

What You Need to Know About the Flu Shot for pH1N1 and Seasonal Flu

Ottawa area hospitals have collaborated with Public Health to collect information that is relevant to our staff, physicians and volunteers.

How do flu vaccines (flu shots) work?

Flu shots for pH1N1 and seasonal flu:

- Cause us to make antibodies to fight the 'real' virus. If we come in contact with the real virus, we will be able to fight it off quickly, usually without getting sick.
- Are made with tiny parts of **dead** viruses
- Are not made with live viruses

Can flu shots cause the flu?

No. There is no live virus in the flu vaccine, so there is no chance of getting the flu from the vaccine. Remember that during flu season, there are hundreds of viruses around that can cause cough, runny nose, diarrhea, fever and body aches. If people get sick after the flu vaccine, it is because they:

- Caught another virus, or;
- Got the shot when they already had the flu virus, and their bodies did not have enough time to make antibodies to fight it

Do flu vaccines really work?

No vaccine is perfect. But the flu shot will work well for 7-9 out of 10 healthy children and adults, if there is a good match between virus particles used to make the vaccine and the flu viruses that are going around. People who get the flu after getting the shot, if they get it at all, will have a much milder flu than if they didn't get the flu shot. The pH1N1 flu shot will protect well against pH1N1 flu. Health-care workers who get flu shots get sick less often and miss fewer days at work.

Do healthy children need flu shots?

Yes. Somewhere between 1 and 4 out of every 10 healthy preschool and school aged children get the flu every year. And it's not just children with health problems who can get very sick with seasonal flu. Healthy children under 2 have to be cared for in hospital as often as elderly people. And healthy babies under a year have the highest risk of death from flu.

Children with health problems could also get very, very sick if they get pH1N1 or seasonal flu. This includes children with:

- Developmental problems, brain or neuromuscular disorders
- Immune system problems (including children taking medications that weaken their immune system)
- Heart or lung problems (for example, cystic fibrosis)
- Diabetes, obesity (these seem to increase the risks with pH1N1 only)

pH1N1 can spread quickly in children and youth. In Ontario in 2009, children between 5 and 19 years of age have had most of the confirmed cases of pH1N1.

Do healthy adults need flu shots?

Yes. Many people think that only people with health problems need a flu shot. But the with the Spanish flu in 1918, it was healthy adults who died most often. Healthy people who don't get a flu shot can pass the flu on to others (like their patients, children and other family members), even if they don't get really sick themselves. Preventing the spread of the flu also lowers the chance of people getting pneumonia caused by bacteria (close to 1 out of 3 people who died of pH1N1 in the United States also had a bacterial infection).

I've heard that some people got Guillain-Barré syndrome (GBS) after getting an pH1N1 vaccine in the 1970s-could this happen again?

In 1976, a very small number of people developed GBS (a disorder that causes temporary paralysis) after getting a shot for pH1N1 (out of 48 million people who got the vaccine, less than 300 developed GBS). This vaccine did not go through the usual system of safety checks that happens today. While there was no proof that the shot **caused** GBS, we no longer use that vaccine. Studies since then have found that when it comes to GBS, there is no difference between people who get flu vaccines and those who don't. But your chance of getting GBS after being sick from the flu is much greater than your risk of getting GBS after a flu shot. Remember that **the flu** can cause many serious problems like:

- Swelling of the brain and brain coverings (encephalitis and meningitis)
- Movement disorders (like GBS)
- Coma
- Seizures

It's important to weigh concerns about GBS with the very real chance of serious problems the flu can cause.

Is there mercury in the flu shot?

There are tiny amounts of thimerosal in the flu shot. Thimerosal prevents bacteria from growing in the bottle of vaccine. Thimerosal breaks down into a kind of mercury, but not the kind that causes mercury poisoning.

Is mercury linked with autism?

Many large studies have showed us that **preservatives (like thimerosal) in vaccines do not cause autism**. In Denmark, thimerosal was taken out of vaccines, but this didn't reduce the number of children who developed autism. The World Health Organization and the Institutes of Medicine have carefully reviewed this research and conclude that thimerosal **does not** cause autism.

What are adjuvants?

Adjuvants are added to vaccines to:

- Make vaccines more effective (cause us to make more antibodies and to make them more quickly)
- Allow vaccines to 'go further' so more people can get flu shots
- Help people with weaker immune systems to make more antibodies

Are adjuvants safe?

Adjuvants have a good safety record (many vaccines given to babies in Canada have adjuvants added). Influenza vaccines in Europe have also included adjuvants with no untoward effects. However, pH1N1 vaccine with adjuvant has not yet been tested in pregnant women. Pregnant women will be able to get pH1N1 vaccines without adjuvant.

Can people with egg allergies get the flu shot?

Many vaccines are 'grown' in eggs, and there may be very small amounts of egg in the vaccine (if there is any at all). **People with a severe allergy to eggs (with hives, mouth swelling, trouble breathing and low blood pressure) should not get flu shots.** People with less serious egg allergies should be checked by an allergy doctor before getting flu shots.

Should pregnant or breastfeeding women get the flu shot?

Yes. Remember that the flu shot does not have any live virus in it. It can't cause the flu in a pregnant woman or her baby. The flu shot won't harm a baby who is being breast fed by or receiving breast milk from an immunized mother. And the antibodies the pregnant woman makes after getting the flu shot will be shared with her unborn baby. This will help to protect the baby from the flu after it is born.

It's important for pregnant women to get the vaccine for pH1N1 and seasonal flu. Pregnant women who get seasonal flu or pH1N1 have a higher chance of:

- Becoming very, very sick
- Having to stay in hospital
- Dying

Questions?

Ottawa Public Health Info Line 613-580-OPHI (6744)

Toll free:

1-866-426-8885

Ottawa Public Health

www.ottawa.ca/residents/health

References

1. Children's Hospital of Eastern Ontario Flu vaccination information fact sheet, 2009
2. Greenberg ME et al. Response after one dose of a monovalent influenza A (H1N1) 2009 Vaccine – Preliminary report. NEJM. 2009;361. <http://content.nejm.org/cgi/content/full/NEJMoa0907413> Accessed September 13, 2009
3. Clark TW et al. Trial of influenza A (H1N1) 2009 Monovalent MF59-Adjuvanted Vaccine – Preliminary Report. NEJM 2009. 361. <http://content.nejm.org/cgi/content/full/NEJMoa0907650> Accessed: September 13, 2009
4. GlaxoSmithKline, Pandemic (H1N1) 2009 Influenza Update: Initial results from first clinical trial of GSK's H1N1 adjuvanted vaccine Issued: Monday 14 September, 2009 http://www.gsk.com/media/pressreleases/2009/2009_pressrelease_10087.htm Accessed: September 14, 2009

Part –Two - Flu Vaccination Additional Information

Seasonal flu: The flu viruses that go around every year.

Virus: Germs that cause many kinds of infections, like pH1N1 and seasonal flu. Antibiotics won't work with viruses.

Bacteria: Germs that cause many kinds of infections. Antibiotics can kill bacteria.

Antibodies: Proteins our bodies make to fight viruses and bacteria. When we come in contact with these germs antibodies will kill them.

Immunity: Having antibodies to fight a virus so that you are protected (and won't get sick) from that virus.

Vaccine (like the flu shot): Cause us to make antibodies to viruses. They often contain tiny parts of dead viruses.

Pneumonia: A serious lung infection where the lungs can fill with fluid. Can be caused by viruses or bacteria.

How is flu immunization being rolled out this year?

Ontario will be providing publicly-funded vaccination against both the seasonal flu virus and the pH1N1 flu virus this year.

People of 65 years of age or older and residents of long-term care homes living in Ontario are currently being offered the seasonal flu vaccine.

The pH1N1 vaccine is going to be available to whoever needs and wants it. However, because vaccine will not all be available at one time, pH1N1 immunization will be offered using the national sequencing of target audiences. Healthcare workers are in the first phase of pH1N1 immunizations.

After the pH1N1 vaccine has been rolled out, the seasonal flu vaccine will be available to everyone who is six months of age and over who lives, works or attends school in Ontario.

Groups who will receive pH1N1 vaccine in the first sequence include:

- Health-care workers involved in pandemic response or the delivery of essential health-care services
- People under 65 with chronic conditions
- Pregnant women
- Healthy children 6 months up to 5 years of age
- Persons residing in remote and isolated settings and communities

- Household contacts and care providers of persons at high risk who cannot be immunized or may not respond to vaccines. These include:
 - Infants less than six months of age
 - Persons who are immunocompromised
 - Populations otherwise identified at high risk (including those identified by provinces and territories)

What strains are covered in the seasonal flu vaccine?

The seasonal flu vaccine covers three strains: A/Brisbane/59/2007 (pH1N1)-like, A/Brisbane/10/2007 (H3N2)-like and B/Brisbane/60/2008-like.

If pH1N1 is expected to be so predominant, why offer the seasonal flu vaccine at all?

In the Southern atmosphere, the seasonal flu was still circulating even though the pH1N1 flu was the main strain. As such, Ontario is still offering the seasonal vaccine to those who are 65 years of age and older and to residents of long-term care homes because it is known that the elderly are more susceptible to serious complications and hospitalization from seasonal flu. At the same time, the evidence to date has shown that those born prior to 1957 are generally less likely to become infected with the pH1N1 flu virus.

Why are we not offering the seasonal vaccine and the pH1N1 vaccine together?

At this time, there is not enough scientific evidence to show that this would be safe or effective.

Does vaccination with the seasonal vaccine make it more likely that I will get infected with pH1N1?

A Canadian study found a possible association between immunization with the seasonal flu vaccine and infection with the pH1N1 flu virus. Data from other countries have not found an association. On the contrary, a recent study from Mexico suggests that immunization with seasonal flu vaccine might offer protection from pH1N1 infection and death.

All these studies have limitations. An expert panel convened by the World Health Organization to examine these data concluded that there is no evidence that people who got seasonal vaccine are more prone to develop severe illness if they catch the new pH1N1 virus. At this time, it is recommended that everyone get both the pH1N1 vaccine and seasonal vaccine this year.

Will people under the age of 65 be able to get the seasonal flu vaccine this year?

Yes. After the pH1N1 vaccine is rolled out, the seasonal flu vaccine will be available to everyone.

How is the safety of the pH1N1 influenza vaccine going to be assessed?

The pH1N1 vaccine will follow the same process as every other vaccine does before it is licensed for use in Canada. There are no short cuts being taken.

Who will the non-adjuvanted vaccine be recommended for?

The WHO's Strategic Advisory Group of Experts (SAGE) recommended in July that pregnant women should receive non-adjuvanted vaccine where possible, but that an adjuvanted vaccine could be used if necessary. Canada's purchase of non-adjuvanted vaccine aligns with this recommendation.

Canada's recommendations on the use of both adjuvanted and non-adjuvanted vaccine will be based on clinical safety and efficacy data, as well as the latest epidemiological data on the spread of the virus.

If the adjuvanted vaccine is safe, why do we need a non-adjuvanted vaccine for certain populations?

The purchase of a small quantity of non-adjuvanted vaccine is a precautionary measure for pregnant women as no clinical data of the safety of adjuvanted vaccine in this group is available. In these cases, should a non-adjuvanted vaccine prove to be effective, it may be the preferred option. The WHO has indicated that it has no special concerns about the safety of adjuvanted pH1N1 vaccines in general. WHO has also strongly recommended that pregnant women be immunized against the pH1N1 flu virus, even if no non-adjuvanted vaccine is available.

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