



Department of Health and Social Services
Valerie J. Davidson, Commissioner

3601 C Street, Suite 540
Anchorage, Alaska 99503 <http://www.epi.Alaska.gov>

Division of Public Health

Jay C. Butler, MD, Chief Medical Officer
and Director
Local (907) 269-8000
24 Hour Emergency (800) 478-0084

Editors:

Joe McLaughlin, MD, MPH
Louisa Castrodale, DVM, MPH

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Influenza Vaccines Available During the 2015–16 Season

Background

Eleven influenza vaccine products from six different vaccine manufacturers will be available on the U.S. market this fall.¹

2015–16 Influenza Vaccine Composition

- Trivalent vaccines will contain hemagglutinin (HA) derived from an A/California/7/2009 (H1N1)-like virus, an A/Switzerland/9715293/2013 (H3N2)-like virus, and a B/Phuket/3073/2013-like (Yamagata lineage) virus.
- Quadrivalent vaccines will contain these vaccine viruses, and 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 *cannot cause influenza*.
- Vaccine formulation varies according to the manufacturer (refer to package inserts).
- Single-dose presentations 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 include local redness and soreness at the injection-site.
- Less commonly reported adverse events include mild fever, muscle pain, and rash.
- IIV4 vaccines available this season: Fluarix® Quadrivalent, FluLaval® Quadrivalent, Fluzone® Quadrivalent, Fluzone® Intradermal Quadrivalent.¹
- IIV3 vaccines available this season: Afluria®, Fluvirin®, Fluzone®, 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

- Contains live, attenuated (weakened), temperature-sensitive (cold-adapted) viruses that are able to replicate efficiently only at temperatures present in the nasal mucosa. The vaccine virus cannot cause influenza.
- FluMist® Quadrivalent is the only LAIV available this season; it is thimerosal-free and available for healthy, non-pregnant persons aged 2 through 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. Information on correct administration technique is 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 a protein that induces immunity; the recombinant protein is produced in an insect cell line, thus *the vaccine is egg-free*.²
- FluBlok® is the only RIV3 available this season; it may be used in persons aged ≥18 years.²
- Store at 35°–46°F (2°–8°C); do not freeze.²

State-supplied Influenza Vaccines

The Alaska Immunization Program will supply the following five presentations of influenza vaccine this season:⁴

- Fluzone® Pediatric IIV4: prefilled syringe, preservative free, latex free, available for children aged 6 through 35 months.
- Fluzone® IIV4: multidose vial, contains thimerosal, available for persons aged ≥6 months.²
- Fluzone® High-Dose IIV3: prefilled syringe, preservative free, latex free, available for persons aged ≥65 years.
- Fluarix® IIV4: prefilled syringe, preservative free, latex free, available for persons aged ≥36 months.
- FluMist® LAIV4: prefilled sprayer, preservative free, latex free, available for persons aged 2 through 49 years.³

Influenza vaccine contraindications and precautions are summarized below (Table).

References

1. CDC. Prevention and control of influenza with vaccines: recommendations of the ACIP, United States, 2015–16 Influenza Season. *MMWR* 2015;64(30):818-25. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a3.htm?s_cid=mm6430a3_e
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 Bulletin. "Influenza Vaccine Recommendations and Administration for the 2015-16 Season". No. 22. Available at: http://www.epi.alaska.gov/bulletins/docs/b2015_22.pdf

Table. Contraindications and Precautions for Influenza Vaccines, 2015–16 Season¹

Contraindications for LAIV and IIV	Do not administer if the 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 RIV is not available, IIV should be administered by a physician experienced in recognition and management of severe allergic conditions)
Precautions for ALL influenza vaccines	Use caution if the 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
Additional contraindications and precautions for LAIV (Note: persons with contraindications for LAIV may be candidates for IIV or RIV.)	Do not administer if the person:	<ul style="list-style-type: none"> • is aged <2 years or >49 years • is pregnant • is immunosuppressed • is a child aged 2 through 4 years with asthma or a history of wheezing in past 12 months • is a child aged 2 through 17 years receiving long-term aspirin or other salicylates therapy • received live virus (LAIV, MMR, varicella) vaccine within the last 4 weeks • received influenza antiviral medication within the last 48 hours • is a close contact of a patient with severe immunosuppression requiring protective isolation
	Use caution if the person:	<ul style="list-style-type: none"> • has medical conditions that might predispose them to higher risk for complications attributable to influenza¹
Contraindications for RIV	Do not administer if the person:	<ul style="list-style-type: none"> • is aged <18 years • has a history of severe allergic reaction to any component of the vaccine