

In May of 2004, Doctors Christopher Knoedler and Robert Gaertner performed the first private practice robotic prostatectomy in Minnesota and the five state area. Since then they have quickly accrued the largest robotic surgical experience in Minnesota and the upper Midwest. To date, they have combined as a team in performing over 5000 robotic prostatectomies, putting them in the top five robotic surgical teams in the United States.

In addition to caring for the patients in their community, Drs. Knoedler and Gaertner have a large referral based practice from around the five state region, from each of the coasts as well as internationally. Patient referrals are accepted from their fellow primary care physicians, their fellow urologist but are just as commonly sent from their former surgical patients.

Drs. Knoedler and Gaertner are affiliated with St. John's Hospital/Healtheast in Maplewood and United Hospital in St. Paul, MN. Unique awards and features of these hospitals are listed.

- United and St. John's Hospitals have both been awarded with the "Robotic Center of Excellence," the only 2 hospital in the state given this distinction.
- Due in part to the large volume of their robotic practice, St. John's have been recognized as one of sixteen hospitals in the country to be in both the "Top 100" for robotic procedures for both Urology and Gynecology.
- St. John's hospital has been recognized by US News and World Report as a Top 50 hospital in Urology.
- United and St. John's Hospitals are the leading institutions in the region with five and three state-of-the-art *da Vinci* robots respectively.
- United and St. John's Hospitals staffs are highly trained in robotic surgery and set the standard for other programs in the region. United Hospital is a Training Epicenter for Intuitive Surgical.

At Metro Urology, a unique and comprehensive approach in the treatment of all facets of prostate cancer care is offered. For patients that are candidates for robotic surgery, a 5 step program is outlined.

## Step 1 - Consultation with the Robotic Surgeon

Each patient will have their specific prostate cancer issues addressed. The stage and grade of the cancer, PSA, and the patient's age and overall general health are key elements when deciding on an appropriate treatment. All treatment options are addressed. If robotic surgery is deemed to be the treatment of choice, you will be encouraged to attend our preoperative class.

Suggested websites with an emphasis on prostate cancer:

- Metro Urology [www.minnesotaroboticsurgery.com](http://www.minnesotaroboticsurgery.com)
- National Cancer Institute [www.nci.nih.gov](http://www.nci.nih.gov)
- American Cancer Society [www.cancer.org](http://www.cancer.org)

- National Comprehensive Cancer Network [www.nccn.org](http://www.nccn.org)
- Intuitive Surgery [www.intuitivesurgery.com](http://www.intuitivesurgery.com)
- WebMD [www.webmd.com](http://www.webmd.com)

## Step II - Penile Rehabilitation and Preoperative Robotic Class

The Surgical Impotence Management Strategy (SIMS) was coined and developed by Minnesota Urology. The SIMS protocol involves preoperative instruction and teaching, as well as a thorough and comprehensive follow up for all patients undergoing prostate cancer treatment. The program concentrates on the successful return of sexual function through early and aggressive penile rehabilitation.

Penile rehabilitation is specifically designed to help the nerves responsible for erections to recover after surgery, while maintaining the health of the penile tissue. The SIMS Protocol begins with a preoperative class that provides the patient with information regarding the specifics of this Minnesota Urology developed protocol, as well as initializing the follow up scheduled care.

Patients and their spouses or significant others are welcomed and encouraged to attend the initial two hour session, given on selected Wednesday evening. They are provided with an explanation of the upcoming surgical treatment with what to expect before, during and after their hospital stay. A “Care Package” is given to each patient with literature and a drug prescription if appropriate.

Follow up post-operative appointments for this portion of their care have typically already been scheduled by the office. Patients merely need to follow their written instructions and individual guidance in the office, in order to complete the protocol — it’s as simple as that.

You will also learn about exercises that are helpful in regaining urinary control. We encourage patients to begin pelvic floor exercises (Kegel) prior to surgery and resume them after the catheter is removed. Listed are tips on practicing Kegel exercises

### **How to Identify the Correct Muscle**

- To find the pelvic floor muscle, place your finger on your anus. Try to squeeze the muscle. You should feel it contract. This is the muscle you want to exercise. This muscle is the same one you use to hold back gas or a bowel movement. When you squeeze the anal sphincter, the urethral sphincter contracts at the same time.
- REMEMBER do not squeeze your stomach, leg or buttock muscles. To find out if you are also contracting your stomach muscles, place your hand on your stomach while squeezing your pelvic floor. If you feel your stomach or body move, then you are using too many muscles.
- These exercises can be practiced anytime, anywhere. Since this muscle is inside your body, no one will see you exercise it.
- Exercising the pelvic floor muscle after surgery will gradually regain strength and increase the circulation in that area.

### Doing the Exercises

- Gradually, not quickly, squeeze the muscle you identified earlier. Take a breath in as you squeeze the anus. Hold the sphincter contracted for 5 seconds. Release it. Take a deep breath in and then exhale.
- Do 10 exercises in the morning, 10 at noon, 10 after dinner and 10 at bedtime.
- Do gentle and easy gradual squeezes.
- These exercises can be practiced until and after surgery.

### Doing the Exercises after Surgery

- Following surgery you will have a catheter in to allow the surgery to heal.
- **DO NOT DO KEGELS WHILE THE CATHETER IS IN PLACE**
- You can restart the exercises after your catheter has been removed.

Most patients regain urinary control quickly after surgery. Specific maneuvers to expedite return of continence are listed below. These quick squeezes close the urethral sphincter just enough to hold the sphincter closed against the pressure of your abdomen pushing down on the bladder.

You will be using the fast twitch muscle fibers of the pelvic muscle group. If possible, you should practice these moves before your surgery when you are able to identify and feel this group of muscles as they are working.

- As you get up from a sitting position, do a quick squeeze of the anal sphincter (or the whole pelvic hammock of muscles, if you can feel it). Once you are standing, release the contraction and then breathe. If you start to feel urine coming down the shaft of the penis, stop and squeeze again.
- If you feel a tickle in the back of your throat like you are going to cough or sneeze, breath in deeply and quickly squeeze the anal sphincter, holding while you cough or sneeze. You can practice this maneuver by just coughing and squeezing the anal sphincter at the same time.
- Practice squeezing the anal sphincter as you twist or reach quickly for something.
- Do the same quick squeezes of the anal sphincter as you bend over to pick up something.
- When getting out of a car, turn to face the open door; put your feet down on the running board or ground, and as you lean forward, quickly squeeze the pelvic floor muscles, (the anal sphincter). After the surgery, if you leak when you lift your legs to get out of the car, squeeze the anus prior to lifting your legs.

## Step III - The Operation

Routine pre-operative testing is performed prior to surgery. A clear liquid diet is started the day prior to surgery. To help evacuate any contents in the bowel, patients are instructed to use Milk of Magnesia on the day before surgery and administer a Fleet enema the morning of surgery. Patients should receive nothing by mouth for at least eight hours prior to surgery.

A patient is admitted to the hospital the day of surgery. The surgeon once again consults with the patient prior to surgery to address any pre-operative questions. During the surgery, you will be given general

anesthesia. The procedure is performed through 6 small incisions across the mid abdomen. Through these small incisions, fine laparoscopic instruments are inserted to dissect the prostate gland, seminal vesicles, and vasa deferentia from the urethra and bladder. Excellent visualization of the prostate gland and the surrounding neurovascular structures is achieved with the use of a high-powered telescopic lens attached to a camera device. Once the prostate gland is dissected free from the bladder, rectum, and urethra, it is placed in a small plastic bag and eventually removed by extending one of the small incisions to accommodate the prostate. The bladder is sewn back to the urethra to restore continuity of the urinary tract. A catheter is placed through the penis to drain the bladder and allow healing of the bladder-urethra connection. In addition, a small drain is sometimes placed near the surgical site. Once surgery is completed, the family will be able to see the patient one hour later. After lunch the following day, the patient is discharged home with a Foley catheter. Below is a list of post-op expectations.

**Hospital Stay:** Hospital stay for most patients is 1 day.

**Post-Operative Pain:** Because dVP performed through very small incisions, it is associated with little surgical pain. Most patients recover without narcotics. The reduction of pain also permits most patients to get back on their feet within hours of surgery and leave the hospital the next day. A small amount of drainage from the incisions may be seen.

**Bladder Spasms:** Bladder Spasms are commonly experienced following prostatectomy manifested as a moderate cramping sensation in the lower abdomen or bladder. You may have an urgent need to void. Spasms may be exacerbated by sitting to have a bowel movement. These spasms often decrease over time.

**Urinary Catheter:** A urinary catheter is used to drain the bladder for approximately 5-7 days following the surgery. It is not uncommon to have blood-tinged urine for a few days to a week. Blood or urine may leak around the catheter usually, seen with increased activity or bowel movements.

**Pelvic Drain:** If a pelvic drain is placed in the operating room to drain the pelvic space around the bladder-urethra, it is usually removed in 24 hours.

**Diet:** Most patients are able to tolerate clear liquids a few hours after surgery. A regular diet may be started after a bowel movement. Liberal fluid intake is encouraged.

**Bruising:** Bruising on the back may be noted. It may take up to one week to resolve.

**Scrotal Swelling:** 2-3 days after surgery swelling of the penis and scrotum may occur. Placing a wash cloth under the scrotum when sitting or lying down will help alleviate the swelling. Generally, swelling resolves in 3-4 days.

**Fatigue:** Generalized fatigue is common and should start to subside in a few weeks.

**Constipation:** Sluggish bowels for several days to a week following surgery can occur. Stool softeners have been ordered for one month. Milk of magnesia as directed on the bottle may be used.

**Showering:** Wound sites can get wet, but must be patted dry. Showers are permissible but tub baths are not recommended in the first 2 weeks following surgery.

**Activity:** Walking is strongly advised. Prolonged sitting or lying in bed should be avoided. Climbing stairs is encouraged. Driving should be avoided for at least 1 week. Most patients return to full activity an average of 2 weeks after surgery. No biking or horseback riding for four weeks.

**Medications:** With the exception of aspirin or other blood thinners, usual medications can be resumed following surgery. Three new medications will be added; an antibiotic for one week, a stool softener for one month, and a pain medication taken as needed.

## Continence

Seven days after surgery the Foley catheter is removed by our nurse. Kegel exercises should be resumed at this time (see step II). Each patient will meet with the surgeon two weeks post operatively for a check up. Most patients are making good progress with urinary control by this time. Few will be recommended for treatment with a Metro Urology physical therapist for additional help with continence.

## Surgical Impotence Management Strategy (SIMS)

Two weeks post-op, the penile rehabilitation program will be implemented. Treatment will be addressed at the post-operative visit. We have seen great strides in erectile function with early intervention. Each patient will have a tailored course of treatment dependent on their progress. Any additional treatment is done within Metro Urology on an individual basis. Below is a brief summary outlining the SIMS program.

### Phase I

- Begin PDE-5 Inhibitor two weeks after surgery.
- Take one tablet at bedtime 3 times a week.
- Medication will be taken for six weeks.

### Phase II

- Eight weeks after surgery Vacuum Erection Device (VED) training.
- Use VED on a daily basis.
- Continue oral medication.
- Progress monitored at 2, 6, 9, and 12 months.

## Overactive bladder

During the healing process, some patients may experience an “overactive” bladder. These symptoms are manifested by urinary urgency and frequency. There is no specific diet that can cure this problem. However, there are certain dietary habits that may cause your bladder to become overactive. Some patients reduce the amount of liquid that they consume hoping to urinate less often. Actually, reducing your liquid intake causes concentrated urine. Concentrated urine can be more irritating to the bladder lining increasing symptoms. Beverages that are the least irritating to your bladder include: water, apple juice, grape juice, pear nectar and peach nectar.

Certain foods and beverages thought to contribute to an overactive bladder are listed below. You may wish to eliminate some of the following to see if your symptoms improve. Eliminate one at a time for at least a week to see how it affects your symptom

- Coffee, tea- even decaffeinated (herbal teas are okay)
- Caffeine-pop, medications containing caffeine, coffee, tea
- Alcoholic beverages
- Carbonated beverages
- Citrus fruits and juices-oranges, grapefruit, cranberries
- Tomatoes-tomato based products
- Highly spiced foods

- Sugar-honey-corn syrup
- Chocolate-(contains caffeine)
- Artificial sweeteners, especially aspartame

## Step V - Ongoing Care

Prostate cancer requires a lifetime commitment to follow up care. Further visits will include physical exams, PSA blood checks, and penile rehabilitation as outlined in the chart provided below. At selected visits a survey regarding quality of life issues will be administered. The Questionnaire helps us determine our results after surgery. The results can be found in this packet of information titled "Outcomes".

Date From Procedure	weeks			months													
	1	2	8	3	6	9	12	15	18	21	24	30	36	42	48	54	60
MD Visit		•		•			•				•		•		•		•
PSA				•	•	•	•	•	•	•	•	•	•	•	•	•	•
Questionnaire				•			•		•		•		•		•		•
Penile Rehabilitation		•	•		•	•	•										
Catheter	•																
Continence Therapy	(as needed)																

Minnesota Urology continues to strive to deliver state of the art urologic care. We are constantly implementing new ideas and methods into our program in order to bring world class care to our patients.

Most of the information in this handout is from our robotic website

[www.minnesotaroboticsurgery.com](http://www.minnesotaroboticsurgery.com)

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# OUTCOMES

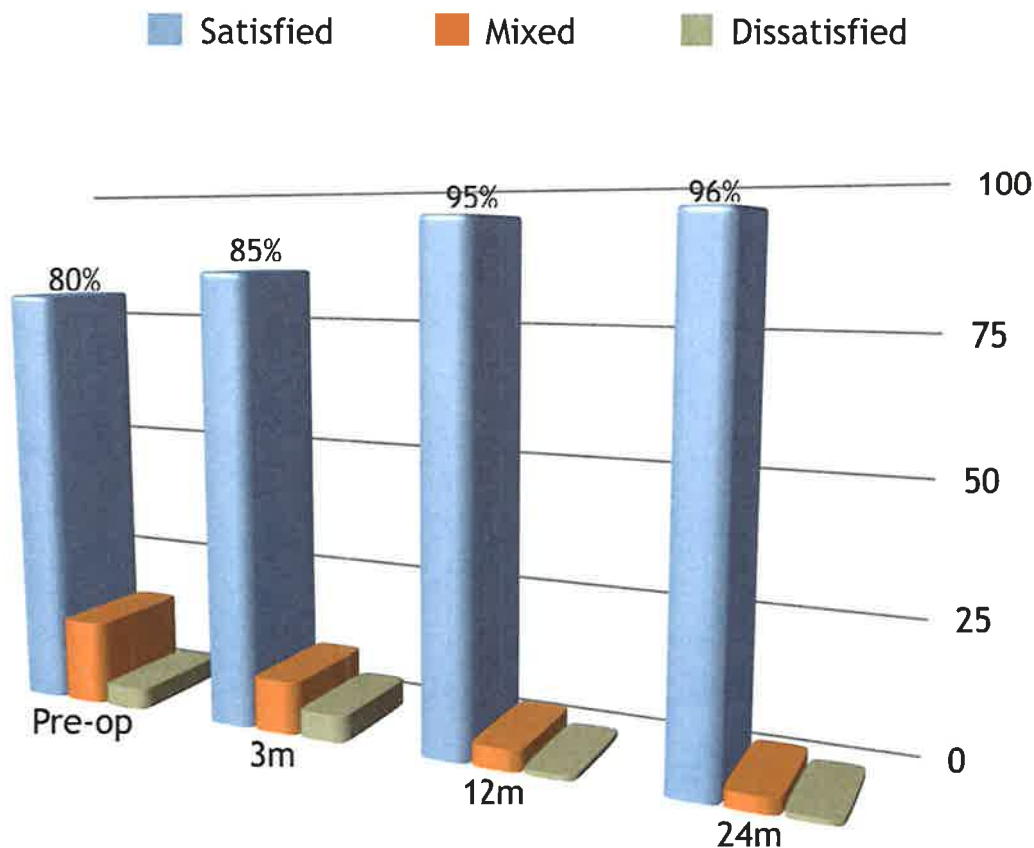
after  
Prostate Cancer  
Surgery

The graphs below represent the outcomes reported by Drs Gaertner and Knoedler patients after a robotic prostatectomy. The data is separated into four categories:

- ▶ Quality of Life
- ▶ Erectile Function
- ▶ Urinary Function
- ▶ Hospital Data

## ▶ Quality of Life (as related to urinary function)

It is not uncommon for patients to be concerned about their postoperative quality of life as it relates to urinary symptoms. The data below demonstrates that patients report a higher satisfaction with their urinary symptoms after prostate removal. As shown below, 96% of patients are satisfied with their urinary quality of life 2 years after surgery compared to 80% before surgery.

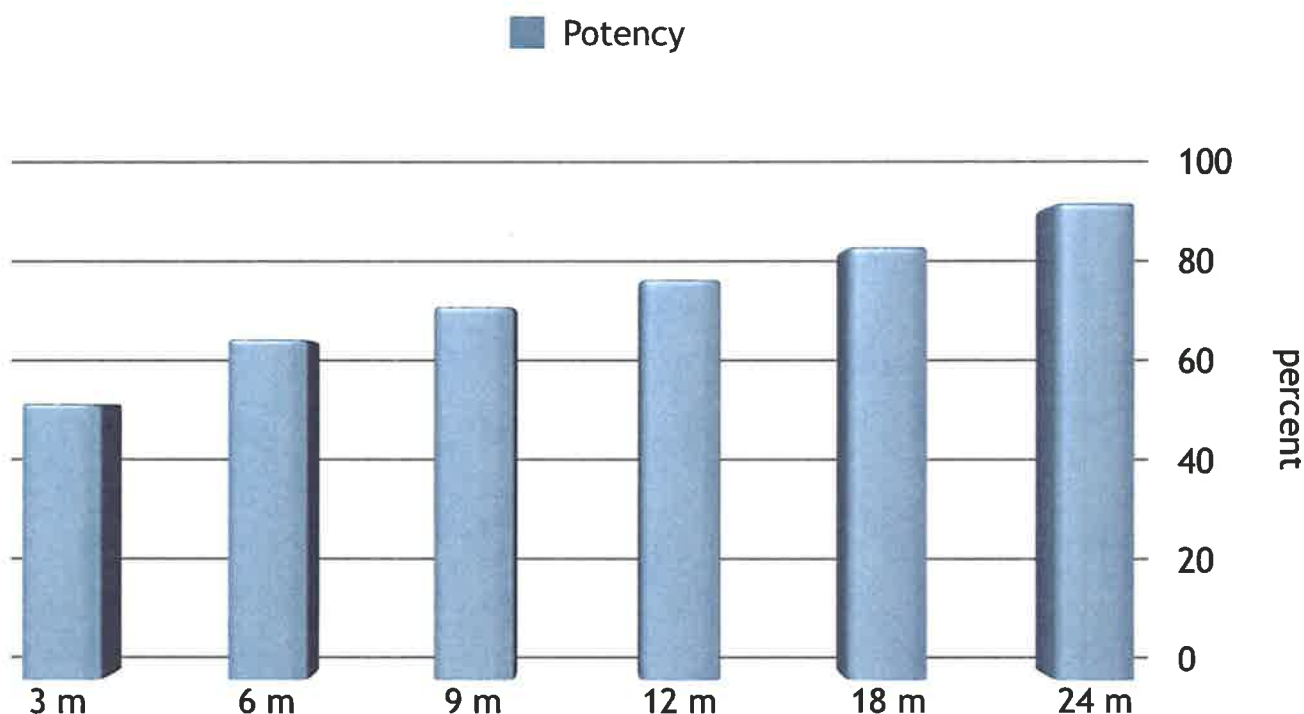


## ► Erectile Function

Small delicate nerves responsible for erectile function run adjacent to the prostate. Trauma or injury to the nerves during surgery may result in impotence. This category is subdivided into Potency and Quality of Erection.

### ☞ Potency

The graph below shows that 89% patients, less than 70 years of age who had good sexual function prior to prostate surgery, will regain potency by 24 months. (ASA 1 and ASA 2).



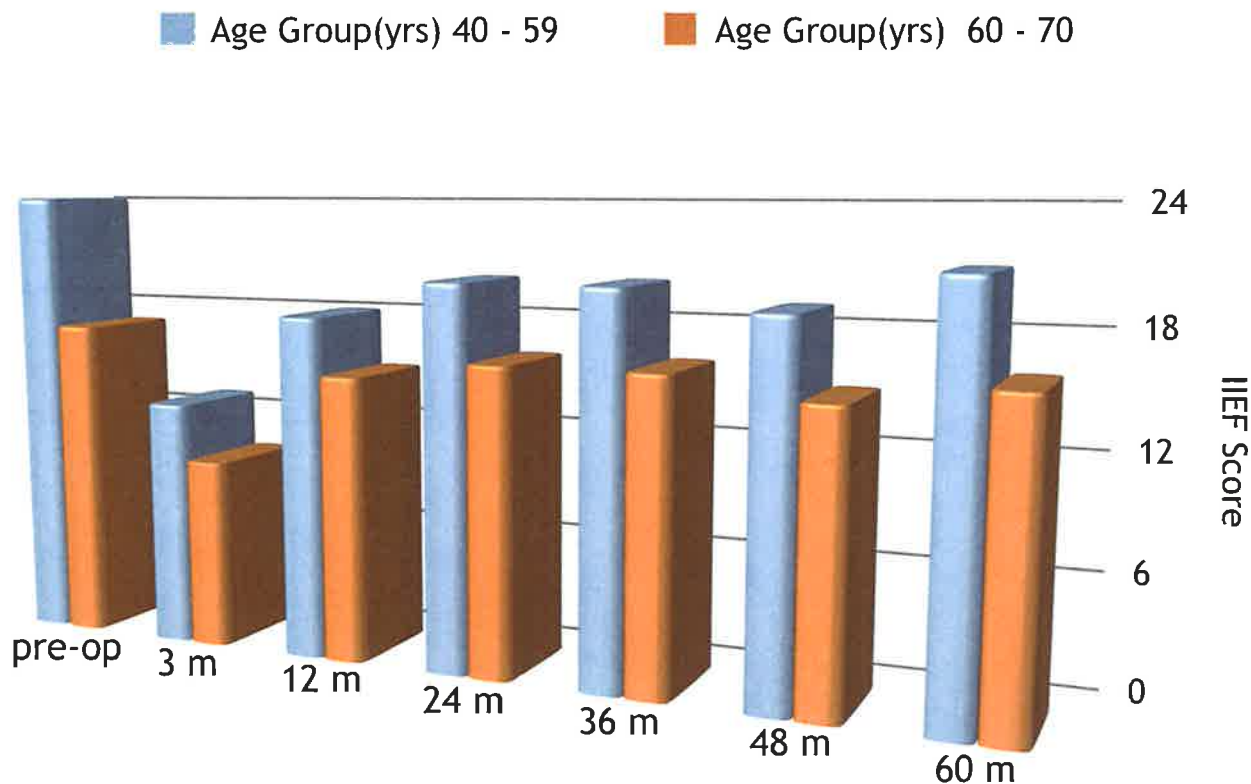
### ☞ Quality of Erection

Prostate surgery patients were asked to fill out an IIEF-5 survey (Standardized form to assess Erectile Function). Patients were at various stages in their care. The IIEF-5 surveys were tallied and scored. Depending on the score, patients were categorized as follows:

- ▶ 5 – 7 severe erectile dysfunction (ED)
- ▶ 8 – 11 moderate ED
- ▶ 11 - 16 mild / moderate ED
- ▶ 17 - 21 mild ED
- ▶ 22 - 25 normal erectile function



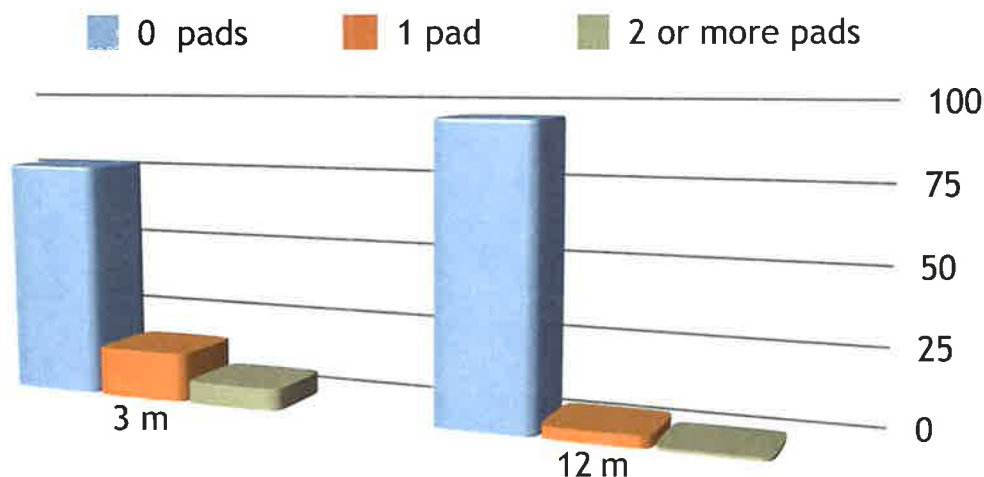
Results of IIEF-5 below, broken into 2 age groups, indicate most patients achieve preoperative erectile function quality.



## ► Urinary Function

Incontinence and irritative voiding symptoms are challenging issues patients may encounter after prostate surgery. We continue to modify our technique to minimize time to urinary continence and irritative voiding symptoms.

### ☞ Urinary Continence

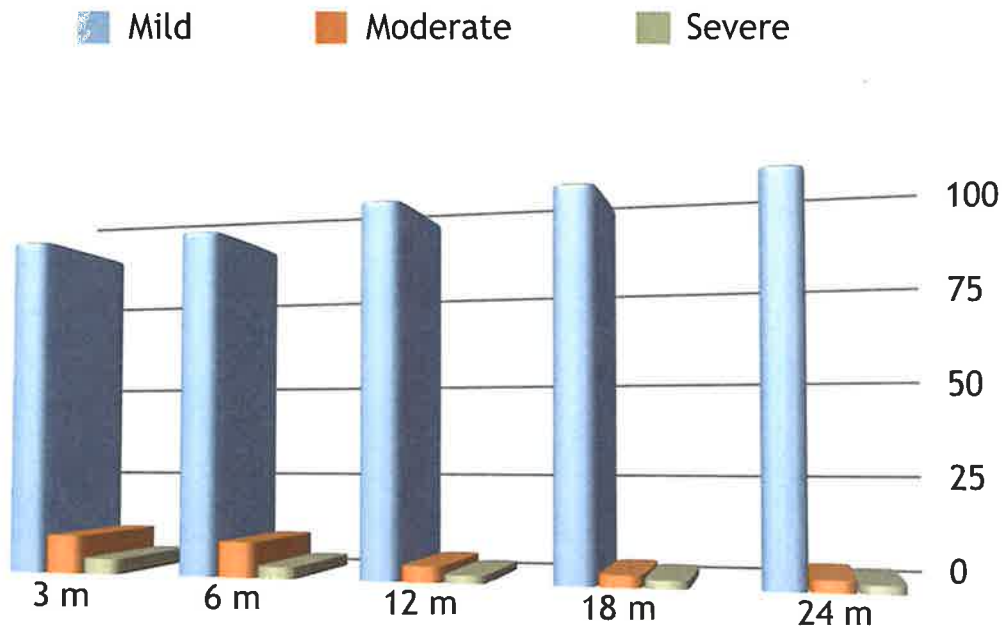


The majority of patients regained urinary control by three months. Approximately 94 – 96% of patients are continent of urine one year after surgery.

## Irritative Urinary Symptoms

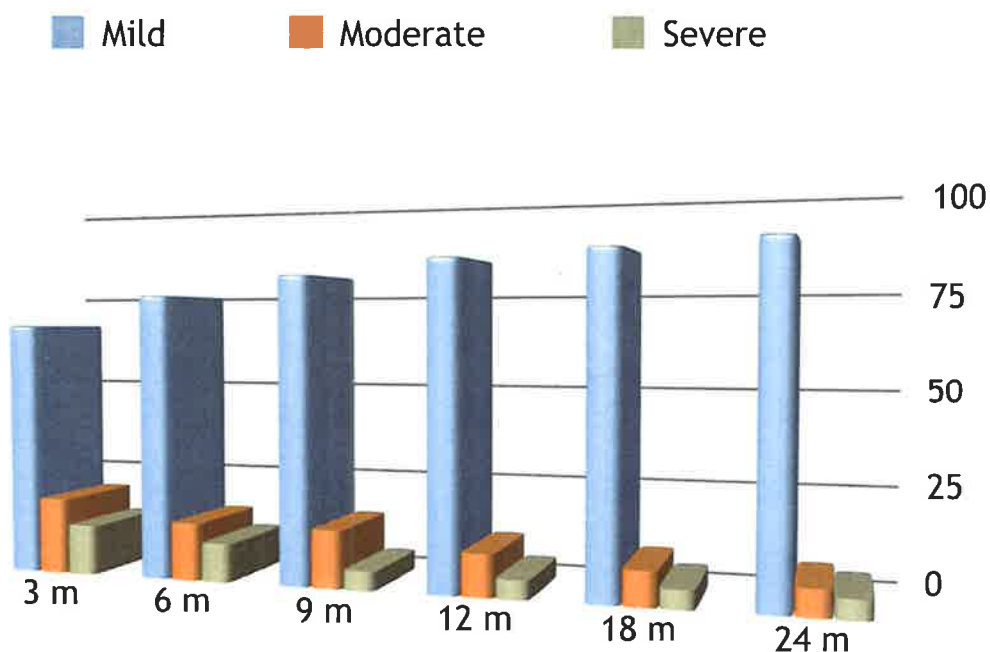
As men age, irritative urinary symptoms can become more pronounced. This usually is attributed to an enlarging prostate. Men may develop an array of symptoms including urinary frequency, intermittency, urgency, weak stream, straining and incomplete bladder emptying. Removing the prostate has a favorable effect on patients with irritative (obstructive) urinary symptoms.

*Postoperative urinary symptoms in patients with mild symptoms preoperative*



Three months after surgery, over 90% of patients report normal voiding symptoms. Over time, approximately 97-98% of patients continue to experience only mild urinary symptoms.

*Postoperative urinary symptoms in patients with moderate/severe symptoms preoperative*



Most patients with moderate or severe urinary symptoms before surgery resolve by three months after surgery. 88% of patients improve over time, experiencing only mild (normal) urinary symptoms.

## ► Hospital Data

Information obtained during hospital stay after robotic prostate surgery.



Average length of stay in the hospital is **1 day**  
95% of patients stay less the 24 hours



Median robotic time is **1 hour and 19 minutes**  
Median operative time is **1 hour and 41 minutes**



Blood transfusion rate is **0.5%**  
< **1%** transfusions in past 3 years



**99%** of patients without a drain

**100%**

No patient excluded from robotic surgery due to body  
or prostate size or previous abdominal surgery

**Q: What is robotic prostate surgery?**

**A:** Referred to by many as robotic surgery for prostate cancer or robotic prostatectomy, *da Vinci*® Prostatectomy is more accurately a robot-assisted, minimally invasive surgery that is quickly becoming the preferred treatment for removal of the prostate following early diagnosis of prostate cancer. In fact, studies suggest that *da Vinci* Prostatectomy may be the most effective, least invasive prostate surgery performed today. The robot, called the *da Vinci* Surgical System, is used to assist in surgical removal of the prostate by providing three-dimensional vision, magnification and an articulating robotic wrist.

**Q: Does the robot perform surgery by itself?**

**A:** No. It simply recreates the actions performed by the surgeon at the console in a more precise manner. The instruments only move if and when the surgeon decides to move them. The surgeon is in control of the instruments and not the robot.

**Q: What if the robotic equipment fails during the surgery?**

**A:** This is a highly unlikely scenario, but in the event that the robot mechanically fails during surgery, the procedure would be completed with either conventional laparoscopic or open surgery.

**Q: How do I know if I am a candidate for *da Vinci* (robotic) Prostatectomy?**

**A:** Potential candidates for the *da Vinci* procedure should ideally be under 75 years old and weigh less than 300 lbs. In addition, previous pelvic radiation or multiple abdominal surgeries will make you ineligible for this procedure. If you meet these criteria, we would like the opportunity to present you with some of the potential benefits of the *da Vinci* Prostatectomy option. Most patients who are candidates for open surgery would have an excellent outcome with this procedure.

**Q: Why should I choose robotic prostatectomy instead of traditional open surgery?**

**A:** If your doctor recommends surgery to treat your prostate cancer, you may be a candidate for *da Vinci* Prostatectomy. This new, less-invasive surgical procedure utilizes a state-of-the-art surgical system that helps your surgeon see vital anatomical structures more clearly and to perform a more precise surgical procedure. For most patients, robotic prostatectomy offers numerous potential benefits over open prostatectomy, including:

- Shorter hospital stays
- Less pain and pain medication
- Less blood loss and transfusions
- Less scarring
- Faster recovery
- Quicker return to normal activities

As with any surgery, these benefits cannot be guaranteed, as surgery is both patient- and procedure-specific. While prostatectomy performed using the *da Vinci* Surgical System is considered safe and effective, this procedure may not be appropriate for every individual.

**Q: Will my insurance cover the *da Vinci* surgery?**

**A:** The majority of insurance companies pay for this surgery as they would the traditional open or laparoscopic prostatectomy; however, there are exceptions. Please consult with your carrier to confirm your coverage prior to surgery.