ACIP Releases Updated Recommendations on Influenza Vaccination to Include the 2014-2015 Season

Key Points for Practice

- Children six months to eight years of age will require two vaccine doses this season, unless they had at least one dose during the 2013-2014 season or two doses in a single season since July 2010, or have received two doses in a season with at least one H1N1-containing vaccine.
- The preferred vaccine in children two through eight years of age, unless contraindicated, is the live attenuated influenza vaccine.
- Trivalent recombinant influenza vaccine (non-egg based) is available for persons 18 through 49 years of age with a history of allergic reaction to eggs.

From the AFP *Editors*

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The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) has released its yearly recommendations for routine influenza vaccination in the 2014-2015 season. Updates include information on antigenic composition of seasonal influenza vaccines available in the United States; concerns about dosing in children six months to eight years of age; and the preferred use of live attenuated influenza vaccine (LAIV), when available, in healthy children two to eight years of age. Any information not addressed in this updated report can be found in the ACIP's 2013 recommendations.

Ideally, vaccination should happen before influenza activity begins. It should be offered as soon as the vaccines are available (preferably by October) and should continue through influenza season. In children six months to eight years of age who need to have two doses of the influenza vaccine, the first dose should be given as soon as possible after the vaccine is available. The second dose should be given at least four weeks after the first dose.

Vaccine Dosing in Children Six Months to Eight Years of Age

Two approaches exist to establish influenza vaccine dosing in children six months to eight years of age for the 2014-2015 season; one takes into account only doses received since July 1, 2010, and the other relies on a known vaccination history before the 2010-2011 season.

With the first approach, if the child had at least one dose of the 2013-2014 seasonal vaccine, or at least two doses since July 1, 2010, then he or she needs to have only one dose of the 2014-2015 seasonal vaccine. If the vaccination history is unknown, or the child did not receive at least one dose of the 2013-2014 seasonal vaccine or at least two doses since July 1, 2010, then two doses of the 2014-2015 vaccine are needed.

For the second approach, the vaccination history starting before July 1, 2010, must be available. If the child has received at least one dose of the 2013-2014 seasonal vaccine or at least two doses during any previous season, and at least one dose of a 2009(HlN1)-containing vaccine, then only one dose is needed for the 2014-2015 season.

Vaccines Available for the 2014-2015 Season

Influenza vaccines available in the United States will have the same vaccine virus strains in the 2014-2015 season as those in the 2013-2014 season. Trivalent vaccines will have hemagglutinin originating from an A/California/7/2009 (H1N1)-like virus, an A/Texas/50/2012 (H3N2)-like virus, and a B/Massachusetts/2/2012-like (Yamagata lineage) virus. Quadrivalent vaccines will have these same antigens plus a B/Brisbane/60/2008-like (Victoria lineage) virus. *Table 1* provides information on the influenza vaccines available in the United States for the 2014-2015 season.

Recommendations

CONSIDERATIONS FOR VACCINATION

Persons at least six months of age should receive an influenza vaccination each year. ▶

Table 1. Influenza Vaccines—United States, 2014-15 Influenza Season

Trade name	*Dispensing method*	*Age indications*	*Route of administration*
Inactivated influenza vaccine, quadrivalent (IIV4), standard dose*			
Fluarix Quadrivalent	0.5-mL single-dose prefilled syringe	≥ 3 years	Intramuscular†
Flulaval Quadrivalent	0.5-mL single-dose prefilled syringe	≥ 3 years	Intramuscular†
	5.0-mL multidose vial	≥ 3 years	Intramuscular†
Fluzone Quadrivalent	0.25-mL single-dose prefilled syringe	6 to 35 months	Intramuscular†
	0.5-mL single-dose prefilled syringe	≥ 36 months	Intramuscular†
	0.5-mL single-dose vial	≥ 36 months	Intramuscular†
	5.0-mL multidose vial	≥ 6 months	Intramuscular†
Inactivated influenza vaccine, trivalent (IIV3), standard dose*			
Afluria	0.5-mL single-dose prefilled syringe	≥ 9 years‡	Intramuscular†
	5.0-mL multidose vial	≥ 9 years‡	Intramuscular†
Fluarix	0.5-mL single-dose prefilled syringe	≥ 3 years	Intramuscular†
Flulaval	0.5-mL single-dose prefilled syringe	≥ 3 years	Intramuscular†
	5.0-mL multidose vial	≥ 3 years	Intramuscular†
Fluvirin	0.5-mL single-dose prefilled syringe	≥ 4 years	Intramuscular†
	5.0-mL multidose vial	≥ 4 years	Intramuscular†
Fluzone	0.5-mL single-dose prefilled syringe	≥ 36 months	Intramuscular†
	5.0-mL multidose vial	≥ 6 months	Intramuscular†
Fluzone Intradermal§	0.1-mL prefilled microinjection system	18 to 64 years	Intradermal‖
Inactivated influenza vaccine, trivalent, cell culture-based (ccIIV3), standard dose*			
Flucelvax	0.5-mL single-dose prefilled syringe	≥ 18 years	Intramuscular†
Inactivated influenza vaccine, trivalent (IIV3), high dose*			
Fluzone High-Dose¶	0.5-mL single-dose prefilled syringe	≥ 65 years	Intramuscular†
Recombinant influenza vaccine, trivalent (RIV3)*			
Flublok	0.5-mL single-dose vial	18 to 49 years	Intramuscular†
Live attenuated influenza vaccine, quadrivalent* (LAIV4)**			
Flumist Quadrivalent	0.2-mL single-dose prefilled intranasal sprayer	2 to 49 years	Intranasal

ACIP = Advisory Committee on Immunization Practices.

**—Contraindications for all vaccines include severe allergic reaction to any component of the vaccine, including egg protein, or after previous dose of any influenza vaccine. Precautions for all vaccines include moderate to severe illness with or without fever, or history of Guillain-Barré syndrome within six weeks of receipt of influenza vaccine. Immunization providers should check the U.S. Food and Drug Administration–approved prescribing information for 2014-15 influenza vaccines for the most complete and updated information, including (but not limited to) indications, contraindications, warnings, and precautions. Package inserts for U.S.-licensed vaccines are available at http://www.fda.gov/biologicsbloodvaccines/vaccines/approvedproducts/ucm093833.htm.*

†—For adults and older children, the recommended site of vaccination is the deltoid muscle. The preferred site for infants and young children is the anterolateral aspect of the thigh. Specific guidance regarding site and needle length for intramuscular administration can be found in ACIP's General Recommendations on Immunization (http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6002a1.htm).

‡—Age indication per package insert is at least five years of age; however, the ACIP recommends Afluria not be used in children six months to eight years of age because of increased risk of febrile reactions noted in this age group with bioCSL's 2010 Southern Hemisphere IIV3. If no other age-appropriate, licensed inactivated seasonal influenza vaccine is available for a child five to eight years of age who has a medical condition that increases the child's risk of influenza complications, Afluria can be used; however, physicians should discuss with the parents or caregivers the benefits and risks of influenza vaccination with Afluria before administering this vaccine. Afluria may be used in persons at least nine years of age.

§—Trivalent inactivated vaccine, intradermal: a 0.1-mL dose contains 9 mcg of each vaccine antigen (27 mcg total).

‖—The preferred site is over the deltoid muscle. Fluzone Intradermal is administered using the delivery system included with the vaccine.

¶—Trivalent inactivated vaccine, high dose: a 0.5-mL dose contains 60 mcg of each vaccine antigen (180 mcg total).

***—Additional contraindications include concomitant use of aspirin or aspirin-containing medications in children and adolescents. The ACIP recommends LAIV4 not be used for pregnant women, immunosuppressed persons, persons with egg allergy, and children two to four years of age 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 professional stated that they had wheezing or asthma within the past 12 months. LAIV should not be administered to persons who have taken influenza antiviral medications within the previous 48 hours. Persons who care for severely immunosuppressed persons who require a protective environment should not receive LAIV, or should avoid contact with such persons for seven days after receipt. Additional precautions include asthma in persons five years and older and medical conditions that might predispose to higher risk of complications attributable to influenza.*

Adapted from the Centers for Disease Control and Prevention. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP)—United States, 2014-15 influenza season. MMWR Morb Mortal Wkly Rep. *2014;63(32):693-694.*

If an acceptable preparation is available, this vaccination should not be postponed for a different preparation. If there are no contraindications or precautions, LAIV should be given to all healthy children two to eight years of age. If LAIV is not available, inactivated influenza vaccine (IIV) can be given instead. The upper age limit for this recommendation is eight years because of greater proven effectiveness of LAIV in this age group and to maintain programmatic consistency. The recommendation to give LAIV to all healthy children two to eight years of age should be put into effect for the 2014-2015 season; however, if this is not possible, it should occur no later than the 2015-2016 season.

LAIV should not be given to persons with the following characteristics:

- Age younger than two years
- Age older than 49 years
- Contraindications stated in the package insert for LAIV (age two to 17 years, taking aspirin or products containing aspirin; allergic reactions to the vaccine or its components, or to any previously received influenza vaccine)
- Pregnancy
- Immunosuppression
- Egg allergy
- Age two to four years with asthma or wheezing within the past 12 months
- Influenza antiviral drug use in the past 48 hours.

Additionally, the LAIV package insert indicates that any person with asthma may have an increased risk of wheezing after receiving LAIV. The safety of LAIV in persons with other underlying medical conditions that may put them at risk of complications after influenza infection, such as hepatic, neurologic, hematologic, or metabolic disorders, has not been established. These underlying medical conditions, as well as asthma in persons at least five years of age, are precautions for LAIV use.

LAIV should not be given if a person is taking care of another person with severe immunosuppression. If that person does choose to get LAIV, he or she should not have contact with the immunosuppresssed person for seven days.

VACCINATION IN PERSONS WITH EGG ALLERGY

Persons with egg allergy should still get the influenza vaccine if they have had only hives after having contact with or ingesting eggs. However, because of a lack of evidence regarding LAIV use in this population, IIV or trivalent recombinant influenza vaccine (RIV3, non–egg based) or IIV (traditional egg based) should be given instead of LAIV. If no other contraindications exist, RIV3 may be used in persons 18 to 49 years of age. IIV can also be used, but only if the vaccine is given by a health care professional who knows how egg allergy presents. Additionally, persons with egg allergy receiving the vaccine should be monitored for at least 30 minutes after each dose to determine if there are any signs of an allergic reaction.

Persons 18 to 49 years of age with egg allergy who have reported having more severe reactions to egg (e.g., angioedema, respiratory distress, lightheadedness, emesis) or who have had to use epinephrine or any other type of emergency intervention can receive RIV3; however, they must have no other contraindications. If RIV3 is not available or if the patient is younger than 18 years or older than 49 years, IIV can be given. In this situation, the vaccine should be given by a health care professional who knows how to recognize and treat severe allergic reactions. Irrespective of the recipient's allergy status, staff and equipment should be available to allow for immediate identification and management of allergic reactions.

Persons who can eat lightly cooked eggs without having a reaction probably do not have an egg allergy, and those with a known egg allergy may be able to eat egg in baked products, such as bread, without having a reaction. These scenarios indicate that just because a person is able to ingest eggs without having a reaction, it does not rule out the possibility of an egg allergy. A consistent history of adverse reactions to eggs, combined with immunoglobulin E testing directed against egg proteins, can confirm an egg allergy. If there is no known history of exposure to egg, but egg allergy is still suspected, a physician with expertise in allergies should be consulted before vaccination. RIV3 may be used if the patient is 18 to 49 years of age.

Previous severe allergic reaction to the influenza vaccine is a contraindication to future vaccination.

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Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6332a3.htm

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