UNDERSTANDING SMALL CELL LUNG CANCER

1-800-298-2436
LungCancerAlliance.org
ANATOMY OF THE LUNGS

The following image shows different parts that make up the lungs. Please use this picture to help guide you through the topics discussed in our brochure.

The content of this publication is for informational purposes only and is not intended to be a substitute for professional medical advice, diagnosis or treatment. Only your doctor can provide you with advice on what is safe and effective for you. Models used in the brochure are for illustrative purposes only.

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SMALL CELL LUNG CANCER

Cancer is a group of diseases in which normal cells change, grow and divide out of control.

Cancer that begins in the lungs — lung cancer — is one of the most commonly diagnosed cancers in the United States. There are two main types: small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC). SCLC is the less common of the two, making up about 15% of lung cancer diagnoses. It is a type of cancer that spreads quickly.

WHAT CAUSES LUNG CANCER?

There is so much we don’t know. What we do know is that a history of smoking is the main risk factor for developing lung cancer. Cigarettes contain many carcinogens, which are substances that cause lung cancer.

Other risk factors include:

- Exposure to secondhand smoke (or passive smoking)
- Exposure to radon (an invisible, odorless, tasteless radioactive gas that occurs naturally in soil and rocks)
- A family history of lung cancer
- Radiation therapy to the chest area
- Other lung illnesses (such as emphysema, chronic obstructive pulmonary disease [COPD] or tuberculosis)
- Exposure to industrial chemicals including arsenic, asbestos, beryllium, uranium and Agent Orange.

DIAGNOSING SCLC: IMAGING

A number of tests provide information on areas of the lungs that do not appear normal. Doctors sometimes refer to these areas as tumors, spots, lesions, nodules or masses. Imaging can help doctors learn if a suspicious area is cancerous (malignant) or not (benign). Some imaging tools include the following:

CT (computed tomography) or “CAT” scanning can show tumors that may not be visible on a normal chest X-ray

PET (positron emission tomography) scanning shows how a tumor is using glucose (also known as sugar). Since tumors typically use more glucose than surrounding tissue, they appear as “hot spots” (bright areas) in these images

EBUS (endobronchial ultrasound) can help diagnose cancer in cases where lymph nodes (organs that are part of the lymphatic system) in the middle of the chest are involved

MRI (magnetic resonance imaging) creates detailed images of the body and can help determine whether a tumor has spread beyond its original location. Used in SCLC to check for cancer in the brain.
The lymphatic system is a collection of organs, vessels and nodes that are found throughout the body. The two major functions of the lymphatic system are to: collect excess fluid and return it to the blood and fight infection.

**LYMPH VESSELS** are similar to blood vessels and help to circulate lymph fluid throughout the body. Lymph fluid contains white blood cells, which help to fight infection.

**LYMPH NODES** are small, oval-shaped organs within the lymphatic system. The purpose of lymph nodes is to trap and collect invading organisms that can be destroyed by white blood cells. Lymph nodes are found throughout the body, but major clusters can be found behind the knee and elbow joints, and in the groin, armpits, neck and chest. A large group is found in the center of the chest (mediastinum) which drain lymph fluid from the lungs.

Cancer cells can break off from the main tumor and travel through the lymphatic system. Some of these cells can become trapped within a lymph node and start to grow. Determining whether there are cancer cells in lymph nodes can help a doctor estimate how far the cancer may have spread.

A biopsy is a procedure during which tissue is removed from the body for testing. The tissue can help doctors diagnose cancer and provide specific information about the suspicious area.

There are several types of biopsy procedures:

**FINE NEEDLE ASPIRATION** (FNA) Tissue is removed using a thin hollow needle
- Depending on the location of the tumor, FNA is done during bronchoscopy procedure (in which a camera-equipped tube is used to view the windpipe and other airways) or through skin
- This procedure may be guided by a CT scan

**CORE NEEDLE BIOPSY** Tissue is removed using a wider needle
- More tissue can be removed with this procedure than with fine needle aspiration

**SURGICAL BIOPSY** Tissue is removed during a surgical procedure
- Smaller tissue samples may be removed surgically during a bronchoscopy procedure; larger samples may require traditional surgery

**THORACENTESIS** Fluid is removed from the space around the lungs (also called the pleura) using a hollow needle inserted into the chest
SCLC is usually staged in two stages: limited or extensive. Some doctors use the same four stage (I-IV) system as is used in non-small cell lung cancer.

**LIMITED STAGE***

SCLC is generally found in the following areas:

- One lung
- Tissue between the lung
- Nearby lymph nodes only

**EXTENSIVE STAGE***

SCLC has spread outside the lung in which it began or to other parts of the body.

* No universally accepted definition of these stages exists. Some patients will not clearly fit into one stage or the other.
THE GOAL OF CHEMOTHERAPY IS TO KILL CANCER CELLS, WHICH ARE FAST GROWING. BECAUSE THE CELLS THAT MAKE UP THE HAIR AND THE LINING OF THE DIGESTIVE SYSTEM ARE ALSO RAPIDLY GROWING, CHEMOTHERAPY CAN DAMAGE THEM TOO AND CAUSE MANY COMMON SIDE EFFECTS. NOT EVERYONE EXPERIENCES THE SAME SIDE EFFECTS AND THEY MAY VARY IN SEVERITY. IT IS IMPORTANT TO KNOW THAT IN MOST CASES, SIDE EFFECTS CAN BE MANAGED. YOU AND YOUR HEALTHCARE TEAM SHOULD DISCUSS ANY POTENTIAL SIDE EFFECTS YOU MAY EXPERIENCE.

COMMON SIDE EFFECTS OF DRUG THERAPY MAY INCLUDE:

- Hair loss
- Nausea and vomiting
- Loss of appetite (anorexia)
- Constipation
- Diarrhea
- Shortness of breath (dyspnea)
- Tiredness (fatigue)
- Numbness or tingling in the hands or feet (neuropathy)
- Rash
- Low red/white blood cell count
RADIATION THERAPY

Radiation therapy is a treatment that uses high energy x-rays to kill or shrink cancer cells, to manage pain or to prevent cancer from spreading to the brain, as in the case of prophylactic cranial irradiation (PCI, see box on page 14).

SCLC is usually treated with general external beam radiation, which uses carefully aimed doses of radiation at specific sections of the lungs or surrounding areas.

**COMMON SIDE EFFECTS OF RADIATION THERAPY TO THE CHEST INCLUDE:**
- Tiredness (fatigue)
- Loss of appetite (anorexia)
- Inflammation of the esophagus (esophagitis)
- Inflammation of the lung (pneumonitis)
- Skin irritation
  - Redness
  - Itching
  - Dryness
  - Infection
- Hair loss
- Nausea
- Vomiting
- Headache
- Fever
- Short term memory changes

When SCLC has spread to the brain, whole brain radiation therapy (WBRT) is typically used as treatment. Tiredness and skin irritation are common. Additional side effects may include:

- Hair loss
- Headache
- Nausea
- Fever
- Vomiting
- Short term memory changes

Be sure to talk with your healthcare team about ways to manage any side effects you may experience.

COMBINATION THERAPY

A combination approach of chemotherapy and radiation at the same time is often used to treat SCLC. Your healthcare team will decide if combination therapy is best for your situation.

SURGERY

Surgery is not a commonly used to treat SCLC. For a small number of patients, if the cancer is found very early, is small and has not spread to lymph nodes; or the tumor is a mixture of SCLC and NSCLC (non-small cell lung cancer), surgery may be an option.

When surgery is considered for SCLC, learning as much as possible about the size and location of the cancer is especially important.

**IF YOU SMOKE, QUITTING IS ONE OF THE SINGLE MOST IMPORTANT LIFESTYLE CHANGES YOU CAN MAKE TO IMPROVE YOUR HEALTH.**

Even if you have lung cancer, quitting may help improve how you respond to treatment. If you want to quit, help is available. Ask your doctor or other healthcare provider for information.
**PCI PROPHYLACTIC CRANIAL IRRADIATION**

**WHAT IS PCI AND WHY SHOULD I CONSIDER IT?**

PCI is radiation to the brain. The goal is to prevent cancer from growing in the brain by killing any cells too small to see on imaging tests.

SCLC often spreads (metastasizes) to the brain. Studies show that after successful treatment with chemotherapy, PCI can reduce the chance that SCLC will spread to the brain by 30 to 50%.

PCI usually starts three to four weeks after chemotherapy ends. It is given five times a week for two to three weeks (10 to 15 sessions). The procedure only lasts three to four minutes but a visit can take 30 to 40 minutes.

**WHAT CAN I EXPECT?**

During PCI, the head must stay still so the radiation is given the same way each time. To help, a plastic mask is made before treatment starts. It takes 15 to 20 minutes to make the mask and do a test (“dry run” or simulation) so that the radiation beams are properly aimed.

The doses of radiation used in PCI are smaller than those used to treat the cancer if it spreads to the brain. Anxiety or fear of being closed in can be helped by medication. Some centers have ways to help patients stay calm during PCI, such as playing music.

**WHAT ABOUT SHORT-TERM SIDE EFFECTS?**

Due to the low dose of radiation used, side effects are usually mild. Tiredness and hair loss are the most common. Unless tiredness is an issue, or anti-anxiety medications are used, a patient may drive home after PCI. Many people are able to work while in PCI treatments.

**WHAT ABOUT LONG-TERM EFFECTS?**

Some people worry that PCI will affect their memory and how they think later in life. Major long-term effects are unlikely. Similar to the normal aging process, concentration and short-term memory seem to be the most affected.

The idea of radiation to the brain can be scary, especially when no cancer has been found there. Your doctor should talk with you about the risks and benefits of PCI. Be sure to ask questions and discuss any concerns you have.

**CLINICAL TRIALS**

Clinical trials are available for people diagnosed with SCLC and should be considered as an option every time a treatment decision is made. Clinical trials allow patients to receive promising new treatments or combinations of treatment that are still being evaluated by doctors and researchers.

**LUNG CANCER CLINICAL TRIAL MATCHING SERVICE**

We work with EmergingMed to offer a free clinical trial matching service. By providing information about your diagnosis, such as the stage and type of lung cancer you have, your treatment history and other information, a Clinical Trial Navigator will identify specific clinical trials for which you may be eligible. These recommendations can help you begin a discussion with your doctor to determine if enrolling in a clinical trial is right for you.

1-800-698-0931  
WWW.LUNGCANCERALLIANCE.ORG
While SCLC can be more challenging to treat than some other cancers, it is important to note that it often responds well to initial treatment.

Unfortunately, sometimes SCLC does not respond to treatment, or responds at first and then stops responding. In other cases, the treatment works, but the cancer comes back later. If any of these things happens, your treatment options will vary depending on whether your cancer responded to initial treatment or if it stopped working and when. Chemotherapy drugs that you received in the past may be used again or you may receive treatment with drugs you haven’t had before.

Long-term SCLC survivors should be aware that, in addition to possible recurrence of SCLC, there is an increased risk for second primary tumors which are commonly NSCLC (non-small cell lung cancer). This risk increases over time. It is important to know that if lung cancer is detected at a later time, it may not be SCLC.
WHERE CAN I GO FOR MORE INFORMATION?

For more information about lung cancer and current treatments, to discuss support options or for referral to other resources such as financial and legal assistance, please contact us:

INFORMATION LINE  |  1-800-298-2436
CLINICAL TRIAL MATCHING SERVICE  |  1-800-698-0931
WEBSITE  |  lungcanceralliance.org
E-MAIL  |  support@lungcanceralliance.org
MAIL  |  888 16th Street NW Suite 150 Washington, DC 20006

LUNG CANCER ALLIANCE

We are the only national non-profit organization dedicated to providing information, support and advocacy for people living with lung cancer and those at risk for the disease.

ENDING INJUSTICE AND SAVING LIVES THROUGH AN ALLIANCE OF ADVOCACY, EDUCATION AND SUPPORT.
Our programs are made possible by generous support from people like you. Please consider giving back so that others may continue to receive these free services. We are a 501 (c) (3) non-profit organization. All donations are tax-deductible to the full extent permitted by law.

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