

MANHATTAN DERMATOLOGY
DR. WENDY LONG MITCHELL
71 PARK AVENUE, SUITE 1A
NEW YORK, NY 10016
P: 212-689-9587
F: 212-689-8519

A PATIENT'S GUIDE TO
SKIN CANCER
AND
MOHS
MICROSCOPICALLY CONTROLLED
SURGERY

READ THIS ENTIRE PACKET AS SOON AS YOU RECEIVE IT.

THERE IS A \$250 FEE FOR CANCELLING/RESCHEDULING A MOHS
APPOINTMENT LESS THAN ONE WEEK PRIOR TO APPOINTMENT
(UNLESS IT'S AN EMERGENCY THAT YOU DISCUSS WITH DR. MITCHELL).
IF YOU NEED TO RESCHEDULE YOUR MOHS SURGERY APPOINTMENT, DO
SO AT LEAST ONE WEEK PRIOR TO YOUR APPOINTMENT.

SKIN CANCER: CAUSES, TYPES, AND TREATMENT OPTIONS

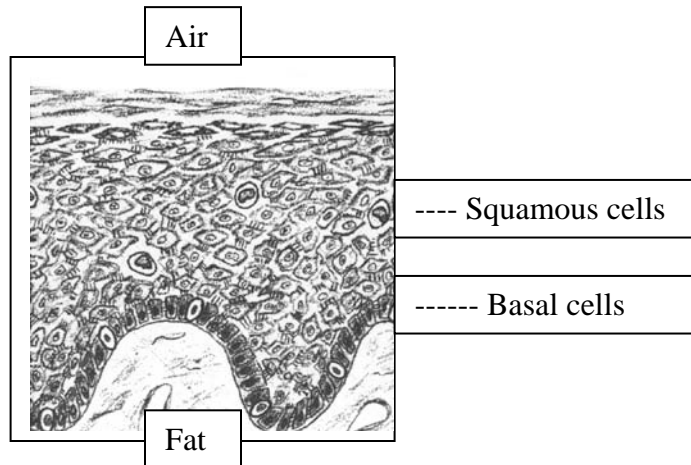
Skin cancer is the most common form of all cancers. More than one million new cases of skin cancer will be diagnosed in the United States this year alone. The three most common types of skin cancer are **1) basal cell carcinoma** (the most common, but least dangerous), **2) squamous cell carcinoma**, and **3) melanoma** (the least common, but most dangerous type). These names come from the name of the type of cell that becomes cancerous, a basal cell, squamous cell, or a melanocyte.

Why people get skin cancers:

Although we do not know all of the factors that cause skin cancer, excessive exposure to sunlight is the single most important factor in the formation of skin cancer. Other forms of radiation including tanning bed use, medical ultraviolet light therapy, or X-ray therapy, also contribute to the formation of skin cancers.

Cancer is a very frightening word that is used to describe many very different diseases with many very different prognoses. Some cancers are more dangerous than others, but basal cell and squamous cell skin cancers are generally curable when treated appropriately. A cancer simply means that a cell is replicating faster than it normally should. Most cells that make up the body divide and reproduce in an orderly manner at a set slow pace. This allows the body to grow, replace worn-out tissue, and repair injuries. If one of these cells is injured in some way (for example, by the radiation from the sun in skin cancers) and becomes cancerous, it begins to replicate and divide much more quickly. With the cell dividing more rapidly, the body is unable to process all of the new cells and a mass of these cells is formed. This mass of new cells is called a tumor.

In some tumors, the cells may break away from the mass, travel in the blood or lymphatic stream to another part of the body where they grow and invade the tissue. This cancer has become metastatic and is therefore more dangerous. This almost never occurs in basal cell carcinomas and is rare in squamous cell carcinomas that are smaller than two centimeters in width. Although not common with today's advanced diagnostic and therapeutic methods, melanoma is more likely to metastasize and spread to other parts of the body such as the lungs, liver, and bones than other forms of skin cancer.



Skin cancers occur more frequently in people with fair complexions (blonde hair, blue eyes), individuals of Celtic decent, and those exposed to a more than average amount of sun. Darker skinned individuals, who have more pigment to shield their skin from the harmful rays of the sun, more rarely form skin cancers. Although the effect of the sun's rays are cumulative, there are usually many years separating the significant exposure to the sun and the formation of the skin cancer. The majority of sun exposure generally occurs during the teenage years and early twenties, while most skin cancers do not begin to occur until one's forties. The skin never forgets any of the sun it has received.

The best way to protect yourself from future skin cancers is to make a serious attempt at reducing the amount of sunlight you are exposed to. Whenever you will be exposed to the sun you should always apply a sun screen with a **Sun Protection Factor (SPF)** of 45 or greater (I use SPF 70 or 85 myself). Also, one should wear a broad brimmed hat, and try to avoid sun-exposure during midday (10 AM to 3 PM), when the rays are most intense. You don't have to change your entire lifestyle, just alter it intelligently and take the proper precautions.

Basal Cell Carcinoma:

Basal cell carcinoma is the most common form of all cancers in this country. It accounts for approximately 75% of all skin cancers and of the three skin cancers listed above, has the best prognosis. Although basal cell carcinomas typically arise in the sun-exposed or tanning bed-exposed areas of fair-skinned middle to older aged adults, basal cell carcinomas are being seen more and more frequently in the younger population and in people of darker skin complexions. In my practice I regularly see this type of skin cancer in adults in their thirties, or even twenties, and in people of Asian, Southeast Asian, or Hispanic descent. Basal cells normally line the base, or bottom, of the uppermost layer

of skin, the epidermis. Basal cell carcinomas generally start at one particular spot and grow, very slowly, out and downward in the skin. When basal cell carcinomas are small they look like pimples, and are frequently entirely unnoticed or dismissed as harmless for months to years before a person seeks medical evaluation. An unfortunate statistic is that 50% of people who develop a basal cell carcinoma, will develop another one within 5 years.

The true size and extent of skin cancers cannot be fully appreciated by simply looking at the surface of the skin. In fact, the skin cancer has usually been growing for several months beneath the skin before it surfaces and can be seen by the naked eye. Only under microscopic examination is it possible to determine the extent of the tumor. If the tumor is very small, the biopsy may remove most of the skin cancer that was visible to the naked eye. After a biopsy site has healed the skin may appear normal on the surface. Unfortunately, there are almost always tumor cells beneath this normal-appearing skin that are continuing to replicate and grow, like the roots of a tree or the underwater portion of an iceberg. On the other hand, some basal cell carcinomas may be quite large, and residual tumor is evident after the biopsy site has healed. Although it is extremely unusual for a basal cell carcinoma to metastasize, if left untreated, these tumors will continue to grow to very large sizes and can invade cartilage, bone, and other tissues beneath the skin.

Squamous Cell Carcinoma:

Squamous cell carcinomas, especially when they are larger than 2 cm in width, can be a more serious disease than basal cell carcinomas. This type of skin cancer is also most common in middle to older aged adults in sun-exposed skin. Upon examination, squamous cell carcinomas usually appear as rough scaly red spots on the skin. Normal squamous cells are located in the upper and middle part of the most superficial layer of skin, the epidermis, and tend to be more aggressive when they become cancerous. These skin cancers usually grow more quickly, are more likely to invade structures beneath the skin, and may metastasize to other parts of the body. Still, only approximately 5% of squamous cell carcinomas actually do metastasize, most often to local lymph nodes. Unfortunately, as with basal cell carcinomas, it is very difficult to judge the size and extent of the skin cancer by simply looking at the skin surface. Skin cancers often grow under what appears to be normal skin to the eye.

Malignant Melanoma:

This is potentially the most dangerous form of skin cancer. Malignant melanoma generally appears as a brown or black patch, with shades of red or purple in it. They may

arise on their own or develop in a pre-existing mole. While most commonly found in chronically sun-exposed or tanning bed-exposed skin, melanoma can grow on skin that has never, or almost never been exposed to the sun. Since melanoma is not often treated with the microscopically controlled or Mohs' surgery, it will not be discussed further in this text. All information in this brochure refers to basal and squamous cell carcinomas.

TREATMENT OF SKIN CANCERS

Skin cancers may be treated by several different methods. The most common ways include electrodesiccation and curettage (“scraping and burning”), cryotherapy (“freezing”), X-ray therapy, traditional excisional surgery, and Mohs’ microscopically controlled surgery. The treatment of each skin cancer must be individualized, taking into account the type, size, and location of the cancer, the patient's age, and whether or not the cancer has been treated before. Of all forms of treatment for skin cancers, Mohs’ microscopically controlled surgery has the highest cure rate.

MOHS MICROSCOPICALLY CONTROLLED SURGERY:

Microscopically controlled surgery was developed by Dr. Frederick Mohs in the 1940s as a more precise way to remove skin cancers. Originally, chemicals were applied to the skin and the entire surgical procedure could take several days. The technique has been refined over the years to the point where the skin cancer is now removed and examined under the microscope for any remaining tumor almost immediately. The basic principle behind the Mohs' technique, is to examine 100% of the margins/edges of the removed tissue to ensure definitive removal of the entire cancer, and to remove as little normal skin as is possible.

Often times what can be seen on the skin surface only represents a part of the actual skin cancer, "the tip of the iceberg" so to speak. One cannot see the "roots" of the skin cancer that are under the skin surface. Instead of guessing approximately how far these "roots" extend under and around the skin cancer, the microscope is used to trace out and map the exact extent of the tumor. The surgeon may then remove only the cancerous tissue. This prevents either removing too little skin, and leaving tumor behind to come back or recur (usually larger) in the future, or from removing too much, and creating a larger than necessary wound and scar. In essence the best of both worlds is achieved. The entire skin cancer is removed and as much as possible of the normal skin is preserved. The Mohs' microscopically controlled technique offers a cure rate of 98 - 99%, the highest of any technique available.

Since Mohs' surgery requires highly-trained personnel, and can be time consuming, it is reserved only for certain cases.

The four most common indications for using the Mohs' technique:

- When the tumor is located on a structure that is so important that one wishes to remove only the diseased tissue and preserve as much of the normal skin and function as possible (head and neck, hands, etc...).
- When the cancer has been previously treated and has come back (recurred).
- When the tumor is larger than 2cm.
- When skin cancer develops in an immunocompromised person or in an area that has been treated with radiation therapy.

PREPARING FOR YOUR SURGERY

There is usually no special preparation required before the Mohs' surgery. We recommend being well-rested and having a good breakfast on the morning of surgery. Only local anesthesia will be required and you will be able to travel home afterwards on your own, unless you prefer to have a friend or family member keep you company.

TWO WEEKS PRIOR TO SURGERY:

MEDICATIONS: Many over-the-counter medications and supplements prevent blood clotting and can result in excessive bleeding or bruising during and/or after your surgery. Unless it is medically necessary or a physician has prescribed them for you, we recommend that you do not take the following;

- vitamin E
- aspirin
- aspirin-containing products
- ibuprofen/Advil
- naproxen/Aleve,
- Any pain reliever except acetaminophen/Tylenol for two weeks prior to surgery, if possible.

Please take all of your other usual medications, including prescribed blood-thinners such as Coumadin or Plavix unless directed otherwise by Dr. Mitchell.

TOBACCO: If you smoke, please reduce or stop smoking for at least one week prior to and for one week after surgery.

A FEW DAYS PRIOR TO SURGERY:

ALCOHOL: We also require that you do not drink any alcohol for three days prior to surgery and for three days after the surgery, since this also thins the blood and may cause excessive bleeding.

RETURN TO WORK: Most patients return to work on the day after surgery, although you may choose to stay at home because of mild discomfort, swelling, or the size of the pressure bandage that will be required during the first 24 hours after the surgery.

SHOWERING: We recommend washing your hair the night before or the morning of surgery, as your wound and initial dressing must remain dry for the first 24 hours.

WHAT TO EXPECT ON THE DAY OF SURGERY:

EAT NORMAL MEALS: Eat a good breakfast, take your normal medications unless directed otherwise, wear comfortable clothing, and be prepared to spend the day. Mohs' surgery is a minor surgical procedure, performed on an outpatient basis in an ambulatory surgery or office setting.

ARRIVE EARLY: You should arrive for your appointment 15 minutes early in order to complete any registration and check in requirements. The length of the surgery varies greatly depending on the size and location of the skin cancer. The average length of surgery is approximately 2 - 4 hours.

PAIN RELIEF: Once in the room, a local anesthetic (lidocaine) will be injected to the area. This is generally the only part of the surgery that causes any discomfort, and it is usually no worse than what was done when the lesion was biopsied.

PROCEDURE: Once the area is numb, a small layer of tissue will be removed, called a "stage," and a map of it will be made. The small amount of bleeding that may occur will be stopped with a cautery unit and a dressing will be placed on your wound. It typically takes 20 to 60 minutes to process the tissue. You will wait in the waiting room with the few other Mohs' surgery patients during this period. It is a good idea to bring some reading material with you.

During this time, the tissue will be frozen, stained, and cut for microscopic slides by the histopathology technician. Dr. Mitchell will then review these slides under the microscope and create a map of any tumor roots remaining. In this manner, the exact location of any residual tumor may be determined and then removed, without having to remove any of the skin that appeared normal under the microscope.

Once Dr. Mitchell knows if any tumor remains, you will be escorted back to a procedure room. If any tumor remains she will take another “stage” using the microscopic "map" of the skin cancer. Only the area or areas seen as cancerous are then removed. The process is repeated until the entire skin cancer is removed. It is this process of systematically searching out and removing all of the "roots" of the skin cancer that gives Mohs' surgery its cure rate of 98-99%. Although some skin cancers are removed in one stage, the average tumor requires two or three stages for removal, and some require several more. If your skin cancer should require more than one stage, try not to get discouraged. The intent is to remove the entire skin cancer, and to preserve any uninvolved normal skin. To achieve these goals, the tissue must be removed in very small, conservative layers.

When the tumor has been completely removed, a decision will be made with you as to the best method to repair the wound where the skin cancer had been. Depending on the size and location of the wound or defect, it may be allowed to heal by itself, closed side to side with sutures, or closed using a local flap or graft to provide an aesthetically-optimal result. Dr. Wendy Long Mitchell or Dr. William Long repair almost all wounds in the office on the day of your surgery. It is rarely necessary to utilize the unique skills of other surgical specialists and in these cases, the reconstruction may be arranged to occur later that same day or on a subsequent day shortly thereafter.

WHAT TO EXPECT AFTER SURGERY:

WOUND CARE INSTRUCTIONS: Detailed written instructions on wound care will be given to you and reviewed upon completion of the surgery. Essentially, you will leave the original bandage on for the first 24 hours. Then, on a daily basis until the stitches are removed, you will gently clean the wound using soap and water, then place an ointment (Vaseline or Aquaphor Healing Ointment) on the wound, and then cover it with a dressing.

Keep the wound **CLEAN, MOIST, and COVERED**. It is very important to keep the wound moist with ointment, and not to let it dry out. When a wound dries and a scab forms, it will take longer to heal and form a much more noticeable scar. Contrary to the old belief; scabs are not “good”. Do your best to prevent scab formation! If a scab forms, gently remove it by using one part hydrogen peroxide mixed with two parts water. Only use hydrogen peroxide on a scab-NOT as part of daily wound care.

PAIN RELIEF: Most patients do not report more than a minimal amount of discomfort the first day or two following surgery. This discomfort usually responds readily to

Tylenol in its usual dosage. We recommend you do not take any aspirin or ibuprofen containing products for three days following surgery. There may also be a normal sensation of itching or tightness that is experienced in the immediate post-operative period.

EXERCISE AND ACTIVITY: Be aware that you may not bend, lift, or exercise for at least one week following your procedure. We recommend that you refrain from cleaning the apartment or house, lifting heavy grocery bags or laundry bags, or exercising in any way. Please make arrangements for necessary assistance during the post-operative period.

HEALING PROCESS: Often patients will have "black and blue" marks and swelling around the site of surgery. This reaction is particularly frequent and exuberant around the eyes. Most of this is your body's reaction to trauma. Cells from other areas come to the wound to help repair it. In doing so, they create swelling. This usually gets worse for the first three days after surgery, and then slowly begins to improve.

LOSS OF SENSATION: You may also experience some numbness around the area that was operated on. There are many small nerves that carry sensation to the skin. Some of these may be cut during surgery, and it may take 6 - 12 months before full sensation returns. Rarely the skin cancer involves larger nerves. When these are cut, the loss of sensation or muscle weakness may be permanent.

SCARRING: Remember, every surgical procedure produces some form of a scar. Although every attempt will be made to minimize and hide the scar, the extent of the scarring depends on the location, size, and depth of the skin cancer, and the healing properties of the individual. The scar will continue to improve for 8-16 months. After the first month, the area should be gently massaged if it feels thick or lumpy. Keep in mind that scarring for associated with Mohs' surgery is generally far less than for other surgical procedures for treating skin cancer.

SUTURE REMOVAL: You will be seen for suture removal seven to fourteen days after surgery, and in many cases a few months after surgery to make sure everything is healing according to schedule.

FOLLOW-UP: After the three-month visit, you should be monitored every six months to a year for new skin cancers, unless Dr. Mitchell informs you otherwise. Although the chance of having the skin cancer recur after Mohs' surgery is only 1-2%, it does happen, and the area should be monitored. More critically, there is a good possibility that a new

skin cancer may develop in other areas in the future. Remember that 50% of patients will have a second skin cancer within five years of their first. This is why it is very important to protect yourself from the sun's rays, and to have a dermatologist follow your skin closely. If you should notice any new lesions and suspect they might be skin cancers, you should schedule an appointment promptly and not wait the six or twelve months before the next scheduled visit.

REMINDERS

- ✓ Refrain from taking aspirin, vitamin E or ibuprofen products for ten days prior to surgery, provided you have not been placed on it for medical purposes. If a doctor has placed you on aspirin, Coumadin, or Plavix therapy, please continue to take these medications, until you discuss the matter with that doctor.
- ✓ Refrain from alcohol for three days prior to and after the surgery.
- ✓ Be well-rested and eat well on the day of surgery.
- ✓ Take all of your medications as you normally would on the day of surgery. Do not discontinue your physician-recommended or prescribed medications, unless the physician who placed you on it has given you permission to do so.

If you have any questions before, during, or after your surgery, please do not hesitate to ask them. There are no bad or stupid questions.