

## **Should patients get vaccinated against 2009 H1N1 if they have had a flu-like illness since the Spring of 2009?**

Since most people with flu-like illnesses were not tested with RT-PCR this season, the majority will not know whether they have been infected with 2009 H1N1 flu or a different virus. RT-PCR tests to confirm 2009 H1N1 are not performed at most labs. The in-office tests and DFA test available at most labs do not differentiate between seasonal influenza A virus and 2009 H1N1 influenza A virus. Therefore, most people recommended for 2009 H1N1 vaccination should be vaccinated with the 2009 H1N1 vaccine regardless of whether they had a flu-like illness earlier in the year or have been tested. If a patient had 2009 H1N1 flu, as confirmed by an RT-PCR test, they should have some immunity against 2009 H1N1 flu and can choose not to get the 2009 H1N1 vaccine. However, vaccination of a person with some existing immunity to the 2009 H1N1 virus will not be harmful. For more information on flu tests, see [Influenza Diagnostic Testing During the 2009-2010 Flu Season](#).

Any immunity from 2009 H1N1 influenza infection or vaccination will not provide protection against seasonal influenza. All people who want protection from seasonal flu should still get their seasonal influenza vaccine.

## **Can a patient that recently used TAMIFLU receive a 2009 H1N1 vaccine?**

Inactivated influenza vaccine can be administered at any time relative to use of TAMIFLU.

The concomitant use of TAMIFLU with live attenuated influenza vaccine (LAIV) intranasal vaccine has not been evaluated. However, because of the potential for interference between these products, LAIV should not be administered within 2 weeks before or 48 hours after administration of TAMIFLU, unless medically indicated. The concern about possible interference arises from the potential for antiviral drugs to inhibit replication of live vaccine virus.

## **Are there any contraindications to giving breastfeeding mothers the 2009 H1N1 LAIV nasal spray vaccine?**

Breastfeeding is not a contraindication for the nasal spray flu vaccine. Women who are breastfeeding can get the nasal spray vaccine, including 2009 H1N1 vaccine.

## **Can the LAIV nasal-spray flu vaccine be given to patients when they are ill?**

The nasal-spray flu vaccine can be given to people with minor illnesses (e.g., diarrhea or mild upper respiratory tract infection with or without fever). However, if nasal congestion is present that might limit delivery of the vaccine to the nasal lining, then delaying of vaccination until the nasal congestion is reduced should be considered.

### **Can people receiving the LAIV nasal-spray flu vaccine pass the vaccine viruses to others?**

There have been no documented cases of transmission of influenza after receiving the live attenuated influenza nasal vaccine. Healthy, non-pregnant people, ages 2 – 49, can receive this vaccine even if they are in close contact with infants, immunocompromised people, or people with chronic disease, including asthma. Health care providers caring for hospitalized bone marrow transplant patients in positive pressure isolation rooms should not receive this vaccine as a precaution.

### **Does 2009 H1N1 vaccine available in the U.S. contain the adjuvant “Squalene”?**

No. All 2009 H1N1 vaccine available in the U.S. is unadjuvanted does NOT contain squalene. 2009 H1N1 vaccine is manufactured identically to seasonal flu vaccine, with the exception of the viral antigen contained in the vaccine. Viral antigens are replaced in flu vaccine annually to provide protection against the most commonly circulating forms of flu virus.

### **Which 2009 H1N1 influenza vaccines contain thimerosal?**

The 2009 H1N1 influenza vaccine is being manufactured in several formulations. The 2009 H1N1 influenza vaccine in single-dose units does not contain thimerosal as a preservative. The live-attenuated version of the vaccine, which is administered intranasally is produced in single-units and does not contain thimerosal. Multi-dose vials of vaccine do contain thimerosal as a preservative, as does seasonal flu vaccine in multi-dose vials.

### **Should I be concerned about thimerosal?**

The most recent and rigorous scientific research does not support the hypothesis that thimerosal-containing vaccines are harmful. Three leading federal agencies (CDC, FDA, and NIH) have reviewed the published research on thimerosal and found it to be a safe product to use in vaccines. Three independent organizations [The National Academy of Sciences’ Institute of Medicine, Advisory Committee on Immunization Practices (ACIP), and the American Academy of Pediatrics (AAP)] reviewed the published research and also found thimerosal to be a safe product to use in vaccines. The scientific community supports the use of thimerosal in influenza vaccines.

Thimerosal is an important preservative that protects vaccines against potential microbial contamination, which may occur in opened multi-dose vials of vaccine. Such contamination could cause serious illness or death. Since seasonal influenza vaccine is produced in large quantities for annual immunization campaigns, some of the vaccine is produced in multi-dose vials, and contains thimerosal to safeguard against possible contamination of the vial once it is opened.

The amount of ethyl mercury present in thimerosal contained in a 0.50 mg injection of flu vaccine is equivalent to the amount of methyl mercury a person consumes in one serving of canned tuna. Ethyl mercury, however, is much more quickly eliminated from the body than methyl mercury.

### **Who should be treated with influenza antiviral drugs?**

Most people ill with influenza will recover without complications. Some people are at highest risk of influenza-related complications and are prioritized for treatment with influenza antiviral drugs this season. They include:

- People with more severe illness, such as those hospitalized with suspected or confirmed influenza
- People with suspected or confirmed influenza who are at higher risk for complications
  - Children younger than 2 years old
  - Adults 65 years and older
  - Pregnant women
  - People with certain chronic medical or immunosuppressive conditions
- People younger than 19 years of age who are receiving long-term aspirin therapy

Children 2 years to 4 years old are more likely to require hospitalization or urgent medical evaluation for influenza compared with older children, although the risk is much lower than for children younger than 2 years old. Children aged 2 years to 4 years without high risk conditions and who are not severely ill do not necessarily require antiviral treatment.

Children and adults presenting with suspected influenza who have symptoms of lower respiratory tract illness or clinical deterioration should also receive prompt empiric antiviral therapy, regardless of previous health or age.

Physicians may also decide not to treat some people in these groups and/or treat people who are not in these groups based on their **clinical judgment**.

### **Should everyone with 2009 H1N1 treated with influenza antiviral drugs?**

Treatment with influenza antiviral drugs is generally not needed for people who are not at higher risk for complications or do not have severe influenza, such as those requiring hospitalization. However, any suspected influenza patient who presents with emergency warning signs (for example, difficulty breathing or shortness of breath) or signs of lower respiratory tract illness or worsening illness should seek medical care promptly and receive antiviral therapy when indicated.

Doctors may treat some people who are not in a high risk group based on their clinical judgment. In addition, doctors also may decide that treatment is not needed for some who are in a high risk group based on their clinical judgment.

**What are the recommendations for the use of antiviral drugs in young children?**

Children younger than 2 years old should be considered for early empiric treatment with the antiviral drug oseltamivir if they have suspected or confirmed flu. Hospitalization data available found that children younger than 2 years old were at increased risk for flu-related complications compared to older populations. The FDA has granted emergency authorization to treat children under 1 year of age with oseltamivir (Tamiflu®). Children ages 2 years to 4 years old without high risk conditions and who are not severely ill do not necessarily need antiviral treatment. While children 2 years to 4 years old are more likely to require hospitalizations or urgent medical care for influenza compared with older children, this risk is much lower than the risk for children younger than 2 years old. Providers should use clinical judgment to guide treatment decisions for healthy children.

**What if the pediatric oral suspension (liquid formulation) is not available and the child cannot swallow a capsule?**

In the absence of oral suspension (liquid formulation) of Tamiflu® for pediatric patients who cannot swallow capsules, the children's doses of Tamiflu® capsules may be opened and mixed with sweetened liquids such as regular or sugar-free chocolate syrup.

**Where can I get up-to-date information about 2009 H1N1 vaccine?**

[www.in.gov/flu](http://www.in.gov/flu)

[www.cdc.gov/h1n1flu/](http://www.cdc.gov/h1n1flu/)

[www.h1n1.nejm.org](http://www.h1n1.nejm.org)