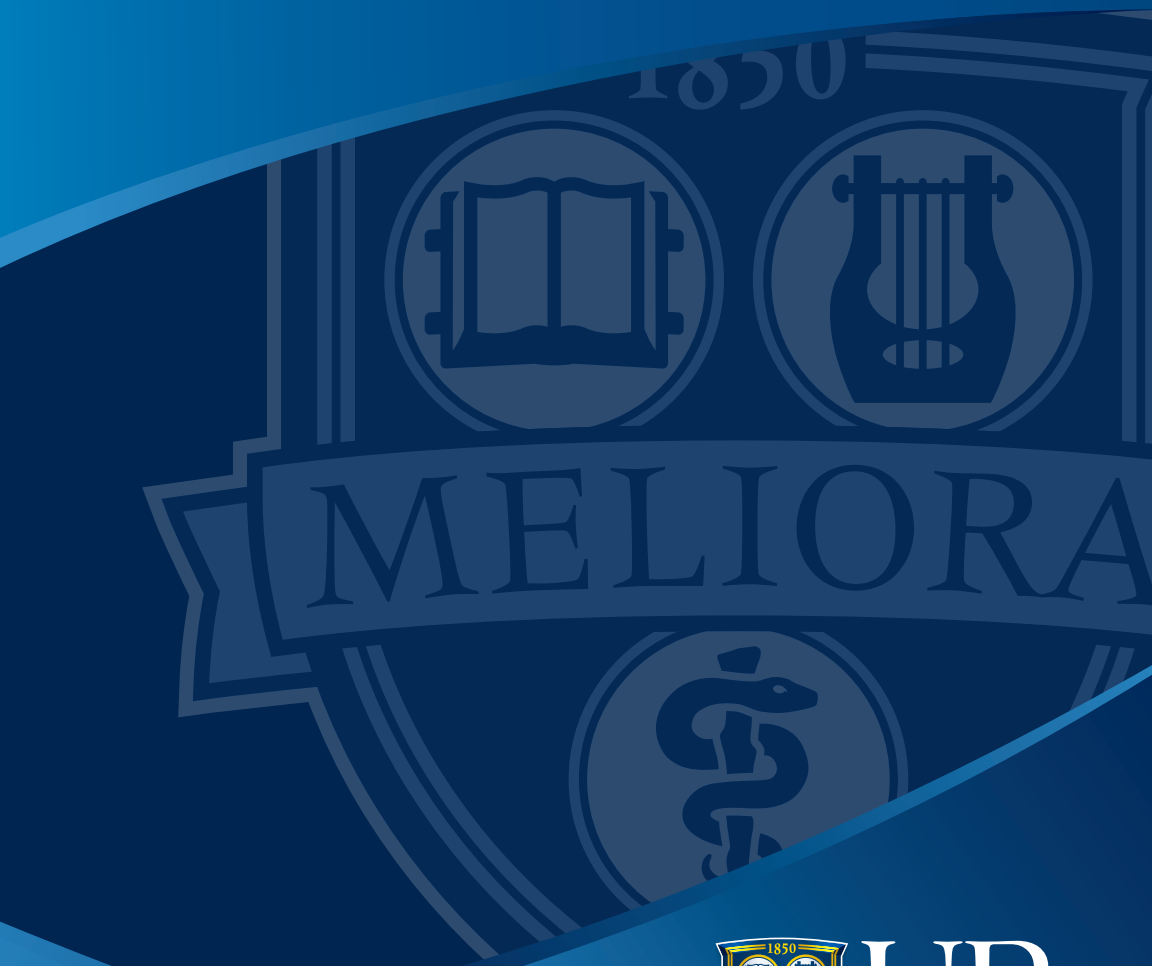
Dermatology



UR MEDICINE

MEDICINE *of* THE HIGHEST ORDER

Mohs Micrographic Surgery

Welcome.

This brochure serves as an introduction to Mohs Micrographic Surgery and will help you prepare for your upcoming procedure with UR Medicine Mohs Micrographic Surgery Division.

Please take a few moments to read this information and share it with the person who will be assisting you before and after your procedure. In addition to providing details about what to expect from the time you arrive for your surgery through discharge, this brochure includes answers to the following frequently asked questions:

- What can be done to prevent future skin cancers?
- What is skin cancer and how is it treated?
- What is Mohs Micrographic Surgery?
- How do I prepare for my surgery?
- What are the options for reconstruction once my cancer has been removed?
- What does post-operative care involve?

How can I help prevent future skin cancers?

Statistically speaking, you have a higher chance of developing additional skin cancers after having had one skin cancer. The most common association with skin cancer is exposure to sunlight. This is why skin cancers most often develop on body parts exposed to the sun, such as the face and arms.

Skin cancers also occur more frequently in fair skinned individuals and in people who live in the sun-belt areas. The damage your skin has already received from the sun cannot be reversed. However, there are precautions that can be taken to prevent further skin cancers including:

- Minimize outdoor activities during peak sunlight hours (10 a.m. to 3 p.m.).
- When in the sun, wear a broad-brimmed hat and cover up with protective clothing as much as possible.
- Use a sunscreen with a sun protection factor (SPF) of 30 or greater on all exposed skin. Reapply every two hours; more frequently if swimming or perspiring.
- Don't be fooled by cloudy or overcast days; the sun's damaging rays can still get through.
- Wear sunglasses, preferably wrap-around styles that block both ultraviolet A (UVA) and ultraviolet B (UVB) rays.
- Beware of light-colored reflective surfaces, such as sand, snow and water, which magnify potential harm to the skin.
- Avoid tanning booths and sunlamps.
- Protect children from the sun—kids who suffer from sunburns at a young age are at risk of developing skin cancer later in life.

Finally, if you have a family history of skin cancer, you should be especially careful about sun exposure. Also be sure to check your skin regularly for signs of skin cancer, such as any change in the size, shape or texture of an existing mole or blemish, the appearance of a new mole or a sore that doesn't heal. Report any unusual findings to your doctor.

Skin cancer and Mohs Micrographic Surgery.

What is skin cancer?

Skin cancer is the growth of abnormal cells at an uncontrolled and unpredictable rate. As the cancer cells grow, they destroy the surrounding normal tissue. Although the cancer originates in the skin, if left untreated, it can invade and destroy structures such as fat, muscle, cartilage and bone.

The most common skin cancers we treat are basal cell carcinoma and squamous cell carcinoma. Melanoma, the third most common skin cancer, is usually treated with a wide excision and not necessarily Mohs Surgery.

- Basal cell and squamous cell cancer most commonly occur on sun exposed areas such as the face and head. They often begin as a small bump, which continues to enlarge, sometimes bleeds and often does not heal completely. The cancer can be flesh colored, red or a darker color than the surrounding skin.

- Basal cell cancer rarely metastasizes (spreads beyond the site of original growth), but frequently grows larger and deeper, destroying the nearby tissue in its path.

- Certain high-risk squamous cell cancers can spread from the skin to distant sites, such as lymph nodes and lungs, but this is rare.

- Skin cancers originate in the upper-most layer of the skin. They can then grow downward, forming finger-like projections under the skin's surface. At times, these "roots" are subtle and can be seen only with the help of a microscope. Therefore, what you see on your skin is sometimes only a small portion of the total tumor (like seeing only the tip of a large iceberg).

- There are several different subtypes of basal cell carcinoma and squamous cell carcinoma. It is important to distinguish these types prior to treatment because different therapies may be required. For this reason, a biopsy is usually performed prior to treatment.

How is skin cancer treated?

There are many treatments for skin cancers including:

- Excision (surgical removal and stitching)
- Curettage (scraping with a sharp instrument)
- Cryosurgery (freezing)
- Radiation therapy (X-rays)
- Topical creams

For some skin cancers, these treatments have a greater than 90% success rate. However, for more aggressive skin cancers, and for those in delicate locations such as the face, Mohs Micrographic Surgery is utilized.

What is Mohs Micrographic Surgery?

Mohs Micrographic Surgery, also called Mohs Surgery, microscopically controlled surgery or histographic surgery, is a specialized technique where sequential horizontal layers of the skin cancer are removed. The success rate for Mohs Surgery in treating recurrent and/or aggressive cancers is 95% or better. Mohs Surgery requires a highly trained team of medical personnel, including a physician, nurse and technician. It is typically utilized for skin cancers that:

- Are large and difficult to treat with other therapies.
- Are located in high-risk areas such as the nose, ear and lip or around the eye.
- Show an aggressive or infiltrative growth pattern when viewed under a microscope.
- Are recurrent.

How does Mohs Surgery work?

As the skin cancer is surgically removed, it is mapped by the Mohs surgeon so its exact location can be pinpointed.

- Every layer of tissue removed is inspected under a microscope for evidence of cancer cells at both the periphery and deep margins.
- If cancer cells are seen anywhere within the specimen, the Mohs surgeon continues to remove and examine sequential tissue layers, but only from that section of the wound that shared the cancer cells.
- If any cancer cells remain, the surgeon is able to locate them based on the mapping technique.
- Subsequent layers of tissue are removed and the procedure is repeated until the physician is satisfied that the entire base and sides are clear of cancer cells.

In addition to ensuring total removal of the cancer, this process preserves as much normal healthy skin and tissue as possible. However, even with this meticulous surgical technique, rare recurrences may occur.

Who performs Mohs Surgery?

At the UR Medicine Mohs Micrographic Surgery Division, procedures are performed by a specialized dermatologic surgeon who serves as both surgeon and pathologist (a doctor who identifies disease by studying cells and tissues under a microscope).

Mohs dermatologic surgeons have had subspecialty surgical training in this technique and have completed medical school, an internship and three years of dermatology residency. They are then accepted into a fellowship where special instruction in the procedure is offered. The highly specialized nature of the procedure has traditionally limited the number of trained Mohs surgeons in this country.

Mohs Micrographic Surgery was named in honor of Dr. Frederic Mohs, the physician who developed the basic technique over 75 years ago. Since Dr. Mohs first described this surgical procedure, many technical improvements and refinements have contributed to making it a safe and highly effective means of treating skin malignancies. The main difference between Mohs Surgery and other methods of removing skin cancers is meticulous microscopic control with the surgeon also functioning as the pathologist, reading the slides.

What to expect pre- and post-operatively.

How do I prepare for the day of surgery?

The best preparation for Mohs Surgery is a good night's sleep. The morning of your surgery, follow your normal routine. Bathe or shower, eat breakfast and take any prescription medications. If you need to take any additional medications during the day, please bring them with you. Since you may be at our surgical facility for a large portion of the day, remember to bring a book, your laptop computer or other reading materials with you. Also pack a lunch, if you would like. We will provide light snacks.

What happens on the day of my surgery?

Mohs Surgery appointments are scheduled either early morning or early afternoon. (In almost all cases, the surgery will be completed on an outpatient basis.) After your arrival and check-in at the reception area, one of our nurses or medical assistants will escort you to the surgical suite.

- If you have not had a prior consultation visit, our nurse will go through the procedure with you. This includes taking a health history, checking your blood pressure and pulse and answering any questions you may have. Please remember to bring a list of all your medications with you on the day of your surgery.
- You will then be seated on a comfortable surgical table and the area around your skin cancer will be anesthetized (numbed) using a local anesthetic. You may experience slight discomfort, but usually this is the only pain you will feel during the procedure.
- After waiting approximately five to ten minutes for the anesthetic to work completely, a layer of tissue will be removed. This tissue will be carefully diagrammed, mapped and then sent to a specially trained technician to be frozen and processed into microscopic slides. To expedite this step, the lab is located directly in our office.
- Our nurse will then place a pressure dressing over your surgical wound and you will be free to return to the surgical waiting area.
- On average, it takes approximately one hour for the slides to be prepared and studied. During this time, you may sit in the waiting room, read a book or magazine and have something to eat or drink.

Our goal is to remove the cancer in the first layer or stage; however, more often than not, our surgeon may need to remove sequential layers of tissue. In doing so, we try not to remove any more normal skin than necessary. At the end of your Mohs Surgery, you will have a surgical wound. Once we are sure that you are skin cancer free, we will discuss our recommendations for repairing the surgical wound with you.

What can I expect after my surgery is complete?

We request that a family member or friend accompany you on the day of your surgery to provide companionship and to assist you in getting home.

Following Mohs Surgery, most people are concerned about pain, although the majority of our patients experience only mild discomfort. In part, your level of discomfort will depend upon how large your wound is and where it is located.

- Most patients do quite well taking acetaminophen (Tylenol) or ibuprofen (Advil, Motrin). On occasion, a stronger medication such as codeine will be prescribed.
- A small number of patients may experience some bleeding post-operatively. This can usually be controlled by the use of pressure.
- Prior to your discharge from our facility, one of our nurses or medical assistants will advise you on appropriate wound care and provide you with a detailed list of instructions.
- In most instances, you will return to our office in one week for removal of the sutures/stitches and a post-operative check. We commonly see our patients one month after surgery to ensure that the healing process is proceeding well.
- After the one-month check, most patients can be followed by their referring physician. We typically recommend follow-ups with your general dermatologist every six months.
- If you notice signs or symptoms of a new skin cancer growth at any time, seek consultation with your referring physician immediately. We will gladly schedule an appointment to see you in our office.

Are there possible complications with Mohs Surgery?

With any surgical procedure, there is a chance of complications. Although every effort will be made to offer the best possible cosmetic result, you will be left with a scar. Proper wound care at home will help the healing process and minimize scarring. If necessary, reconstructive surgery following removal of your skin cancer can result in a more pleasing cosmetic outcome.

- Please keep in mind that it often takes months before final wound healing is complete and the best cosmetic result is obtained.
- Although uncommon, bleeding after surgery is the most common potential post-operative complication. To minimize the chances of this occurring, patients are advised to be as minimally active after surgery as possible. This includes activity restrictions such as:
  - No bending or heavy lifting.
  - No rigorous exercise or exertion.
  - Not making important plans in the days immediately following your surgery.
- Infection is also a possibility following surgery, but it occurs only in one to two percent of patients. A small red area may develop surrounding your wound. This is normal and does not necessarily indicate infection. However, if this redness does not subside, and if the wound begins to drain pus or becomes swollen or very tender, you should notify us immediately.
- Swelling and bruising are common following Mohs Surgery, particularly when surgery is performed around the eyes. This usually occurs within five to seven days after surgery and may be decreased by the use of an ice pack during the first 24 to 48 hours after surgery.
- At times, the area surrounding your wound will be numb to the touch. This may persist for weeks or months, and in some instances, can be permanent. This is due to trauma to the small nerve endings in the skin surface that occurs during removal of the tumor.
- Finally, the skin cancer can recur. The cure rate with Mohs Surgery is greater than 95% but, unfortunately, not 100%. Occasionally, the cancer may reappear in the same location.

What are the options for repairing my surgical wound?

Most patients are initially surprised that the size of their surgical wound is larger than they expected. The cancerous tumor is often well beyond its obvious external margins with nests of cells growing in unpredictable areas.

Please keep in mind that our major goal is to completely remove the skin cancer. After this has been achieved, our next goal is to provide you with the best possible functional and cosmetic results. There are several options for repairing your surgical wound including:

- **Healing by granulation –** This simply means letting the wound heal by itself. Experience has taught us that there are certain areas of the body where nature will heal a wound as nicely as a surgical procedure. There are also times when a wound will be left to heal knowing that if the resultant scar is unacceptable, some form of reconstructive surgery can be performed at a later date.
- **Closing the wound side-to-side with stitches –** This involves sewing the skin edges together. This procedure speeds the healing and typically offers an excellent cosmetic result.
- **Skin flaps –** This involves movement of adjacent healthy tissue to cover a surgical site. When practical, flaps are chosen because of the excellent cosmetic match of nearby skin.
- **Skin grafts –** There are two types of skin grafts, which are used to cover a surgical site with skin from another area of the body:
  - A split thickness graft is a thin shave of skin usually taken from the thigh.
  - A full thickness graft provides a thicker layer of skin to achieve the desired results. This skin is usually removed from around the ear or collarbone and then stitched to cover the wound. The donor site is also sutured together to provide good healing.

If your Mohs Surgery is extensive, we may recommend that you see one of our consultant physicians, usually a plastic or facial-plastic surgeon. If a reconstructive surgeon referred you to us, he or she will care for you after your cancer has been removed. Your referring physician will usually let us know ahead of time whether you will be seeing him or her for closure of the wound.

Will my insurance cover the surgery?

Mohs Micrographic Surgery is usually covered by most major insurances. Please be prepared to give your insurance information to our billing office and bring any forms that may need processing with you. We can counsel you concerning your insurance coverage at the time of surgery. Specific questions regarding billing can be directed to our billing office manager at (585) 273-4412.

Meet the Doctors

Marc D. Brown, M.D.

Marc D. Brown, M.D. graduated from LeMoyne College with a degree in biology. He received his M.D. from Georgetown Medical School. Dr. Brown completed a residency in Internal Medicine at the University of Rochester School of Medicine & Dentristy, and then a Dermatology residency at the University of Michigan. He then completed a fellowship in Mohs Surgery and Cutaneous Oncology.

Dr. Brown is a Professor of Dermatology and Oncology and a member of the James P. Wilmot Cancer Institute where he heads the melanoma and complex skin cancer tumor board. Dr. Brown has been included in the Best Doctors in America and Best Cancer Doctors directories. He serves as an editorial reviewer for several major dermatologic journals and has published more than 50 articles and two books.

Dr. Brown performs approximately 2,400 Mohs surgeries per year, and has performed a total of more than 30,000 Mohs procedures.

Dr. Brown sees patients at Strong Memorial Hospital.

Sherrif F. Ibrahim, M.D., Ph.D.

Sherrif F. Ibrahim, M.D., Ph.D. graduated from Massachusetts Institute of Technology with a degree in chemical engineering. He earned his M.D. and Ph.D. through the Medical Scientist Training Program at the University of Washington in Seattle. Dr. Ibrahim completed a fellowship in Mohs Surgery, cutaneous oncology, facial reconstruction, laser surgery and cosmetic dermatology at the University of California, San Francisco.

Dr. Ibrahim is an Assistant Professor of Dermatology and Oncology, and is a member of the James P. Wilmot Cancer Institute. He has published numerous scientific articles and dermatology textbook chapters. Dr. Ibrahim focuses his research on the molecular basis of skin cancer. His hope is to better understand what causes skin cancer and to develop non-surgical ways to treat it.

Dr. Ibrahim performs approximately 2,000 Mohs surgeries per year.

Dr. Ibrahim sees patients at our Red Creek Office.

Marc D. Brown, M.D.
Strong Memorial Hospital
2nd Floor of the Ambulatory Care Facility (Silver Elevators)

Office Hours: 8:30 a.m. - 4:30 p.m.
(585) 275-9208

To reach the doctor on call:
(585) 275-9208
After hours, you will be automatically connected to our answering service, which will contact the doctor on call.

If there is any difficulty contacting the doctor on call, Dr. Brown can be reached on his cell phone, (585) 737-6892.

Directions to Dr. Brown's office at Strong Memorial Hospital:

Use the Elmwood Avenue main entrance to the hospital.

Take the Silver Elevators to the second floor.

Turn right out of the elevators and right again at the windows.

The last reception area on your right is Dermatology Mohs.

Dr. Brown's office is at the far end of the waiting room, through the door.

Sherrif F. Ibrahim, M.D., Ph.D.

400 Red Creek Drive
Suite 200

Office hours: 8:30 a.m. - 4:30 p.m.
(585) 487-1440

To reach the doctor on call:
(585) 487-1440
After hours, you will be automatically connected to our answering service, which will contact the doctor on call.

Directions to Dr. Ibrahim's office at Red Creek:

From the South: Take I-390 North to the Hylan Drive exit. Take a right at the end of the exit ramp. Take a right onto Calkins Road at the traffic light. Take first left onto Red Creek Drive.

From the West: Take the New York State Thruway, I-90 to Exit 47. Take I-490 East to I-390 South to the Hylan Drive exit. Take a left at the end of the exit ramp. Take a right onto Calkins Road at the traffic light. Take first left onto Red Creek Drive.

From the East: Take the New York State Thruway, I-90 to Exit 46. Take I-390 North to the Hylan Drive exit. Take a right at the end of the exit ramp. Take a right onto Calkins Road at the traffic light. Take first left onto Red Creek Drive.

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