

A study of atezolizumab (immunotherapy: a medicine that helps a person's own immune system attack their cancer) given under the skin (subcutaneous) compared with into a vein (intravenous) for people with a type of lung cancer called 'non-small cell lung cancer'

See the end of the summary for the full title of the study.

About this summary

This is a summary of the results of a clinical trial (called a 'study' in this document) written for:

- Members of the public
- People who took part in the study and other patients

This summary is based on information known at the time of writing.

The study **started in December 2018 and is planned to finish by the end of 2024**. This summary includes the results that were analysed in January 2023. At the time of writing this summary, the study is ongoing, and study doctors are still collecting information.

The results from this study may be different from other studies with the same medicine. One study can't tell us everything about **how safe a medicine is and how well it works**. It takes lots of people in many studies to find out everything we need to know.

This means that you should not make decisions based on this one summary. Always talk to your doctor before making any decisions about your treatment.

Glossary

- Immunotherapy = a medicine that helps a person's own immune system attack their cancer
- Intravenous = into a vein
- NSCLC = non-small cell lung cancer
- Subcutaneous = under the skin

Thank you to the people who took part in this study

The people who took part in this study have helped researchers answer important questions about a type of lung cancer called 'non-small cell lung cancer' (NSCLC) and the medicine being studied – 'atezolizumab'. Atezolizumab given into a vein (intravenous) was compared with atezolizumab given under the skin (subcutaneous).

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Key information about this study

Why was this study done?

- This study is being done to compare how a drug (called '**atezolizumab**') works when it is given under the skin compared with when it is given into a vein.
- The study had 2 parts:
 - In the first part, researchers wanted to find out how much atezolizumab to give under the skin. Even though atezolizumab had been used before in people with NSCLC (and other types of cancer), it had only been given into a vein. This part of the study helped researchers find the safest and best amount of the drug to give under the skin. 67 people were included in this part of the study. This part of the study helped researchers decide how much of the medicine to give to people in the second part of the study.
 - The second part of the study looked at how much atezolizumab was in people's blood after being given the medicine under the skin of the upper leg or into a vein. It also looked at how well the medicine worked and how safe it was. The amount of medicine given under the skin was based on the results from Part 1. All of the people who participated in the study had locally advanced NSCLC (the cancer had spread throughout the lungs and to lymph nodes) or metastatic NSCLC (the cancer had spread to other parts of the body). Before patients started the study, their cancer either did not get smaller with chemotherapy, or it got smaller but then got larger again within 6 months of chemotherapy treatment. This part of the study included 371 people.
- This summary focuses on the results from Part 2.
- 371 people from 68 different centres in 19 countries joined this part of the study.
- Atezolizumab was given to people every 3 weeks under the skin (**Group A**) or into a vein (**Group B**).

Group A

**Atezolizumab
given under the skin
(subcutaneous)**

Group B

**Atezolizumab
given into a vein
(intravenous)**

What were the results?

- So far, the main findings were that:
 - People from both groups had similar amounts of the drug (atezolizumab) in their blood. This tells researchers that both ways of giving the drug give people similar amounts of medicine in their body.
 - People who were given atezolizumab **under the skin** lived for about **10.7 months** after starting the drug. People who were given atezolizumab **into a vein** lived about **10.1 months** after starting the drug. This means that both ways of giving the drug helped people live a similar amount of time.
 - For people who got atezolizumab under the skin, their cancer got worse about 2.8 months after starting the treatment. For people who got atezolizumab into a vein, their cancer got worse about 2.9 months after starting treatment. This means that both ways of giving the drug kept the cancer from getting worse for about the same amount of time.

How many people had serious side effects related to their treatment?

- **Group A (atezolizumab given under the skin):** 5 out of 247 people (2%) had serious side effects related to their treatment.
- **Group B (atezolizumab given into a vein):** 4 out of 124 people (3%) had serious side effects related to their treatment.
- At the time of writing this summary, the study is still ongoing. It is planned to finish by the end of 2024.

1. General information about this study

Why was this study done?

People with cancer that has spread to other parts of the body (locally advanced, which means that the cancer has spread to nearby areas, or metastatic, which means that the cancer has spread far from where it started) are very ill and probably will not live for a very long time. These people are sometimes given a treatment called 'immunotherapy' – a medicine that helps the person's own immune system attack their cancer (tumour).

A type of immunotherapy called an 'immune checkpoint inhibitor' works by blocking substances called checkpoint proteins. Normally, these proteins stop a person's immune system from attacking healthy cells, but cancer cells can use them to stop the immune system from killing the tumour. Immune checkpoint inhibitors help to treat cancers by blocking these proteins, which allows the immune system to attack tumours. One checkpoint protein that can be blocked by immune checkpoint inhibitors is called 'programmed death-ligand 1' or 'PD-L1'. Atezolizumab is a medicine that blocks PD-L1.

Usually when people with cancer get immunotherapy, the medicine is given into a vein (intravenous). However, some people may have trouble getting medicine into a vein or may find it painful. Some people may find that an injection under the skin (subcutaneous) is easier, faster, and less painful. Therefore, researchers wanted to see if giving the medicine (atezolizumab) under the skin (subcutaneous) would work in the same way as when it is given into a vein (intravenous).

What were the treatments being studied?

This study compared people with NSCLC who had their medicine (atezolizumab) given to them under the skin (subcutaneous) or into a vein (intravenous).

- **Group A: Atezolizumab (study medicine) given under the skin (subcutaneous)**
- **Group B: Atezolizumab (study medicine) given into a vein (intravenous)**

Group A

**Atezolizumab
given under the skin
(subcutaneous)**

Group B

**Atezolizumab
given into a vein
(intravenous)**

The immunotherapy medicine used in this study is called **'atezolizumab'** (known by its brand name, Tecentriq®).

- You say **'atezolizumab'** as 'a – teh – zo – liz – oo – mab'.
- You say **'Tecentriq'** as 'tee – sen – trik'.
- The body's immune system can fight diseases such as cancer. However, cancer cells containing PD-L1 can stop the immune system from attacking the cancer. Atezolizumab helps the immune system fight the cancer cells by stopping PD-L1 from working. This may mean that the cancer (tumour) gets smaller in some people.

What did researchers want to find out?

- Researchers did this study to compare **atezolizumab given under the skin (Group A)** with **atezolizumab given into a vein (Group B)**. They wanted to see how much medicine was in people's blood and how well atezolizumab worked (see section 4 "What were the results of the study?").
- They also wanted to find out how safe atezolizumab was by checking how many people had side effects in each treatment group and seeing how serious they were (see section 5 "What were the side effects?").

The main question that researchers wanted to answer was:

- How much medicine was in the person's blood if it was given under the skin (**Group A**) compared with when it was given into a vein (**Group B**)? Researchers wanted to make sure these amounts were similar. When researchers make this type of comparison, they use a mathematical formula to tell them how much of a difference is "close enough" to be considered similar (referred to by researchers as "non-inferior").

What kind of study was this?

This study had 2 parts.

The first part was a 'Phase 1' study. This part of the study helped find the best dose of the medicine to give to people in the second part of the study. It was also done to look at how safe atezolizumab was when it was given under the skin.

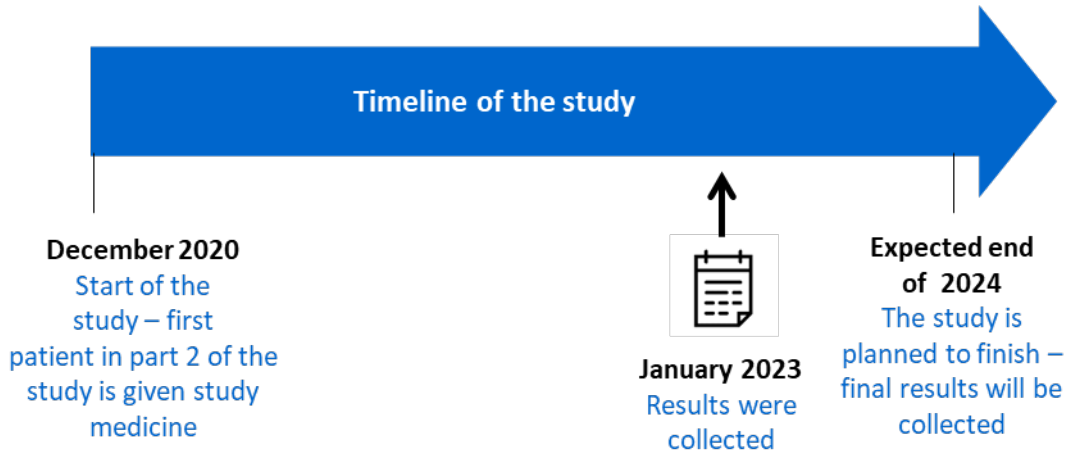
The rest of this summary focuses on the second part, which was a '**Phase 3**' study. This part of the study was done in a larger number of people to see if atezolizumab given under the skin worked as well as atezolizumab given into a vein. Researchers looked at how much medicine was in people's blood, how long people lived after starting the medicine, and how long the medicine helped before their cancer got worse. They also looked at whether atezolizumab given under the skin was as safe as atezolizumab given into a vein. Atezolizumab given into a vein is already approved as a treatment that doctors can prescribe. However, for the medicine to also be approved as treatment that can be given under the skin, researchers have to show that all of these measurements are as good or better when it is given under the skin.

The study was '**randomised**'. This means that it was decided by chance which of the treatments people in the study would be given. Other than the way the medicine was given in each group, all other care was the same.

This was an ‘open label’ study. This means that both the people taking part in the study and the study doctors knew which group the people were in.

When and where did the study take place?

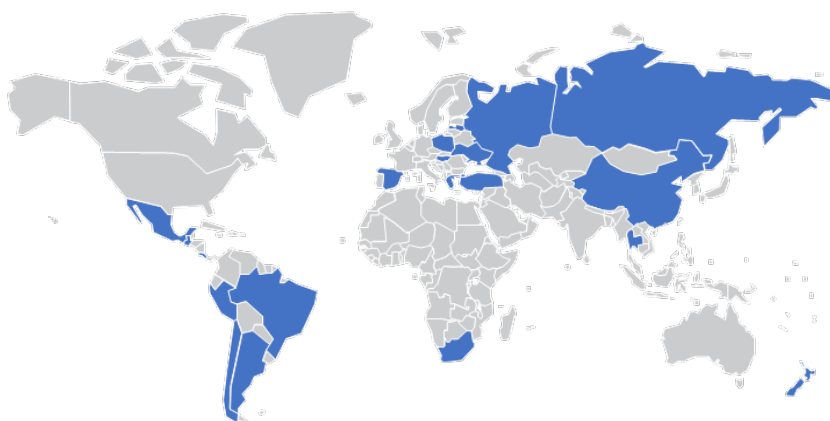
Part 2 of the study started in December 2020 and is planned to finish by the end of 2024. This summary includes the results from Part 2 up until January 2023. At the time of writing this summary, the study is ongoing – study doctors are still collecting information.



The symbol on the timeline (📅) shows when the information shown in this summary was analysed (January 2023 – about 2 years and 1 month after the study started).

Part 2 of this study took place at 68 hospitals and clinics in 19 countries/regions.

This map shows the countries/regions where this study took place.

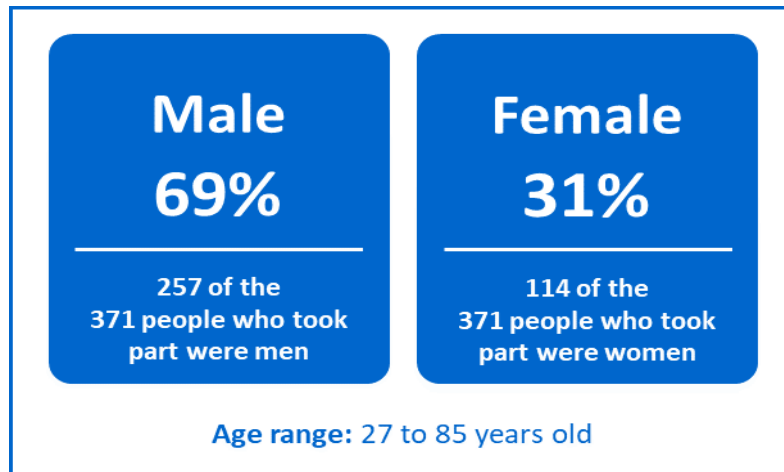


- Argentina
- Brazil
- Chile
- China
- Costa Rica
- Greece
- Guatemala
- Hungary
- Latvia
- Mexico
- New Zealand
- Peru
- Poland
- Russian Federation
- South Africa
- Spain
- Thailand
- Turkey
- Ukraine

2. Who took part in this study?

In this study, 371 people with NSCLC took part.

This picture shows more information about the people who took part.



People **could** take part in the study if:

- They had NSCLC that was locally advanced (had spread throughout the lungs and to lymph nodes) or metastatic (had spread to other parts of the body).
- They were healthy enough to get treatment.
- They had already taken chemotherapy for their advanced disease, but the cancer either didn't get better, or it got better, but then came back within 6 months of chemotherapy treatment.
- They had allowed their doctor to take samples of their tumours.

People **could not** take part in the study if:

- They had cancer that spread to the brain or spine.
- They had an illness that causes their immune system to attack their own body (called an 'autoimmune disease').
- They had previously had other types of lung disease or lung infection.
- They had taken other cancer drugs that target the immune system, referred to as cancer immunotherapy.

These are just some of the key requirements that people needed to meet in order to be able to take part in this study. There were also other requirements that are not listed here.

3. What happened during the study?

During the study, people were selected at random by a computer to get 1 of 2 treatments. About twice as many people were put into Group A compared with Group B.

The treatment groups were:

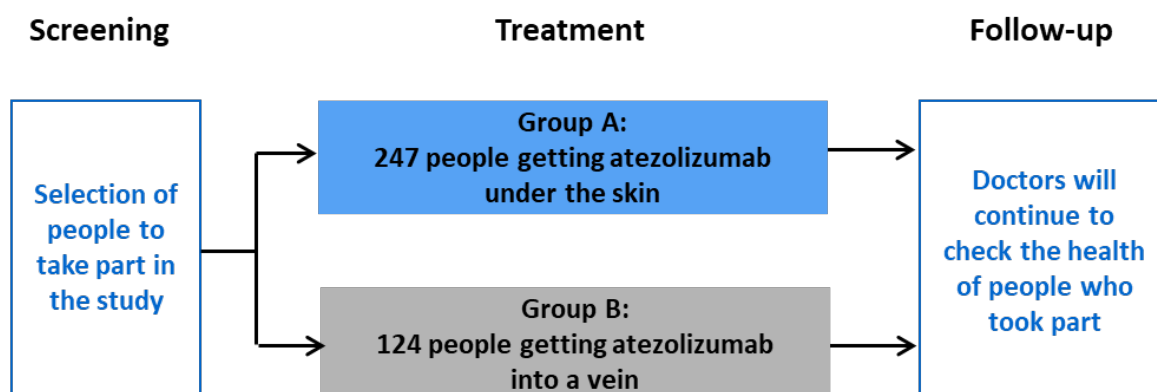
- **Group A:** atezolizumab given under the skin (subcutaneous)
- **Group B:** atezolizumab given into a vein (intravenous)

This table shows the number of people who took each study treatment, and how often the drugs were taken.

	Group A Atezolizumab given under the skin	Group B Atezolizumab given into a vein
Number of people who got the treatment	247	124
How the drug was given	Injected under the skin	Infused into a vein
How often the drug was given	Once every 3 weeks	Once every 3 weeks

This study is ongoing. People are still going back to their study centre for visits – to check their overall health and collect information on side effects – until the study finishes at the end of 2024.

This picture shows more information about what happened in the study and what the next steps are. People continued to take atezolizumab under the skin or into a vein for as long as it was helping them. They stopped taking the medicine if their cancer got worse or they were having serious side effects. Doctors continued to check the health of people even after they stopped taking the medicine.



4. What were the results of the study?

Question 1: How much medicine was in a person's blood if they got the medicine under the skin or into a vein?

To understand how a drug works, it's important to see how much of it gets into a person's blood. Researchers looked at how much atezolizumab was in a person's blood after getting 1 dose of the drug.

Results were collected for 247 people who got atezolizumab under the skin and 124 people who got atezolizumab into a vein.

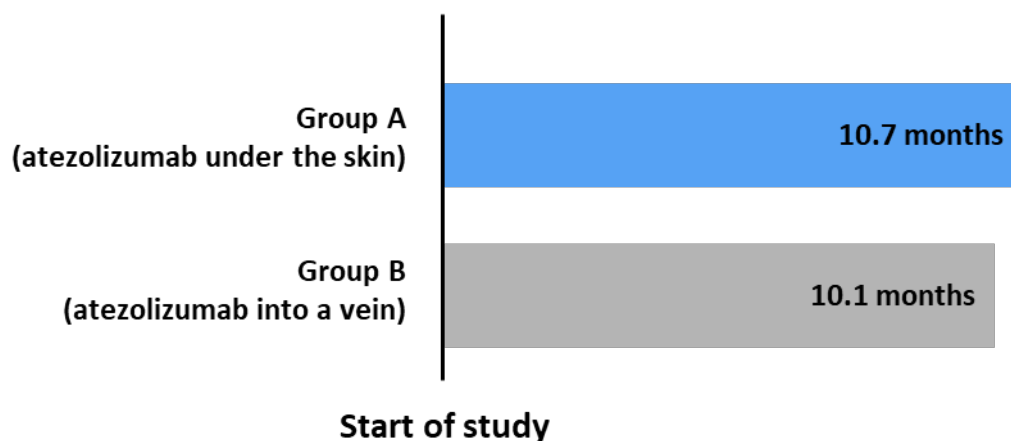
- When people got atezolizumab under the skin, they had similar amounts of medicine in their blood compared with people who got atezolizumab into a vein.

Question 2: How long did people in this study live?

Another piece of information that researchers collected was how long people in this study lived after they started treatment. They compared this information between the 2 groups.

- People who got atezolizumab under the skin lived for a similar amount of time as people who got atezolizumab into a vein.
 - People who got atezolizumab **under the skin** lived about **10.7 months** after starting the medicine.
 - People who got atezolizumab **into a vein** lived for about **10.1 months** after starting the medicine.

How long did people in each group live?



Out of the 371 people who were originally given a medicine in this study, 223 people died during the study.

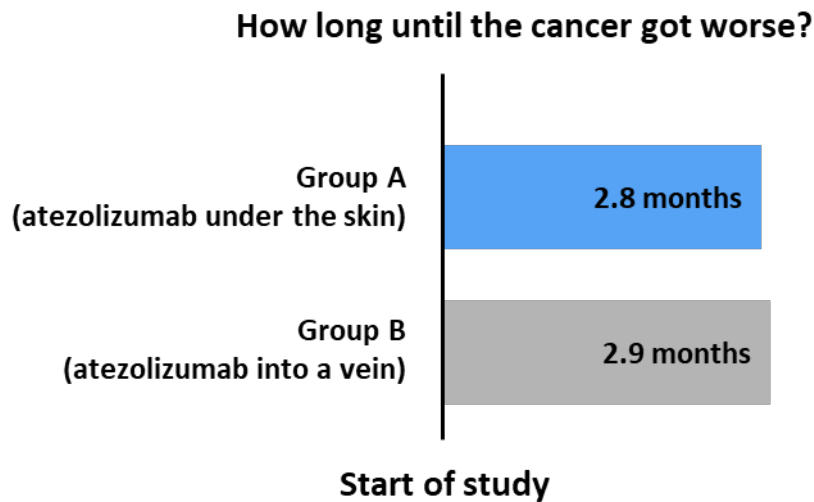
- In **Group A**, 144 out of 247 people (58%) died. Of those who died, 125 people (87%) died due to their cancer getting worse.
- In **Group B**, 79 out of 124 people (64%) died. Of those who died, 69 people (87%) died due to their cancer getting worse.

Question 3: How much time was there between the start of the study treatment and people's cancer getting worse?

Researchers looked at how much time there was before the cancer got worse in **Group A** and **Group B**.

- People who got atezolizumab under the skin and people who got atezolizumab into a vein had about the same amount of time between starting treatment and their cancer getting worse.
 - In people who got atezolizumab **under the skin (Group A)**, the cancer got worse after about 2.8 months.
 - In people who got atezolizumab **into a vein (Group B)**, the cancer got worse about 2.9 months.

This picture shows how long it took for the cancer to get worse in each group.



This section only shows the key results from this study. You can find information about all other results on the websites at the end of this summary (see section 8).

5. What were the side effects?

Side effects are medical problems (such as feeling dizzy or getting a rash) that may happen during the study.

- The study doctor decided if the side effects were related to the study treatment or not.
- Not all of the people in this study had all of the side effects.
- Side effects may be mild to very serious.
- Side effects can be different from person to person.
- It is important to be aware that the side effects reported here are from this one study. Therefore, the side effects shown here may be different from those seen in other studies or those that appear on the medicine leaflets.
- Serious and common side effects are described in the next sections.

The safety results shown in this section are for all the people who took the medicines in the study. Results were collected for 247 people who got atezolizumab under the skin and 124 people who got atezolizumab into a vein.

Serious side effects

A side effect is considered 'serious' if it is life-threatening, needs hospital care, or causes lasting problems.

- In people who got atezolizumab **under the skin**, 5 out of 247 people (2%) had a serious side effect thought to be related to atezolizumab.
- In people who got atezolizumab **into a vein**, 4 out of 124 people (3%) had a serious side effect thought to be related to atezolizumab.

Some people in the study died due to side effects that may or may not have been related to the study treatment:

- 16 out of 247 (6.5%) people who got atezolizumab under the skin died from a side effect.
 - Of these, 2 of the deaths (less than 1% of those who got atezolizumab under the skin) were thought to be related to the study treatment.
- 8 out of 124 (6.5%) people who got atezolizumab into a vein died from a side effect.
 - Of these, none of the deaths (0%) were thought to be related to the study treatment.

Most common side effects

The most common side effects related to the study medicine are shown in this table. These are the side effects reported by at least 5% of people (5 out of 100) in either group. Some people had more than 1 side effect.

Most common side effects reported in this study	Group A Atezolizumab given under the skin (247 people total)	Group B Atezolizumab given into a vein (124 people total)
Itching	5% (12 out of 247)	7% (9 out of 124)
Low levels of hormones made by the thyroid	6% (15 out of 247)	4% (5 out of 124)
Rash	4% (10 out of 247)	6% (8 out of 124)
Fatigue (excessive tiredness)	4% (9 out of 247)	6% (7 out of 124)

- In people who got atezolizumab **under the skin**, 9 out of 247 people (4%) decided to stop getting atezolizumab because of side effects.
- In people who got atezolizumab **into a vein**, 9 out of 124 people (7%) decided to stop getting atezolizumab because of side effects.

Other side effects

You can find information about other side effects (not shown in the sections above) on the websites listed at the end of this summary – see section 8.

6. How has this study helped research?

The information presented here is from one study of 371 people with locally advanced or metastatic NSCLC. These results helped researchers learn about different ways that people can get atezolizumab.

Overall, this study showed that for people who got atezolizumab into a vein compared with people who got atezolizumab under the skin:

- 1) They had similar amounts of medicine in their blood after treatment.
- 2) They lived a similar length of time after starting treatment.

- 3) They had a similar amount of time between when they started treatment and when their cancer got worse.
- 4) They had similar side effects.

No single study can tell us everything about how safe a medicine is and how well it works. It takes lots of people in many studies to find out everything we need to know. The results from this study may be different from other studies with the same medicine.

- **This means that you should not make decisions based on this one summary. Always talk to your doctor before making any decisions about your treatment.**

7. Are there plans for other studies?

Another study is currently being done to tell researchers more about the safety and effects of atezolizumab given under the skin. That study is also looking at whether people with NSCLC would rather get atezolizumab under the skin or into a vein.

8. Where can I find more information?

You can learn more about this study on the websites listed below:

- <https://clinicaltrials.gov/ct2/show/NCT03735121>
- <https://www.clinicaltrialsregister.eu/ctr-search/search?query=2018-002328-18>
- <https://forpatients.roche.com/en/trials/cancer/lung-cancer/a-study-to-investigate-the-pharmacokinetics--efficacy---50110.html>

If you want to find out more about the results of this study, the full titles of the papers we described here are:

- “Results of a dose-finding Phase Ib study of subcutaneous atezolizumab in patients with locally advanced or metastatic non-small cell lung cancer” by Mauricio Burotto, Zanete Zvirbule, Enriqueta Felip, Mathilde Marchand and others. This paper is published in *Clinical Pharmacology in Drug Development* and can be accessed by visiting: <https://accp1.onlinelibrary.wiley.com/doi/10.1002/cpdd.936>.
- “IMscin001 Part 2: A randomised phase III, open-label, multicentre study examining the pharmacokinetics (PK), efficacy, immunogenicity, and safety of atezolizumab subcutaneous versus intravenous in previously treated locally advanced or metastatic non-small-cell lung cancer and PK comparison to other approved indications” by Mauricio Burotto, Zanete Zvirbule, Anastasia Mochalova, Yotsawaj Runglodvatana, Enriqueta Felip, and others. The paper is published in *Annals of Oncology* and can be accessed by visiting: [https://www.annalsofoncology.org/article/S0923-7534\(23\)00694-4/fulltext](https://www.annalsofoncology.org/article/S0923-7534(23)00694-4/fulltext).

Who can I contact if I have questions about this study?

If you have any questions after reading this summary:

- Visit the ForPatients platform and fill out the contact form – <https://forpatients.roche.com/en/trials/cancer/lung-cancer/a-study-to-investigate-the-pharmacokinetics--efficacy---50110.html>.
- Contact a representative at your local Roche office.

If you took part in this study and have any questions about the results:

- Speak with the study doctor or staff at the study hospital or clinic.

If you have questions about your own treatment:

- Speak to the doctor in charge of your treatment.

Who organised and paid for this study?

This study was organised and paid for by F. Hoffmann-La Roche Ltd who have their headquarters in Basel, Switzerland, and Genentech Inc, a member of the Roche Group, who have their headquarters in South San Francisco, California.

Full title of the study and other identifying information

The full title of this study is: “A Study to Investigate Atezolizumab Subcutaneous in Patients With Previously Treated Locally Advanced or Metastatic Non-Small Cell Lung Cancer”.

The study is known as ‘IMscin001.’

- The protocol number for this study is: BP40657.
- The ClinicalTrials.gov identifier for this study is: NCT03735121.
- The EudraCT number for this study is: 2018-002328-18.