Published November 2021

What is EGFR-positive lung cancer and how will I know if I have it?

To find out if you have EGFR-positive lung cancer, doctors will do tests to see if your cancer cells have the EGFR mutation (change or error).

What is EGFR-positive lung cancer?

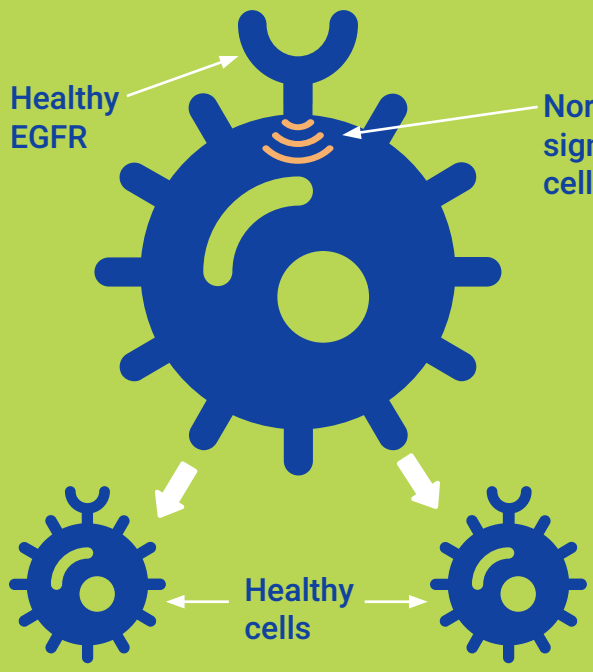
EGFR (epidermal growth factor receptor) is a protein on the surface of cells. It normally helps cells grow by sending signals to tell cells if, when, and how quickly to divide. When EGFR mutates, it sends too many signals that tell the cell to divide, which can cause cancer cells and a tumor to form.

EGFR-positive lung cancer means your cancer cells have a mutation in the EGFR **gene**. This mutation happened during your life - you were not born with it.

A **gene** is the part of a cell that has the code or instructions that tell the cell what to do. An EGFR **mutation** is a change or error in the gene that tells EGFR how to work.

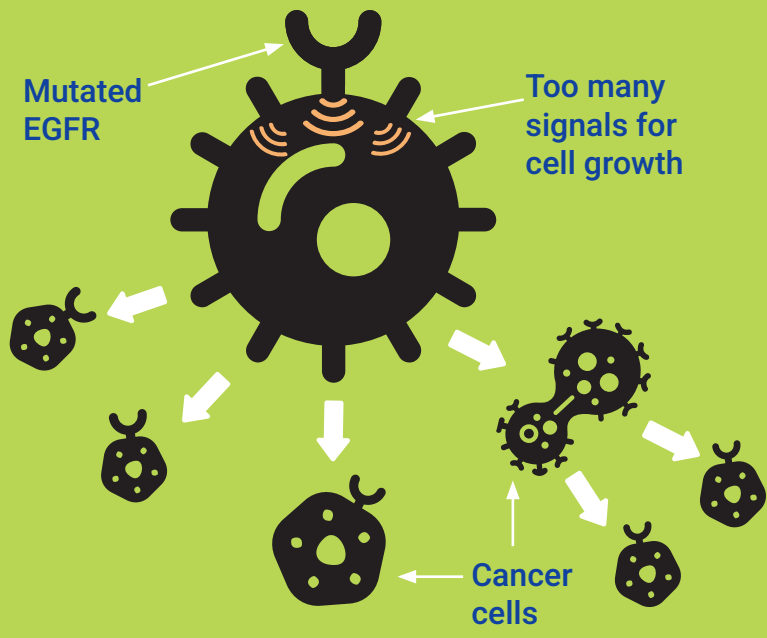
How the EGFR mutation causes cancer

Normal EGFR in healthy cells



In healthy cells, EGFR sends signals that tell cells how to divide. 1 healthy cell divides into 2 healthy cells.

Mutated EGFR in cancer cells

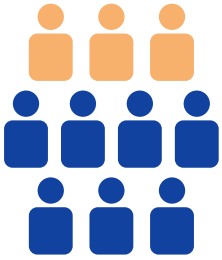


In cancer cells, the EGFR mutation sends too many signals that tell cells to divide. 1 cancer cell divides into many cells and forms a tumor.

There are different types of EGFR mutations

The type of EGFR mutation tells doctors the specific part of the EGFR gene that has a mutation. Specific treatments work best for certain types of EGFR mutations. The most common EGFR mutations are an exon 19 deletion or an exon 21 change.

How common is the EGFR mutation?



About 3 out of 10 people with non-small cell lung cancer (NSCLC) test positive for EGFR, which means that they have the EGFR mutation. EGFR mutations are more common in:

- **Certain racial or ethnic groups** - about 5 out of 10 Asian people with NSCLC test positive for EGFR
- **Women**
- **People without a history of tobacco use**
- **People diagnosed with lung cancer at a younger age**

How will I know if I have EGFR-positive lung cancer?

Doctors do **biomarker testing** to learn if your lung cancer cells have the EGFR mutation or other biomarkers that helped your cancer grow. The EGFR mutation is one type of biomarker that doctors test for in lung cancer.

Doctors can measure biomarkers in tissues, blood, or other body fluids, like fluid around your lungs.

To test for biomarkers, doctors may do 1 or both of these types of biopsies:

- **Tissue biopsy** - test a sample of tumor tissue in a lab
- **Liquid biopsy** - test a sample of your blood

What is a biomarker?
Biomarkers are changes in a cancer cell that cause cancer to grow. There are treatments that work best to treat cancers with certain biomarkers. EGFR is a type of biomarker.

Why is it important to know if I'm EGFR-positive?

Knowing if you're EGFR positive can help you and your doctors decide on the treatment that is most likely to work for your lung cancer.

Some treatments, such as chemotherapy, attack many different cells in your body, including healthy and cancer cells. But treatments called **targeted therapies** are made to attack the mutated parts of cancer cells. Targeted therapies are often taken by mouth as pills.

For people with EGFR-positive lung cancer, **targeted therapies** can mean:

- Less side effects from treatment
- A better quality of life
- A higher chance to avoid or postpone chemotherapy

To learn more about treatments, see our material "Treatment options for EGFR-positive lung cancer".

To learn more, visit: **egfrcancer.org**

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