



Module 1: Exploring vaccination and influenza Introduction and overview of the importance of influenza vaccination

About this module

The first module of this three-part e-module course will discuss the concept of vaccination as an important part of healthy living and improving quality of life. This will then lead to an introduction on influenza as a disease, including knowledge on its causes and symptoms. Influenza vaccination as a preventative and protective measure will be outlined, particularly to help understand its annual need.





Lessons

- Immunization as part of your personal health plan
- When is the flu the flu?
- Why is an annual flu vaccination important?

Learning Objectives

1. Understand the purpose of vaccination and how it can support health and well-being.
2. Gain knowledge on important information about influenza as a disease, including its causes and symptoms.
3. Understand the importance of influenza vaccination and why it is needed on an annual basis.



Lesson 1: Immunization as part of personal health plans

Learning Objective 1: Understand the purpose of vaccination and how it can help health and well-being

What is a vaccine?

- A **vaccine** is a tool that works alongside our body's natural defense system, which is our **immune system**, to develop protection against diseases without acquiring the risks that come from getting the diseases.

How does vaccination work?

- Vaccination works by exposing our bodies to parts of bacteria or viruses called **antigens**.
- Our bodies are exposed to these antigens in a safe way so that our immune system can develop an immune response.
- If we are exposed to that same bacterium or virus later on, our immune system will have the ability to respond more quickly to prevent us from:
 - Getting the disease
 - Getting very sick if we do get the disease

How does vaccination work?

- Vaccines are normally given by an injection (with a needle) into the upper arm.
- There are some vaccines that can be given orally (by the mouth) and there is even an influenza (flu) vaccine that can be sprayed into the nose.
- Certain vaccines will provide life-long protection and others may require a **booster dose** or an annual dose (such as for the flu) to ensure continued protection.
- There are some vaccines that provide protection against only one virus or bacterium and there are combination vaccines that protect against several at the same time.

How does vaccination help lead a healthier and better quality of life?

- Vaccination is considered one of the most important public health tools available. Over the past 50 years, vaccination has saved an estimated 154 millions lives globally. Vaccines help keep us healthy by preventing potentially deadly diseases.
- Staying up to date and getting our vaccines helps protect those who are **immunocompromised** or are unable to receive vaccination due to barriers such as access to vaccines.
- For the individual, vaccination prevents:
 - Hospitalization and death
 - Vulnerability to vaccine preventable diseases (VPDs) and other chronic diseases. Research shows that vaccination reduces the risk of heart and stroke problems and negative impacts on cognition.
 - For example, the Journal of the American Heart Association in 2021 published a study where flu vaccination was linked to an 18% lower chance of death from cardiovascular problems and a 25% lower chance of death from any cause in patients with cardiovascular disease.
 - Loss of overall function
- Older adults are at a greater of risk of experiencing more severe symptoms and outcomes from diseases and this is because of a concept known as **immunosenescence**.
 - Immunosenescence is the decreased immune function that comes with the process of ageing.
- With decreased immune function, the body is more susceptible to infection, and it becomes more difficult for the immune system to fight off any infectious diseases.



- At-risk adults may also have other underlying medical conditions or are in certain environments that increase their chances of acquiring diseases.
- As older and at-risk adults experience these vulnerabilities and increase their risk of negative impacts from diseases, it is important for them to be vaccinated.
- For all of these reasons, it is therefore important to include vaccination as a part of our health plans.
- In addition to exercise, a nutritious diet, and practicing good hygiene, vaccination is an important part of keeping ourselves healthy.



Lesson 2: When is the flu the flu?

Learning Objective 2: Gain knowledge on important information about influenza as a disease, including its causes and symptoms

What is the flu?

- The flu, also known as **influenza** is a **respiratory infection** caused by influenza viruses.
- In Canada, seasonal influenza or flu epidemics generally occur annually in the late fall and winter months.

What causes the flu?

- The flu is caused by 2 main influenza viruses:
 - Influenza A virus
 - Influenza B virus
- It is important to note that these are the main influenza viruses that cause seasonal **epidemics** in humans.
 - An epidemic is when a disease or health-related event spreads unexpectedly across a region or population.
- Normally, influenza is transmitted or passed on to others through coughing and sneezing and through direct or indirect contact with respiratory secretions.

What are symptoms of the flu?

- It is important to note that infection from the flu may be asymptomatic or present itself as a mild disease. It may also present as a severe disease and can result in death.
- Symptoms typically include:
 - Sudden onset of fever, cough, and muscle aches and pains
 - Other common symptoms include:
 - Headache, chills, loss of appetite, fatigue, and sore throat
 - Nausea, vomiting, and diarrhea may also occur



What are complications of the flu?

- Most people will recover within a week to 10 days.
- For some, the infection from the flu may lead to complications including:
 - Pneumonia, respiratory failure, cardiovascular complications, or worsening of underlying chronic medical conditions
 - Flu infection is also connected with an increased risk of myocardial infarction (heart attack), stroke, and Guillain- Barre syndrome (GBS)



Lesson 3: Why is annual vaccination essential?

Learning Objective 3: Understand why the influenza vaccine is needed on an annual basis

Why is the flu shot needed every year?

- Influenza viruses are constantly evolving and the body's immune response to the influenza vaccine may not continue to be effective beyond a year. A new vaccine is made each year to target the changes in the influenza virus.
- Vaccination against influenza helps to reduce our risk of getting sick and developing serious illness and complications if we are exposed to the flu virus.

Why is the flu shot needed every year?

- The flu shot will help protect ourselves and others every year by:
 - Preventing us from getting very sick from flu-related complications
 - Protecting people close to us as we are less likely to spread the virus to others
 - Reducing the overall burden on the health care system during respiratory virus season
 - Reducing your chances of being infected with the flu and other respiratory viruses at the same time, which could lead to serious complications