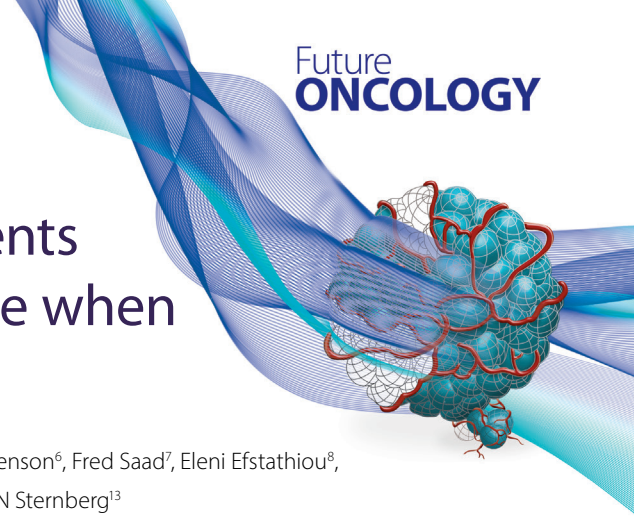
Future ONCOLOGY

Plain Language Summary of Publication

Which traits affect how long patients with advanced prostate cancer live when treated with enzalutamide?



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First draft submitted: 29 June 2022; Accepted for publication: 26 September 2022; Published online: 13 October 2022

Summary

What is this summary about?
This is a summary of a research article originally published in *European Journal of Cancer.*

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

- **Prostate cancer:** PROS-tayt KAN-ser
- **Nonmetastatic:** non-meh-tuh-STA-tik
- **Enzalutamide:** EN-zuh-LOO-tuh-mide
- **Bicalutamide:** BY-kuh-LOO-tuh-mide

The PROSPER study involved men who had a type of advanced prostate cancer called nonmetastatic castration-resistant prostate cancer (nmCRPC). In men with nmCRPC, their cancer has progressed on traditional hormone therapy but scans show that it has not spread to other parts of the body. The main results of the PROSPER study showed that patients treated with enzalutamide lived longer than patients treated with placebo. For this analysis, researchers looked at whether this was different depending on patients' traits.

What were the results?
Researchers found that age and location did not affect how long patients lived when treated with enzalutamide. They found three patient traits that did make a difference. Being able to carry out daily activities, low prostate-specific antigen level (PSA level), and receiving no other prostate cancer treatments after the study meant that patients were more likely to live longer.

What do the results of the study mean?
Patients with nmCRPC treated with enzalutamide lived longer than patients treated with placebo. Age and location did not affect how long these patients lived, but other traits did.

Who is this article for?

This article is for anyone interested in knowing more about this topic, regardless of background knowledge or education.

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. Enzalutamide is approved to treat the condition under study that is discussed in this summary.

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

You can read the original article published in *European Journal of Cancer* for free at:
https://www.ejcancer.com/article/S0959-8049(21)01169-2/fulltext

What is nonmetastatic castration-resistant prostate cancer?

All patients in this study had **nonmetastatic castration-resistant prostate cancer** (**nmCRPC**).

nmCRPC

nm Nonmetastatic	**CR** Castration-resistant	**PC** Prostate cancer
Nonmetastatic means that scans show the cancer has **not** spread to other parts of the body.	Most prostate cancers need male sex hormones, called androgens, to grow. Treatments that lower androgen levels are known as **castration**. These treatments can include drugs (known as medical castration) or surgery (known as surgical castration). For most men with prostate cancer, castration will stop or slow down the growth of prostate cancer cells. However, eventually, castration will no longer be effective in stopping or slowing the disease. This is known as **castration-resistant** prostate cancer.	The **prostate** is part of the male reproductive system. **Cancer** is a disease where abnormal cells multiply and form a tumor.

What treatments did patients in this study receive?

Everyone in this study received **androgen deprivation therapy** (ADT).

ADT stops the body from making androgens, such as testosterone.
– This may shrink the cancer or slow cancer growth.

One group of patients in this study received **enzalutamide** (brand name XTANDI®).

These patients took **160 mg of enzalutamide every day**.

Enzalutamide can slow or stop androgens, such as testosterone, from making prostate cancer grow.

The other group of patients received a **placebo**.

These patients took **placebo every day**.

A **placebo** looks like the study treatment but does not contain any active ingredients.

Why was this analysis done?

Researchers previously reported the main results of the PROSPER study, which can be found in the "Where can I find more information?" section. All men in the PROSPER study had nmCRPC and a prostate-specific antigen level (PSA level) that doubled in 10 months or less.

- PSA is produced by normal prostate cells. Small amounts of PSA usually circulate in the blood. Cancer cells that are growing quickly can increase PSA level.
- Patients whose PSA level doubles more quickly usually have more severe prostate cancer than patients whose PSA level doubles more slowly.

In the PROSPER study, researchers found that patients treated with enzalutamide lived longer than patients treated with placebo. Before the PROSPER study, there were no treatments shown to help men with nmCRPC live longer.

The PROSPER study included patients of different ages and in different countries. Other studies have found that age and location can affect how long patients with prostate cancer live. Researchers wanted to see if this was true in the PROSPER study.

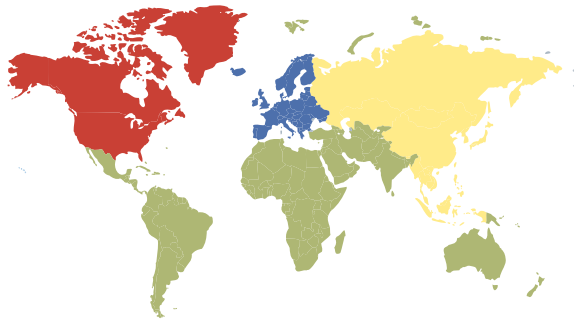
Researchers wanted to find out, for patients with nmCRPC treated with **enzalutamide**:

- Does **age** affect how long patients live?
- Does **location** (where in the world patients live) affect how long patients live?
- Do any **other traits** affect how long patients live?
- Are **side effects** different depending on these traits?

Answering these questions will tell us more about how long patients with nmCRPC might live when treated with **enzalutamide**.

When and where did the study take place?

The PROSPER study took place in 32 countries between November 26, 2013 and October 15, 2019



Who took part in the study?

All men in the PROSPER study:

- Had nmCRPC
- Had a rising PSA level that doubled in 10 months or less
- Were receiving ADT

What did this analysis look at?

Researchers collected patients' information, including:

- Age
- Location (where in the world they lived)
- Treatments they received before the study started
- Treatments they received after the study ended
- PSA levels
- How well they could carry out daily activities
- Other traits such as race, weight, and other test results

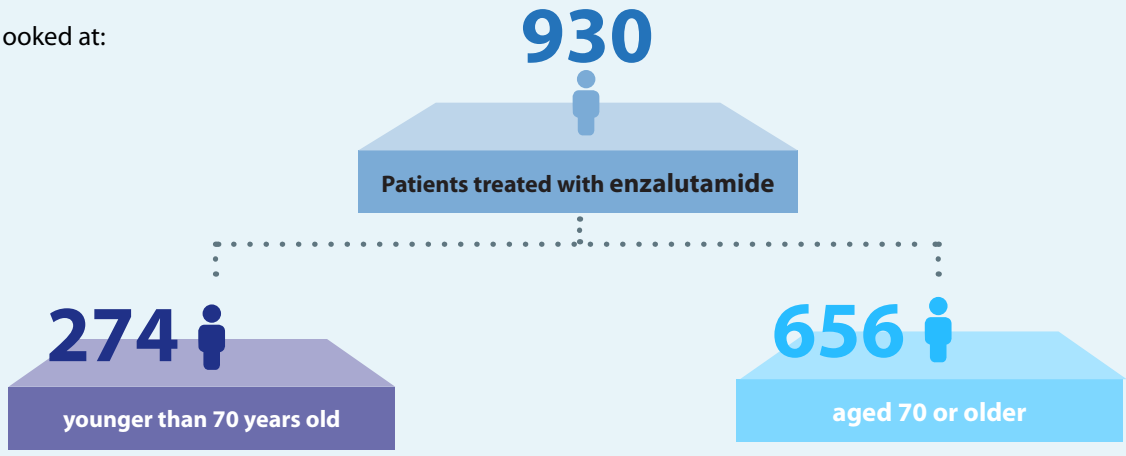
Researchers were interested in whether any of this information made a difference in:

- How long patients lived
- The side effects that patients experienced

What were the results of the study?

1 Did age affect how long patients with nmCRPC lived when treated with enzalutamide?

This analysis looked at:



Researchers found some differences between patients in different age groups.
Overall, compared with patients who were younger than 70, patients who were **70 or older**:

- Were less able to carry out daily activities.
- Had a PSA level that increased more slowly.
- Were less likely to receive another prostate cancer treatment after the study.

Researchers found that there was **no meaningful difference** in how long patients in both age groups lived.

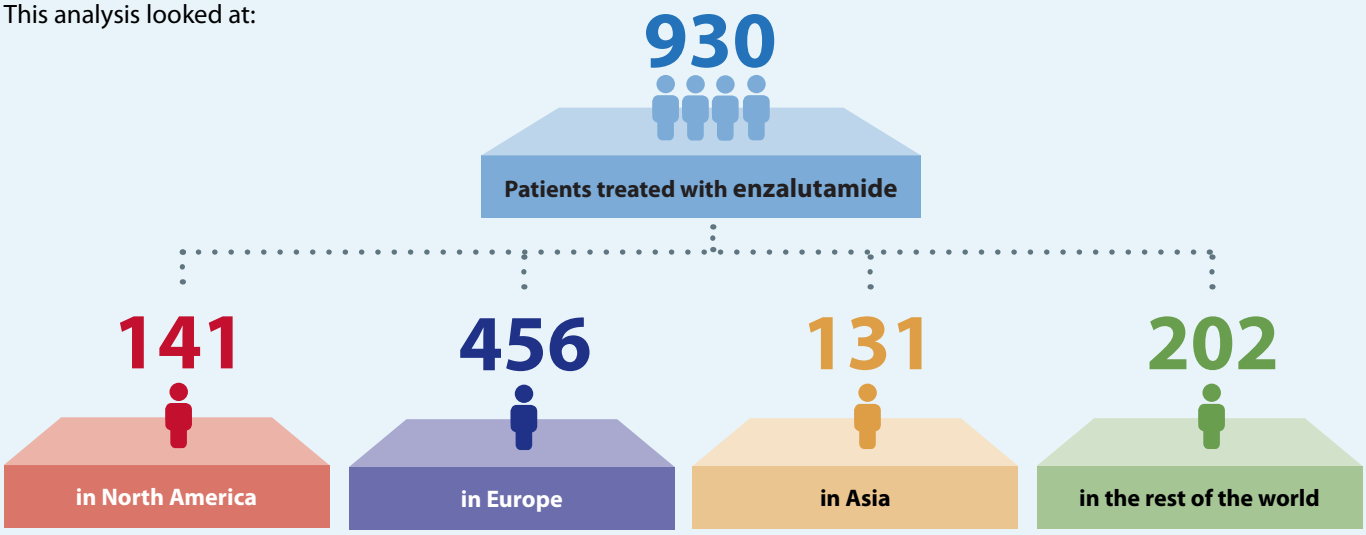
2 Did age affect the side effects that patients with nmCRPC treated with enzalutamide had?

Researchers found that age made a meaningful difference in some side effects that patients experienced.

- Patients who were **70 or older** had **serious** side effects more often than younger patients.
- Patients who were **70 or older** had more falls and broken bones than younger patients.

3 Did location affect how long patients with nmCRPC lived when treated with enzalutamide?

This analysis looked at:



Researchers found some differences between patients in different locations. Overall, compared with patients in other locations:

- Patients in **Asia** weighed less.
- Patients in **Asia** were more likely to have been treated with bicalutamide.
  – Bicalutamide is a treatment for prostate cancer.
- Patients in the **rest of the world** were older and were less able to carry out daily activities.
- Patients in **Asia** and the **rest of the world** were more likely to receive one prostate cancer treatment after the study. There was no difference across locations for patients who received two or more prostate cancer treatments after the study.

Researchers found that there was **no meaningful difference** between how long patients in different locations lived.

4 Did location affect the side effects that patients with nmCRPC treated with enzalutamide had?

Patients in **North America** had more **falls** and **musculoskeletal side effects** than other patients.

- **Musculoskeletal** includes the bones, muscles, and tissue that connects them.

Patients in **Asia** who were treated with enzalutamide were more likely to have high blood pressure than patients who were treated with placebo. This difference was not seen for patients in other locations.

5 Did other traits affect how long patients with nmCRPC lived when treated with enzalutamide?

Some traits made a difference in how long patients lived:

- Patients who received **other prostate cancer treatments after the study** lived for **less time** than patients who did not.
  - This could be because patients received more treatments if their prostate cancer was aggressive. Patients with more aggressive prostate cancer usually live for less time than patients with less aggressive prostate cancer.
- Patients who were **less able to carry out daily tasks** lived for **less time** than other patients.
- Patients with **higher PSA levels** lived for **less time** than patients with lower PSA levels.

Some traits did not affect how long patients lived:

- Other test results, including how quickly PSA level increased.
- Prostate cancer treatments received before the study, including bicalutamide.

6 What else did researchers find out about patients in the PROSPER study?

Patients who were treated with **enzalutamide**:

- Were **less likely to receive another prostate cancer treatment** after the study than patients who were treated with placebo.
- Received their **treatment for much longer** than patients treated with placebo.

What do the results of this analysis mean?

Some traits meant that patients were **more likely to live longer**	Some traits **did not** affect how long patients lived
• Able to carry out daily activities • Low PSA level • No other prostate cancer treatments after the study	• Age • Location • How quickly PSA level increased • Treatment before the study started

What were the main conclusions of this analysis?

Patients with nmCRPC treated with enzalutamide lived longer than patients treated with placebo. Age and location did not affect how long these patients lived.

Researchers found **three patient traits** that affect how long these patients lived:

- Ability to carry out daily activities
- PSA level
- Use of other prostate cancer treatments after the study

Who sponsored this study?

This study was sponsored by Pfizer Inc and Astellas Pharma Inc, the developers of enzalutamide.

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- Astellas Pharma Inc; 1 Astellas Way, Northbrook, IL 60062
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Where can I find more information?

The full title of the original publication is 'Consistent survival benefit of enzalutamide plus androgen deprivation therapy in men with nonmetastatic castration-resistant prostate cancer: PROSPER subgroup analysis by age and region'.
You can read the original article on which this summary is based in the *European Journal of Cancer* for free at:
https://www.ejcancer.com/article/S0959-8049(21)01169-2/fulltext

The full citation of the original article is:
De Giorgi U, Hussain H, Shore N *et al.* Consistent survival benefit of enzalutamide plus androgen deprivation therapy in men with nonmetastatic castration-resistant prostate cancer: PROSPER subgroup analysis by age and region. *Eur. J. Cancer* 159, 237–246 (2021).

Study number: NCT02003924

For more information on the PROSPER study, please visit:
https://www.clinicaltrials.gov/ct2/show/NCT02003924, and
https://www.nejm.org/doi/full/10.1056/NEJMoa2003892

The original PROSPER study publication citation is: Sternberg CN, Fizazi K, Saad F *et al.* Enzalutamide and Survival in Non-metastatic, Castration-Resistant Prostate Cancer. *N. Engl. J. Med.* 382, 2197–2206 (2020).

For more information on clinical trials in general, please visit:
https://www.clinicaltrials.gov/ct2/about-studies/learn, and
http://www.cancerresearchuk.org/about-cancer/find-a-clinical-trial/what-clinical-trials-are

Acknowledgments
The authors and sponsors would like to thank everyone who contributed to this study.
Writing support for this summary was provided by Lauren Rainer and Kirstie Anderson of Onyx (a Prime Global agency) and funded by both sponsor companies.

Financial & competing interests disclosure
U De Giorgi: served as a consultant for Janssen, Astellas Pharma Inc, Sanofi, Bayer, Pfizer Inc, BMS, Novartis, Ipsen, and Merck.
M Hussain: served as a consultant or in an advisory role for AstraZeneca, Bayer, Bristol-Myers Squibb, Daiichi Sankyo Company, Genentech, Janssen, and Pfizer Inc, received honoraria and/or travel expenses for educational functions/lectures from Astellas Pharma Inc, AstraZeneca, Bayer, Genentech/Roche, MLI PeerView, OncLive, Physicians' Education Resource LLC, Phillips Gilmore Oncology, Projects in Knowledge, Research to Practice, Sanofi-Genzyme, UroToday, and Precisca, and received institutional research funding from AstraZeneca, Bayer, Genentech, Prostate Cancer Clinical Trials Consortium (PCCTC), Pfizer Inc and Arvinas.
N Shore: served as a consultant for AbbVie, Amgen, Astellas, AstraZeneca, Bayer, BMS, Boston Scientific, Clovis Oncology, Cold Genesys, Dendreon, Exact Imaging, Exact Sciences, FerGene, Foundation Medicine, Genesis Care, Invitae, Janssen, MDxhealth, Merck, Myovant, Myriad, Nymox, Pacific Edge, Pfizer Inc, Phosphorous, Propella, PreView, Sanofi Genzyme, Speciality Networks, Sesen Bio, Tolmar, and Urogen.
K Fizazi: served as a consultant for Janssen Oncology, Bayer, Astellas Pharma Inc, Sanofi, Orion Pharma GmbH, Curevac, AstraZeneca, ESSA Pharmaceuticals, Roche/Genentech, Clovis Oncology, and Amgen, received money for travel/accommodation expenses from Amgen and has received honoraria from Janssen, Sanofi, Astellas Pharma Inc, and Merck.

B Tombal: received personal fees and non-financial support from Amgen, Astellas Pharma Inc, Bayer, Ferring, Janssen, and Sanofi, personal fees from Pfizer, Steba Biotech and Takeda, and grants from Ferring.
D Penson: reported no conflict of interest.
F Saad: served as a consultant for Astellas Pharma Inc, Janssen Oncology, Sanofi, and AstraZeneca/MedImmune, received honoraria from Astellas Pharma Inc, Janssen Oncology, Sanofi, Bayer and AstraZeneca, received institutional funding from Astellas Pharma Inc, Bayer, Janssen Oncology, Sanofi, Myovant Sciences, and AstraZeneca.
E Efstathiou: received honoraria from Janssen-Cilag, Sanofi and Takeda, served as a consultant for Janssen-Cilag, Sanofi, Astellas Pharma Inc, Bayer, AstraZeneca, Merck Sharp & Dohme, Innocrin Pharma, Takeda, and Tolmar. Member of the Speakers Bureau for Janssen-Cilag, received research funding from Janssen-Cilag, Sanofi, and Astellas Pharma Inc.
K Madziarska: reported no conflict of interest.
J Steinberg: employee of Astellas Pharma Inc, and has an immediate family member with stock ownership in Amgen.
J Sugg: employee of Astellas Pharma Inc, with stock ownership in AstraZeneca.
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Q Shen: employee and stockholder of Pfizer Inc.
CN Sternberg: served as a consultant for Janssen-Cilag, Astellas Pharma Inc, Sanofi-Genzyme, Novartis, Bayer, Pfizer Inc, Merck, MSD, AstraZeneca, Immunomedics (now Gilead), Janssen, Foundation Medicine, UroToday, and Medscape, and received prior institutional funding from Cougar Biotechnology (now Janssen), Medivation (now Pfizer), Clovis Oncology, and Roche-Genentech.
The authors have no other relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript apart from those disclosed.