About Merkel Cell Skin Cancer

Overview

If you have been diagnosed with Merkel cell carcinoma or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- What Is Merkel Cell Carcinoma?

Research and Statistics

See the latest estimates for new cases of Merkel cell carcinoma in the US and what research is currently being done.

- Key Statistics for Merkel Cell Carcinoma
- What’s New in Merkel Cell Carcinoma Research?

What Is Merkel Cell Carcinoma?

Cancer starts when cells begin to grow out of control. Cells in nearly any part of the body can become cancer, and can then spread to other areas of the body. To learn more about how cancers start and spread, see What Is Cancer?

Merkel cell carcinoma (MCC) is an uncommon type of skin cancer. It starts when cells in the skin called Merkel cells start to grow uncontrollably. This type of cancer can grow quickly and can be hard to treat if it spreads beyond the skin.

Merkel cells

Merkel cells are thought to be a type of skin neuroendocrine cell, because they share some features with nerve cells and hormone-making cells. Merkel cells are found mainly
at the base of the epidermis, which is the top layer of the skin. These cells are very close to nerve endings in the skin. They help us sense light touch, which lets us do things like feel the fine details on an object’s surface.

**Merkel cell carcinoma**

Merkel cell carcinoma starts when Merkel cells grow out of control. Because Merkel cells are a type of neuroendocrine cell, MCC is also sometimes called *neuroendocrine carcinoma of the skin*. Another name for MCC is *trabecular carcinoma* (or *trabecular cancer*).

MCC is much less common than most other types of skin cancer (see below), but it’s one of the most dangerous types. It’s much more likely than common skin cancers to spread to other parts of the body if not caught early, and it can be very hard to treat if it has spread.

These cancers most often start on sun-exposed parts of the skin, such as the face (the most common site), neck, and arms. But MCC can start anywhere on the body. Merkel cell tumors usually appear as firm, pink, red, or purple lumps or bumps on the skin. They are not usually painful, but they can grow quickly and can sometimes open up as ulcers or sores (see *Signs and Symptoms of Merkel Cell Carcinoma*).

While nearly all MCCs start on the skin, a very small portion start in other parts of the body, such as inside the nose or esophagus.

**Other types of skin cancer**

**Basal and squamous cell carcinomas**

These are by far the most common skin cancers. They rarely spread to other parts of the body, and usually can be cured with surgery. For more information on these cancers, see *Basal and Squamous Cell Skin Cancer*.

**Melanomas**

These cancers develop from melanocytes, the pigment-making cells of the skin. Melanomas are much less common than basal and squamous cell cancers, but they are much more likely to spread and be life-threatening if not caught at an early stage. Learn more in *Melanoma Skin Cancer*. 
Less common types of skin cancer

Other, much less common types of skin cancer include:

- Kaposi sarcoma
- Lymphoma of the skin
- Skin adnexal tumors (tumors that start in the hair follicles or skin glands)
- Various types of sarcomas

Together, these types account for less than 1% of skin cancers.

References
See all references for Merkel Cell Skin Cancer

Key Statistics for Merkel Cell Carcinoma

Skin cancer is by far the most common type of cancer in the United States, but Merkel cell carcinoma (MCC) is not common. It’s thought that about 1,500 cases of MCC are diagnosed in the United States each year.

The number of these cancers diagnosed each year has been rising quickly over the past few decades. Some of this is probably because MCC was first described only about 45 years ago. Doctors have become more aware of MCC since then, and lab tests to diagnose these cancers have become more accurate. But the rise in MCC might also be caused by increases in risk factors such as people living longer and getting more sun exposure, and more people living with weakened immune systems.

More than 9 out of 10 people diagnosed with MCC are older than age 50, and more than 2 out of 3 are older than 70.

MCC is much more common in whites than in people of other races. More than 9 out of 10 cases of MCC in the United States develop in whites.
For survival statistics, see Survival Rates for Merkel Cell Carcinoma.

Visit the American Cancer Society’s Cancer Statistics Center for more key statistics.

- References
  See all references for Merkel Cell Skin Cancer

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What’s New in Merkel Cell Carcinoma Research?

Research into the causes, prevention, and treatment of Merkel cell carcinoma (MCC) is under way in many medical centers throughout the world.

Causes of MCC

Scientists have made a great deal of progress in recent years in learning how ultraviolet (UV) light damages the DNA in skin cells, which might cause them to become cancer. Researchers are working to apply this information to help prevent and treat these and other skin cancers.

Researchers are also learning more about the Merkel cell polyomavirus (MCV), which has been found in most MCC tumors. It’s not yet clear exactly how damage from UV light, infection with MCV, and changes in the body’s immune system might interact to cause MCC, but this is an active area of research.

Prevention and early detection of MCC

Most skin cancers, including many MCCs, can be prevented. The best way to lower the number of skin cancers and the pain and loss of life from this disease is to educate the public, especially parents, about skin cancer risk factors and warning signs. It’s
important for health care professionals and skin cancer survivors to remind others about
the dangers of too much UV exposure (both from the sun and from man-made sources
such as tanning beds) and about how easy it can be to protect your skin from UV rays.

**MCC can often be found early**, when it’s most likely to be cured. Monthly skin self-
exams and awareness of the warning signs of MCCs and other skin cancers can be
helpful in finding them when they are at an early, curable stage.

The American Academy of Dermatology (AAD) sponsors annual free skin cancer
screenings throughout the country. Many local American Cancer Society offices work
closely with AAD to provide volunteers for registration, coordination, and education
efforts related to these free screenings. Look for information in your area about these
screenings or call the [American Academy of Dermatology](https://www.aad.org) for more information.

**Treatment**

While early-stage MCCs often can be cured, more advanced MCCs can be much
harder to treat. It’s been hard to study the best way to treat these cancers because they
are not common. But in recent years, doctors have begun to look at newer types of
treatment for this disease.

**Immunotherapy**

This type of treatment helps the body’s immune system attack cancer cells more
effectively. Doctors have been hopeful that this approach might be useful against MCC,
especially because this cancer appears to be linked to infection with a virus (MCV). And
in recent years, some types of immunotherapy have shown promise in treating MCC.

**Immune checkpoint inhibitors:** Immune system cells normally have substances that
act as *checkpoints* to keep them from attacking other healthy cells. Cancer cells
sometimes take advantage of these checkpoints to avoid being attacked by the immune
system. Some newer drugs, such as avelumab (Bavencio) and pembrolizumab
(Keytruda), work by blocking these checkpoints, which boosts the immune response
against cancer cells in the body. These drugs have been shown to help some people
with advanced MCC. Other checkpoint inhibitors are now being studied as well. To learn
more, see [Immunotherapy for Merkel Cell Carcinoma](https://www.cancer.gov/cancertopics/types/merkel-cell-vaccine).

**Autologous T cell therapy:** In this approach, immune cells called T cells are removed
from a person’s blood and exposed in the lab to parts of the Merkel cell polyomavirus
(which is found in most MCC cells), along with chemicals to help activate the T cells.
The cells are then infused back into the body. The hope is that these cells will now seek out and attack MCC cells. This approach is still in early phases of testing.

**Hormone-like drugs**

MCC is a type of neuroendocrine tumor, which means its cells share features with cells that normally make hormones in the body. Doctors are now testing whether drugs that affect hormone-making cells might be helpful against MCC. Examples include lanreotide (Somatuline Depot) and pasireotide (Signifor), which are in a group of drugs known as somatostatin analogs.

Some new drugs, such as 177Lu-DOTATATE, pair a somatostatin analog with a radioactive atom. These drugs should bind to the cancer cells, delivering the radiation to those cells and limiting the effects on normal cells. Research testing these types of drugs against MCC is still in very early phases.

**Other new drugs**

Newer drugs called targeted therapies may someday be shown to help treat MCC. Targeted therapies attack parts of cancer cells that make them different from normal cells. Each type of targeted therapy works differently, but they alter the way a cancer cell grows, divides, repairs itself, or interacts with other cells in some way. Targeted drugs are already used to treat many types of cancer, and some are now being studied for use against MCC.

- Additional Resources
- References


- For information on skin cancer, a skin cancer risk assessment, a locator for free skin cancer screenings, and a dermatologist locator

See all references for Merkel Cell Skin Cancer

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Merkel Cell Skin Cancer Causes, Risk Factors, and Prevention

Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Learn more about the risk factors for Merkel cell carcinoma.

- Merkel Cell Carcinoma Risk Factors
- What Causes Merkel Cell Carcinoma?

Prevention

There is no sure way to prevent Merkel cell carcinoma. But there are things you can do that might lower your risk. Learn more.

- Can Merkel Cell Carcinoma Be Prevented?
- Skin Cancer Prevention and Early Detection

Merkel Cell Carcinoma Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Different cancers have different risk factors. Some risk factors, like smoking and too much sun exposure, can be changed. Others, like your age or family history, can’t be changed.

Having a risk factor for Merkel cell carcinoma (MCC), or even several risk factors, does not mean that you will get it. Most people with risk factors never get MCC, while others with this disease may have few or no known risk factors.

There are a few known risk factors for MCC.
Infection with Merkel cell polyomavirus (MCV)

Evidence of the Merkel cell polyomavirus (MCV) can be found in the cells of most Merkel cell carcinomas. But MCV is a common virus. Most people are infected with MCV at some point (often before the age of 20), but the infection doesn't cause symptoms, and it rarely leads to MCC. Because of this, there are no recommended screening tests or treatments for MCV infection.

MCV was first discovered in 2008, so there’s still a lot that scientists don’t know about this virus. For example, it’s not clear how people are infected with MCV, exactly how it might cause MCC, or if infection with MCV is required before MCC can develop.

Ultraviolet (UV) light exposure

Exposure to ultraviolet (UV) rays is thought to be a major risk factor for most skin cancers, including MCC. UV rays damage the DNA inside skin cells. This can lead to skin cancer if this damage affects the DNA of genes that control skin cell growth.

From the sun: Sunlight is the main source of UV rays. Most MCCs start in areas of the body often exposed to the sun, such as the face, neck, and arms. People who get a lot of sun exposure are at greater risk for MCC.

UV rays make up only a very small portion of the sun’s rays, but they are the main cause of the damaging effects of the sun on the skin.

From tanning beds: Tanning beds are another source of UV rays for some people. MCC is an uncommon cancer, and no studies have looked for a link between MCC and tanning bed use. But it stands to reason that more exposure to UV rays might increase the risk.

From psoriasis treatments: Some patients with psoriasis (a long-lasting inflammatory skin disease) are given medicines called psoralens along with UV light, which is known as PUVA treatments. This can increase the risk of developing MCC.

To learn more about the effects of UV rays on the skin and what you can do to protect yourself and your loved ones, see Skin Cancer Prevention and Early Detection.

Having light-colored skin
The risk of MCC is much higher for whites than for African Americans or Hispanics. This is probably due to the protective effect of darker skin against the damaging effects of UV rays.

**Being older**

The risk of MCC goes up as people get older. In fact, this cancer is very rare before the age of 50. The increased risk is probably related to skin damage caused by sun exposure over time and to the fact that people's immune systems tend to become weaker as they get older.

**Being male**

Men are more likely than women to develop MCC. This might be because they tend to get more sun exposure.

**Having a weakened immune system**

The immune system defends the body against germs such as viruses. It also seems to help the body fight some cancers of the skin and other organs. People with weakened immune systems (from certain diseases or medical treatments) are more likely to develop some types of skin cancer, including MCC.

For example, **people who get organ transplants** usually are given drugs that weaken their immune system to help keep them from rejecting the new organ. This increases their risk of developing MCC. People with autoimmune diseases (such as lupus) sometimes take medicines that suppress the immune system, which might increase their risk.

**People infected with HIV**, the virus that causes AIDS, often have weakened immune systems and are also at increased risk for MCC.

**People with some types of blood cancers**, such as chronic lymphocytic leukemia (CLL) or certain lymphomas, also tend to have weakened immune systems. This can be from the cancer itself or from its treatment. People with these cancers are more likely to get MCC.

MCCs in people with weakened immune systems tend to grow faster and are more likely to be life-threatening.
What Causes Merkel Cell Carcinoma?

Although we know some of the things that can raise a person’s risk of Merkel cell carcinoma (MCC), it’s not clear exactly how these things might cause MCC.

Cancer is caused by changes in the DNA inside of cells. DNA is the chemical in each of our cells that makes up our genes, which control how our cells function. We usually look like our parents because they are the source of our DNA. But DNA affects more than just how we look.

Some genes help control when our cells grow, divide into new cells, and die:

- Genes that help cells grow, divide, and stay alive are called oncogenes.
- Genes that keep cell growth in check by slowing down cell division or making cells die at the right time are called tumor suppressor genes.

Cancers can be caused by DNA changes that turn on oncogenes or turn off tumor suppressor genes. Changes in several different genes are usually needed for a cell to become a cancer cell.

Researchers don’t yet know all of the DNA changes that can result in MCC, but they have found that many of these cancers have changes in tumor suppressor genes.

MCC does not seem to run in families, so the DNA changes that lead to MCC are not likely to be inherited from a person’s parents. Instead, these changes probably happen during the person’s life. Sometimes these changes might just be random events that happen inside cells, without having an outside cause. But sometimes the cause might be something specific, like long-term sun exposure or infection with the Merkel cell polyomavirus (MCV).

Ultraviolet (UV) radiation can damage the DNA inside skin cells. Sometimes this
damage affects certain genes that control how and when cells grow and divide, which may be the first step on the path to cancer.

How MCV infection plays a role in the development of MCC is not completely clear. But researchers have found that the virus can get inside cells and cause them to make a protein that turns off tumor suppressor genes, which might lead to MCC.

The importance of MCV infection might help explain why people with weakened immune systems have a higher risk of MCC. It might be that the virus is normally kept in check (but not eliminated completely) by the immune system. A weakened immune system could allow the virus to grow and flourish, which in turn might raise the risk of MCC.

Scientists are looking for the specific DNA changes inside MCC cells to help explain what causes it. A better understanding of how damaged DNA leads to MCC might also be used to design better treatments for it.

- References

  See all references for Merkel Cell Skin Cancer

Can Merkel Cell Carcinoma Be Prevented?

The risk of getting Merkel cell carcinoma (MCC) is low, and some risk factors for MCC, such as your age, gender, and skin color can’t be controlled. But there are things you can do that might help lower your risk. These might also lower your risk of getting more common types of skin cancer, or even some other types of cancer.

Limit your exposure to ultraviolet (UV) rays

The most important way to lower your risk of skin cancers (including MCC) is to limit your exposure to UV rays. Practice sun safety when you are outdoors.
Seek shade

Simply staying in the shade is one of the best ways to limit your UV exposure.

“Slip! Slop! Slap!® … and Wrap”

This catchphrase can help you remember some of the key steps you can take to protect yourself from UV rays. If you are going to be in the sun:

- Slip on a shirt.
- Slop on sunscreen.
- Slap on a hat.
- Wrap on sunglasses to protect the eyes and sensitive skin around them.

Avoid tanning beds and sunlamps

Many people believe the UV rays of tanning beds are harmless. This is not true. Tanning lamps give off UV rays, which can cause long-term skin damage and can contribute to skin cancer. Most skin doctors and health organizations recommend not using tanning beds and sun lamps.

Protect children from the sun

Children need special attention, since they tend to spend more time outdoors and can burn more easily. Parents and other caregivers should protect children from excess sun exposure by using the steps above. Children need to be taught about the dangers of too much sun exposure as they become more independent.

To learn more about protecting yourself in the sun...

For more on how to protect yourself and your family from UV exposure, see Skin Cancer: Prevention and Early Detection.

Avoid weakening your immune system (when possible)

Having a weakened immune system increases the risk of getting MCC, as well as other types of skin cancer.
Infection with HIV, the virus that causes AIDS, can weaken the immune system. Avoiding known risk factors for HIV infection, such as intravenous (IV) drug use and having unprotected sex with many partners, can also lower your risk of getting MCC and many other types of cancer. (For more information, see HIV Infection, AIDS, and Cancer.)

Some people need to take medicines to suppress their immune system. This includes people who have had organ transplants and some people with autoimmune diseases. People with cancer also sometimes need to take medicines such as chemotherapy that can lower their immune function. For these people, the benefit from taking these medicines will likely far outweigh the small overall increased risk of getting MCC.

- References
See all references for Merkel Cell Skin Cancer

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Merkel Cell Skin Cancer Early Detection, Diagnosis, and Staging

Detection and Diagnosis

Catching cancer early often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that is not always the case.

- Can Merkel Cell Carcinoma Be Found Early?
- Skin Cancer Prevention and Early Detection
- Signs and Symptoms of Merkel Cell Carcinoma
- Tests for Merkel Cell Carcinoma

Stages and Outlook (Prognosis)

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and anticipated response to treatment.

- Merkel Cell Carcinoma Stages
- Survival Rates for Merkel Cell Carcinoma, by Stage

Questions to Ask About Merkel Cell Carcinoma

Get some questions you can ask your health care team to help you better understand your diagnosis and treatment options.

- What Should You Ask Your Cancer Care Team About Merkel Cell Carcinoma?

Can Merkel Cell Carcinoma Be Found Early?
Merkel cell carcinoma (MCC) and many other skin cancers often can be found early, when they are likely to be easier to treat.

**Skin self-exam**

Although the American Cancer Society does not have guidelines for the early detection of skin cancer, knowing your own skin is important to finding skin cancer early. Learn the patterns of moles, blemishes, freckles, and other marks on your skin so that you'll notice any changes.

Many doctors recommend checking your own skin, preferably once a month. Self-exams are best done in a well-lit room in front of a full-length mirror. Use a hand-held mirror for areas that are hard to see, such as the backs of your thighs.

Examine all areas, including your palms and soles, scalp, ears, nails, and your back. For a more thorough description of a skin self-exam, see Skin Exams. A friend or family member can also help you with these exams, especially for those hard-to-see areas, such as your scalp and back.

Be sure to show your doctor any areas that concern you and have them look at areas that may be hard for you to see. Any spots on the skin that are new or changing in size, shape, or color should be seen by a doctor promptly. If you can’t see your doctor right away, you might want to take good close-up photos of the area so your doctor can see if the area is changing when you do get an appointment.

Any unusual sore, lump, blemish, marking, or change in the way an area of the skin looks or feels may be a sign of skin cancer or a warning that it might occur. The area might become red, swollen, scaly, crusty, or begin oozing or bleeding. It may feel itchy, tender, or painful.

Merkel cell tumors usually look like firm, pink, red, or purple lumps or bumps on sun-exposed areas of the skin. They are not usually painful, but they can grow quickly and can sometimes open up as ulcers or sores. (See Signs and Symptoms of Merkel Cell Carcinoma for a more detailed description of what to look for.)

**Exam by a health care professional**

Some doctors and other health care professionals will examine your skin as part of your routine health check-up.
Having regular skin exams is especially important for people who are at high risk of MCC or other skin cancers, such as people with reduced immunity (for example, those who have had an organ transplant). Talk to your doctor about how often you should have your skin examined.

- References

See all references for Merkel Cell Skin Cancer

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**Signs and Symptoms of Merkel Cell Carcinoma**

Merkel cell carcinoma (MCC) usually starts on areas of skin exposed to the sun, especially the face, neck, arms, and legs, but it can occur anywhere on the body. It often first appears as **a single pink, red, or purple bump that is not usually painful**. Sometimes the skin on the top of the tumor might break open and bleed.

These tumors can grow quickly. They might spread as new lumps in the surrounding skin. They might also reach nearby lymph nodes (small collections of immune system cells throughout the body). Over time, the lymph nodes might grow large enough to be seen or felt as lumps under the skin (usually in the neck or under the arm).

Merkel cell carcinoma is not common, and it can look like many other, more common types of skin cancer or other skin problems when it first appears. Because of this, doctors do not usually suspect MCC at first, and **the diagnosis is often made only after the tumor is biopsied**.

It’s very important to have any new, growing, or changing lumps, bumps, or spots on your skin checked by a doctor as soon as possible so that the cause can be found and treated, if needed. The earlier any type of skin cancer is found, the more likely it can be treated effectively.

- References
Tests for Merkel Cell Carcinoma

Most skin cancers, including Merkel cell carcinoma (MCC), are brought to a doctor’s attention because of signs or symptoms a person is having.

If you have an abnormal area that might be skin cancer, your doctor will examine it and might do tests to find out if it’s cancer or some other skin condition. If there’s a chance the skin cancer has spread to other areas of the body, other tests might be done as well.

Medical history and physical exam

Usually the first step is for your doctor to ask about your symptoms, such as when the mark on the skin first appeared, if it has changed in size or appearance, and if it has been painful, itchy, or bleeding. You might also be asked about your possible risk factors for skin cancer (including sun exposure and immune system problems) and if you or anyone in your family has had skin cancer.

During the physical exam, the doctor will note the size, shape, color, and texture of the area(s) in question, and if it is bleeding, oozing, or crusting. The rest of your body may be checked for spots that could be related to skin cancer.

The doctor may also feel the nearby lymph nodes, which are bean-sized collections of immune system cells under the skin in certain areas. Merkel cell carcinomas (and some other skin cancers) can spread to lymph nodes. When this happens, the lymph nodes might be felt as lumps under the skin.

If you are being seen by your primary doctor and skin cancer is suspected, you may be referred to a dermatologist (a doctor who specializes in skin diseases), who will look at the area more closely.
Along with a standard physical exam, some dermatologists use a technique called dermatoscopy (also known as dermoscopy, epiluminescence microscopy [ELM] or surface microscopy) to see spots on the skin more clearly. The doctor uses a dermatoscope, which is a special magnifying lens and light source held near the skin. Sometimes a thin layer of alcohol or oil is used with this instrument. The doctor may take a digital photo of the spot.

**Skin biopsy**

If the doctor thinks that a suspicious area might be MCC (or another type of skin cancer), he or she will remove it and send it to a lab to have it looked at with a microscope. This is called a skin biopsy.

There are different ways to do a skin biopsy. The doctor will choose one based on the suspected type of skin cancer, where it is on your body, its size, and other factors. Different methods can result in different scars, so ask your doctor about possible scarring before the biopsy is done.

Skin biopsies are done using a local anesthetic (numbing medicine), which is injected into the area with a very small needle. You will probably feel a small prick and a little stinging as the medicine is injected, but you should not feel any pain during the biopsy.

**Shave (tangential) biopsy**

For this type of biopsy, the doctor shaves off the top layers of the skin with a small surgical blade. Bleeding from the biopsy site is then stopped by applying an ointment, a chemical that stops bleeding, or a small electrical current to cauterize the wound.

A shave biopsy is useful in diagnosing many types of skin diseases, especially if the doctor thinks an abnormal area is unlikely to be a serious skin cancer such as MCC or melanoma. A thin shave biopsy is generally not used if the doctor strongly suspects MCC (or melanoma), because the biopsy often does not go deep enough to get below the tumor. On the other hand, a deeper shave biopsy can be useful if done properly.

**Punch biopsy**

For a punch biopsy, the doctor uses a tool that looks like a tiny round cookie cutter to remove a deeper sample of skin. The doctor rotates the punch biopsy tool on the skin until it cuts through all the layers of the skin. The sample is removed and the edges of the biopsy site are often stitched together.
Incisional and excisional biopsies

To examine a tumor that might have grown into deeper layers of the skin, the doctor may use an incisional or excisional biopsy. For these types of biopsies, a surgical knife is used to cut through the full thickness of skin. A wedge or sliver of skin is removed for examination, and the edges of the wound are usually stitched together.

An incisional biopsy removes only a portion of the tumor. An excisional biopsy removes the entire tumor, and is usually the preferred method of biopsy for a suspected MCC if it can be done. But this is not always possible, so other types of biopsies may be needed.

Lymph node biopsy

MCC often spreads to nearby lymph nodes early in the course of the disease, so it’s very important for the doctor to find out if these nodes contain cancer cells. If MCC has already been diagnosed on the skin, nearby lymph nodes will usually be biopsied to see if the cancer has spread to them.

The type of biopsy used depends on how likely it is that the cancer has reached the nearby lymph nodes:

- If the nearby lymph nodes feel normal on physical exams and look normal on imaging tests, a sentinel lymph node biopsy is likely to be done.
- If exams or imaging tests suggest that nearby lymph nodes might contain cancer (for example, if the nodes are larger than normal), then a needle biopsy is more likely to be done.

Sentinel lymph node biopsy (SLNB)

A sentinel lymph node biopsy can be used to find the lymph nodes that are likely to be the first place the MCC would go if it has spread. These lymph nodes are called sentinel nodes.

To find the sentinel lymph node (or nodes), a doctor injects a small amount of a radioactive substance into the area of the cancer. After giving the substance time to travel to the lymph node areas near the tumor, the doctor uses a special camera (and sometimes a handheld scanner) to “see” the radioactive substance where it collects in one or more sentinel lymph nodes. Once the radioactive area has been marked, the patient is taken to where the surgery will be done, and a blue dye is injected in the same
place the radioactive substance was injected. A small incision is then made in the marked area, and the lymph nodes are then checked to find which one(s) became radioactive and turned blue. These sentinel nodes are removed and looked at with a microscope for cancer cells.

For more on this test and what the results could mean, see Surgery for Merkel Cell Carcinoma.

**Needle biopsy**

If a lymph node near a Merkel cell carcinoma is abnormally large, the doctor can use a needle biopsy to find out if the cancer has spread to the node. Needle biopsies are not as invasive as some other types of biopsies, but they may not always provide enough of a sample to find cancer cells.

There are 2 main types of needle biopsies.

- In a **fine needle aspiration (FNA)** biopsy, the doctor uses a syringe with a very thin, hollow needle (thinner than the ones used for blood tests) to withdraw (aspirate) cells and small pieces of tissue.
- In a **core biopsy**, a larger needle is used to remove one or more small cylinders (cores) of tissue. Core biopsies remove larger samples than FNA biopsies.

With either type of biopsy, a local anesthetic is sometimes used to numb the area first. These biopsies rarely cause much discomfort and do not usually leave a scar.

If the lymph node is just under the skin, the doctor can often feel it well enough to guide the needle into it. For a suspicious lymph node deeper in the body, an imaging test such as ultrasound or a CT scan is often used to guide the needle into place.

**Surgical (excisional) lymph node biopsy**

This type of biopsy might be done if a lymph node’s size suggests the cancer has spread there but a needle biopsy of the node has not been done (or if it did not find any cancer cells, but the doctor still suspects the cancer has spread there).

In this procedure, the doctor removes the enlarged lymph node through a small incision (cut) in the skin. This can often be done in a doctor’s office or outpatient surgical center. A local anesthetic (numbing medicine) is generally used if the lymph node is near the surface of the body, but a person may need to be sedated or even asleep (using general anesthesia) if the lymph node is deeper in the body.
Lab tests of biopsy samples

All biopsy samples will be sent to a lab, where a pathologist (a doctor who is specially trained to diagnose disease) will look at them under a microscope for MCC (or other types of cancer). Often, skin samples are sent to a dermatopathologist, a doctor who has special training in looking at skin samples.

If the doctor can't tell for sure if the sample contains MCC just by looking at it, special lab tests may be done on the cells to try to confirm the diagnosis. One of the tests often used for MCC is immunohistochemistry (IHC), which looks for certain proteins on the cancer cells, such as CK-20.

If MCC is found, the pathologist will also look at certain important features such as the tumor thickness, mitotic rate (the portion of cells that are actively dividing), and whether the tumor has invaded the tiny blood vessels or lymph vessels in the sample. These features could help determine a person's prognosis (outlook).

Imaging tests

Imaging tests use x-rays, magnetic fields, or radioactive substances to create pictures of the inside of the body. They are often used to see if MCC has spread to lymph nodes or to other organs in the body.

Imaging tests can also be done to help determine how well treatment is working or to look for possible signs of cancer coming back (recurring) after treatment.

Computed tomography (CT) scan

The CT scan uses x-rays to make detailed, cross-sectional images of your body. Unlike a regular x-ray, CT scans can show the detail in soft tissues (such as internal organs). This test can show if any lymph nodes are enlarged or if other organs have suspicious spots, which might be from the spread of MCC.

CT-guided needle biopsy: CT scans can also be used to help guide a biopsy needle into a suspicious area within the body.

Magnetic resonance imaging (MRI) scan

MRI scans use radio waves and strong magnets instead of x-rays to create detailed
images of parts of your body. This test can help tell if any lymph nodes are enlarged or if other organs have suspicious spots, which might be due to the spread of MCC. MRI scans are also very helpful in looking at the brain and spinal cord.

**Positron emission tomography (PET) scan**

A PET scan can help show if the cancer has spread to lymph nodes or other parts of the body. This test looks for areas where cells are growing quickly (which might be a sign of cancer), rather than just showing if areas look abnormal based on their size or shape.

For this test, you are injected with a slightly radioactive form of sugar, which collects mainly in cancer cells. A special camera is then used to create a picture of areas of radioactivity in the body.

**PET/CT scan:** Many centers have special machines that can do both a PET and CT scan at the same time. This lets the doctor compare areas of higher radioactivity on the PET scan with the more detailed appearance of that area on the CT scan.

- References
  See all references for Merkel Cell Skin Cancer

Last Medical Review: April 13, 2015 Last Revised: May 23, 2016

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**Merkel Cell Carcinoma Stages**

After someone is diagnosed with Merkel cell cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called staging. The stage of a cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to treat it. Doctors also use a cancer's stage when talking about survival statistics.

The earliest stage Merkel cell cancers are called stage 0 (carcinoma in situ), and then range from stages I (1) through IV (4). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage. Although each person's
cancer experience is unique, cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

How is the stage determined?

The staging system most often used for Merkel cell cancer is the American Joint Committee on Cancer (AJCC) **TNM** system, which is based on 3 key pieces of information:

- The extent (size) of the tumor (**T**): How large is the cancer? Has it grown into nearby structures or organs?
- The spread to nearby lymph nodes (**N**): Has the cancer spread to nearby lymph nodes?
- The spread (metastasis) to distant sites (**M**): Has the cancer spread to distant lymph nodes or distant organs such as the lungs and skin?

The system described below is the most recent AJCC system effective January 2018.

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced. Once a person’s T, N, and M categories have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more information see [Cancer Staging](#).

The staging system in the table below uses the **pathologic stage** (also called the **surgical stage**). This is the staging system most often used for Merkel cell cancer. It is determined by examining tissue removed during an operation.

Sometimes, if surgery is not possible right away or at all, the cancer will be given a **clinical stage** instead. This is based on the results of a physical exam, biopsy, and imaging tests. The clinical stage will be used to help plan treatment. Sometimes, though, the cancer has spread further than the clinical stage estimates, and may not predict the patient’s outlook as accurately as a pathologic stage. Clinical staging for Merkel cell cancer follows a separate staging system that is not covered in the table below. If your cancer has been clinically staged, ask your doctor for information about your specific stage.

Cancer staging can be complex, so ask your doctor to explain it to you in a way you understand.

<table>
<thead>
<tr>
<th>AJCC Stage</th>
<th>Stage grouping</th>
<th>Stage description*</th>
</tr>
</thead>
</table>
The cancer is confined to the epidermis, the outermost skin layer (Tis). It has not spread to nearby lymph nodes (N0) or distant sites (M0). This stage is also known as carcinoma in situ (Tis).

# Stage I

<table>
<thead>
<tr>
<th>Category</th>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>T1</td>
<td>The cancer is no more than 2 centimeters (cm) across (about 4/5 inch). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
</tbody>
</table>

# Stage II

<table>
<thead>
<tr>
<th>Category</th>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIA</td>
<td>T2 or T3</td>
<td>The cancer is larger than 2 cm across, but it is no more than 5 cm (about 2 inches) across (T2) OR the tumor is larger than 5 cm across (T3). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
</tbody>
</table>

# Stage III

<table>
<thead>
<tr>
<th>Category</th>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIIA</td>
<td>T1, T2, T3 or T4</td>
<td>The cancer can be any size or may have grown into nearby tissues (T1, T2, T3 or T4) AND the cancer has spread to nearby lymph nodes, but this was found during a lymph node biopsy or surgery and was not noticed on exams or imaging tests (N1a[sn] or N1a). It has not spread to distant sites (M0).</td>
</tr>
</tbody>
</table>

OR

<table>
<thead>
<tr>
<th>Category</th>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIIA</td>
<td>T0, N1b</td>
<td>There is no sign of a primary cancer (T0) AND the cancer has spread to nearby lymph nodes, which was noticed on exams or imaging tests (and then confirmed by biopsy or surgery) (N1b). It has not spread to distant sites (M0).</td>
</tr>
</tbody>
</table>

# Stage IV

<table>
<thead>
<tr>
<th>Category</th>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>T0, T1, T2, T3 or T4</td>
<td>The cancer can be any size or may have grown into nearby tissues (T0, T1, T2, T3, or T4) AND might or might not have spread to nearby lymph nodes (Any N). It has spread to distant lymph nodes or organs such as the lungs, or skin (M1).</td>
</tr>
</tbody>
</table>

* The following additional categories are not listed on the table above:
• **TX:** Main tumor cannot be assessed due to lack of information.
• **T0:** No evidence of a primary tumor.
• **NX:** Regional lymph nodes cannot be assessed due to lack of information.

**References**


[See all references for Merkel Cell Skin Cancer](#)

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# Survival Rates for Merkel Cell Carcinoma, by Stage

Survival rates tell you what portion of people with the same type and stage of cancer are still alive a certain amount of time (usually 5 years) after they were diagnosed. They can’t tell you how long you will live, but they may help give you a better understanding about how likely it is that your treatment will be successful. Some people will want to know the survival rates for their cancer, and some people won’t. If you don’t want to know, you don’t have to.

**What is a 5-year survival rate?**

Statistics on the outlook for a certain type and stage of cancer are often given as 5-year survival rates, but many people live longer – often much longer. The 5-year survival rate is the percentage of people who live at least 5 years after being diagnosed with cancer. For example, a 5-year survival rate of 70% means that an estimated 70 out of 100 people who have that cancer are still alive 5 years after being diagnosed. Keep in mind, however, that many of these people live much longer than 5 years after diagnosis.

**Relative survival rates** are a more accurate way to estimate the effect of cancer on survival. These rates compare people with Merkel cell carcinoma (MCC) to people in the overall population. For example, if the 5-year relative survival rate for a specific
stage of MCC is 60%, it means that people who have that stage of cancer are, on average, about 60% as likely as people who don’t have that cancer to live for at least 5 years after being diagnosed.

But remember, all survival rates are estimates – your outlook can vary based on a number of factors specific to you.

**Cancer survival rates don’t tell the whole story**

Survival rates are often based on previous outcomes of large numbers of people who had the disease, but they can’t predict what will happen in any particular person’s case. There are a number of limitations to remember:

- The numbers below are among the most current available. But to get 5-year survival rates, doctors have to look at people who were treated at least 5 years ago. As treatments are improving over time, people who are now being diagnosed with MCC may have a better outlook than these statistics show.
- These statistics are based on the stage of the cancer when it was first diagnosed. They do not apply to cancers that later come back or spread, for example.
- The outlook for people with MCC varies by the stage (extent) of the cancer. In general, the survival rates are higher for people with earlier stage cancers. But many other factors can affect a person’s outlook, such as a person’s age and overall health, and how well the cancer responds to treatment. The outlook for each person is specific to their circumstances.

Your doctor can tell you how these numbers may apply to you, as he or she is familiar with your particular situation.

**Survival rates for Merkel cell carcinoma**

MCC is an uncommon type of cancer, so it’s hard to get accurate, up-to-date survival statistics for this disease, especially by individual stages. Overall, the 5-year survival rate for MCC is about 60%. It’s much higher if the cancer is found early as opposed to having spread to the lymph nodes or distant parts of the body.

**Survival rates by stage**

The following survival rates are based on the outcomes of nearly 3,000 patients diagnosed with MCC from 1986 to 2000 and recorded in the National Cancer Data...
Stage IA: The 5-year relative survival rate is about 80%.
Stage IB: The 5-year relative survival rate is about 60%.
Stage IIA: The 5-year relative survival rate is about 60%.
Stage IIB: The 5-year relative survival rate is about 50%.
Stage IIC: The 5-year relative survival rate is about 50%.
Stage IIIA: The 5-year relative survival rate is about 45%.
Stage IIIB: The 5-year relative survival rate is about 25%.
Stage IV: The 5-year relative survival rate is about 20%.

Remember, these survival rates are only estimates – they can’t predict what will happen to any individual person. We understand that these statistics can be confusing and may lead you to have more questions. Talk to your doctor to better understand your specific situation.

Other factors affecting survival

Factors other than stage can also affect survival. For example:

- People who have weakened immune systems, such as those who have had organ transplants or who are infected with HIV, tend to have a worse outlook.
- Older age has been linked with a less favorable outlook.
- Where the tumor is on the body can also affect outlook. For example, tumors on the arms tend to have a better outlook than tumors in other areas.

References
See all references for Merkel Cell Skin Cancer

Last Medical Review: April 13, 2015 Last Revised: May 23, 2016
What Should You Ask Your Cancer Care Team About Merkel Cell Carcinoma?

It’s important to have honest, open discussions with your doctor. You should feel comfortable asking any question, no matter how small it might seem. Here are some questions you might want to ask:

When you’re told you have Merkel cell carcinoma

- How sure are you about my diagnosis of Merkel cell carcinoma?
- Has the cancer spread beneath the skin? Has it spread to lymph nodes or other organs?
- Do I need a sentinel lymph node biopsy to look for cancer in the lymph nodes?
- Will I need any other tests before we can decide on treatment?
- Do I need to see any other types of doctors?
- If I’m concerned about the costs and insurance coverage for my diagnosis and treatment, who can help me?

When deciding on a treatment plan

- How much experience do you have treating this type of cancer?
- What are my treatment options? What do you recommend? Why?
- Should I get a second opinion? Can you recommend a doctor or cancer center?
- What’s the goal of treatment?
- How quickly do we need to decide on treatment?
- What should I do to be ready for treatment?
- How long will treatment last? What will it be like? Where will it be done?
- What risks or side effects I should expect? How long are they likely to last?
- Will I have a scar after treatment?
- How might treatment affect my daily activities?
- What are the chances of my cancer growing or coming back with the treatment options we have discussed? What would we do if that happens?
- What type of follow-up will I need after treatment?
During treatment

Once treatment begins, you'll need to know what to expect and what to look for. Not all of these questions may apply to you, but getting answers to the ones that do may be helpful.

- How will we know if the treatment is working?
- Is there anything I can do to help manage side effects?
- What symptoms or side effects should I tell you about right away?
- How can I reach you on nights, holidays, or weekends?
- Are there any limits on what I can do?
- Can you suggest a mental health professional I can see if I start to feel overwhelmed, depressed, or distressed?

After treatment

- What symptoms should I watch for?
- What are the chances of my cancer coming back?
- What are my chances of developing another skin cancer?
- Should I take special precautions to avoid the sun?
- What type of follow-up will I need after treatment?
- How will we know if the cancer has come back? What would my options be if that happens?
- Are my family members at risk for skin cancer? What should I tell them to do?

Along with these sample questions, be sure to write down some of your own. For instance, you might want more information about recovery times so you can plan your work or activity schedule. Or you may want to ask about clinical trials for which you may qualify.

Keep in mind that your doctor isn’t the only one who can give you information. Other health care professionals, such as nurses and social workers, may have the answers to some of your questions. You can find more information about speaking with your health care team in The Doctor-Patient Relationship.

- References

See all references for Merkel Cell Skin Cancer

Last Medical Review: April 13, 2015 Last Revised: May 23, 2016
Treating Merkel Cell Carcinoma

Once Merkel cell carcinoma (MCC) has been diagnosed and staged, your cancer care team 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 MCC?

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

- Surgery
- Chemotherapy
- Immunotherapy
- Radiation therapy

Sometimes more than one type of treatment is used. Your treatment options will depend on the stage (extent) of the cancer, as well as other factors such as your overall health and personal preferences.

Which doctors treat MCC?

Depending on your options, you may have different types of doctors on your treatment team. These doctors may include:

- A dermatologist: a doctor who treats diseases of the skin
- A surgical oncologist (or oncologic surgeon): a doctor who uses surgery to treat cancer
- A medical oncologist: a doctor who treats cancer with medicines such as chemotherapy and immunotherapy.
- A radiation oncologist: a doctor who treats cancer with radiation therapy

Many other specialists might be part of your treatment team as well, including physician assistants (PAs), nurse practitioners (NPs), nurses, nutrition specialists, social workers, and other health professionals. To learn more about who may be on your cancer care team, see Health Professionals Associated With Cancer Care.

Making treatment decisions

It's important to discuss all of your treatment options as well as their possible side effects with your treatment team to help make the decision that best fits your needs. Some important things to consider include:

- Your age and overall health
- The stage (extent) and location of your cancer
- The likelihood that treatment will cure your cancer (or help in some other way)
- Your feelings about the possible side effects from treatment

If there is anything you don’t understand, ask to have it explained. See What Should You Ask Your Cancer Care Team About Merkel Cell Carcinoma? for some questions to ask.

Getting a second opinion

MCC is not common, so most doctors are unlikely to have seen or treated many cases. Even at major medical centers, where doctors are more likely to have experience with MCC, not all doctors agree on the best way to treat these cancers. If time allows, getting a second opinion from a team of experts is often a good idea. It can give you more information and help you feel good about the treatment plan that you choose.

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. 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 the [Complementary and Alternative Medicine](#) section of our website to learn more.

Choosing to stop treatment or choosing no treatment at all

For some people, when treatments have been tried and are no longer controlling the cancer, it could be time to weigh the benefits and risks of continuing to try new treatments. Whether or not you continue treatment, there are still things you can do to help maintain or improve your quality of life. Learn more in [If Cancer Treatments Stop Working](#).

Some people, especially if the cancer is advanced, might not want to be treated at all. There are many reasons you might decide not to get cancer treatment, but it’s important to talk this through with your doctors before you make this decision. Remember that even if you choose not to treat the cancer, you can still get help for pain or other symptoms.

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. Hospital- or clinic-based support services can be an important part of your care. These might include nursing or social work services, financial aid, nutritional advice, rehab, or spiritual help.

The American Cancer Society also has [programs and services](#) – including rides to treatment, lodging, and more – to help you get through treatment. Call our National
Surgery for Merkel Cell Carcinoma

Surgery is the main treatment for most Merkel cell carcinomas (MCCs). Different types of surgery might be done, depending on the situation.

Surgery to diagnose or help stage the cancer

Initial skin biopsy

In many cases, a skin biopsy is done to remove a suspicious spot even before the doctor suspects it might be MCC (see Tests for Merkel cell carcinoma). This can be thought of as a type of surgery (especially if an excisional biopsy is done), but it’s not considered adequate treatment for MCC. If MCC is diagnosed from the biopsy, a wide excision (described below) is used to remove more skin and other tissues in the area.

Sentinel lymph node biopsy (SLNB)

Even in people who have MCC with no obvious spread to nearby lymph nodes (or distant organs), about 1 out of 3 will have cancer cells in their lymph nodes when the nodes are looked at with a microscope. Because of this, a sentinel lymph node biopsy (described in Tests for Merkel Cell Carcinoma) is typically a very important part of determining the stage of the cancer.

Whenever possible, it’s important that the SLNB be done before a wide excision is used to remove more skin and other tissues from the main tumor site. This helps ensure the results of the SLNB are accurate.

If the SLNB is negative (that is, if the sentinel node does not contain cancer cells), no more lymph node surgery is needed because it’s very unlikely the cancer would have spread beyond this point (although radiation therapy might still be given to the nearby
lymph nodes just in case).

If cancer cells are found in the sentinel node, the remaining lymph nodes in this area are often removed and looked at, too. This is known as a lymph node dissection (see below). Radiation therapy might be given to the area after the lymph node dissection. (Sometimes radiation might even be used instead of doing a lymph node dissection.)

**Surgery to treat the cancer**

**Wide excision**

When a diagnosis of MCC is made by skin biopsy, the tumor site will most likely need to be excised (surgically cut out) again to help make sure the cancer has been removed completely. This fairly minor surgery might cure MCC if it hasn’t spread beyond the skin.

Local anesthesia is injected into the area to numb it before the excision. The surgeon then cuts out the tumor site, along with some normal skin at the edges. The normal, healthy skin around the edges of the cancer is called the margin. The skin is carefully stitched back together afterward. This will leave a scar.

The removed tissue sample is then sent to a lab, where it is viewed with a microscope to make sure that no cancer cells are at the edges of the skin that was removed.

Wide excision differs from an excisional biopsy. The margins are wider (usually at least 1/2 inch). This is because the diagnosis is already known, and the doctor is trying to be sure all of the cancer cells are removed.

The margins can also vary based on where the cancer is on the body and other factors. For example, if MCC is on the face, the margins may be smaller to avoid large scars or other problems. Smaller margins may increase the risk of the cancer coming back, so be sure to discuss the options with your doctor.

In uncommon situations where the cancer is on a finger or toe and has grown deeply, the treatment might require amputation of all or part of that digit.

**Mohs micrographic surgery**

Mohs surgery is sometimes used when the goal is to save as much healthy skin as possible, such as with cancers around the eye. It’s done by a doctor with special training in this approach.
Using the Mohs technique, the doctor removes the tumor and a margin of normal-appearing skin and then checks the sample under a microscope. If cancer cells are seen at the edges of the sample, another layer of skin is removed and examined. This is repeated until the skin samples are free of cancer cells. This process is slow, often taking several hours, but it allows more normal skin near the tumor to be saved.

**Lymph node dissection**

MCC often spreads to nearby lymph nodes. If cancer is found in the nearby lymph nodes (on a sentinel lymph node biopsy or another type of biopsy), a lymph node dissection is usually done.

In this operation, the surgeon removes all of the lymph nodes in the region near the primary tumor. For example, if the MCC is found on an arm, the surgeon would remove the nodes in the underarm region on that side of the body, which is where cancer cells would be most likely to travel first.

This type of surgery is done in an operating room and requires general anesthesia (where you are in a deep sleep). As with any major operation, complications can include reactions to anesthesia, bleeding, blood clots, and infections. Most people will have soreness or pain for some time after surgery. This can usually be helped with medicines, if needed.

A full lymph node dissection can also cause some long-term side effects. One of the most troublesome is called lymphedema. Lymph nodes in the groin or under the arm normally help drain fluid from the limbs. If they are removed, fluid could build up. This can cause limb swelling, which may or may not go away. If severe enough, it can cause skin problems and an increased risk of infections in the limb. For more information, see our section on Lymphedema. (Sentinel lymph node biopsy is less likely to cause this problem.)

**Skin grafting and reconstructive surgery**

After removing large skin cancers, it may not be possible to stretch the nearby skin enough to stitch the edges of the wound together. In these cases, healthy skin may be taken from another part of the body and grafted over the wound to help it heal and look better after surgery. Other reconstructive surgical procedures can also be helpful in some cases.

- References

See all references for Merkel Cell Skin Cancer
Radiation Therapy for Merkel Cell Carcinoma

Radiation therapy uses high-energy rays (such as x-rays) or particles (such as electrons) to kill cancer cells. The radiation is focused from outside the body onto the tumor.

When might radiation therapy be used?

Not all doctors agree on exactly when radiation therapy should be used for Merkel cell carcinoma (MCC), but it might be used in these situations:

- To treat the area of the main (primary) skin tumor after surgery to try to kill any cancer cells that might have been left behind. This is especially important if there’s a higher chance that the cancer will come back (such as if the main tumor was large, or if the doctor is not sure it was all removed with surgery).
- To treat the main tumor if surgery is not an option for some reason, such as if a person isn’t healthy enough for surgery.
- To treat the lymph nodes near the main tumor. If a sentinel lymph node biopsy (or other type of biopsy) found cancer in the lymph nodes, if the results of the biopsy were not clear, or if a biopsy was not done, radiation therapy is often given to the lymph nodes in the area. This might be done after a lymph node dissection, or it might even be done instead of a lymph node dissection.
- To help treat MCC that has come back (recurred) after surgery, either in the skin or lymph nodes.
- To help treat MCC that has spread to distant parts of the body, often along with other treatments. In this case, the radiation is used to help shrink or slow the growth of the cancer and/or to relieve symptoms caused by its spread, but it’s not expected to cure the cancer.
How is radiation therapy given?

When used to treat MCC, radiation is usually given 5 days a week for several weeks. The length of treatment might be shorter if it’s only being used to relieve symptoms caused by the cancer spread.

Before treatments start, your radiation team will take careful measurements to determine exactly where to aim the radiation beams and the proper dose of radiation. This planning session is called *simulation*.

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 set-up time – getting you into place for treatment – takes longer.

Possible side effects of radiation therapy

Common side effects depend on where the radiation is aimed and can include:

- Sunburn-like skin problems
- Changes in skin color
- Hair loss where the radiation enters the body
- Fatigue
- Nausea (if the radiation is aimed at the abdomen)

These often get worse as treatment goes on and slowly go away after treatment ends.

Radiation therapy can also raise the risk of getting another type of cancer in the treated area. If this happens, it’s usually many years after treatment.

To learn more, see the Radiation Therapy section of our website.

- References
See all references for Merkel Cell Skin Cancer

Last Medical Review: April 13, 2015 Last Revised: May 23, 2016
Chemotherapy for Merkel Cell Carcinoma

Chemotherapy (chemo) uses anti-cancer drugs that are typically injected into a vein or given by mouth. These drugs travel through the bloodstream to all parts of the body, which makes chemo useful for treating cancers that have spread to other organs.

When might chemo be used?

Merkel cell carcinoma (MCC) is not common, so it’s been hard to study the use of chemotherapy for MCC in clinical trials.

Chemo is most likely to be helpful for MCC that has spread to other organs. So far it’s not clear if it can be helpful for cancers that are still just in the skin or that have only spread to nearby lymph nodes, but some doctors might still recommend it for these cancers (see “Intralesional chemotherapy” below for an example).

Which chemo drugs are used to treat MCC?

It has also been hard to study which chemo drugs work best against MCC. Because of this, doctors often use chemo drugs that are helpful against other types of fast-growing neuroendocrine tumors. The most commonly used drugs for MCCs that have spread include:

- Cisplatin
- Carboplatin
- Etoposide
- Topotecan

Most often, either cisplatin or carboplatin is used, often along with etoposide. Topotecan tends to have fewer serious side effects, so it might be a better option for some people who are older or have serious health problems.

These drugs are given intravenously (IV or into a vein), usually once every few weeks. They can often shrink MCC tumors for a time (or at least slow their growth and spread) and help relieve some symptoms. But usually these cancers will start growing again.
Intralesional chemotherapy: For some early skin tumors, some doctors have tried injecting small amounts of a chemo drug such as bleomycin directly into the site of the tumor, sometimes after surgery. This seems to help some people, although it hasn’t been studied enough to be sure. One advantage of this approach is that it’s unlikely to cause the side effects often seen with chemo that goes through the whole body.

Possible side effects of chemotherapy

Chemo drugs can cause side effects. These depend on the type and dose of the drugs given and how long they are used. Side effects 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 other effects that are not listed above, so be sure to talk with your cancer care team about what to expect.

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

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

- References
See all references for Merkel Cell Skin Cancer

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Immunotherapy for Merkel Cell Carcinoma

Immunotherapy is the use of medicines that help a person’s own immune system find and destroy cancer cells. This is a promising newer form of treatment for Merkel cell carcinoma (MCC), especially if the cancer has spread to other parts of the body.

Immune checkpoint inhibitors

An important part of the immune system is its ability to keep itself from attacking normal cells in the body. To do this, it uses “checkpoints” – proteins on immune cells that need to be turned on (or off) to start an immune response. Cancer cells sometimes use these checkpoints to avoid being attacked by the immune system.

For example, PD-1 is a checkpoint protein on immune cells called T cells. It normally acts as a type of “on/off switch” that can help keep the T cells from attacking other cells in the body. It switches “off” when it attaches to PD-L1, a protein on some normal (and cancer) cells. This basically tells the T cell to leave the other cell alone. Some cancer cells have large amounts of PD-L1, which helps them evade immune attack.

Drugs that block either PD-1 or PD-L1 can stop this binding and boost the immune response against cancer cells. Examples of such drugs include:

- **Avelumab (Bavencio)**, which targets PD-L1
- **Pembrolizumab (Keytruda)**, which blocks PD-1

These drugs are given as an intravenous (IV) infusion, typically every 2 or 3 weeks. They have been shown to shrink or slow the growth of some advanced MCC tumors, sometimes even after other treatments have been tried.

Some other immune checkpoint inhibitors are now being studied for use against MCC as well.

Possible side effects

Side effects of these types of drugs can include:

- Fatigue
• Cough
• Nausea
• Rash or itchy skin
• Joint pain
• Loss of appetite
• Diarrhea
• Constipation

Other, more serious side effects occur less often:

**Infusion reactions:** Some people might have an infusion reaction while getting one of these drugs. This is like an allergic reaction, and can include fever, chills, flushing of the face, rash, itchy skin, wheezing, and trouble breathing. You might be given medicines before each infusion to help lower the risk of this happening.

**Autoimmune reactions:** These drugs work by basically removing the brakes on the body’s immune system. Sometimes the immune system starts attacking other parts of the body, which can cause serious or even life-threatening problems in the lungs, intestines, liver, hormone-making glands, kidneys, or other organs.

It’s very important to report any new side effects to your health care team right away. If serious side effects do occur, treatment may need to be stopped and you may get high doses of corticosteroids to suppress your immune system.

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**References**

See all references for Merkel Cell Skin Cancer

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**Treating Merkel Cell Carcinoma Based on the Extent of the Cancer**
Merkel cell carcinoma (MCC) is not common, so it has been hard for doctors to study how best to treat this cancer. Some doctors might suggest treatments other than those listed here.

Treatment depends mainly on how far the cancer has spread in the body, so having the right tests done to determine the extent of the cancer (such as a sentinel lymph node biopsy or imaging tests like CT, MRI, or PET/CT scans) is very important.

Other factors, such as the location of the tumor and your age and overall health, might also affect your treatment options.

**MCC with no obvious spread to the lymph nodes (or elsewhere)**

These cancers are thought to be confined to the skin based on physical exams and imaging tests. Once MCC has been diagnosed, a sentinel lymph biopsy (SLNB) is usually done first to see if small amounts of cancer have reached the nodes.

After the SLNB, surgery (usually wide local excision) is done on the skin to try to remove all of the cancer. If the cancer is in a place where it would be hard to remove it with a wide margin of normal skin, Mohs micrographic surgery might be used. Radiation therapy might be another option instead of surgery for some people.

Within a few weeks after surgery, radiation might be given to the site where the tumor was removed. This is more likely if the doctor thinks there’s a higher risk of the cancer coming back (such as if the main tumor was large, or if the doctor is not sure if it was all removed with surgery).

If a SLNB was done and did not find any cancer in the lymph nodes, some doctors might suggest watching you closely with no further treatment, especially if the main tumor was small and did not have any concerning features. But because MCC often spreads to the lymph nodes, many doctors prefer to give radiation therapy to the nodes to be safe. Radiation to the nodes is also likely to be recommended if a SLNB was not done, or if it was done but the results were not clear. (If radiation therapy is being given to the main tumor, the radiation to the lymph nodes is typically given at the same time.)

**MCC that has spread to nearby lymph nodes**

These cancers have been confirmed to have spread to the nearby lymph nodes, either
with a SLNB or with another type of biopsy.

After the biopsy, the main tumor on the skin is treated with surgery (usually wide local excision) to try to remove all of the cancer. If the cancer is in a place where removing it with a wide margin of normal skin would be difficult, Mohs micrographic surgery might be used.

Within a few weeks after surgery, radiation therapy is often given to the site where the tumor was removed, especially if the doctor thinks there is a higher risk of the cancer coming back (such as if the main tumor was large, or if the doctor is not sure if it was all removed with surgery).

Because cancer has been found in the lymph nodes, these need to be treated as well. Options might include lymph node dissection to remove them, radiation therapy, or lymph node dissection followed by radiation therapy. (If radiation therapy is being given to the main tumor, the radiation to the lymph nodes is typically given at the same time.) Some doctors might also recommend chemotherapy to try to lower the chances of the cancer coming back, although it’s not clear how helpful this is.

**MCC that has spread to other parts of the body**

If MCC has spread to other parts of the body, treatment can often help control the cancer and relieve symptoms, but these cancers are very hard to get rid of completely. Not all doctors agree on the best way to treat these cancers, so if time permits it’s often a good idea to get a second opinion from a team of experts.

Treatment options might include surgery, radiation therapy, chemotherapy, immunotherapy, or some combination of these. The benefits of each treatment need to be weighed against the side effects they might cause. Be sure you understand the goal of each treatment and its possible downsides before starting treatment.

Like other types of fast-growing neuroendocrine cancers, MCC often shrinks in response to chemotherapy at first, but these cancers almost always start growing again at some point. Chemotherapy can also have side effects that need to be taken into account.

Treatment with one of the newer immunotherapy drugs, such as avelumab (Bavencio) or pembrolizumab (Keytruda) might be another option. These types of drugs can shrink some MCC tumors and tend to have fewer side effects than standard chemo, although sometimes the side effects from these drugs can be serious.
Because these cancers can be very hard to treat with current therapies, patients may want to think about taking part in a clinical trial. Studies are now looking at new drugs and combinations of different types of treatments. (See What’s New in Merkel Cell Carcinoma Research?)

**MCC that comes back (recurs) after initial treatment**

If MCC comes back after treatment, further treatment depends on where it comes back and what types of treatment were used before.

If the cancer comes back on the skin where it first started, surgery (with wider margins) can often be done to try to remove it. This might be followed by radiation therapy to the area if it hasn’t been given before. If the nearby lymph nodes have not been treated, they might be removed and/or treated with radiation. Some doctors might consider giving chemotherapy as well, although it’s not clear how helpful this might be.

If the cancer comes back in the nearby lymph nodes and they have not been treated before, they might be removed and/or treated with radiation. Some doctors might consider giving chemotherapy as well, although again it’s not clear how helpful this is.

Cancers that come back in distant parts of the body can be hard to treat. Surgery and/or radiation therapy might be used, but the goal is usually to relieve symptoms rather than to try to cure the cancer. Chemotherapy can often shrink or slow the growth of the cancer for a time and can help relieve symptoms, but the cancer almost always starts growing again at some point. Chemotherapy can also have side effects that need to be taken into account. Treatment with one of the newer immunotherapy drugs, such as avelumab (Bavencio) or pembrolizumab (Keytruda) might be another option, as these drugs have been shown to be helpful against some advanced MCCs.

The benefits of each treatment need to be weighed against the side effects they might cause. Be sure you understand the goal of each treatment and its possible downsides before starting treatment.

Because these cancers can be hard to treat, patients might want to think about taking part in a clinical trial. Studies are now looking at new drugs and combinations of different types of treatments (see What’s New in Merkel Cell Carcinoma Research?).

The treatment information given here is not official policy of the American Cancer Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor. Your doctor may have reasons for suggesting a
treatment plan different from these general treatment options. Don’t hesitate to ask him or her questions about your treatment options.

- References
  See all references for Merkel Cell Skin Cancer

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1-800-227-2345 or www.cancer.org
After Merkel Cell Skin Cancer Treatment

Living as a Cancer Survivor

For many people, cancer treatment often raises questions about next steps as a survivor.

- Living as a Merkel Cell Carcinoma Survivor

Living as a Merkel Cell Carcinoma Survivor

For many people with Merkel cell carcinoma (MCC), treatment can remove or destroy the cancer. Completing treatment can be both stressful and exciting. You may be relieved to finish treatment, but find it hard not to worry about cancer growing or coming back. (When cancer comes back after treatment, it is called a recurrence.) This is very common if you've had cancer.

For others, MCC may never go away completely. These people may get regular treatment with radiation therapy, chemotherapy, or other treatments to try to help keep the cancer in check. Learning to live with cancer that does not go away can be difficult and very stressful.

Follow-up after MCC

Even if you have completed treatment, your doctors will still want to watch you closely. It’s very important to keep all follow-up appointments. During these visits, your doctors will ask if you are having any problems. They may also examine you and order lab tests or imaging tests to look for signs of cancer or treatment side effects.
Some **treatment side effects** might last a long time or might not even show up until years after you have finished treatment. Your doctor visits are a good time to ask questions and talk about any changes or problems you notice or concerns you have.

**Exams and tests**

A typical follow-up schedule for MCC might include physical exams every few months for the first couple of years, with more time between exams after that. Some doctors might also recommend imaging tests such as PET/CT scans, especially for people who are at higher risk of the MCC returning (such as those who had a large tumor or more advanced disease).

It’s also important for you to regularly examine your skin and lymph nodes. Most doctors recommend this at least monthly. You should see your doctor if you find any new lump or change in your skin. You should also report any new symptoms (for example, pain, cough, fatigue, or loss of appetite) that do not go away. If MCC returns, it is usually within the first couple of years after treatment, but it can sometimes come back many years later.

Patients with MCC that does not go away completely with treatment will have a follow-up schedule based on their situation.

**Ask your doctor for a survivorship care plan**

Talk with your doctor about developing a survivorship care plan for you. This plan might include:

- A suggested schedule for follow-up exams and tests
- A schedule for other tests you might need in the future, such as early detection (screening) tests for other types of cancer, or tests to look for long-term health effects from your cancer or its treatment
- A list of possible late- or long-term side effects from your treatment, including what to watch for and when you should contact your doctor
- Diet and physical activity suggestions

**Can I lower my risk of MCC progressing or coming back?**
If you have (or have had) MCC, you probably want to know if there are things you can do that might lower your risk of the cancer coming back, or of getting a new skin cancer.

At this time, not enough is known about MCC to say for sure if there are things you can do that will be helpful.

We do know that having a weakened immune system can raise the risk of dying from MCC, but this is often something people can’t do much about. For example, some people need to take immune-suppressing medicines because they’ve had an organ transplant or because they have an autoimmune disease. But for others, there may be things you can do to help keep your immune system strong. For example, it’s very important for people infected with HIV to take their medicines to help keep the infection under control.

We also know that people who have had MCC have a higher risk for developing other types of skin cancer. Because of this, it’s important to limit your exposure to UV rays (from the sun or tanning beds) and to examine your skin every month for signs of MCC coming back or possible new skin cancers. Skin cancers that are found early are typically much easier to treat than those found at a later stage. (See Skin Cancer Prevention and Early Detection for information on how to protect your skin and do a skin self-exam.)

Adopting healthy behaviors such as not smoking, eating well, being active, and staying at a healthy weight might help as well, but no one knows for sure. Still, we do know that these types of changes can have positive effects on your health that can extend beyond your risk of MCC or other cancers.

**About dietary supplements**

So far, no dietary supplements (including vitamins, minerals, and herbal products) have been shown to clearly help lower the risk of MCC progressing or coming back. This doesn’t mean that no supplements will help, but it’s important to know that none have been proven to do so.

Dietary supplements are not regulated like medicines in the United States – they do not have to be proven effective (or even safe) before being sold, although there are limits on what they’re allowed to claim they can do. If you are thinking about taking any type of nutritional supplement, talk to your health care team. They can help you decide which ones you can use safely while avoiding those that might be harmful.

**If the cancer comes back**
If MCC does come back at some point, your treatment options will depend on where the cancer is, what treatments you've had before, and your overall health. For more information on how recurrent cancer is treated, see Treating Merkel Cell Carcinoma Based on the Extent of the Disease. For more general information on dealing with a recurrence, see our Understanding Recurrence section.

Keeping health insurance and copies of your medical records

Even after treatment, it's very important to keep health insurance. Tests and doctor visits cost a lot, and even though no one wants to think of their cancer coming back, this could happen.

At some point after your cancer treatment, you might find yourself seeing a new doctor who doesn't know about your medical history. It's important to keep copies of your medical records to give your new doctor the details of your diagnosis and treatment. Learn more in Keeping Copies of Important Medical Records.

Getting emotional support

Some amount of feeling depressed, anxious, or worried is normal when MCC is a part of your life. Some people are affected more than others. But everyone can benefit from help and support from other people, whether friends and family, religious groups, support groups, professional counselors, or others. Learn more in Life After Cancer.

- References

See all references for Merkel Cell Skin Cancer

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