

The Oregon Public Health Division reminds health care workers that live, attenuated influenza vaccine (LAIV, FluMist®) is a safe and effective choice for seasonal and H1N1 influenza protection.

Live attenuated influenza vaccine (LAIV): A safe and effective choice for health care workers

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Who can receive LAIV?

Healthy non-pregnant people 2 through 49 years of age without any chronic health conditions are eligible for LAIV. This includes household contacts and out-of-home caregivers of infants <6 months, contacts of persons who have chronic health conditions, and health care workers.

Health care workers are frequently treating vulnerable patients; shouldn't they avoid the live, attenuated vaccine?

No. As long as health care workers are healthy and are ≤49 years of age, choosing LAIV, currently available as FluMist®, for seasonal and H1N1 influenza, means they are helping to conserve inactivated influenza vaccine for high-risk persons who do not have the option of live attenuated influenza vaccine. They would also be receiving a needle-less vaccine.

Can close contacts of people with weakened immune systems be vaccinated with LAIV (FluMist®)?

Yes. FluMist® can be used in contacts of persons who have HIV and AIDS, who are on chemotherapy, or who have diseases that weaken their immune system. There is only one instance in which healthy people should consider the inactivated flu injection over live nasal spray – when they are caring for persons **requiring protective isolation**, e.g., following a bone marrow transplant.

Can a pregnant health care worker administer LAIV?

Yes. No special precautions (such as gloves) are necessary. Wash hands or clean them with a hand sanitizer before and after administering the vaccine or having any direct contact with patients in a health care setting.

Is shedding the virus a problem for health care workers?

By law, the FluMist® package insert must state that a person can shed the virus for up to three weeks. However, shedding should not be equated with transmitting to others. In fact, studies have found that it is very rare.¹

Can people receiving LAIV pass the vaccine viruses to others?

In clinical studies, transmission of vaccine viruses to close contacts has occurred only rarely. The current estimated risk of getting infected with vaccine virus after close contact with a person vaccinated with the nasal-spray flu vaccine is low (0.6% - 2.4%). Because the viruses are attenuated, infection is unlikely to result in influenza illness symptoms. A small study of 40 adults conducted since licensure found that only 50% of the adults were shedding the virus from the influenza vaccine on day three after vaccination; one adult shed the virus on day seven as well.² Some post-licensure studies have prompted a change in recommendations, reducing the time during which a vaccinated HCW should avoid contact with patients requiring protective isolation from three weeks to seven days.

What side effects are associated with LAIV in adults?

Adults may experience a runny nose, headache, sore throat, and cough. Unlike children, fever is not a common side effect in adults receiving LAIV.

Is LAIV safe?

Prior to licensure, the safety of LAIV was studied in 20 clinical trials. More than 6,000 clinical trial participants were in the age range of 5–49 years and an additional 4100 children age 6–59 months were monitored. In healthy children down to age 24 months there were no significant differences between vaccine and placebo recipients. In children <24 months there were increased reports of wheezing and hospitalization compared to the group receiving TIV.³ Serious adverse reactions have been identified in <1% of LAIV recipients, either children or adults, since licensure.

There have been no instances of Guillain-Barré Syndrome reported among LAIV recipients.

Is LAIV effective?

During the 2007–2008 influenza season, a comparative efficacy study among healthy adults found that inactivated vaccine prevented 68% of culture- or PCR-confirmed influenza infections, while LAIV prevented 36%.⁴ On the other hand, among children, LAIV has been shown to be more effective than inactivated vaccine.³ The reason for the differential efficacy is

thought to be caused by pre-existing cross-reactive antibody against seasonal strains of influenza in the serum of adults, leading to diminished replication of vaccine virus.⁵ However, because adults <60 years of age lack antibody against the 2009 H1N1 virus, LAIV should be at least as effective as inactivated vaccine against this strain in adults this year.

¹Vesikari T, Karnoven AI, Karhonen T. et al. A randomized double-blind study of the safety, transmissibility, and phenotypic stability of cold-adapted influenza virus vaccine. *Ped Infec Dis J* 2006; 26:4940–6.

²Talbot TR, Crocker DD, Peters J, et al. Duration of viral shedding after trivalent intranasal live attenuated influenza vaccination in adults. *Infec Control Hosp Epidemiol* 2005; 26:494–500.

³Belshe RB, Edwards KM, Vesikari T, et al. Live attenuated versus influenza vaccine in infants and young children *NEJM* 2007; 356:685–96.

⁴Monto AS, Ohmit SE, Petrie JG, et al. Comparative efficacy of inactivated and live attenuated influenza vaccines. *NEJM* 2009; 361:1260–7.

⁵Cox NJ, Bridges CB. Inactivated and live attenuated influenza vaccines in young children--how do they compare? *NEJM* 2007; 361:729–31.