## Facing Surgery for Lung Cancer?

Learn about minimally invasive *da Vinci*° Surgery





## **Treatments & Surgery Options:**

The treatment and surgical options for the most common lung cancer, non-small cell lung cancer, can vary. Patients may have surgery, chemotherapy, radiation therapy or a combination of treatments.



Cancer affecting one lung

Your doctor will discuss the side effects, as well as the pros and cons of all treatments and surgery options.

During lung cancer surgery, the amount of tissue and/ or lung removed will depend on the stage of the cancer. Your surgeon may perform one of the following:

**Wedge Resection:** The tumor and a small section of your lung (cut) are removed, along with a portion of healthy tissue.



Segmental Resection: A larger portion of your lung is removed, but not the entire lobe.

**Lobectomy:** The entire lobe of one lung is removed.

Pneumonectomy: The entire lung is removed.

These procedures may be done with open surgery or minimally invasive surgery, as described below.

### **Open Surgery**

Open surgery is performed through a long chest incision. Your surgeon may also need to spread your ribs to reach your lung.

### Minimally Invasive Surgery

One minimally invasive surgical option is thoracoscopy, also called video-assisted thoracic surgery or VATS. Doctors insert a tiny camera and surgical instruments into your chest through small incisions. The camera sends images to a video screen in the operating room to guide doctors as they operate.

Another minimally invasive option for lung cancer patients facing lobectomy is robotically-assisted da Vinci Surgery. Using the da Vinci System for nonsmall cell lung cancer, surgeons make a few small incisions between your ribs, similar to a thoracoscopy.



VATS Incisions



da Vinci Surgery Incisions

**Open Surgery** Incision

## **da Vinci Surgery:** A Minimally Invasive Surgical Option

The *da Vinci* System features a magnified 3D HD vision system and special instruments that bend and rotate far greater than the human hand. These features enable surgeons to operate with enhanced vision, precision, and control. Early clinical data suggests:

*da Vinci* Lobectomy may offer the following potential benefits **compared to open surgery**:

- > Shorter hospital stay<sup>1,2,3,4</sup>
- > Shorter chest tube duration<sup>1,2,5</sup>
- Less or similar rate of blood loss and/or transfusions<sup>1,2,5</sup>
- > Smaller incisions for less scarring

*da Vinci* Lobectomy may offer the following potential benefits **compared to VATS**:

> Shorter/similar hospital stay<sup>2,6</sup>

*da Vinci* Lobectomy may offer the following potential benefit:

> Low mortality (death) rate<sup>1,4,5</sup>

Your doctor controls the *da Vinci* System, which translates his/her hand movements into smaller, precise movements of tiny instruments inside your body.

# The *da Vinci* System has brought minimally invasive surgery to more than 3 million patients worldwide.

**Risks & Considerations Related to Pulmonary Resection (removal of part of lung):** air leaks from lungs, lung infection, lengthy time on a breathing machine of 48 hours or more, abnormal/irregular heartbeat, breathing tube needs to be re-inserted, abnormal path between lung airways and lining, lung failure lymph fluid collects around lungs, abnormal vocal cord function.

#### **Important Information for Patients:**

Serious complications may occur in any surgery, including *da Vinci*<sup>®</sup> Surgery, up to and including death. Risks include, but are not limited to, injury to tissues and organs and conversion to other surgical techniques.

If your doctor needs to convert the surgery to another surgical technique, this could result in a longer operative time, additional time under anesthesia, additional or larger incisions and/or increased complications. Individual surgical results may vary.

Patients who are not candidates for non-robotic minimally invasive surgery are also not candidates for *da Vinci* Surgery. Patients should talk to their doctor to decide if *da Vinci* Surgery is right for them.

Patients and doctors should review all available information on non-surgical and surgical options in order to make an informed decision. Please also refer to www.daVinciSurgery.com/Safety for Important Safety Information.

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## Your doctor is one of a growing number of surgeons worldwide offering *da Vinci*<sup>®</sup> Surgery.

For more information and to find a *da Vinci* surgeon near you, visit: **www.daVinciSurgery.com** 

<sup>1</sup> Cerfolio RJ, et al. Initial consecutive experience of completely portal robotic pulmonary resection with 4 arms. The Journal of Thoracic and Cardiovascular Surgery.2011;142(4)740-746. <sup>2</sup> Farivar AS, et al. Comparing Robotic Lung Resection With Thoracotomy and Video-Assisted Thoracoscopic Surgery Cases Entered Into The Society of Thoracic Surgeons Database. Innovations: Technology and Techniques in Cardiothoracic and Vascular Surgery. 2014;9(1):1-6. <sup>3</sup> Kent M, et al. Open, Video-Assisted Thoracic Surgery, and Robotic Lobectomy: Review of a National Database. The Annals of Thoracic Surgery. 2013: 97(1): 236-244. <sup>4</sup> Oh DS, et al. Early Adoption of Robotic Pulmonary Lobectomy: Feasibility and Initial Outcomes. The American Surgeon.2013: 79: 175-180. <sup>5</sup> Adams RD, et al. Initial multicenter community robotic lobectomy experience: comparisons to a national database. The Annals of Thoracic Surgery. 2014:97(6): 1893–1900 http://dx.doi.org/10.1016/j. athoracsur.2014.02.043. <sup>6</sup> Jang HJ, et al.; Comparison of the Early Robot-Assisted Lobectomy Experience to Video-Assited Thoracic Surgery Lobectomy for Lung Cancer. 2011: Innovations • Volume 6, Number 5, September/October 2011.