

THORACIC SURGERY & LUNG CENTER OF EXCELLENCE



Meyer Family
Main Lobby

Extraordinary expertise and
technology providing cancer care
to the Jupiter community and beyond.



A TRULY EXTRAORDINARY RESOURCE FOR CANCER CARE

ANDERSON FAMILY CANCER INSTITUTE

At Jupiter Medical Center we take a multidisciplinary approach to cancer care. Cancer patients have access to some of the most renowned physician experts in the field and the most advanced technology in the region. Our experts treat all types of cancer, including complex and advanced stages, with specialty programs in breast, lung, gynecologic, gastrointestinal, pancreatic, and liver cancers.

All these specialists converge to share ideas and knowledge offering each patient a personalized treatment plan, a vast array of support services and a patient navigation team. At The Anderson Family Cancer Institute, you'll have the feel of a community hospital backed by the expertise and technology rivaling that of any academic medical center including:

- Cyberknife® M6™
- Intraoperative Electron Radiation Therapy
- Varian TrueBeam™ Linear Accelerator
- Minimally Invasive and Robotic Surgery
- Chemotherapy and Infusion Services
- Risk Assessment and Genetics Counseling
- Clinical Research Trials
- Oncology Patient Navigation Team
- Oncology Psychosocial Support
- Oncology Nutrition Support

A NOTE FROM THE DIRECTOR

Welcome to The Anderson Family Cancer Institute at Jupiter Medical Center, where award-winning physicians remain at the forefront of comprehensive cancer care, setting the bar for the entire region.

Here, you will have access to physician experts, medical, surgical and radiation oncologists, along with social workers and care navigators to provide support from start to finish.

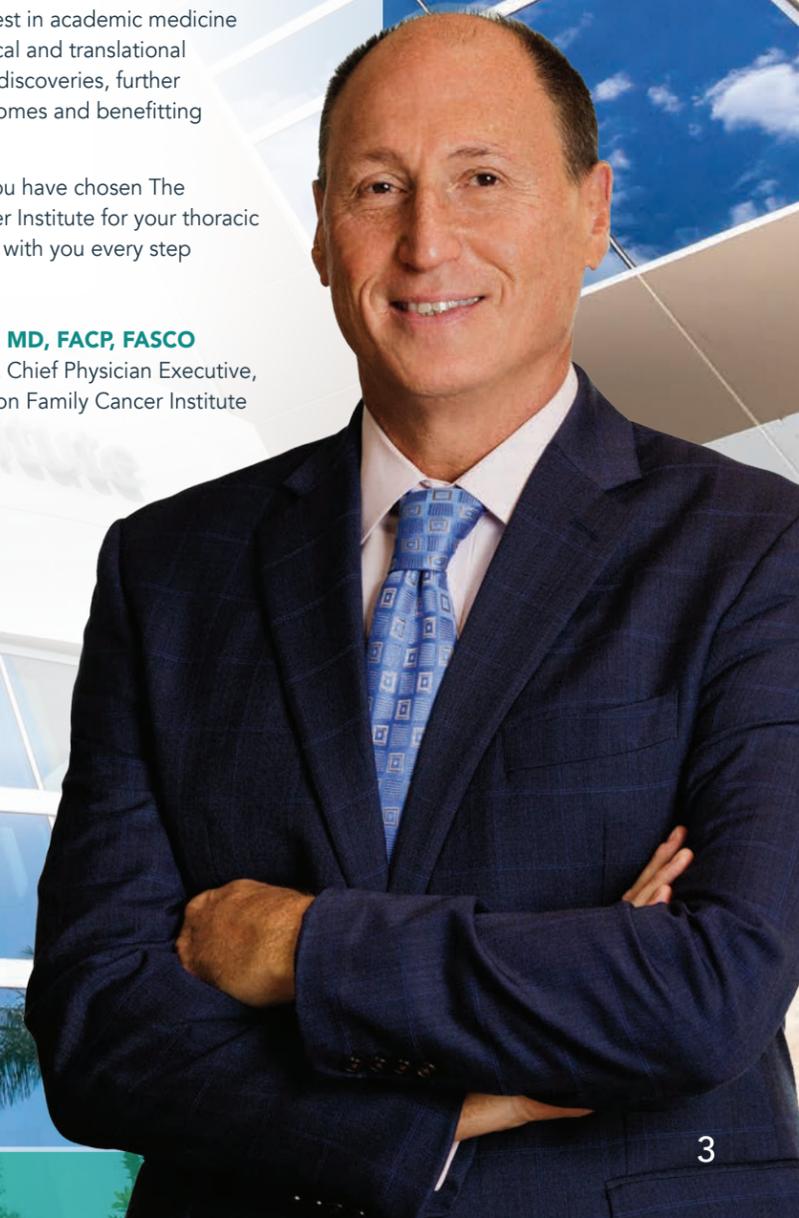
The Thoracic Surgery and Lung Center of Excellence offers the latest in surgical and non-surgical technologies, and innovative strategies designed for your individual diagnosis.

As we bring the very best in academic medicine to the community, clinical and translational research will yield new discoveries, further improving patient outcomes and benefitting our entire region.

We are honored that you have chosen The Anderson Family Cancer Institute for your thoracic cancer care. We will be with you every step of the way.

Rogerio C. Lilenbaum, MD, FACP, FASCO

Senior Vice President & Chief Physician Executive,
Director of The Anderson Family Cancer Institute





"We are progressive in the technologies we use to help in the fight against cancer."

A MESSAGE FROM THE MEDICAL DIRECTOR

There have been exciting developments in the fight against lung cancer and other diseases of the chest and lungs in recent years. New bio-molecular targeted therapies and immunotherapy have made treatment more personalized and effective in advanced stage lung cancer, with fewer side effects. New techniques and technology are continuously being developed and refined, resulting in better outcomes for thoracic surgery and greater rates of early detection, which improves survival.

However, the fact remains that lung cancer is the leading cause of cancer deaths in men and women nationwide. Jupiter Medical Center recognized this challenge and established the Thoracic Surgery and Lung Center of Excellence. The aim of this strategic initiative was successful in establishing a multidisciplinary approach to the diagnosis and treatment of lung cancer and other malignancies of the chest. We are dedicated to delivering the highest quality, most advanced, comprehensive care to patients with diseases of the lung, trachea, esophagus, chest wall and mediastinum. We are High Performing (highest score) for Lung Cancer Surgery by U.S. News and World Report, designated a Lung Cancer Screening Center by the American College of Radiology, and recognized as a Screening Center of Excellence by the Lung Cancer Alliance. Patients concerned about or at risk for lung cancer have access to a quick, painless, and non-invasive approach to screening. In the case of any findings on CT lung scans, patients are referred to our Lung Nodule Clinic where they receive accurate evaluation and rapid intervention for the best possible outcome.

At Jupiter Medical Center, we provide comprehensive treatment options for all stages of disease, including surgery, interventional pulmonology, chemotherapy and radiation therapy, as well as some of the most revolutionary techniques, like radiofrequency ablation, Stereotactic Body Radiation Therapy, oncologic targeted therapy, and minimally invasive robotic surgery. We were one of the first programs in the world to offer the da Vinci® Xi™ system and have added a third Xi™ system—a natural progression as our surgical team was the first in the nation to perform a four-arm robotic lobectomy for lung cancer nearly two decades ago. We currently are leaders nationally in robotic bronchoscopy utilizing the Intuitive Ion bronchoscope. For our patients, this translates to earlier diagnosis, smaller incisions, shorter hospital stays, less post-operative pain, and a more rapid return to normal activities. We are recognized nationally for the progressive technologies we use in the fight against cancer. Now a teaching site for navigational bronchoscopy, robotic bronchoscopy, and the da Vinci® Xi™ robotic surgery system; physicians from around the world refer their patients to us and visit our program to train on these technologies and to emulate our procedures and protocols.

We conduct weekly tumor boards and multidisciplinary clinics where patients can count on examination of their case by an entire team of physicians. Experts from surgery, hematology/ oncology, radiation oncology, pulmonology, pathology, and diagnostic and interventional radiology collaborate to craft a personalized treatment plan, employing the least invasive solution to maximize each patient's quality of life.

We were the first in the region to develop and offer a specialized program for early detection and treatment of lung cancer in women. The talent and resources we have assembled are unmatched in the region and have uniquely positioned Jupiter Medical Center and The Anderson Family Cancer Institute as a destination for advanced Cancer care—further defining us as a Thoracic Surgery and Lung Center of Excellence.

K. Adam Lee, MD
Medical Director,
Thoracic Surgery & Lung Center of Excellence at Jupiter Medical Center

EARLY DETECTION IS THE KEY TO BEATING LUNG CANCER

One of the reasons lung cancer is so deadly is that it grows silently. "Basically, by the time you develop signs and symptoms, the cancer is advanced," says Lee Fox, MD, chief of radiology at Jupiter Medical Center. However, Dr. Fox says there is reason for hope. "Studies have shown that the key to early detection is using computed tomography or CT scans to screen high-risk patients. If we can start diagnosing the disease earlier, we can begin treatment earlier and save lives."

LUNG CANCER

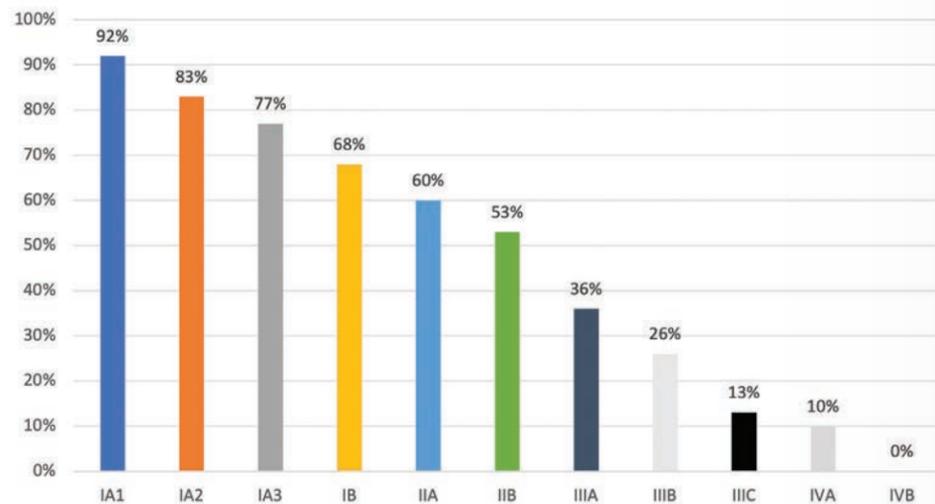
More than 235,000 new cases of lung cancer are expected on an annual basis in the U.S., accounting for about 13 percent of all cancer diagnoses, according to the American Cancer Society (ACS). New cases of lung cancer in Florida are estimated at more than 18,000. While the numbers are unnerving, they actually represent a steady decline in the disease. Still, lung cancer accounts for more deaths than any other cancer. According to the ACS, smoking cessation interventions and an increased focus on early detection are critical to addressing this formidable challenge.

Heeding this advice, Jupiter Medical Center has employed a multi-pronged approach to lung cancer prevention and control that begins with education, support and screening. These

efforts are steadily paying off. Jupiter Medical Center has increased the rate of early diagnoses each year, currently more than 50% of lung cancers are diagnosed in the earliest stages, providing better opportunity for successful lung cancer treatment.

Much of the success at early diagnosis, according to K. Adam Lee, MD, is due to Jupiter Medical Center's continued outreach efforts. "We expect these numbers to go up as we bring education and awareness to more and more areas of our community." Jupiter Medical Center hosts lectures and experts go out to health fairs, civic associations, churches and even businesses to spread the word about risk factors, the need for screening and early diagnosis to improve survivorship.

5-year survival by clinical stages



Early detection matters:

When detected early, lung cancer 5-year survival rate is relatively high.



CT LUNG SCREENING SAVES LIVES

Computed tomography, or CT lung screening, is proven to aid in finding lung cancers in its' earliest stages, when more than 80 percent of cases can be cured. At Jupiter Medical Center, individuals who have a high risk of developing lung cancer, but no signs or symptoms of the disease, undergo low-dose CT scanning of the chest. "Low-dose CT produces images of high quality to detect many lung diseases and abnormalities using up to 90 percent less ionizing radiation than a conventional chest CT scan," says Dr. Fox.

Jupiter Medical Center's Thoracic Surgery and Lung Center of Excellence follows the National Comprehensive Cancer Network guidelines for lung cancer screening.

At Jupiter Medical Center, CT exams are read by board-certified, fellowship-trained radiologists. "Our program is recognized as a Screening Center of Excellence by the Lung Cancer Alliance and is a designated Lung Cancer Screening Center by the American College of Radiology (ACR)," explains Dr. Fox. "The ACR designation means our screening program meets the highest standards in providing safe, effective diagnostic care."

If you are a current or former smoker, or have a family history of lung cancer, low-dose CT lung screening at Jupiter Medical Center could help save your life. Medicare now pays for CT lung screening for patients who meet certain criteria and even many private insurance plans now cover the cost.

Our Thoracic Nurse Navigator can help you understand your risk and your coverage. If you are concerned about your risk but do not meet the criteria, or you do not have coverage for screening, you can take advantage of our \$99 self-pay price.

Who can benefit from CT lung screening?

- People who smoked a pack of cigarettes a day for 20 years or two packs a day for 10 years
- Those exposed to asbestos, radon, silica, cadmium, arsenic, beryllium, chromium, diesel fumes or nickel
- People with regular exposure to secondhand smoke
- Anyone with related issues such as COPD or pulmonary fibrosis
- People with a family history of lung cancer

To schedule your appointment today, please call 561-263-4437.



Jupiter Medical Center has been accredited as a Lung Cancer Screening Center by the American College of Radiology and as a Lung Screening Center of Excellence by the Lung Cancer Alliance.

LUNG NODULE CLINIC

The purpose of the CT lung cancer screening is to look for lung nodules. Nodules are common, and about 97 percent are noncancerous. However, a nodule can represent early lung cancer. The Lung Nodule Clinic is designed to help diagnose, monitor and treat patients with previously identified or suspected lung nodules.

“We offer patients access to a multidisciplinary team of experts who work together to evaluate lung nodules that may be detected during routine examinations or through our lung screening program,” says K. Adam Lee, MD, medical director of the Thoracic Surgery and Lung Center of Excellence at Jupiter Medical Center. “If necessary, our team—which includes pulmonologists, thoracic surgeons, and interventional radiologists—will conduct additional tests to determine whether the nodule is cancerous, including a bronchoscopy with or without EBUS, an endobronchial ultrasound, a CT-guided lung biopsy or a surgical biopsy.”

If you have an abnormal chest x-ray or CT of the lung, or if you are seeking a second opinion, you can be seen at Jupiter Medical Center’s Thoracic Surgery and Lung Center of Excellence within 48 hours for an evaluation. A physician referral is not necessary to contact us. Our patient navigator is always available to answer questions and help you make an initial appointment. You will leave the clinic with a plan of care the same day as your consultation and the Thoracic Nurse Navigator will continue to guide you through any further treatment.

What is a Lung Nodule?

- **A pulmonary nodule is an abnormality in the lung that is smaller than 3 cm (slightly larger than an inch) in diameter. Generally, a pulmonary nodule must grow to at least 1 cm (the size of a pea) in diameter before it can be seen on a chest x-ray. CT Scans can detect nodules less than 1 cm in size.**
- **Pulmonary nodules are surrounded by normal lung tissue and are not associated with any other abnormality in the lung or nearby lymph nodes.**
- **People with a lung nodule or nodule(s) do not experience symptoms.**
- **Lung nodules are usually found by chance on a chest x-ray or CT scan taken for another reason.**
- **Approximately 150,000 cases are detected every year. Determining whether the lung nodule is benign or malignant is important. Prompt diagnosis and treatment of early lung cancer may be the only chance to cure the cancer.**

To contact our Lung Nodule Clinic, please call 561-263-4437.

WOMEN'S LUNG HEALTH PROGRAM

Every five minutes a woman in the United States is diagnosed with lung cancer and, surprisingly, there's a strong chance that she is a nonsmoker. That's because lung cancer in nonsmokers is more common than many people realize. Overall, 10 to 15 percent of lung cancers occur in nonsmokers and two-thirds of the people in this group are women. The percentage is significantly higher in Asian women. People with a family history of lung cancer also may be at risk of developing the disease. In fact, lung cancer in those who have never smoked is now considered the 6th most common cause of cancer deaths in the United States.

Many women are not aware of the risk factors and the importance of screening and early detection. Some of the nontobacco-related causes of lung cancer include exposure to:

- Radon gas in the home
- Previous radiation therapy to the chest to treat other cancers
- Secondhand smoke
- Vaporized oils resulting from stir-fry cooking at high heat
- Asbestos while on the job or living with someone who has been exposed to asbestos
- Cancer-causing agents in the workplace, such as chemicals, pesticides and various products in factories, nail or hair salons and other job sites

If you are concerned about your risk, we can help. The Thoracic Surgery & Lung Center of Excellence's Women's Lung Health Program was developed to educate women about their risk. Our thoracic patient navigator can help evaluate your risk and guide you through the entire process. Women at a higher risk of developing lung cancer can benefit from regular screenings and close monitoring for early detection.

If you have a family history of lung cancer, our Nurse Practitioner who is certified in genetics risk assessment will work with you to provide education, hereditary cancer risk assessment, genetic counseling and testing. A personalized surveillance plan can be developed based on your specific risk factors.



RISK FACTORS

Smoking

Cigarette smoking is the most important risk factor in the development of lung cancer. It is estimated that more than 85 percent of lung cancer diagnoses could be prevented if cigarette smoking were eliminated. Cigar and pipe smoking also increase risk. A smoker's best chance to decrease the risk of lung cancer is to quit smoking. Low-tar or low-nicotine tobacco has not been shown to reduce the risk.

Family History

Genetic susceptibility plays a contributing role in the development of lung cancer—especially in those who develop the disease at a young age. If you have one family member who had lung cancer, you are twice as likely to develop cancer as someone else without a family history of lung cancer. The chances for developing lung cancer are even higher for people who have two or more first-degree relatives (brothers, sisters, parents, or children) with a diagnosis. Your risk multiplies if you are exposed to other risks such as smoking.

Secondhand Smoke

Smoke that is exhaled by smokers or smoke that comes from a burning cigarette, pipe or other tobacco product, can be inhaled by a present non-smoker. This exposure, though in smaller amounts than smokers, increases the risk of lung cancer in the non-smoker.

Environmental and Occupational Exposure

The second-leading cause of lung cancer in the U.S. is exposure to radon gas, released from soil and building materials. Radon can enter buildings through cracks in floors or walls; construction joints; or gaps in foundations around pipes, wires or pumps. Most exposure to radon comes from being indoors in homes, offices, schools, and other buildings.

Radon also is found at low levels in outdoor air and in drinking water from rivers and lakes. In people who have never smoked, about 30 percent of deaths caused by lung cancer have been linked to radon exposure.

More information about radon can be found on the Environmental Protection Agency website at epa.org. If you are concerned about possible radon emissions, you can hire a qualified tester in your area or purchase a simple to use do-it-yourself radon test kit.

Smoking Cessation

Why quit? Smoking causes lung cancer and lung diseases such as chronic obstructive pulmonary disease (COPD), emphysema, bronchitis and chronic airway obstruction. On average, smokers die 13 to 14 years earlier than non-smokers. Quitting smoking reverses much of the damage caused to your body.

Benefits of quitting smoking:*

- **20 minutes after you quit smoking your blood pressure decreases**
- **8 hours after you quit, your blood oxygen level returns to normal**
- **3 months after you quit smoking your lung functions improve by 30 percent**
- **1 year after you quit your risk of heart attack is cut in half**
- **10 years after you quit, your risk of dying from lung cancer is about half that of a smoker's**

Quitting smoking no matter how long you have smoked or how many cigarettes you smoked each day, is your best defense against lung cancer and other diseases that can lead to death.

You don't have to do it alone; join others in the effort to stop smoking. To register for Jupiter Medical Center's complimentary, six-week smoking cessation class, call 1-877-819-2357.

*SOURCE: Tobacco Free Florida

TEAM APPROACH FOR OPTIMAL PATIENT CARE

Behind every cancer survivor is a team of great doctors. The Anderson Family Cancer Institute's comprehensive program is modeled after elite academic medical centers.

Cancer is a complex and varied disease. Modern cancer care requires a collaborative approach to optimize the patient's survival and quality of life.

Our Thoracic Multidisciplinary Conference brings together physician experts from multiple specialties who share ideas and knowledge to develop a personalized treatment plan for each patient.

Our experts work together to ensure comprehensive, coordinated care is available to guide each patient through diagnosis, treatment and recovery, and that patients who need several different therapies to treat their cancer will receive the most effective combination.

Jupiter Medical Center has acquired the latest in surgical and nonsurgical cancer treatment technologies and paired them with physicians who are exceptionally skilled and qualified to deliver the ideal patient care experience.

Multidisciplinary Conferences and Clinics

Thoracic multidisciplinary cancer conferences—held each week—are what set Jupiter Medical Center's Thoracic Surgery and Lung Center of Excellence apart from other programs in South Florida. Each conference is attended by a number of doctors who are experts in different disciplines, including medical oncologists, radiation oncologists, surgeons, radiologists, pathologists and other specialists. They share ideas and knowledge, and work together to determine the best course of action for each patient.

Multidisciplinary cancer conferences aren't new, but they're typically found only in large academic medical institutions. Conducting weekly conferences is resource-intensive and challenging for physician scheduling. For this reason, they're not widely found in community or regional medical centers.

"As the medical director of thoracic surgery, I lead a team dedicated to presenting the most appropriate choices to patients with a goal of achieving the best possible outcomes," says K. Adam Lee, MD, medical director of the Thoracic Surgery and Lung Center of Excellence at Jupiter Medical Center. "Our thoracic program is the only one in Palm Beach and Martin counties that conducts a weekly multidisciplinary thoracic conference—so we're unique in that we are able to bring together great expertise all under one roof."

At each conference, experts review the facts surrounding individual patients. This includes an analysis of the patient's medical history, the disease stage and prognostic indicators. Current research and best practices are considered by the specialists when forming a recommendation. Together, the team discusses a treatment plan using evidence-based and national treatment guidelines. The group also evaluates options for clinical trials or palliative care.

Multiple national research studies have demonstrated that cancer conferences positively impact clinical decision making and thereby directly influence patient care. The conferences represent an opportunity to maximize communication among professionals and facilitate treatment planning. With particularly complex cases it's beneficial to have the input and collaboration of multiple specialists.

The Thoracic Cancer Conference was initiated in 2011 and continues to grow, with hundreds of cases presented each year. The weekly sessions follow standards set by the Commission on Cancer and the American College of Surgeons. The kind of treatment planning that a cancer conference enables is invaluable, explains Dr. Lee. "If I were a patient, I would want as many experts talking about me in a multidisciplinary setting as possible."

Thoracic Multidisciplinary Clinic

The Thoracic Multidisciplinary Clinic (MDC) brings together a team of specialists who provide a comprehensive approach to the evaluation and treatment of patients with cancers of the lung, esophagus and chest. Developing an effective treatment plan for these types of cancers involves input from a variety of specialists. For many patients, the time from diagnosis to the start of treatment can be frustrating and lengthy. The MDC allows patients to see multiple specialists in a single day at one location to gather clinical opinions which would otherwise take several weeks.

Benefits for our Patients

The Clinic offers innovative diagnostic and therapeutic strategies specific to each individual patient's diagnosis. To expedite development and implementation of a treatment plan, we bring together a multidisciplinary team of specialists in thoracic surgery, medical oncology and radiation oncology with collaboration from pulmonology, pathology, and radiology physician specialists.

This expert team evaluates the patient, reviews diagnostic testing and meets to discuss each patient's case to determine the best course of action for treatment. In a single visit, treatment plans involving any or all of the doctors' specialties can be developed that meet each patient's unique needs.

Our support team includes an oncology social worker, a licensed clinical dietitian, cancer rehabilitation specialists and a clinical research nurse.



INTERVENTIONAL PULMONOLOGY

Navigational Robotic Bronchoscopy

The newest evolution to navigational bronchoscopy utilizes the advantage of robotics. Jupiter Medical Center's Thoracic Surgery Division has invested in the enhancing technology and better cancer care solutions so our South Florida community may have access to the highest quality care.

ION (Intuitive Surgery) is a robot assisted bronchoscope, featuring an ultra-thin, ultra-maneuverable catheter that provides navigation far into the peripheral parts of the lung as well as an unprecedented stability which enables the precision needed for biopsy of small lesions compared to manual techniques.

During bronchoscopy with ION, the physician uses the video game like controller to navigate to the target along a planned path. The catheter can articulate 180° in any direction to pass through small, difficult to navigate airways, and around tight bands to reach all 18 segments of the lungs. ION's peripheral vision probe provides direct vision during navigation. Once the pulmonary nodule is reached, the catheter locks in place. The Flexision biopsy needle, a flexible biopsy needle compatible with ION, then passes through the catheter, even when positioned in tortuous airways. After advancing around tight radius bends of the catheter, the needle deploys into the target location on a straight path for greater biopsy quality.



GPS-like Technology

Targets Trouble Deep in the Lungs

Abnormal findings or lesions in the lung may be caused by infection, inflammation or cancer. However, if they're found on a traditional X-ray or CT scan, doctors can't always make a diagnosis. Further testing is needed to identify the cause of the problems. Bronchoscopy is a pulmonary procedure where physicians examine the major air passages of the lungs through a thin, lighted tube called a bronchoscope. Doctors use bronchoscopies to evaluate the lungs and collect small tissue samples—or biopsies—to diagnose lung disease and lung cancer. "The lung cancer team at Jupiter Medical Center specializes in the most advanced, minimally invasive bronchoscopy techniques," says Kenneth Fuquay, MD, a board-certified pulmonologist. He and his colleagues are able to offer patients many benefits thanks to these sophisticated techniques. "We are able to minimize the risks of more invasive diagnostic surgeries."

Navigational Bronchoscopy

Traditional bronchoscopy can't reliably reach deep into the lungs, where nearly two-thirds of all lung lesions are found. Navigational bronchoscopy works in a similar fashion to the Global Positioning System (GPS) in your car. A CT scanner creates a three-dimensional image of the lungs, and the physician maps a route to the lesions. While the patient is

Navigational Bronchoscopy is used to:

- Find and biopsy suspicious masses
- Suction excess fluid or mucus from the airway or chest
- Control bleeding in the airway
- Treat tumors in the airway
- Place airway stents
- Place catheters in vital areas of the lungs

anesthetized, a bronchoscope with electromagnetic sensors (on-track guidance) is moved down into the airways of the lungs. The instruments feature 360 degree steering and the sensors allow the physician to track the bronchoscope's exact location. Once the target lesions are reached, tiny surgical instruments are passed through the bronchoscope to collect a biopsy from the lesion for testing and diagnosis.

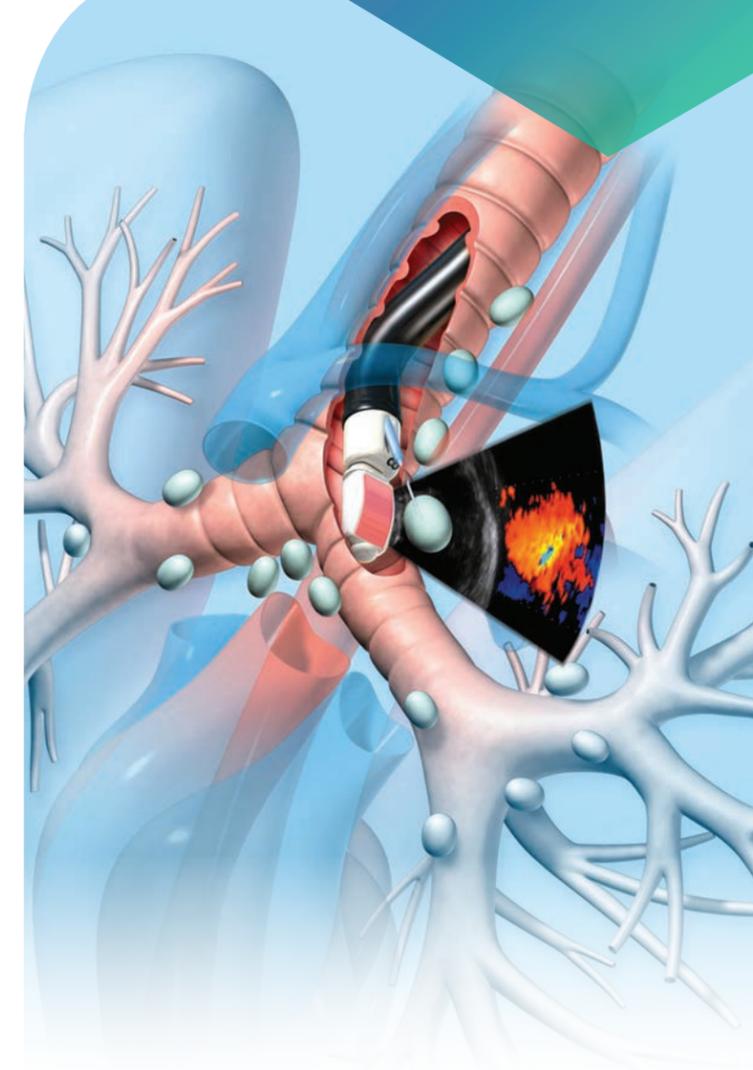
"Navigational bronchoscopy is minimally invasive compared to percutaneous lung biopsy procedures. (A percutaneous biopsy is a biopsy that is obtained by putting a needle through the skin in order to obtain tissue for examination.) It also requires less time for recovery and can be done on an outpatient basis," adds Maung Kyaw Oo, MD, a board-certified pulmonologist and medical director of pulmonary rehabilitation at Jupiter Medical Center.

Endobronchial Ultrasound

Another type of groundbreaking diagnostic procedure lets physicians "see" through lung tissue to test for conditions such as lung cancer, lymphoma and other diseases. During endobronchial ultrasound (EBUS), a physician uses an ultrasound probe to look at the lung and mediastinum (the membranous partition between the lungs) on an ultrasound monitor. The doctor can then take tissue samples from a lung nodule or a lymph node that may look suspicious for cancer. This procedure may be done by a surgeon or an interventional pulmonologist.

Rogelio Choy, MD, a board-certified pulmonologist explains that during the conventional diagnostic procedure, surgery known as mediastinoscopy is performed to provide access to the chest. A small incision is made in the neck just above the breastbone or next to the breastbone. Next, a thin scope is inserted through the opening to provide access to the lungs and surrounding lymph nodes. Tissue or fluid is then collected via biopsy.

During EBUS, the physician can perform needle aspiration on lymph nodes using a bronchoscope inserted through the mouth. "A special endoscope fitted with an ultrasound processor and a fine-gauge aspiration needle is guided through the patient's trachea. No incisions are necessary," adds Dr. Choy.



Benefits of EBUS:

- Provides real-time imaging of the surface of the airways, blood vessels, lymph nodes.
- The improved images allow the physician to easily view difficult-to-reach areas and to access more, and smaller, lymph nodes for biopsy with the aspiration needle than through conventional mediastinoscopy.
- The accuracy and speed of the EBUS procedure lends itself to rapid onsite pathologic evaluation.
- Pathologists in the operating room can process and examine biopsy samples as they are obtained and can request additional samples to be taken immediately if needed.
- EBUS is performed under moderate sedation or general anesthesia.
- Patients recover quickly and can generally go home the same day.

THORACIC SURGERY & LUNG CENTER OF EXCELLENCE

“Is this really happening to me?” For many people newly diagnosed with lung cancer, that’s the first question that pops into their minds. Then, before the initial shock even has a chance to subside, they face a new quandary. “What doctor should I see? Where should I go for treatment?” The fact is there is no one answer that is right for everyone.

But what if you discovered a hospital right in your community that is a training ground for doctors from around the world who wish to learn to use the newest technologies and provide the latest treatments? The Jupiter Medical Center Thoracic Surgery and Lung Center of Excellence program is just such a place. Both Intuitive Surgical® and Veran™ Medical Technologies send doctors to Jupiter Medical Center from other health care facilities to see first-hand the high-tech equipment and systems being used to more effectively treat patients. Physicians from around the world visit the Medical Center to train on the da Vinci® Xi™ Surgical Systems robots and with Veran™ Medical Technologies Total Navigation Oncology Solution navigational bronchoscopy technology.

Intuitive Surgical®

Dr. K. Adam Lee and a surgical team performed the first four-arm robotic lobectomy in the nation nearly two decades ago. For the first time, that advance enabled an individual thoracic surgeon to manipulate all four “arms” of the robotic surgical device for greater control and accuracy.

Dr. Lee led that surgery and remains a pioneer in robotic thoracic procedures. He has traveled nation-wide teaching cardiothoracic surgeons the technique. In addition, the Jupiter Medical Center program was one of the first in the world to offer the da Vinci® Xi™ System. With the da Vinci® Xi™ Surgical System, Jupiter Medical Center continues to provide innovative technology and procedures that are not found in most hospitals.

Veran™ Medical Technologies

Jupiter Medical Center’s Thoracic Surgery and Lung Program is a Veran™ Medical Technologies Center of Excellence. This program was the first in the nation to offer patients Veran™ Medical Technologies Total Navigation Oncology Solution. This advanced system allows for easier navigation to lung, liver and kidney biopsies, as well as drainage and ablation procedures. Jupiter Medical Center also serves as a teaching site for physicians from hospitals around the country.

Acquiring these technologies puts Jupiter Medical Center at the forefront of early detection and diagnosis of lung cancer. “We are very pleased to partner with Jupiter Medical Center’s Thoracic Surgery & Lung Program as a Veran™ Medical Technologies Center of Excellence. Dr. Lee has created what we consider the model lung cancer program to provide world-class care for patients afflicted with this disease,” said Ryan Denney, Vice President of Sales for the U.S., Veran™ Medical Technologies.



LUNG CANCER SURGERY

U.S. News & World Report, the trusted source in hospital rankings and consumer advice, has named Jupiter Medical Center a 2022-2023 High Performing hospital for Lung Cancer Surgery, Kidney Failure and COPD. This is the highest award a hospital can earn for U.S. News’ Best Hospitals Procedures & Conditions ratings.



“We are committed to continually improving the health and well-being of individuals, families and our communities through innovation and the pursuit of excellence.”

Amit Rastogi, MD, MHCM
President & CEO
Jupiter Medical Center

Thoracic Surgery

Refers to surgery performed on the lungs, esophagus, chest wall and mediastinum. It is used to treat cancer as well as a range of esophageal disorders, including those listed below.

Myasthenia Gravis

A neuromuscular disorder which can cause muscle weakness, difficulty breathing, chewing and swallowing

Thymoma

Tumor or cancer of the thymus gland

Mediastinal Masses

Benign or cancerous growths that form in the area of the chest that separates the lungs

Esophageal Disorders

Such as achalasia and gastro-esophageal reflux disease (GERD)

PIONEERING CANCER SURGERY THROUGH TINY INCISIONS

Twenty years ago, most surgeries were "open" or invasive procedures in which a surgeon made a large incision. In the case of lung cancer, the cut could be several inches long as a surgeon maneuvered between the ribs to remove a tumor. Today, minimally invasive techniques have changed the standard of care for virtually all types of surgery.

"Surgery for lung cancer at Jupiter Medical Center combines the best of everything," explains K. Adam Lee, MD, medical director of the Thoracic Surgery and Lung Center of Excellence, "including thoracic surgeons experienced in the latest minimally invasive techniques, cutting-edge robotic technology and multidisciplinary collaboration across disciplines and fields of study. At the Frank E. & Mary D. Walsh Robotic Surgery Program at Jupiter Medical Center, we use the latest advances including robotic-assisted thoracic surgery (RATS) and video-assisted thorascopic surgery (VATS)."

Traditionally, surgeons use thoracotomy surgery to biopsy or remove tissue from the lungs. This open chest procedure has a higher risk of infection and complications as well as a longer recovery time for patients. Through the minimally invasive RATS approach, surgeons reduce these risks with a more accurate procedure.

RATS requires only small incisions in the chest, rather than one large incision. The surgeon views a magnified, 3D image of the patient's lungs and chest. Then, using robotic technology to translate hand movements into precise actions, the surgeon performs the procedure. According to Dr. Lee, "Patients experience less pain, scarring and since the RATS procedure causes less trauma to the body, recovery time is also reduced."

Another refinement of standard lung cancer surgery, VATS allows surgeons to operate through two to four openings between the ribs while viewing the patient's internal organs on a video monitor. Each opening is less than two inches in diameter, rather than the 6 to 10-inch incisions common in open thoracic surgery. Once again, the patient benefits from less pain, less risk of infection, less scarring, shorter hospital stay and a faster recovery.

Dr. K. Adam Lee at the control console performing lung cancer surgery with the da Vinci® system.



The da Vinci® robotic technology allows the surgeon's hand movements to be translated into smaller, precise movements of tiny instruments inside the patient's body. The surgeon sits at an ergonomically designed console just a few feet from the patient (seen on the left) but remains 100% in control of the robotic arms at all times.

Leading the Way in Robotic Thoracic Surgery

The Frank E. & Mary D. Walsh Robotic Surgery Program at Jupiter Medical Center is one of the most comprehensive programs in the area and offers the leading technology of the da Vinci® Xi™ System. Jupiter Medical Center was one of the first facilities in the world to implement this technology and has recently added a third Xi™ system. If your physician recommends surgery to treat lung cancer or another thoracic condition, you may be a candidate for minimally invasive da Vinci® surgery. The da Vinci® Xi™ Surgical Systems are sophisticated robotic platforms designed to enable complex surgery using a minimally invasive approach. The da Vinci® Xi™ Systems consist of an ergonomic surgeon's console, a patient-side cart with four interactive robotic arms, a high-performance 3D/HD vision system and proprietary EndoWrist® instruments with Intuitive® motion.

During robotic surgery, the surgeon sits at the system console next to the patient, and has a 3D view inside the patient's body while controlling the robot's four arms in real time. The system translates the surgeon's hand, wrist and finger actions into precise movements with the da Vinci's miniaturized instruments. Patients realize tremendous benefit with minimally invasive robotic surgery including fewer complications, less blood loss, lower risk of infection, shorter hospital stay, less pain, and faster return to normal quality of life.

"Our investment in the most technologically advanced surgical equipment available, the da Vinci® Xi™ Surgical System, speaks to our commitment to transform patient care," says Dr. Lee, "and our desire to build a hopeful future for cancer care in South Florida."



THE CHANGING ROLE OF PATHOLOGY

The Changing Role

The role of the pathologists has transformed substantially with the identification of molecular markers and other advances in the evaluation of lung cancer and the development of targeted therapies.

Patients at Jupiter Medical Center benefit from our team of board-certified pathologists with experience in lung cancer diagnosis. Our pathologists use state-of-the-art equipment and the most advanced techniques to interpret laboratory tests and evaluate cells, tissues and organs to diagnose disease. They analyze thousands of tissue samples each year.

It is the pathologist who determines the precise type and severity (stage) of the cancer and is a member of the multidisciplinary team that recommends a treatment strategy that could include observation, surgery, chemotherapy, radiation therapy or a combination of these approaches.

A complete and accurate pathology report is crucial for a precise diagnosis and to determine the best treatment plan for a patient.

Obtaining a Tissue Sample

Doctors will often recommend a biopsy after a physical exam or a diagnostic test indicates a possible cancer. During a biopsy, a physician removes a small amount of tissue from the area of the body in question so it can be examined by a pathologist.

For most types of cancer, a biopsy is the only way to make a definitive cancer diagnosis. The most common types of biopsy include:

- **Incisional biopsy, in which only a sample of tissue is removed**
- **Excisional biopsy, in which an entire lump or suspicious area is removed**
- **Needle biopsy, in which a sample of tissue or fluid is removed with a needle**

It is critical to obtain a biopsy sample that provides enough material not only for diagnosis but for genetic analysis as well. "We use the least amount of the biopsied tissue needed for diagnosis, saving remaining tissue for genetic analysis and clinical matching," says Paul Garen, MD, a fellowship-trained pathologist. Following National Comprehensive Cancer Network (NCCN) guidelines, the pathologist takes the tissue sample and submits it for a molecular profile so that patients can have the benefit of the newest types of treatment for specific markers and be matched to clinical trials.

"By testing a tumor for its molecular makeup, we can find signals expressed by tumor cells which can be targets of chemotherapy and immunotherapy agents. This is the concept behind targeted therapy. This approach helps the oncologist devise a treatment plan that is personalized for every patient," explains Michel Betancourt, MD, a board-certified pathologist.

THE ROAD TO RECOVERY BEGINS WITH SPECIALIZED CARE

At the Thoracic Surgery and Lung Center of Excellence at Jupiter Medical Center, the goal is to help each patient get back to good health and achieve independence as soon as possible. This process begins immediately following surgery with a dedicated team and unit, the Crisp Surgical Oncology Unit, designed for the thoracic patient.

Jupiter Medical Center is the first in the region to establish a unit specifically for patients who undergo thoracic surgery. The commitment to provide this level of care has clear benefits. The minimally invasive nature of our treatment approaches combined with our ability to deliver highly specialized postoperative attention has resulted in our patients spending less time in the hospital. When compared to the national average for hospitalization following thoracic surgery, the Medical Center has a shorter length of stay. Additionally, our coordinated and comprehensive approach to care means we can treat individuals who have complex disease or coexisting medical problems, as well as patients who have undergone previous thoracic surgical procedures.

Quality Comparison

Multiple studies have analyzed outcomes for lung surgery. A comparison reveals that Jupiter Medical Center offers high quality outcomes for patients.

	Study Findings	Jupiter Medical Center
Length of stay mean	4.5 days	3 days
Complication rate*	upwards of 26%	2%
Conversion rate**	0 to 15%	0%

*Complications include minor occurrences such as pneumothorax and atrial fibrillation.

**Conversion is when a minimally invasive procedure is converted to a traditional, open surgery.

Each individual patient responds to surgery differently. In the Crisp Surgical Oncology Unit, care is provided by specially trained and knowledgeable nursing staff that is focused on minimizing the risk of post-operative complications and making sure patients recover quickly and completely following thoracic surgery.

“Postoperative care is a very important part of patient recovery,” explains Jerome Folden, RN, PCCN. “Many factors contribute to our patients’ ability to achieve excellent results. In this dedicated unit, we’re able to provide 24-hour care at the bedside and employ advanced monitors to manage pulmonary hygiene and function, as well as to control fluids, medication and any pain.”

In the days following surgery experienced nurses in the unit provide a balance of activity, pulmonary exercises and rest so patients can heal, regain strength and begin getting back to normal, daily activities. Getting discharged from the hospital is usually a great relief but can sometimes cause some anxiety.

Unit nurses review each patient’s discharge medications and provide the appropriate education. Extensive teaching is essential before discharge to help the patient transition back to his or her normal routine. As each patient is different, the team takes care to determine when each individual is physically ready to go home. Specialists called case managers also assist if it is determined a patient is going to need temporary or ongoing health care services in the home.



“Before the patient is discharged, we evaluate their home situation and specific abilities to determine the need for home care nursing, physical therapy or supplemental oxygen.” says nurse Folden.

“We take every measure to ensure the patient and family are prepared for the return home from the hospital.”

Jerome Folden
Thoracic Nurse Navigator

INTERVENTIONAL ONCOLOGY

Interventional oncology, practiced by interventional radiologists, is one of the key parts of a multidisciplinary team approach in the treatment of cancer and cancer related disorders. They work hand-in-hand with medical oncology, surgical oncology and radiation oncology.

Today, many conditions that once required surgery can be treated less invasively by interventional radiologists. Interventional radiology treatments offer less risk, less pain and less recovery time compared to open surgery. Our interventional radiologists are board-certified, fellowship-trained physicians offering the most in-depth knowledge of the least invasive treatments available coupled with diagnostic and clinical experience across all specialties. "For many years, surgery was the only treatment available for many conditions. Today, interventional radiology treatments are first-line care for thoracic and lung cancer," says Andrew Hall, MD, a board certified diagnostic radiologist and fellowship-trained interventional radiologist.

Chemoembolization

In chemoembolization, anti-cancer drugs are injected in very high concentrations directly into the blood vessel feeding a cancerous tumor. Because we inject the chemotherapy directly into the tumor, we can inject concentrations much higher than can be injected systemically through the veins. The chemotherapy is usually packaged within tiny medicine releasing beads that plug up the blood vessels that supply blood to the tumor, in effect trapping the chemotherapy in the tumor and cutting off nutrient rich blood from reaching the tumor.

Radiofrequency Ablation

Radiofrequency ablation (RFA) is a treatment that uses imaging guidance to place a needle electrode through the skin into a lung tumor. High-frequency electrical currents are passed through the electrode, creating heat that destroys the cancer cells. RFA is an effective treatment option for patients who might have difficulty with conventional surgery or those who have a small number of tumors that have spread to the lungs from a cancer located elsewhere in the body, such as the kidney, intestine or breast. It's much less invasive than open surgery when treating primary or metastatic lung tumors.

Dr. Hall adds, "RFA is also used to reduce the size of a tumor so that it can be more easily eliminated by chemotherapy or radiation therapy and provide relief when a tumor invades the chest wall and causes pain. RFA is not intended to replace surgery, radiation therapy or chemotherapy in all patients. It may be effective when used alone or in conjunction with these treatments.

Patient Benefits of RFA

- RFA is much less invasive than open surgery when treating primary or metastatic lung tumors. Side effects and complications are less frequent and less serious.
- Patients who have multiple tumors or tumors in both lungs usually are not considered to be candidates for surgery. They may, however, be candidates for RFA.
- Lung function is better preserved after RFA than after surgical removal of a tumor. This is especially important for those whose ability to breathe is impaired.
- When part of the tumor persists after RFA, the procedure may be repeated, or radiation therapy may eliminate the remaining tumor cells. RFA is very effective for destroying the central part of a tumor—the area that tends not to respond well to radiotherapy.
- If a tumor recurs in the same region, it usually can be retreated by RFA. The procedure may be repeated multiple times if necessary.
- Even when RFA does not remove all of a tumor, a reduction in the total amount of tumor may extend life for a significant time.
- RFA is a relatively quick procedure and recovery is rapid so that chemotherapy may be resumed almost immediately in patients who need it.
- No surgical incision is needed—only a small nick in the skin that does not have to be stitched closed.

RADIOTHERAPY & SURGERY WITHOUT INCISIONS

Radiation therapy plays an important role in the treatment of lung cancer. Radiation destroys cancerous tissue, but it is important to keep it from affecting nearby healthy tissue as well. The experts at Jupiter Medical Center specialize in treating lung cancer and have an understanding of the delicate balance between normal tissue and the various types of lung cancers.

Ensuring that each patient receives radiation therapy with skill and precision is the job of Nathan Tennyson, MD, medical director of radiation oncology at Jupiter Medical Center, a Palm Beach County native who has advanced training in stereotactic radiosurgery, intraoperative radiation therapy, brachytherapy and stereotactic body radiation therapy. Plans are created that maximize the appropriate radiation dose while staying within parameters that protect normal tissues. Radiation oncologists at Jupiter Medical Center work with hundreds of patients each year, many of whom have lung cancer.

These physicians rely on the latest technology and the most recent findings from research and clinical trials. They collaborate with other physician specialists through the weekly multidisciplinary thoracic conference to determine how best to treat each case, based on each patient's diagnosis, prognosis, situation and needs.

External beam radiation

Jupiter Medical Center has some of the world's leading technology for external beam radiation, allowing us to offer our thoracic and lung cancer patients advanced methods to kill cancer cells and shrink or destroy tumors.

3D conformal radiation therapy

Three-dimensional conformal radiation therapy is an image-based computerized treatment planning and delivery technique that utilizes the beam's eye view to shape the radiation fields to conform the dose to the target. A treatment planning system employs sophisticated three-dimensional dose calculation algorithms to determine the dose given to the patient.

CyberKnife® M6™

Stereotactic radiosurgery is a form of radiation therapy that focuses high-power energy on a small area of the body. Despite its name, radiosurgery is a treatment, not a surgical procedure. Incisions are not made on the body.

Patients of the Thoracic Surgery and Lung Center of Excellence at Jupiter Medical Center now have access to one of the best radiosurgery solutions available. Jupiter Medical Center was the first center in Florida to offer the revolutionary technology of the CyberKnife® M6™ System. Cyberknife® offers a pain free, patient-friendly alternative to patients who have inoperable tumors. The CyberKnife® M6™ System allows Jupiter Medical Center physicians to offer patients an innovative, non-invasive alternative to conventional surgery and weeks of radiation to remove both cancerous and non-cancerous tumors from the body.

Stereotactic radiosurgery destroys tumors with extremely precise, very intense doses of radiation while minimizing damage to healthy tissue. There's no incision, anesthesia or hospital stay required, and tumors can be eliminated in as little as one to five treatments.

This new M6™ System allows doctors to customize the treatment to each patient, and provides an option for those patients who have been determined to be a poor surgical candidate.



"Thankfully, as a radiation oncologist today, I have access to leading-edge technology that enables me to target and eliminate many types of tumors without even making an incision. For early stage lung cancer patients who are not surgical candidates, we can use stereotactic radiosurgery to treat tumors with extremely precise, very intense doses of radiation with high rates of success while minimizing damage to healthy tissue."

Nathan Tennyson, MD

Medical Director of Radiation Oncology
Jupiter Medical Center

TrueBeam™ Radiotherapy System

Jupiter Medical Center offers the most advanced radiation therapy with the TrueBeam™ radiotherapy system. Designed to target tumors with precision and power, TrueBeam™ combines sophisticated imaging, radiation delivery and motion management technology to treat even the most challenging cancers in numerous areas of the body, including the lung, liver, kidney, pancreas, abdomen, head and neck, spine, brain, prostate and breast.

Stereotactic Body Radiotherapy (SBRT) with TrueBeam™

Conventional radiation therapy is typically delivered in relatively small doses each day over several weeks. Stereotactic body radiotherapy (SBRT) is a more technologically advanced form of radiation therapy. SBRT delivers a high dose of radiation to the targeted tumor, with a high degree of precision, over fewer sessions and a shorter time period. Research shows that SBRT offers better outcomes than conventional radiation for many types of cancers.

When SBRT is applied specifically to tumors in the brain it is often called stereotactic radiotherapy (SRS). SRS and SBRT are important alternative to surgery. SBRT is also important for treating tumors in places such as the lung and breast, which may move slightly when the patient breathes during the radiation treatment.

SBRT allows for the precise delivery of high-dose radiation, immediately after the tumor has been imaged.

How is SBRT and SRS Performed at Jupiter Medical Center?

Jupiter Medical Center's radiation oncologists use several types of equipment to perform SBRT, including the CyberKnife and the TrueBeam™.

Both CyberKnife and the TrueBeam™ are stereotactic radiosurgery devices that deliver radiation with linear accelerators, or devices that form beams of fast-moving subatomic particles. Using advanced imaging technologies and a computer guidance system, the beams are precisely directed at the cancer cells. Both the CyberKnife and the TrueBeam™ can deliver a more intense dose of radiation in just a few sessions, compared to conventional radiation therapy.



Varian TrueBeam™ Radiotherapy System

Our expert radiation oncologists have many years of experience in treating all types of cancer. Our oncology teams will develop a targeted treatment plan and determine which form of radiotherapy will offer the best results to treat your cancer. Factors that will be considered include the type of cancer, its characteristics and location, among other considerations.

More About TrueBeam™ Technology

TrueBeam™ combines advanced imaging and radiation therapy technology to target tumors with speed and accuracy, while protecting the healthy tissue surrounding the tumor.

The TrueBeam™ system's advanced imaging capabilities generate high-resolution, 3-D images to map the tumor and surrounding anatomy. These high-definition images enable our oncology teams to visualize the tumor in great detail, and incrementally adjust the patient's position to maximize the accuracy of the radiation beam.

TrueBeam™ also integrates motion management technology to account for the movement of the tumor that occurs when a person breathes. By synchronizing imaging and beam delivery with respiration, TrueBeam™ technology is especially helpful for complex cancers in areas of the body such as the lung and breast. While the patient relaxes and breathes normally, the motion management technology allows our treatment team to deliver the dose with sub-millimeter accuracy.

In many cases, TrueBeam™ also reduces treatment times. Images can be created 60 percent faster, using 25 percent less X-ray dose than with previous technology. Depending on the type of cancer and the treatment plan, treatments that may have taken a half hour in the past may take only a few minutes.

With shorter treatment times and quiet operation, TrueBeam™ provides for a more comfortable patient experience. Two-way audio and closed-circuit TV technology allow our radiation therapists to be in continual contact with patients during treatment. Because treatment times are short, you can be in and out of sessions quickly and with minimal disruption to your daily life.

Understanding Advanced Radiotherapy Techniques: IMRT, RapidArc and IGRT

Advances in radiation therapy are creating new options for the treatment of many types of cancers. TrueBeam™ technology allows us to employ a variety of different advanced radiotherapy approaches. In addition to stereotactic body radiation therapy (SBRT), some patients may benefit from intensity modulated radiation therapy (IMRT) and image-guided radiation therapy (IGRT).

Intensity modulated radiation therapy (IMRT) delivers high-dose radiation to cancer cells while minimizing damage to healthy tissues and organs. With IMRT, the radiation is delivered from various angles. The intensity of the radiation dose can be varied to conform to the contours of the tumor, while sparing surrounding noncancerous tissue.

IMRT is used with many types of cancers, including brain, breast, colorectal, esophagus, gynecological cancers, head and neck, lung, pancreas, prostate, sarcoma and thyroid. Our radiation oncologists also use RapidArc®, a rapid, precise form of IMRT that delivers radiation with a single, 360-degree rotation of the TrueBeam that lasts just two minutes.

Image-guided radiation therapy (IGRT) enhances the accuracy of IMRT through imaging prior to each session. In traditional radiation therapy, doctors diagnose, stage and image the tumor before radiation begins, and then use the information to plan the entire cancer treatment.

But a tumor's size and shape can change during radiation treatment. Through IGRT, our oncology teams track the changes in the tumor throughout treatment, delivering more precise radiation therapy with fewer side effects and less damage to healthy tissues.

Using the TrueBeam™ system, Jupiter Medical Center's radiation oncologists can design the optimal radiotherapy treatment plan for almost any cancer.

CHEMOTHERAPY & TARGETED TREATMENT OPTIONS

Medical Oncology is a modality of management in cancer care. Often utilizing therapeutic options as chemotherapy, Immunotherapy, Targeted therapy, and Hormonal therapy. These agents are the foundational treatment for lung cancer of all types: small cell lung cancer (SCLC), non-small cell lung cancer (NSCLC), mesothelioma and others. Medical oncologists work with other specialists at Jupiter Medical Center to determine if chemotherapy will be given, and whether it will be used in conjunction with or without surgery or radiation.

Our team follows the National Comprehensive Cancer Network (NCCN) standards of care as a guide to determine what drugs to use for each patient, depending on the location of the tumor, the type and stage (how far the cancer has advanced and where), as well as the patient's health. In this way, we provide a treatment plan based on each person's specific diagnosis and needs. For small cell and non-small cell lung cancer, most patients will receive platinum-based combination chemotherapy, either alone or in conjunction with other treatment such as surgery and radiation therapy.

Depending on each individual's case, the medical oncologist will also use several other chemical agents. Those decisions are made based on the patient's histology, toxicity of the chemotherapy regimen and the length of time needed for the treatment.

Personalized Targeted Medicine

In recent years, personalized medicine has begun to bring new hope to people with lung cancer, especially non-small cell lung cancer.

Lung cancer is still a devastating diagnosis. By the time a lung cancer patient develops symptoms, the cancers are usually stage 3 or 4, when the cancer is much more difficult to cure. Now, biologic markers are bringing precision therapy to the disease. In select patients, personalized treatments based on genetic discoveries can extend survival.

At Jupiter Medical Center's Thoracic and Lung Surgery Center of Excellence, we're looking at tumor cells obtained from a biopsy to see if there are any genetic mutations or changes in the genes. We know that certain drugs are more effective than others against tumors with specific mutations, so molecular analysis of a tumor (also called genomic testing) helps us determine which therapies will most likely work best for a particular patient. In many cases, drugs that specifically target these mutant proteins can be administered safely and effectively, resulting in better tumor shrinkage and cancer control. Lung cancer is essentially the poster child for targeted or personalized medicine. What's happening in the field of lung cancer could transform the way other cancers are treated.

What is Chemotherapy?

Chemotherapy is the use of anticancer drugs designed to slow or stop the growth of rapidly dividing cancer cells in the body. Chemotherapy may be used:

- As a primary treatment to destroy cancer cells
- Before another treatment to shrink a tumor
- After another treatment to destroy any remaining cancer cells
- To relieve symptoms of advanced cancer

There are a variety of ways chemotherapy can be delivered: orally (by mouth as a pill or liquid), intravenously, topically (as a cream on the skin), by injection or direct placement.

When chemotherapy drugs travel through the bloodstream to reach cells throughout the body, it is called systemic chemotherapy. When chemotherapy drugs are directed to a specific area of the body, it is called regional chemotherapy.

Chemotherapy for Lung Cancer

Lung cancer chemotherapy treatments are used in three primary ways:

- Neoadjuvant or primary systemic lung cancer chemotherapy may be used before surgery to destroy cancer cells. It also allows your oncologist to determine the effectiveness of a particular lung cancer treatment regimen on the tumor.
- Adjuvant chemotherapy is used after surgery or radiation to target cancer cells that were not removed during lung cancer surgery, and helps prevent the cancer from spreading to other parts of your body.
- Systemic chemotherapy, meaning the circulation of chemotherapy drugs through the bloodstream to cancer cells throughout the body, plays an important role in the treatment of locally advanced or metastatic lung cancer.

Throughout lung cancer treatment, the Jupiter Medical Center team continually monitors the effectiveness of chemotherapy on the diseases, with physical exams, blood tests, CT scans, MRI scans and chest X-rays. We are also experienced in proactively managing the side effects of treatment.

The potential side effects of chemotherapy may be unpleasant and can include nausea, vomiting, hair loss and mouth sores. At Jupiter Medical Center, the care team will use multiple measures to help reduce or moderate chemotherapy-related symptoms.

Our team follows the NCCN standards of care as a guide to determine what drugs to use for each patient, depending on the location of the tumor, the type and stage, as well as the patient's health.

PATIENT NAVIGATORS: A SHOULDER TO LEAN ON

A lung cancer diagnosis can be overwhelming bringing many challenges for patients and their loved ones. There is a large amount of new and unfamiliar information to process, decisions to be made concerning treatment and care, and uncertainty about which steps to take or where to go for assistance. This often leads to enormous stress for patients and their families.

Jupiter Medical Center's thoracic nurse navigator helps individuals and their families navigate through the complex, often complicated health care process. A member of the Thoracic Surgery and Lung Center of Excellence multidisciplinary team, the patient navigator provides information, knowledge, support and guidance, and collaborates with every specialist the patient will encounter along their journey—from diagnosis to treatment and survivorship.

Nurse navigators are increasingly recognized as an essential component of comprehensive cancer care, serving as the lynchpin for facilitating a coordinated and seamless experience for cancer patients and their families. At Jupiter Medical Center, there is a team of navigators dedicated to supporting patients with specific types of cancer. They help thoracic patients find doctors, make appointments and resolve insurance problems.

Navigators have knowledge of both standard and emerging treatment options as well as available community and supportive resources so they can appropriately guide and offer interventions based on patient-specific needs. Furthermore, navigators are well-versed and skilled in side effect management as they are often the first to be contacted when a patient experiences treatment toxicities. Then, once treatment is completed, there are survivorship issues navigators can assist in clarifying, such as surveillance schedules and appropriate follow-up care.

Receiving support from a nurse navigator can make a difference in the way newly diagnosed cancer patients feel about their care. According to a study published in the *Journal of Clinical Oncology*, patients with a nurse navigator rated their care higher and reported fewer problems than patients without one.

"Significant contributions are documented throughout the oncology literature to demonstrate the impact navigation programs are making to improve not only the overall patient experience but even clinical outcomes," says K. Adam Lee, MD, medical director of the Thoracic Surgery and Lung Center of Excellence. "We value what our nurse navigators bring to the table in accomplishing a successful plan of care."

Jupiter Medical Center offers comprehensive support services for cancer patients and their families. From patient navigation and psychosocial support to extensive rehabilitation therapies to assist patients with the physical, emotional, social and spiritual issues a cancer diagnosis brings.

Treating cancer involves more than surgery, chemotherapy and radiation treatment. Healing the entire body, mind and spirit is an important part of the recovery process. People with cancer are living longer, healthier and happier lives. Our Oncology Support Services are designed to help you throughout your treatment and into survivorship.

Support Services include:

- Patient Navigation
- Psychosocial Support
- Nutrition Counseling
- Oncology Rehabilitation
- Transportation
- Support Groups
- Integrative Medicine
- Survivorship Program



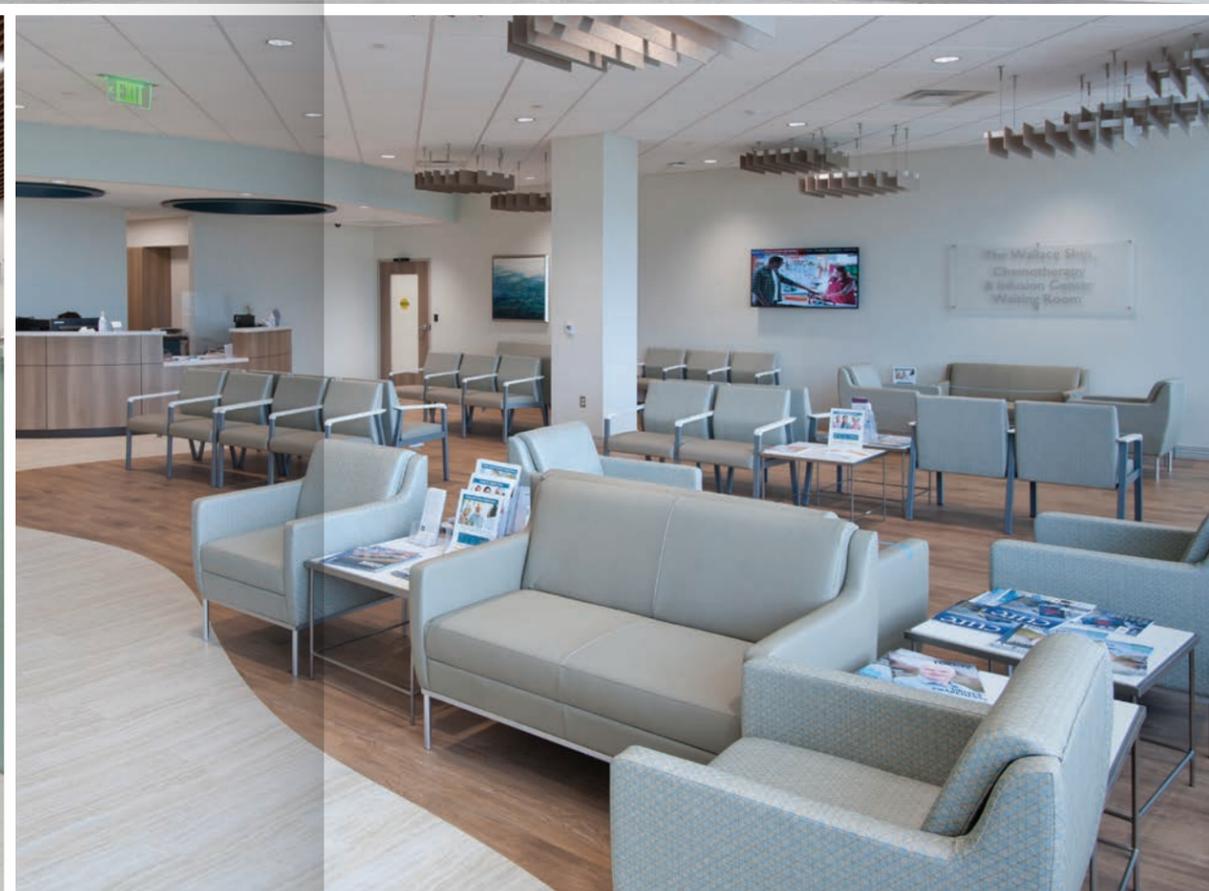


“My Cancer Team Gave Me My Life Back”



Barbara Krumins with Dr. K. Adam Lee, Medical Director of the Thoracic Surgery and Lung Center of Excellence and

When Barbara Krumins' persistent cough became concerning, tests revealed lung nodules that progressed into cancer. Barbara was referred to Dr. K. Adam Lee, a pioneer in robotic surgery, and later had chemotherapy. Dr. Lee led a multidisciplinary team of medical oncologists, pulmonologists, radiologists, thoracic surgeons, and a patient navigator dedicated to Barbara's care. After undergoing minimally invasive robotic surgery and chemotherapy, Barbara is now living cancer-free.





Partner with us as we
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life-giving care for generations to come.

jmcfoundation.org

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