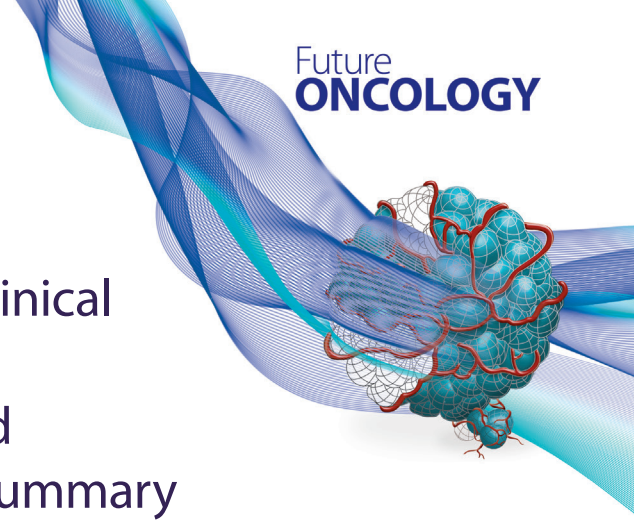
Plain Language Summary of Publication

Future ONCOLOGY



Prolonging the life of people with metastatic breast cancer in routine clinical practice by adding palbociclib to an aromatase inhibitor from a real-world database analysis: a plain language summary

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Summary

How to say (double click sound icon to play sound)...

- **Aromatase:** ah-ROH-muh-tays
- **De novo:** DEH-noh-voh
- **Estrogen:** EH-struh-juhn
- **Inhibitor:** in-HIH-bih-ter
- **Metastatic:** meh-tuh-STA-tik
- **Palbociclib:** PAL-boh-SY-klib

What is this summary about?

This is a summary of an article about a study called "P-REALITY X" that was published in the medical journal *npj Breast Cancer* in October 2022. "P-REALITY X" stands for Palbociclib REAl-world first-LIne comparaTive effectiveness studY eXtended.

This study used information from a database to look at whether adding a second treatment (palbociclib) to an aromatase inhibitor (AI) helped people with a certain type of breast cancer to live longer. The type of breast cancer is metastatic hormone receptor-positive/human epidermal growth factor-negative breast cancer, also called HR-positive (or HR+)/HER2-negative (or HER2–) breast cancer.

The study used information from the Flatiron Database. This database contains unidentified health care information collected from people seen by doctors in the USA. Only data from people who did not participate in a clinical trial were used. When people are treated outside of a clinical trial, this is called the real-world setting, or routine clinical practice.

In clinical trials, people lived longer without their disease worsening if they were treated with palbociclib plus an AI versus being treated with an AI only. Based on the results of clinical trials, treatment with palbociclib plus an AI is already approved and recommended for people with HR+/HER2– breast cancer. This study looked at whether people lived longer if they were treated with palbociclib plus an AI versus being treated with an AI only in routine clinical practice as well.

What were the results?

This study showed that, in routine clinical practice, people treated with the medicine palbociclib plus an AI lived longer than people treated with only an AI.

What do the results mean?

These results support the continued use of palbociclib plus an AI as a standard first medicine to be given to people with metastatic HR+/HER2– breast cancer.

Disclaimer: Palbociclib is approved to treat HR+/HER2– breast cancer which is discussed in this summary.

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Who should read this article?

This summary may help people with breast cancer and their caregivers, advocates for people with breast cancer, and health care professionals who are helping people learn about metastatic HR+/HER2– breast cancer.

Why was the study carried out?

In a clinical trial, there are strict rules about who can join a study. If people have other illnesses or are taking other medicines for any reason, they may not be able to join a clinical trial.

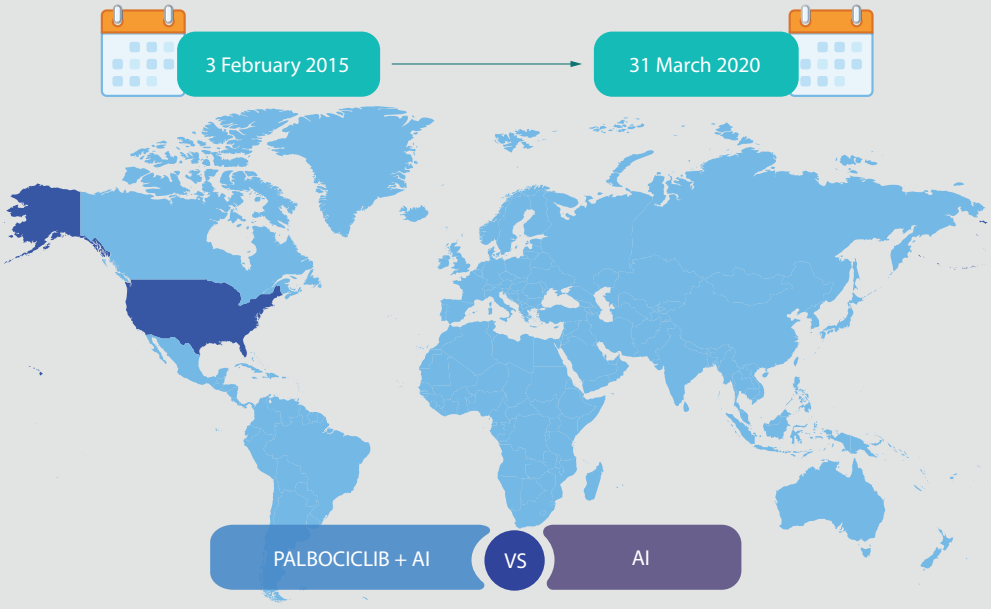
In routine clinical practice, the rules about who can be treated with a medicine are less strict and any check-ups are based on how ill the person is and how often the doctor or clinic normally sees a person with that illness. Because in routine clinical practice people might see a doctor less often than in a clinical trial, how well a medicine is treating their cancer is looked at less often.

Compared with people in clinical trials, people with breast cancer in routine clinical practice may be older or sicker. They may have illnesses in addition to breast cancer. The illnesses can include heart disease, high blood pressure, diabetes, or even tumors in the brain.

If a person has additional illnesses or is taking medications for these illnesses, they may not be able to participate in a clinical trial. These conditions or other medications may increase the chance of side effects with a new medicine or affect how well it may work.

This study used unidentified information from a database of routine clinical practice records from people with a type of breast cancer called metastatic hormone receptor-positive/human epidermal growth factor receptor 2-negative (HR+/HER2–) breast cancer. The study looked at what happened to people who were treated with 2 medicines at a time, palbociclib plus an aromatase inhibitor (AI), compared to people who were treated only with an AI.

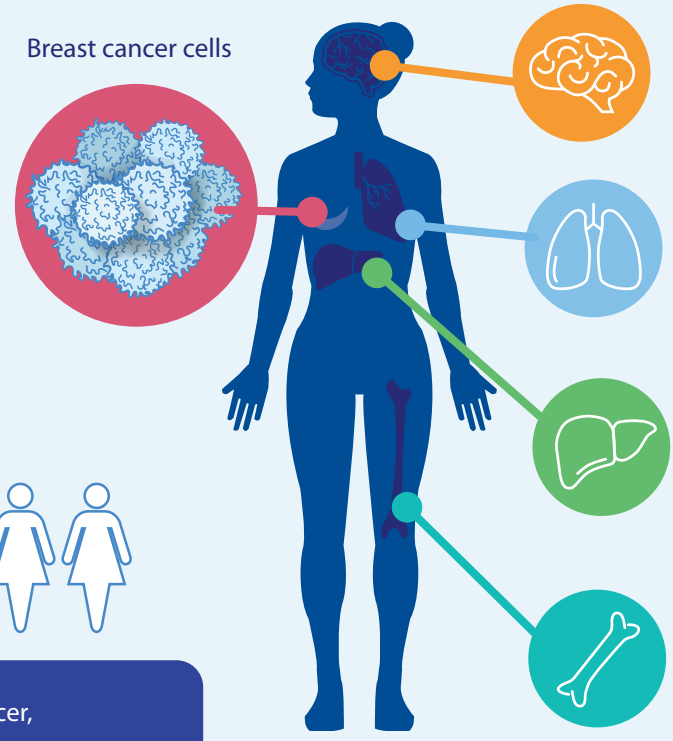
The P-REALITY X study collected information about people in the USA with metastatic HR+/HER2– breast cancer who began treatment with palbociclib plus an AI or just an AI alone between 3 February 2015 – 31 March 2020

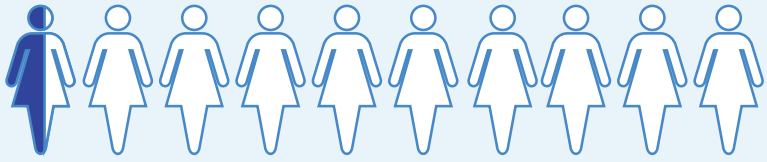


What is metastatic breast cancer?

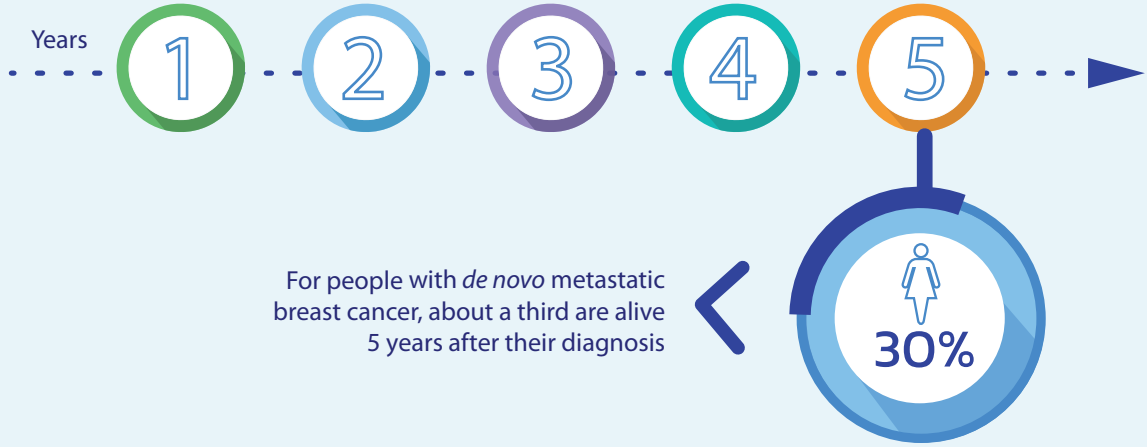
There are many different types of breast cancer. Each type of breast cancer can respond differently to treatment, for many reasons. Breast cancer can be seen in men as well as in women.

When breast cancer has spread to other parts of the body, it is called metastatic. The breast cancer may have spread to other organs, such as the liver or lungs, or to the bones.





Of every **100** people with breast cancer,
6 will already have metastatic cancer when they are first diagnosed.
This is called *de novo* metastatic breast cancer.

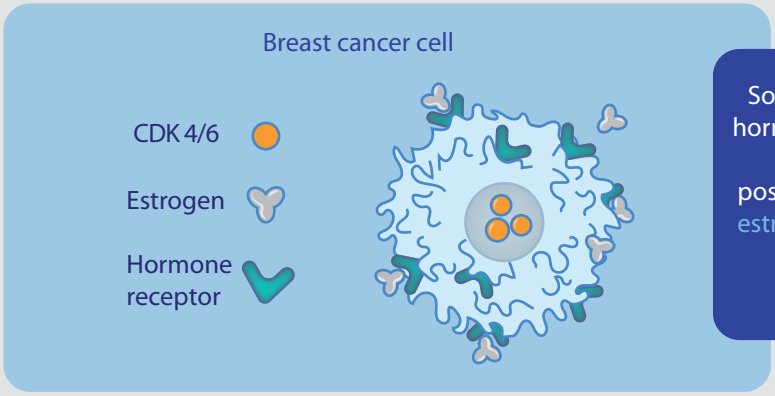


For people with *de novo* metastatic breast cancer, about a third are alive 5 years after their diagnosis

What does HER2– breast cancer mean?

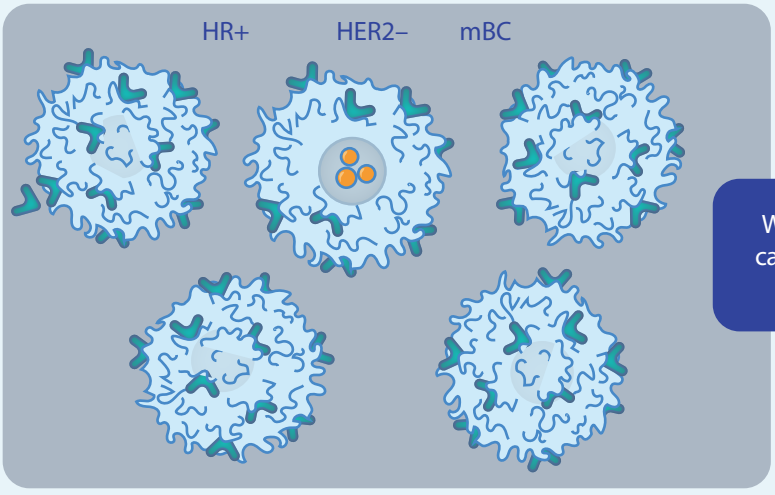
If a breast cancer cell has a low amount of HER2 protein, they are known as HER2-negative (or HER2–). Cancer cells that are HER2– may grow more slowly and are less likely to recur (come back) or spread to other parts of the body.

What does HR+ breast cancer mean?

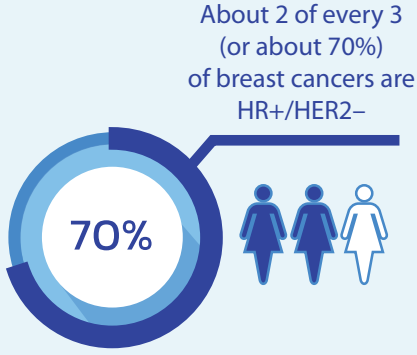


Some people with HER2– breast cancer can also have hormone receptors on their breast cancer cells. In breast cancers that are called hormone-receptor-positive (HR+), hormones naturally present in the body, estrogen and progesterone, can cause breast cancer to grow or spread by binding to hormone receptors in cells.

What is HR+/HER2– breast cancer?



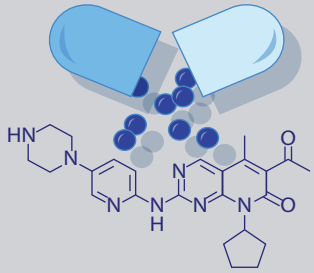
When a person has hormone receptors on their breast cancer cells as well as low amounts of the HER2 protein, their breast cancer is known as HR+/HER2–.



What is palbociclib?

Palbociclib is a type of medicine called a cyclin-dependent kinase 4 and 6 inhibitor (known as a CDK4/6 inhibitor).

When a protein called cyclin D1 binds to CDK4/6 in cells in the breast, this allows the cells to grow. In people with HR+/HER2– breast cancer, the cancer cells have higher levels of cyclin D1. The high level of cyclin D1 leads to uncontrolled growth of some cells, and this becomes a tumor. Palbociclib helps to block CDK4/6 and works to either stop or slow down the growth of a tumor in the breast.



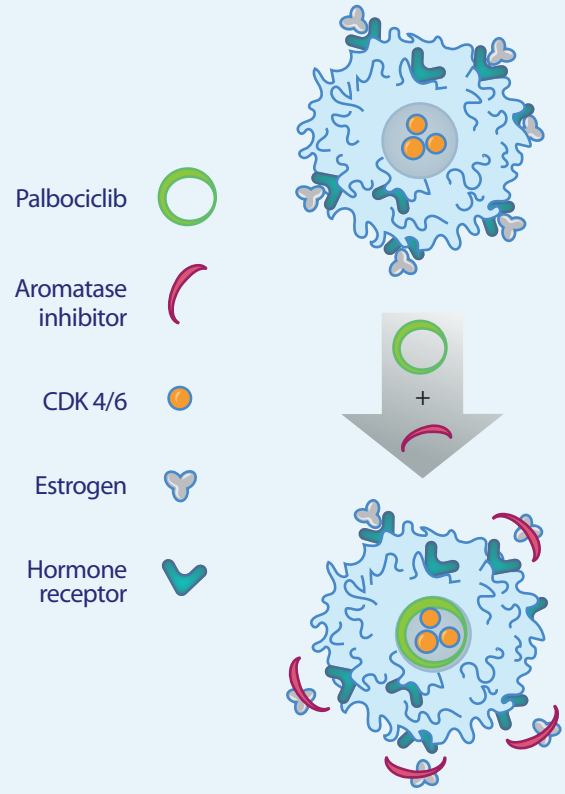
Palbociclib

What is an AI?

An AI is a hormone therapy that is used to stop the body from making estrogen (a female hormone). With lower levels of estrogen, there are fewer signals to tell the cancer cells to grow.

How does combining palbociclib and an AI work?

By combining a CDK4/6 inhibitor with an AI, there are 2 ways to control the growth of cancer cells in people with HR+/HER2– breast cancer.



How was this study carried out?

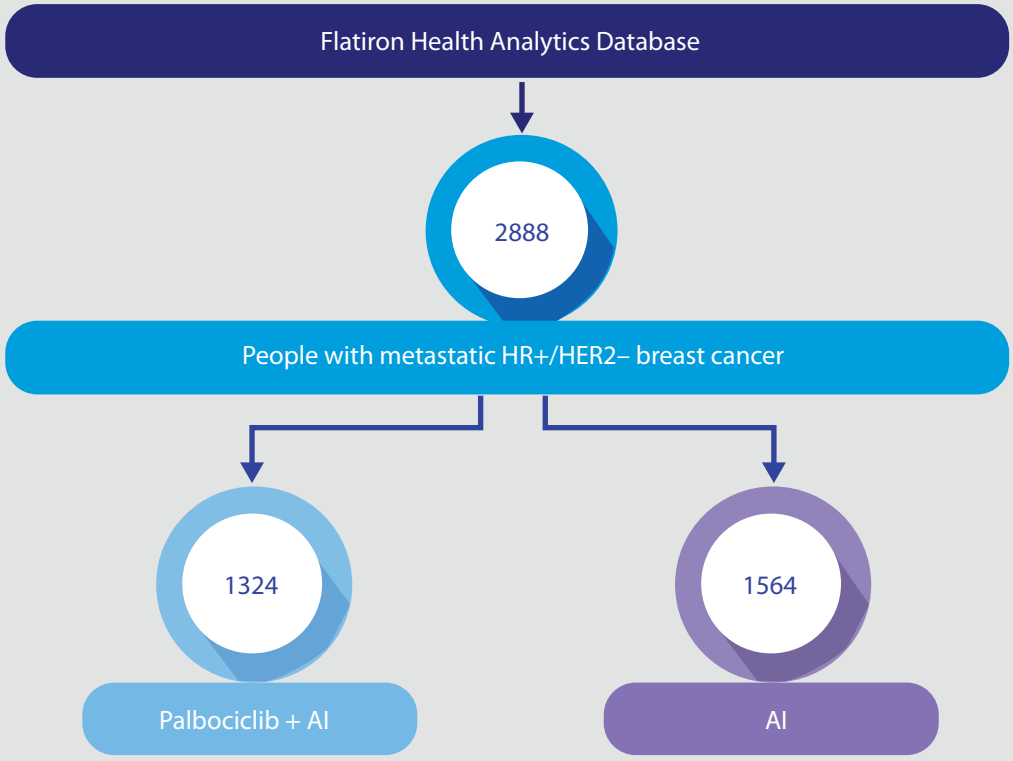
The Flatiron Health Analytics Database (or Flatiron Database) has collected information from more than 3 million people who received cancer treatment in the USA.

In this study people had already been treated before and the investigators were looking at past medical health records from the database.

The investigators collected information about people with metastatic HR+/HER2– breast cancer who began treatment with palbociclib plus an AI or just an AI alone between 3 February 2015 – 31 March 2020.

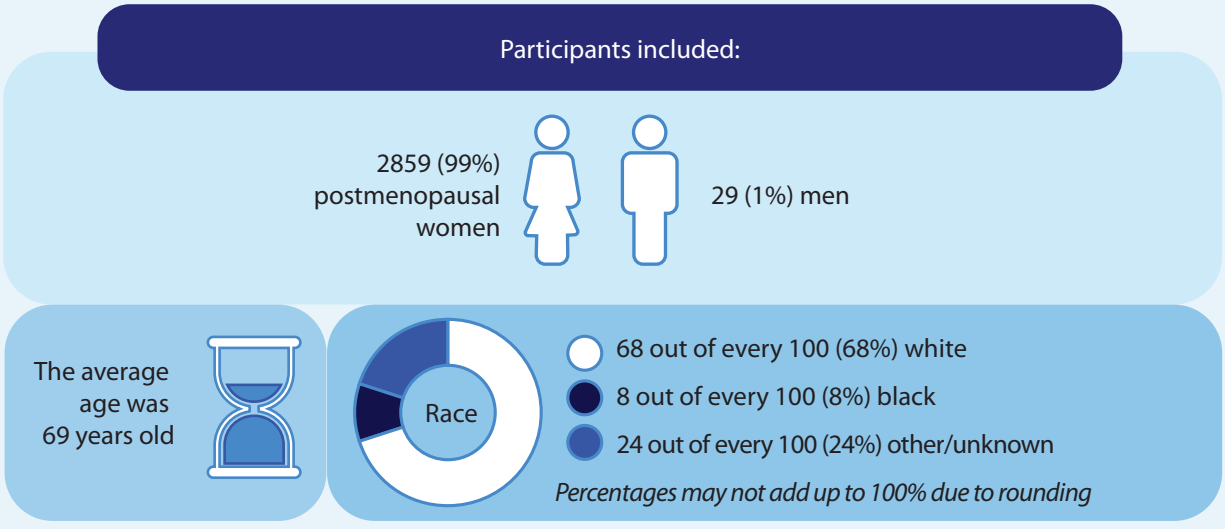
A total of 2888 people were identified as being treated during this time and were included in the study.

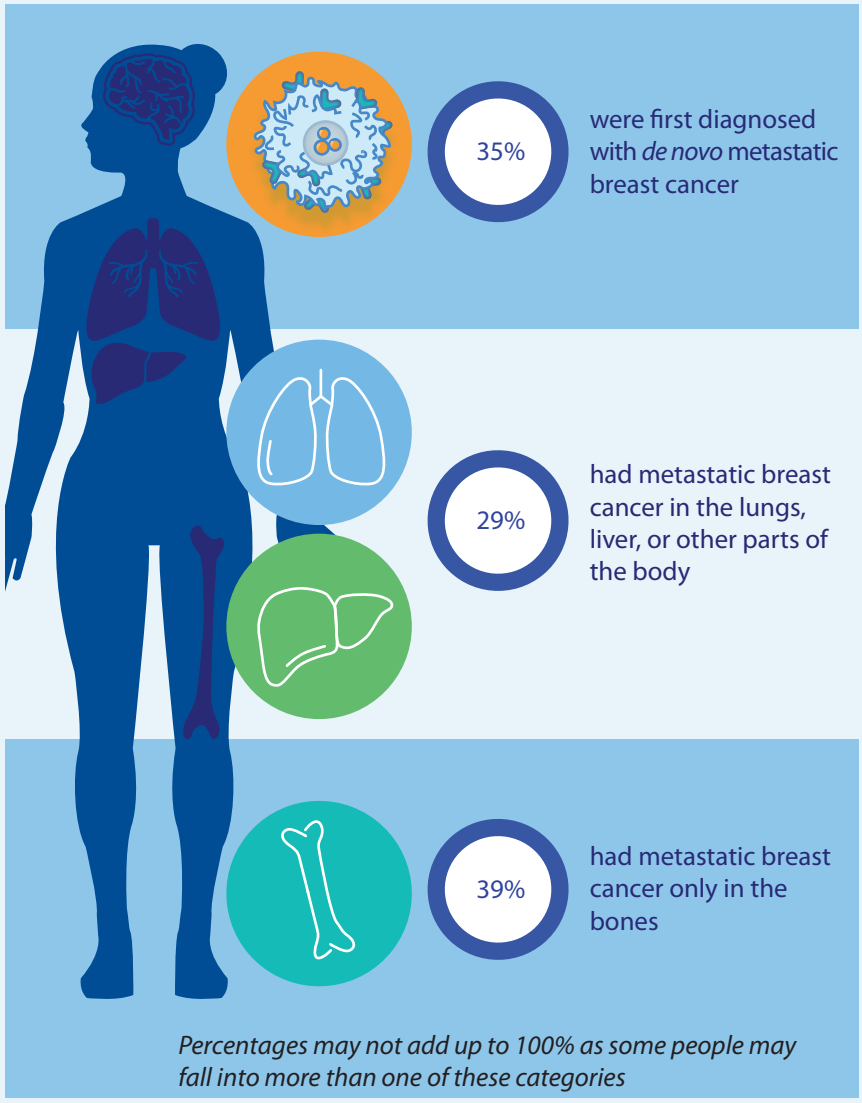
The study compared the length of time people survived from the start of treatment depending on whether they were treated with palbociclib plus an AI or an AI alone.



Who was included in the study?

The database had information from 2888 people who were aged 18 years or older and who had metastatic HR+/HER2– breast cancer.





What were the overall results of the study?

- After adjusting for certain differences in the people between the 2 groups, the investigators found that people treated with palbociclib plus an AI in routine clinical practice lived longer than those treated with an AI alone.
- Adjusting for differences helped make sure it was a fair comparison because people may be given different treatments partly based on different individual characteristics (for example, their age, other medical conditions they have as well as their cancer, or previous treatments).

What do the results of this study mean?

This large real-world study of people in the Flatiron Database showed that, in the routine clinical practice setting, people treated with palbociclib plus an AI lived longer than those treated with an AI only in this study. This result supports the use of palbociclib plus an AI as a standard first treatment given to people with metastatic HR+/HER2– breast cancer.

Strengths:

A key strength of this study is the diversity of the Flatiron Database, which includes people from different backgrounds and with different characteristics. The study highlights that real-world data can be useful to help health authorities, and organizations that pay for treatment, to make decisions about whether to recommend treatments.

Limitations:

This study looked at information from a database of electronic health records of people with breast cancer. There are limitations on what types of conclusions the researchers can draw. The database may have missing or inaccurate data. In each case, the treating doctor decided whether the person's cancer had progressed (grown or spread more) and this was recorded in the medical record, so different doctors may have come to different conclusions. Side effects were not looked at as part of this study.

Where can I find the original article on which this summary is based?

The original article "Real-World Study of Overall Survival With Palbociclib Plus Aromatase Inhibitor in HR+/HER2– Metastatic Breast Cancer" is published in the journal *npj Breast Cancer*.

You can read this article for free at: https://www.nature.com/articles/s41523-022-00479-x

Where can I find additional resources on breast cancer?

- For more information on breast cancer, please visit: https://www.breastcancer.org/
- For more information on this clinical study, please visit: https://clinicaltrials.gov/ct2/show/NCT05361655
- For more information on clinical studies in general, please visit: https://www.clinicaltrials.gov/ct2/about-studies/learn

Who sponsored the study?

This study was sponsored by Pfizer Inc.

This summary reports the results of a single study. The results of this study may differ from those of other studies. Health professionals should make treatment decisions based on all available evidence, not on the results of a single study.

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Financial & competing interests disclosure

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