



Patient Care Services  
300 Pasteur Drive  
Stanford, CA 94305

## **Skin Cancer and Mohs Micrographic Surgery Patient Education**

### **Skin Cancer**

#### **How Common is Skin Cancer?**

Skin cancer is the most common form of cancer in humans. According to the American Cancer Society, over 1,000,000 new cases of skin cancer will be diagnosed this year in the United States. The incidence of skin cancers increases yearly.

#### **Skin Cancer Treatment**

The treatment of skin cancer has four goals:

1. Completely remove the cancer.
2. Preserve normal skin.
3. Preserve function.
4. Provide an optimal cosmetic result.

To be cured, skin cancers must be destroyed or removed. They may be treated by cryotherapy (freezing), curettage and electrodesiccation (scraping and burning with an electric needle), excision (surgical removal), radiation therapy, or Mohs micrographic surgery. For primary, untreated skin cancers, the non-Mohs surgery methods may offer a cure rate of 90 to 95%. For recurrent, previously treated skin cancers, these non-Mohs surgery methods may offer cure rates of only 60 to 80%.

### ***Mohs Micrographic Surgery***

The process of Mohs micrographic surgery was created by Dr. Fred Mohs when he was a medical student over forty years ago. It is a meticulous and precise surgical technique used for removing skin cancers. This procedure has gained wide acceptance for skin cancer treatment in the last fifteen years. The name micrographic comes from 'micro', indicating the use of a microscope, and 'graphic', indicating that a detailed map or drawing of the tumor is made during the treatment.

The Mohs procedure requires the following three steps:

1. Remove the visible tumor to determine the initial tumor borders.
2. Remove a thin disk of skin around and underneath these borders.
3. Examine the removed skin under the microscope and draw a map of where skin cancer remains.

If cancer is still present, we will remove only that skin where the cancer remains. These steps are repeated in cycles until the tumor is totally removed. In this way, a careful, accurate, and complete removal of the skin cancer is achieved with minimal removal of normal surrounding skin.

### **Advantages of Mohs Micrographic Surgery**

The Mohs technique has a number of advantages over other methods of skin cancer treatment. Because no guess work is involved in determining where the cancer's edge lies a minimum of normal skin is removed and only those normal structures involved with cancer are removed.

In other words, the cancer is completely removed while normal tissues are conserved. This procedure results in the smallest possible tissue defect and therefore the smallest possible scar results. In addition, the surgeon acts as the pathologist who immediately examines the removed tissue.

The surgeon can directly compare what he sees in the patient's skin and under the microscope. This is not the case when the tissue is sent to an outside person for interpretation.

The Mohs technique provides cure rates for primary (previously untreated) and recurrent (previously treated) basal cell and squamous cell cancer of 94% to 99%. The cure rate varies depending on the type of cancer and the type of treatments already performed.

### **Check List Before Surgery**

- We recommend that you eat a light breakfast, take all your morning medications, and bring any medications with you which you will need for the day.
- Please let our staff know if you are taking any aspirin, Coumadin, anti-inflammatory agents [ibuprofen (Motrin, Advil, Nuprin), Naprosyn (Aleve or Relafin)] at least a week before surgery. These medicines thin your blood and increase the risk of hemorrhage.
- If you have been told not to stop these medications, please let our staff know.
- Please refrain from consuming any alcohol for three days before and after surgery.
- If you have a medical condition, such as a heart murmur, mitral valve prolapse, or an artificial valve or joint, which requires that you take antibiotics before dental or surgical procedures, let us know so we can arrange for you to obtain these before you arrive for surgery.

**To improve wound healing, reduce the risk of infection and achieve the best possible cosmetic outcome:**

**Please refrain from smoking for three days before your surgery.**

- Be prepared to stay all day. Feel free to bring reading material and snacks.
- We suggest you arrange for a friend or family member to drive you home after surgery.

## **Before Surgery**

- Our first concern is providing you with excellent medical care for your skin cancer. This requires some preparation before surgery.
- Your surgeons will review your medical and surgical history, any drug allergies, and your medications to prevent problems from occurring during and after surgery.
- Occasionally, you will need to see us beforehand for a consultation to plan the surgery and post-operative care.
- Please bring with you on the day of surgery a complete list of your medications, including the dose and number of times you take them during the day.
- Also bring a day's supply of each of your medications. *You should stop taking any aspirin, ibuprofen, Coumadin, or other blood-thinning agents for one week before surgery.* If your physician has recommended that you not stop these medications, let us know so that we can discuss this matter with your physician.
- Your skin cancer surgery will be performed in an outpatient surgery unit. Hospitalization for Mohs surgery is only rarely required. Due to the nature of the surgery, you will spend most of your time in our waiting room while we process the tissue specimen.
- While your surgery will be completed as quickly as possible, you should plan to spend a whole day with us. You are welcome to bring reading material and snacks with you.
- Please do not make other plans or appointments for the day. We recommend that you be accompanied by a friend or relative who can drive you home after surgery.

## **On the Day of Surgery**

- When you have checked in for surgery, you will be escorted to an outpatient surgery suite.
- Our staff will prepare you for surgery by taking your vital signs, checking your medications and medical history, photographing the skin cancer and obtaining your signed informed consent to the surgery.
- One of the surgical team will then cleanse and numb the area of the cancer using a local anesthetic.
- Surgery will begin with the removal of a small piece of skin including the cancer. Any bleeding will then be stopped and a bandage applied to the area.
- You can relax in the waiting room while the tissue is processed for microscopic examination by the surgeon.

- If the tissue examination demonstrates that cancer still remains in the skin, you will return to the surgery suite where additional skin will be removed in the areas where the cancer remains.
- On average, Mohs surgery requires two or three stages to completely remove the skin cancer.

## **After Surgery**

- When the cancer is completely removed. The surgical area will be measured and photographed.
- At this point we will discuss your options for managing the surgical wound. In most cases we will proceed with the reconstruction immediately. On occasion, special arrangements will need to be made for your reconstructions.

## **In the days after surgery you may experience the following:**

Pain, bleeding, swelling, drainage, infection, redness, and scarring.

### **Pain**

During surgery, pain is prevented by the use of local anesthetic injections. Typically this anesthetic loses its effect in 3 to 6 hours. Tylenol alone usually takes away further pain.

### **Bleeding**

Great care will be taken to seal all blood vessels during surgery and a pressure dressing will be applied before you leave the surgery unit. These two measures should prevent any significant bleeding. Occasionally post-operative bleeding occurs. Those individuals who are on blood thinners, drink alcohol before or after surgery, or who stretch or traumatize the wound within the first few days after surgery may be more prone to this type of bleeding.

If bleeding which soaks through the pressure dressing occurs, apply firm, even pressure with your hand for a full twenty minutes.

If this does not halt the bleeding, call our office at 650-725-52782 or go to the nearest emergency room.

Bruising around the operative site is a common side effect. This will resolve as do other bruises. The eyelids and cheeks are particularly sensitive to bruising. Bruising of one or both eyes may even occur when they are not directly involved with the surgery.

### **Swelling**

One can expect some swelling (edema) within the first days after surgery. Swelling will be worst the first day after surgery and should gradually resolve over two to three days. Sleeping with the surgical site elevated is helpful in minimizing post-operative swelling.

### **Drainage**

All wounds will have some drainage. This should steadily improve each day. Increasing drainage can be a sign of infection.

**Infection**

Any time the skin is broken, by trauma, surgery or other causes, an infection may result. Fortunately, close attention to wound care largely prevents infection from setting in. Non-infected wounds will gradually become less red and less painful each day after surgery. Infection is signaled when redness and pain increase in the first days after surgery. If you suspect an infection, call us immediately. Infections can be cured with antibiotics.

**Redness**

It is normal for surgical wounds to become red. The redness is caused by increased blood flow to the area to heal the wound. Increasing redness spreading out from the wound can be a sign of infection or allergic reaction. If you suspect a problem, please call our office and ask to speak to one of the nursing staff.

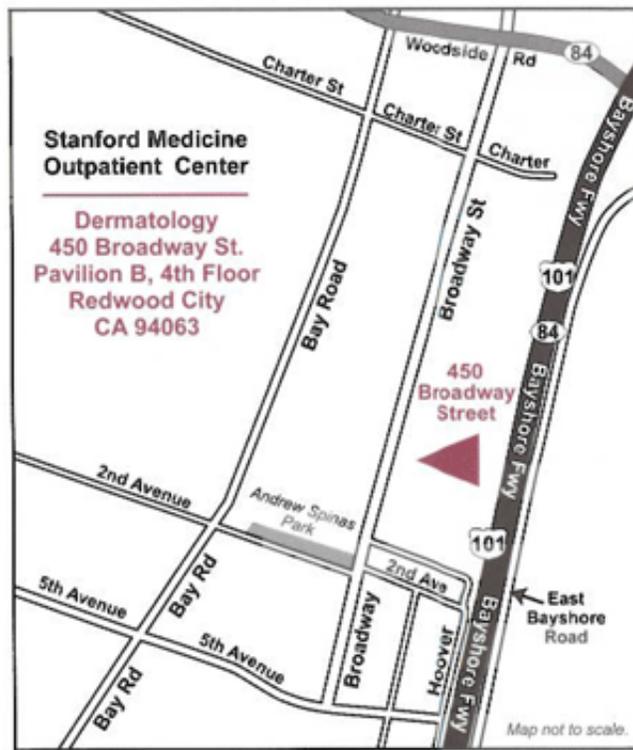
**Scarring**

Scars always result from surgery of the skin. Our intent is to minimize the scarring. On occasion, a second procedure can help disguise the scar further.

**Follow-Up Visits After Surgery**

If your surgical wound has been reconstructed, you will be asked to return for suture removal and usually once more to judge wound healing. Occasionally revision of a scar or graft may be required necessitating more visits. These issues will be reviewed at your post-operative visit(s). Our goal is to return you as soon as possible for follow up with your own dermatologist for long term surveillance for skin cancer.

Mohs Micrographic Surgery  
Dermatology Clinic  
Stanford University Medical Center  
450 Broadway Street, Pavilion B, 4th Floor  
Redwood City, CA 94063  
Appointments/Info: 650-725-5272  
[www.stanfordskincenter.com](http://www.stanfordskincenter.com)



Written directions available at:

<http://outpatient.stanfordhospital.org/directions/>

Web sites for your interest:

Stanford School of Medicine Department of Dermatology

<http://dermatology.stanford.edu/>

Stanford University Hospital & Clinics

<http://stanfordhospital.org/>

National Cancer Institute Skin Cancer

<http://www.cancer.gov/cancertopics/types/skin>

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