

# Precise, Minimally Invasive Prostate Cancer Removal

Why *da Vinci*® Surgery may be your best  
treatment option



***da Vinci*® Surgery**  
For Prostate Cancer

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

## Facing Prostate Cancer

Prostate cancer is the second most common cancer in men worldwide with about 900,000 cases reported each year.<sup>1</sup> This disease is most common in the U.S. where one in six men will be diagnosed in their lifetime.<sup>2</sup>

The good news is that with increased awareness and screening, more men are diagnosed early. As a result, most cancers are found while in the earlier and more treatable stages.

This guide provides patients with detailed information about prostate cancer surgery. It also addresses the three main concerns most men have about prostate cancer: getting rid of the cancer while maintaining urinary and sexual function.

### Treatment Options

When prostate cancer is believed to be localized (has not spread outside the prostate gland), there are several treatment options. The most common are:<sup>3</sup>

1. Surgery to remove the cancerous prostate using a large abdominal incision, conventional laparoscopic surgery or minimally invasive robotic-assisted surgery (known as a radical prostatectomy)
2. Radiate the cancerous prostate through external radiation (delivered via X-ray, such as IMRT or stereotactic radiation) or radioactive seed implants (delivered internally, such as with brachytherapy)
3. Freeze the cancerous prostate (cryotherapy)
4. Hormonal therapy, which is not a cure but is often given in conjunction with radiation therapy or cryotherapy
5. Observation (watchful waiting)

Patients should discuss the advantages and disadvantages of each treatment approach with their doctor.

## Surgery:

### Definitive Treatment for Prostate Cancer

*"Because the entire prostate gland is removed with radical prostatectomy, the major potential benefit of this procedure is a cancer cure in patients in whom the prostate cancer is truly localized."<sup>3</sup>*

- 2007 American Urological Association Clinical Guidelines

An estimated 91% of prostate cancer cases in the U.S. are localized,<sup>2</sup> which means most men are potential candidates for surgery to remove the cancerous prostate. Radical prostatectomy is considered a definitive treatment for localized prostate cancer.<sup>3</sup>

Surgery can be performed in a very precise, minimally invasive manner using the *da Vinci*<sup>®</sup> Surgical System.

## Choosing Surgery: Patient Perspectives



**James Porter, MD**

*da Vinci* Surgeon and *da Vinci* Prostatectomy Patient

"...We often see a lot more cancer in the prostate than we would have predicted based on the biopsy. I knew with surgery that I was going to get the final word with regard to how much cancer I had... I guess you could call it 'the need to know.'"



**Donald Sosin**

*da Vinci* Prostatectomy Patient

"You have a chance with this kind of surgery to get rid of the cancer... If I had to do it again, I would do it again — except sooner."

Visit [www.daVinciStories.com](http://www.daVinciStories.com) to hear from more patients on why they chose *da Vinci* Surgery to treat their prostate cancer.

## Surgery: Confidence in Knowing Your Status

Removing the cancerous prostate lets your doctor see the extent and nature of the cancer. This step can be critical. In clinical studies, up to 35% of tumors are undergraded; in other words, the tumors are more aggressive than the pre-surgery assessment and biopsy indicated.<sup>4</sup>

While learning about prostate cancer, you may hear the term “margin.” This refers to whether or not doctors find cancer present at the very edge (the margin) of the prostate gland after it is removed. A negative margin means all edges of the prostate are free of cancer cells. A negative margin status is a good indicator that all the cancer has been removed.

### Surgery: Preserving Your Options

With careful monitoring of your PSA (Prostate-Specific Antigen, a protein that may indicate the presence of cancer), your doctor can detect if the cancer has returned. PSA results are more reliable following a radical prostatectomy compared to radiation therapy.<sup>5</sup>

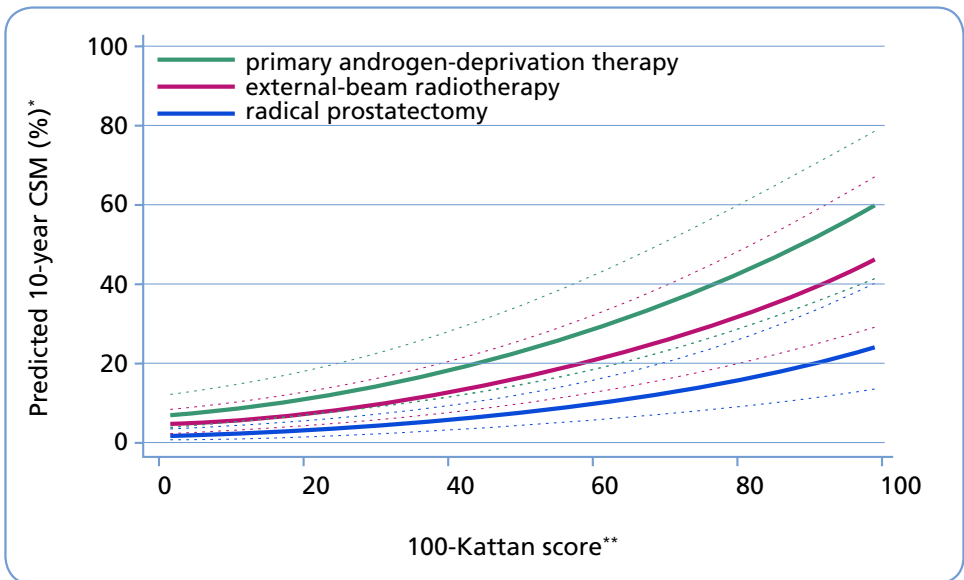
If cancer does return, surgery can also help preserve your treatment options. This is because after radiation therapy, there may be damage to the tissue surrounding the prostate. This makes nerve-sparing surgery an unlikely option. However, radiation usually remains an option for patients who have had surgery to treat their prostate cancer.<sup>6</sup>

# Long-Term Survival and Localized Prostate Cancer

With any cancer treatment, survival is the first priority. Several large studies suggest there is a greater chance of long-term survival for patients who have surgery compared to other potential treatments.<sup>6</sup>

A recent study of 7,500 prostate cancer patients found that men who had a radical prostatectomy had a significantly lower risk of death compared to men who had radiation therapy or hormone therapy.<sup>6</sup> In fact, the death rate among radiation and hormone therapy patients was 2 and 3 times greater, respectively, than those who had surgery.<sup>6</sup>

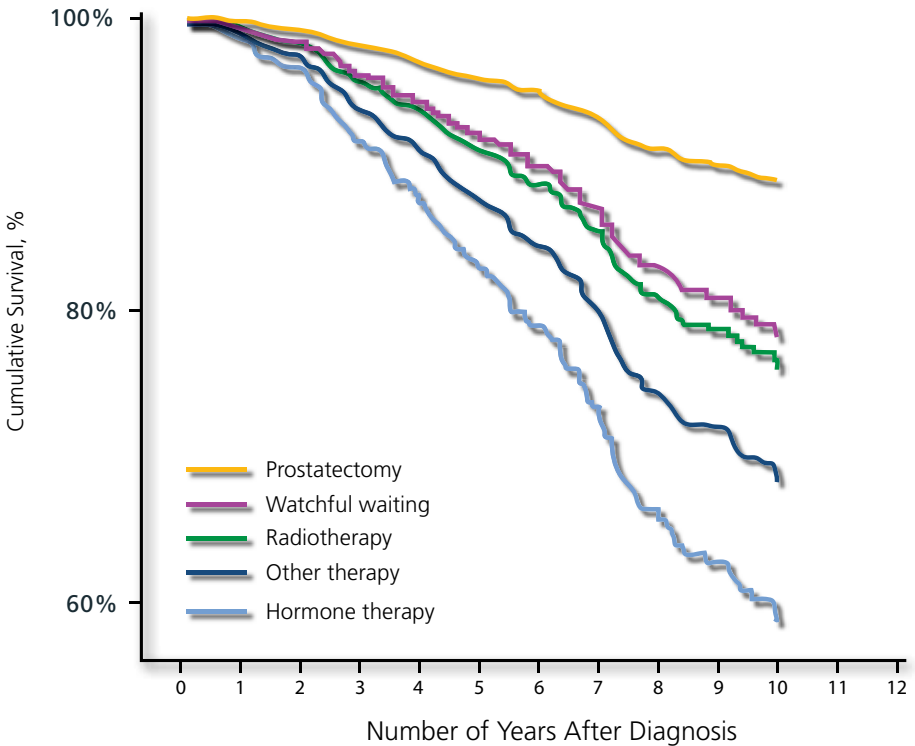
## 10-Year Risk of Death is Lower with Radical Prostatectomy vs. Radiation & Hormone Therapy



\*CSM, (Cancer-Specific Mortality) refers to death that occurs as a direct result of cancer

\*\*A Kattan score is a combination of the patient's PSA, clinical stage of cancer, and Gleason score. A Kattan score is used to predict whether the cancer will return.

## Prostate Cancer - Survival is Better with Surgery



In another study that included watching waiting, patients who had radical prostatectomy had a higher prostate cancer survival rate than men having other treatments.<sup>7</sup>

## Precision with *da Vinci*<sup>®</sup> Surgery

*da Vinci* Surgery provides your doctor with several advantages that can allow him or her to perform a more precise operation.

### Precision

The *da Vinci* System's tiny wristed instruments have an even greater range of motion than the human hand. *da Vinci* seamlessly filters tremors from your surgeon's hands while scaling his or her motions - translating them into more precise movements of the instrument tips.



*da Vinci* Surgical System instruments are approximately the diameter of a pencil.

### Vision

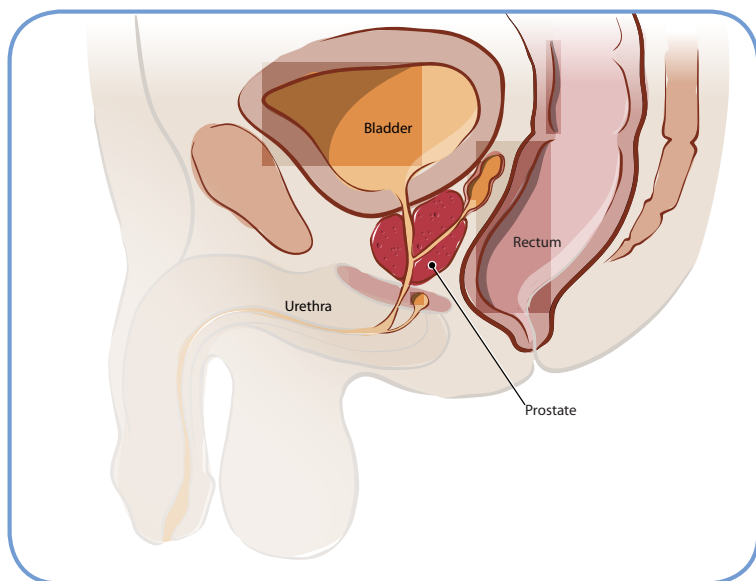
High-definition 3D vision and up to 10x magnification enable your doctor to see the cancer, healthy tissues and blood vessels at a level of detail far greater than with open surgery or conventional laparoscopic surgery.

### Control

The *da Vinci* System's *Intuitive*<sup>®</sup> Motion provides control through an interface that allows your doctor to use natural movements similar to traditional open surgery.

## Precision Matters:

### Cancer Control



The prostate gland is attached to nerves, the rectum and the bladder. The goal of nerve-sparing surgery is to preserve important nerves, blood vessels and structures that control urinary and sexual function without compromising cancer control.

### In Prostate Cancer Treatment, Precision Matters

In prostate cancer treatment, millimeters matter because delicate nerve fibers and blood vessels are attached to the prostate gland. To spare these nerves during surgery, they are carefully separated from the prostate before its removal. In comparison, during radiation treatment, your doctor targets the prostate while avoiding the attached nerves and blood vessels. The problem is that the radiation beam's path can vary by several millimeters; in one study of newer radiation beam therapy, the average variation of the beam target was 3 mm between sessions.<sup>8</sup> This variation can cause radiation to be delivered to the edges of the prostate where the nerves are located and potentially cause nerve damage.



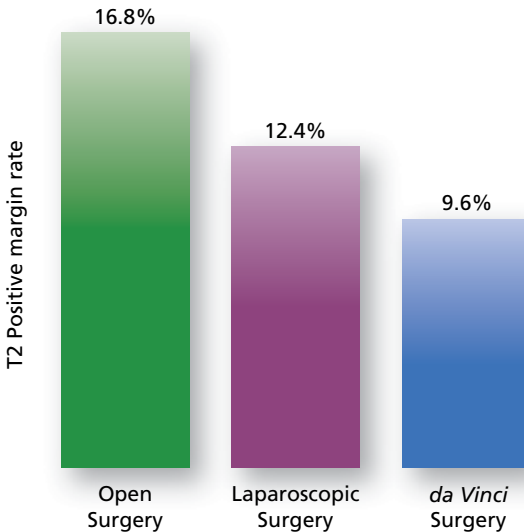
# Precision Matters:

## Cancer Control

Surgeons use the precision, vision, dexterity and control provided by the *da Vinci* System to assist them in removing the cancerous prostate while preserving important nerves and blood vessels.

In several large studies, *da Vinci* Prostatectomy has shown equal or lower rates of positive margins compared to other forms of surgery in patients with localized (T2) prostate cancer.<sup>9,10</sup> Positive surgical margins mean cancer cells are present at the edge of the tissue that was removed. The lower the positive margins, the better. Low margins mean there is much less chance that the cancer will return.

### Better Cancer Control with *da Vinci* Surgery Compared to Open and Laparoscopic Surgery<sup>10</sup>



Predicting results for cancer control can be challenging because results are dependent in part on the patient's specific cancer type. Surgeon experience is also an important factor. Talk to your doctor about what your expectations should be regarding cancer control.

Visit [www.daVinciProstatectomy.com](http://www.daVinciProstatectomy.com) for more cancer control data.

# Precision Matters:

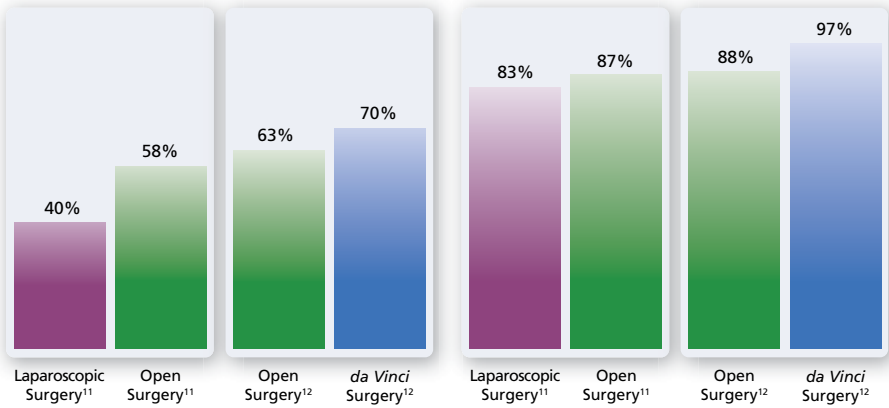
## Urinary Symptoms

Studies show that patients who had a *da Vinci* Prostatectomy may experience a faster return of urinary continence following surgery compared to patients who had traditional open or laparoscopic surgery.<sup>11,12</sup> Also, radiation patients report a higher rate of urinary pain than surgery patients.<sup>13</sup>

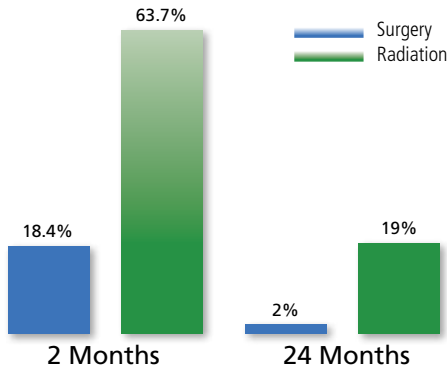
### Faster Return of Urinary Continence with *da Vinci*

3 Month Continence Rates

12 Month Continence Rates



### Increased Urinary Pain with Radiation<sup>13</sup>

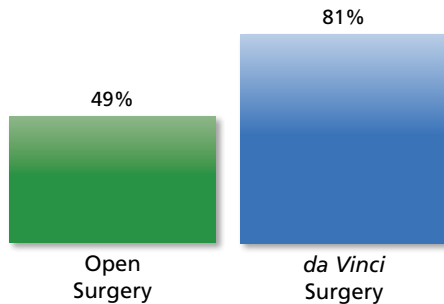


## Precision Matters:

### Sexual Function

The prostate is surrounded by a delicate layer of nerves that support erectile function. Many patients are candidates for a nerve-sparing prostatectomy, where the prostate gland is removed but the surgeon's goal is also to preserve these critical nerves. Several studies, including those using patient questionnaires, show that patients who are potent prior to surgery experience a faster recovery of sexual function (defined as an erection acceptable for intercourse) within a year after *da Vinci* Surgery compared to traditional open surgery.<sup>11</sup>

#### Sexual Function at 1 Year with *da Vinci* Surgery Compared to Open Surgery



Talk to your surgeon about reasonable expectations for recovery of sexual function and ask about a rehabilitation program that may include exercises and drug therapy.

### Radiation and Sexual Function

Radiation can cause long-term damage to the nerves and important structures involved in sexual function. Many patients undergoing brachytherapy or external beam radiation treatment develop erectile dysfunction; in fact, the number was as high as 50% in several studies.<sup>14,15</sup> Many radiation patients are also placed on hormone therapy, which can have an immediate and negative impact on sexual function.<sup>16</sup>

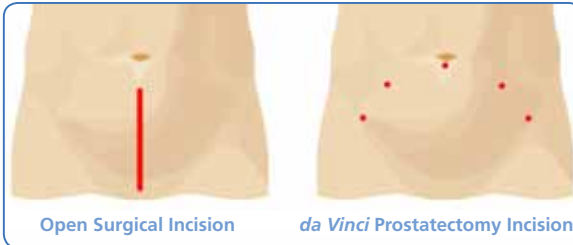
## da Vinci® Surgery:

Get Back to Your Life

Thanks to breakthrough surgical technology, doctors can offer a minimally invasive treatment for prostate cancer - *da Vinci* Prostatectomy.

Why *da Vinci*? Imagine major surgery performed through the smallest of incisions. Imagine having the benefits of a definitive treatment with the potential for:

- Excellent cancer control<sup>9,10,14</sup>
- Faster return of sexual function<sup>10,14</sup>
- Faster return of urinary continence<sup>10,14</sup>
- Shorter hospital stay<sup>14,17,18,19</sup>
- Low level of pain<sup>17</sup>
- Less blood loss, fewer transfusions<sup>10,14,17,18,20,21</sup>
- Lower risk of infection, complications<sup>18,20</sup>
- Faster recovery and return to normal activities<sup>17,19,21</sup>



Learn more at [www.daVinciProstatectomy.com](http://www.daVinciProstatectomy.com)

## *da Vinci*<sup>®</sup> Surgery:

### Beyond Minimally Invasive Surgery

With the added vision, precision, dexterity and control provided by the *da Vinci* System, your surgeon can offer you the gold standard treatment — surgery — and all potential benefits of a minimally invasive procedure. It's no wonder more U.S. men choose *da Vinci* Surgery than any other treatment for prostate cancer.<sup>22</sup>

The exceptional precision of *da Vinci* Surgery can help your doctor provide you with effective cancer removal and nerve preservation - nerves responsible for urinary and sexual function - as compared to traditional surgery or radiation.

In summary, *da Vinci* Surgery can help you put cancer behind you so you can get back to your life faster.

### **Important Considerations with *da Vinci* Prostatectomy**

*da Vinci* Prostatectomy is a surgical procedure, and all surgery carries inherent risks. Though data suggests that *da Vinci* Surgery can provide excellent cancer control, faster return to sexual function and to urinary continence as compared with other treatment options, all prostate cancer treatments, including surgery, can increase risk of incontinence and/or urinary symptoms and impotence. Additionally, there is no guarantee of the benefits described for every patient. For example, some individuals may not be candidates for a full nerve-sparing procedure due to the extent of their cancer. And as with any surgical treatment, results of *da Vinci* Surgery are in part surgeon-dependent and can improve significantly with surgeon experience.

# References

- <sup>1</sup>World Cancer Research Fund International; Stopping cancer before it starts; Available from: [http://www.wcrf.org/cancer\\_facts/prostate-cancer-worldwide.php](http://www.wcrf.org/cancer_facts/prostate-cancer-worldwide.php)
- <sup>2</sup>Prostate Cancer Foundation; Prostate Cancer FAQs. Available from: [http://www.pcf.org/site/c.leJRIR0EPh/b.5800851/k.645A/Prostate\\_Cancer\\_FAQs.htm](http://www.pcf.org/site/c.leJRIR0EPh/b.5800851/k.645A/Prostate_Cancer_FAQs.htm)
- <sup>3</sup>Prostate cancer clinical guideline update panel. Guideline for the management of clinically localized prostate cancer: 2007 update. Linthicum (MD): American Urological Association Education and Research, Inc. 2007; 82. Available from: <http://www.usrf.org/CaP%20Guidelines,%20AUA,%202007.pdf>
- <sup>4</sup>King CR, Patterns of prostate cancer biopsy grading: trends and clinical implications. *Int J Cancer (Radiat. Oncol. Invest.)* 2000; 90,305-311.
- <sup>5</sup>Di Blasio CJ, Rhee AC, Cho D, Scardino PJ, Kattan MW. Predicting clinical end points: treatment nomograms in prostate cancer. *Semin Oncol.* 2003 Oct;30(5):567-86.
- <sup>6</sup>Cooperberg MR, Vickers AJ, Broering JM, Carroll PR, for the Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE) Investigators; Comparative Risk-Adjusted Mortality Outcomes After Primary Surgery, Radiotherapy, or Androgen-Deprivation Therapy for Localized Prostate Cancer; *Cancer Month* 00, 2010; DOI: 10.1002/cncr.25456.
- <sup>7</sup>Merglen A, Schmidlin F, Fioretta G, Verkooyen HM, Rapiti E, Zanetti R, Miralbell R, Bouchardy C. Short- and long-term mortality with localized prostate cancer. *Arch Intern Med.* 2007 Oct 8;167(18):1944-50
- <sup>8</sup>Boda-Heggemann J, Köhler FM, Wertz J, Ehmann M, Hermann B, Riesenacker N, Küpper B, Lohr F, Wenz F. Intrafraction motion of the prostate during an IMRT session: a fiducial-based 3D measurement with Cone-beam CT. *Radiat Oncol.* 2008 Nov 5;3:37.
- <sup>9</sup>Ahlering TE, Woo D, Eichel L, Lee DJ, Edwards R, Skarecky DW. Robot-assisted versus open radical prostatectomy: a comparison of one surgeon's outcomes. *Urology.* May 2004;63(5):819-822.
- <sup>10</sup>Coelho RF, Rocco B, Patel MB, Orvieto MA, Chauhan S, Ficarra V, Melegari S, Palmer KJ, Patel VR. Retropubic, laparoscopic, and robot-assisted radical prostatectomy: a critical review of outcomes reported by high-volume centers. *J Endourol.* 2010 Dec;24(12):2003-15. Epub 2010 Oct 13.
- <sup>11</sup>Jacobsen NE, Moore KN, Estey E, Voaklander D. Open versus laparoscopic radical prostatectomy: a prospective comparison of postoperative urinary incontinence rates. *J Urol.* 2007 Feb;177(2):615-9.
- <sup>12</sup>Rocco B, Matei DV, Melegari S, Ospina JC, Mazzoleni F, Errico G, Mastropasqua M, Santoro L, Detti S, de Cobelli O. Robotic vs open prostatectomy in a laparoscopically naive centre: a matched-pair analysis. *BJU Int.* 2009 Oct;104(7):991-5. Epub 2009 May 5.
- <sup>13</sup>Buron C, Le Vu B, Cosset JM, Pommier P, Peiffert D, Delannes M, Flam T, Guerif S, Salem N, Chauveinc L, Livartowski A. Brachytherapy versus prostatectomy in localized prostate cancer: results of a French multicenter prospective medico-economic study. *Int J Radiat Oncol Biol Phys.* 2007 Mar 1;67(3):812-22.
- <sup>14</sup>Ficarra V, Novara G, Fracalanza S, D'Elia C, Secco S, Iafrate M, Cavalleri S, Artibani W. A prospective, non-randomized trial comparing robot-assisted laparoscopic and retropubic radical prostatectomy in one European institution. *BJU Int.* 2009 Aug;104(4):534-9. Epub 2009 Mar 5.
- <sup>15</sup>Zelevsky M, Chan H, Hunt M, Yamada Y, Shippy A, Amols H. Long-term outcome of high dose intensity modulated radiation therapy for patients with clinically localized prostate cancer. *Journal of urology.* 2006; 176 (4): 1415-1419.
- <sup>16</sup>Merrick G. Erectile function after prostate brachytherapy. *Int J Radiat Oncol Biol Phys.* 2005 Jun; 62(2): 437-47.
- <sup>17</sup>Menon M, Tewari A, Baize B, Guillonneau B, Vallancien G. Prospective comparison of radical retropubic prostatectomy and robot-assisted anatomic prostatectomy: the Vattikuti Urology Institute experience. *Urology.* 2002 Nov;60(5):864-8.
- <sup>18</sup>Boris RS, Kaul SA, Sarle RC, Stricker HJ. Radical prostatectomy: a single surgeon comparison of retropubic, perineal, and robotic approaches. *Can J Urol.* 2007 Jun; 14(3):3566-70.
- <sup>19</sup>Hohwu L, Akre O, Pedersen KV, Jonsson M, Nielsen CV, Gustafsson O. Open retropubic prostatectomy versus robot-assisted laparoscopic prostatectomy: A comparison of length of sick leave. *Scand J. Urol. Nephrol.* Apr 7 2009;1-6.
- <sup>20</sup>Carlsson S, Nilsson AE, Schumacher MC, Jonsson MN, Volz DS, Steineck G, Wiklund PN. Surgery-related complications in 1253 robot-assisted and 485 open retropubic radical prostatectomies at the Karolinska University Hospital, Sweden. *Urology.* 2010 May;75(5):1092-7.
- <sup>21</sup>Miller J, Smith A, Kouba E, Wallen E, Pruthi RS. Prospective evaluation of short-term impact and recovery of health related quality of life in men undergoing robotic assisted laparoscopic radical prostatectomy versus open radical prostatectomy. *J Urol.* 2007 Sep;178(3 Pt 1):854-8; discussion 859. Epub 2007 Jul 16.
- <sup>22</sup>Claim based on 2008 U.S. data. Data on file at Intuitive Surgical, Inc.

While clinical studies support the effectiveness of the *da Vinci* Surgical System when used in minimally invasive surgery, individual results may vary. There are no guarantees of outcome. All surgeries involve the risk of major complications. Before you decide on surgery, discuss treatment options with your doctor. Understanding the risks of each treatment can help you make the best decision for your individual situation. Surgery with the *da Vinci* Surgical System may not be appropriate for every individual; it may not be applicable to your condition. Always ask your doctor about all treatment options, as well as their risks and benefits. Only your doctor can determine whether *da Vinci* Surgery is appropriate for your situation. The clinical information and opinions, including any inaccuracies expressed in this material by patients or doctor about *da Vinci* Surgery are not necessarily those of Intuitive Surgical, Inc. and should not be considered as substitute for medical advice provided by your doctor. All people depicted unless otherwise noted are models. © 2011 Intuitive Surgical. All rights reserved. *Intuitive, Intuitive Surgical, da Vinci, da Vinci S, da Vinci Si, Single-Site, InSite, TilePro and EndoWrist* are trademarks or registered trademarks of Intuitive Surgical. All other product names are trademarks or registered trademarks of their respective holders. PN 870298 Rev C 04/11



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