

The Lung Cancer Center



We provide multidisciplinary treatment for **optimal survival and quality of life** for patients with all types and stages of lung cancer and mesothelioma.

Recognized as **High Performing for Lung Cancer Surgery.**

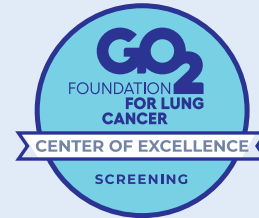


What Sets Us Apart

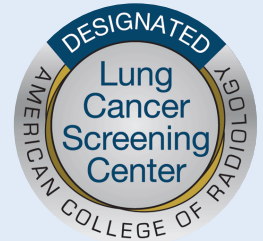
- **High proportion of lung surgeries** performed using thoroscopic procedures
- **Robotic bronchoscopy** for detection and biopsy of small, difficult-to-reach peripheral nodules with a minimally invasive approach.
- **Dedicated interventional pulmonology service** working alongside our thoracic surgeons and oncologists.
- **On-site tumor molecular profiling** allows us to personalize treatment to the cancer's unique genetic characteristics
- **Stereotactic Body Radiation Therapy (SBRT)** delivers precise high-dose radiotherapy in fewer treatment sessions
- **Robust clinical trials program** offering the latest advances in surgical tactics, radiation techniques, novel agents, targeted therapies and immunotherapies.

High-Risk Patient?

Roswell Park's **Lung Cancer Screening Program** seeks to identify early-stage lung lesions and cancer in the high risk population. The program involves a focused medical history, physical examination and a non-contrast Low-Dose CT scan.



Delivering Excellence in Responsible Screening

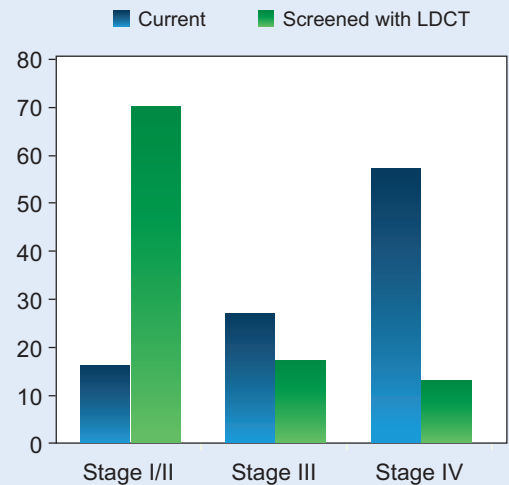


WHO SHOULD BE SCREENED?

1. Patients with a history of cancer of the lung, esophagus, head or neck,
- OR -
2. Patients with the following three factors:
 - age 55 to 79
 - at least 30 pack/years of smoking
 - actively smoked within the last 15 years

Our screening program diagnoses 70% of cancers at stage 0, I, and II, compared to current trends that detect 70% of lung cancers in advanced stages.

The Shift in Lung Cancer Stage with LDCT Screening



For more information about the **LUNG CANCER SCREENING PROGRAM**, or to refer a patient, call 716-845-RPMD (716-845-7763)

Lung Nodule Management

Lung nodules require expert surveillance to monitor for increasing size and other features that require further action. Our data indicate this surveillance results in a mean of:

- **5 CT reports per patient**
- **1,120 days (>3 years surveillance)**

Let Roswell Park manage your patients with lung nodules

Our multidisciplinary team — including experts in interventional pulmonology, diagnostic radiology, pulmonary pathology, nuclear medicine, smoking cessation and medical, surgical and radiation oncology — manages the surveillance to detect malignancies at the earliest stages, while avoiding unnecessary invasive intervention.

“Our approach to early detection is changing the face of lung cancer. Following these guidelines for screening with low-dose CT will mean that the number of people now diagnosed with late-stage cancers will instead be diagnosed with early stage — and highly treatable — disease.”



– Mary Reid, MSPH, PhD

Director of Cancer Screening and Survivorship

Nathaniel Ivanick, MD,
the region's only fellowship-trained
interventional pulmonologist.



Interventional Pulmonary Medicine

Minimally invasive approaches to diagnosis and treatment

Roswell Park's state-of-the-art technologies provide fast, accurate and minimally invasive options for diagnosis, biopsy, staging and treatment for tumors of the lung, trachea, mediastinum and pleural cavity. In addition, we treat pleural effusion, advanced emphysema and central airway obstruction from nonmalignant causes. We offer options that result in:

- **Less trauma, faster recovery**
- **Reduced risk of complications**
- **Immediate opening of mass-obstructed airways**
- **Treatment options for nonsurgical candidates**

More than 90% of interventional pulmonology procedures are performed on an outpatient basis.

Highlights of our capabilities include:

Endobronchial Ultrasound (EBUS) to biopsy lymph nodes in the mediastinum via bronchoscope, providing an outstanding view of the sample area and precise navigation around critical structures. We offer both linear and radial EBUS to reach otherwise inaccessible lung areas.

Robotic Bronchoscopy enables detection and biopsy of smaller and more difficult-to-reach peripheral nodules than other tools — without surgery. This new technology integrates the latest advancements in robotics, computer navigation, 3D imagery and endoscope innovation for maneuvering to remote nodules with unmatched precision and dexterity. Roswell Park is the first center in New York State to offer the Monarch™ platform robotic bronchoscopy, which enables real-time continuous visualization.

OUR CAPABILITIES

- Pulmonary function tests
- Cardiopulmonary exercise stress tests
- Lung cancer screening in high-risk populations
- Low-dose chest CT (LDCT)
- Pleuroscopy
- Endobronchial ultrasound (EBUS)
- Robotic bronchoscopy
- Electromagnetic navigational bronchoscopy
- Endobronchial laser, electrocautery or argon plasma coagulation
- Tracheal and bronchial stent placement
- Endobronchial cryotherapy, brachytherapy and photodynamic therapy (PDT)
- Endobronchial valve placement for persistent air leaks, bronchopleural fistulas and severe emphysema
- Balloon bronchoplasty
- Indwelling pleural catheter



Roswell Park is a high-volume center for VATS

Our thoracic surgeons use VATS in **80% to 90%** of lung surgeries. Nationally, only 20% to 30% of lung procedures use this approach.



“We are constantly adopting new technology, such as 3D imaging and energy devices, to enhance our ability to perform procedures minimally invasively, even in patients undergoing redo surgery or after previous chemotherapy and radiation. This allows patients to have multimodality therapy and still have an acceptable quality of life.”

– Sai Yendamuri, MD, FACS
Chair of Thoracic Surgery

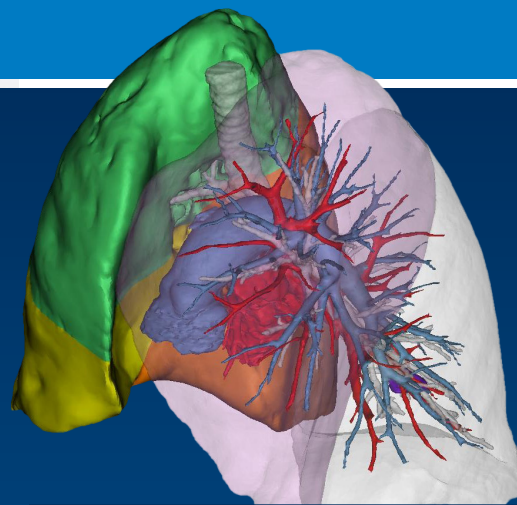
Minimally Invasive Lung Surgery

Surgical advances such as **Video-Assisted Thoracoscopic Surgery (VATS)** and **Robot-Assisted Thoracoscopic Surgery (RATS)** have revolutionized lung cancer procedures. Both techniques employ minimally invasive approaches where the surgeon operates through ports, aided by video and/or robotic tools. With the smaller incisions, patients typically heal faster and enjoy these benefits:

- **Shorter hospital stay**, typically three to four days. Fewer patients require nursing services or home health care afterwards.
- **Faster return to normal activities**. Patients have no lifting restrictions and may return to work quickly. Patients feel normal in three to four weeks.
- **Significantly less pain**. Many patients require little or no pain medication post surgery.
- **A safer surgical option**. Especially important for older patients with other health problems who would not be candidates for traditional surgery.

Thoracoscopic approaches

- Video-assisted thoracoscopic surgery (VATS)
- Lobectomy/VATS
- Pneumonectomy/VATS
- Robot-assisted thoracic procedures with the daVinci® Surgical System
- Chest wall resection
- Uniportal wedge resection
- Sleeve resection
- Video-assisted mediastinal lymphadenectomy (VAMLA)
- Transcervical mediastinal lymphadenectomy (TEMLA)



3D Imaging + Virtual Reality

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Superior Presurgical Planning

Thanks to Roswell Park’s new 3D Imaging Lab, our surgeons can now plan complex thoracic procedures with a diagnostic and interactive 3D model of the patient’s cancer and anatomy. Using a virtual reality headset and hand-held controllers, the surgeon can rotate the model, turn it over and explore the real-life intricacies of this patient’s cancer, see how a tumor may intertwine with organs, airways or blood vessels and plan for optimal excision.

RADIOTHERAPY APPROACHES

External Beam radiotherapy (EBRT)
Internal radiotherapy
Stereotactic Body Radiation Therapy (SBRT)

SBRT—A New Radiotherapy Tactic

Stereotactic Body Radiation Therapy (SBRT) delivers exceptionally precise, high-dose radiotherapy in **three treatment sessions** (or fewer). SBRT uses cone-beam CT to pinpoint the tumor and track its movement with respiration. Abdominal compression devices limit movement during radiation delivery.

Our outcomes with SBRT

This approach is becoming the preferred treatment for early-stage non-small cell lung cancers in patients who cannot tolerate surgery. Compared to traditional radiotherapy approaches, SBRT **triples** the 5-year survival rate from 10% to 30%. For more than 95% of patients, the tumor never grows back.

Later stage lung cancers

The use of SBRT to treat late stage non-small cell lung cancer is currently being evaluated at Roswell Park. Eligible patients include both non-surgical and surgical candidates, provided the lung surgery was a minimally invasive procedure. Patients undergo TEMPLA (or VAMLA at surgeon's discretion) to remove all mediastinal nodes, followed by one single fraction of SBRT. The one radiation treatment delivers a dose of 30 Gy to the primary tumor and 10 Gy to the mediastinal lymph node beds. Afterward, patients undergo chemotherapy as needed. This approach aims to improve control of these difficult cancers, diminish treatment toxicity and achieve better overall survival.

Personalized Medicine at Roswell Park

We test lung cancer tumors using two panels developed at Roswell Park to determine which targeted agents or immunotherapies offer your patient their very best option, based on:

Tumor genetic profile. OmniSeq Comprehensive analyzes the tumor to identify genetic alterations that actionable, meaning we offer a drug or anti-cancer agent that targets that specific genetic mutation. This test looks at 144 genes in all. Patients can then be matched with a targeted therapy or a clinical trial that offers a new agent, personalized for their tumor's genetic profile.

Unique immune system features. OmniSeq Immune Analysis examines multiple biomarkers to learn of unique abnormalities of a patient's immune system and predict which immunotherapies would provoke the best response.

MEDICAL APPROACHES TO LUNG CANCER AT ROSWELL PARK

- Immunotherapies, including monoclonal antibodies and vaccines
- Tyrosine kinase inhibitors
- Anti-angiogenesis agents
- Antibody drug conjugates
- Standard chemotherapy

Photodynamic Therapy (PDT)

Developed at Roswell Park, this targeted anticancer treatment uses a photosensitizing drug, such as Photofrin[®] that settles in tumor cells and is activated with non-thermal, visible red light, destroying malignant cells, but sparing normal tissue.

Second-generation photosensitizers, such as Photochlor[®] (HPPH) and others are being evaluated at Roswell Park. These newer drugs pose milder and shorter-lived side effects.

OUR THORACIC TEAM USES PDT FOR:

- Lung cancer
- Bronchus cancer
- Mesothelioma
- Pleural malignancies
- During thoracoscopic procedures





Clinical Trials — A vital treatment choice

The need for better lung cancer therapies remains urgent, making participation in clinical research studies an important option for many patients. With nearly 20 protocols underway, Roswell Park offers lung cancer patients more options to maximize survival by providing early access to promising new therapies, months to years ahead of FDA approval.

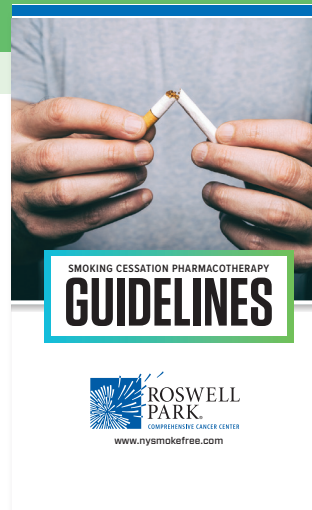
Highlights of current investigations include:

- **Agents for cancer prevention** including some aimed at halting the progression of premalignant lesions to cancer.
- **New treatment methods** such as intraoperative photodynamic therapy, stereotactic body radiotherapy, vaccines and other immunotherapies.
- **Novel targeted agents** to personalize medicine for each patient, maximize anticancer effect and quality of life, and minimize side effects. Some examples include antibody drug conjugates and oral KRAS, RET, HER2 and MET inhibitors.

The CIMAvax Vaccine

Roswell Park is the only center in the nation conducting clinical trials of the CIMAvax EGF[®] vaccine, a treatment for non-small cell lung cancer developed in Cuba. Learn more at RoswellPark.org/CIMAvax.

Multiple clinical research studies are available to patients with all stages of lung cancer. Find specific lung protocols: www.RoswellPark.org/clinical-trials or call 716-845-RPMD (716-845-7763)



Tobacco Treatment Service

Although quitting tobacco can improve treatment response and longevity, quitting can be especially difficult while fighting cancer. Our Tobacco Treatment Service specializes in helping patients quit tobacco use, no matter where they are in their treatment plan. Every Roswell Park patient who uses tobacco is proactively contacted by our certified tobacco treatment specialists. In conjunction with the cancer care team, our specialists will:

- Conduct a thorough tobacco treatment assessment over the telephone
- Develop an individualized tobacco treatment plan
- Provide evidence-based cognitive-behavioral treatment individually, over the telephone, and/or in a group treatment setting
- Coordinate with insurance plans to maximize pharmacotherapy options



SMOKING CESSATION

Patient Information Pamphlet



SUPPORTIVE CARE

We treat the whole patient, not just the cancer.

Most patients and families don't have the knowledge or time to prepare for the demands of a cancer journey, which may involve a hospital stay or home care needs. While our supportive services are beneficial to many cancer patients, they are often essential for those with lung diagnoses, and include:

- **Nutrition consultation** and services to meet vital nutrient needs, improve tolerance to treatment and promote healing
- **Smoking cessation** program for patients and their families
- **Rehabilitation medicine** to rebuild strength and mobility, decrease effects of treatment and provide pathway to a healthier lifestyle
- **Psychosocial counseling** to combat depression, anxiety and distress
- **Pastoral care** for spiritual understanding and support
- **Healthcare planning** and assistance with completing a healthcare proxy and advance care directives
- **Support groups** for patients and caregivers
- **Legal and financial assistance** to address issues with employment, FMLA, insurance, and disability and social security benefits
- **Practical resources** for transportation, lodging, home care needs and interpreter services



The Patient Navigator

Your patient's personal guide for the lung cancer journey

Our lung cancer team includes a patient navigator **specifically for lung patients**. This person ensures that every new lung patient and their family understands their treatment plan and how they may access Roswell Park's entire array of care, support and other resources.

SURVIVORSHIP CENTER

HELPING PATIENTS EMBRACE LIFE AFTER CANCER

Our new Survivorship Center brings together many of Roswell Park's clinical and supportive services to help our patients aim for a higher level of quality of life and wellness.

Our team will develop a long-term personalized care plan specific to your patient's diagnosis and treatment history to:

- **Detect and manage any complications** or side effects from the disease or its treatment
- **Address post-treatment adjustment**, anxiety, sleep issues and difficulty with intimacy or fertility
- **Provide guidance** for continued health and quality of life



Meet the Team



Thoracic Surgery

- 1 Todd Demmy, MD, FACS
- 2 Elisabeth Dexter, MD, FACS
- 3 Mark Hennon, MD, FACS
- 4 Chukwumere Nwogu, MD, PhD, FACS
- 5 Anthony Picone, MD, PhD, MBA, FACS
- 6 Sai Yendamuri, MD, FACS

Medical Oncology

- 7 Hongbin Chen, MD, PhD
- 8 Grace Dy, MD
- 9 Amy Early, MD, FACP
- 10 Edwin Yau, MD, PhD

Radiation Oncology

- 11 Jorge Gomez, MD
- 12 Anurag Singh, MD

Interventional Pulmonology

- 13 Nathaniel Ivanick, MD

Diagnostic Radiology

- 14 Charles Roche, MD

Nuclear Medicine

- 15 Dominick Lamonica, MD

Lung Cancer Screening

- 16 Mary Reid, MSPH, PhD

Pathology

- 17 Saraswati Pokharel, MD, PhD
- 18 Jingxin Qiu, MD, PhD
- 19 Bo Xu, MD, PhD

All team members are Board Certified.

Refer a Patient

Call us today to discuss a case, confirm a diagnosis or refer a patient, **716-845-RPMD** or 716-845-7763.



Elm & Carlton Streets | Buffalo, New York 14263
www.RoswellPark.org/rpmd
 716-845-RPMD (716-845-7763)

National Cancer Institute-Designated Comprehensive Cancer Center | National Comprehensive Cancer Network Member
 Blue Distinction Center for Cellular Immunotherapy - CAR-T | Blue Distinction® Center for Cancer Care | Blue Distinction® Center for Transplants