

COVID-19 Living Evidence Synthesis #8

What is the effectiveness of available COVID-19 vaccines for children and adolescents, including variants of concern?

A variant of concern is a variant for which there is evidence of an increased risk of spread, more severe disease (for example, causing more hospitalizations or deaths), lower capacity of antibodies generated as a result of infection by the virus or vaccination to block its actions, reduced success of treatments or vaccines, or failure of diagnostic tests to detect the virus. **It is important to understand how COVID-19 variants of concern affect the virus' behaviour, including their impact on how well vaccines work among children and adolescents.**

How have we done this living evidence synthesis?



We conducted a broad search in several databases and websites to retrieve studies evaluating the effectiveness of COVID-19 vaccines, including the [COVID-END Inventory of Evidence Syntheses](#).



We examined the studies reporting data on how well vaccines work against variants of concern (more specifically, whether the vaccines prevent any infection, symptomatic infection, admission to the intensive care unit, severe disease, and death).



We critically appraised the studies and determined the level of certainty of the body of evidence. The color indicates the level of certainty based on the evidence.

Levels of certainty based on the best evidence available

Low-certainty evidence



There are aspects of the studies that led us to believe the results may not be the same in future studies

Moderate-certainty evidence



The studies were done with low to moderate risk of bias but revealed only partially consistent findings

High-certainty evidence



The studies were well done with low risk of bias. The studies revealed consistent findings

Vaccine* effectiveness** against Omicron

Outcome (and vaccine)	Vaccine effectiveness (2 doses) up to 28 days after last dose	
	5 – 11 years	12 – 18 years
Any infection		
Pfizer	29 – 70%	25 – 83%
Moderna		55 – 78%
Symptomatic infection		
Pfizer	48 – 71%	55 – 83%
Admission to the intensive care unit		
Pfizer	21%	
Severe disease (may include death in some studies)		
Pfizer	41 – 94%	76%
Death		
No evidence available		

The COVID-19 Evidence Network to support Decision-making (COVID-END) is supported by an investment from the Government of Canada through the Canadian Institutes of Health Research (CIHR). To help Canadian decision-makers as they respond to unprecedented challenges related to the COVID-19 pandemic, COVID-END in Canada is preparing rapid evidence responses like this one. The opinions, results, and conclusions are those of the evidence-synthesis team that prepared the rapid response, and are independent of the Government of Canada and CIHR. No endorsement by the Government of Canada or CIHR is intended or should be inferred.

Vaccine* effectiveness** against Omicron based on number of doses, time since last dose and age

Outcome (and vaccine)	Number of doses	Age	Time since last dose (days)	Vaccine Effectiveness
Any infection				
Pfizer	1	5 - 11	60	4%
			12 - 17	21 - 48
		28 - 56		58%
		49 - 76		1 - 17%
		2	5 - 11	77
	56 - 84			64%
	14 - 82			31%
	29 - 84		21 - 23%	
	60		26%	
	3	12 - 15	70	23%
			14 - 149	59%
		12 - 17	28 - 69	59 - 63%
			56 - 83	48 - 58%
			84 - 111	41 - 51%
	3	12 - 17	112 - 139	38 - 46%
70			8%	
16 - 17			63	23%
Moderna	2	12 - 17	14	56 - 72%
			7 - 13	80%
Moderna	2	12 - 17	35 - 69	29%
			70	20%
Symptomatic Infection				
Pfizer	1	12 - 17	28 - 69	23 - 49%
			70 - 83	16 - 27%
			84	17 - 26%
			14 - 98	19%
		16 - 17	105	13%

Outcome (and vaccine)	Number of doses	Age	Time since last dose (days)	Vaccine Effectiveness	
Symptomatic Infection (continued)					
Pfizer	2	5 - 11	30 - 90	29%	
			30 - 59	60%	
			60	43%	
			90	35%	
		12 - 15	30 - 90	17%	
			60 - 120	10%	
			12 - 17	7 - 69	32 - 77%
				14 - 149	34 - 45%
	56 - 120	10 - 38%			
	14 - 98	65%			
	3	12 - 17	70	23%	
			7	62 - 87%	
2 doses + mRNA vaccine		0 - 60	56%		
		12 - 17	14 - 98	63%	
Transmission					
No evidence available					
Admission to the intensive care unit					
No evidence available					
Multisystem inflammatory syndrome in children (MIS-C)					
Pfizer	2	12 - 18	28	92%	
Severe Disease (may include death for some studies)					
Pfizer	2	12 - 17	7 - 60	76 - 84%	
			60 - 120	82 - 86%	
			60	74%	
			98	83%	
Death					
No evidence available					

* This infographic includes evidence about vaccines available in Canada.

** The values represent "range of means" and single values mean the result is derived from a single study.