What to Expect From Your Mohs Surgery

Mohs and Dermatologic Surgery Unit

Weill Cornell Medicine
Dermatology

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Your doctor has recommended **Mohs** micrographic surgery to treat your skin cancer. This booklet will help answer some of the most common questions about **Mohs** micrographic surgery and prepare you for what to expect before, during, and after your procedure. We encourage you to ask us any additional questions that might arise.

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What is **Mohs** Micrographic Surgery

Mohs surgery was first developed by Frederic E. Mohs, MD, in the 1930’s. It is a highly specialized method of removing skin cancers that uses microscopic guidance to decrease the likelihood of leaving behind extensions of cancer that are not visible at the skin surface [Figure 1], and avoids wide cuts that remove healthy skin and unnecessarily increase scarring [Figure 3].

Mohs micrographic surgery offers the highest possible cure rate for removal of the most common types of skin cancer, with cure rates for new skin cancers as high as 99% and recurrent skin cancers 95%, while sparing as much healthy skin as possible [Figure 2].

**Mohs** micrographic surgery offers the best chance that your cancer is completely removed, while sparing as much healthy skin as possible to minimize scarring.

The precision of Mohs micrographic surgery results in two major advantages:

1) The highest published cure rates for many forms of skin cancer, making it less likely for cancer to grow back.

2) Maximal preservation of healthy skin, which leads to the best possible cosmetic and functional result.

These advantages make Mohs micrographic surgery especially useful for the treatment of skin cancers that are large, have poorly defined edges, have grown back after previous treatments, or are located on areas of the body where keeping the surgical wound as small as possible is critical for obtaining excellent cosmetic and functional outcomes.

**Dr. Minkis** is a board-certified dermatologist who has completed advanced training in Mohs micrographic surgery through a fellowship sponsored by the American College of Mohs Surgery and accredited by the Accreditation Council for Graduate Medical Education (ACGME). She has also completed a fellowship in Cosmetic dermatologic surgery through the American Society for Dermatologic Surgery.
What are the Steps Involved in **Mohs** Micrographic Surgery?

**Mohs** surgery is performed in a dermatologic surgical suite/office under local anesthesia while the patient is awake.

**Stage 1:**
After numbing the area around the skin cancer by injecting a local anesthetic, your Mohs surgeon removes all visible portions of the skin cancer and a thin margin of normal-appearing skin.

A staff member places a temporary bandage over the wound and takes you to our waiting room.

**Microscopic Examination**

While you are waiting, Dr. Minkis examines the entire margin of the removed skin under the microscope in our laboratory.

If microscopic examination shows that your cancer has been completely removed, you are ready to have your wound repaired.

By contrast, if microscopic examination identifies extensions of the cancer that are not visible at the surface of your skin, Dr. Minkis needs to remove those precise areas where the cancer cells remains.

... highest published cure rates for many forms of skin cancer minimizes the potential for the cancer to grow back.
Subsequent Stages {may not be necessary}

If all the cancer was not removed in the previous stage, the staff member brings you back to the operating room. In this subsequent stage, Dr. Minkis cuts out the precise areas where cancer still remains.

Once again, a temporary bandage is placed over your wound and you are taken to our waiting room.

Microscopic Examination

While you are waiting, Dr. Minkis examines the entire margin of the removed skin under the microscope in our laboratory.

This process of targeted cancer removal and complete microscopic margin examination will continue until Dr. Minkis finds that all of the cancer has been completely removed.

...maximal preservation of healthy skin leads to the best possible cosmetic and functional outcome.
Reconstruction of the Surgical Wound

When all of the cancer has been removed, Dr. Minkis will discuss all the options for repairing your wound with you.

In the majority of cases, Dr. Minkis immediately repairs your wound with stitches. Certain wounds may require a flap, which rearranges skin from near the wound, or a graft, which borrows skin from another site to cover the wound.

Questions BEFORE Surgery

Do I need to Schedule a Pre-Operative Consultation?

It is preferable that a pre-operative consultation be scheduled so that Dr. Minkis can discuss your planned surgery, best evaluate your skin cancer, review your pathology results and schedule your surgery appropriately. If you are unable to present for a pre-operative consultation, please call our office so we can make all the appropriate accommodations.

What else can I do before my first visit?

We recommend obtaining a photograph ("selfie" or otherwise) of the cancer or the biopsy site. This will help identify the site easily in the event that the wound heals well prior to your visit.

Should I stop taking medications prescribed by one of my doctors?

No. Continue any medications, including blood thinners (such as Aspirin, Coumadin (warfarin), Pradaxa (dabigatran), Plavix (clopidrogel), Aggrenox)), which have been prescribed by one of your doctors. Please bring a complete list of your medications on the day of surgery. Please take all your normal prescription medications the morning of surgery. Please fill any prescriptions that may have been given to you before surgery.

Should I stop taking any over-the-counter medicines or supplements, which have NOT been ordered by my doctor?

Yes. Avoid over-the-counter pain medications and supplements that can increase risk of bleeding for 10 days prior to surgery. They may be resumed 2 days after surgery. To protect you from potential bleeding complications, please stop any of the following medications or supplements at least seven to 10 days prior to surgery if they have not been ordered by a doctor: Ibuprofen, Motrin, Advil, Aleve, etc.. Aspirin unless prescribed by your medical doctor. Vitamin E, Fish Oil, Gingko, Ginseng, Garlic pills. Please refrain from drinking alcoholic beverages three days prior to and three days after your appointment, since alcohol increases your risk of bleeding. If you use tobacco products, reduce or stop smoking for 1 week prior and 1-2 weeks following surgery to help improve wound healing. Tylenol (acetaminophen) use for aches or pains is not restricted.
Questions BEFORE Surgery

Do I need antibiotics prior to MoHS surgery?
Typically not. However we recommend antibiotics 30 to 60 minutes prior to your surgery in the following situations:
1) If you have had a joint replacement surgery within the past two years;
2) If you have an artificial heart or heart valves;
3) If you have a history of endocarditis/infected heart valves; or,
4) If you have severe dysfunction of a heart valve.

If you qualify for any of these situations, please call our office prior to your scheduled procedure at least two to three days before your appointment so we can prescribe an appropriate antibiotic.

Can I eat before surgery?
Yes. We recommend that you eat a normal breakfast prior to your arrival. You may also wish to pack a lunch or bring some snacks with you on the day of the surgery.

Questions About THE DAY OF Surgery

Will I be in pain during surgery?
You may experience minor discomfort during the injection of the local anesthesia. The pain is similar to what you experienced when your doctor performed a biopsy of the cancer.

You will not feel pain while Dr. Minkis is removing your cancer or stitching your wound. Subsequent anesthetic injections prior to any additional stages or reconstruction of your wound are often painless, since the anesthesia from the first injection is usually still effective.

How long does MoHS surgery take?
We cannot predict precisely how long it takes to remove the skin cancer and reconstruct the surgical wound. The actual time you’ll spend with us varies, depending upon the nature of your cancer. Since we cannot predict an exact time, please plan to spend the entire day with us and cancel any other appointments on the day of your surgery.
The following flow diagram gives you a rough estimate of the time required for each step of your surgery. Please understand that these times may vary, depending upon multiple factors.

We recognize that waiting is the most difficult part of the day, so we keep you informed of your progress and work efficiently to get you home as quickly as possible. We encourage you to bring reading materials or a companion to help you pass the time. Additionally, we have WIFI in our waiting rooms and you may wish to bring a wireless tablet or laptop to keep busy during the waiting periods.

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**A**
Removal of Tissue
15-20 minutes
OPERATING ROOM

**B**
Microscopic Tissue
Examination (Mohs Lab)
60-90 minutes (variable, may be longer for certain types of cancers)
WAITING ROOM

- All Cancer Removed
- Some Cancer Remains

**C**
Reconstruction
30-90 minutes (variable, depending on multiple factors and level of complexity)
OPERATING ROOM

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**When will my final surgical wound be repaired?**

In the majority of cases, Dr. Minkis repairs your final surgical wound on the day of surgery after confirming that all of the cancer has been removed. Most wounds are repaired with stitches. If it is difficult for you to tolerate reconstruction on the same day of surgery or if you have an extensive wound inappropriate for reconstruction under local anesthesia, we may schedule you to come back on another day or see another surgeon for your repair.

**Will Mohs surgery leave a scar?**

Yes. Any surgery to remove skin cancer results in a scar. However, the precision of the Mohs surgery technique helps decrease the amount of scarring by removing all of the diseased skin while leaving behind as much healthy skin as possible. Dr. Minkis is skilled in surgical reconstruction and repairs your wound to make your scar as unnoticeable as possible. The vast majority of patients heal very nicely and do not require additional treatment to their scars. Occasionally, additional procedures may be required to optimize scar appearance and camouflage the scar; we will discuss all the options with you and schedule you for any necessary follow-up appointments.

**Can I go home after surgery?**

Yes. The surgery is performed under local anesthesia, and you return home with a bandage over your wound.

**Will I be able to drive home?**

We recommend that you arrange for a companion to drive you home. Postoperative swelling or bulky dressings used to cover the surgical wound may obstruct your vision or restrict your movements making driving alone dangerous.
Questions AFTER Surgery

Will I experience much pain after surgery?
Most patients have minimal pain after surgery, and it is usually controlled by taking Tylenol (acetaminophen) if necessary. Please avoid products containing aspirin (unless your doctor has specifically prescribed it) or ibuprofen, as these can promote bleeding.

How do I take care of my wound?
Our staff explains and demonstrates the technique to care for your wound immediately after your surgery. We give you written instructions that also provide information for contacting Dr. Minkis, in the rare case of an emergency.

Can I resume my normal activities after surgery?
In order to protect your wound and ensure optimal results with the best possible scar, we suggest that you avoid strenuous activities for at least a week after your surgery. Be prepared for the possibility of having visible swelling, redness, and bruising for one to two weeks after surgery, especially if your cancer is on the central face (forehead, eyes, nose, lips) or scalp.

Do I have to come back to your office after the surgery?
Usually you return in one to three weeks to have the stitches removed and to ensure that your wound is healing well. We may request that you return for additional visits to ensure that your scar has healed with the best possible results. Thereafter, it is important for you to return to the office of your referring doctor for regular skin examinations to evaluate for the development of any new skin cancers.

Will my cancer come back?
Approximately 1 to 3 percent of skin cancers may grow back after Mohs micrographic surgery. For certain high-risk skin cancers, this recurrence rate may be higher. We always recommend that you monitor your surgical site, as you should all other areas of your body, for any signs of skin cancer. You should call us or your referring doctor for an evaluation if you are concerned that your cancer may be growing back.

What can I do to keep my skin healthy in the future?
Adopting sun-smart habits and performing regular self-skin examinations are critical to keeping your skin healthy.

Sun-smart habits include:
1) Faithful avoidance of harmful ultraviolet rays from the sun (or from tanning salons), especially between the peak hours of 10 a.m. to 4 p.m.
2) Sensible coverage with clothing, including a broad-brimmed hat, long sleeves, and pants whenever possible.
3) Daily use of a broad-spectrum sunscreen (UVA/UVB protection) with a sun protection factor (SPF) of 30 or higher on areas of your skin not covered with protective clothing.
Mohs Pre-Surgical Checklist

Please use the following checklist to prepare for your appointment

If your insurance carrier requires a referral from your primary doctor, you must obtain this prior to the day of your surgery. The referral should specify that you will be having Mohs micrographic surgery and reconstruction of the surgical wound. Make sure our office has a copy of the referral or bring it with you on the day of your surgery.

Compile a complete list of your medication and allergies.

- To avoid delays during registration on the day of your appointment, please complete any forms that you have received from us in advance of your appointment. Remember to bring the completed forms with you on the day of your surgery.
- If you have had joint replacement surgery within the past two years or if you have a dysfunctional or artificial heart valve, please contact us so that we can prescribe a preoperative antibiotic.
- Prepare a list of names and addresses of any doctors to whom you would like us to send a report of your surgery.
- Prepare to spend the entire day at our office.
- Bring along some reading material or an electronic device to help you pass the time.
- Eat a normal breakfast on the day of surgery. Consider packing a lunch or some snacks to bring with you.

Dr. Minkis specializes in the treatment and prevention of skin cancer. The Mohs micrographic surgical technique allows for the highest potential cure rate for high-risk non-melanoma skin cancers while removing the least possible amount of tissue. Dr. Minkis also has extensive training in surgical removal of early stage melanoma with precise microscopic examination of the surgical margin. Her expertise includes surgical dermatology, nail surgery and laser and cosmetic dermatology.

Dr. Minkis received her Bachelor of Arts degree in chemistry with honors at New York University. She pursued her medical education and doctorate in molecular oncology and immunology at New York University School of Medicine. Dr. Minkis completed her training in dermatology at New York-Presbyterian Hospital (NYPH) Weill Cornell Medical Center, where she was awarded the Distinguished House Staff Award. Following her residency training, she completed a fellowship in procedural dermatology and Mohs micrographic surgery at Northwestern University and in addition was one of the first seven dermatologists in the US to have completed the American Society for Dermatologic Surgery Cosmetic Dermatologic Surgery Fellowship. As a NYP/Weill Cornell-trained dermatologist, Dr. Minkis strives to continue the tradition of excellence in patient care and scholarly pursuits that distinguishes the Weill Cornell Department of Dermatology.

Where can I learn more about skin cancer?

To learn more about skin cancer and other related topics, please visit the following websites:

- www.cornelldermatology.org
- www.aad.org
- www.skincancer.org
- www.mohscollege.org