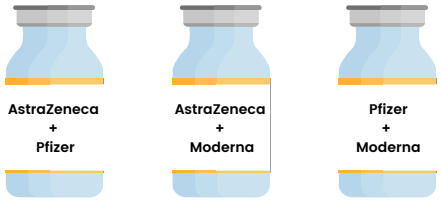
COVID-19 VACCINES
EVIDENCE IN BRIEF

MIXED VACCINE SCHEDULES

OPTIMIZING PROTECTION AND FEASIBILITY

In the face of increasingly urgent and complex decisions related to COVID-19 vaccination, heterologous—or mixed—vaccine schedules may allow countries to optimize immunization programs while building in flexibility for the dynamic COVID-19 vaccine supply. There is a growing body of evidence to help public health officials consider recommendations for mixed schedules as different vaccine products become available.



WHO INTERIM GUIDANCE

Mixed Schedules

While homologous COVID-19 vaccine schedules remain the standard practice, WHO supports a flexible approach to homologous vs. heterologous schedules.

Countries should consider vaccine supply, access, and product-specific factors when weighing homologous vs. heterologous schedule options. Rapidly achieving high vaccination coverage with a primary series in priority groups should continue to be the focus while supply remains constrained.

Both heterologous and homologous schedules should be utilized to achieve high coverage and vaccination should not be delayed over considerations regarding the potential benefits of heterologous schedules.

Read the full WHO interim guidance on mixed COVID-19 vaccination schedules here

Booster Doses

All booster studies to date show a strong immunological response, achieving or improving upon the peak antibody levels following the primary immunization series for both homologous and heterologous booster regimens.

Introducing booster doses should be evidence-driven and targeted to the population groups at highest risk of serious disease and those necessary to protect the health system.

Equity considerations support improving coverage of the primary vaccination series in high risk populations as the top priority. More data are needed to understand the potential impact of booster vaccination against specific variants.

Read the full WHO interim guidance on COVID-19 vaccine booster doses here

(WHO interim guidance on other priority topics will be added as it becomes available.)

RESOURCES

Full studies and supplemental data are available at https://bit.ly/covid-vax-evidence and https://VIEW-hub.org/covid-19/effectiveness-studies

VERSION: JANUARY 4, 2022

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COVID-19 VACCINES
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MIXED VACCINE SCHEDULES

EXPLORE THE DATA

HETEROLOGOUS COMBINATIONS FOR PRIMARY SERIES

VACCINE EFFECTIVENESS (95% CI)*			PREDOMINANT VARIANTS OF CONCERN	STUDY REFERENCE[1]
Against infection	Against symptomatic disease	Against hospitalization		
AstraZeneca + mRNA (any)				
88% (83-92)			Alpha	Gram, *PLOS Medicine,* 2021
90% (89-91)		99% (98-100)	Alpha, Delta, Gamma	Skowronski, *medRxiv*, 2021
80% (72-86)		100% (-inf-100)	Alpha, Delta	Poukka, *Vaccine*, 2022
AstraZeneca + mRNA (Pfizer)				
86% (70-93)	91% (71-97)	95% (79-99)	Alpha, Delta	Martinez-Baz, *Eurosurveillance*, 2021
	67% (59-73)		Delta	Nordstrom, *Lancet Regional Health - Europe,* 2021a
AstraZeneca + mRNA (Moderna)				
		79% (62-88)	Delta	Nordstrom, *Lancet Regional Health - Europe,* 2021b
mRNA (any) + mRNA (any)				
91% (90-92)		98% (96-99)	Alpha, Delta, Gamma	Skowronski, *medRxiv*, 2021
100% (-inf-100)		100% (-inf-100)	Alpha, Delta	Poukka, *Vaccine*, 2022

* *VE assessed 14 days after 2nd dose, unless otherwise indicated*

[1] Predominant variant identified by study authors or based on https://outbreak.info/location-report . Refer to cited study or report for more details.

DISCLAIMER: This table is not a comprehensive summary of all available vaccine effectiveness data and studies for other vaccines and mixed schedules are ongoing; visit the links below for additional studies and data. As a result, this brief does not report on all available COVID-19 vaccines. Data may not reflect most recent variants of concern and will be updated as studies become available.

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