



IMPORTANT INFORMATION FOR PEOPLE WITH ADVANCED NON-SMALL CELL LUNG CANCER

The following information is only meant for people who have been diagnosed with **advanced non-small cell lung cancer (NSCLC)**. NSCLC is the most common type of lung cancer, accounting for approximately 80% of all lung cancers. If you are unsure whether or not you have advanced NSCLC, please talk to your Doctor.

For people who have advanced non-small cell lung cancer (NSCLC), it is especially important to fully understand all of your treatment options. A key part of this is knowing the EGFR mutation status of the tumour. Knowing whether the tumour is “EGFR mutation-positive” or “EGFR mutation-negative” is one factor that can help your Doctor decide which treatment is best for you. New cancer treatments and medicines are always being developed so it is essential to know if one of them could be an option for you.

WHAT YOU NEED TO KNOW ABOUT EGFR MUTATION STATUS TESTING

You may be wondering what an EGFR mutation is. This document will help explain:

- EGFR mutations and their role in lung cancer
- Factors that may be predictors of EGFR mutations
- How to get tested for the EGFR mutation
- EGFR-related Frequently Asked Questions (FAQs)

You can also find a glossary on page 7 that may be helpful if you come across any unfamiliar words along the way.



WHAT ARE EGFRs AND HOW CAN THEY AFFECT LUNG CANCER?

Some lung cancer tumour cells have a DNA mutation that affects the Epidermal Growth Factor Receptors. This is known as having a tumour that is "Epidermal Growth Factor Receptor (EGFR) mutation-positive". These receptors are found on the cells of the tumour, and they are responsible for telling the tumour when to grow. Mutated EGFRs show an increased rate of uncontrolled tumour growth, which can speed up the cancer's progression.

WHY IS KNOWING YOUR MUTATION STATUS SO IMPORTANT?

It is important to know your EGFR mutation status because it can help your Doctor determine which treatment will work best for you. In advanced NSCLC, there are two main treatment options: chemotherapy and targeted therapy.

Tumour cells with mutated EGFRs (mutation-positive) are constantly signalling the tumour to grow and are therefore, very sensitive to cancer treatments known as "targeted therapies" or "Epidermal Growth Factor Receptor Tyrosine Kinase Inhibitors (EGFR-TKIs)".

Patients who have mutation-negative tumours are usually treated with chemotherapy

- Medical studies have shown that patients with EGFR mutation-negative tumours gain more benefit from chemotherapy than with targeted therapies

Patients who have mutation-positive tumours can now be treated with targeted therapy

- Medical studies have shown that patients with EGFR mutation-positive tumours gain more benefit from targeted therapies than with standard chemotherapy

It is very important for your Doctor to know your mutation status whether it is negative or positive, so that you get the treatment that will work best for you.



WHO SHOULD HAVE THEIR EGFR MUTATION STATUS TESTED?

There are some factors that may predict how likely you are to have an EGFR mutation. For example, certain groups of people seem to have a higher chance of being EGFR mutation-positive.

IF YOU FALL INTO ONE OR MORE OF THE FOLLOWING GROUPS, YOU MAY BE MORE LIKELY TO HAVE AN EGFR MUTATION:

- ✓ You are a nonsmoker (or ex-light smoker)
- ✓ You have been diagnosed with adenocarcinoma
(the most common subtype of non-small cell lung cancer – about 40%-50% of NSCLC)
- ✓ You are a female
- ✓ You are of Asian descent

If you have advanced non-small cell lung cancer and fit into any of the four groups listed above, you should talk to your Doctor about EGFR mutation testing. The only way to find out if your tumour is EGFR mutation-positive and determine which treatment will work best for you is to have your Doctor request a diagnostic test.



HOW CAN I FIND OUT IF I AM EGFR MUTATION- POSITIVE?

To determine if your tumour is EGFR mutation-positive, your Doctor has to request a diagnostic test. The test is usually performed on a tumour tissue sample that has been preserved from a previous biopsy.

If you have been diagnosed with advanced non-small cell lung cancer (NSCLC) and fit into one (or more) of the groups mentioned on page 3, it is possible that your tumour may be EGFR mutation-positive. If you fit the description (or if you are unsure), ask your Doctor if the test is right for you.

If you qualify for the EGFR mutation-status test, there may be programs in place to help facilitate the process for your Doctor, and completely cover the cost for you.



FREQUENTLY ASKED QUESTIONS ABOUT EGFRs AND MUTATION TESTING

WHAT IS AN EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR)?

Epidermal Growth Factor Receptors can be found on the cells of a tumour, and they are responsible for telling a tumour when to grow. Some lung cancer tumour cells have a DNA mutation that affects the Epidermal Growth Factor Receptors. This is known as having a tumour that is "Epidermal Growth Factor Receptor (EGFR) mutation-positive". Mutated EGFRs show an increased rate of uncontrolled tumour growth, which can speed up the cancer's progression.

Tumour cells with mutated EGFRs (mutation-positive) are constantly signalling the tumour to grow and are therefore, very sensitive to cancer treatments known as "targeted therapies" or "Epidermal Growth Factor Receptor Tyrosine Kinase Inhibitors (EGFR-TKIs)".

WHY DOES KNOWING MY EGFR MUTATION STATUS MATTER?

In advanced NSCLC, there are two main treatment options: chemotherapy and targeted therapy. Knowing your mutation status will help your Doctor determine which treatment will work best for you. Patients who have mutation-negative tumours usually get treated with chemotherapy; patients who have mutation-positive tumours now have the option of treatment with targeted therapy.

WHAT HAPPENS IF MY TUMOUR IS EGFR MUTATION-POSITIVE?

If the mutation-status test determines that your tumour is EGFR mutation-positive, your Doctor may choose to treat your cancer with a targeted therapy. Medical studies have shown that patients with EGFR mutation-positive tumours gain more benefit from targeted therapies than with standard chemotherapy.



FREQUENTLY ASKED QUESTIONS ABOUT EGFRs AND MUTATION TESTING

(CONTINUED)

WHAT HAPPENS IF MY TUMOUR IS EGFR MUTATION-NEGATIVE?

If the mutation-status test determines that your tumour is EGFR mutation-negative, your Doctor will likely treat your cancer with chemotherapy. Medical studies have shown that patients with EGFR mutation-negative tumours gain more benefit from chemotherapy than with targeted therapies.

HOW MUCH WILL THE EGFR MUTATION-STATUS TEST COST?

If you qualify for the EGFR mutation-status test, there may be programs in place that will cover the cost for you. Your Doctor will know how to obtain coverage.

I HAVE SEVERAL DOCTORS, WHICH ONE SHOULD I ASK TO REQUEST THE EGFR TEST?

Your Oncologist is the Doctor you should speak to about any questions that relate to your mutation status. They are also the Doctors who request EGFR mutation-status tests for patients who meet the criteria.

MY DOCTOR SAYS I DON'T NEED TO BE TESTED. WHAT SHOULD I DO NOW?

The EGFR mutation-status test is not for everyone. To start with, you must have advanced non-small cell lung cancer (NSCLC) to be eligible for the test. Having at least one of the factors may increase your chances of having an EGFR mutation. These factors include patients who are nonsmokers or ex-light smokers, female, Asian, or who have been diagnosed with adenocarcinoma. Your Oncologist will decide whether or not you should be tested.



GLOSSARY

ADENOCARCINOMA

The most common type of non-small cell lung cancer (NSCLC). In NSCLC, it is usually found in the tissues of the lung.

ADVANCED NSCLC

Non-small cell lung cancer that has spread in the body to nearby areas.

BIOPSY

The removal of a sample of body tissue (e.g. lung tissue) to examine and test for cancer.

CANCER

An abnormal growth of cells that usually multiplies in an uncontrolled way and can invade surrounding tissue and spread to other areas of the body.

CHEMOTHERAPY

A type of cancer treatment. Chemotherapy kills cancer cells by interfering with the tumour cells' ability to grow and reproduce. Because chemotherapy drugs travel throughout the whole body, they can also affect normal cells.

DNA

Short for deoxyribonucleic acid. DNA is found in all living cells. It makes up the genetic material (genes or chromosomes) responsible for passing on inherited characteristics from parents to their children.

EGFR (OR EPIDERMAL GROWTH FACTOR RECEPTOR)

Epidermal Growth Factor Receptors play a key role in tumour growth.

Receptors are like little flags found on the surface of a cell, or within a cell. Substances in the body can attach to these receptors and cause a change in the cell. For example, when Epidermal Growth Factor attaches to the Epidermal Growth Factor Receptor, it triggers a reaction that tells the cell to grow and multiply.



GLOSSARY (CONTINUED)

EGFR-TKI (OR EPIDERMAL GROWTH FACTOR RECEPTOR TYROSINE KINASE INHIBITOR)

A type of targeted therapy sometimes used in advanced (metastatic) non-small cell lung cancer (see "TARGETED THERAPY").

METASTATIC (OR METASTASIS)

The spread of cancer to other places in the body through the lymphatic system and/or bloodstream.

MUTATION

A change in the DNA sequence of a gene or chromosome.

NSCLC (OR NON-SMALL CELL LUNG CANCER)

One of the major classes of lung cancer (the other is known as "small-cell lung cancer"). There are three major subtypes of NSCLC: adenocarcinoma, squamous cell carcinoma, and large cell carcinoma.

ONCOLOGIST

A doctor who specializes in treating cancer. Some oncologists specialize in chemotherapy (medical oncologists), radiotherapy (radiation oncologists), or surgery (surgical oncologists). Other oncology specialists include oncology nurses and oncology social workers.

TARGETED THERAPY

Targeted therapies are designed to "target" cancer cells and interfere with their ability to grow and spread. Since targeted therapies directly target cancer cells and not the normal healthy cells in the body, they do not have the same side effects as chemotherapy. Some of these targeted therapies are taken orally (by mouth) which offers the added convenience of being able to take treatment at home. EGFR-TKIs (or EGFR inhibitors) are just one example of a targeted therapy.

TUMOUR

An abnormal growth of cells that can be benign (non-cancerous) or malignant (cancerous).

Information provided by a leading Canadian healthcare company.