



Glossary of terms

A

Adenocarcinoma	Cancer that forms in the glandular tissue, which lines certain internal organs and makes and releases substances in the body, such as mucus, digestive juices, and other fluids. Most cancers of the breast, lung, oesophagus, stomach, colon, rectum, pancreas, prostate, and uterus are adenocarcinomas.
ALK-positive or ALK+	Describes cells that have a protein called ALK on their surface. In cancer, it is also used to describe cells that have a change in the structure of the ALK gene or that make too much ALK protein. In normal cells, ALK helps control cell growth. Cancer cells that have the changed ALK gene or make too much ALK protein may grow more quickly. Knowing whether a cancer is ALK positive may help plan treatment. Cancers that may be ALK positive include neuroblastoma, non-small cell lung cancer, and anaplastic large cell lymphoma. Also called anaplastic lymphoma kinase positive.
ALK-EML4 gene	ALK+ lung cancer occurs when the ALK gene fuses with another gene (most commonly, a gene called EML4). This fused gene produces a mutated ALK fusion protein which triggers abnormal signals within the cell.
Antibody	A protein made by plasma cells (a type of white blood cell) in response to an antigen (a substance that causes the body to make a specific immune response). Each antibody can bind to only one specific antigen. The purpose of this binding is to help destroy the antigen. Some antibodies destroy antigens directly. Others make it easier for white blood cells to destroy the antigen. An antibody is a type of immunoglobulin.

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A

Antigen	An antigen is a marker on the outside of a cell that causes the body to make an immune response. Antibodies, which are made in our bodies and help fight infection, bind to antigens as part of this immune response. In immunohistochemistry testing, pathologists make specific antibodies with a dye that is activated when the antibodies bind to a specific cancer cell antigen. If the dye is activated, we know that a specific antigen – and therefore a specific cancer type – is present.
Adjuvant therapy	Treatment given after surgery to reduce the chances of the cancer returning.

B

Basal cell carcinoma	Cancer that begins in the lower part of the epidermis (the outer layer of the skin). It may appear as a small white or flesh-coloured bump that grows slowly and may bleed. Basal cell carcinomas are usually found on areas of the body exposed to the sun. Basal cell carcinomas rarely metastasise (spread) to other parts of the body. They are the most common form of skin cancer. Also called basal cell cancer.
Biomarkers	Cancer biomarkers are substances produced by cancer cells (or our body cells in response to the cancer). They can give us information about the cancer's characteristics and how it may respond to certain treatments.

B

Biopsy	A biopsy is a medical procedure that involves taking a small sample of body tissue so it can be examined under a microscope.
Blood-brain barrier	The blood-brain barrier is a selective membrane which acts as a filter for the brain. It protects the brain from unwanted substances such as pathogens which could cause infections. It can be difficult for medicines to cross the blood-brain barrier.
Bronchoscopy	A bronchoscopy is a procedure that allows a doctor to see the inside of your airways and remove a small sample of cells (biopsy). During a bronchoscopy, a thin tube with a camera at the end, called a bronchoscope, is passed through your mouth or nose, down your throat and into your airways.

C

Cancer	Cancer is a condition where cells in a specific part of the body grow and reproduce uncontrollably. The cancerous cells can invade and destroy surrounding healthy tissue, including organs.
Carcinoma	Cancer that begins in the skin or in tissues that line or cover internal organs.
Chemotherapy	Chemotherapy is a cancer treatment where medicine is used to kill cancer cells. There are many different types of chemotherapy medicine, but they all work in a similar way. They stop cancer cells reproducing, which prevents them from growing and spreading in the body.

C

CNS	Our central nervous system (CNS) is made up of our brain and spinal cord.
Cognitive effects/ cognitive impairment	Problems with a person's ability to think, learn, remember, use judgement, and make decisions. Signs of cognitive impairment include memory loss and trouble concentrating, completing tasks, understanding, remembering, following instructions, and solving problems. Other common signs may include changes in mood or behaviour, loss of motivation, and being unaware of surroundings. Cognitive impairment may be mild or severe. There are many causes of cognitive impairment, including cancer and some cancer treatments.
CT (computerised tomography) scan	A CT scan is a test that takes detailed pictures of the inside of your body. It's usually used to diagnose conditions or check how well treatment is working.

D

DNA and RNA	DNA (deoxyribonucleic acid) and RNA (ribonucleic acid) are molecules that hold our genetic information. DNA contains the instructions for our growth and development, while RNA helps use these instructions to make proteins.
Driver mutation	ALK+ lung cancer is referred to as a driver mutation, or an oncogenic driver mutation. This term is referring to the type of gene mutation that has taken place. Driver mutations drive the development of cancer. A driver mutation is a genetic change that directly causes the cancer cells to grow and divide uncontrollably, by using key messaging pathways within the cell to constantly signal it to multiply.

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Echocardiogram

An echocardiogram, or 'echo', is a scan used to look at the heart and nearby blood vessels. It's a type of ultrasound scan, which means a small probe is used to send out high-frequency sound waves that create echoes when they bounce off different parts of the body. These echoes are picked up by the probe and turned into a moving image on a monitor while the scan is carried out.

Endobronchial ultrasound

An endobronchial ultrasound (EBUS) uses soundwaves to get a picture of your lungs and nearby lymph nodes from inside the windpipe.

F

First-line treatment or first-line setting

This refers to the first treatment used to treat a cancer. There are also second-line and third-line treatments, referring to the treatments used after the first one fails or can no longer be tolerated.

G

Gastrointestinal (GI)	Having to do with the gastrointestinal (GI) tract or GI system. The GI tract includes the mouth, throat, oesophagus, stomach, small intestine, large intestine, rectum, and anus. Food and liquids travel through the GI tract as they are swallowed, digested, absorbed, and leave the body as faeces. The GI system includes these organs as well as the salivary glands, liver, gallbladder, and pancreas, which make digestive juices and enzymes that help the body digest food and liquids. Also called GI.
Gene	The functional and physical unit of heredity passed from parent to offspring. Genes are pieces of DNA, and most genes contain the information for making a specific protein.
Genomic testing	Genomic testing in lung cancer involves looking at the genetic makeup of the cancer cell. By learning about the DNA of the cell, we can establish which treatments might work against it.
Germline mutation	A gene change in a body's reproductive cell (egg or sperm) that becomes incorporated into the DNA of every cell in the body of the offspring. Germline mutations are passed on from parents to offspring. Also called germline variant.

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Histopathology

Histopathology involves the diagnosis and study of diseases of the tissues by examining tissues and/or cells under a microscope.

I

Index of suspicion

An index of suspicion is defined as 'awareness and concern for potentially serious underlying and unseen injuries or illness. For example, if a doctor has a 'high index of suspicion' for lung cancer when examining a patient with a persistent cough, they will conduct investigations until they are certain whether or not lung cancer is present.

Immuno-histochemistry

Immunohistochemistry is a technique that can help pathologists identify specific cancer cells using antibodies.

Invasive procedure

Immunotherapy is a treatment which uses your immune system to fight cancer. It works by helping the immune system recognise and attack cancer cells. Some types of immunotherapy are also called targeted treatments or biological therapies.

Lack of specificity:

A medical procedure that invades (enters) the body, usually by cutting or puncturing the skin or by inserting instruments into the body.

L

Lack of specificity:	Drugs with low specificity tend to produce unintended physiological effects, for example side effects. This happens because these drugs target both the ALK protein and other proteins which are important for the normal functioning of our body.
Large-cell carcinoma	Lung cancer in which the cells are large and look abnormal when viewed under a microscope.
Liquid biopsy	A laboratory test done on a sample of blood, urine, or other body fluid to look for cancer cells from a tumour or small pieces of DNA, RNA, or other molecules released by tumour cells into a person's body fluids. Liquid biopsy allows multiple samples to be taken over time, which may help doctors understand what kind of genetic or molecular changes are taking place in a tumour. A liquid biopsy may be used to help find cancer at an early stage. It may also be used to help plan treatment or to find out how well treatment is working or if cancer has come back.
Lung function test	Lung function tests (also known as spirometry) measure how much air a patient can breathe out in one forced breath.

M
Metastasis (plural: metastases)

When a cancer starts in one place in the body and spreads elsewhere, this is a secondary cancer or a 'metastasis'. The place in the body where a cancer first starts is the 'primary cancer'. Sometimes, cancer cells can break off from the primary cancer and spread elsewhere in the body. Cancer can then grow in another part of the body. When this happens, this is secondary (metastatic) cancer.

Multi-disciplinary team (MDT)

A multi-disciplinary team (MDT) is a group of healthcare professionals who meet regularly to discuss patients' cases, particularly new cases, sharing knowledge to work out the best treatment plans on an individual basis.

N
Neo-adjuvant therapy

Treatment given as a first step to shrink a tumour before the main treatment, which is usually surgery, is given. Examples of neoadjuvant therapy include chemotherapy, radiation therapy, and hormone therapy.

Never-smokers

Never smokers are commonly defined as people who have smoked fewer than 100 cigarettes in their lifetime.

Non-small-cell lung cancer (NSCLC)

NSCLC, or non-small-cell lung cancer, is the most common form of lung cancer. It can be one of three types: squamous cell carcinoma, adenocarcinoma or large-cell carcinoma.
ALK+ lung cancer is a type of non-small cell lung cancer.

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Oligoprogressive disease

This refers to a state in which a limited number of tumours have grown, while all the others remain controlled by treatment.

Overall survival

This refers to the length of time either after diagnosis or after a treatment is given in which the patient survives.

P

Palliative care

Care given to improve the quality of life and help reduce pain in people who have a serious or life-threatening disease, such as cancer. The goal of palliative care is to prevent or treat, as early as possible, the symptoms of the disease and the side effects caused by treatment of the disease. It also attends to the psychological, social, and spiritual problems caused by the disease or its treatment. For cancer, palliative care may include therapies, such as surgery, radiation therapy, or chemotherapy, to remove, shrink, or slow the growth of a tumour that is causing pain. It may also include family and caregiver support. Palliative care may be given with other treatments from the time of diagnosis until the end of life.

PET-CT scan

PET-CT (which stands for positron emission tomography with computerised tomography) is a scanning method that allows healthcare professionals to see how cells are behaving in different parts of the body. It involves giving the patient an injection containing a small amount of radioactivity called a tracer.

P

Pleural biopsy	In a pleural biopsy, tissue samples are taken from the pleural cavity – the space between the lungs and the walls of the chest.
Progression	In medicine, the course of a disease, such as cancer, as it becomes worse or spreads in the body.
Progression-free survival	This refers to the time after a treatment is given in which a person lives with the cancer but it does not get worse.
Prognosis	The likely outcome or course of a disease; the chance of recovery or recurrence.

R

Radiotherapy	Radiotherapy is a treatment where radiation is used to kill cancer cells.
Resectable	This term refers to a tumour which is able to be removed by surgery.

S

Small-cell lung cancer (SCLC)	An aggressive (fast-growing) cancer that forms in tissues of the lung and can spread to other parts of the body. The cancer cells look small and oval-shaped when looked at under a microscope.
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Somatic mutation	An alteration in DNA that occurs after conception. Somatic mutations can occur in any of the cells of the body except the germ cells (sperm and egg) and therefore are not passed on to children. These alterations can (but do not always) cause cancer or other diseases. Also called somatic variant. ALK+ lung cancer is caused by a somatic mutation.
Squamous cell carcinoma	Cancer that begins in squamous cells. Squamous cells are thin, flat cells that look like fish scales, and are found in the tissue that forms the surface of the skin, the lining of the hollow organs of the body, and the lining of the respiratory and digestive tracts. Most cancers of the anus, cervix, head and neck, and vagina are squamous cell carcinomas. Also called epidermoid carcinoma.
Systemic therapy	Treatment using substances that travel through the bloodstream, reaching and affecting cells all over the body.

T

TKIs	TKIs (tyrosine kinase inhibitors), also known as ALK inhibitors, are the key treatment for ALK+ lung cancer.
Toxicity	The extent to which something is poisonous or harmful. When 'toxicity' is used in the context of cancer, it is usually referring to adverse effects on the body (side effects) from cancer treatments.

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