CONDITION

Lung metastases

Lung metastases are cancer deposits that have spread to the lungs from another part of the body.

WHAT IT IS
Cancer deposits spreading to the lungs from another site

BODY SYSTEM
Lungs and breathing

MAIN SYMPTOMS
Cough, breathlessness, chest pain, coughing blood

WHAT CAUSES IT
Cancer cells spreading from another body site

HOW IT IS DIAGNOSED
CT imaging, often confirmed by biopsy and pathology

MAIN TREATMENT
Systemic cancer treatment, sometimes surgery or focused radiation

CAN IT BE CURED?
Sometimes - limited spread can be eradicated

IS IT AN EMERGENCY?
Sometimes - severe breathlessness or significant coughing of blood

LONG-TERM OUTLOOK
Shaped by cancer type, extent, and treatment response

Overview

Lung metastases are areas of cancer that have spread to the lungs from somewhere else in the body. They are also called secondary cancer in the lungs or pulmonary metastases.

They are not the same as cancer that started in the lungs. For example, breast cancer that spreads to a lung is still breast cancer. Its cells usually retain the features of breast cancer, and treatment is chosen on that basis.

Cancer cells can break away from the original tumour, travel through the blood or lymphatic system, and settle in the lungs. The lymphatic system is a network of vessels and glands that helps manage fluid and supports the immune system. The lungs receive a large blood supply, so they are a possible destination for travelling cancer cells.

A person may have one lung metastasis, several deposits, or many deposits in both lungs. Cancer may also be present in other organs. These details matter because they affect which treatments may be useful.

Some lung metastases are found during planned scans before they cause symptoms. A spot on a scan is not automatically a metastasis. Infections, inflammation, scar tissue, and non-cancerous growths can also cause lung nodules.

Symptoms

Many people with lung metastases have no breathing symptoms. The deposits may be discovered during follow-up imaging for a known cancer.

When symptoms occur, they can include:

Symptoms can also come from fluid around a lung, called a pleural effusion. This fluid can press on the lung and cause breathlessness, chest heaviness, or difficulty lying flat.

These symptoms have many possible causes. A cough or breathlessness does not by itself mean that cancer has spread. New or changing symptoms still deserve medical assessment, especially if you have a current or previous cancer diagnosis.

- A cough that is new, persistent, or changing
- Shortness of breath during activity or at rest
- Chest discomfort or pain
- Coughing up blood
- Repeated chest infections
- Tiredness, reduced appetite, or unplanned weight loss

Causes and risk factors

Lung metastases happen when cells from another cancer spread to the lungs. Cancers that may spread there include breast, bowel, kidney, testicular, bone and soft-tissue cancers, as well as melanoma and some head and neck cancers. Almost any invasive cancer can potentially spread to the lungs.

The chance of spread is mainly related to the biology of the original cancer. This includes how quickly its cells grow, whether they can invade nearby tissue, and whether they have reached blood or lymph vessels. The stage of the original cancer and its response to treatment also

matter.

Having lung metastases is not evidence that you caused the spread. Everyday actions, exercise, coughing, or having a biopsy do not make cancer travel through the body.

A history of smoking can increase the risk of developing a new primary lung cancer, but it is not the direct cause of lung metastases. People who have never smoked can also develop them if another cancer spreads.

Diagnosis

A chest CT scan is the main imaging test used to examine possible lung metastases. CT uses X-rays and computer processing to produce detailed pictures. The scan can show the number, size, shape, and position of lung nodules.

Earlier scans are useful for comparison. A nodule that is new or growing may be more concerning than one that has remained unchanged for a long time.

Other tests may include:

PET-CT cannot confirm every metastasis. Infection and inflammation can also appear active, while very small or slow-growing cancer deposits may not show clearly.

A biopsy removes cells or tissue for examination in a laboratory. It may be taken with a needle through the chest wall, through a bronchoscope passed into the airways, or during surgery. A pathologist examines the sample and may use protein or genetic tests to identify where the cancer began.

A biopsy is not always needed. If you have a known cancer and the scan pattern is typical, the clinical team may be confident about the diagnosis without one. They will consider whether a biopsy could change treatment and whether it can be done safely.

- A PET-CT scan to look for areas using unusually high amounts of glucose
- Scans of other body areas to assess the full extent of cancer
- Blood tests to check general health and organ function
- Breathing tests if surgery or another lung procedure is being considered

Treatment and management

Treatment is based mainly on the cancer where it originally started, not simply on its location in the lungs. The plan also considers how many metastases are present, whether cancer is

elsewhere, previous treatment, symptoms, general health, and your priorities.

Systemic treatment travels through the bloodstream and can treat cancer in more than one area. Depending on the original cancer and its laboratory features, this may include chemotherapy, hormone therapy, targeted therapy, or immunotherapy.

Some people have a small number of metastases in limited locations. This is sometimes called oligometastatic cancer. In carefully selected cases, treatment aimed directly at all known deposits may be considered. Options include:

Local treatment is not suitable for everyone. It is more likely to be considered when the original cancer is controlled, all known disease can be treated, and enough healthy lung would remain.

Treatment can also focus on symptoms and quality of life. A pleural effusion may be drained. If it repeatedly returns, a procedure to seal the space around the lung or a long-term drainage catheter may help. Pain relief, breathing support, nutrition care, and help with fatigue can be provided alongside cancer treatment.

Palliative care means care focused on comfort, symptoms, and practical or emotional support. It can be used at any stage and does not require stopping cancer treatment.

- Surgery to remove part of the lung containing a deposit
- Stereotactic body radiotherapy, which delivers focused radiation
- Ablation, which destroys a deposit using heat, cold, or another energy source

Complications

Lung metastases can sometimes interfere with breathing or with the normal drainage of fluid around the lungs.

Possible complications include:

Cancer can also spread through tiny lymph vessels in the lungs. This is called lymphangitic spread and can cause increasing breathlessness and a dry cough.

Procedures and treatments have their own risks. A lung biopsy can occasionally cause bleeding or a pneumothorax, meaning air collects around the lung and partly collapses it. Surgery, radiation, and systemic treatments can also affect breathing or energy levels. Your care team should explain the expected benefits and risks of any proposed treatment.

- Pleural effusion, causing breathlessness or chest pressure
- Narrowing or blockage of an airway

- Collapse of part of a lung
- Infection behind a blocked airway
- Bleeding into an airway
- Low blood oxygen levels
- Reduced ability to manage physical activity

Prevention

There is no reliable way to prevent an existing cancer from spreading to the lungs. Metastasis is driven mainly by the cancer's biology, and spread can sometimes occur despite timely and effective treatment.

Reducing the risk of some original cancers may lower the overall chance of metastatic cancer. Measures include avoiding tobacco, taking part in suitable cancer screening, limiting ultraviolet exposure, and following occupational safety guidance. These steps cannot prevent every cancer or guarantee that cancer will not spread.

If you have had cancer, attend the follow-up recommended for that cancer and report important new symptoms. Follow-up cannot always prevent metastases, but it may identify recurrence or treatment effects that need assessment.

Living with it and what to expect

The course of lung metastases differs greatly between cancer types and between people. Some deposits respond quickly to treatment. Others remain stable for months or years, while some continue to grow or appear in new places.

Scans are usually used to see whether treatment is shrinking the cancer, keeping it stable, or no longer controlling it. A scan showing no visible cancer may be described as no evidence of disease or a complete response. This is encouraging, but it does not always mean that every cancer cell has gone permanently.

Some people can have all known lung metastases treated and remain free of detectable disease for a long time. Others need repeated or ongoing systemic treatment. When treatment cannot remove the cancer, it may still slow its growth, relieve symptoms, and help protect daily function.

Life expectancy cannot be estimated from the words "lung metastases" alone. It is influenced by the original cancer, its molecular features, the amount and location of spread, response to

treatment, and general health.

Daily life may include scans, clinic visits, treatment cycles, and periods of recovery. Breathlessness and fatigue can affect work, caring roles, exercise, and sleep. Activity can often be adapted rather than stopped completely. A cancer rehabilitation or physiotherapy service may help you find a safe level.

Waiting for scan results can be difficult. Let your care team know if worry, low mood, sleep problems, or uncertainty are disrupting your daily life. Psychological support, cancer support groups, and practical advice may help.

When to get medical help

Seek emergency help if you:

These symptoms can have causes other than lung metastases, but they need immediate assessment.

Contact your cancer team or another medical service promptly for a new cough, worsening breathlessness, blood-streaked mucus, persistent chest pain, or a clear decline in what you can do. Fever during chemotherapy or another treatment that weakens immunity needs prompt advice according to your treatment team's instructions.

At routine follow-up, mention gradual changes in appetite, energy, sleep, pain, cough, or exercise tolerance. You do not need to wait until a symptom becomes severe before discussing it.

- Have severe or rapidly worsening trouble breathing
- Cough up more than a small amount of blood
- Develop blue, grey, or very pale lips or skin
- Have sudden chest pain with breathlessness, fainting, or confusion

Common questions

Are lung metastases the same as lung cancer?

No. Primary lung cancer starts in lung tissue. Lung metastases began as another cancer and then spread to the lungs. This distinction matters because the two are classified and treated differently.

Can lung metastases be cured?

Sometimes. Long-term control or cure may be possible when there are only a few deposits and all known cancer can be removed or destroyed. Widespread disease is less often curable, but treatment may control it and relieve symptoms.

How fast do lung metastases grow?

There is no single growth rate. It reflects the original cancer's biology and may change after treatment. Comparing scans taken at different times is more informative than judging one scan alone.

Do several lung nodules always mean metastatic cancer?

No. Multiple nodules can result from infection, inflammation, previous exposure, or non-cancerous conditions. Their appearance, changes over time, your cancer history, and sometimes a biopsy are used to determine the likely cause.

What is the life expectancy with lung metastases?

It cannot be predicted from lung involvement alone. Some cancers with lung metastases respond for years, while others are more difficult to control. The original cancer, other areas of spread, available treatments, and treatment response provide more useful information.

Can I exercise with lung metastases?

Many people can remain active, but the safe level depends on symptoms, lung function, treatment, and complications. Gentle, paced activity may help maintain strength. Stop and seek advice for new chest pain, dizziness, coughing blood, or unusual breathlessness.

Sources

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