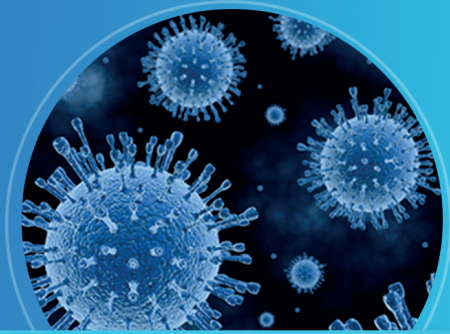


UNDERSTANDING INFLUENZA

December 2023

- Influenza is a respiratory disease caused by three types of influenza viruses known to infect the human respiratory tract: A, B, and C. These viruses typically circulate during fall/winter seasons.

- All age groups can be affected by influenza but people at greater risk of severe disease or complications when infected include pregnant individuals, children under 5 years of age, older adults, individuals with chronic medical conditions (such as cardiac, pulmonary, renal or metabolic diseases) and individuals with immunodeficiency disorders or on immunosuppressants.¹



Influenza is highly contagious and presents a significant global challenge, leading to substantial mortality and morbidity. There are around one billion cases of seasonal influenza annually, including 3–5 million cases of severe illness. It causes 290,000 to 650,000 respiratory deaths annually.¹

LET'S TALK ABOUT VACCINES!

» SYMPTOM OVERVIEW

Acute presentation: Sudden onset of fever | Cough | Headache | Muscle/joint pain | Severe malaise | Sore throat | Runny or stuffy nose

Chronic effects: exacerbation of comorbidities, which may last longer than the acute phase of an infection.

- » In diabetes, a stressor such as the influenza virus may induce stress hormones that induce hyperglycaemia (increases abnormal glycaemic events leading to disturbance of controlled diabetes).²

- » In cardiovascular diseases, the influenza virus increases the risk of acute myocardial infarction, heart failure and stroke.³

- » In respiratory conditions, such as chronic obstructive pulmonary disease (COPD) and asthma, the influenza virus causes additional inflammation in the lungs which can flare up or exacerbate these existing conditions. The virus may impair proper oxygenation and lead to acute hospitalisation.^{4,5}

» TYPES OF VACCINE

Every year, the World Health Organization utilises a surveillance system to collect data on the annual circulating strains to formulate an influenza vaccine for each hemisphere.



1. Inactivated influenza vaccine (IIV):

administered by intramuscular injection, available in multiple presentations (manufacturer-filled syringe, single-dose vials, and multidose vials) and in preservative-free formulations, and some products contain residual egg protein.



2. Live, attenuated influenza vaccine (LAIV):

the vaccine is provided in a manufacturer-filled, single-use, intranasal sprayer; half of the dose is sprayed into each nostril. Contains residual egg protein.



3. Recombinant influenza vaccine (RIV):

administered by intramuscular injection and does not contain egg protein.



- ▶ Trivalent vaccines contain three inactivated viruses: Type A (H1N1), type A (H3N2), and type B antigen.⁶
- ▶ Quadrivalent vaccines contain type A (H1N1), type A (H3N2), and two type B antigens.

» INFLUENZA VACCINATION IN ADULTS

Annual influenza vaccination has shown remarkable benefits for older adults* and individuals with cardiovascular disease (CV/CVD), diabetes and chronic respiratory conditions. One of the most common complications is post-influenza pneumonia, which is also the leading cause of mortality in influenza.⁸

Individuals with diabetes

Risks: Patients with diabetes are typically more susceptible to certain infections and might experience increased severity or more complications. Diabetes is considered a risk factor for severe presentation of an influenza infection.

Protection: The influenza vaccine aids in reducing flu-associated hospitalisations among diabetic patients. Furthermore, evidence indicates fewer hospital admissions for CV events in this group.⁸ Ultimately, in patients with diabetes, getting vaccinated can reduce the severity and burden of influenza.

Individuals with cardiovascular disease

Risks: Influenza leads to a systemic inflammatory response and a risk of dislodging atherosclerotic plaques. Infection is correlated with an increased risk of CV events in patients with existing CVD, including myocardial infarction (MI).⁹

Protection: Vaccination can increase CV protection by modifying atherogenesis. A research study revealed a link between the influenza vaccine and decreased rates of significant cardiac events, such as CV death, MI, unstable angina, stroke, heart failure and urgent coronary revascularisation.⁹ A separate randomised trial underscored that patients receiving the vaccine after MI or those with high-risk coronary conditions experienced fewer all-cause deaths and MIs with the influenza vaccine.¹⁰ Evidence suggests that the high-dose quadrivalent vaccine provides better protection because patients with CVD may have a decreased immune response to the standard-dose vaccine.¹¹

Pregnant individuals

- The influenza vaccine during pregnancy can protect the pregnant individual from flu and potentially serious complications.¹
- Since the vaccine is not effective in infants younger than 6 months, passive immunisation of foetuses through transplacentally transmitted antibodies is currently the best prevention strategy for newborns. Thus, maternal influenza immunisation is an essential component of prenatal care for pregnant individuals and their newborns.¹⁷

Individuals with chronic respiratory conditions

Risks: Patients with concurrent chronic respiratory conditions such as chronic obstructive pulmonary disease (COPD) and asthma are at increased risk of influenza-related complications including exacerbation of symptoms, hospitalisations and lower tract respiratory infections.¹²

Protection: Influenza vaccination could reduce influenza-related complications and exacerbations in patients with COPD and asthma, therefore reducing hospitalizations and deaths.^{13,14}

Older adults*: According to the World Health Organization, annual influenza vaccination is recommended for people over age 65.¹

Risks: Because the human immune system becomes weaker with age (immunosenescence), older adults are at higher risk of developing serious complications from flu, compared with young, healthy adults.

- Up to 70% of influenza-related hospitalisations and up to 85% of influenza-related deaths concern adults aged 65 years and over.¹⁵
- In older adults, influenza can also trigger a progressive loss of autonomy leading to increased healthcare resources and the need for home care and long-term social care.¹⁶
- Diabetes, asthma, and chronic cardiovascular disease (even if well managed) are among the most common comorbidities that place people at higher risk of developing serious flu complications.

Protection: An annual flu vaccine is the best way to reduce the risk of flu and its potentially serious consequences in older adults. There are three preferred formulations of the flu vaccine in older adults: high-dose quadrivalent inactivated flu vaccine, quadrivalent recombinant flu vaccine, and quadrivalent adjuvanted inactivated flu vaccine.

*Age recommendations for vaccinations of older adults may vary per country. Check your local and national guidelines.

» CONTRAINDICATIONS AND SPECIAL CONSIDERATIONS

- Check your national recommendations as some vaccines are preferred over others for specific populations.
- A history of Guillain-Barre syndrome within six weeks post influenza vaccination.
- Previous anaphylactic reaction to an influenza vaccine.
- Live attenuated vaccines in pregnant individuals.¹⁰
- Live vaccines are not recommended for those with compromised immune systems or for pregnant individuals.
- Live vaccines are also not recommended for patients with comorbidities such as cardiovascular disease, diabetes and chronic respiratory conditions.⁶
- Individuals with egg allergies can generally receive the flu vaccine without any special precautions. Current research suggests the likelihood of allergic reactions in this group is minimal.⁶

» COMMON SIDE EFFECTS OF INFLUENZA VACCINE

- Local injection site reactions such as soreness, redness and swelling.
- Systemic reactions: Fever, muscle aches and headache.

» ROLE OF PHARMACISTS



Pharmacists should stand ready to provide advice and address any questions regarding the influenza vaccine.



Pharmacists play a pivotal role in promoting vaccination awareness and uptake and advocating for vaccination.

» REFERENCES AND ACKNOWLEDGMENTS

For the bibliography and additional information, check the FIP vaccination microsite:

www.fip.org/letstalkaboutvaccines



» RESOURCES

- International Pharmaceutical Federation (FIP). FIP vaccination handbook for pharmacists: Procedures, safety aspects, common risk points and frequent questions. The Hague: International Pharmaceutical Federation; 2021.
- International Pharmaceutical Federation (FIP). Building vaccine confidence and communicating vaccine value: A toolkit for pharmacists. The Hague: International Pharmaceutical Federation; 2021.
- International Pharmaceutical Federation (FIP). An overview of pharmacy's impact on immunization coverage: A global survey. The Hague: International Pharmaceutical Federation; 2020.
- International Pharmaceutical Federation (FIP). Expanding immunisation coverage through pharmacists. The Hague: International Pharmaceutical Federation; 2021.
- Centers for Disease Control and Prevention. Epidemiology and prevention of vaccine-preventable diseases. Hall E., Wodi AP, Hamborsky J, et al., eds. 14th ed. Washington, D.C. Public Health Foundation, 2021. Available at: <https://www.cdc.gov/vaccines/pubs/pinkbook/index.html>