

A Patient's Guide to **MOHS SURGERY**

Microscopically Controlled Surgery for the Treatment of Skin Cancer

Mohs Surgery has been recommended to you.

This information has been prepared to answer your questions regarding Mohs surgery including pre- and postoperative care and what to expect on the day of surgery. Please review all of this information before the date of your surgery.

During a pre-surgical visit, you will be asked to provide information regarding your medical history and the history of your skin cancer. It would be helpful if you could tell us when you first developed your cancer, and when and how it has been treated in the past. Please remember to provide a list of the medicines you take regularly and any medical records relating to the skin cancer such as pathology reports and operative notes.

After discussing the procedure with you and examining your skin cancer, we will schedule a date for your surgery. Should you have further questions after reviewing this information, we will be happy to answer them for you.

What is Mohs Surgery?

There are several effective methods available for treating skin cancer. The method chosen depends on the location of the cancer, its size and previous treatment, and patient preference. Mohs surgery has been recommended to you because it has been proven to be a highly successful treatment for your type of skin cancer. Other treatment methods include conventional surgical removal (excision), curettage and electrodesiccation (scraping and burning with an electric needle), radiation therapy (x-ray treatments), cryosurgery (freezing) and topical chemotherapy (topical medication).

Mohs surgery is indicated for skin cancers that arise in certain locations, are large, or have failed simpler therapies. The technique provides the highest possible cure rate while ensuring the maximum preservation of healthy, cancer-free skin. Because Mohs surgery can be relatively time-consuming and requires highly trained personnel, it is reserved for cases in which a simpler, quicker treatment would not be as effective.

Frederic E. Mohs, M.D., developed this technique, which involves microscopically controlled excision of the cancerous tissue, at the University of Wisconsin. The procedure involves rapidly preparing the excised tissue in the laboratory and examining it under a microscope to check for any remaining cancer roots. If any cancer roots are detected, a "map" of the tumor is created using the microscope, and additional tissue is then excised based on the map. In this manner, the cancer can be precisely and efficiently removed with a minimal loss of healthy surrounding tissue.

How Do I Prepare for Surgery?

No special preparation, apart from a good night's sleep, is required for Mohs surgery. Patients who take aspirin or other blood-thinning medications (Plavix, warfarin, Coumadin, anti-inflammatory drugs) at the advice of a doctor should always check with the prescribing doctor before stopping the medicine. Some patients must remain on their blood thinners before and after Mohs surgery due to various health conditions and risk factors such as a recent stroke, blood clot, heart valve replacement, or heart attack. These situations should be discussed preoperatively. Other patients should avoid aspirin (or any medications such as Bufferin, Alka-Seltzer or Anacin that contain aspirin) for seven days prior to surgery and over the counter anti-inflammatory pain medicines (ibuprofen, Motrin, Advil, Aleve) and vitamin E for four days before the surgery. All of these medicines thin the blood and can increase bleeding and bruising during and after surgery. Alcoholic beverages have a similar effect on the blood and should be avoided for two days before the surgery. Tylenol (acetaminophen) is safe to take before and after the surgery.

Eat a light breakfast on the day of surgery. Fasting is not necessary. Take all of your usual medications unless otherwise instructed. Bring any medications you take during the middle of the day with you. We also recommend bringing lunch or snacks as you may be in our office for several hours. You may want to bring reading material to pass the time.

What Can I Expect on the Day of Surgery?

Shortly after your arrival you will be taken to one of the treatment rooms where the doctor will use a small needle to numb the area where the tumor is located. The doctor will then remove the cancerous skin in a thin layer. Any bleeding will be stopped with an electrical device (cautery). It takes approximately 15 to 20 minutes for the layer of tissue to be removed. Your wound will then be bandaged and you will be able to sit up and move about.

While you are waiting, the tissue is taken to our laboratory, where it is cut, dyed and made into microscope slides. This slide preparation process takes up to one hour.

If examination of the microscope slides reveals that residual cancer is present, the procedure will be repeated. Further tissue is removed only from the areas in which tumor cells are found on microscope examination. On average, two or three surgical sessions are needed before the cancer is removed completely.

Once we determine that your skin cancer has been completely removed, we will select the best method for managing the wound created by the surgery; this will depend on the size and location of your wound. It is not possible to predict the exact size of the wound or the best repair method for all patients in advance.

In most cases, the wound will be closed with sutures (stitches). Larger wounds and wounds in certain areas may require skin grafts or flaps. In some cases, the site will be left to heal by itself (this process is known as "healing by granulation"). This type of wound may require four to eight weeks to heal. Daily bandage changes will be required during this period.

Mohs surgery and reconstruction usually can be finished in the course of a single day. Please plan to spend several hours at our office, and arrange to have someone take you home after the surgery. You should not plan other appointments or activities for later in the day.

What Can I Expect after the Surgery?

Most patients do not complain of severe pain following surgery, although you may experience some discomfort. If this occurs, we suggest that you take two tablets of Extra Strength Tylenol (acetaminophen) every four to six hours. Avoid aspirin-containing compounds, other anti-inflammatory products (Motrin, Advil, ibuprofen, Aleve), vitamin E, and alcoholic beverages during the first two days. All of these products thin the blood and may increase bleeding and bruising during the postoperative period.

For the first few days following surgery, the operative site may be swollen or red. Bruising is also common and fades within a few weeks. It is common for wounds to drain for a few days after surgery. Numbness where the skin has been cut is often noted by patients for at least several weeks. Scars improve in appearance gradually over many months. Some surgical sites require scar revision or a second stage of reconstructive surgery to achieve an optimal appearance.

You will be given instructions on how to care for your wound following the surgery. Please do not hesitate to contact our office if you have questions about your wound. One of our physicians is on call at all times. During evening and weekend hours, you can reach the doctor by calling our office at 714.525.3500 and following the instructions in the recorded message. Most stitches are removed in the office in 1-2 weeks depending on the location. A follow-up visit will be scheduled before you leave the office.

Who Performs Mohs Surgery?

Many dermatologists are familiar with basic Mohs surgery techniques and employ them in their practices. When patients require more extensive surgery, they are referred to a member of the American College of Mohs Surgery. Dr. Holmkvist is the only member of the Mohs College currently practicing in the North Orange County area.

The American College of Mohs Surgery (www.mohscollege.org) recognizes a small number of training programs in the United States where qualified doctors receive comprehensive training in Mohs surgery. The period of training is at least one year, during which time the dermatologist acquires extensive experience with all aspects of the technique. After successfully completing the advanced training, which includes research, the physician is eligible for membership in the College.

In addition to completing this year of intensive training, Dr. Holmkvist has performed Mohs surgery on more than 5000 patients with high-risk or extensive skin cancers. She is also Board Certified in Dermatology. Dr. Holmkvist received the top award for outstanding research in Mohs surgery at the 1998 Annual Meeting of the American College of Mohs Surgery. She has published several scientific articles on Mohs surgery and has lectured at national and international medical conferences on the technique.