

COVID-19 Vaccine AstraZeneca Real-World Evidence Summary

Summary of real-world evidence for COVID-19 Vaccine AstraZeneca

Data from clinical trials in up to 60,000 participants show COVID-19 Vaccine AstraZeneca is well tolerated¹ and highly effective² against COVID-19 across all disease severities, with consistent efficacy across demographics, ethnicities and all adult age groups, including individuals aged 65 and older.³ New real-world evidence, in tens of millions of vaccinated people globally, is also demonstrating the effectiveness of the vaccine against COVID-19 death, hospitalisation and transmission.

In the first real-world evidence in people who have had a full two-dose regimen of the AstraZeneca vaccine, Public Health England (PHE) reports the vaccine is 89% effective against symptomatic COVID-19.⁴

In those that have had a single dose of the two-dose regimen, real-world evidence shows:

1. COVID-19 Vaccine AstraZeneca markedly reduces the likelihood of death caused by the disease

Between December 2020 and 30 April 2021, a PHE study estimated at least 11,700 deaths were prevented in individuals aged 60 years or older as a result of the COVID-19 vaccination programme in England. This included 9,900 deaths prevented in individuals aged 80 years and older, 1,500 in those aged 70 to 79 years and 300 in those aged 60 to 69 years.⁵ The study included both the AstraZeneca and Pfizer-BioNTech vaccines.

A single dose of COVID-19 Vaccine AstraZeneca was found to significantly reduce the risk of death in people over 70 years old compared to unvaccinated individuals. The study from PHE and National Institute for Health Research found that these data combined with recent estimates of protection against symptomatic disease in the same age group, suggest that a single dose is approximately 80% effective at preventing mortality.⁶

Italian Institute of Public Health data from 13.7 million people vaccinated with either AstraZeneca, Pfizer-BioNTech or Moderna vaccines between December 2020 and 3 May 2021 reported a 95% reduction in mortality risk across genders and age groups at 35 days after vaccination.⁷

2. COVID-19 Vaccine AstraZeneca reduces the number of people with COVID-19 who need to go to hospital

A PHE study, up to the end of April 2021, estimated at least 33,000 hospitalisations were prevented in those aged 65 and older in England as a result of the COVID-19 vaccination programme.⁵ The study included both the AstraZeneca and Pfizer-BioNTech vaccines.

A single dose of COVID-19 Vaccine AstraZeneca reduced the likelihood of COVID-19-related hospitalisation by 94%, in a large, national population-level study in Scotland, UK.³ The majority of vaccine recipients were aged over 65 years and the effects were comparable across all age groups.

In a UK surveillance project, a single dose of COVID-19 Vaccine AstraZeneca was 80% effective in preventing hospitalisation in elderly and frail adults aged 80 years and older and with extensive comorbid disease.⁸

Data from the national surveillance system for COVID-19 hospitalisations in England between December 2020 and April 2021, showed that people aged 80 years and over who received a single dose of the AstraZeneca vaccine were 73% less likely to be hospitalised and that vaccination is likely to have a significant impact in reducing demand for intensive care health services as a result of COVID-19 infection.⁹

The Italian Institute of Public Health reported a 90% reduction in risk of hospitalisation across genders and age groups at 35 days after vaccination with either AstraZeneca, Pfizer-BioNTech or Moderna vaccines.⁷

3. COVID-19 Vaccine AstraZeneca reduces the likelihood of infection

A single dose of either the AstraZeneca or Pfizer-BioNTech vaccine reduced the chance of a new COVID-19 infection by 65% compared to individuals who were unvaccinated, in a large, UK community surveillance study of people aged 16 years and older.¹⁰

In a study conducted by PHE, a single dose of COVID-19 Vaccine AstraZeneca was 73% effective against symptomatic COVID-19 infections from day 35 onwards in adults aged 70 years and older.¹¹

A first analysis of vaccine effectiveness in South Korea, in more than 700,000 people, showed a single dose of COVID-19 Vaccine AstraZeneca reduced the risk of COVID-19 infection by 90% after 14 days.¹²

Italian Institute of Public Health data noted an 80% reduced risk of COVID-19 infection across genders and age groups at 35 days after vaccination with either AstraZeneca, Pfizer-BioNTech or Moderna vaccines.⁷

4. COVID-19 Vaccine AstraZeneca reduced the likelihood of household transmission of the virus

Both the AstraZeneca and Pfizer-BioNTech vaccines reduced the likelihood of household transmission of COVID-19 by up to a half, in a PHE study of individuals who became infected three weeks after receiving their first dose.¹³ In analyses with COVID-19 Vaccine AstraZeneca, vaccinated individuals were between 38% and 47% less likely to pass the virus on to their household contacts compared to those who were unvaccinated.¹³

Latest data released

Two doses of the AstraZeneca vaccine is approximately

89%
effective

against symptomatic COVID-19.⁴

A single dose of the AstraZeneca vaccine is approximately

80%
effective

at preventing mortality.⁶

A single dose of the AstraZeneca vaccine reduced the likelihood of COVID-19-related hospitalisation by

73%

in people aged 80 years and over.⁹



What is real-world evidence and why is it important for learning about the effectiveness of COVID-19 vaccines?

Real-world evidence helps people better understand if a treatment is effective in day-to-day clinical practice, as opposed to 'efficacy' which is determined in controlled clinical trials.

By using this evidence, scientists, regulators and governments are able to monitor the important contribution a treatment is making to society. In the case of COVID-19, this evidence helps to demonstrate the real-world contribution vaccines are making to help manage the pandemic. It is vital in helping governments, health providers and communities understand how effective vaccines are at reducing the burden of, and protecting against, COVID-19. Specifically, understanding its effectiveness:

- Against different disease severities - from reducing deaths and hospital admissions to preventing milder forms of the disease
- To reduce rates of infection across the population
- To prevent transmission and spread of the virus
- In different populations, including age, race, ethnicity and those living with underlying health conditions, such as asthma, diabetes and HIV

How is real-world evidence different from clinical trial evidence?

A clinical trial is a carefully controlled research study that is designed to establish the effect of a medical treatment and how well it "works" (its 'efficacy'), by assigning people to different treatment groups.

Clinical trials are usually conducted in a specialised research setting and with certain controls in place to minimise bias and ensure precise data collection. These trials are an essential part of the evaluation and approval process for medicines and are carefully planned, conducted, and agreed with regulators in advance. Clinical trials provide a good indication of how well a medicine or vaccine works and its safety profile, but when this is observed in the real-world setting, a wider view of its impact can be monitored.

In combination with clinical trial data, real-world evidence helps to inform the "bigger picture" – how effective a medicine is in a larger, more varied patient population, in various healthcare settings, over an extended period of time.

Why can't you compare real-world evidence for different vaccines?

Comparing vaccines data is complex and must take many factors into account, including effectiveness, supply, storage and distribution logistics. So, while real-world evidence is helpful, not all real-world evidence is the same and it is difficult to compare.

It is captured at different times, in different populations, in different places that may have different levels of COVID-19 infection and with different variants of the virus in circulation.¹⁴

To overcome the disease, many different vaccines are needed to support long-term immunity and for protection against new variants as they arise. Real-world evidence can help to improve our knowledge and understanding, and support strategies that increase vaccine uptake to protect lives and reduce hospitalisations.

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