



A GUIDE TO YOUR PROSTATE CANCER SURGERY

Treatment Summary



A GUIDE TO YOUR PROSTATE CANCER SURGERY



SUMMARY OF YOUR PREOPERATIVE TESTS AND PREPARATION

Preoperative appointments and tests

Anesthesia appointment:

Consultations:

You are scheduled for radical prostatectomy surgery on

_____, _____ at _____.

Your surgeon will have you report to either:

1. Weiss Hospital Pre-operative holding area (2nd Floor- A-elevators).

It is important that you arrive at the time specified to avoid either a delay or cancellation of your surgery.

Preoperative Preparation

- Start Kegel exercises.
- Do not take aspirin or aspirin-like products 10 days prior to surgery. Stop aspirin on _____.
- Start a clear liquid diet on _____.
- Administer a Fleet's enema the night before surgery.
- Shower and then use chlorhexidine wipes (provided) the night before surgery.

Main hospital telephone number is (773) 878-8700.

As a reminder, it is strongly recommended that you check with your insurance carrier regarding your hospital benefits and the need to obtain pre-authorization prior to surgery. Your insurance company may deny payment if you do not adhere to their policies.

TABLE OF CONTENTS

1. TO THE PATIENT	- Page 5
What is This Booklet For?.....	- Page 5
What Will I Find in This Booklet?.....	- Page 5
2. THE PROSTATE	- Page 6
Diagram of the Prostate.....	- Page 6
3. PREOPERATIVE WORK-UP AND EVALUATION.....	- Page 7
Selection of the Appropriate Surgical Procedure.....	- Page 7
What is a Preoperative Work-up?.....	- Page 7
Initial Consultation.....	- Page 7
Imaging Procedures	- Page 8
Bone Scan	- Page 8
CT Scan	- Page 9
Endorectal MRI.....	- Page 10
Blood Transfusions	- Page 10
Pre-surgical Testing.....	- Page 10
4. PREPARING FOR SURGERY.....	- Page 11
Insurance Considerations.....	- Page 11
Preoperative Medication Instructions.....	- Page 11
Pre-surgical Diet.....	- Page 11
Laxative.....	- Page 12
Nutrition	- Page 12
Smoking	- Page 12
Sex	- Page 12
Arriving at the Hospital	- Page 12
Waiting Area and Visiting	- Page 12
Products Containing Aspirin (non-prescription).....	- Page 13
Products Containing Aspirin (prescription).....	- Page 14
Pelvic Muscle (Kegel) Exercises	- Page 15
How to Find the Pelvic Muscles	- Page 15
5. GENERAL INFORMATION.....	- Page 16
Parking.....	- Page 16
Telephone	- Page 16
Spiritual Advisors	- Page 16
Hotel Accommodations.....	- Page 16
Private Rooms	- Page 16
What to Bring to The Hospital.....	- Page 16
Telephone Numbers	- Page 16
6. OTHER TREATMENT OPTIONS.....	- Page 17
Perineal Prostatectomy	- Page 17
Radiation Therapy	- Page 17
Cryosurgery.....	- Page 17
Hormonal Therapy/Orchiectomy	- Page 17
Active Surveillance/Watchful Waiting.....	- Page 17
7. SURGICAL AND POSTSURGICAL PROCEDURES.....	- Page 18

Robotic Radical Prostatectomy.....	- Page 18
Radical Retropubic Prostatectomy.....	- Page 18
Impact of Surgery on Bladder and Sexual Function	- Page 19
Incisions.....	- Page 19
Recovery Following Radical Prostatectomy and Follow-up Care	- Page 19
Pathology Results	- Page 20
Post-operative Adjustments	- Page 20
Long-term Follow-up.....	- Page 21
Cancer Risk Clinic.....	- Page 21
8. DISCHARGE INSTRUCTIONS.....	- Page 22
Activity Guidelines.....	- Page 22
Exercise.....	- Page 22
Three Things You Should Avoid	- Page 22
Pain Control.....	- Page 22
Bowel Function.....	- Page 23
Bathing.....	- Page 23
Your Diet After Surgery.....	- Page 23
Fever.....	- Page 23
Catheter Care	- Page 23
Appointments for Removal of Staples and Catheter.....	- Page 24
Complications.....	- Page 25
Sexual Function.....	- Page 25
9. TELEPHONE NUMBERS.....	- Page 26
10. GLOSSARY.....	- Page 27-28

1. TO THE PATIENT

What Is This Booklet For?

Surgery is an experience that everyone approaches with some anxiety. This anxiety is normal. Your path to good health starts with an understanding of your cancer and the most effective treatment options. Once you've decided to proceed with treatment, following your surgeon's instructions is the best way to help speed your recovery.

What Will I Find in This Booklet?

In this booklet you will find detailed information about the surgery and related medical procedures that have been recommended for you as well as information about what to expect before, during, and after surgery.

This booklet is not a substitute for communication between you and your surgeon and other members of the health care team. If at any time during your examination or consultation you don't understand what is said, speak up. Never be afraid to clarify something you have not understood.

The information in this booklet is arranged chronologically. It begins with a brief description of prostate anatomy. Then the discussion turns to what will happen before your surgery, a description of the surgery itself, and what to expect after the procedure. **Both the robotic radical prostatectomy and radical retropubic prostatectomy are outlined in detail.** Finally, the booklet contains a glossary.

The Prostate illustrates and describes the area of your body on which the surgery will be performed.

Preoperative Workup and Evaluation describes tests and procedures you might undergo before surgery.

Preparing for Surgery provides important information about getting ready for your surgery -- the diet you must follow prior to surgery and other necessary preparations, and important information about your admission to the hospital.

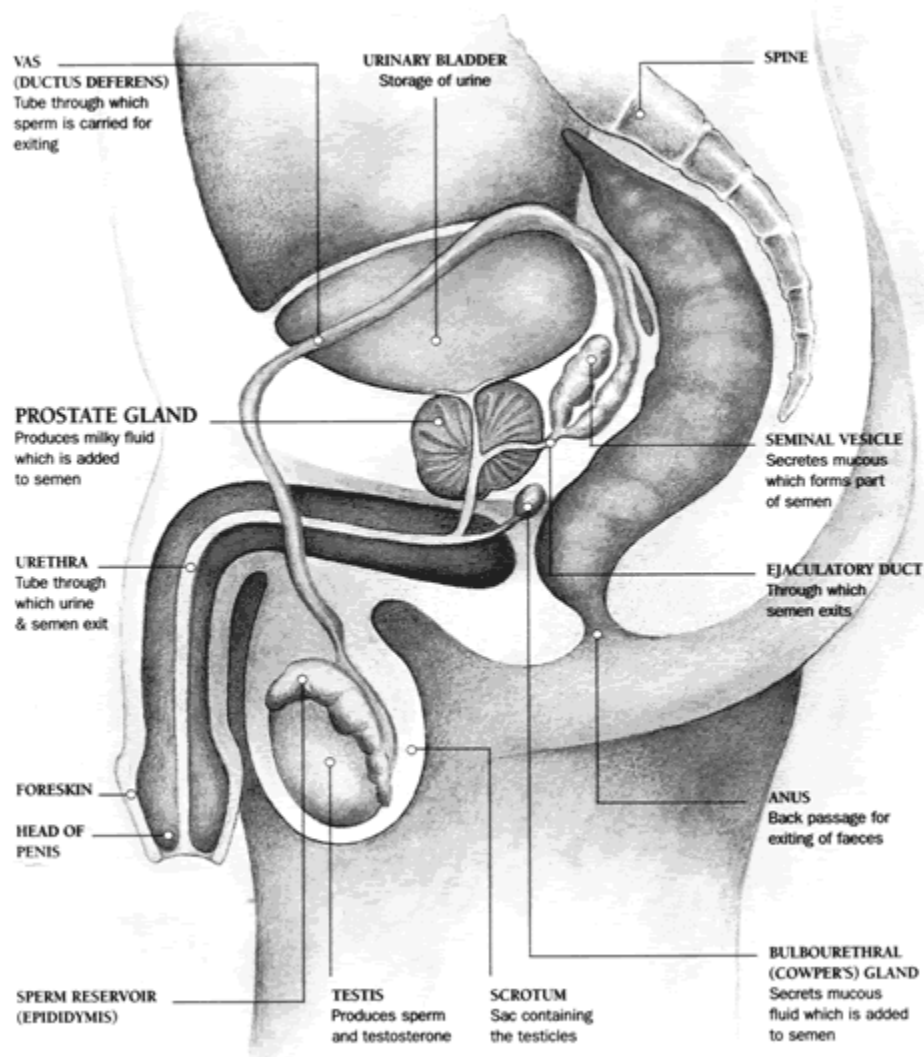
Surgical and Post-surgical Procedures describes the various surgical procedures used in treating prostate cancer and the postoperative care which includes what happens after surgery from your time in the recovery room until you are fully recovered from surgery.

Discharge Instructions provides important information about pain control, physical activity, bathing and driving when you are home, after discharge from the hospital.

Glossary clarifies medical terms used in this booklet. Whenever a medical term you might not understand is used, it is printed in bold-face type and defined in the glossary at the end of the booklet.

2. THE PROSTATE

Prostate cancer is the most common malignancy in American men. The prostate gland is a small, firm organ about the size of a walnut, located below the **bladder** and in front of the **rectum**. The **urethra**, the channel that carries urine from the bladder to the penis, runs through the prostate. The primary function of the **prostate gland** is to produce fluid that helps to transport the sperm produced by the **testicles**. Fluid produced by the prostate gland along with the fluid processed by the **seminal vesicles** (which are attached to the prostate) makes up 95% of the ejaculate volume.



3. PREOPERATIVE WORK-UP AND EVALUATION

This section describes the procedures used to evaluate your illness and to gather the information necessary for a good outcome from your surgery.

Selection of the Appropriate Surgical Procedure

Your physician has recommended that you undergo surgery to treat prostate **carcinoma**, or cancer. **At The University of Chicago, this is most commonly done with the da Vinci™ Robot through six small incisions in the abdomen.** Alternatively, a radical retropubic prostatectomy can be performed through a single larger incision from the pubic bone to just below the belly button. Regardless of the technique, your surgeon's goal is to preserve the greatest amount of normal tissue and maintain as much normal body function as possible while removing all the abnormal tissue.

What Is a Preoperative Work-up?

Before surgery, you will undergo a number of diagnostic tests - to evaluate both the tumor and your general health. These procedures constitute what physicians call the preoperative workup.

By the time you are referred to a surgeon for consultation, you usually have already had a **PSA** blood test and biopsy of the prostate. PSA, or prostate specific antigen, is a protein produced by the prostate. If prostate cancer cells spread, the most common initial sites of the spread are to the pelvic lymph nodes and bones. Prostate cancer cells produce PSA in these locations, just as they do in the prostate. When prostate cancer grows, more PSA is often produced. However, other diseases of the prostate beside cancer (e.g., enlarged prostate, urinary tract infection) can also cause an elevation in the PSA. Therefore, a **transrectal ultrasound** examination and needle biopsy of the prostate are performed when an elevated PSA or abnormal digital rectal exam is detected to determine whether or not a man has prostate cancer.

Once the preoperative assessment has been completed, the surgeon will meet with you and your family to describe and discuss the surgical procedures they recommend. **This meeting is a good time to ask questions.**

Initial Consultation

Please bring copies of your pertinent test results with you to the initial consultation. This includes all PSA blood tests, pathology results, and notes from other physicians.

Your pathology from the biopsy will be reviewed at the University of Chicago, so it is important to bring the actual pathology slides to the initial consultation or to have them shipped to your surgeon in advance.

Your initial consultation begins with the taking of a complete medical history, in which you will be asked to describe previous illnesses and treatments, as well as your current health. You will also be asked if members of your immediate or extended family have had prostate cancer, as some families are at increased risk of cancer due to genetic conditions. This will provide the physician a basis for further recommendations for careful screening and monitoring not only for you but your family members as well.

It is important that you be able to describe the following accurately and in detail:

- The names of any medications you are now taking and the doses.
- The names of medications previously taken and had to stop taking because of side effects.
- Any allergies you have had or have now.
- Serious illnesses you have had in the past or have now.

- Previous surgical procedures you have undergone.
- Any symptoms you might be having now.

The surgeon needs this information in order to give you the best treatment. Others involved in your care - the anesthesiologist, for example -- will also use this information in treating you.

Please bring the names, addresses, and telephone numbers of all of the physicians with whom you would like your surgeon to correspond.

After the medical history is taken, a thorough physical examination will be performed. By the time you see the surgeon, you probably will have had several digital rectal examinations. The surgeon will repeat this examination to determine if the tumor can be felt and the precise location of the tumor.

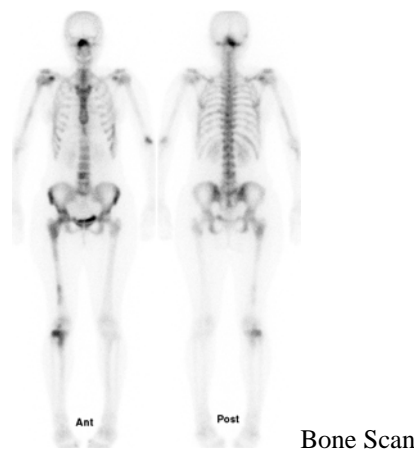
Once the medical history and physical examination have been completed, your physician will discuss with you and your family the need for some or all of the following diagnostic tests. All of these tests help in evaluating the tumor and your general health. **This meeting is a good time for you and your family to ask questions.**

Imaging Procedures

Several imaging procedures - those that allow the surgeon to assess for distant **metastasis** (i.e., the spread of cancer to distant sites such as the bones) and to determine if the tumor is invading organs adjacent to the prostate - may be performed. You may also have a chest x-ray which will be useful in assessing the status of your heart and lungs, information that the surgeon and anesthesiologist need to know. Even though the work will be done on your prostate, surgery affects your whole body.

Bone Scan

You may undergo or have already undergone an imaging procedure called a **bone scan**. This is a nuclear medicine test that detects metastases to the skeletal system. There is no preparation for this exam, however, you should allow at least three hours for the test. You will be given two appointment times, one for the injection of the imaging agent, and the second (two hours later) for the actual time the scan will take place. It takes approximately two hours for the bones to absorb the imaging agent, which is necessary to obtain an accurate scan. **Pre-operative bone scans are usually not required, especially for those cancers thought to be confined to the prostate based on other clinical characteristics (e.g., PSA value, rectal exam findings, prostate biopsy results).** However, it is ultimately your surgeon's decision whether or not a bone scan will be performed.



CT Scan

You may also undergo or may have undergone a **CT scan** of the abdomen and pelvis. CT stands for computerized tomography - a procedure that produces a detailed picture of the interior of your body. The scan is simple, painless and takes about an hour. You lie still while the scanner moves over your abdomen, creating computerized images of the interior tissues and organs. The CT scan helps your surgeon assess for any possible spread of the cancer to the pelvic lymph nodes or other abdominal organs. **Not all patients will undergo a CT scan and the final decision on this will be made by your surgeon.**

For the CAT scan, the technician will start an intravenous line that contains a **contrast medium** to produce clearer pictures of your abdominal and pelvic organs. A contrast medium is a substance that shows up very clearly on X-rays and enhances the images the physician sees.

IMPORTANT! The contrast medium contains iodine. **TELL YOUR SURGEON AND RADIOLOGIST IF YOU KNOW YOU ARE SENSITIVE TO IODINE OR IF YOU HAVE ANY ALLERGY OR SENSITIVITY TO SHELLFISH, SHRIMP, CLAMS or OYSTERS.** These reactions indicate iodine sensitivity. The radiologist must be aware of this sensitivity before the contrast medium is injected! The radiologist can change the type and dose of contrast injected to minimize the likelihood of an adverse reaction. In addition, you may be given special medications to prevent a dangerous reaction from occurring.

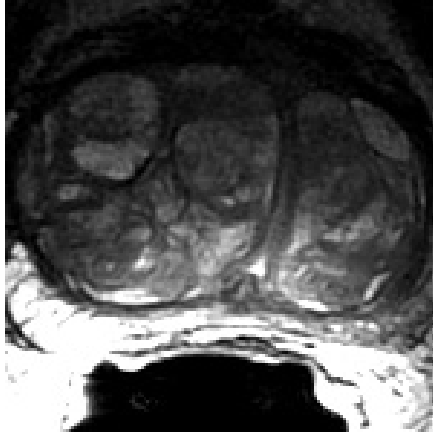
To enhance the quality of the test, you will also be given oral contrast to drink before the CT scan. Oral contrast is a liquid drink that also serves as a contrast medium which helps visualize the intestines better.



CT Scan

Endorectal Magnetic Resonance Imaging (MRI)

Your surgeon may have you undergo an endorectal MRI to better assess the anatomy of the prostate and surrounding tissues. During this exam, an endorectal coil is placed in the rectum to obtain the best possible pictures of the prostate. This endorectal coil consists of a thin wire covered by a balloon, which is inflated to maintain its position once inside the rectum. The practice guidelines for endorectal MRI vary by location, but you may be asked to administer a Fleets enema per rectum prior to the procedure. The radiologist or staff at the facility will give you detailed instructions. **Only certain patients, typically those with a higher volume or potentially more aggressive cancer are asked to obtain an endorectal MRI.**



Endorectal MRI

Blood Transfusions

Newer surgical techniques minimize blood loss and fewer transfusions are needed. The rate of blood transfusion during or after a robotic radical prostatectomy is < 1%. **Therefore, we do not recommend any autologous donation of blood (donating your own blood) prior to Robotic surgery.** For the radical retropubic prostatectomy, you and your surgeon will decide beforehand if any blood needs to be donated.

Presurgical Testing

Before you are scheduled for surgery, a series of blood tests (e.g., blood count, kidney function, electrolytes) and an **electrocardiogram, or EKG** (a test that evaluates or "maps" your heart function) will be performed. The surgeon and anesthesiologist want to know that you are in the best possible physical condition to proceed safely through surgery. Before surgery you will be scheduled for an anesthesia clinic appointment where you will be able to discuss the plan for anesthesia. **If you are under the care of a cardiologist it will be very important to have these records available at the time of your anesthesia appointment.** Furthermore, based on the laboratory work and EKG results, the surgeon and/or anesthesiologist may recommend additional testing prior to surgery.

The surgical patient is usually interested in and concerned about the anesthesia that he will receive. Therefore, it is helpful for you to see the anesthesiologist to allay any fears that might exist. The choice of anesthesia agents will be discussed, and you will have an opportunity to let the anesthesiologist know if you have had any previous problems with anesthesia in the past as well as any medical problems that might impact the choice of agents recommended.

For a robotic radical prostatectomy, you will receive general anesthesia, where you will be put to sleep and have a breathing tube placed. For a radical retropubic prostatectomy, either general anesthesia or an **epidural anesthetic** will be performed. Epidural anesthesia entails an injection of medication into the back (between the vertebral bones) to numb the surgical area. If you choose to undergo an epidural, the anesthesiologist can administer medication through your IV to make you drowsy prior to the procedure. During your anesthesia pre-op appointment, more details will be provided about your planned anesthesia.

4. PREPARING FOR SURGERY

Following is information about coordinating your surgery with your insurance carrier, your preoperative diet and medication, arriving at the hospital, and waiting/visiting arrangements for your family.

Insurance Considerations

We strongly recommend that you contact your insurance carrier well before your scheduled surgery date. Many insurance plans require that you notify them of the surgery in advance. Some require approval of the procedure. You risk having reimbursement denied if you fail to follow your insurance carrier's procedures, so this step is very important. You may give your surgeon's name and office telephone number to your insurance representative and they will provide them with the necessary medical information.

Preoperative Medication Instructions

IMPORTANT: DO NOT TAKE ANY ASPIRIN OR ANY OTHER PAIN MEDICATION EXCEPT TYLENOL FOR 10 DAYS PRIOR TO YOUR SURGERY! Aspirin interferes with the normal blood clotting that must take place during and after surgery. Instead, take Tylenol (or generic acetaminophen) for headaches, muscle aches, etc. If you are taking aspirin prescribed by your physician - for arthritis or cardiovascular prophylaxis, for example – **LET US KNOW AT LEAST 10 DAYS BEFORE YOUR SURGERY IS SCHEDULED!** See a list of commonly used medications that contain aspirin on pages 13 and 14. Also, if you take vitamin E supplements, we ask that you stop them 10 days prior to surgery. **Make sure to have a complete list of your medications available during all consultations, so your doctors can make additional recommendations about stopping certain medications prior to surgery.**

Presurgical Diet

Inadvertent rectal injury is a very rare complication that can occur during surgery because of the close proximity of the rectum to the prostate. Therefore, it is important that the colon and rectum be free of stool prior to surgery. The day before surgery, you must stop eating solid foods and start a clear liquid diet.

You may eat as much as you want, but you may only eat the following items:

- Broth (chicken, beef, or vegetable)
- Plain Jell-O , but no fruit or whipped topping
- Tea or coffee, but no cream
- Energy drinks (such as Gatorade)
- Ice pops, but no ice cream pops
- Soda
- Clear fruit juices including only apple, grape, or cranberry (*No orange, grapefruit, tomato, or any other kind of juice*)
- Mineral water or regular water

Patients undergoing a robotic radical prostatectomy

You will be asked to administer a cleansing Fleet's enema the evening prior to your surgical procedure.

Patients undergoing an open radical retropubic prostatectomy

You may receive a prescription to purchase a 4 liter bottle of Go-Lytely™. This is a laxative that comes in a powder form and is reconstituted with water. The day before surgery you will drink the 4

liters, at a rate of one 8 ounce glass every 10-15 minutes. You will only be allowed clear liquids (see below) starting the day prior to surgery. **Your surgeon will decide if you are to take Go-Lytely™ or any other bowel cleansing medication.**

Nutrition

Your nutrition is very important. Try to eat a well balanced diet. There are no dietary restrictions except for the day before surgery, when you will only be allowed a clear liquid diet.

Smoking

Every effort should be made to stop smoking prior to surgery in order to decrease the risk of developing postoperative complications.

Sex

Although you have been diagnosed with prostate cancer, it is important to remember that you cannot transmit cancer to your spouse or significant other. You cannot harm yourself in any way by continuing sexual activity.

Arriving at the Hospital

You should be at the hospital **at least 90 minutes before your scheduled surgery time.** Upon arrival, go to the designated locations described above. **Remember: You should have had nothing to eat or drink, not even water, after midnight of the night before surgery.** Your physician may tell you that it is all right to take certain regular medications (for high blood pressure, for example) on the day your surgery is scheduled; take these drugs with the smallest sip of water you can manage.

Waiting Area and Visiting

Your family and friends can wait in the Family Waiting Lounge, room P211 in Bernard Mitchell Hospital and Area 2C in the DCAM, during your surgery. They should check in with the volunteer and/or surgical coordinator staffing the lounge when they arrive. Prior to surgery, the surgeon or his nurse will stop by the Surgical Waiting Lounge or Pre-operative waiting area to answer any last minute questions that you may have. Your family will also receive a phone call to let them know the actual time surgery started and a follow-up phone call approximately every hour thereafter. In the meantime, to help the time pass more quickly, we encourage the family to either take walks, or visit the coffee shops, bookstore, etc. between phone calls. When the surgery is completed, the surgeon will come down to the Waiting Lounge to talk to your family. Your family will not be able to see you while you are in the recovery room.

Once you have been transferred from the recovery room to a surgical floor, you may have visitors between the hours of 9:00 a.m. and 8:00 p.m. daily.

(Acetylsalicylate) and Aspirin-like compounds)

NON-PRESCRIPTION PRODUCTS

<u>Product</u>	<u>Manufacturer</u>
Advil	Whitehall
Alka-Seltzer Effervescent Tablets	Miles Laboratories
Alka-Seltzer Plus Cold Medicine Tablets	Miles Laboratories
Anacin Tablets, Caplets & Maximum Strength	Whitehall

Products Containing Aspirin

Arthritis Pain Formula Tablets	Whitehall	Bufferin Tablets, Caplets & Extra Strength	Bristol-Myers
Ascriptin Tablets	Roer	Bufferin Arthritis Strength Caplets	Bristol-Myers
Ascriptin A/D Caplets	Roer	Cama Arthritis Pain Reliever	Sandoz
Ascription Extra-Strength Caplets	Roer	Ecotrin Tablets, Caplets & Maximum Strength	SmithKline
		Empirin W/Codeine	Burroughs Wellcome
Product	Manufacturer	Excedrin Tablets & Caplets Extra Strength	Bristol-Myers
Bayer Timed-Release Aspirin Tablets	Glenbrook	4-Way Cold Tablets	Bristol-Myers
BC Tablet and Powder	Block	Ibuprofen	
BC Arthritis & Cold Powder	Block	Momentum Tablets	Whitehall

Product	Manufacturer	Product	Manufacturer
Motrin	Upjohn	Sine-Off Tablets	SmithKline
Norwich Tablets & Extra-Strength	Chattern	St. Joseph Adult Aspirin	Plough
Pepto-Bismol Tablets and Suspension	Proctor& Gamble	Ursinus Inlay-Tabs	Sandoz
		Vanquish Caplets	Glenbrook

PRESCRIPTION PRODUCTS

Product	Manufacturer	Aspirin w/Codeine Phosphate Tablets	Geneva
Acoda #3	Everett	Aspirin w/Codeine Tablets	Barr
Aspirin 5 gr Delayed Release Tablets	Duramed	Aspirin Tablets	Warner Chicott
Aspirin 800 mg. Tablets	Duramed		

		Product	Manufacturer
Axotal Tablets	Adria		
Azdone Tablets	Central	Methhocarbamol & Aspirin Tablets	Par
B-A-C Tablets	Mayrand	Mono-Gesic Tablets	Centra
Carisoprodol Compound Tablets	Rugby	Norgesic & Norgesic Forte tablets	Riker
Carisoprodol Compound Tablets	Bolar	Orphengesic	Par
Damason-P	Mason	Oxycodone w/Aspirin Tablets	Barr
Darvon with A.S.A.	Lilly	Percodan & Percodan-Demi Tablets	DuPont
Darvon-N with A.S.A.	Lilly		
Disalcid Capsules & Tablets	3M Riker	Propoxyphene Compound 65 Capsules	Lemmon
Dolprn #3 Tablets	Bock	Propoxyphene HCl/Aspirin & Caffeine Capsules	Geneva
Easprin	Park-Davis		
Equagesic Tablets	Wyeth-Ayerst	Propoxyphene w/Aspirin & Caffeine Capsules	Rugby
Fiogesic Tablets	Sandoz	Rhinex D-Lay Tablets	Lemmon
Fiorinal Tablets & Capsules	Sandoz	Robaxisal tablets	Robins
Fiorinal w/Codeine capsules	Sandoz	Roxiprin Tablets	Roxane
Gelpirin Tablets	Alra	Salflex	Camrick
Lortab ASA Tablets	Whitby	Salsalate tablets	Duramed, Geneva, Par
		Salsitab Tablets	Upsher-Smith
		Soma Compound w/Codeine Tablets	Wallace
		Soma Compound tablets	Wallace
		Supac	Mission
		Synalgos-DC Capsules	Wyeth-Ayerst
		Talwin Compound	Sanoff-Winthrop
		Zorprin	Boots
Meprobamate & Aspirin Tablets	Paru		

Kegel Exercises

Male urinary continence is afforded by two levels of resistance. First is the prostate which provides a passive resistance, requiring no thought process from the patient. The other is the active resistance provided by the pelvic floor muscles. These muscles need to voluntarily contract in order to provide resistance. Most men rarely ever have to use these muscles, especially when standing, coughing, laughing, bearing down, etc... As such, the male pelvic floor muscles are rarely used and often “out of shape”, particularly in men 50-70 year of age.

Following radical prostatectomy, the only source of resistance to urinary flow is the pelvic floor muscles. Therefore, it is essential that the patient start training this muscle group well before surgery to prepare for the workload. The Kegel exercises are performed to help strengthen the pelvic floor

and improve urinary control after surgery. Therefore, once you have set a date for surgery you will be asked to adhere to a daily Kegel exercise schedule. It is important to remember that the more conscientious you are the sooner you will regain bladder control postoperatively.

How to find the pelvic muscles

Some people find this muscle by voluntarily stopping the stream of urine. If there is movement of your stomach, legs or buttock muscles you are not performing these exercises correctly. At the time of your initial consultation a rectal examination will be performed which will help you to better understand and identify the correct muscles. These exercises can be practiced anywhere and anytime. Work these exercises into your daily routine. The exercises cannot hurt you. If you are getting back pain or stomach pains, you are probably not performing them correctly. Remember to breathe normally while exercising.

Recommended Kegel Exercise Regimen

Once you have made a decision to have surgery it is important to begin Kegel exercises. Your surgeon recommends at least 100-200 repetitions per day divided into two to three sessions. Each exercise should be done for 5 seconds then relax for 5 seconds. It is also acceptable to do fewer exercises more frequently as long as the total number per day remains the same.

It is essential to continue performing the exercises after surgery to maintain good pelvic floor muscle tone and endurance. Importantly, you will develop an automatic reflex of contracting the pelvic floor muscles when performing activities that increase abdominal pressure (e.g., laughing, coughing, squatting, etc...). This reflex will prevent urinary leakage at the most susceptible times of the day.

5. GENERAL INFORMATION

Parking

The University offers special parking rates. Self-parking and valet services are available. Full valet services are available at the following entrances: Lying-In, Bernard Mitchell and DCAM between the hours of 6:00 a.m. and 6:30 p.m. Between 6:30 p.m. and 9:00 p.m., valet attendants are only available to retrieve your car. Should you leave later than 9:00 p.m., your keys will be given to the garage cashier, who will direct you to the location of your car. Reduced rate parking coupon booklets can be purchased in the Admitting Office located on the second floor of the Bernard Mitchell Hospital and from the cashier on the first floor of the DCAM building. These coupons do not expire and can be used for valet services as well as self-parking.

Telephone

To place calls from your hospital room to phone numbers outside of the 312 or 773 area code, a long distance calling card is required. If you do not have one, cards for suburban and long distance service can be purchased at a machine adjacent to the Admitting Office.

Spiritual Advisors

Spiritual advisors of all denominations are available. Either the floor nurse or the admitting personnel can assist you in making visitation arrangements if you so desire.

Hotel Accommodations

The Ramada Inn Lake Shore offers reduced rates should family and friends desire to stay within close proximity to the hospital. The Ramada is located ten minutes from the hospital. Shuttle services are available to and from the hospital. For inquiries please call (773) 288-5800.

Wooded Isle Suites is located six blocks from the University of Chicago Hospital. For inquiries call (773) 288-6305.

The Omni Suites Hotel also offers reduced rates. The Omni is located at 676 North Michigan Avenue in downtown Chicago, near the Water Tower. The telephone number (312) 944-6664.

The hospital website offers a complete list of hotel accommodations with reduced rates. Please refer to <http://www.uchospitals.edu/visitor/hotel/>.

Private Rooms

Should you request a private room you will incur an additional daily charge, as most insurance carriers do not cover private room rates. **Private rooms can be requested, however, they cannot be guaranteed.** Every effort is made to fulfill your request. Should you get a private room, your family members will be allowed to stay in your room overnight. Unfortunately, you are not allowed overnight guests if you are in a semi-private room.

What to Bring to The Hospital

A robe and slippers as well as your toiletries are sufficient. Please leave valuables at home. You may want to keep a few dollars at your bedside should you desire to purchase a daily newspaper. You may be more comfortable if you wear loose fitting clothes at the time of discharge, such as jogging pants. Jockey underwear for scrotal support is also recommended. Please let your family and friends know.

6. OTHER TREATMENT OPTIONS

Perineal Prostatectomy

A perineal prostatectomy is done through an incision under the scrotum. Compared with the radical retropubic approach, the recovery is somewhat quicker because there is no large incision on the abdomen. However, the recovery time for a robotic radical prostatectomy is as fast or faster than a perineal prostatectomy. There are some disadvantages to this approach. It may be more difficult to spare the nerves that control erection. Also, the lymph nodes cannot be removed through the same incision. We do not perform perineal prostatectomy at The University of Chicago.

Radiation Therapy

Radiation therapy involves the use of concentrated focused x-rays to destroy cancer cells. The treatment is administered daily Monday through Friday for 6-8 weeks. This type of delivery is called external beam radiation therapy. If radiation therapy fails, surgery can be performed, however, complication rates following surgery are higher and the effectiveness of surgery is reduced.

An alternative method of delivering radiation is to use brachytherapy, or treatment that is delivered directly into the prostate. By means of ultrasound guidance, radioactive seeds are placed into the prostate. This procedure is performed in the operating room under anesthesia, and most patients go home the same day.

Cryosurgery

Cryosurgery involves the use of probes to freeze the prostate and thus kill cancer cells. This procedure is done under ultrasound guidance. The probes are temporarily placed in the prostate through the perineum (skin beneath the scrotum) and are subsequently removed at the end of the procedure. Most patients go home the same day or the following day. We do not perform cryosurgery at The University of Chicago.

Hormonal Therapy

The use of hormones to treat prostate cancer generally does not eliminate all of the cancer from your body, but rather slows the growth, thus keeping the cancer under control for a variable period of time. As the cancer is dependent on the male hormone testosterone to grow, reducing testosterone levels in the blood is beneficial. Although hormonal therapy can slow the cancer growth, it seldom cures the cancer. Hormonal therapy is often the treatment of choice in men with metastatic or advanced prostate cancer. The most common way to deliver the hormone treatments is by intramuscular injection every few months. A small surgical procedure to remove both testicles in the scrotum is another option.

Active Surveillance

Some men with early stage cancers may be candidates for active surveillance. Typically this involves following the PSA levels closely as well as interval repeat biopsies of the prostate to ensure that the cancer is not progressing. If the cancer becomes larger or more aggressive, then treatment can be initiated. Although younger and healthier men are usually counseled toward active treatment, other patients with early cancers are at least considered for active surveillance. We do not use a chronological age cutoff for any treatment modality. We believe that biological age (i.e., the current health of your body) is more important when considering treatment options.

7. SURGICAL AND POSTSURGICAL PROCEDURES

Robotic Radical Prostatectomy

The surgery is performed with the da Vinci™ surgical system. Six small (~ 1 cm) incisions are made on the abdomen to gain access to the prostate. The surgeon performs the surgery at the robotic console which controls the instruments inside the patient's body. A surgical assistant is at the patient's bedside helping with the procedure. The prostate (and adjoining seminal vesicles – small organs that help make semen) is removed by separating it from the bladder and urethra as well as the rectal wall. The bladder and urethra are then sewn back together. During the procedure, the nerves that control erections may be spared on one or both sides. The decision to spare the nerves is based on several criteria, but most importantly the location, amount, and aggressiveness of the cancer. **The decision about sparing the nerves will be discussed at your consultation, but ultimately the final decision is made in the operating room. Based on the features of your cancer, your surgeon will decide whether or not to remove the pelvic lymph nodes.** Certainly the larger or more aggressive cancers require lymph node removal, but each surgeon has his or her own criteria, and the decision is made on a case-by-case basis. If the lymph nodes are removed, your surgeon may send them for immediate preliminary analysis in the operating room (also known as “frozen section” analysis). If this is the case, your family will be updated with those results. The recovery is essentially the same with or without lymph node removal. The prostate is removed through the incision closest to the belly button, which is slightly enlarged to allow for removal. The skin incisions are closed with absorbable stitches. The entire surgery takes about 2-4 hours. There is significant variability in the length of surgery due to factors such as patient body habitus, previous surgeries, and intra-operative anatomy. Your surgeon will give your family updates every hour on the progress of the surgery.

The major advantages of the robotic approach include significantly decreased blood loss, decreased post-operative pain, earlier hospital discharge, and faster recovery. At The University of Chicago, the cancer control, urinary function, and sexual function outcomes have been as good with the robotic prostatectomy when compared with the open retropubic approach.



da Vinci™ surgical system

Radical Retropubic Prostatectomy

Surgery is performed by making an incision in your lower abdomen from the belly button to the pubic bone. The prostate (and possibly the lymph nodes) is then removed and the bladder is subsequently reattached to the urethra. The skin is closed using surgical staples. If the surgery proceeds as planned, the operation lasts approximately 2-4 hours.

Impact of Surgery on Bladder and Sexual Function

Bladder function will be affected by the operation. There may be some dribbling for several weeks to several months after the catheter is removed. Leakage of urine may be most evident when going from a sitting to standing position and when engaging in increased physical activity. Adhering to daily Kegel exercises will improve urinary control in the immediate post-operative period and over time. For a very small percentage of men, urinary function does not return to baseline level.

Sexual function is a very sensitive and important issue. Because the nerves that stimulate sexual function in men are also located in the surgical area, problems such as the inability to achieve an erection can occur as a result of the surgery. Your surgeon will make every effort to preserve these nerves, so that the chance of sexual impairment is lessened. If a nerve sparing procedure is performed, your surgeon will encourage the early use of an oral agent such as Viagra, Cialis, or Levitra, to be taken several times per week. These medications will increase the blood flow to the penis during the recovery phase and will help erectile function return more rapidly. Your surgeon will explain the details of this medication regimen during your consultation. It can take up to 18 months following surgery to realize optimal sexual function. There are other options to achieve erections if medications are not successful.

Because the prostate and seminal vesicles are removed and the vas deferens are cut during the surgery, you will not have any significant ejaculate during orgasm. The sensation will not be altered, but fluid will no longer come out.

Incisions

After robotic surgery, you will have six small incisions which have been sewn closed and covered either with adhesive strips or a clear protective solution. A surgical drain may exit your body through one of the small incisions on the abdomen; it is usually removed prior to hospital discharge. **Your surgeon will decide whether or not a surgical drain will be left in place.**

After the open retropubic radical prostatectomy, you will have a vertical incision from the pubic bone to the belly button. A surgical drain will likely be placed and exit the abdomen to one side of the incision. The drain will most likely be removed before you are discharged.

Recovery In the Hospital

After your surgery you will be taken to the recovery room. The average stay is 2-3 hours. When you awaken in the recovery room, you will have a tube through your penis draining your urine into a bag. You will also have an intravenous line that will provide hydration. You may or may not have the surgical drain described above.

Robotic Prostatectomy

You are encouraged to sit in a chair and take a short walk on the evening of the surgery. Please walk again the next morning. You can eat a regular diet immediately after surgery. Take it slow with the food, and if you experience nausea stop eating. Most importantly, stay hydrated by drinking plenty of fluids. Your pain in the hospital will be controlled initially with an intravenous medication called Toradol, and then with Tylenol and Motrin. In the rare instance of breakthrough pain, additional medications will be administered. Virtually all of the patients are discharged home on the first post-operative day. The nursing staff will provide catheter care teaching. Rest assured that you will only be discharged if you have met all of the criteria. If there is any question, you will remain in the hospital until ready for discharge.

Radical Retropubic Prostatectomy

You will be encouraged to sit in a chair and walk on the first post-operative morning. You will likely

start a clear liquid diet after surgery. If you tolerate the clear liquids, you will be advanced to a regular diet. Your pain will initially be controlled with some form of oral narcotic medication. Breakthrough pain can be managed with intravenous medications as needed. Most patients are discharged home on the second or third post-operative day.

After the robotic or open retropubic surgery, blood clots in the legs and infections in the lungs, such as pneumonia, may occur. To minimize the chances of these complications occurring, it is important that you begin to walk post-operatively, as described above. You will also be encouraged to cough and do deep breathing exercises. Deep breathing expands the lungs and aids in moving any mucous that may have collected in the lungs until you eventually cough it out. To achieve maximum lung expansion, a sitting position in a chair or while in bed with the head elevated is preferred. You are also encouraged to use a special device called an incentive spirometer that also promotes deep breathing. You may be more comfortable when you do coughing and deep breathing exercises if you place a pillow or blanket gently over abdomen. Please take your pain medication. The less pain you feel, the easier these tasks will be.

To improve the circulation in your legs while in bed, you should also move your legs i.e., point your toes toward the bed, pull the feet up pointing the toes toward your chin, and move each foot at the ankles making circles. While lying in bed, please keep the sequential compression devices on your legs to help with your circulation.

Pathology Results

It will be at least 7 days before the results of the laboratory tests on the tumor that was removed will be available. These results will be discussed with you and your family as soon as they become available.

Post-operative Adjustments

Stress incontinence is common in most men after the catheter is removed. Urinary control improves in the early weeks and continues to improve in the months following surgery, at which time pads are no longer needed. For the few men who may encounter significant urinary incontinence, non-surgical as well as surgical treatments are available.

New techniques have reduced the extent to which sexual function is affected by the surgery. However, some disruption of the nerves that control sexual function may be unavoidable. It is important that these issues be discussed with the surgeon before the procedure is done. Your spouse or partner should be included in this discussion.

Additionally, the presence of cancer and the side effects of treatment can cause emotional distress that can affect one's self-image and thus have a negative impact on sexual function. When you recover from surgery, your surgeon will discuss the use of pharmacologic agents to stimulate erectile function in an attempt to shorten the length of time until spontaneous erections firm enough for penetration return.

It is important that you, your family, and others close to you realize that the emotional recovery from this type of surgery can take many months. Your physician and the support staff involved are available.

Long-term Follow-up

After treatment has been completed, it is important that you continue follow-up with your surgeon on a regular basis. Typically, a PSA level will be drawn at 6 weeks, 3 months, 6 months, and 12 months

post-operatively, and then on an annual basis if it remains undetectable. Each laboratory has a different level for what is considered undetectable (based on the PSA test used). At The University of Chicago, a PSA level < 0.05 is considered undetectable. After prostate removal, an undetectable PSA level indicates that there is no cancer remaining. A rising PSA level usually indicates recurrent prostate cancer. Under these circumstances your surgeon will discuss with you the need for further evaluation and treatment. Your surgeon would like you to follow-up at The University of Chicago for at least the first year after surgery. Post-operative visits are usually at 3 months, 6 months, and 12 months. PSA tests can be drawn at outside laboratories and the results faxed to your surgeon. If your recovery has gone as planned, you may follow-up with your local urologist after one year; he or she will keep in close contact with your surgeon.

Cancer Risk Clinic

Some families are prone to multiple occurrences of cancer. Programs designed to offer advice on preventative care and the early detection of cancer, as well as genetic counseling, are available to patients and their families who may be at increased risk due to medical or genetic conditions. To obtain more information or to make an appointment, call the Cancer Risk Clinic at (773) 702-6149.

8. DISCHARGE INSTRUCTIONS

Following are general guidelines to speed your recovery and to enhance your comfort after you have left the hospital.

Activity Guidelines

Moderate physical activity is good for you, helps increase your strength after surgery, and is an important factor in your recovery. Moderate exercise helps your wound heal normally and helps prevent complications, such as pneumonia. Activities such as walking around the house, going up the stairs slowly, and taking walks around the neighborhood are encouraged. As a general rule, if the activity hurts, it probably is too strenuous. You should alternate periods of exercise with periods of rest.

Three things you should avoid

- **Heavy lifting.** Avoid lifting anything that weighs more than 10 pounds, including children and pets, for four to six weeks after surgery.
- **Strenuous exercise.** Even if tennis or aerobic dancing or running is a normal part of your daily life, avoid such activities for four to six weeks after surgery, until you have regained your strength and obtained your physician's approval to resume. Substitute moderate activity.
- **Total bed rest.** Avoiding physical activity increases the chances of complications and delays wound healing. Gradually increasing your daily activity will make you stronger.

You should not sit in a hard chair or other hard surface for prolonged periods, for several weeks, because this may be quite uncomfortable. When you do sit, sit on a soft surface and lean back to keep pressure off your **perineum**, the area between the base of the scrotum and the rectum.

Your penis and scrotum may become bruised and swollen. This is normal and will resolve in a few weeks. If particularly swollen, wearing jockey underpants will be helpful for support.

On the day of discharge you may find the ride home more comfortable if you sit on a soft pillow or rubber/foam donut.

Pain Control

To control any pain that you may have, you should take **Motrin** (three 200 mg tablets or one 600 mg tablet) by mouth every six hours during the daytime and before bed. This medication can be purchased over the counter and without prescription in any drugstore. You can also take **Tylenol** 650 mg (two 325 mg tablets) by mouth every 6 hours. Alternate the Motrin and Tylenol so you are not taking them at the same time. After three days, stop taking these medications regularly. At this time, take Motrin and/or Tylenol only if you have pain. Remember not to take Motrin on an empty stomach. Speak with your surgeon about alternate pain control medications if you cannot take Motrin.

Bowel Function

It is important that you avoid constipation during the first two weeks after surgery. Your bowel movements should return to normal within several days following discharge home. If you feel you are constipated, you may take prune juice or stewed prunes to assist your regularity. Your surgeon may also recommend **Colace**, a gentle stool softener. If you feel you are severely constipated, you should take one ounce of **Milk of Magnesia**, which can be purchased at any drugstore. If your constipation persists please contact your surgeon. **Do not place any suppository or enema into the rectum.**

Bathing

You may shower. The incisions and staples can get wet. Just pat them dry with a towel. The catheter can also get wet. Gently wash the tip of the penis where the catheter enters with soap and water. You should not take hot baths while the staples or urinary drainage catheter are in place.

If you have surgical staples, they are removed from your incision one-week postoperatively and replaced with small strips of tape. Leave the strips in place when you bathe. It is OK to get them wet. After bathing, just pat (don't rub) them dry with a towel. After a few days, they will begin to curl up and fall off on their own.

Your Diet After Surgery

You have undergone a major operation. Therefore, it is important that you eat a proper diet and obtain sufficient rest over the next few weeks. You can eat a regular diet without restriction, including alcohol in moderation if desired. A vitamin tablet may be taken daily for one month after the surgery to help maintain your nutritional equivalents.

Fever

You should notify our office if you develop any fever (temperature ≥ 101). After hours, page the resident on call at 773-702-6800.

Catheter Care

You are being sent home with a catheter in your bladder. This will stay in for 5-10 days.

You will be sent home with two urine collection bags for your catheter. One is a large bag that should be used at nighttime so that you do not have to get up during the night to empty it. The other is a small bag (the "leg bag") that may be attached to your leg and worn under your pants for daytime use. It holds a smaller volume of urine and so it will need to be emptied more frequently. **You should not sit or lie down in bed with the leg bag for long periods as it will not drain well.** Make sure that the catheter bag is always positioned below the level of the bladder and that the tubing does not kink and block the flow of urine.

Your catheter will be secured to your leg in such a way that if it gets inadvertently pulled, it will not put tension on your bladder. You may retape the catheter if the tape comes off (such as after a shower). The leg bag also has straps that attach it to your leg. When tightened, you should be able to slip one finger under the strap. If you are not able to do this, the leg bag is too tight.

You should wash your penis around the catheter with a washcloth and soap and water 2-3 times a day. After doing this you should apply a small amount of antibacterial ointment to the tip of the penis. This will lubricate the catheter so that it causes less irritation.

You may see some blood in your urine or draining from the tip of your penis around the catheter. This usually occurs after having a bowel movement or exercising. Please do not be concerned about this. Simply drink additional fluid to increase your urine production. This will help clear the blood

in your urine and keep the blood from clotting in the catheter.

If you notice more frequent blood or urine draining around the catheter at the tip of the penis, you may want to place some gauze around the penis to absorb the fluid or wear a pad inside your underwear to avoid staining your clothing. Bloody drainage around the catheter is not a problem as long as urine is draining into the collection bag. This drainage around the catheter may continue until the catheter is removed.

You may experience a sudden and intense urge to urinate which may be uncomfortable and associated with urine flowing both through the catheter into the bag and around the catheter from the tip of the penis. This is called a bladder spasm and occurs because the bladder contracts prematurely. Bladder spasms usually occur infrequently and go away completely after the catheter is removed. As long as urine continues to drain into the bag, bladder spasms are usually not a problem unless they occur so frequently that they are causing discomfort. If bladder spasms become a problem, please call your surgeon or one of the urology residents so that we can prescribe a medication to reduce the discomfort.

If you feel that your catheter is not draining properly or that your bladder is full, please contact your surgeon or one of the urology residents immediately. You may have developed a blockage in your catheter, which can be resolved by gently irrigating the catheter.

Appointments for Catheter and Staple Removal

When you are ready to leave the hospital, your surgeon will tell you when to return for removal of the skin staples (if you have them), which is done by using a staple-removing device. After your staples have been removed, your incision will be covered with adhesive strips. These should remain in place for a few more days to make sure that the incision has healed. These adhesive strips will then fall off on their own or can be peeled off in the shower. Afterwards, do not cover the incision anymore.

When you are ready to leave the hospital, your surgeon will tell you when to return for removal of the urinary catheter. Catheter removal is done easily by deflating the balloon at the end of the catheter with a syringe. After the catheter is removed, you will most likely experience some urinary leakage. Purchase a box of Depend Guards for Men and bring two of these Depend pads and a pair of jockey shorts with you when you come to clinic for catheter removal. Urinary leakage will be particularly troublesome when you are walking, exercising, and especially when you rise from a seated position. Exhaling (breathing out) when rising may help prevent inadvertent leakage. Please do not be discouraged about this. Most patients regain reasonable control within a few weeks, but some take several months.

Kegel exercises are important in helping you regain your urinary control. You should resume doing Kegel exercises after your catheter has been removed. However, if the perineal area is still sensitive and painful delay the Kegel exercises until the level of discomfort is lessened. Other things you can do to help regain your urinary control are to reduce alcohol and caffeine intake, reduce your overall fluid intake (particularly in the late afternoon and evening) and exercise mainly in the morning (rather than in the late afternoon or evening), because your pelvic floor muscles will be more tired at the end of the day.

Until you regain urinary control, use Male Depend Guards to absorb urinary leakage. These guards may be cut in half and placed directly in front of the penis. Cutting the pads in half will reduce the bulk of the pad, and you can use each half separately. As your urinary control improves, you may change to a lighter pad such as a light day menstrual shield. Alternatively, you can place a facial tissue or light paper towel inside your underpants. Urinary control almost always returns with time, but the process may take longer than you expect. Please be patient and do your Kegel exercises! If

you get discouraged or have any problems, please do not hesitate to call. Remember to only do the prescribed number of Kegel exercises per day. Like any muscle, the pelvic floor can become fatigued as well, so overdoing it with the Kegels can actually exacerbate the leakage.

Complications

The most serious complication that can result from this surgery is formation of blood clots in the legs which subsequently migrate to the lungs. If you develop leg pains, leg swelling, shortness of breath, or chest pain, call your surgeon immediately either in the office or at home or go directly to the nearest Emergency Room. When you get to the Emergency Room, let the staff know that you may have developed a blood clot in your leg or lung and have them get in touch with your surgeon. If he is unavailable, you can always reach the urology resident on call by calling the University of Chicago operator at (773) 702-6800 and asking for the Urology Resident on Call to be paged.

Sexual function

The time to regaining erectile function is variable, usually on the order of weeks to months. Sometimes it can take up to 12-18 months to see the ultimate result. **You can resume sexual activity after the catheter is removed if you have undergone a robotic prostatectomy.** Wait about 2 weeks after the catheter is removed if you have undergone an open retropubic prostatectomy. You can do no harm trying, and therefore we encourage patients to attempt sexual activity at this time. You may find it difficult to obtain an erection, but direct genital stimulation may help. We encourage the early and regular use of oral aids such as Viagra which your surgeon will prescribe either prior to surgery or once the catheter is removed. Remember, you can reach orgasm or climax even without an erection. When you do reach a climax, however, there will be no or very little fluid produced because the prostate and seminal vesicles have been removed. For men who do not recover erections sufficient for sexual activity, several non-surgical and surgical treatments exist, and these can be discussed during your subsequent clinic visits.

9. TELEPHONE NUMBERS

Dr. Arieh Shalhav **Office:** (773) 834-9889

Dr. Gary Steinberg **Office:** (773) 702-3080

Dr. Gregory Zagaja **Office:** (773) 834-4830

Dr. Scott Eggener **Office:** (773) 702-5195

Urology Resident-On-Call (773) 702-6800 and ask the operator to page the urology resident on call.

10. GLOSSARY

analgesic any medication that relieves pain

anal sphincter the ring of strong muscle that surrounds the anus and controls defecation

anus the opening through which stools are expelled from the body

autologous blood your own blood

bladder the body organ that stores urine

bone scan nuclear medicine exam that utilizes a radionuclear isotope to visualize the skeletal system

carcinoma the medical term for cancer

CAT scan (or CT scan) an x-ray procedure that produces computerized images of internal organs

contrast medium a substance introduced into the body (orally, rectally, or by IV) to enhance X-ray images of an organ, tissue, or other body structures

deep vein thrombosis blood clot in the deep veins of the legs

digital rectal examination the probing of the rectum with a gloved finger to examine the prostate and rectum

electrocardiogram (EKG) a test that "maps" heart function

epidural anesthesia a method of anesthesia and pain control similar to spinal anesthesia

excision the removal of tissue by cutting

incontinence the inability to control urine

localized limited or confined to a specific area

lymphocele a collection of lymphatic fluid following surgical removal of lymph nodes

MRI a diagnostic test that relies on magnets and computers to produce images of the body

metastases spread of cancer from one organ to other parts of the body

oncologist a physician who specializes in the treatment of cancer

perineum the area between the anus and external genitalia

prophylaxis measures designed to preserve health and prevent the spread of disease

prostate gland a walnut size gland located below the bladder that helps produce semen.

PSA (prostate specific antigen) a protein produced by the prostate that is used to screen individuals for prostate cancer and to evaluate the effectiveness of treatment

pulmonary embolism obstruction of one or more pulmonary arteries by a blood clot that originates in the venous system, becomes dislodged and travels to the heart

rectum the final six inches of the colon, in which stools are held until defecation

resection the surgical removal of an organ or part of an organ

semen the sexual fluid produced by the prostate, seminal vesicles, and testicles

seminal vesicles two glandular structures attached to the prostate and behind the bladder

testicles the male reproductive gland located in the scrotum which produce sperm and the male hormone testosterone

transrectal ultrasound a procedure that produces detailed pictures of the interior of the prostate by transmitting sound waves through the rectum

urethra a channel that carries urine from the bladder and semen from the prostate

vas deferens two tubes through which sperm travels from the testicles through the prostate and into the urethra