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Influenza Vaccines Available during the 2014–15 Season

Background

Thirteen influenza vaccine products from seven different vaccine manufacturers will be available on the U.S. market this fall.¹ Influenza vaccine contraindications and precautions are summarized below (Table).

Influenza Vaccine Composition

The 2014–15 vaccine composition is the same as for 2013–14.

- Trivalent vaccines will contain 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 include an additional vaccine virus, a B/Brisbane/60/2008-like (Victoria lineage) virus.¹

Influenza Vaccine Abbreviations¹

- IIV: inactivated influenza vaccine
- LAIV: live-attenuated influenza vaccine
- RIV: recombinant hemagglutinin (HA) influenza vaccine
- cc: a prefix indicating cell culture-based vaccine (e.g., ccIIV)
- Numeric suffix: specifies the number of antigens in the vaccine (e.g., IIV3=trivalent, and IIV4=quadrivalent)

Inactivated Influenza Vaccines

- Inactivated influenza vaccines contain inactivated viruses and thus *cannot cause influenza*.
- Vaccine composition varies according to the manufacturer (refer to package inserts).
- Single-dose preparations are thimerosal-free.
- Multidose vials contain the preservative thimerosal.
- Store at 35°–46°F (2°–8°C); do not freeze.²
- Commonly reported adverse events: local redness and soreness at the injection-site.
- Less commonly reported adverse events: mild fever, muscle pain, and rash.
- IIV4 vaccines available this season: Fluarix® Quadrivalent, FluLaval® Quadrivalent, Fluzone® Quadrivalent.¹
- IIV3 vaccines available in the U.S. this season: Afluria®, Fluarix®, FluLaval®, Fluvirin®, Fluzone®, Fluzone® Intradermal, Fluzone® High-Dose.¹
- ccIIV3 vaccine available this season: Flucelvax®, approved for persons aged ≥18 years.² Vaccine virus strains are grown in mammalian cells; however, initial reference strains are passed through an egg and thus the vaccine should be administered following CDC's egg-allergy guidelines.¹

Live-Attenuated Influenza Vaccine

- When immediately available, LAIV4 should be used for healthy children aged 2 through 8 years who have no contraindications or precautions.

- Contains live, attenuated (weakened), temperature-sensitive (cold-adapted) viruses that are able to replicate efficiently only at temperatures present in the nasal mucosa.
- FluMist® Quadrivalent is the only LAIV available this season; it is thimerosal-free and available for healthy, non-pregnant persons aged 2–49 years.¹
- FluMist® Quadrivalent is for intranasal administration only, and is supplied in a prefilled, single-use sprayer containing 0.2 mL of vaccine; an attached dose-divider clip is removed from the sprayer to administer the second half of the dose into the other nostril. Illustrations and a video showing correct administration technique are available on the manufacturer's website.³
- Store at 35–46°F (2°–8°C); do not freeze.²
- The most commonly reported adverse events following LAIV are nasal congestion, cough, headache, and sore throat.

Recombinant Influenza Vaccine

- RIV3 is made by using DNA and cell culture technology to produce the HA protein that induces immunity; the recombinant HA is produced in an insect line using a baculovirus, thus *the vaccine is egg-free*.²
- FluBlok® is the only RIV3 available this season; it may be used in persons aged 18–49 years.²
- Store at 35–46°F (2°–8°C), do not freeze, and protect from light.²

State-Supplied Influenza Vaccines

The Alaska Immunization Program will supply the following three formulations of influenza vaccine this season:⁴

- Fluzone® Pediatric IIV4: prefilled syringe, preservative free, latex free, available for children aged 6–35 months.
- Fluzone® IIV4: multidose, contains thimerosal, available for persons aged ≥6 months.²
- FluMist® LAIV4: prefilled sprayer, preservative free, latex free, available for persons aged 2–49 years.³

References

1. CDC. Summary Recommendations: Prevention and Control of Influenza with Vaccines: Recommendations of the ACIP – United States, 2014–15 Influenza Season. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6332a3.htm>
2. U.S. Food and Drug Administration, Vaccines, Blood, and Biologics: Manufacturer Package Inserts. Available at: <http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/UCM093833>
3. MedImmune Vaccines, Inc. Information for Healthcare Professionals: Dosing and Administration. Available at: <https://www.flumistquadrivalent.com/hcp/>
4. Alaska Section of Epidemiology. Influenza Vaccine Recommendations and Administration for the 2014–15 Season. *Bulletin* No. 16. Available at: http://www.epi.alaska.gov/bulletins/docs/b2014_16.pdf

Table. Contraindications and Precautions for Influenza Vaccines, 2014–15 Season¹

Contraindications for LAIV4 and IIV	Do not administer if person has:	<ul style="list-style-type: none"> • anaphylaxis or life-threatening reaction to a previous influenza vaccine or vaccine component • severe allergy (e.g., anaphylaxis) to egg (if RIV3 is not available, IIV should be administered by a physician experienced in recognition and management of severe allergic conditions.)
Additional contraindications and precautions for LAIV4 (Note: persons with contraindications for LAIV4 may be candidates for IIV or RIV.)	Do not administer if person:	<ul style="list-style-type: none"> • is aged <2 years or >49 years • is pregnant • is immunosuppressed • is a child aged 2–4 years with asthma or a history of wheezing in past 12 months • is a child aged 2–17 years receiving long-term aspirin or other salicylates therapy • who received live virus (LAIV4, MMR, varicella) vaccine within the last 4 weeks • who received influenza antiviral medication within the last 48 hours • is a close contact of a patient with severe immunosuppression requiring protective isolation <p>Precaution: has chronic medical conditions* (these are no longer contraindications)</p>
Contraindications for RIV	Do not administer if person:	<ul style="list-style-type: none"> • is aged <18 years or ≥50 years (may be used in persons with severe allergy to egg protein.) • has a history of severe allergic reaction to any component of the vaccine
Precautions for ALL influenza vaccines	Do not administer if person:	<ul style="list-style-type: none"> • has a moderate or severe illness with or without fever (mild illness is not a precaution) • developed Guillain Barré syndrome within 6 weeks of a previous influenza vaccination

*Chronic pulmonary (including asthma in persons ≥5 years), cardiovascular (excluding hypertension), renal, hepatic, cognitive, neurologic/neuromuscular (e.g., cerebral palsy), hematologic or metabolic disorders (e.g., diabetes).