

A Patient's Guide to MOHS Surgery for Skin Cancer

This guide is designed to help you understand the causes and treatments of skin cancer. MOHS Surgery has been proposed to treat your particular skin lesion; this guide is to help give you a better idea of what that means for you.

1. What is Skin Cancer?

Skin cancer is the most common cancer among humans. More than 1,000,000 Americans will be treated for skin cancer this year. Skin cancer is skin tissue that grows at an uncontrollable rate and is named for the type of tissue that gives rise to the cancer. The three major forms of skin cancer are; basal cell carcinoma, squamous cell carcinoma, and malignant melanoma.

2. What causes Skin Cancer?

Like most other forms of cancer, the causes of cancer are not fully understood. However, it seems likely that the single most important known factor in the causes of skin cancer is excessive exposure to sunlight. Skin cancers are most common on the face and arms, the most exposed areas of the body. Those who are fair skinned develop skin cancer more frequently than those with darker skin. Skin cancer is most common in the southern United States.

An inherited tendency towards skin cancer is also noted, with skin cancers occurring at different rates among certain ethnic groups. Again, those with fairer complexions like Northern Europeans display skin cancer at higher frequencies. Those individuals who spend more time in the sun will show earlier and more severe signs of sun damage.

3. Is Skin Cancer Dangerous?

The most common forms of skin cancer; basal cell carcinoma and squamous cell carcinoma enlarge locally from their point of origin and rarely spread to distant parts of the body (metastasize). If not completely removed both types can invade and destroy structures in their immediate path of growth. However, these cancers are often caught early and therefore cure rates are high.

Malignant melanoma on the other hand can be life threatening if not treated early. Melanomas usually appear as a brownish black spot or bump on the skin which enlarges, and sometimes itches or bleeds. Occasionally, melanomas originate from a preexisting mole, therefore, any mole that changes in size, shape, color, consistency, or sensation should quickly be examined by a dermatologist.

4. Where Does Skin Cancer Start? How Does it Grow?

Skin cancer begins in the uppermost layer of the skin and grows downward, forming roots. It spreads horizontally along the surface of the skin. Unfortunately, these extensions cannot be directly visualized and therefore what is visible to the naked eye may only be the "tip of the iceberg".

5. What Does Skin Cancer Look Like?

Basal cell carcinomas often start as a small, pearly, wax like bump on the skin. Fine blood vessels may be seen on the surface. Other forms may look like a red, scaly, flat patch. If left untreated such skin cancers may enlarge, ulcerate, and bleed easily. Any lasting blemish, scaling, or discoloration should be evaluated by a physician.

Melanomas can arise from preexisting moles or may develop on their own. Any “new mole” or preexisting mole that changes or begins to burn, itch, or bleed should be examined by a dermatologist. Ulceration and bleeding of the lesion is usually seen in more advanced cases. However, when detected early melanoma cure rates approach 100%. Persons with a family history of melanoma are at increased risk for developing melanoma. It is therefore recommended that all first-degree relatives of a melanoma patient have a total body skin exam by their dermatologist.

6. How is Skin Cancer Diagnosed?

Often by having a suspicious lesion inspected you can be assured that it is benign. However, in some cases a biopsy will be necessary. You will be given an injection of local anesthetic to numb the area, and a small piece of the lesion will be removed and sent to the laboratory for analysis. Usually results take about a week to get back to us from the laboratory and your doctor will get in touch with you regarding your results. This may be done either by phone or a follow up visit.

7. How May Skin Cancer be Treated

There are several methods for treating skin cancer, all of which are highly successful in most patients. These methods include; excision (surgical removal) and suturing, curettage and electrodesiccation (scraping and burning with an electric needle or laser), radiation therapy, cryosurgery (freezing), topical chemotherapy, and MOHS surgery (microscopically controlled excision). The method of treatment chosen depends on many factors.

8. How Effective is MOHS Surgery in the Treatment of Skin Cancer?

The MOHS surgery technique has an excellent success rate, 97%-99.5%, even in cases that other treatment modalities have failed. Therefore, with the MOHS technique the chance of cure is very high, however, no one can 100% guarantee a cure.

9. What are the Advantages of MOHS Surgery?

Using microscopic examination, the MOHS surgeon can pinpoint the areas that involve the cancer and selectively remove them leaving behind the maximum amount of normal tissue. In this manner the cancer is traced to its roots and eliminated there. MOHS has a high rate of cure even after previous therapy has failed and is the best at preserving normal tissue. Other forms of therapy frequently only have a 50%-70% rate of cure after another method has failed.



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10. How is MOHS Microscopic Controlled Surgery Performed?

There are three steps to the MOHS procedure: (1) excision of the visible part of the skin cancer, (2) excision to a certain depth of the surrounding tissue, (3) examination of the excised tissue under a microscope. Before the tissue is examined it is oriented so that any remaining cancer cells can be pinpointed for removal. If more cancer is found then the procedure is repeated, but only in the area that contains the cancer. This is how the cancer roots are traced out. Each time tissue is removed it is called a "stage".

11. How Long Does MOHS Surgery Take?

Total removal of the skin cancer could involve only one surgical stage, or it may involve many stages. Each stage takes about an hour from start to finish. The actual time spent removing the tissue may be as little as 5-10 minutes, but then the slides must be prepared and read. You should plan on being occupied for most of the day. After the MOHS surgeon has ensured all of your cancer is gone it is time to proceed with reconstruction.

12. Will MOHS Surgery Leave a Scar?

Yes. Any form of surgical therapy will leave a scar. The MOHS procedure tends to minimize this as much as possible by removing the least amount of normal tissue.

13. Who Does MOHS Surgery?

Physicians who have finished their residency in dermatology can participate in a special fellowship training at an institution approved by the American College of MOHS Microscopic Surgery and Cutaneous Oncology. UVM Medical Center is one of the centers in the United States that has Certified MOHS Surgeons. You will be referred to one of them to excise your lesion.

14. Will I Need to be Hospitalized?

Probably not. The surgery is performed as an outpatient procedure at the ambulatory care center of the Medical Center Campus.

15. What Happens at the Preoperative Consultation Visits?

The preoperative visit gives your surgeon a chance to view your lesion and determine the most suitable way of treating your particular case. This visit also gives you a chance to ask any questions you may have. Your doctor will most likely have already completed a biopsy at the time of your consultation before referring you to a MOHS surgeon. This allows everyone to know what kind of cancer they are dealing with. Photographs may be taken by your doctor prior to the biopsy, when you arrive from the MOHS surgeon, and when you have healed from the reconstruction. The MOHS surgeon may take their own set of photos and these will become part of your chart. If Dr. Lane will be co-managing your case with one of the MOHS surgeons, an acceptable time for all parties will be chosen to proceed with surgery and reconstruction.



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16. Why MOHS Surgery?

There is a very limited amount of skin and tissue around the eyes and MOHS surgery is very good at preserving as much normal tissue as possible while maintaining high cure rates. For the best chance at a cure as well as the best cosmetic outcome MOHS surgery has been recommended to treat your skin cancer. Because MOHS surgery uses microscopic control to seek out the cancer root it offers the best chance of cure while trying to preserve the most amount of normal tissue.

17. Will My Insurance Cover MOHS?

As with other types of skin cancer surgery, most insurance policies cover MOHS surgery. Please check with your provider if you have any questions regarding cost or insurance issues.

18. How Should I Prepare Myself for MOHS Surgery?

Try to get a good night's rest and eat a light breakfast. Take your usual medications as prescribed unless otherwise directed. You will likely spend much of your day in the office and a good majority of the time may be spent in the waiting room. It is advisable to bring a book or magazine with you. Shower and wash your hair prior to going to the appointment as you may be sore afterwards and may not wish to do this. Also wear comfortable clothing, such as a button-down shirt so you do not have to lift clothing over your head.

19. Should Someone Come With me on the Day of Surgery?

Yes. You will need a driver to transport you from the ambulatory care center, after the MOHS procedure is complete, to Dr. Lane's office, for the reconstruction, then home.

20. What Happens on the Day of Surgery?

Appointments for surgery are usually early in the day. The nurse will use a local anesthetic to numb the skin around the skin cancer. Tell us if you feel anything other than mild discomfort. The MOHS surgeon will surgically remove a layer of skin involving the cancer. Any bleeding will be stopped by cauterizing the vessels. Before you leave the surgical suite, the assistant will dress your and bandage your wound. The layer of skin removed is then processed in the laboratory for microscopic examination. This usually take about an hour.

If the microscopic examination shows that your tissue still contains cancer cells, the procedure will be repeated. Several excisions and examinations may be needed in one day to ensure all the cancer cells have been removed. After the MOHS surgeon has determined that your tissue is cancer free it is time for reconstruction.

21. What Happens After MOHS Surgery?

Dr. Lane is an Ophthalmic Plastic and Reconstructive surgeons who works in conjunction with the MOHS surgeons to repair the defects created by cancer removal around the eyes. If this is the method you chose to manage your wound after MOHS surgery you will leave the ambulatory care center and be driven to Ophthalmic Consultants of



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Vermont. There it will be ensured that your skin is numb, your doctor will examine you to determine the best way to close your wound. Once Dr. Lane has completed the reconstruction, they will go over instructions with you and schedule a follow up visit. It is very important that you have a ride to Ophthalmic Consultants of Vermont and home. In some cases when wound closure looks to be more extensive, the doctors may choose to work in conjunction in the operating room rather than in their offices. This will be a decision that you will make together with your physicians during the consultation process.

22. Will I have Pain After Surgery?

Most patients do not complain of pain. If you are uncomfortable we recommend that you take two extra strength Tylenols every 4-6 hours as needed. Avoid aspirin and ibuprofen as these may increase bleeding. If you think you need something stronger for the pain, please speak with your physician prior to surgery.

23. What About Bleeding After Surgery?

Rarely bleeding does occur following MOHS surgery. If this should happen, lie down and place steady, firm pressure with a clean washcloth or sterile gauze pad. Mild to moderate bleeding should abate with firm pressure within 15 minutes. If the bleeding is severe, place firm pressure on the wound and get in touch with our office (802) 864-2010.

24. What About Other Complications?

All wounds will develop a small, surrounding halo of redness which will gradually go away. Swelling is common following surgery, especially when it is around the eyes. Ice for the first 48 hours after surgery in 20 minutes on and 20 minutes off intervals to help with swelling. Bruising around the eyes is also not uncommon. Some itching is normal and a natural part of the healing process.

25. What Happens After the Wound Has Healed?

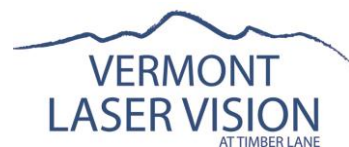
You may experience some tightness as the wound heals and this is normal. After several months this sensation should lessen. Frequently, tumors involve the nerves so it may take upwards of one year before sensation should in this area returns to normal. In some cases this area never fully regains normal sensation; however, it is possible to predict this outcome. The skin that grows in to cover the defect will contain many more blood vessels than the old skin did and this will make it red. It may be sensitive to temperature changes, though this too should lessen with time.

26. Once the Wound is Fully Healed, When Will I Need to Return for Follow Up?

Dr. Lane and the MOHS surgeon will determine the follow up schedule that is right for you. Typically, you will be seen one week after surgery for a check on sutures and possible suture removal.



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27. Later Must I Avoid the Sun?

No. We do not think that the sunshine will be harmful to you as long as you provide yourself with proper protection. Avoid burning, use discretion, and sunscreen. Remember, it has taken many years for this skin cancer to develop. Complete avoidance of the sun will not prevent any further development of other skin cancers and it is bad for your health.

It is likely that sun exposure is probably the main contributing factor in the development of skin cancers. Patient who develop one skin cancer will often develop another at a later time. Therefore, in the future when you are in the sun we recommend liberal use of sunscreen that protects against UVA and UVB rays with an SPF 25 or greater. It is best to apply sunscreen 20 minutes prior to going out into the sun and reapply after swimming or exercising. In addition to sunscreen, you may want to wear a wide brimmed hat and avoid going out between 11am and 3pm, when the sun's rays are the strongest.

After skin cancer and MOHS surgery you can lead a normal life and enjoy the outdoors if you take the proper precautions. It is also very important to teach children proper sunscreen precautions. Daily use of sunscreen in the first 20 years of life can reduce the incidence of skin cancer and other signs of sun damage by as much as 75%!

Locations of Your Procedures:

A UVM Medical Center, Dermatology
111 Colchester Ave
West Pavillion 5
Burlington, VT 05401
(802) 847-4570

B Ophthalmic Consultants of Vermont, Dr. Katherine Lane
55 Timber Lane
South Burlington, VT 05403
(802) 864-2010