Merkel Cell Skin Cancer Early Detection, Diagnosis, and Staging

Detection and Diagnosis

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

- Can Merkel Cell Carcinoma Be Found Early?
- 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 the likely response to treatment.

- Merkel Cell Carcinoma Stages
- Survival Rates for Merkel Cell Carcinoma

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.

- Questions To Ask 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’re small, haven’t spread, and are likely to be easier to treat.

Skin self-exam

While the American Cancer Society doesn't have guidelines for the early detection of skin cancer, knowing your own skin is important in 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 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 of your skin, including your palms and soles, scalp, ears, nails, and your back. To learn more about how to examine your skin, see How to Do a Skin Self-exam. A friend or family member can also help you with these exams, especially for those hard-to-see places, like your scalp and back.

Be sure to show your doctor any skin changes that concern you and have them look at areas that may be hard for you to see. Any spots on your skin that are new or changing in size, shape, or color should be seen by a doctor right away. If you can’t see your doctor soon, you might want to take good close-up photos of the area so your doctor can see if it’s 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 start 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 usually don't hurt, but they can grow quickly and can sometimes open up as ulcers or sores.

Exam by a health care professional
Some doctors and other health care professionals will examine your skin as part of your routine health check-ups.

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 (like those who have had an organ transplant). Talk to your doctor about your skin cancer risk and how often you should have your skin examined.

Hyperlinks


References


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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 shiny bump that usually doesn't hurt. Sometimes the skin on the top of the tumor breaks open and bleeds.

These tumors grow quickly. They might spread as new lumps in the nearby skin. They might also reach nearby lymph nodes\(^1\) (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 rare, 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 usually don't 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 easier it might be to treat.

**Hyperlinks**


**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 do tests to find out if it’s cancer or some other skin problem. If MCC is diagnosed and there’s a chance it has spread to other parts of your body, other tests will be needed.

Medical history and physical exam

The first step is for your provider to ask about your symptoms, such as when you first noticed the change on your skin, 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, your provider will note the size, shape, color, and texture of the area(s) in question, and if it’s bleeding, oozing, or crusting. The rest of your body will also be checked for spots that could be related to skin cancer.

Nearby lymph nodes, which are bean-sized collections of immune system cells under the skin will also be closely checked. MCCs (and some other skin cancers) can spread to lymph nodes. When this happens, the lymph nodes swell and might be felt as lumps under the skin.

Referral to a specialist
If you're first seen by your primary doctor and skin cancer is suspected, you may be referred to a dermatologist. This is a doctor who specializes in skin diseases. This doctor will look at the changed area more closely.

Along with a standard physical exam, some dermatologists use a technique called dermatoscopy (also called dermoscopy, epiluminescence microscopy, 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 that's 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, too.

**Skin biopsy**

If the doctor thinks that a suspicious area might be MCC (or another type of skin cancer), a tiny piece of it (called a sample) will be removed and sent to a lab. There, it's tested and 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 local anesthetic (numbing medicine), which is injected into the area with a very small needle. You'll probably feel a small prick and a little stinging as the medicine goes in, but you shouldn't feel any pain during the biopsy.

(For animated views of some of these procedures, see Skin Biopsy and Treatment Procedures.)

**Shave (tangential) biopsy**

To do this biopsy, the doctor shaves off the top layers of the skin with a small surgical blade. Any bleeding is then stopped by putting on either an ointment, a chemical that stops bleeding, or using a small electrical current to seal (cauterize) the wound.

A shave biopsy is useful in diagnosing many types of skin diseases, especially if the doctor thinks an abnormal area is not likely 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 doesn't go deep enough to get below the tumor.
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 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, and the edges of the wound are stitched together.

- An incisional biopsy removes only part of the tumor.
- An excisional biopsy removes the entire tumor, and is usually preferred for a suspected MCC if it can be done.

Lymph node biopsy

MCC often spreads to nearby lymph nodes early in the course of the disease, so it’s very important to find out if lymph 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.

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

Needle biopsy

If a lymph node near an MCC tumor is abnormally large, the doctor can use a needle biopsy to find out if the cancer has spread to that node. Needle biopsies are easier than some other types of biopsies, but they may not always take out enough of a tissue 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 pull out (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, numbing medicine (a local anesthetic) is sometimes used to numb the area first. These biopsies rarely cause much discomfort and usually don't 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. If the lymph node is deeper in the body, an imaging test, like an ultrasound or CT scan, is often used to guide the needle into the right 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 hasn’t been done. An excisional biopsy might also be used if a needle biopsy didn't find any cancer cells, but the doctor still suspects the cancer has spread there.

In this type of biopsy, the doctor takes out the enlarged lymph node through a small cut (incision) in the skin. This can often be done in a doctor’s office or outpatient surgical center. Numbing medicine (local anesthetic) 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 and do tests 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 commonly used for MCC is called immunohistochemistry (IHC). It 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, the portion of cells that are actively dividing (mitotic rate), and whether the tumor has invaded the tiny blood vessels or lymph vessels in the sample. These features could help determine a person’s outlook (prognosis).

Imaging tests

Imaging tests[^9] use x-rays, magnetic fields, or radioactive substances to create pictures of the inside of the body. They can be 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 see how well treatment is working or to look for possible signs of cancer coming back (recurring) after treatment.

Computed tomography (CT) scan

CT scans[^9] use x-rays to make detailed, cross-sectional images of your body. Unlike a regular x-ray, CT scans can show details in soft tissues (such as internal organs). This test can show if 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 deep inside the body.

Magnetic resonance imaging (MRI)

MRIs[^10] use radio waves and strong magnets instead of x-rays to create detailed images of the inside of your body. This test is very helpful in looking for cancer that has spread to the brain and/or spinal cord.
Positron emission tomography (PET) scan

A PET\textsuperscript{11} 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.

**PET/CT scan:** Often a PET scan is combined with a CT scan using a special machine that can do both at the same time. This lets the doctor compare areas of higher radioactivity on the PET scan with the more detailed pictures of that area on the CT scan. This is the type of imaging scan most preferred in patients with MCC.

**Hyperlinks**

10. [www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html](http://www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html)

**References**

Merkel Cell Carcinoma Stages

After someone is diagnosed with Merkel cell cancer (MCC), 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 (or 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, like 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 as of 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 get an overall stage. For more on this, 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 MCC. It’s decided after testing the tissue taken out during an operation.

Sometimes, if surgery can't be done 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. In some cases, though, the cancer has spread further than the clinical stage estimates, and may not predict the patient’s outlook as well as a pathologic stage. Clinical staging for MCC follows a separate staging system that’s 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>
<tbody>
<tr>
<td>0</td>
<td>Tis, N0, M0</td>
<td>The cancer is only in 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).</td>
</tr>
</tbody>
</table>
| I          | T1             | The cancer is no more than 2 centimeters (cm) across (about 4/5
<table>
<thead>
<tr>
<th>Stage</th>
<th>Tumor Size</th>
<th>Lymph Nodes</th>
<th>Distance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I</strong></td>
<td>T1, T2, T3, or T4</td>
<td>N0 (or N1a)</td>
<td>M0</td>
<td>The cancer can be any size or may have grown into nearby tissues (T1, T2, T3, or T4) and has spread to nearby lymph nodes (N1a), but this was found during a lymph node biopsy or surgery and was not seen on exams or imaging tests (N1a[sn] or N1a). It has not spread to distant sites (M0).</td>
</tr>
<tr>
<td><strong>II A</strong></td>
<td>T2 or T3</td>
<td>N0 (or N1a)</td>
<td>M0</td>
<td>The cancer is more than 2, but less than 5 cm (about 2 inches) across (T2) OR the tumor is more than 5 cm across (T3). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
<tr>
<td><strong>II B</strong></td>
<td>T4</td>
<td>N0 (or N1a)</td>
<td>M0</td>
<td>The cancer has grown into nearby tissues such as muscles, bones, or cartilage (T4). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
</tbody>
</table>
| **III A** | T1, T2, T3, or T4 | N1b, N2 or N3 | M0 | The cancer can be any size or may have grown into nearby tissues (T1, T2, T3, or T4) AND any of the following:  
- It has spread to nearby lymph nodes, which was seen on exams or imaging tests and then confirmed by biopsy or surgery (N1b).  
- It has spread toward a nearby lymph node area without reaching the lymph nodes (N2). This is called *in transit metastasis*.  
- It has spread toward a nearby lymph node area (called in transit metastasis) and has reached the lymph nodes (N3). |
| **III B** | T0 | N1b | M0 | There's no sign of a primary cancer (T0) AND the cancer has spread to nearby lymph nodes, which was seen on exams or imaging tests and then confirmed by biopsy or surgery (N1b). It has not spread to distant sites (M0). |
### Staging

<table>
<thead>
<tr>
<th>IV</th>
<th>T0, T1, T2, T3 or T4</th>
<th>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).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any N</td>
<td>It has spread to distant lymph nodes or organs, such as the lungs or skin (M1).</td>
</tr>
<tr>
<td></td>
<td>M1</td>
<td></td>
</tr>
</tbody>
</table>

* The following 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.

### Hyperlinks

2. [www.cancer.org/treatment/understanding-your-diagnosis/staging.html](http://www.cancer.org/treatment/understanding-your-diagnosis/staging.html)

### References


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**Survival Rates for Merkel Cell**
Carcinoma

Survival rates can give you an idea of what percentage 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 of how likely it is that your treatment will be successful.

Keep in mind that survival rates are estimates and are often based on previous outcomes of large numbers of people who had a specific cancer, but they can’t predict what will happen in any particular person’s case. These statistics can be confusing and may lead you to have more questions. Talk with your doctor about how these numbers may apply to you, as he or she is familiar with your situation.

What is a 5-year relative survival rate?

A relative survival rate compares people with the same type and stage of cancer to people in the overall population. For example, if the 5-year relative survival rate for a specific stage of Merkel cell carcinoma (MCC) is 70%, it means that people who have that cancer are, on average, about 70% as likely as people who don’t have that cancer to live for at least 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the Surveillance, Epidemiology, and End Results (SEER) database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for Merkel cell carcinoma in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by AJCC TNM stages (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized:** There is no sign that the cancer has spread outside of the skin where it started.
- **Regional:** The cancer has spread outside the skin where it started to nearby structures or lymph nodes.
- **Distant:** The cancer has spread to distant parts of the body, such as the lungs, liver, or distant parts of the skin.
5-year relative survival rates for Merkel cell carcinoma

These numbers are based on people diagnosed with MCC between 2011 and 2017.

<table>
<thead>
<tr>
<th>SEER stage</th>
<th>5-year relative survival rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Localized</td>
<td>76%</td>
</tr>
<tr>
<td>Regional</td>
<td>56%</td>
</tr>
<tr>
<td>Distant</td>
<td>23%</td>
</tr>
<tr>
<td>All SEER stages combined</td>
<td>64%</td>
</tr>
</tbody>
</table>

Understanding the numbers

- **These numbers apply only to the stage of the cancer when it is first diagnosed.** They do not apply later on if the cancer grows, spreads, or comes back after treatment.
- **These numbers don’t take everything into account.** Survival rates are grouped based on how far the cancer has spread. But other factors, such as your age and overall health, where on the body the cancer starts, and how well the cancer responds to treatment, can also affect your outlook.
- **People now being diagnosed with MCC may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on people who were diagnosed and treated at least five years earlier.

References


Questions To Ask 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 (MCC)?
- 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?
- What is the stage of my MCC?
- Do I need to see any other types of doctors?
- Who can talk to me about costs and insurance coverage for my diagnosis and treatment?

When deciding on a treatment plan

- How much experience do you have treating MCC?
- What are my treatment options\(^1\)? What do you recommend? Why?
- Should I get a second opinion\(^2\)? 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? What will it look like?
• How might treatment affect my daily activities? My work? My sex life?
• What are the chances of the cancer will still grow or come back after the treatment options we’ve discussed? What would we do if that happens?
• What type of follow-up\(^3\) will I need after treatment?

**During treatment**

Once treatment starts, you’ll need to know what to expect and what to look for. All of these questions might not apply to you, but getting answers to the ones that do may be helpful.

• How will we know if treatment is working?
• Is there anything I can do to help manage side effects\(^4\)?
• 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 the 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\(^5\) 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\textsuperscript{6} that might be right for you.

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 learn more about speaking with your health care team in The Doctor-Patient Relationship\textsuperscript{7}.

Hyperlinks


References

See all references for Merkel Cell Skin Cancer (www.cancer.org/cancer/merkel-cell-skin-cancer/references.html)


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The American Cancer Society medical and editorial content team (www.cancer.org/cancer/acs-medical-content-and-news-staff.html)
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