A Patient’s Guide to Mohs Micrographic & Reconstructive Surgery for Skin Cancer

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Developed in conjunction with Brian Cho M.D.
UCSF Dermatology 2006

Patient Name __________________________          DOB: _______________
About Dr. Whitney Tope

Dr. Tope graduated ΦβΚ and summa cum laude from Duke University with a BS degree in Biology in 1984 and Duke University School of Medicine in 1988. During medical school he spent a year performing immunology research at the University of Cambridge (UK) earning a Master of Philosophy degree in Biochemistry.

After medical school, Dr. Tope completed a general internal medicine internship at the University of Washington in Seattle, then returned to Duke University for his dermatology residency training (1992). Dr. Tope’s training continued with fellowships in Advanced Dermatologic Surgery at Oregon Health & Science University in Portland and in Clinical and Research Laser studies at Harvard Medical School’s Wellman Center for Photomedicine.

Dr. Tope then spent 10 years in academic dermatology, directing patient care, performing research, and teaching laser and dermatologic surgery techniques at the University of Minnesota (1996-2003) and the University of California – San Francisco (2003-2006). He has taught medical students, residents, and fellows all aspects of dermatologic surgery. Many of these physicians are now dermatologists and dermatologic surgeons practicing in the Twin Cities. Dr. Tope returned to the Twin Cities to devote the remainder of his career to providing patient care and performing research in dermatologic, laser, and cosmetic surgery in a private practice setting. After working locally with Metropolitan Dermatology and Advancements in Dermatology, Dr. Tope initiated Academic Dermatology, his own independent practice, in April, 2009.

A board-certified dermatologist, Dr. Tope is a Fellow of the American Academy of Dermatology, American Society for Dermatologic Surgery, American College of Mohs Surgery, and American Society for Laser Medicine and Surgery.
Preventing Skin Cancer

Skin cancer prevention depends on limiting exposure to ultraviolet radiation, and on early detection (a physical examination by a dermatologist to discover and treat pre-cancers and cancers in their early stages).

The risk of developing skin cancer appears to correlate directly with a person’s total lifetime dose of ultraviolet radiation. Sunscreens should have a Sun Protection Factor (SPF) of at least 30, should protect against ultraviolet A and B light, and should be used on a daily basis on exposed skin of the head, neck, hands and arms. In addition, wearing sun protective clothing can reduce ultraviolet light exposure. We will be happy to provide you with recommended sunscreens and UV-protective clothing. Individuals who have had one skin cancer have a significantly increased risk of discovering another skin cancer within two to three years.

Therefore, those who have had one skin cancer should be examined by a dermatologist at least once a year.

Pre-surgery Checklist

Please read this patient guide thoroughly, it should answer many of your questions. Please contact our staff with any additional questions.

- We recommend that you eat a light breakfast, take all of your morning medications, and bring with you any medications required for one day.
- To prevent excessive bleeding during and after surgery, stop taking any aspirin products, Coumadin, Plavix (clopidogrel), Ticlid (ticlopidine), non-steroidal anti-inflammatory agents [ibuprofen (Motrin, Advil, Nuprin), Naprosyn (Alleve)], and vitamin E at least one week before surgery. If you have been told not to stop these medications, because of TIAs, stroke, blood clots, or heart attacks, please let our staff know. We will only ask you to discontinue these medications after discussion with your physician. Herbal supplements, gingko biloba, Echinacea, ginger, garlic, and feverfew should also be discontinued one week before surgery. Please refrain from consuming any alcohol for three days before and three days after surgery. Please see attached detailed drug list
- To improve wound healing, do not use tobacco products or nicotine for one week before and one week after surgery.
- Be prepared to stay all day. We suggest you arrange for a friend or family member to drive you home after surgery. Please do not bring small children.
- Make no other appointments for the date of surgery.
Skin Cancer

What is skin cancer? Skin cancer is a condition where abnormal skin cells grow in a disorganized fashion, invade the surrounding tissue and disrupt normal tissue function.

Skin cancer is highly treatable if detected early.

Invasion of tumor cell into normal tissue

How common is skin cancer?

Skin cancer is the most common form of cancer in humans and occurs more often than all other malignancies combined. According to the American Cancer Society, well over 1,000,000 new cases of skin cancer will be diagnosed this year in the United States alone. The incidence of skin cancer increases annually. This type of cancer is highly treatable when it is diagnosed in its early stages, and it is usually relatively easy to diagnose.

What causes skin cancer?

The largest factor causing skin cancer is ultraviolet radiation found in sunlight. Most skin cancers occur on the sun-exposed parts of the body: the head, neck, arms, and hands. An individual’s risk of skin cancer depends upon many factors. Fair-skinned people who sunburn easily are at greater risk than those who are dark and tan easily. Outdoor occupations and long hours of outdoor recreation are also associated with a greater tendency to form skin cancer. Skin cancers may also occur because of genetic syndromes or exposure to X-rays, coal tar, or chemicals such as arsenic. Immunosuppression, which decreases the immune system’s ability to perform surveillance for malignant cells, can also contribute to skin cancer development. Immunosuppression is caused by HIV infection, lymphoma, and medications, such as cyclosporine, mycophenolate mofetil, azathiaprine, prednisone, mercaptopurine, and sirolimus.
Three types of skin cancer account for over 90% of all skin cancers.

**Basal cell carcinoma (BCC)** is the most common, accounting for about 80% of all skin cancers. It is a slowly-growing cancer, which does not tend to metastasize, but can cause destruction of skin, muscle, cartilage, and even bone tissue. BCC begins as a persistently pink or pearly white area, which may break down to form an ulcer or bleed.

**Squamous cell carcinoma (SCC)** is the second most common skin cancer (about 16% of skin cancers). SCC grows more quickly than BCC and may spread (metastasize) to lymph nodes and internal organs, sometimes causing death. Squamous cell cancers begin as raised red scaly areas which persist over months.

**Melanoma** is the least common (4%), but most aggressive type of skin cancer. Family members of those who have had melanoma and individuals who have had a number of severe or blistering sunburns during childhood appear to have an increased risk of developing melanoma. The prognosis depends upon the melanoma’s depth or thickness. Thin melanomas can be easily cured by surgery alone; deep melanomas are harder to remove and may already have metastasized to internal organs when discovered. Melanoma and death from melanoma are increasing every year. Melanoma can begin in a pre-existing mole or may arise as a new brown (pigmented) lesion. Usually melanomas have an irregular shape, ill-defined borders, and variable color (brown, blue, red, white, black, or a combination of these colors).

**Skin Cancer Treatment**

*There are four goals when treating skin cancer:*

1. Completely remove the skin 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),
- photodynamic therapy,
- imiquimod (Aldara),
- interferon injections,
- radiation therapy,
- Mohs micrographic surgery.

For primary, untreated non-melanoma skin cancers, **non-Mohs** surgery methods may offer cure rates of 80-95%. For recurrent, previously treated skin cancers, **non-Mohs** surgery methods may offer cure rates of only 60-80%.
Mohs Micrographic Surgery

Mohs micrographic surgery is a highly specialized, state-of-the-art technique used for the treatment of complex skin cancers. Mohs micrographic surgery (MMS) was created by Dr. Fred Mohs when he was a medical student over fifty 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 25 years. The name “micrographic” comes from “micro”, indicating the use of a microscope to examine tissue, and “graphic”, indicating that a detailed map or drawing of the tumor is made during the treatment. With the Mohs technique, surgically removed tissue is carefully mapped, color-coded, and thoroughly examined microscopically by the surgeon on the same day of surgery. During this process, 100% of tissue margins are evaluated to ensure that the tumor is completely removed prior to repair of the skin defect. Mohs micrographic surgery therefore results in the highest cure rate for complex skin cancers while minimizing the removal of normal tissue.

Mohs Surgery: Advantages

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 normal structures involved with cancer are sacrificed. In other words, the cancer is completely removed while normal tissues are conserved. This procedure results in the smallest possible skin tissue defect and, therefore, the smallest possible scar results. In addition, the surgeon is the pathologist and immediately examines the removed tissue. The surgeon can directly compare what is seen in the patient’s skin with what is seen under the microscope. This is not the case when the tissue is sent to an outside pathologist for interpretation (sometimes termed “excision with frozen section control”). Finally, the cure rates for skin cancers treated with Mohs technique are superior to those achieved by other methods. Mohs surgery provides cure rates for primary (untreated) and recurrent (previously treated) basal cell and squamous cell carcinoma of >97%. While the Mohs technique offers the best possible chance of cure, it is not a 100% guaranteed cure.

Advantages of Mohs

- Highest cure rate for skin cancer
- Smallest amount of normal skin is removed maximizing the likelihood for preserving function and minimizing scar.
- Fewer risks with local anesthesia compared with general anesthesia
Mohs Micrographic Surgery--How It Works

This procedure was first developed in the 1930s by Dr. Frederick Mohs, a professor of surgery at the University of Wisconsin. Mohs micrographic surgery is distinct from routine surgical excision. **Standard surgical excision** allows for **delayed** examination of approximately **1%** of tissue margins. Since only a small percentage of margins are evaluated, residual tumor may be missed. If more cancer cells are found to remain during delayed pathologic examination, a second surgical procedure will be required at a later date.

**Mohs surgeons** are dermatologists who have performed additional fellowship training to become experts in Mohs micrographic surgery. Fellowship-trained Mohs surgeons are highly skilled in all aspects of this technique, including surgical removal of the tumor, pathologic examination of the tissue, and advanced reconstruction techniques of the skin. Dr. Whitney Tope is Mohs fellowship-trained and a **member of the American College of Mohs Micrographic Surgery and Cutaneous Oncology** (ACMMSCO). This official national organization maintains the high level of training and quality of care of this sub-specialty.

**Indications**

The majority of tumors treated with Mohs Micrographic surgery are complex **basal** and **squamous cell carcinomas**. In some circumstances, Mohs surgery can be used to treat less common tumors, including some superficial melanomas. Skin cancers are complex when:

- the cancer is in an area where preservation of healthy tissue is critical to maximize function and cosmetic result (eyelids, nose, ears, lips, hands)
- the cancer is in an area of higher tumor recurrence (ears, lips, nose, eyelids, temples)
- the cancer was incompletely treated, or was previously treated and is recurrent
- the cancer is large
- the edges of the cancer cannot be clearly defined
- scar tissue exists in the area of the cancer
- the cancer grows in an area of prior radiation therapy
- the patient is immunosuppressed (organ transplant, HIV infection, chronic lymphocytic leukemia)
- the patient is prone to getting multiple skin cancers (including genetic syndromes such as basal cell nevus syndrome and xeroderma pigmentosa)
The Mohs Surgical Procedure

The Mohs surgical procedure involves a repeated series of surgical excisions followed by microscopic examination of the tissue to assess if any tumor cells remain. Some tumors that appear small on clinical exam may have extensive invasion underneath normal appearing skin, resulting in a larger surgical defect than would be expected. It is therefore impossible to predict a final size until all surgery is complete. As Mohs surgery is used to treat complex skin cancers, approximately half of all treated tumors require 2 or more stages for complete excision.

Steps in detail:

Step 1: Anesthesia  The tumor site is locally infused with anesthesia to completely numb the tissue. General anesthesia is not required for Mohs micrographic surgery.

Step 2: Stage I - Removal of visible tumor  Once the skin has been completely numbed, the tumor is gently scraped with a curette, a semi-sharp, scoop-shaped instrument. This helps define the clinical margin between tumor cells and healthy tissue. The first thin, saucer shaped "layer" of tissue is then surgically removed by the Mohs surgeon. An electric needle may be used to stop the bleeding.

Step 3: Mapping the tumor  Once a "layer" of tissue has been removed, a "map" or drawing of the tissue and its orientation to local landmarks (e.g. nose, cheek, etc) is made to serve as a guide to the precise location of the tumor. The tissue is labeled and color-coded to correlate with its position on the map. The tissue sections are processed and then examined by the surgeon to thoroughly evaluate for evidence of remaining cancer cells. It takes approximately 60 minutes to process, stain and examine a tissue section. During this processing period, your wound will be bandaged and you may leave the operative suite.

Step 4: Additional stages - Ensuring all cancer cells are removed  If any section of the tissue demonstrates cancer cells at the margin, the surgeon returns to that specific area of the tumor, as indicated by the map, and removes another thin layer of tissue only from the precise area where cancer cells were detected. The newly excised tissue is again mapped, color-coded, processed and examined for additional cancer cells. If microscopic analysis still shows evidence of disease, the process continues layer-by-layer until the cancer is completely removed. This selective removal of tumor allows for preservation of much of the surrounding normal tissue. Because this systematic microscopic search reveals the roots of the skin cancer, Mohs surgery offers the highest chance for complete removal of the cancer while sparing the normal tissue. Cure rates typically exceed 99% for new cancers, and 95% for recurrent cancers.

Step 5: Reconstruction  Fellowship-trained Mohs surgeons are experts in the reconstruction of skin defects. Reconstruction is individualized to preserve normal function and maximize aesthetic outcome. The best method of repairing the wound following surgery is determined only after the cancer is completely removed, as the final defect cannot be predicted prior to surgery. Stitches may be used to close the wound side-to-side, or a skin graft or a flap may be designed. Sometimes, a wound may be allowed to heal naturally.
Pictorial of Mohs Micrographic Surgery Technique

Clinical extent of tumor delineated with a curette

Tumor is excised with a small margin of normal tissue

map

Frozen sections cut

Microscopic review

Further ressection and histologic examination performed

Tumor is marked on map

Schematic of a Pathologic Examination of Tissue Margins

Representative sample of tissue examined by traditional “bread loaf” pathologic examination

Thin slices within the excised skin are examined for tumor. Only 1% of the surgical margin is examined by this technique.

100% peripheral margin examined by Moh's micrographic surgery

The entire (100%) surgical margin is examined for tumor.
Before Surgery

Our first concern is providing you with excellent medical care for your skin cancer. This requires some preparation before surgery. Our staff will review with you your medical and surgical history, any drug allergies, and your medications to prevent problems from occurring during or after surgery. Occasionally, you will need to see Dr. Tope beforehand for a consultation to plan the surgery and post-operative care. During these meetings you should take the opportunity to ask us any questions you may have regarding the surgery. These meetings will also be used to determine if any laboratory tests, X-rays, scans, or evaluations by other physicians are necessary before surgery.

Please bring with you a complete list of your medications, including the dose and number of times you take them each day. Also bring a day’s supply of your medications and a list of any medications to which you are allergic. You should stop taking blood-thinning drugs for one week before and one week after 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.

The surgery will be performed in an outpatient clinic. Hospitalization for Mohs surgery is rarely required. Due to the nature of the surgery, you will spend most of your time waiting in our waiting room while our Mohs technician processes the tissue specimens, usually 45 to 60 minutes. While the surgery will be completed as quickly as possible, you should plan to spend the whole day with us. Please do not make other appointments for the day. Most patients can drive themselves home after surgery, but many choose to be accompanied by, or dropped off and picked up by, a friend or relative. Patients with special needs (elderly, physical disabilities) should be accompanied during the time they are with us in clinic.

The Day of Surgery

After you check in for surgery, you will be escorted to an outpatient surgery suite. A staff member will prepare you for surgery by taking your vital signs, checking your medications and medical history, photographing your skin cancer, and obtaining your signed informed consent for surgery. A staff member will then cleanse and numb the area of the cancer using a local anesthetic. The anesthetic will allow you to be pain free within minutes; the anesthetic effect typically lasts for 1.5 to 2.5 hours. Surgery will begin with removal of a small piece of skin including the skin cancer. Any bleeding will then be stopped using cautery, and a bandage will be applied to the area. You will then be escorted back to the waiting room while your tissue is processed for microscopic examination by the surgeon.

During this time you may relax, read, or visit with friends. 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 Mohs Surgery

When the skin cancer is completely removed, the surgical area will be photographed and measured. At this point we will discuss your options for managing the surgical wound. Multiple factors must be considered (the size, depth, and location) to determine the best management of a surgical wound. Some wounds can be expected to heal best when allowed to heal on their own, termed wound healing by “granulation” or “second intention”. Most wounds are reconstructed (sutured) in order to achieve an optimal functional and cosmetic outcome and to speed wound healing. Reconstruction may take the form of a linear, side-to-side closure, a skin flap, or skin graft. These options will be discussed with you and a method of reconstruction chosen. Most commonly, the reconstructive procedure occurs on the same day. If a full thickness skin graft is selected, it will be performed at a later date. Delaying placement of the graft allows time for the surgical wound to slough devitalized tissue from cautery and to generate a base of healing tissue which optimizes the survival of the graft.

Whether the wound is allowed to heal on its own or is reconstructed, you will leave the outpatient surgery suite with a pressure dressing over the wound and with written instructions describing wound care. In the days after surgery you may experience the following:

**Pain**
During surgery, pain is prevented by the use of local anesthetic injections. Typically this anesthetic loses its effect in 2-3 hours. While Tylenol (acetominophen) alone usually takes away any pain you may experience, occasionally we will prescribe a stronger pain medication.

**Bleeding**
Great care will be taken to seal off all blood vessels during surgery and a pressure dressing will be applied before you leave the surgery suite. 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 are 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 as measured by the clock. If this does not stop the bleeding, call our office or go to the nearest emergency room or urgent care clinic.

**Bruising**
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 in the surgery. Some swelling (“edema”) may occur within the first few days after surgery. The thin skin around the eyes is particularly sensitive to swelling. Edema is typically worst in the morning and improves after you get up and move around during the day. Swelling is worst on the first morning after surgery and should gradually resolve over two to four days.

**Drainage**
Wounds that are left open to heal by themselves, and those which are stitched closed, will drain during the first week, and possibly longer. Draining wounds must be kept clean by following our written and verbal wound care instructions.
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 after surgery. If you suspect an infection, call us immediately. Infections can be cured with topical and/or oral antibiotics.

Redness
It is normal for surgical wounds to result in redness, caused by increased blood flow to the area to aid wound healing. Increasing redness spreading out from the wound edge can be a sign of infection or of an allergic reaction to antibiotic ointment of bandage adhesives. If you suspect a problem, please call our office and ask to speak to one of the nursing staff.

Scarring
Scarring always results from surgery to the skin. Scars that occur after surgery are minimized if the defect after cancer removal is small. This is one of the major advantages of Mohs surgery; the cancer is removed leaving the smallest wound defect possible. Small scars are generally less noticeable than large scars. A second procedure to reconstruct the wound often improves the cosmetic outcome by placing the scar lines in natural grooves in the skin.

After the Skin has Healed
In healing surgical wounds, the skin cells lay down collagen (rope-like) molecules to knit together the sides of the wound. Blood vessels grow into the area to provide nutrients to the healing wound. The collagen strands are first placed quickly and randomly to hold the wound edges together. At the same time the epidermis (the top layer of the skin) grows over the wound to seal it. For up to a year after the epidermis has re-sealed the wound, the collagen molecules are remodeled according to the stretch and stress placed on the wound.

During this activity you may experience a number of sensations. Initially, the wound will feel tight, but should relax within weeks. Occasional itching or twinges of pain may occur. A scar may remain raised and pink for months, but should become flat and pale within a year or so. Occasionally scars become thick, raised, red, and sensitive. Such scars are known as hypertrophic scars, or keloids. Persistently raised and red scars should be treated immediately. Please contact our office if this type of scarring occurs and persists for more than two months. The process of scar remodeling may be enhanced by gentle massage using Vaseline or vitamin E oil. You may begin massaging the wound a week after the skin surface has re-sealed or the stitches have been removed.

During skin surgery small sensory nerves are cut. This results in numbness around the wound. Usually the skin will remain numb for many months until tiny nerve fibers slowly grow back into the area. If the skin remains numb two years after surgery, this loss of sensation will likely be permanent.
If we have chosen to let your wound heal by itself, the resulting scar will usually be quite acceptable. Occasionally the initial scar may not be ideal. In this case your scar can be revised to improve the appearance.

**Follow-up Visits**

If your surgical wound has been reconstructed, you will be asked to return for suture removal, and usually one more time to judge wound healing. Occasionally revision of a scar or skin graft may be required necessitating more visits. Our goal is to return you as soon as possible for follow-up with your own dermatologist for long-term surveillance for skin cancer.

**Other Cutaneous Surgery & Laser Center Services**

- Surgical removal of benign and malignant skin lesions
- Surgical removal and management of atypical (dysplastic) moles and melanoma
- Laser treatment of vascular (red) and pigmented (brown) lesions; e.g. rosacea and facial vessels, age spots, benign moles
- Treatment of acne scars, traumatic scars, hypertrophic scars, and keloids
- Skin resurfacing for scars, photoaging
- Photodynamic therapy for pre-cancers and skin cancers
- Botox and soft tissue filler injections for wrinkles and excessive sweating
- Liposculpture
- Treatment of varicose veins by sclerotherapy, phlebectomy, and endovenous techniques
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If you have any problems or require additional information please call Dr. Tope’s office @ 952-746-6090

These instructions have been explained to me, specifically:

- Mohs Surgery - advantages and the actual procedure,
- Pre-surgery checklist
- Overview of the “Day of the procedure”
- After Mohs surgery and wound care
- Mohs surgery follow-up

I understand my responsibility to follow the above instructions and guidelines and have been given a copy for my reference.

__________________________________________  _____________________________  ____________
Academic Dermatology Representative                  Patient Signature                  Date

__________________________
DOB
Pre-Mohs Surgery Drug Guide

Continue to take all of your prescribed medications up to, and including, the day of your surgery. This includes blood thinners such as aspirin, Plavix (clopidogrel), Coumadin (warfarin), Aggrenox (aspirin and dipyridamole) and Ticlid (ticlopidine). These medications increase your risk of bleeding during and after your surgery but a more serious complication could occur if these medications are stopped and your blood were to clot.

Stop aspirin or any other aspirin containing product, which is not prescribed by a physician, two weeks prior to surgery. This includes Aspirin and/or Salicylate Agents

Acuprin
Amigesic
Anacin Caplets
Anacin Maximum Strength
Anacin Tablets
Anaflex 750
Arthritis Pain Ascriptin
Arthritis Pain Formula
Arthritis Strength Bufferin
Arthropan
Aspergum
Aspirin
Aspir-Low
Aspirtab
Aspirtab-Max
Backache Caplets
Bayer Children's Aspirin
Bayer Select Maximum Strength
Strength Backache Pain Relief
Bufferin Caplets
Bufferin Tablets
Buffex
Buffinol
Buffinol Extra
Cama Arthritis Pain Reliever
CMT
Cope
Darvon Compound
Disalcid
Doan's Regular Strength

Easprin
Ecotrin
Empirin
Empirin w/Codeine
Equagesic
Extended-release Bayer
Extra Strength Bayer
Extra Strength Bayer Plus Ca
Fiornal
Gensan
Genuine Bayer Aspirin
Halfprin
Healthprin Adult Low
Healthprin Full Strength
Healthprin Half-Dose
Lortab ASA
Magan
Magnaprin
Magsal
Marthritic
Maximum Strength
Ascriptin
Maximum Strength
Doan's
Mobidin
Mono-Gesic
Norwich Aspirin
Norgesic products
P-A-C Revised Formula
Percodan products
Regular Strength
Ascriptin
Robaxisal
Salsalate
Salflex
Salsitab
Slopren
Soma products
St. Joseph Adult Chewable
Synalgos-DC
Talwin compound
Tricosal
Trilisate
ZORprin
Stop herbal supplements two weeks prior to surgery. This includes:

**Herbal Supplements**
- Ginseng
- Vitamin E (400 IU or more)
- Ephedra (ma huang) should also be avoided as it may change the effect of the anesthesia
- Garlic (ajo)
- Ginkgo (duck foot tree, maidenhair)

If possible, stop anti-inflammatory medication such as ibuprofen four days prior to surgery. You may substitute acetaminophen (Tylenol) if needed. This includes: Nonsteroidal Anti-inflammatory Agents

- Actron
- Advil
- Aleve
- Anaprox
- Ansaid
- Bayer Select
- Cataflam
- Clinoril
- Daypro
- Diclofenac
- Dristan Sinus caplets
- Etodolac
- Excedrin IB
- Indocin
- Ketoprofen
- Ketorolac
- Lodine
- Meclofenamate
- Meclomen
- Mefenamic Acid
- Midol IB
- Motrin
- Nalfon
- Naprosyn
- Naproxen
- Nuprin
- Orudis
- Orudis KT
- Oxaprozin
- Pamprin IB
- Piroxicam
- Ponstel
- Saleto-200
- Sine-Aid IB
- Sulindac
- Tolectin
- Tolmetin
- Toradol
- Voltaren