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Influenza Vaccines Available during the 2013–14 Season

Background

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

Influenza Vaccine Composition

- Trivalent vaccines will contain an A/California/7/2009 (H1N1)-like virus, an H3N2-like A/Victoria/361/2011, and a B/Massachusetts/2/2012-like virus.
- Quadrivalent vaccines will include an additional vaccine virus, a B/Brisbane/60/2008-like virus.¹

Influenza Vaccine Abbreviations¹

- IIV: inactivated influenza vaccine, which is replacing trivalent inactivated influenza vaccine (TIV) this year
- LAIV: live-attenuated influenza vaccine
- RIV: recombinant hemagglutinin 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.
- Multi-dose 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.
- IIV3 vaccines available this season: Afluria®, Fluarix®, FluLaval®, Fluvirin®, Fluzone®, Fluzone® Intradermal, Fluzone® High Dose.¹
- ccIIV3 vaccine available this season: Flucelvax® is a cell culture-based vaccine; it is approved for persons aged ≥18 years.² Vaccine virus strains are grown in mammalian cells instead of in eggs; however, initial reference strains are passed through an egg and thus the vaccine should be administered following CDC's egg-allergy guidelines.¹
- IIV4 vaccines available this season: Fluarix® Quadrivalent, FluLaval® Quadrivalent, Fluzone® Quadrivalent.¹

Live-Attenuated Influenza Vaccine

- 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. An illustration and a video showing the appropriate 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 use of LAIV include nasal congestion, cough, headache, and sore throat.

Recombinant Influenza Vaccine

- RIV3 is made by using DNA and cell culture technology to produce the hemagglutinin (HA) protein that induces immunization; 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

Three presentations of state-supplied influenza vaccine will be offered by the Alaska Immunization Program this season:⁴

- Fluzone® Pediatric IIV3: prefilled syringe, preservative free, latex free, available for children aged 6–35 months.
- Fluarix® IIV4: prefilled syringe, preservative free, available for persons aged ≥3 years.²
- FluMist® LAIV: 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, 2013–14 Influenza Season. Available at: <http://www.cdc.gov/flu/professionals/acip/2013-summary-recommendations.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 2013-14 Season. *Bulletin* No. 23. Available at: http://www.epi.alaska.gov/bulletins/docs/b2013_23.pdf

Table. Contraindications and Precautions for Influenza Vaccines, 2013–14 Season¹

Contraindications for LAIV and IIV	Do not administer if person has:	<ul style="list-style-type: none"> • anaphylaxis or life-threatening reaction to a previous influenza vaccine • severe allergy (e.g., anaphylaxis) to egg protein or to any component of the vaccine
Additional contraindications for LAIV (Note: persons with contraindications for LAIV may be candidates for IIV or RIV.)	Do not administer if person:	<ul style="list-style-type: none"> • is aged <2 years or ≥50 years • is pregnant • has chronic medical conditions* • has asthma • is a child aged 2–4 years with a history of wheezing in past 12 months • is a close contact of a patient with severe immunosuppression requiring protective isolation • is a child aged ≤18 years receiving long-term aspirin or other salicylates therapy • who received live virus (LAIV, MMR, varicella) vaccine within the last 4 weeks • who received influenza antiviral medication within the last 48 hours
Contraindications for RIV	Do not administer if person:	<ul style="list-style-type: none"> • is aged <18 years or ≥50 years • 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 a fever (a person with a mild illness, such as a mild cold, may be vaccinated) • developed Guillain Barré syndrome within 6 weeks of a previous influenza vaccination

*Chronic pulmonary (including asthma), cardiovascular (excluding hypertension), renal, hepatic, cognitive, neurologic/neuromuscular (e.g., cerebral palsy), hematologic or metabolic disorders (e.g., diabetes), immunosuppression including that caused by medications or HIV, and children (through 18 years of age) on long-term aspirin therapy.