

Breakthrough Varicella and Second Dose Varicella Vaccination FAQs

Q. What are the current ACIP recommendations for second dose varicella vaccine for outbreak control?

A. During a varicella outbreak, persons who have received 1 dose of varicella vaccine should, resources permitting, receive a 2nd dose, provided the appropriate vaccination interval has elapsed since the first dose (3 months for persons aged 12 months to 12 years and at least 4 weeks for persons aged ≥ 13 years). This recommendation can be found at: http://www.cdc.gov/nip/vaccine/varicella/varicella_acip_recs.pdf

Q. Why do 2nd dose varicella vaccinations?

A. The following reasons:

- Despite the success of the 1-dose vaccination program, varicella outbreaks continue to persist.
- One dose of varicella vaccine is only 70-90% effective against varicella of any severity, but is 95% effective against severe disease.
- Some recent outbreaks have occurred among highly vaccinated populations (i.e. settings where varicella vaccine coverage among children without disease history was 93-99%)

Q. What has the research shown regarding the vaccine efficacy of two-dose administration?

A. Vaccine trials in children have compared one-dose regimen of varicella vaccine with two doses given 3 months apart. Over a 10 year observation period:

- Vaccine efficacy was 94% (1 dose) vs. 98% (2 doses)
- Attack rates were 7.3% for 1-dose regimen vs 2.2% for 2-dose regimen
- Thus, risk of developing varicella in vaccinated children was 3.3x lower in those receiving 2 doses
- Although the effectiveness in the field of 2 doses may be less than its efficacy in vaccine trials (as is true with 1 dose), the 2-dose regimen did significantly reduce varicella disease compared to 1 dose

Q. What does breakthrough varicella disease look like?

A. Breakthrough disease—varicella disease in vaccinated children—typically exhibits:

- Shorter duration of illness
- Fewer constitutional symptoms
- Fewer than 50 skin lesions (sometimes even fewer than 10)
- A rash that may be atypical in appearance (maculopapular with few or no vesicles)