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2019

Squamous Cell Skin Cancer

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- ✓ Designed to help you discuss cancer treatment with your doctors

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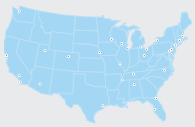

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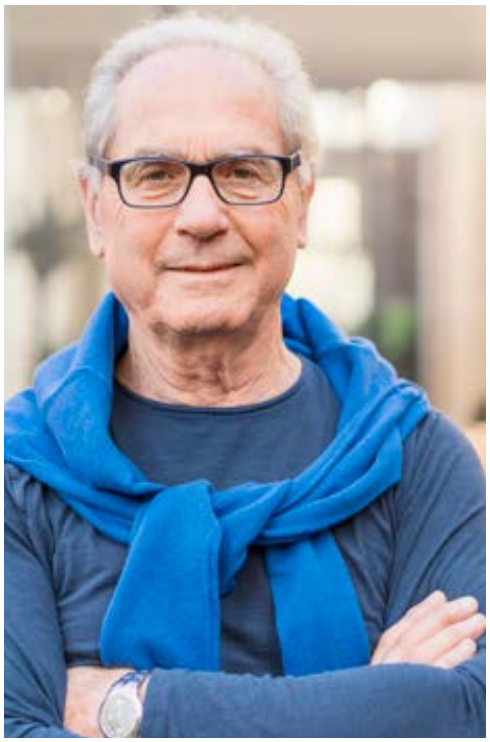
is a Canadian patient-led not-for-profit group dedicated to fighting against non-melanoma skin cancers, melanoma and ocular melanoma. By using and sharing the valuable and comprehensive NCCN Guidelines for Patients®, SYSF is confident in their provision of solid patient support with accurate and current information on these cancers and related topics such as melanoma treatment with immunotherapy. www.saveyourskin.ca



Contents

1 Squamous cell skin cancer basics

You've learned you have skin cancer. This chapter goes over the basics of cancer and how it affects the skin. This first look at your cancer will help prepare you for next steps.

Types of skin cancer

There are three main types of skin cancer:

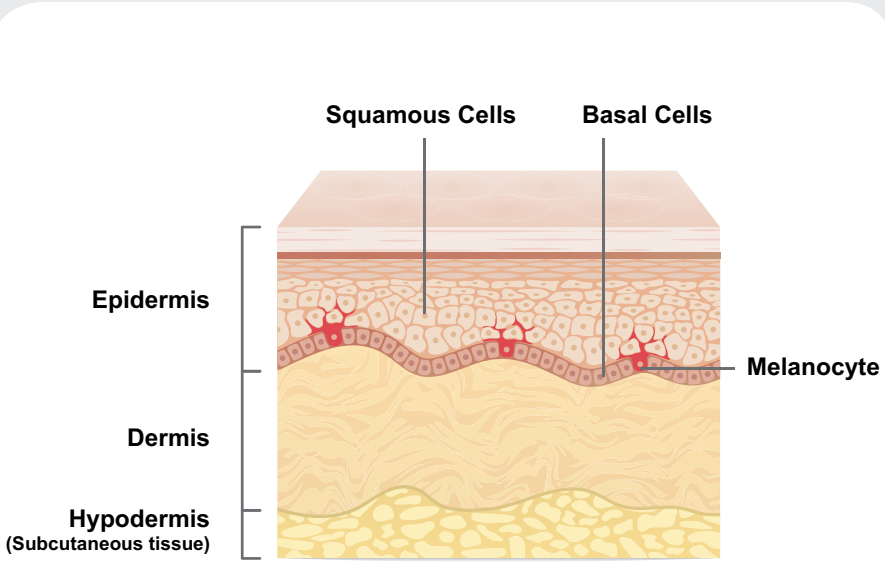
- Basal cell carcinoma
- Squamous (pronounced skway-miss) cell carcinoma
- Melanoma

Basal cell carcinoma is the most common, followed closely by squamous cell carcinoma. Melanoma is the rarest of the three, but also the most dangerous. Because they are so different from melanoma, basal cell and squamous cell skin cancer are often called non-melanoma skin cancers. This book is about squamous cell skin cancer only.

There are three main layers of skin. The epidermis is the outermost layer. Squamous cells and basal cells are both found in the epidermis. **See Figure 1**. The dermis layer is below the epidermis. It contains hair follicles, nerves, sweat glands, oil glands, and blood vessels. Beneath the dermis is the hypodermis. This layer is sometimes called subcutaneous tissue. Like the dermis, the hypodermis also contains connective tissue, blood vessels, and nerves. This layer is best known, however, for its many fat cells. Fat storage is the main purpose of the hypodermis.

Figure 1
Layers and cell structure of skin

Squamous cells are found in the outer layer of skin, called the epidermis.



Squamous cell skin cancer

Squamous cells are thin, flat, and look like fish scales under a microscope. They are found on the surface of the skin and in other areas of the body, like the lungs, thyroid, and esophagus. When cancer starts in a squamous cell, it is called a squamous cell carcinoma. Squamous cell carcinoma of the skin is often shortened to CSCC (**c**utaneous **s**quamous **c**ell **c**arcinoma), or just SCC. The word cutaneous means that it's an SCC of the skin. **The terms "squamous cell carcinoma," "squamous cell skin cancer," and "SCC" are used interchangeably throughout this book.**

What causes squamous cell skin cancer?

A risk factor is something that increases the chances of getting a particular disease. For example, smoking cigarettes is a risk factor for lung cancer. The major risk factors for squamous cell skin cancer are described next.

Sunlight

Most squamous cell skin cancers are caused by spending too much time in the sun over the course of many years, especially in people who sunburn easily. People with light skin, hair, and eyes who have been exposed to too much sun are at the highest risk for squamous cell skin cancer. People who work outdoors are also at higher risk. Also, because long-term sun exposure can lead to squamous cell skin cancer, it is more common in older people who have spent more years in the sun. Older people also have weaker immune systems, which makes it easier for cancer to start growing. **See Figure 2.**

Indoor tanning

The use of tanning beds is a major risk factor for squamous cell skin cancer. Any type of tanning (especially indoor tanning) can increase your chance of getting skin cancer.

Figure 2
Sun exposure

Most squamous cell skin cancers are caused by spending too much time in the sun over a long period of time.

Snapshot: Squamous cell carcinoma (SCC)

- ✓ A very common type of cancer in light-skinned people
- ✓ Usually starts in areas of the body exposed to sun, especially the head and neck
- ✓ Once an SCC is completely removed, over 95% of people are cured
- ✓ Rarely spreads to distant areas of the body
- ✓ Can spread in the area where it forms, causing severe damage and, in rare cases, death

Scars and chronic wounds

SCC can form in scars or chronic (non-healing) wounds, such as ulcers (sores) and burns. When this happens, it is called Marjolin's ulcer. SCC that starts in damaged, inflamed, or scarred skin is difficult to treat and more likely to come back after treatment.

Actinic keratoses

An actinic keratosis is an area of thick, rough skin caused by being in the sun. Actinic keratoses can vary a lot in appearance, and may be red, white, tan, or pink in color. Many stick out from the skin like bumps, and may even look like warts. **See Figures 3 and 4**. Having actinic keratoses means you are at high risk of developing squamous cell skin cancer.

Bowen's disease

Very early squamous cell carcinoma that is only in the epidermis and has not invaded deeper layers of the skin yet is called Bowen's disease. It is also called SCC in situ and stage 0 SCC. Having Bowen's disease means you are at high risk of developing squamous cell skin cancer.

I had no idea skin cancer could be so serious. I had never even heard of squamous cell before. Now I have scars and side effects, and a medical team.

– Gary, age 54
3-year SCC survivor

Genetic syndromes

If you have certain genetic syndromes, it means you are at higher risk of getting SCC. One such syndrome is albinism (lack of color in the hair, skin, and eyes). Another is xeroderma pigmentosum, in which the body isn't able to repair damage to DNA (**d**eoxyribo**n**ucleic **a**cid) caused by sunlight.

Weakened immune system

Having a weakened immune system can put you at risk of getting a squamous cell carcinoma. An example of this is organ transplantation. If you received an organ from another person, you likely take drugs to stop your body from attacking the donated organ. These drugs, called immunosuppressants, reduce the body's ability to fight infection and disease. This increases the risk of getting squamous cell skin cancer. Your immune system may also not work well because of other medical conditions, such as lymphoma, chronic lymphocytic leukemia, and HIV (**h**uman **i**mmunodeficiency **v**irus).

Diagnosing SCC

Squamous cell carcinoma is typically discovered when a suspicious area of skin is spotted—either by you, your doctor, or someone you know.

When squamous cell skin cancer is suspected, the steps your doctor may take to investigate include:

- Taking a full health history
- Examining the suspicious area
- Doing a head-to-toe skin exam to look for other suspicious areas
- Feeling your lymph nodes
- Taking a sample of skin from the suspicious area in order to have it tested for cancer. This is called a *biopsy*.

Figure 3
Actinic keratosis on hand

An actinic keratosis is an area of thick, rough skin caused by being in the sun.

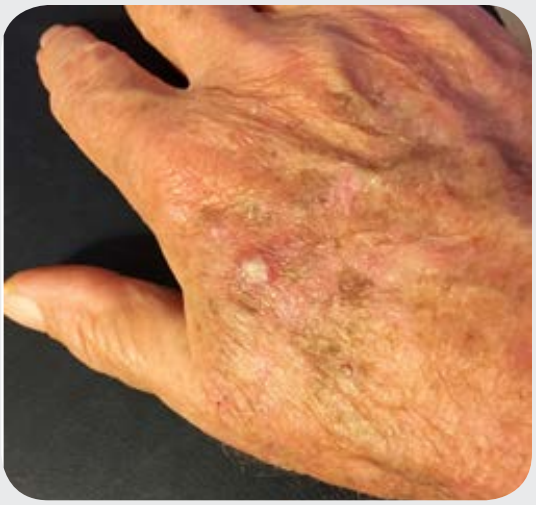
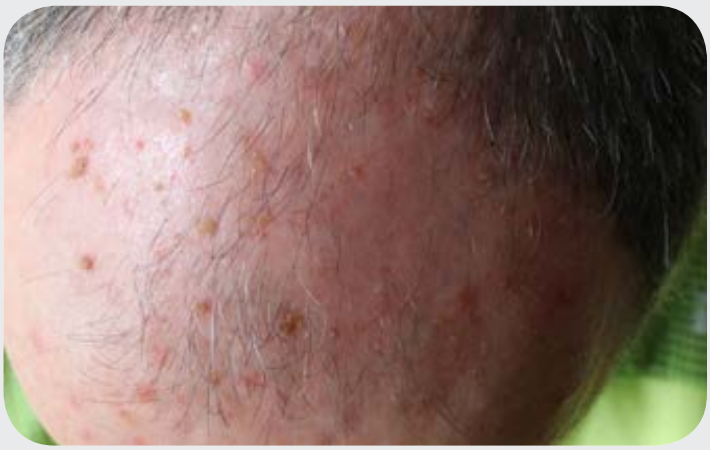


Figure 4
Actinic keratosis on top of head

Actinic keratoses can vary a lot in appearance, and may be red, white, tan, or pink in color.



- Ordering imaging tests, if he or she suspects that the cancer has invaded deep into the skin or has spread to lymph nodes

Cancer cells can travel through blood and lymph to form tumors in other parts of the body. If your lymph nodes feel larger than they should or look suspicious on imaging tests, cancer may have spread to the lymph nodes. To find out, your doctor will use a needle to take a sample from the lymph node for testing (a biopsy). If cancer is found in the lymph node, it is considered regional squamous cell skin cancer. See Part 4, *Treatment guide: Regional SCC* for information on how this type of skin cancer is treated.

SCC that hasn't spread to nearby lymph nodes is called local SCC. See Part 3, *Treatment guide: Local SCC* for information on how this type of SCC is treated.

Review

- The three main types of skin cancer are basal cell carcinoma, squamous cell carcinoma, and melanoma. Squamous cell skin carcinoma is very common.
- Squamous cells are thin, flat, and look like fish scales under a microscope.
- When cancer starts in a squamous cell, it is called a squamous cell carcinoma.
- Squamous cell skin cancer is usually caused by getting sunburns or spending too much time in the sun over the course of many years.
- An actinic keratosis is an area of scaly or rough skin that may become squamous cell skin cancer.
- Bowen's disease is very early squamous cell skin cancer that has not invaded deeper layers of the skin.
- You may be more likely to get squamous cell skin cancer if you have a weakened immune system, certain genetic syndromes, actinic keratoses, or Bowen's disease.
- Squamous cell skin cancer may also form in old wounds, burns, or scars. When this happens, it is called Marjolin's ulcer and may be hard to treat.

2
Overview of treatments

This chapter describes the main treatments for squamous cell skin cancer. The best treatment(s) for you will depend on the cancer stage and your preferences. Squamous cell skin cancer is usually treated with surgery.

Superficial treatments

Treatments that affect only the top layer of the skin (epidermis) are called superficial. These treatments should only be used for people with the earliest possible stage of squamous cell skin cancer (called SCC in situ, Bowen's disease, or T stage 0).

Most patients with SCC in situ have several actinic keratoses and SCC in situ lesions in the same general area. This is called field cancerization. While surgery is almost always the best way to treat more advanced SCC, superficial treatments are often the most practical and effective way to treat SCC in situ.

Photodynamic therapy (PDT)

In PDT, a light-sensitive drug is applied to the area. When exposed to light (either red or blue light in the doctor's office or shaded outdoor light), the drug becomes active and kills the cells of in situ SCC and actinic keratoses. Common side effects of PDT are itching or burning when the liquid is applied, pain during the red or blue light exposure, and itching and redness for a few days after treatment. **See Figure 5.**

Cryotherapy

Cryotherapy (also called cryosurgery) freezes and destroys cancerous cells using a very cold liquid or tool. Cryotherapy burns during treatment and then a blister or scab heals over 1–2 weeks. It can cause skin lightening. **See Figure 6**.

Figure 5
Photodynamic therapy

A drug applied to the skin becomes active when exposed to light.

Figure 6
Cryotherapy

Cryotherapy freezes and destroys cancer cells using a very cold liquid or tool.

Topical therapies

Imiquimod (Aldara®) and fluorouracil (also called 5-FU) are prescription creams used to treat SCC in situ (Bowen's disease). Both drugs can cause burning, redness, itching, and pain in the treated area. Sun-damaged skin may need to be re-treated with topical therapies from time to time.

Surgical methods

Curettage & electrodesiccation

In this method, the visible tumor is first scraped off using a thin tool with a sharp loop or spoon at the end. Then an electric needle is used to cauterize (burn) the base of the wound. This usually kills any remaining cancer cells and helps stop bleeding. This two-step system of scraping then burning may be done up to three times in the same session. **See Figure 7**.

What are the downsides or limitations?

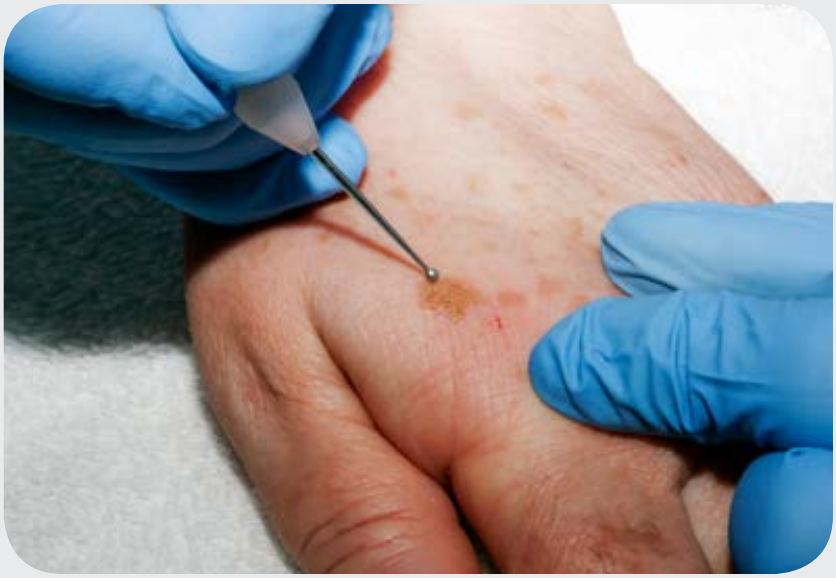
In the curettage & electrodesiccation method, the edges (margins) of the removed tissue are not looked at under a microscope. This means that there could still be cancer cells left in the wound. For this reason, curettage & electrodesiccation is not the best option for tumors that have invaded deeper layers of the skin.

Mohs surgery

In Mohs surgery, the visible tumor is removed using a scalpel. Then a thin layer of normal-looking tissue is removed around and under the wound. The edges and underside of this tissue are examined for cancer cells by the Mohs surgeon using a microscope while you wait. If cancer is seen by the surgeon, another thin layer of tissue is removed from the area of the wound where the cancer was seen. When a removed layer shows no cancer cells at its edges, the procedure is over and the wound is usually closed with stiches. **See Figures 8 and 9**.

Figure 7
Curettage and electrodesiccation

This procedure uses a two-step system of scraping and burning to kill cancer cells.



What are the advantages of Mohs surgery?

Your doctor will know on the spot whether more tissue needs to be removed in order to get rid of all the cancer. The doctor knows exactly where the cancer is because he or she has looked at it with a microscope. In standard surgery (see below), it is not known until 2–7 days later (after testing with another doctor called a pathologist) whether there are cancer cells at the edges of tissue that was removed. If there are, more treatment is needed. So, with Mohs surgery, there is no guessing or waiting to see whether all the cancer was removed and whether you'll need more treatment. Another advantage is that (unlike in standard surgery) all the edges and underside of the removed tissue are looked at with a microscope. This precision gives Mohs surgery the highest cure rate for SCC.

Is Mohs surgery an option for me?

Mohs surgery is the preferred surgical technique for high-risk squamous cell skin cancer because the doctor can be sure that all the cancer has been removed. Mohs surgery is also preferred for SCC on the head, face, hands, feet, shins, and genital areas because it can remove the cancer while sparing as much normal tissue as possible. Mohs surgery may also be used after standard surgical excision in both high- and low-risk patients, if the excision didn't remove all of the cancer.

Figure 8
Mohs surgery

This procedure allows the surgeon to know right away whether all cancer was removed.

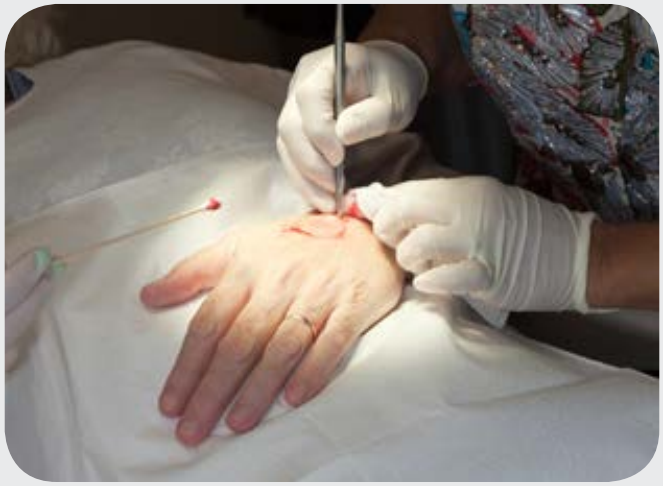
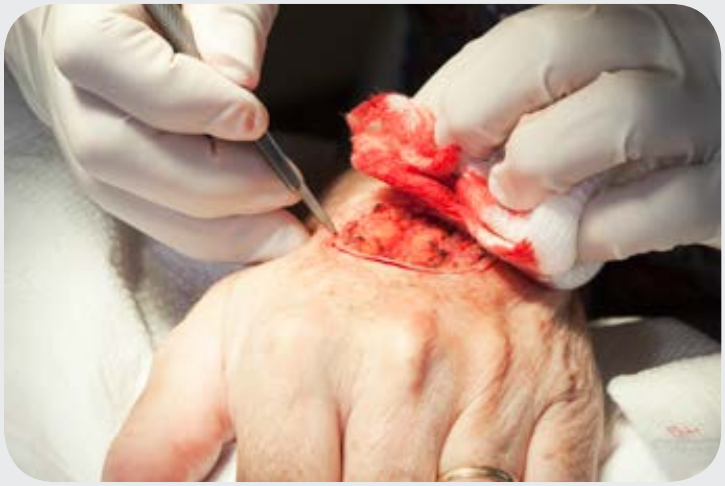


Figure 9
Mohs surgery

Mohs surgery is the preferred treatment for high-risk squamous cell skin cancer.



Standard surgical excision

During a standard surgical excision (removal), the doctor removes the tumor and a ring of healthy tissue around it with a scalpel blade. The edges of the removed tissue are called the surgical margin. The removed tissue is then tested, by looking at thin samples of the tissue via a microscope, to see if there are cancer cells at the margin. If there are, it is called a positive margin and more treatment is needed because it is likely that not all the cancer was removed. Next treatments you may have include Mohs surgery (see above) or another surgical excision. If another surgical technique can't be used, radiation therapy is an option.

Is standard surgical removal an option for me?

Standard surgical excision is a treatment option for low-risk squamous cell skin cancers. Mohs surgery (described above) is preferred for high-risk patients, but standard surgical removal is also an option. If used for high-risk patients, the doctor will remove a larger area of tissue around the tumor for testing.

"The main thing I have learned from all of this: don't just sit back – certainly if it is a rare cancer. Until consistent protocols are put in place, you (the patient) have to keep pushing for information.

– Helen, 59
5-year SCC survivor

Radiation therapy

The best way to treat SCC is usually surgery. However, radiation therapy can also be used as the primary (main) treatment. Radiation therapy may also be used after surgery, if not all of the cancer was removed. However, it is not known how effective this is for SCC.

Radiation therapy may be an appropriate primary treatment option if:

- You don't want to have surgery
- The tumor is too large or deep to be completely removed with surgery, or the resulting wound couldn't be closed (this is rare)

Radiation therapy may be used after surgery if:

- The tumor has grown into larger or multiple nerves
- Only some of the cancer could be removed with surgery

How is radiation therapy given?

Radiation therapy uses high-energy waves similar to x-rays to kill cancer cells. The type of radiation therapy usually used for SCC is called EBRT (**e**xternal **b**eam **r**adiation **t**herapy). In EBRT, a large machine aims radiation at the tumor. **See Figure 10**.

What are the downsides or limitations?

Radiation therapy usually involves about 30 brief treatments over 6 weeks. It can be hard for some patients to go to that many visits. Most patients have some pain and significant fatigue by the end of treatment, but these get better after treatment.

People who have had radiation therapy are prone to getting new SCC in the treated area, usually several years later. Similarly, if radiation is used to treat existing SCC, the risk of SCC returning (recurring) is also higher than with surgery.

Radiation can also be harmful to your appearance. It can cause spider veins, changes in skin color, and scar tissue. More serious long-term side effects include non-healing ulcers and cataracts (for SCC in the eye area).

Radiation therapy shouldn't be used in people with certain conditions that put them at higher risk of skin cancer caused by radiation, such as basal cell nevus syndrome or xeroderma pigmentosum. It may also not be appropriate for some people with connective tissue diseases, such as lupus or scleroderma.

The same area generally shouldn't be treated with radiation more than once. When SCC grows in a radiated area, it usually needs to be removed with surgery. However, the area often doesn't heal as well because the tissues were weakened by the radiation.

Systemic therapy

A treatment that is given to a specific area of the body (including those above) is called local. Surgery and radiation are examples of local cancer therapies. Cancer treatment that affects the whole body is called systemic and usually involves medicines taken by mouth or given through the veins.

Systemic therapy is not used often to treat squamous cell skin cancer. It may be needed in the following situations:

- For high-risk SCC tumors if surgery wasn't an option or wasn't successful
- For SCC that has spread to lymph nodes, if surgery wasn't an option or wasn't successful
- For SCC that has spread to distant areas of the body (metastasized)

Types of systemic therapies are described next.

Figure 10
Radiation therapy

Radiation therapy uses high-energy waves similar to x-rays to kill cancer cells.

Chemotherapy

Chemotherapy is treatment with drugs to kill cancer cells. Most chemotherapy drugs are liquids that are slowly injected into a vein. The drugs travel in your bloodstream to treat cancer throughout your body.

Targeted therapy

Targeted therapy is a cancer treatment that may target and attack specific types of cancer cells. Some are taken by mouth, while others are injected into veins.

Immunotherapy

Immunotherapy is a cancer treatment that increases the activity of your body's immune system. By doing so, it improves your body's ability to find and destroy cancer cells. These medicines are generally given through the veins.

Clinical trials

New tests and treatments aren't offered to the public as soon as they're made. They first need to be studied. A clinical trial is a type of research that studies how safe and helpful tests and treatments are. When found to be safe and helpful, they may become tomorrow's standard of care. Because of clinical trials, the tests and treatments in this book are now widely used to help people with cancer.

Joining a clinical trial can have both upsides and downsides. **See Figure 11** for some things to consider when deciding to join a clinical trial. You will need to weigh the pros and cons and decide what is right for you.

To join a clinical trial, you must meet the conditions of the study. Patients in a clinical trial are often alike in terms of their cancer and general health. This is to know that any progress is because of the treatment and not because of differences between patients.

To join, you'll need to review and sign a paper called an informed consent form. This form describes the study in detail. The study's risks and benefits should be described and may include others than those described above.

Ask your treatment team if there is an open clinical trial that you can join. There may be clinical trials where you're getting treatment or at other treatment centers nearby. You can also find clinical trials through the websites listed in Part 6, *Making treatment decisions.*

Figure 11
Pros and cons of joining a clinical trial

Review

- A treatment that is given to a specific area of the body is called local. Surgery and radiation are examples of local cancer therapies.
- The three main surgical techniques used to treat squamous cell skin cancer are curettage & electrodesiccation, Mohs surgery, and standard excision.
- A treatment that affects the whole body is called systemic. Chemotherapy is an example of a systemic cancer therapy.
- Photodynamic therapy, cryotherapy, and topical therapy are treatment options for the earliest stage of squamous cell skin cancer (Bowen's disease).

"I thought after being diagnosed with metastatic melanoma in 2003, that SCC wasn't that big of a deal. But when I had to have a large SCC removed from my scalp in 2014 and another from my leg in 2018, I realized it, too, was a big deal. I remember phoning the surgeon to see what the pathology report had said. He told me not to worry it wasn't melanoma, but I had a huge hole in my scalp and needed to know what it was. I arranged an appointment with my dermatologist, and she said 'we're not really sure what it is, but it's not melanoma'. I was so angry and frustrated, I told her I wasn't leaving till I knew what it was. She fumbled through my file and said 'Oh, it seems to be SCC, not to worry.'

– Dan, age 63
5-year SCC survivor

3
Treatment guide: Local SCC

If cancer hasn't spread to nearby lymph nodes, it is often called "local" disease. The main goal of treating local squamous cell skin cancer is to completely remove the cancer with the least amount of damage to the area. Local disease is usually treated with surgery.

- Tumors on the cheeks, forehead, scalp, neck, or shins that are 10 mm (about the size of a pea) or larger
- Any tumor on the hands, feet, sex organs, or the "mask area" of the face **(see Figure 12)**

Return after treatment
Any tumor that has returned after being treated is considered a high-risk squamous cell skin cancer.

Risk assessment

Cancer affects everyone differently. Based on the features of the cancer, some people will be at higher risk of the cancer returning after treatment and spreading to distant areas (metastasis). This is important to know because high-risk disease is treated differently than low-risk disease. After squamous cell skin cancer is confirmed, your doctor will consider several key features of the cancer to determine if it is a low- or high-risk skin cancer.

For cancer that hasn't spread to lymph nodes ("local" disease), the following factors are used to determine if you are at high or low risk. If your cancer has any of the risk factors described below, it is a high-risk squamous cell carcinoma.

Location and size of the tumor
Squamous cell skin cancer on the head or neck is more likely to return after treatment than tumors on the trunk, arms, or legs. The following tumors are considered high risk because of their location and size:

- Tumors on the trunk, arms, or legs that are 20 mm (about the size of a nickel) or larger

Figure 12
Mask area of face

Tumors on the "mask area" of the face are considered high risk.

Weakened immune system
We learned in Part 1 that people with a weakened immune system (such as organ transplant recipients) are at increased risk of getting squamous cell skin cancer. These people are also at increased risk of the cancer returning after treatment and spreading to distant sites.

The tumor formed in damaged skin
If squamous cell skin cancer starts in an area that was previously treated with radiation therapy (for SCC or a different condition), it is considered a high-risk cancer. This is also the case if the cancer starts in a wound, a scar, or an area of damaged or inflamed skin.

Nerve damage
If the tumor has grown into a nerve or group of nerves, it is a high-risk cancer. Signs that the cancer may have invaded nerves include pain, burning, stinging, loss of feeling, burning or pricking sensation, loss of movement, double vision, and blurred vision.

The tumor grade
The grade is a rating of how fast your doctors expect the cancer to grow and spread. It is based on how different the tumor cells look compared to normal cells. The more different they look, the faster the cancer is expected to spread.

Tumor type
To diagnose squamous cell skin cancer, you likely had a small sample of tissue removed for testing (a biopsy). That tissue sample was then analyzed by a pathologist in order to determine the specific type (and sub-type) of cancer. There are certain rare subtypes of squamous cell carcinoma that are likely to return after treatment.

If there is connective tissue in the tumor
Some tumors form fibrous or connective tissue, which is a sign of a high-risk cancer.

How deep the tumor has grown into the skin
The deeper the tumor has invaded into the skin, the higher the risk of the cancer returning after treatment or spreading to distant sites.

Lymph or blood vessel involvement
If there are cancer cells in the blood vessels or lymph vessels outside of the main tumor, it means that the cancer is more likely to spread to nearby lymph nodes.

Low-risk local SCC

There are three options for treating low-risk, local squamous cell skin cancer. They are listed below and shown in Guide 1. See Part 2, *Overview of treatments* for detailed descriptions of these treatments.

Curettage and electrodesiccation. If the tumor ends up being deeper than expected, you may need to have a standard excision instead.

Standard surgical excision. If testing finds cancer cells in the band of normal tissue removed with the tumor, more treatment is needed. Options for the next treatment include:

- Mohs surgery (or a similar procedure that allows for complete testing of the edges of removed tissue)
- Another surgical excision
- Radiation therapy (if more surgery can't be done)

Radiation therapy. Surgery is the most effective treatment for SCC. However, radiation therapy is an option for people who don't want surgery.

Guide 1. Treatment options for low-risk local SCC

Option	Treatment	Result	Next treatment	What's next?
1	**Curettage and electrodesiccation**	→	→	Follow-up care
2	**Standard excision**	Cancer cells found around edge of removed tissue	Mohs (or similar) surgery →	Follow-up care
			Another excision →	Follow-up care
			Radiation therapy (if more surgery isn't an option) →	Follow-up care
		No cancer cells found around edge of removed tissue	→	Follow-up care
3	**Radiation therapy** (for people who don't want surgery)	→	→	Follow-up care

After treatment

See Part 5, *When treatment is over* on page 31 for information on follow-up care, including:

- Monitoring for the return of skin cancer
- Steps to help prevent the return of skin cancer
- What to do if cancer comes back or spreads

High-risk local SCC

There are three options for treating high-risk SCC that has not spread to nearby lymph nodes. The options for people who can have surgery are shown in Guide 2. See Part 2, *Overview of treatments* for detailed descriptions of these treatments.

Guide 2. Surgical options for high-risk local squamous cell skin cancer

Mohs surgery

Result of surgery		Next treatment(s)	What's next?
Cancer cells remain around tumor	→	Possible treatments: • Radiation therapy • Chemotherapy • Clinical trial	→ Follow-up care
No cancer cells remain around tumor	Tumor has grown into nerves or has other high-risk features	Possible treatments: • Radiation therapy • Clinical trial	→ Follow-up care
	No high-risk features	→	Follow-up care

Standard excision

Result of surgery		Treatment options	What's next?
Cancer cells remain around tumor	→	Mohs surgery →	If cancer remains and more surgery isn't an option, possible treatments include chemoradiation and joining a clinical trial. If cancer is gone, begin follow-up care.
		Another standard excision →	
		Radiation therapy →	
No cancer cells remain around tumor	Tumor has grown into nerves or has other high-risk features	Possible treatments: • Radiation therapy • Clinical trial →	Follow-up care
	No high-risk features	→	Follow-up care

Mohs surgery. Mohs surgery is the most effective treatment for high-risk local SCC. However, if Mohs surgery is unsuccessful at removing all of the cancer, you may have radiation therapy to try to kill the remaining cancer cells. Your doctor may recommend having both radiation therapy and systemic therapy. To determine if treatment beyond surgery is needed, NCCN experts recommend that your doctor consult with other experts who specialize in different types of cancer treatment. This is called getting a multidisciplinary opinion or a tumor board review. Your doctor may also suggest joining a clinical trial, if there is one available to you.

If Mohs surgery was successful, but during surgery the cancer was found to be in a large nerve or group of nerves, you may have radiation therapy to kill any cancer cells that may be "hiding" in or around the nerves. This is also a situation in which NCCN experts recommend seeking a multidisciplinary opinion.

Standard surgical excision. If testing after surgery finds cancer cells in the band of normal tissue removed with the tumor, more treatment is needed. Options for next treatment include:

- Mohs surgery (or a similar procedure that allows for complete testing of the edges of the removed tissue)
- Another surgical excision
- Radiation therapy (if more surgery can't be done)

If the second-line treatments above are unsuccessful at removing the cancer and more surgery isn't an option, NCCN experts recommend that your doctors seek a multidisciplinary consultation. The purpose is to help determine whether systemic therapy might help you. Your doctor may also suggest joining a clinical trial, if there is one available to you.

SNAPSHOT

Local SCC

- ✓ SCC that hasn't spread to the lymph nodes is called "local"
- ✓ The goal of treatment is to remove all of the cancer with as little change as possible to the look and function of the area
- ✓ Local SCC is usually treated with surgery

Radiation therapy. This option is for people who can't have (or don't want) surgery.

Immunotherapy with cemiplimab (Libtayo®). This option is for people whose cancer has spread locally to the point that surgery is unlikely to be curative or the wound would be too large or deep to close.

After treatment

See Part 5, *When treatment is over* on page 31 for information on follow-up care, including:

- Monitoring for the return of skin cancer
- Steps to help prevent the return of skin cancer
- If cancer spreads to distant sites

Review

- If cancer hasn't spread to nearby lymph nodes, it is called local disease. The main goal of treating local squamous cell skin cancer is to completely remove the cancer with the least amount of damage to the area.
- After squamous cell skin cancer is confirmed, your doctor will consider several key features of the cancer to determine if it is a low- or high-risk skin cancer. This is called a risk assessment.
- Local squamous cell skin cancer is usually treated with surgery, but radiation is also an option for some people who can't have (or don't want) surgery.

It was frustrating to get the doctors to take it seriously. We had to push the whole way through. Finally after six months my pathology led to a confirmed diagnosis. Even at that time they didn't do scans, and I think that was a mistake. I ended up having to have part of my lung removed.

– Helen, 59
5-year SCC survivor

4
Treatment guide: Regional SCC

Cancer can spread through lymph or blood to other parts of the body. If squamous cell carcinoma spreads to nearby lymph nodes, it is called regional disease. Regional disease can usually be cured if found early.

First steps

You've learned that squamous cell skin cancer has spread to nearby lymph nodes. Next, your doctor will likely order a CT (**c**omputed **t**omography) scan of the lymph nodes near the tumor. The purpose of the CT scan is to find out the following things.

- How many lymph nodes have cancer?
- Where exactly are the lymph nodes with cancer?
- How big are the lymph nodes with cancer?

Your doctor may want to do more imaging tests to see if cancer has spread farther than the lymph nodes, or to help plan treatment with surgery and radiation therapy.

SNAPSHOT

Regional SCC

- ✓ SCC that has spread to nearby lymph nodes is called "regional"
- ✓ Regional SCC can usually be cured if found early
- ✓ The best way to treat regional SCC is with surgery to remove the tumor and nearby lymph nodes
- ✓ Radiation therapy may be given after surgery to kill leftover cancer cells
- ✓ If you can't have surgery, radiation is an option. Systemic therapy may also be used.

Treatment

After gathering all the information about the lymph nodes with cancer, the next step is for your doctor to decide if you can have surgery. If you are able to have surgery, that is your best treatment option. The surgery would remove the affected lymph nodes and some nearby lymph nodes.

While surgery is the best way to treat the cancer, it may not be an option for one or more reasons. In this case, see "If surgery isn't an option" below.

Tumors on the head or neck

How much surgery is needed depends on the number of lymph nodes that have cancer, where they are located, and how big they are.

- Patients with cancer in only one small (3 cm or smaller) lymph node should have that lymph node removed, as well as any others on the same side of the head/neck that look suspicious for cancer.
- Patients with cancer in a lymph node larger than 3 cm, or in more than one lymph node on the same side of the head/neck, should have all of the lymph nodes on that side removed.
- Patients with cancer in lymph nodes on both sides of the neck should have all lymph nodes on both sides of the neck removed.
- If there is cancer in lymph nodes called the *parotid* lymph nodes, NCCN experts recommend removing part of the gland that drains into these lymph nodes (the parotid gland) and also some of the lymph nodes on the same side of the neck as the tumor.

Treatment after surgery

Having radiation therapy after surgery may kill any remaining cancer cells and could help stop the cancer from coming back. NCCN experts recommend that radiation be offered to everyone with regional SCC of the head and neck after surgery. People with cancer in only one small, low-risk lymph node may be able to safely skip radiation therapy. As with any treatment, some people will benefit from radiation therapy after surgery more than others.

Radiation after surgery is recommended by NCCN experts if:

- Cancer was found in more than one lymph node
- Cancer was found in a lymph node bigger than 3 cm (a little over an inch) in diameter
- Cancer has spread outside the wall of any lymph nodes. The medical name for this is *extracapsular extension*.
- Not all lymph nodes with cancer were removed during surgery

In some situations, systemic therapy (chemotherapy, targeted therapy, or immunotherapy) may be used in addition to radiation. This may be the case if not all lymph nodes with cancer were removed during surgery, or if cancer has spread outside the wall of any lymph nodes (extracapsular extension). To determine if systemic therapy is a good option for you, NCCN experts recommend that your doctor consult with other experts who specialize in different types of cancer treatment. This is called getting a multidisciplinary opinion or a tumor board review.

If systemic therapy is needed in addition to radiation, a chemotherapy drug called cisplatin may be used, either by itself or in combination with another chemotherapy drug called fluorouracil (5-FU). If targeted therapy is given, a drug called cetuximab (Erbitux®) may be used.

Tumors on other areas of the body

Surgery is also the best way to treat tumors on other areas of the body. The primary tumor should be

removed, along with lymph nodes in the tumor area if any of them contain cancer.

Treatment after surgery

You may have radiation therapy after surgery to kill any remaining cancer cells. If there is cancer in more than one lymph node or if cancer has spread outside the wall of any lymph nodes (extracapsular extension), radiation therapy is recommended by NCCN experts.

If surgery isn't an option

Sometimes surgery isn't an option, for one or more reasons. If you can't have surgery, options include radiation therapy, systemic therapy, or both. To determine which option is best for you, NCCN experts recommend that your doctor consult with other doctors who specialize in different types of cancer treatment. This is called getting a multidisciplinary opinion or a tumor board review. Systemic therapy may be given as part of a clinical trial, if one is available.

At this time, the best systemic therapy drug for people with regional SCC who can't have surgery is cemiplimab (Libtayo®). Other systemic therapies that probably won't work as well as cemiplimab include:

- Chemotherapy with a drug called cisplatin, either by itself or in combination with another chemotherapy drug called fluorouracil (5-FU).
- Targeted therapy with a drug called cetuximab (Erbitux®)

After radiation (and systemic therapy, if used), surgery may now be an option. A CT scan may be used to see how much cancer is left and whether it can be removed with surgery. If it can, that is the best option.

Review

- Squamous cell skin cancer that has spread to nearby lymph nodes is called regional.
- Regional squamous cell skin cancer can usually be cured if there is cancer in only one small lymph node. It can be harder to treat if there is cancer in more than one lymph node, or in large lymph nodes. If cancer has spread outside of any nodes, this can also make it harder to treat.
- The best way to treat regional SCC is with surgery to remove the tumor and nearby lymph nodes with cancer. Radiation therapy may be given after surgery to kill leftover cancer cells.
- If you can't have surgery, systemic immunotherapy with cemiplimab (Libtayo®) is an FDA-approved treatment option. Radiation and other types of systemic therapy may also be options.

5
When treatment is over

You've finished treatment. Now you're likely wondering if—and when—cancer might return. Because you've already had squamous cell skin cancer, you are at higher risk of getting it again. You are also at higher risk of getting other types of skin cancer. This chapter explains how you can help prevent it from returning, and how to find it early if it does come back.

Skin exams by your doctor

After finishing treatment, getting regular skin exams to monitor for the return of squamous cell carcinoma is very important. These follow-up skin exams should do a complete check of the skin on your entire body, as well as the lymph nodes closest to the cancer site if the SCC was high risk. Your medical history should also be updated. How often you should have these exams depends on whether the cancer was local (not in nearby lymph nodes), or regional (in nearby lymph nodes).

For local SCC, monitoring during the first 2 years after treatment is the most important. Exams should occur at least every 3 to 12 months during this time. If no further skin cancer develops in the first 2 years, then exams are spaced out to once or twice a year for another 3 years. After that, having an exam once a year for the rest of your life is recommended by NCCN experts.

For regional SCC, physical exams with skin checks should be performed every 1 to 3 months for 1 year, every 2 to 4 months for the second year, every 4 to 6 months for another 3 years, and then every 6 to 12 months for life. For patients with regional SCC, your doctor may want you to have CT scans on a regular basis to look for signs of cancer in nearby lymph nodes, or in other parts of your body.

The follow-up exam schedules for both local and regional squamous cell skin cancer are shown in Guide 3.

Guide 3. Follow-up skin exam schedule

You had local SCC (no spread to lymph nodes)	You had regional SCC (spread to lymph nodes)
First 2 years: Every 3–12 months **Next 3 years:** Every 6–12 months **After that:** Once every year for life	**First year:** Every 1–3 months **Next year:** Every 2–4 months **Next 3 years:** Every 4–6 months **After that:** Every 6–12 months for life

Steps you can take

Your treatment team should provide you with information about how you can play a role in preventing new skin cancers from forming. The information should cover two important topics—sun protection and skin self-exams.

Sun protection

Protecting your skin from the sun is an important part of preventing future squamous cell carcinomas. One of the best ways to do this is to use a broad-spectrum sunscreen every day. Consider using a face moisturizer with an SPF (**s**un **protection** **f**actor) of 30 or higher. When spending time outside, sunscreen should be reapplied to all exposed areas every 2 hours. Other sun protection methods include wearing protective hats and clothing and staying inside (or in the shade) during peak daylight hours. You should never use tanning beds. Your goal is to never get another a sunburn or suntan.

Skin self-exams

Your doctor should also teach you how to examine your skin yourself for signs of cancer. Following the same process each time can make it easier to notice any changes from the last time you checked. A hand-held mirror is helpful for seeing hard-to-reach areas. You may also ask a spouse or friend to help you do the exam. Ideally, you should do a self-exam once a month. If you had regional squamous cell carcinoma, meaning that the cancer spread to nearby lymph nodes, your doctor should also teach you how to inspect your lymph nodes for signs of cancer **See Figures 13, 14, and 15**.

Figure 13
Skin exams by your doctor

After finishing treatment, you should have your skin examined by a doctor on a regular basis. How often you should have these depends on whether cancer spread to nearby lymph nodes.

Figure 14
Sun protection

Using sunblock every day is an important part of preventing new skin cancers.

Prevention in high-risk patients

Treating squamous cell skin cancer when it first appears can help prevent the cancer from growing into deeper layers of the skin. In people who form SCCs very easily, however, treatment alone may not be the best strategy. Rather than wait for the cancer to form, there are ways to help prevent squamous cell skin cancer in high-risk individuals. The following groups of people may benefit from care that may prevent squamous cell skin cancer from forming.

- Organ transplant recipients
- People with xeroderma pigmentosa
- People with psoriasis who have had PUVA therapy (**p**soralen and **u**ltra**v**iolet **A** therapy)
- People who have had squamous cell skin cancer more than once
- People with large areas of actinic keratosis

Figure 15
Skin self-exams

In addition to getting full skin exams by your doctor, examining your skin yourself on a regular basis can help spot the return of cancer and find new cancers early.

The medicines used to help stop squamous cell skin cancer from forming are described next.

Oral retinoids

When taken by mouth (orally), drugs called retinoids can help prevent squamous cell carcinoma from forming in patients who form actinic keratoses easily. Acitretin (Soriatane®) and isotretinoin are two retinoids used for this purpose. Both are also used to treat psoriasis.

Oral retinoids can cause drying or chapping of the lips, peeling of the skin, hair disorders, and more extreme side effects. They can also cause birth defects and should therefore be used with extreme caution in women who could become pregnant. People taking these drugs need to have their blood tested on a regular basis.

Oral nicotinamide

Nicotinamide is a form of niacin (vitamin B3). Nicotinamide may help prevent squamous cell carcinoma from returning after treatment and from spreading to distant sites in people at high risk. To prevent squamous cell skin cancer, nicotinamide is taken orally (by mouth) twice a day. No prescription is needed for nicotinamide and it is considered safe.

Widespread sun damage and actinic keratosis

People with widespread sun damge and actinic keratosis (also called field cancerization) are at risk of forming multiple SCCs. See Part 2, *Overview of treatments* for information on superficial therapies including topical treatments and photodynamic therapy. These treatments, especially when repeated every 1–2 years, can reduce the number of SCCs that form.

If cancer spreads to distant sites

Cancer cells can spread through blood and lymph to form tumors in other areas of the body. This is called metastasis. Squamous cell skin cancer doesn't metastasize often. For this reason, there isn't much research on the best way to treat metastatic squamous cell skin cancer. If you are able to join a clinical trial, NCCN experts recommend doing so. Treatments that may be given as part of a clinical trial include chemotherapy, targeted therapy, or immunotherapy. At this time, cemiplimab (Libtayo®) is the only therapy that is approved by the U.S. Food & Drug Administration for metastatic squamous cell skin cancer. It is a type of immunotherapy. Radiation therapy or surgery may be used to treat distant tumors that are causing pain or other bothersome side effects.

Review

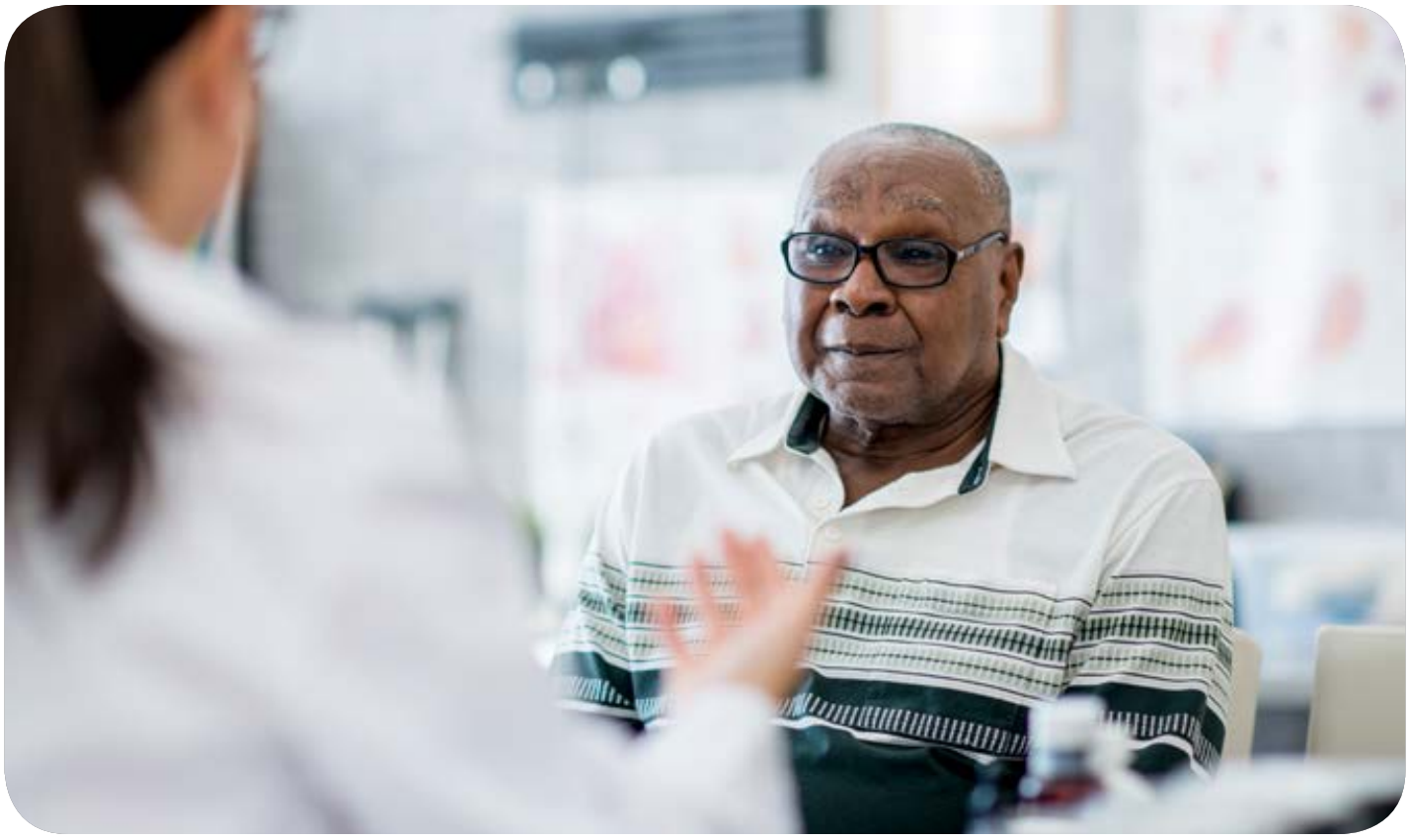
- After finishing treatment it is important to have regular skin exams performed by your doctor. How often exams are needed depends on whether cancer has spread to nearby lymph nodes.
- Using broad-spectrum sunscreen daily, wearing protective clothing, and staying out of the sun are steps you can take to help prevent new skin cancers from forming.
- In addition to skin checks by your doctor, NCCN experts recommend that patients examine their skin themselves for signs of skin cancer on a regular basis.
- People at high risk of getting squamous cell skin cancer may benefit from medicines or topical treatments that can help prevent skin cancers from forming.

Should I be concerned about getting more SCCs?

Out of 100 people who have had squamous cell carcinoma, about 40 will get a new SCC within five years—most within the **first two years**. For this reason, monitoring during the first two years after treatment is very important. NCCN experts recommend having regular skin exams by your doctor, doing skin self-exams, and being strict about sun protection.

- Squamous cell skin cancer doesn't usually spread to distant areas of the body (metastasize). If it does, NCCN experts recommend joining a clinical trial if one is available to you. Immunotherapy with a drug called cemiplimab (Libtayo®) is also an option. At this time, cemiplimab is the only therapy approved by the U.S. Food & Drug Administration for metastatic squamous cell skin cancer.

6
Making treatment decisions



Having cancer is very stressful. There is a lot to learn in what feels like a short time. This chapter can help you make decisions that are in line with your beliefs, wishes, and values.

It's your choice

The role patients want in choosing their treatment differs. You may feel uneasy about making treatment decisions. This may be due to a high level of stress. It may be hard to hear or know what others are saying. Stress, pain, and drugs can limit your ability to make good decisions. You may feel uneasy because you don't know much about cancer. You've never heard the words used to describe cancer, tests, or treatments. Likewise, you may think that your judgment isn't any better than your doctors'.

Letting others decide which option is best may make you feel more at ease. But, whom do you want to make the decisions? You may rely on your doctors alone to make the right decisions. However, your doctors may not tell you which to choose if you have more than one good option. You can also have loved ones help. They can gather information, speak on your behalf, and share in decision-making with your doctors. Even if others decide which treatment you will receive, you still have to agree by signing a consent form.

On the other hand, you may want to take the lead or share in decision-making. Most patients do. In shared decision-making, you and your doctors share information, weigh the options, and agree on a treatment plan. Your doctors know the science behind your plan but you know your concerns and goals. By working together, you are likely to get a higher quality of care and be more satisfied. You'll likely get the treatment you want, at the place you want, and by the doctors you want.

Questions to ask your doctors

You may meet with experts from different fields of medicine. Try to talk with each expert. Prepare questions before your visit and ask questions if the person isn't clear. You can also record your talks and get copies of your medical records. It may be helpful to have your spouse, partner, or a friend with you at these visits. They can help to ask questions and remember what was said. Below are some suggested questions to ask.

Figure 16
Informed consent form

Even if others decide which treatment you will receive, you still have to agree by signing a consent form.

What's my diagnosis and prognosis?

Cancer can greatly differ even when people have a tumor in the same organ. Your doctor should clearly explain the type of cancer you have. This is your diagnosis. Your doctor should also be able to tell you how he or she expects the cancer to respond to treatment. This is your prognosis.

1. Where did the cancer start?
2. Is this cancer common?
3. What is the cancer stage? Does this stage mean the cancer has spread far?
4. Is this a fast- or slow-growing cancer?
5. What other test results are important to know?
6. How often are these tests wrong?
7. Would you give me a copy of the pathology report and other test results?
8. How likely is it that I'll be cancer-free after treatment?

What are my options?

There is no single treatment practice that is best for all patients. There is often more than one treatment option along with clinical trial options. Your doctor will review your test results and recommend treatment options.

1. What will happen if I do nothing?
2. Can I just carefully monitor the cancer?
3. Do you consult NCCN recommendations when considering options?
4. Are you suggesting options other than what NCCN recommends? If yes, why? What are these other options based on?
5. Do your suggested options include clinical trials? Please explain why.
6. How do my age, health, and other factors affect my options?
7. What if I am pregnant?
8. Which option is proven to work best?
9. Which options lack scientific proof?
10. What are the benefits of each option? Does any option offer a cure? Are my chances any better for one option than another? Less time-consuming? Less expensive?
11. What are the risks of each option? What are possible complications? What are the rare and common side effects? Short-lived and long-lasting side effects? Serious or mild side effects? Other risks?
12. What can be done to prevent or relieve the side effects of treatment?
13. What are my chances that the cancer will return?

Weighing your options

Deciding which option is best can be hard. Doctors from different fields of medicine may have different opinions on which option is best for you. This can be very confusing. Your spouse or partner may disagree with which option you want. This can be stressful. In some cases, one option hasn't been shown to work better than another, so science isn't helpful. Some ways to decide on treatment are discussed next.

2nd opinion

After finding out you have cancer, it is normal to want to start treatment as soon as possible. While cancer can't be ignored, there is time to have another doctor review your test results and suggest a treatment plan. This is called getting a 2nd opinion, and it's a normal part of cancer care.

Getting a 2nd opinion doesn't mean you don't trust the first doctor. In fact, most doctors who are diagnosed with cancer will see more than one doctor before beginning treatment. What's more, some health plans require a second opinion. If your health plan doesn't cover the cost of a second opinion, you have the choice of paying for it yourself.

If the two opinions are the same, you may feel better about the treatment you accept to have. If the two opinions differ, think about getting a third opinion, bearing in mind that some cancers can grow if many weeks go by without treatment. Choosing your cancer treatment is a very important decision. It can affect your length and quality of life.

Support groups

Besides talking to health experts, it may help to talk to patients who have walked in your shoes. Support groups often consist of people at different stages of treatment. Some may be in the process of deciding while others may be finished with treatment. At support groups, you can ask questions and hear about the experiences of other people with skin cancer. Unfortunately, however, support groups specifically for squamous cell skin cancer are not widely available. Ask your doctor or local hospital whether there are any support groups near you.

Compare benefits and downsides

Every option has benefits and downsides. Consider these when deciding which option is best for you. Talking to others can help identify benefits and downsides you haven't thought of. Scoring each factor from 0 to 10 can also help since some factors may be more important to you than others.

Websites

Save Your Skin Foundation
https://saveyourskin.ca/

Skin Cancer Foundation
www.skincancer.org

American Cancer Society
https://www.cancer.org/cancer/basal-and-squamous-cell-skin-cancer.html

American Academy of Dermatology
https://www.aad.org/public/diseases/skin-cancer/squamous-cell-carcinoma

National Cancer Institute
https://www.cancer.gov/types/skin

NCCN
www.nccn.org/patients

U.S. National Library of Medicine Clinical Trials Database
www.clinicaltrials.gov

Review

- Shared decision-making is a process in which you and your doctors plan treatment together.
- Asking your doctors questions is vital to getting the information you need to make informed decisions.
- Getting a second opinion, attending support groups, and comparing pros and cons may help you decide which treatment is best for you. Ask your doctor or local hospital whether there are any support groups near you.

Words to know

actinic keratosis
An area of thick, scaly skin that may become squamous cell carcinoma (skin cancer). Also called solar keratosis.

basal cell carcinoma
The most common type of skin cancer. Also called basal cell skin cancer.

biopsy
A procedure that removes fluid or tissue samples to be tested for a disease.

Bowen's disease
A very early form of squamous cell skin cancer marked by scaly or thickened patches on the skin. Also called squamous cell carcinoma in situ.

clinical trial
A type of research that assesses how well health tests or treatments work in people.

computed tomography
A test that uses x-rays from many angles to make a picture of the insides of the body.

curettage and electrodesiccation
A procedure used to treat skin cancer by scraping away cancerous tissue and destroying remaining cancer cells with an electric needle.

dermis
The second layer of skin that is beneath the outer layer.

epidermis
The outer layer of skin.

external beam radiation therapy (EBRT)
A cancer treatment with radiation delivered from a machine outside the body.

hypodermis
The layer of skin below the epidermis. Also called subcutaneous tissue.

immunotherapy
A treatment with drugs that may help the body find and destroy cancer cells.

local therapy
A treatment that is given to a confined area.

Marjolin's ulcer
Squamous cell skin cancer that forms in an area of wounded, inflamed, or scarred skin.

melanoma
A skin cancer of pigment-making cells.

Mohs surgery
A surgical procedure used to treat skin cancer. Layers of cancer-containing tissue are removed and examined under a microscope one at a time until all cancer tissue has been removed. Also called Mohs micrographic surgery.

photodynamic therapy (PDT)
Treatment with drugs that may kill cancer cells when exposed to light.

primary treatment
The main treatment used to rid the body of cancer.

radiation therapy
A treatment that uses intense energy to kill cancer cells.

squamous cell carcinoma (SCC)
The second most common type of skin cancer that is usually caused by many years of sun exposure or multiple sunburns. Also called cutaneous squamous cell carcinoma and squamous cell skin cancer.

SCC in situ
A very early form of squamous cell skin cancer marked by scaly or thickened patches on the skin. Also called Bowen's disease.

sun protection factor (SPF)
A rating of protection against ultraviolet rays.

surgical margin
The normal-looking tissue around a tumor that was removed during an operation.

systemic therapy
A type of treatment that works throughout the body.

targeted therapy
A cancer treatment that may target and attack specific types of cancer cells.

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NCCN Cancer Centers

Abramson Cancer Center
at the University of Pennsylvania
Philadelphia, Pennsylvania
800.789.7366
pennmedicine.org/cancer

Fred & Pamela Buffett Cancer Center
Omaha, Nebraska
800.999.5465
nebraskamed.com/cancer

Case Comprehensive Cancer Center/
University Hospitals Seidman Cancer
Center and Cleveland Clinic Taussig
Cancer Institute
Cleveland, Ohio
800.641.2422 • UH Seidman Cancer Center
uhhospitals.org/seidman
866.223.8100 • CC Taussig Cancer Institute
my.clevelandclinic.org/services/cancer
216.844.8797 • Case CCC
case.edu/cancer

City of Hope National Medical Center
Los Angeles, California
800.826.4673
cityofhope.org

Dana-Farber/Brigham and
Women's Cancer Center
Massachusetts General Hospital
Cancer Center
Boston, Massachusetts
877.332.4294
dfbwcc.org
massgeneral.org/cancer

Duke Cancer Institute
Durham, North Carolina
888.275.3853
dukecancerinstitute.org

Fox Chase Cancer Center
Philadelphia, Pennsylvania
888.369.2427
foxchase.org

Huntsman Cancer Institute
at the University of Utah
Salt Lake City, Utah
877.585.0303
huntsmancancer.org

Fred Hutchinson Cancer
Research Center/Seattle
Cancer Care Alliance
Seattle, Washington
206.288.7222 • seattlecca.org
206.667.5000 • fredhutch.org

The Sidney Kimmel Comprehensive
Cancer Center at Johns Hopkins
Baltimore, Maryland
410.955.8964
hopkinskimmelcancercenter.org

Robert H. Lurie Comprehensive
Cancer Center of Northwestern
University
Chicago, Illinois
866.587.4322
cancer.northwestern.edu

Mayo Clinic Cancer Center
Phoenix/Scottsdale, Arizona
Jacksonville, Florida
Rochester, Minnesota
800.446.2279 • Arizona
904.953.0853 • Florida
507.538.3270 • Minnesota
www.mayoclinic.org/cancercenter

Memorial Sloan Kettering
Cancer Center
New York, New York
800.525.2225
mskcc.org

Moffitt Cancer Center
Tampa, Florida
800.456.3434
moffitt.org

The Ohio State University
Comprehensive Cancer Center -
James Cancer Hospital and
Solove Research Institute
Columbus, Ohio
800.293.5066
cancer.osu.edu

Roswell Park Comprehensive
Cancer Center
Buffalo, New York
877.275.7724
roswellpark.org

Siteman Cancer Center at Barnes-
Jewish Hospital and Washington
University School of Medicine
St. Louis, Missouri
800.600.3606
siteman.wustl.edu

St. Jude Children's Research Hospital
The University of Tennessee
Health Science Center
Memphis, Tennessee
888.226.4343 • stjude.org
901.683.0055 • westclinic.com

Stanford Cancer Institute
Stanford, California
877.668.7535
cancer.stanford.edu

University of Alabama at Birmingham
Comprehensive Cancer Center
Birmingham, Alabama
800.822.0933
www3.ccc.uab.edu

UC San Diego Moores Cancer Center
La Jolla, California
858.657.7000
cancer.ucsd.edu

UCSF Helen Diller Family
Comprehensive Cancer Center
San Francisco, California
800.689.8273
cancer.ucsf.edu

University of Colorado Cancer Center
Aurora, Colorado
720.848.0300
coloradocancercenter.org

University of Michigan
Rogel Cancer Center
Ann Arbor, Michigan
800.865.1125
mcancer.org

The University of Texas
MD Anderson Cancer Center
Houston, Texas
800.392.1611
mdanderson.org

University of Wisconsin
Carbone Cancer Center
Madison, Wisconsin
608.265.1700
uwhealth.org/cancer

Vanderbilt-Ingram Cancer Center
Nashville, Tennessee
800.811.8480
vicc.org

Yale Cancer Center/
Smilow Cancer Hospital
New Haven, Connecticut
855.4.SMILOW
yalecancercenter.org

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NCCN GUIDELINES FOR PATIENTS®

Squamous Cell Skin Cancer

2019

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