skin red and very sensitive for a few weeks. Other topical medicines can be used to help relieve this, if needed. 5-FU can also make the skin more sensitive to sunlight, so treated areas must be protected from
the sun to prevent sunburn for a few weeks after use of this cream.

A very small portion of people have a condition called DPD deficiency, which makes it hard for their bodies to break down and get rid of 5-FU. This can result in serious or even life-threatening side effects. If you are applying 5-FU and have any reactions beyond those you were told to expect on your skin, call your doctor or nurse right away.

Diclofenac (Solaraze): A gel containing the drug diclofenac is sometimes used to treat actinic keratoses. This drug is part of a group of drugs called nonsteroidal anti-inflammatory drugs (NSAIDs), which includes aspirin and ibuprofen. The gel is usually applied twice daily for 2 or 3 months. It may cause less severe skin reactions than 5-FU, but it can also take longer to work.

Ingenol mebutate (Picato): This is a newer gel used to treat actinic keratosis that might work more quickly than other topical gels. It is applied to the skin daily for 2 or 3 days. The gel can cause bothersome skin reactions, but these usually start to go away within a week of starting treatment.

**Immune response modifiers**

Certain drugs can boost the body's immune response against the cancer, causing it to shrink and go away.

Imiquimod (Zyclara) is a cream that can be applied to actinic keratoses and some very early basal cell cancers. It causes the immune system to react to the skin lesion and destroy it. It’s typically applied at least a few times a week for several weeks, although schedules can vary. Like other topical gels, it can cause severe skin reactions in some people. It can also cause flu-like symptoms.

Interferon is a man-made version of an immune system protein. It can be injected directly into the tumor to boost the immune response against it. It might be an option when surgery isn’t possible, but it may not be as effective as other treatments.

**Laser surgery**

This approach uses a beam of laser light to vaporize cancer cells. It’s sometimes used for actinic keratosis, squamous cell carcinoma in situ (Bowen disease), and for very superficial basal cell carcinomas (those only on the surface of the skin). It’s not yet known if this type of treatment is as effective as standard methods of treatment, and it’s not widely used.
Chemical peeling

For this technique, the doctor applies a small amount of trichloracetic acid (TCA) or another chemical to the skin tumor, killing the tumor cells over the course of several days. This approach is sometimes used to treat actinic keratosis.

- References
See all references for Basal and Squamous Cell Skin Cancer

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Radiation Therapy for Basal and Squamous Cell Skin Cancers

Radiation therapy uses high-energy rays (such as x-rays) or particles (such as photons, electrons, or protons) to kill cancer cells.

When is radiation therapy used?

If a tumor is very large or is on an area of the skin that makes it hard to remove with surgery, radiation therapy may be used as the main treatment. Radiation therapy can also be useful for some patients who, for other health reasons, can't have surgery. Radiation therapy can often cure small basal or squamous cell skin cancers and can delay the growth of more advanced cancers.

Radiation is also useful when combined with other treatments. For example, radiation can be used after surgery as an adjuvant (additional) treatment to kill any small areas of remaining cancer cells that may not have been visible during surgery. This lowers the risk of cancer coming back after surgery. Radiation may also be used to help treat skin cancer that has spread to lymph nodes or other organs.

How is radiation therapy given?
When radiation therapy is used to treat skin cancers, the radiation is focused from outside the body onto the tumor. This is often done with a type of radiation called electron beam radiation. It uses a beam of electrons that don’t go any deeper than the skin. This helps limit the side effects to other organs and body tissues.

Getting radiation treatment is much like getting an x-ray, but the radiation is stronger and aimed more precisely at the cancer. The procedure itself is painless. Each treatment lasts only a few minutes, although the setup time – getting you into place for treatment – takes longer.

**Possible side effects of radiation**

Side effects of radiation are usually limited to the area getting radiation, and can include:

- Skin irritation, ranging from redness to blistering and peeling
- Changes in skin color
- Hair loss in the area being treated
- Damage to saliva-making glands and teeth when treating cancers near these structures

With longer treatment, these side effects may get worse.

After many years, **new skin cancers** sometimes develop in areas previously treated by radiation. For this reason, radiation usually is not used to treat skin cancer in young people. Radiation is also not recommended for people with certain [inherited conditions](https://www.cancer.org/cancer/skin-cancer/basal-and-squamous-cell-skin-cancers/treatment-options.html) (such as basal cell nevus syndrome or xeroderma pigmentosum), who may be at higher risk for new cancers, or for people with connective tissue diseases (such as lupus or scleroderma), which radiation might make worse.

To learn more about radiation therapy, see [Radiation Therapy](https://www.cancer.org/cancer/skin-cancer/basal-and-squamous-cell-skin-cancer/treatment-options.html).

- **References**

[See all references for Basal and Squamous Cell Skin Cancer](https://www.cancer.org/cancer/skin-cancer/basal-and-squamous-cell-skin-cancer/treatment-options.html)

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Systemic Chemotherapy for Basal and Squamous Cell Skin Cancers

Systemic chemotherapy (chemo) uses anti-cancer drugs that are injected into a vein or given by mouth. These drugs travel through the bloodstream to all parts of the body. Unlike topical chemotherapy, which is applied to the skin, systemic chemotherapy can attack cancer cells that have spread to lymph nodes and other organs.

If squamous cell carcinoma has spread, chemo drugs such as cisplatin, doxorubicin, 5-fluorouracil (5-FU), capecitabine, topotecan, and etoposide might be used. These drugs are given into a vein (intravenously, or IV), usually once every few weeks. They can often slow the spread of these cancers and relieve some symptoms. In some cases, they might shrink tumors enough so that other treatments such as surgery or radiation therapy can be used.

Basal cell carcinoma very rarely reaches an advanced stage, so systemic chemotherapy is not typically used to treat these cancers. Advanced basal cell cancers are more likely to be treated with targeted therapy.

Possible side effects of chemotherapy

Chemo drugs can cause side effects. These depend on the type and dose of drugs given and how long they are used. The side effects of chemo can include:

- Hair loss
- Mouth sores
- Loss of appetite
- Nausea and vomiting
- Diarrhea or constipation
- Increased risk of infection (from having too few white blood cells)
- Easy bruising or bleeding (from having too few blood platelets)
- Fatigue (from having too few red blood cells)

These side effects usually go away once treatment is finished. Some drugs can have specific effects that are not listed above, so be sure to talk with your cancer care team about what you might expect.

There are often ways to lessen these side effects. For example, drugs can help prevent
or reduce nausea and vomiting. Tell your medical team about any side effects or changes you notice while getting chemo so that they can be treated promptly.

To learn more about chemo, see the Chemotherapy section of our website.

- References

See all references for Basal and Squamous Cell Skin Cancer

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Targeted Therapy for Basal and Squamous Cell Skin Cancers

These drugs target parts of skin cancer cells that make them different from normal skin cells. Targeted drugs work differently from standard chemotherapy drugs. They may work sometimes when chemotherapy drugs don’t. They may also have less severe side effects. Doctors are still learning the best way to use these drugs to treat skin cancers.

Hedgehog pathway inhibitors

Examples of targeted drugs include vismodegib (Erivedge) and sonidegib (Odomzo), which can be used to treat some advanced or recurrent basal cell skin cancers.

It’s very rare for basal cell cancers to reach an advanced stage, but if they do, these cancers can be hard to treat. Most basal cell cancers have mutations (changes) in genes that are part of a cell signaling pathway called hedgehog. The hedgehog pathway is crucial for the development of the embryo and fetus and is important in some adult cells, but it can be overactive in basal cell cancer cells. These drugs target a protein in this pathway.

These drugs are capsules taken once a day. For basal cell cancers that have spread or come back after surgery or other local treatments, these drugs have been shown to help shrink tumors in some people, although it’s not yet clear if they help people live longer.
Side effects can include muscle spasms, joint pain, hair loss, fatigue, problems with taste, poor appetite and weight loss, nausea and vomiting, itchy skin, diarrhea, and constipation. These drugs can also cause women to stop having their periods.

Because the hedgehog pathway affects fetal development, these drugs should not be taken by women who are pregnant or could become pregnant. It is not known if they could harm the fetus if taken by a male partner. Anyone taking these drugs should use reliable birth control during and for some time after treatment.

**References**

See all references for Basal and Squamous Cell Skin Cancer

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**Treating Basal Cell Carcinoma**

Several types of treatment can be used to remove or destroy basal cell skin cancers. The options depend on factors such as the tumor size and location, and a person’s age, general health, and preferences. These cancers very rarely spread to other parts of the body, although they can grow into nearby tissues if not treated.

All of the treatments listed here can be effective. The chance of the cancer coming back (recurring) ranges from less than 5% after Mohs surgery to up to 15% or higher after some of the others, but this depends on the size of the tumor. Small tumors are less likely to recur than larger ones. Even if a tumor does recur, it can often still be treated effectively.

**Surgery**

Different types of surgery can be used to treat basal cell cancers.

**Curettage and electrodesiccation:** This is a common treatment for small basal cell carcinomas. It might need to be repeated to help make sure all of the cancer has been removed.
**Excision:** Excision (cutting the tumor out) is often used to remove basal cell carcinomas, along with a margin of normal skin.

**Mohs surgery:** Mohs surgery has the best cure rate for basal cell carcinoma. It’s especially useful in treating large tumors, tumors where the edges are not well-defined, tumors in certain locations (such as on or near the nose, eyes, ears, forehead, scalp, fingers, and genital area), and those that have come back after other treatments. However, it’s also usually more complex and time-consuming than other methods.

**Radiation therapy**

Radiation therapy is often a good option for treating patients who aren’t able to have surgery and for treating tumors on the eyelids, nose, or ears – areas that can be hard to treat surgically – especially in older patients where cure may not be as important as control over the long term. It’s also sometimes used after surgery if it’s not clear that all of the cancer has been removed.

**Immune response modifiers, photodynamic therapy, or topical chemotherapy**

These treatments are sometimes options for treating very superficial tumors (tumors that have not grown too deeply into the skin). Close follow-up is needed because these treatments do not destroy any cancer cells that have grown deep below the surface.

**Cryotherapy**

Cryotherapy (cryosurgery) can be used for some small basal cell carcinomas, but it’s not usually recommended for larger tumors or those on certain parts of the nose, ears, eyelids, scalp, or legs.

Cryotherapy can also be used to treat large tumors in one treatment session to relieve symptoms from the cancer. The site of treatment often takes a month or two to heal.

**Targeted therapy for advanced basal cell cancers**

In rare cases where basal cell cancer spreads to other parts of the body or can’t be cured with surgery or radiation therapy, a targeted drug such as vismodegib (Erivedge)
or sonidegib (Odomzo) can often shrink or slow its growth.

- References
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**Treating Squamous Cell Carcinoma of the Skin**

Most squamous cell skin cancers are found and treated at an early stage, when they can be removed or destroyed with local treatment methods. Small squamous cell cancers can usually be cured with these treatments. Larger squamous cell cancers are harder to treat, and fast-growing cancers have a higher risk of coming back.

In rare cases, squamous cell cancers can spread to lymph nodes or distant parts of the body. If this happens, treatments such as radiation therapy and/or chemotherapy may be needed.

**Surgery**

Different types of surgery can be used to treat squamous cell skin cancers.

**Excision**: Cutting out the tumor, along with a small margin of normal skin, is often used to treat squamous cell cancers.

**Curettage and electrodesiccation**: This approach is sometimes useful in treating small (less than 1 cm across), thin squamous cell cancers, but it’s not recommended for larger tumors.

**Mohs surgery**: Mohs surgery has the highest cure rate. It’s especially useful for squamous cell cancers larger than 2 cm (about 4/5 inch) across or with poorly defined edges, for cancers that have come back after other treatments, for cancers that are
spreading along nerves under the skin, and for cancers on certain areas of the face or genital area. This approach is typically more complex and time-consuming than other types of surgery.

**Radiation therapy**

Radiation therapy is often a good option for patients with large cancers, especially in areas where surgery would be hard to do (such as the eyelids, ears, or nose), or for patients who can’t have surgery. It’s not used as much as the first treatment in younger patients because of the possible risk of long-term problems.

Radiation is sometimes used after surgery (simple excision or lymph node dissection) if all of the cancer was not removed (if the surgical margins were positive), if nerves are involved, or if there is a chance that some cancer may still be left.

Radiation can also be used to treat cancers that have come back after surgery and have become too large or deep to be removed surgically.

**Cryotherapy**

Cryotherapy (cryosurgery) is used for some early squamous cell cancers, especially in people who can’t have surgery, but is not recommended for larger invasive tumors or those on certain parts of the nose, ears, eyelids, scalp, or legs.

**Treating advanced squamous cell cancers**

**Lymph node dissection:** Removing regional (nearby) lymph nodes might be recommended for some squamous cell cancers that are very large or have grown deeply into the skin, as well as if the lymph nodes feel enlarged and/or hard. The removed lymph nodes are looked at under a microscope to see if they contain cancer cells. Sometimes, radiation therapy might be recommended after surgery.

**Systemic chemotherapy:** Chemotherapy is an option for patients with squamous cell cancer that has spread to lymph nodes or distant organs. Sometimes it’s combined with surgery or radiation therapy.

- References

See all references for Basal and Squamous Cell Skin Cancer
Treating Actinic Keratosis and Bowen Disease

Actinic keratosis

Actinic keratosis is often treated because it can turn into squamous cell skin cancer. But because this risk is low, treatments are generally aimed at avoiding scars or other disfiguring marks as much as possible.

Actinic keratosis is often treated with either cryotherapy or topical creams or gels such as fluorouracil (5-FU), imiquimod, diclofenac, or ingenol mebutate. These treatments destroy the affected area of the epidermis, the outermost layer of the skin, which usually cures actinic keratosis.

Other localized treatments (shave excision, curettage and electrodessication, photodynamic therapy, laser surgery, chemical peeling) are also sometimes used.

Bowen disease

Bowen disease (squamous cell carcinoma in situ) is usually treated by excision (cutting out the tumor). Mohs surgery, curettage and electrodessication, radiation therapy, topical fluorouracil (5-FU), and cryosurgery are other options. Laser surgery or topical therapy may be considered in special situations.

References

See all references for Basal and Squamous Cell Skin Cancer