



Infectious Diseases, Influenza, Vaccine/Immunization

AAP updates recommendations for flu vaccine in children

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The Academy has updated its recommendations for the prevention and treatment of influenza in children. Key points are highlighted below.

The policy statement *Recommendations for Prevention and Control of Influenza in Children, 2016-2017*, is available at <http://pediatrics.aappublications.org/content/early/2016/09/01/peds.2016-2527> and will be published in the October issue of *Pediatrics*.

1. The Academy recommends pediatricians immunize all children starting at 6 months of age with *inactivated* influenza vaccine (IIV).

2. Quadrivalent live attenuated influenza vaccine (LAIV4) should *not* be used in any setting during the 2016-'17 influenza season in light of its poor effectiveness in recent seasons, particularly against influenza A (H1N1) pdm09 viruses (See AAP News article "Intranasal FluMISSED its target," <http://www.aappublications.org/news/2016/07/12/LAIV071216>). The Academy supports the Centers for Disease Control and Prevention (CDC) interim recommendation during the 2016-'17 season (<http://dx.doi.org/10.15585/mmwr.rr6505a1>).

- This approach was taken in light of new observational data from the U.S. Flu Vaccine Effectiveness Network that documented poor vaccine effectiveness (VE) of LAIV4 during each of the past three influenza seasons, especially against 2009 influenza A (H1N1) and pandemic (H1N1pdm09) viruses. During the most recent season, LAIV4 had an overall adjusted VE of 3% against any influenza, while IIV had an adjusted VE of 63% in children 2 through 17 years of age.
- The Academy and CDC are developing communication resources to convey these important messages and to help the public understand this influenza vaccine recommendation. Resources will be available on *Red Book Online*, <https://redbook.solutions.aap.org>.

3. Annual universal immunization of all those 6 months or older with either a trivalent or quadrivalent *inactivated* influenza vaccine (no preference) is indicated. The 2016-'17 influenza A (H3N2) vaccine strain differs from that contained in the 2015-'16 seasonal vaccines. The 2016-'17 influenza B vaccine strain (Victoria lineage) included in the trivalent vaccine differs from that contained in the 2015-'16 seasonal trivalent vaccines (Yamagata lineage).

4. Influenza vaccination is encouraged as soon as vaccine becomes available and by the end of October, if possible. As influenza virus is unpredictable, this approach is intended to achieve protection prior to the anticipated circulation of influenza in the community.

5. The number of seasonal vaccine doses needed depends on the child's age at the time of the first administered dose and his or her vaccination history. The dosing algorithm (below) for children 6 months through 8 years reflects that the H1N1 pandemic influenza virus no longer is believed to be antigenically novel.

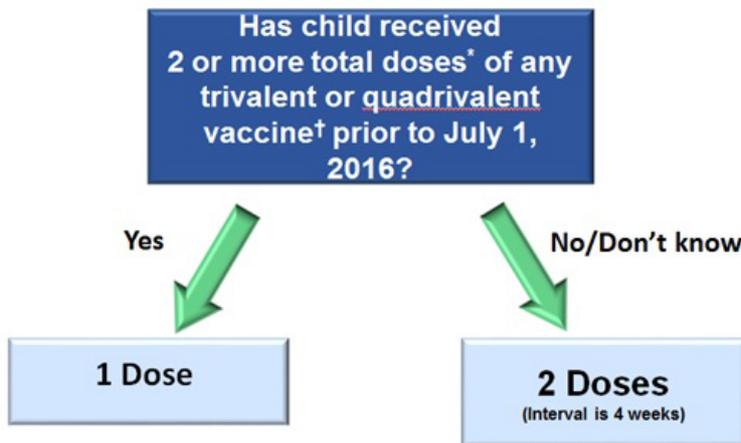
- Children 6 months through 8 years receiving the seasonal influenza vaccine *for the first time* should receive a second dose this season at least four weeks after the first dose.
- Children 6 months through 8 years need only one dose if they have received at least two doses of *any* trivalent or quadrivalent seasonal influenza vaccine (IIV or LAIV) prior to July 1, 2016 (even if not



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in the same or consecutive seasons). Despite recent evidence of poor effectiveness of LAIV4, receipt of LAIV4 in the past still is expected to have primed a child's immune system. There currently are no data that suggest otherwise. Therefore, children who received two or more doses of LAIV4 prior to July 1, 2016, need only one dose of IIV for the 2016-'17 season.

Number of Seasonal Influenza Doses for Children 6 Months Through 8 Years of Age



* The two doses need not have been received during the same season or consecutive seasons. † Receipt of LAIV4 in the past is still expected to have primed a child's immune system, despite recent evidence for poor effectiveness. There currently are no data that suggest otherwise.

6. All children with egg allergy can receive influenza vaccine with no additional precautions than those of routine vaccines. Most IIV vaccines are produced in eggs and contain minute but measurable amounts of egg protein. Recent studies have shown that the amount of egg protein in IIV vaccine does not impart an increased risk of anaphylactic reaction to vaccination. Therefore, a decision-making algorithm for vaccination of children with egg allergy of any severity no longer is needed. The recommended waiting period is 15 minutes, as with all other vaccines.

7. All health care personnel should receive an annual influenza vaccine because prevention of influenza in health care providers is a crucial step in preventing health care-associated influenza infections. Because health care personnel may care for or live with people at high risk for influenza-related complications, it is especially important for them to get vaccinated annually.

8. Neuraminidase inhibitors remain the preferred drugs for the treatment and prevention of influenza. Pediatricians should attempt to promptly identify children suspected of having influenza for rapid antiviral treatment, when indicated, to reduce morbidity and mortality.

9. It is critical to ensure timely vaccination of children at increased risk of complications from influenza, including



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those younger than 5 years and their household contacts, and children with chronic underlying medical conditions (chronic cardiopulmonary disease, neurologic or neurodevelopmental disorders, immune suppression and metabolic disease). Otherwise healthy children also need to be vaccinated, as they too experience important morbidity and mortality from influenza. During the 2015-'16 influenza season, 49% of children hospitalized with influenza had no recorded underlying medical condition, and nearly 60% of the reported pediatric deaths occurred in children with no underlying conditions.

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