



Influenza vaccination: What's new this season

One IIV trivalent product can now be given with a needle-free jet injector. A recombinant vaccine formulation is available for those who have egg allergy. The algorithm for dosing in children now asks just one question.

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The Centers for Disease Control and Prevention (CDC) has published its recommendations for the use of influenza vaccines for the 2015-2016 influenza season.¹ (See the CDC's Web site at <http://www.cdc.gov/flu/professionals/vaccination/index.htm>.) This Practice Alert describes recent changes in vaccine products, discusses the timing of vaccination, reviews a new algorithm for deciding on the number of doses for children ages 6 months through 8 years, and raises issues to consider when thinking about specific products for individual patients.

Vaccine product modifications for 2015-2016

Influenza vaccines contain either 3 or 4 antigens (trivalent or quadrivalent) and either inactivated or modified live viruses (inactivated influenza vaccine [IIV]) or live attenuated influenza vaccine [LAIV]). These vaccines are produced in eggs, by cell cultures, or with recombinant technology. The vaccine products for this influenza season will contain antigens of one H1N1 virus, one H3N2 virus, and one B virus (trivalent products) or 2 B viruses (quadrivalent products).

The viruses selected for the vaccine are based on the most prevalent types in circulation globally, and vaccine effectiveness in the United States will be directly proportional to how well these strains match those circulating here during the influenza season. In the

2014-2015 influenza season, an antigenic drift in the circulating H3N2 virus rendered influenza vaccines only 23% effective in preventing laboratory-confirmed influenza.²

One product, Afluria, an IIV trivalent product, has been approved for administration using a needle-free jet injector in individuals ages 18 to 64 years.¹ Additionally, intramuscular injection of Afluria is still available for those 18 years and older. All other IIV products are administered via needle and syringe. Vaccination with a jet injector achieves protection equivalent to needle injection, but its use is associated with higher rates of local reactions.

Flublok, another trivalent IIV product, is produced using a recombinant egg-free process. It was originally approved for individuals 18 to 49 years; there is now no upper age limit, providing an egg-free option for an expanded age group. An intradermal option, Fluzone, was a trivalent product last year and will be replaced by Fluzone Intradermal Quadrivalent this season.

A complete list of all influenza products and their respective patient-specific recommendations can be found on the CDC influenza Web site (<http://www.cdc.gov/flu/professionals/vaccination/index.htm>).

Timing of vaccine administration

Start providing influenza vaccine by the beginning of October and continue offering it

Flublok, a trivalent IIV recombinant egg-free product, now has no upper age limit for administration.

TABLE

Precautions with LAIV¹

Individuals who should not receive LAIV vaccine
Children ages 2–17 years who are receiving aspirin or aspirin-containing products
Individuals who have experienced severe allergic reactions to the vaccine or any of its components, or to a previous dose of any influenza vaccine
Pregnant women
Immunocompromised individuals
Individuals with a history of egg allergy
Children ages 2–4 years who have asthma or who have had a wheezing episode noted in the medical record within the past 12 months, or for whom parents report that a health care provider stated that the children had wheezing or asthma within the last 12 months
Individuals who have taken influenza antiviral medications within the previous 48 hours
Conditions that theoretically could induce complications with LAIV administration*
Asthma in those ≥5 years
Chronic heart or lung disease (does not include hypertension)
Chronic renal, hepatic, neurologic, or hematologic disorders
Metabolic disorders including diabetes

LAIV, live attenuated influenza vaccine.

*LAIV use is not precluded with these conditions.

throughout the influenza season to those who are unimmunized. In the past, the recommendation was to begin vaccination as soon as vaccine was available. But studies have shown that vaccine effectiveness declines after 6 months, especially among those over age 65 years, which can result in inadequate protection late in the influenza season.^{3,4} Administering the vaccine later in the fall may confer greater protection later in the season, but, as a strategy, it could also lead to missed opportunities to vaccinate.

Annual vaccination for the entire population is a public health challenge and the October start date is appropriate middle ground. However, children who need 2 doses should receive the first dose as soon as vaccine is available, and the second dose 4 weeks later.¹

One or 2 doses for children?

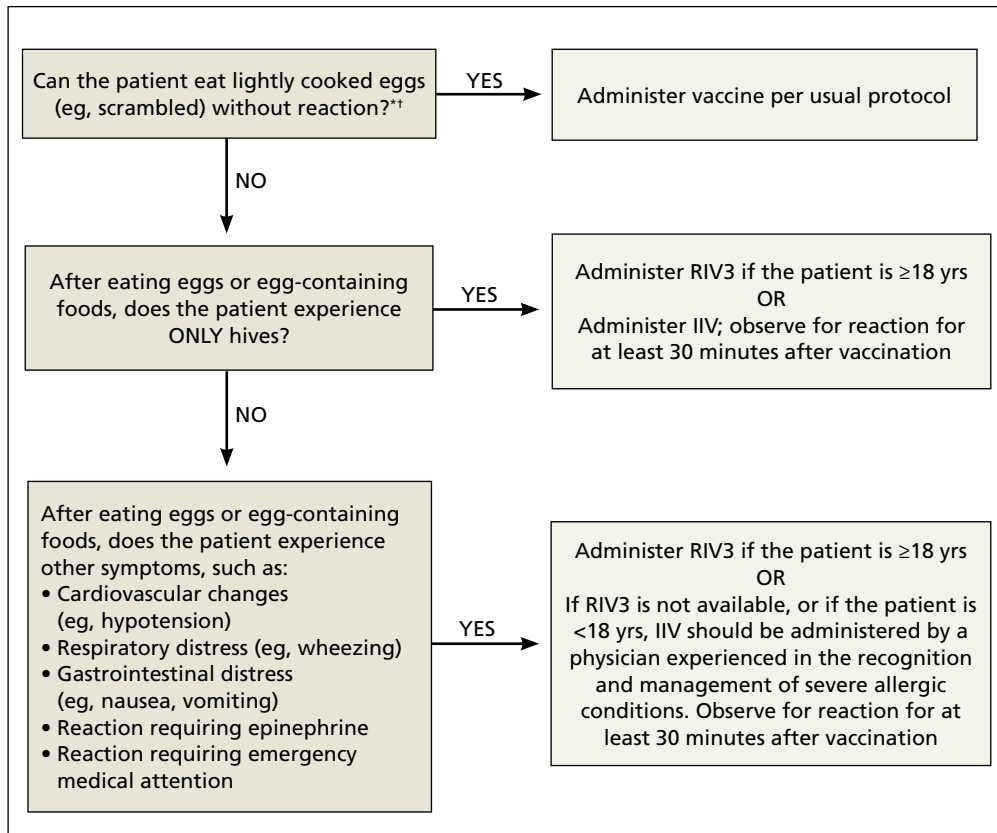
Children ages 6 months through 8 years who are receiving influenza vaccine for the first or second time need 2 doses for maximum immune response. Past algorithms that aided in deciding which children needed 2 doses instead of one considered not only the number and timing of previous doses but also wheth-

er the product had contained pandemic H1N1 antigen. The algorithm for the coming year asks just one question: How many doses of influenza vaccine has the child received previously? This is without regard to when or to the specific products. If the answer is 2 or more doses (not necessarily given in the same season or even in consecutive seasons), only one dose is needed this season. If the answer is “one dose” or “none,” 2 doses are recommended this season, separated by at least 4 weeks.

Considerations for individual patients

The Advisory Committee on Immunization Practices (ACIP) recommends annual influenza vaccination for everyone ages 6 months and older who do not have a contraindication. It states no preference for any product for any age. Last year’s preference for LAIV over IIV for children through age 8 years has been changed; either LAIV or IIV is appropriate for this age group.¹ Although quadrivalent vaccines offer some added protection with an additional B virus, do not delay vaccination if only a trivalent product is available.

FIGURE
Recommendations for patients who say they have an allergy to eggs¹



IIV, inactivated influenza vaccine, trivalent or quadrivalent; RIV3, recombinant influenza vaccine, trivalent.

* Individuals with egg allergy may tolerate egg in baked products (eg, bread or cake). Tolerance to egg-containing foods does not exclude the possibility of egg allergy.

† Consult with a physician who has expertise in the management of allergic conditions before vaccinating individuals who have no known history of exposure to egg, but who are suspected of being egg-allergic on the basis of previously performed allergy testing. Alternatively, RIV3 may be administered if the recipient is ≥18 years.

➤ The dosing algorithm for children this season asks just one question: How many doses of influenza vaccine has the child received previously?

Use the LAIV only for individuals ages 2 years to 49 years who do not have a contraindication listed in the TABLE.¹ There are other conditions that pose a theoretical increased risk of complications with the use of LAIV (TABLE), but they do not preclude the use of the vaccine. Additionally, anyone providing care for a severely immunosuppressed individual should avoid being vaccinated with LAIV or, if vaccinated with the live virus, avoid contact with the individual for 7 days following vaccination.

Recommendations for use of influenza vaccines in those who say they are allergic to eggs remain unchanged from last year (FIGURE¹). The amount of egg protein in influ-

enza vaccines is very low and serious allergic reactions are rare. The availability of trivalent recombinant vaccine provides an egg-free option for those ages 18 and older.

Vaccines are not all we have to protect the public

Remember that while influenza vaccines are recommended and are the most effective intervention to prevent influenza morbidity and mortality, they are imperfect. Their effectiveness varies from year to year, and it wanes with time after administration. The proportion of the population vaccinated is also suboptimal,

which makes other prevention interventions important to implement. These include good infection control practices in all health care facilities, social distancing of those who are infectious, infection control practices in homes

with an infected person, vaccination of all health care workers, and judicious use of pre- and post-exposure chemoprevention when indicated. These have all been discussed in a previous Practice Alert.⁵

JFP

References

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