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Preparing for Mohs Surgery

Please read this information carefully.

We know there is a lot of it but it has been prepared to help you understand the Mohs surgery procedure and repair.

Call us if you have any questions.

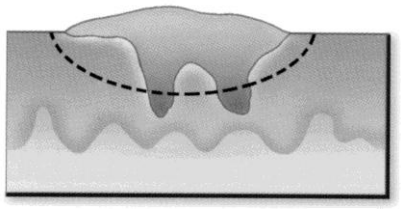
Please bring this information package with you to your appointment

What is Mohs Surgery?

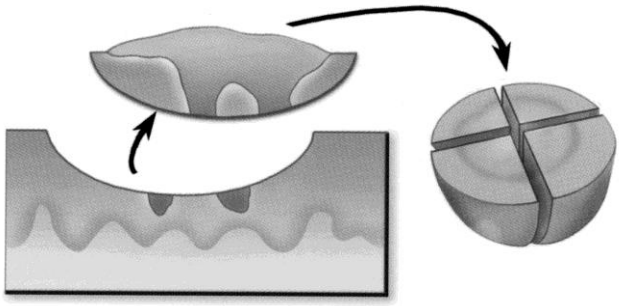
This is a type of surgery developed by Dr Fredrick Mohs for treating skin cancer when he was a medical student in Wisconsin in the 1930's. It allows a skin surgeon to operate on a skin cancer and have a greater certainty that the tumor is completely removed. Mohs surgeons are Board Certified Dermatologists who have undergone additional training in the Mohs technique.

Skin cancers grow like icebergs; there is more below the surface than can be seen on top. If only the visible tumor is removed microscopic cancer cells can get left behind. With Mohs surgery we cut around a cancer and examine every edge under the microscope to make sure it is all removed. If cancer is seen, we remove more skin but only from the area with the cancer. In this way we get rid of all the skin with tumor while leaving the normal skin alone.

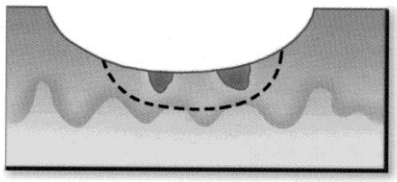
Using this technique we get a 99% cure rate for most skin cancers. The following examples show what happens in Mohs surgery. The process is described again in detail below.



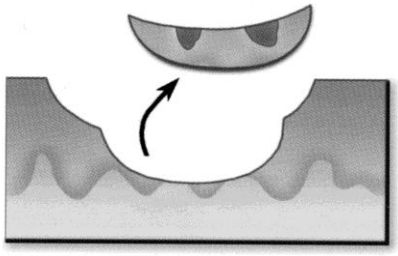
(1) A tumor within the skin (dark grey), the first Mohs layer is taken (dotted line) with a scalpel.



(2) The first section is divided to make processing easier. The skin is then processed and examined under a microscope by the surgeon.



(3) The microscope shows that there is still tumor left at the base of first layer (dark grey).



(4) A second stage is taken which removes the remaining tumor. The tumor is now completely removed and the wound can be repaired.

What should I do before Surgery?

- Have a normal breakfast on the morning of surgery.
- If your surgery is in the afternoon, eat lunch.
- Have someone drive you to the office and, if possible, stay with you throughout the day.
- If it can be avoided try not to bring children to the office.
- All healing after surgery goes better if you are not smoking.
- Try to stop smoking 1 week before surgery and for 2 weeks afterwards.
- If the procedure is on your face please do not wear make up.
- Wear loose comfortable clothing; try to avoid white shirts or blouses.

What Medication Can I Take?

- The following medications increase the risk of bleeding during and after the procedure.

Stop 2 weeks before your surgery date and for 1 day afterwards.
Ibuprofen (Aleve, Advil), Vitamin E, Ginko, Garlic, Ginseng, Ephedra (Ma Huang)

- Otherwise take any medication you would normally take.
- Bring any medication with you that you would normally take during the day.
- Bring a list of all the medications that you take, including vitamins and herbal supplements.
- If you have been advised that you need antibiotics before surgical or dental procedures because you have an implant or abnormal heart valve, please let our nurses know ahead of time so we can arrange for you to have the antibiotics on the day of your surgery.

Aspirin, Plavix and Coumadin (Warfarin)

If you are taking these medicine, both of which thin the blood, because you have had a stroke, artificial valve, atrial fibrillation, heart attack or a blood clot then you should remain on them for the surgery. This is likely to increase minor bleeding during the procedure but that can be controlled and is less dangerous than having another stroke, heart attack or blood clot. Previously we used to stop these medications before surgery but new research shows that it is safe to continue them.

If you are taking them just as a health measure but have NOT had a stroke, heart attack or blood clot then check with your primary care doctor or internist to see if they think it is safe to stop them. **Do not stop them without checking first**. Aspirin (including baby aspirin) should be stopped 10 days before surgery if possible, Coumadin 3 days before surgery.

What can I expect on the Day of Surgery?

- Please try to arrive 15 minutes before your appointment time to complete the necessary paper work.

- Be prepared to spend the entire day with us, as we cannot predict how long the surgery will take.

- You are welcome to have a friend or family member with you during the stages of surgery.

1. The front desk staff will register you.

2. The nursing staff will take you back to one of the procedure rooms and ask you about your past medical history, current medications, allergies, and who your primary care physician is.

3. You will be asked to sign a consent form that will give us your permission to undergo the procedure and to be photographed.

4. We will take a close up photograph of the area to be operated upon.

5. The skin will be cleaned with alcohol and then numbed with an injection of Lidocaine anesthetic. This may burn and sting for a few seconds; then the area will become numb, we aim to make this part as painless as possible.

6. The first step of Mohs surgery is to try to determine the extent of the tumor under the skin. This is typically done using a curette, an instrument used to scrape the skin. The tumor cells will come away while the normal skin stays intact.

7. Then the first layer of skin is removed with a scalpel; any bleeding is stopped.

8. The nurse will put a bandage on the wound and we will show you back to the waiting room.

9. The removed tissue is taken to our lab to be processed and will be looked at under the microscope to see if the cancer is removed. This takes approximately 90 minutes for basal cell and squamous cell carcinoma.

- When the tissue is ready, the doctor looks at it under the microscope. If any tumor is left, we mark that area on a map. We use this map to tell us where the tumor still is on your skin.

- You will come back to the procedure room; we will remove the dressing and inject more local anesthetic (Lidocaine). The doctor will remove further skin from the area where the cancer is still present; the process is then repeated as above.

- The average number of these cycles that need to be taken is two.

- Once the cancer is completely removed we will take another photograph of the wound and discuss the repair.

- We will ask you if you want to look at the wound; we encourage most people to, so that you can better understand the extent of the tumor, but you do not have to if you do not want to.

Wound Closures

If the wound left by the surgery is closed with stitches, they will need to be removed in one to two weeks. Stitches on the face or neck are in for 7-10 days. The ears, arms, legs, back, chest and scalp for 2 weeks.

Please do not schedule surgery near to a vacation or a time when you will not be available for us to see you back for follow up.

Our skin has a remarkable ability to heal. Sometimes a wound is to allow it to heal in by itself without stitches. This can take 4-6 weeks but this option, in the right area, can lead to an excellent result.

The next simplest way of closing skin is stitching it side-to-side in a straight line. On the face the stitches stay in place for 6-8 days. If the skin will not close side-to-side, we may need to do either a graft or a skin flap.

A flap borrows skin from next to the wound and moves it over to fill the wound.

A graft is a piece of skin removed from a site away from the wound, usually from around the ear, above the collarbone or the front of the thigh, and uses it to cover the wound like a patch.

Occasionally the wounds are in a location or of a size that will necessitate referral to a plastic surgeon or eye surgeon for repair; ideally on the same day but sometimes the following day.

We will explain all the methods of closure with you that we think will give the best result.

Once wounds are healed and the stitches taken out, the scar that is left will continue to heal and develop over the next 6 – 12 months.

Sometimes a second procedure is needed to help the scar be less noticeable. This is typically done between 4 to 8 weeks after the surgery. This can include injections of anti-inflammation medication or a dermabrasion procedure to the scar.

What will happen after surgery?

After the wound is closed, we will make an appointment for you to be seen for follow up. You will have a bandage in place. We will give you detailed written wound care instructions and a list of phone numbers to call if you have questions. To give yourself the best chance of healing well we strongly advise that you follow the written wound care instructions.

Most wounds are not painful after surgery. If there is discomfort then take an acetaminophen (Tylenol) based pain killer, not aspirin or ibuprofen based. If we suspect a wound will be more painful we shall give you a prescription for a stronger painkiller.

Our objective is to put you at ease before, during and after your surgery while curing you of your skin cancer and reconstructing the wound with the least scarring possible.
Please let us know if you have any special concerns or questions.
We look forward to seeing you at your appointment

Commonly Asked Questions:

1. **What are the risks of surgery?**
    a. Please read the risks of surgery sheet at the end of this package. We need you to bring this to your appointment and we will place it in your medical record.

2. **Since the biopsy the area appears to have healed. Do I still need surgery?**
    a. Most of the skin cancers have roots under the skin that can not be seen with the naked eye. The biopsy is performed to sample the tumor, not to remove the entire tumor. Even though the surface of the skin has healed there is still tumor underneath.

3. **I have a wedding/graduation/vacation/ reunion/special event within 2 weeks of the surgery; should I still have the surgery?**
    a. Depending on how dangerous the tumor is, many cases can be delayed by 2-3 weeks without problems. It is not advisable to have surgery around the time of major events, as bandages and bruising can ruin a photograph.

4. **Will I have pain afterwards?**
    a. Most wounds are not painful after surgery. If there is discomfort, then take an acetaminophen (Tylenol) based pain killer, not aspirin or ibuprofen based. If we suspect a wound will be more painful, we shall give you a prescription for a stronger painkiller.

5. **Will my cancer become a melanoma?**
    a. Basal cell carcinoma, Squamous cell carcinoma and Melanoma are all completely different types of cancer. One does not become the other. Each of them has early stages and more advanced stages of the disease, but they are still their own cancers.

6. **Why did it take so long for this cancer to be diagnosed?**
    a. Your cancer may have been looked at by a doctor in the past that reassured you that it was nothing to worry about or that it was a pre-cancer and only needed a freezing treatment. It was not until the area began to change that the diagnosis was made. Some skin cancers are easy to spot; they look just like the pictures in the brochures and textbooks! But many are very difficult to detect; they can look just like non-cancerous skin growths or like areas of irritated skin. This inevitably leads to a delay in diagnosis.

7. **What would happen if I leave this area and do nothing?**
    a. There are rare instances where a biopsy may cure a cancer but by far the majority of tumors are not removed by the biopsy. If left alone the cancer continues to grow. Basal cell carcinoma rarely spreads to other parts of the body, it keeps growing locally and eats away at skin and surrounding tissues. Squamous cell carcinoma does have a risk of spreading to other body parts. The longer the tumor is left the more this risk increases.

8. **What are the chances of me getting another cancer?**
    a. Several studies have looked at this and suggest that about 4 out of 10 people (40%) will get another cancer in the next few (2-4) years. The cancer may not necessarily be on the face. Once you have had your surgery we do recommend regular skin checks by a dermatologist. Initially ever 6 months, then if no other tumors are found once a year. Some people with multiple tumors may have to be seen more often. The goal of doing frequent skin checks is to catch tumors at an early stage so they are smaller and easier to treat.

9. **What training has a Mohs Surgeon had?**
    a. A Mohs surgeon is a board certified dermatologist who has undergone additional training in skin cancer surgery. Modern day fellowship training programs last 1-2 years during which time the surgeon is closely supervised while learning the removal of skin cancers, interpreting the findings under the microscope then repairing the defect left by tumor removal. Mohs surgeons who train via this route are members of the Mohs College (http://www.mohscollege.org). Not all Mohs surgeons go to a fellowship training program. Others learn their surgery during their residency or while spending time with other surgeons. They take a test and pass an exam to become members of the American Society for Mohs surgery (http://www.mohssurgery.org/).

10. **Why do I need to bring someone with me?**
    a. It is preferable for you not to drive on the day of surgery. Some tumors on the face can require larger bandages on the first day that may interfere with vision or wearing glasses. Often people feel quite tired after having surgery and would rather have someone else drive. Usually it is fine to drive the next day as you will change to a smaller bandage.

11. **What are the alternatives to Surgery?**
    a. Mohs surgery is not appropriate for all types of skin cancer. There are many different ways of treating skin cancers. The decision to use Mohs depends on a number of factors relating to the cancer, its location, patient factors and prior treatments used.

Other methods that we use for treating skin cancer include the following;

Freezing it with liquid nitrogen: this is painful, can leave large scars and there is no microscope proof that the tumor has been removed. The degree of freezing needed is much greater than when we treat pre-cancerous lesions.

Scraping and burning (electrodessication and curettage): this is often used on the trunk, arms or legs where we have skin to spare, but the recurrence rate on other areas can be quite high, and the scars are often quite wide. Again, there is no microscope confirmation that the tumor is gone; any recurrent tumor will be mixed in with scar tissue, making it more difficult to remove using this method a second time.

Simple Excision: When a lesion is excised, we use a fixed margin, usually 4 mm around the tumor. Sometimes this is fine, again where we have skin to spare, but on the face and areas where the skin is very tight we prefer to take narrow margins. When the specimen is sent to the pathologists they only examine a few sections through it, so the recurrence rates are higher.

Anti-Cancer Creams: There are creams that have been around for many years, and new creams coming on the market that are being used to treat skin cancers. Obviously the idea of using a cream instead of surgery is very appealing. These creams have to be used for several months to work; they cause a lot of irritation on the skin and recent studies have shown that 1/3 of the tumors will come back. The creams do not get very far into the skin, so deeper tumors will not be affected; in addition, some tumors wrap scar tissue around themselves which acts as a barrier to the cream. For the reasons above, these creams have shown better results for thin tumors.

Your doctor has referred you for Mohs as they feel that this is the most appropriate method of treatment for the type of tumor you have. If there is an alternative treatment that may be more appropriate your Mohs surgeon will let you know.

Check List Before Mohs Surgery

1. Have breakfast, bring lunch
2. Wear loose comfortable clothing, avoid white colors.
3. Please bring someone with you who can stay with you during the appointment
4. Be prepared to spend the whole day with us
5. Check with your regular doctor before stopping aspirin or coumadin
6. Stitches will be removed in 1 - 2 weeks, make sure you will be available
7. Stop smoking 1 week before surgery and for 2 weeks afterwards
8. No alcohol for 2 days before surgery and 2 days afterwards
9. Be prepared to take it easy for 1 - 2 weeks after surgery
    - No Exercise, No Golf, No Yard Work, No Heavy Lifting

Medication

1. Take your normal medication that morning
2. Bring medications needed during the day
3. Bring a list of your medication

Call us with any questions or concerns you may have and please remember to bring this entire package with you to your appointment

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PLEASE READ, SIGN AND BRING THIS SHEET TO YOUR APPOINTMENT

This lists the most common risks of Mohs surgery. It is not intended to be a complete list of all the potential complications that may occur with surgery.

1. **Scarring** – it is impossible to cut the skin without leaving a scar. The aim of any surgery is to leave the least noticeable scar as possible and to hide it within the normal lines of the skin to make it less visible. **INITIAL**:_____

2. **Infection** – the rate of wound infection is very low with this kind of surgery, generally less than 1 person out of 100. We aim to keep it this low by cleaning the skin and occasionally using antibiotics after surgery. If you do develop a wound infection, we treat it with antibiotics. **INITIAL**:_____

3. **Bleeding** – there is a risk of bleeding whenever we cut the skin. We reduce this risk by cauterizing any blood vessels during the surgery. Rarely bleeding may occur after the surgery. We will let you know what to do if this occurs. **INITIAL**:_____

4. **Bruising and Swelling** – are common after surgery. They usually begin the day after surgery. This may persist for up to 2 weeks while the skin is healing. **INITIAL**:_____

5. **Pain** – some discomfort is expected after surgery; usually it is minor and controlled with Tylenol. If pain is more severe, we will give you prescription strength pain medicines. Occasional discomfort may be felt during the healing phase of any wound (up to 6 months). **INITIAL**:_____

6. **Numbness** – sometimes nerves can be damaged during the surgery. This may lead to areas of numbness (loss of feeling) in the surrounding skin. Usually this is temporary; sometimes it is permanent. **INITIAL**:_____

7. **Opening of the Wound** – stitches stay in for 1-2 weeks. Rarely the stitches may not hold and come out before you are due back. This can happen for a number of reasons. You will need to contact us if this happens. **INITIAL**:_____

8. **Abnormal Scarring** – scars keep on healing and maturing for up to 1-2 years. Sometime several months after the surgery the scar may begin to thicken. This is called a keloid scar. There are many ways of treating this. **INITIAL**:_____

9. **Recurrence of the tumor** – Mohs surgery provides the highest cure rate of any form of skin cancer treatment. Nevertheless it is not a 100% cure rate and recurrences can occur. Again this is very uncommon. If you do get a recurrence then Mohs surgery would be performed again. **INITIAL**:_____

10. The need for **Additional Procedures** at a later date to reduce scar swelling, redness or thickening. Your Doctor will let you know if this is necessary. **INITIAL**:_____

I HAVE READ THE ABOVE _____ (please sign) **DATE** _____

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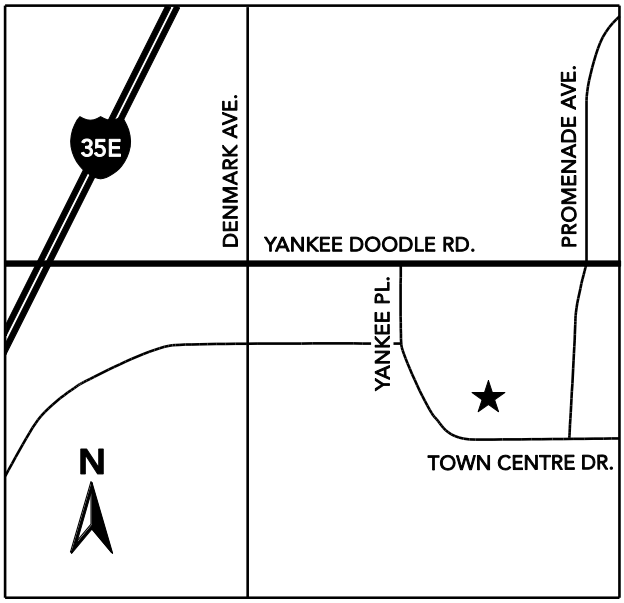
Office Locations

Please call or visit our web site for directions

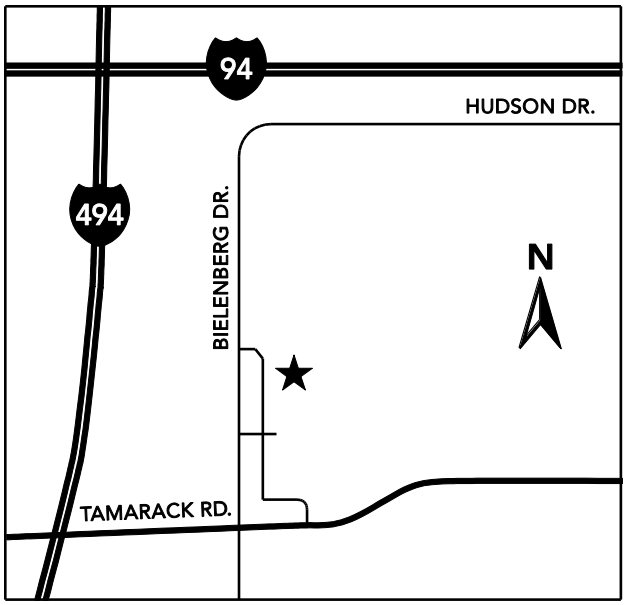
Eagan Office

651 – 251 – 3300 press 0 for reception



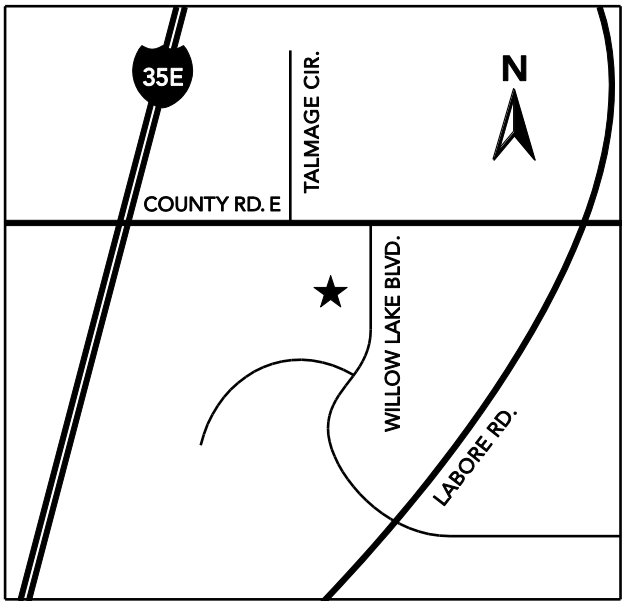
Woodbury Office

651 – 578 – 2700 press 0 for reception



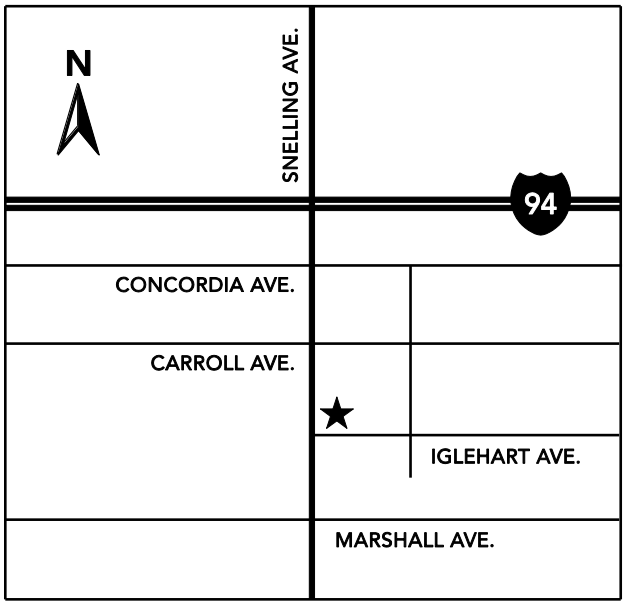
Vadnais Heights Office

651 – 770 – 0110 press 0 for reception



St Paul Office

651 – 645 – 3628 press 0 for reception



YOU WILL BE ASKED TO SIGN THIS SHEET **AT YOUR APPOINTMENT** ONCE YOU HAVE HAD ANY QUESTIONS ANSWERED

Consent Form for Mohs Surgery, Release of Information and Photography

Please read carefully before signing.
If there are any sections you do not consent to, draw a line through them or ask us to do so

I _____have had a consultation with Dr _____ concerning the following

Mohs Excision of _____

Located on _____

With possible repair of defect.

Risks include Scar , Bleeding , Infection , Recurrence of Tumor , Numbness

Other Specific Side Effects_____

The nature, purpose and possible complications of the procedure(s), the risks and benefits, reasonably to be expected, and the alternative methods of treatment that are available have been clearly explained to me. I understand the explanation that I have received, including my right to refuse such treatment. I have had an opportunity to ask any questions I may have and have been encouraged to ask any further questions that may arise during the course of treatment.

I acknowledge that the practice of medicine and surgery is not an exact science and that reputable practitioners therefore cannot properly guarantee results. I further acknowledge that no guarantee or assurances have been given to me regarding the success or benefits that may result from above procedure.

The taking of photographs before, during and after treatment is essential for the medical records and insurance purposes. Rarely pictures will be used for academic purposes; dissemination to other health care professionals, medical journals, research, teaching, publication or presentation. If used for such purposes no reference will be made to your name. Your pictures will become part of the paper medical record and any digital images may be stored on a computer or compact disc.

If your insurance company requests copies of these photographs or other such information from your medical record your signature authorizes Dermatology Consultants to release this information to your insurance company.

After reviewing the above I hereby consent to the treatment, release of information and photography.

Patient or representative _____ **Date** ___/___/___

Relationship to Patient _____ **Date** ___/___/___

Witness _____ **Date** ___/___/___

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Please complete this health information form prior to your appointment

Do You Faint With Needle Injections? Yes No

ALLERGIES: Other: _____

Penicillin	Y	N	Band Aids	Y	N	Latex	Y	N
Sulfa	Y	N	Anesthetic	Y	N	Skin Cleanser	Y	N

Medical Problems:

Other Medical Please list below

Stroke	Y	N
Heart Attack	Y	N
Kidney Disease	Y	N
Bleeding Problems	Y	N
Liver Disease / Hepatitis	Y	N
HIV / AIDS	Y	N
High blood pressure	Y	N
Diabetes	Y	N
Back/Neck Pain	Y	N
Memory problems / Confusion	Y	N

Implants:

Do you have any implants?	Y	N	
Do you have to take antibiotics before going to the dentist?	Y	N	→ **If You Need Antibiotics Prior To Surgery Please Contact Your Primary Care Physician**
Do you have a **PACEMAKER** or **DEFIBRILLATOR**?	Y	N	

Other

Are you Pregnant?	Y	N	
Are you a Smoker	Y	N	_____ a day

Medication

Other Medication

Aspirin	Y	N
Ibuprofen	Y	N
Plavix	Y	N
Coumadin	Y	N

PATIENT NAME: _____ DATE: _____