



# INFLUENZA

## WHAT IS INFLUENZA?

Influenza, also commonly known as the flu, is caused by an infection of the respiratory tract by influenza viruses that infect the nose, throat, and sometimes the lungs. These viruses are classified into 4 types: A, B, C, and D, however, only types A and B commonly cause illness in humans. The circulation of the virus types and subtypes occurs worldwide, varying by strain and intensity from year to year, between geographic areas and time of year.

The main mode of transmission of influenza viruses between people is predominantly through respiratory droplet transmission (when an infected person coughs or sneezes near a susceptible person). Indirect transmission can also occur, such as when a person touches a virus-contaminated surface and then touches his or her face, as well as airborne transmission via small-particle spray.

## WHAT ARE THE SYMPTOMS?

After an incubation period of one to four days, flu usually comes on suddenly. Classic symptoms may include fever or feeling feverish/chills, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, and fatigue (tiredness). Some people may have vomiting and diarrhoea, though this is more common in children than in adults. The cough can be severe and may persist for 2 or more weeks. Most people recover from the fever and other symptoms within a week without requiring medical attention.

Severe cases of the flu can lead to complications such as viral pneumonia, secondary bacterial pneumonia, parotitis (inflammation of the salivary glands), worsening of underlying medical conditions (such as pulmonary and cardiac disease), encephalopathy, myocarditis (inflammation of the heart muscle), inflammation of the muscles, co-infections with other viral or bacterial pathogens, and rarely, death.

## WHERE IS IT FOUND?

The circulation of influenza viruses varies geographically. However, intensity is typically higher during the winter months: October to May in the Northern Hemisphere and April to September in the Southern Hemisphere. In many tropical or subtropical regions, influenza activity can occur year-round.

In most parts of Australia, annual outbreaks tend to occur between late autumn and early spring, although there may be cases early in the year, which are often sparked by returning travellers. Between 5 % and 20% of our population may be infected each year, depending on the extent of the outbreak - from mild sporadic outbreaks to serious epidemics.

Occasionally severe worldwide outbreaks (pandemics) occur involving very high infection rates and more severe disease. The outcomes of these outbreaks can be devastating, resulting in between 3 and 5 million cases of severe illness and about 290,000 to 650,000 respiratory deaths.

As the COVID-19 pandemic advanced, levels of influenza infections were mostly low around the globe and remained that way until the 2021-2022 Northern Hemisphere winter season. The lull in flu reporting was largely due to travel restrictions and the added protections of public health measures such as masking, personal distancing and enhanced personal and hand hygiene. However, now that international borders are opening and people from both hemispheres are on the move again, it is expected that Australia will likely experience a resurgence in flu notifications for the upcoming 2022 winter season. [Read more](#)

## RISK TO TRAVELLERS

The risk of exposure to the flu virus for travellers is dependent on the time of the year and destination.

Travellers are strongly recommended to receive the influenza vaccine, especially if flu infections are circulating in the destination region or if they are travelling in settings with increased risk of influenza circulation during the trip, such as:

- As part of large tourist groups (especially those including older people)
- Cruise passengers
- Those participating in mass gatherings (for example, religious pilgrims or attending large sporting events)

As most travel involves some modes of mass transport, it is not surprising that influenza is the number one vaccine-preventable illness diagnosed in travellers.

If travelling to a different hemisphere, the types or strains of flu virus circulating may differ from the hemisphere from which you have travelled. If you have been vaccinated recently against influenza, it is advisable to check if the strain of the virus at your destination is covered by the vaccine you have received.

Australians who have received a current Southern Hemisphere influenza vaccine and are travelling later in the year to the Northern Hemisphere (during their usual October to May peak season) may receive a second dose of an influenza vaccine within the same year.

In recent years, avian influenza strains that generally only afflict birds have caused infections in humans in various parts of the globe, including China, Indonesia and Egypt. Fortunately, transmission of these viruses between humans has been rare to date, but there remains a possibility that a mutation may allow for further spread.

Advice for travellers to areas affected by avian influenza outbreaks includes: avoid animal markets, do not touch animals/birds, eat only well-cooked chicken & eggs and practice good personal hygiene. Further information on [avian influenza](#) is provided by the Australian Department of Health.

## HOW IS INFLUENZA TREATED?

Antibiotics are not effective against the influenza virus, and so in cases of severe flu and for people at risk of complications, antiviral medications may be prescribed. For most people, however, rest, fluids and analgesia are all that is required (and, of course, appropriate measures to prevent spreading the infection to others).

## OUR RECOMMENDATION

Australia's National Health and Medical Research Council strongly recommends annual influenza vaccination for people in high-risk categories for whom the flu can be a serious and potentially fatal illness:

- Heart conditions
- Severe asthma
- Lung conditions
- Diabetes
- Kidney problems
- Impaired immunity
- Malignant cancers
- Pregnant women
- Chronic neurological disorders

Annual influenza vaccination is recommended for everyone ≥6 months of age who wishes to avoid the infection, including:

- children aged 6 months to <5 years
- adults aged ≥65 years
- Aboriginal and Torres Strait Islander people
- people with medical conditions that increase their risk of influenza
- homeless people
- healthcare workers, carers and household contacts of people in high-risk groups

- residents, staff, volunteers and visitors to aged care and long-term residential facilities
- commercial poultry and pork industry workers
- people who provide essential community services
- people who are travelling during influenza season

## PREGNANT WOMEN

Influenza vaccination for pregnant women reduces the risk of flu-associated acute respiratory infection in these women by about one-half. In fact, in [one study](#) on influenza vaccine efficacy conducted in 2018 found that getting a flu vaccine while pregnant reduced a woman's risk of being hospitalised with flu by an average of 40%. An additional benefit is also passed on to the baby. A number of other studies have shown that a flu vaccine given during pregnancy helps protect the baby from flu for several months after birth when he or she is not old enough to be vaccinated.

The advice from [ATAGI](#) for flu vaccination during pregnancy was updated in February 2022:

- Influenza vaccine is recommended in every pregnancy and at any stage of pregnancy
- Influenza vaccine can safely be given at the same time as a pertussis vaccine and/or COVID-19 vaccine
- For women who received an influenza vaccine in 2021, it is recommended to give the 2022 influenza vaccine if it becomes available before the end of the pregnancy
- For women who receive the influenza vaccine before becoming pregnant, revaccination is recommended during pregnancy to maximise the protection of the mother and the infant in the first six months of life.

## SENIORS & THE ELDERLY

Adults aged ≥65 years are strongly recommended to receive an annual dose of the influenza vaccine.

Influenza-associated mortality rates are highest among adults aged ≥65 years but flu vaccines for seniors have been shown to reduce hospitalisations from influenza and pneumonia and all-cause mortality.

People aged 60+ years can receive the (unfunded) Fluzone High-Dose or, in the case of those ≥65 years, the adjuvanted quadrivalent influenza vaccine Fluad Quad (funded under NIP for ≥65 years cohort), as they both promote an enhanced immune response in this higher risk age group. These vaccines are not suitable for anyone aged under the specified age limit.

## WHAT IS INFLUENZA VACCINATION?

Twice a year, the World Health Organization (WHO) convenes a group of experts to determine the anticipated strains and subtypes of flu viruses that will circulate in the different hemispheres during the following season. The vaccines are then manufactured to those specifications, which should offer optimum protection for the circulating strains (but possibly not every strain causing illness in a community).

**NB:** Influenza vaccine with other vaccines is harmless. And vaccination is recommended every 12 months, in advance of our peak flu season. Flu vaccines offer a high degree of protection against seasonal illness and severe consequences. However, they need to be administered annually due to the constant changes in the influenza viruses. About 2 weeks after having the flu vaccine, antibodies develop in the body to protect against disease.

These antibodies provide protection against infection from the viruses that the vaccine is produced to target. It protects against the four influenza viruses that research indicates will be most common during the upcoming season.

*Type:* Injectable inactivated viral vaccines. These inactivated vaccines cannot cause flu infection – sometimes, the vaccine's side effects may be misinterpreted as early flu symptoms.

The vaccine formulation depends on the person's age:

- People aged 6 months to <65 years should receive the quadrivalent influenza vaccine (QIV).
- For infants and children aged 6 months to <9 years who have never had the vaccine before: 2 doses at least 4 weeks apart in the first year.
- People aged 60+ years can receive the (unfunded) Fluzone High-Dose or, in the case of those ≥65 years, the adjuvanted quadrivalent influenza vaccine Fluad Quad (funded under NIP for ≥65 years cohort), as they both promote an enhanced immune response in this higher risk age group. These vaccines are not suitable for anyone aged under the specified age limit.

**Contraindications:** People who have previously had an allergic reaction following an influenza vaccine or component of an influenza vaccine.

Those individuals with known anaphylactic hypersensitivity reactions to egg proteins (eggs or egg products) or chicken proteins should discuss with a doctor whether administration of this vaccine may be conducted under special conditions (as per the [Australian Immunisation Handbook](#)). Otherwise, a new formulation of the influenza vaccine without egg protein will soon be available.

## SCHEDULE

Most individuals should receive 1 dose of influenza vaccine each year. However, the following people should receive 2 doses, 4 weeks apart:

- children aged 6 months to <9 years receiving influenza vaccine for the first time
- people of any age receiving influenza vaccine for the first time after a haematopoietic stem cell or solid organ transplant

**NB:** As per [ATAGI](#) advice for a flu vaccination during pregnancy (updated February 2022):

- For women who received an influenza vaccine in 2021, it is recommended to give the 2022 influenza vaccine if it becomes available before the end of the pregnancy
- For women who receive the influenza vaccine before becoming pregnant, revaccination is recommended during pregnancy to maximise the protection of the mother and the infant in the first six months of life.

## LEVEL OF PROTECTION

The efficacy and effectiveness of influenza vaccines of similar composition depend on the following:

- the age and immunocompetence of the vaccine recipient
- the degree of similarity between the virus strains in the vaccine and those circulating in the community

## POSSIBLE SIDE EFFECTS

- Usually infrequent and mild
- Soreness at the injection site in around 10% of vaccinees
- 15- 20% may experience fever, lethargy and muscle aches
- High-dose or adjuvanted trivalent vaccines produce injection site reactions in around 30% of vaccinees.
- **NB:** Contrary to popular myth, none of the influenza vaccines are live, so cannot cause influenza.

As with all vaccines, there is a small risk of allergic reaction.

If you're planning a trip overseas or within Australia, our Travelvax doctors are ready to help you sort out all your vaccinations, including those for influenza. To find out about all of our services and the ways we can help, contact one of our friendly staff members on [1300 360 164](tel:1300360164) or fill in a convenient [online enquiry form](#). We'll happily answer any questions and make sure you stay safe while travelling.

*References:*

1. Australian Immunisation Register <https://www.servicesaustralia.gov.au/australian-immunisation-register>
2. Australian Immunisation Handbook <https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/influenza-flu>
3. US Centers for Disease Control & Prevention <https://www.cdc.gov/flu/about/keyfacts.htm>
4. DFAT Smart Traveller <https://www.smarttraveller.gov.au/before-you-go/health/diseases#avian-influenza>
5. World Health Organization [https://www.who.int/news-room/fact-sheets/detail/influenza-\(seasonal\)](https://www.who.int/news-room/fact-sheets/detail/influenza-(seasonal))

6. ATAGI advice on seasonal influenza vaccines in 2022 <https://www.health.gov.au/resources/publications/atagi-advice-on-seasonal-influenza-vaccines-in-2022>

## FAQS

### WHAT CAUSES THE FLU?

**Influenza**, also commonly known as the flu, is an infection of the respiratory tract caused by viruses affecting the nose, throat, and sometimes the lungs. These viruses are classified into 4 types: A, B, C, and D; however it is influenza types A and B that most often cause illness in humans.

### HOW DO YOU PREVENT THE FLU?

Simple ways to control flu spreading is:

- Annual flu vaccination
- Staying home if unwell
- Washing your hands frequently with soap and water
- Wiping over frequently touched surfaces

Use a mask and tissues and cover your mouth when coughing or sneezing.

### HOW DOES FLU SPREAD?

The flu spreads easily through families, workplaces, childcare centres and schools:

- when an infected person coughs or sneezes, and you breathe it in
- through direct contact with fluid from an infected person's coughs or sneezes
- by touching a contaminated surface with the flu virus on it, and then touching your mouth, eyes or nose.

### HOW LONG DOES IT TAKE TO CATCH THE FLU IF EXPOSED?

Symptoms usually start about 1 to 4 days after catching the flu and can last for a week or more. Some people can be mildly affected, while others can become seriously ill.

### HOW LONG ARE YOU INFECTIOUS WITH THE FLU?

If you have the flu, you can be infectious to others from 24 hours before symptoms start until 1 week after the start of symptoms.

### WHAT ARE COMMON SYMPTOMS OF THE FLU?

Flu symptoms include:

- Fever
- Headache
- Chills
- Cough
- Body pain or muscle pain
- Fatigue
- Sore throat
- Runny nose
- Sneezing
- Reduced sense of smell
- Metallic taste in mouth

- Vomiting and diarrhoea (more common in children).

## **~~WHAT ARE MORE SERIOUS COMPLICATIONS OF THE FLU?~~**

Complications may include:

- Pneumonia
- Encephalitis
- Myocarditis
- Myositis
- Kidney failure
- Sinusitis and middle ear infection (less serious but more common complications)

## **~~WHO IS AT HIGHER RISK OF SERIOUS ILLNESS WITH THE FLU?~~**

- Babies
- Older than 65 years
- Aboriginal and Torres Strait Islander people
- Pregnant women
- Individuals with long-term medical conditions
- Individuals suffering from respiratory problems such as asthma, chronic obstructive pulmonary disease
- Individuals with chronic medical conditions such as diabetes, cancer
- Individuals who have weakened immune systems
- Individuals who are obese or who smoke
- Individuals who haven't been vaccinated against the flu.

## **~~HOW DO YOU DIAGNOSE THE FLU?~~**

- Usually diagnosed by symptoms and/or known contact with someone who has the flu
- Definitive diagnosis is by swabbing nose and throat or blood test for the virus

## **~~HOW DO YOU TREAT THE FLU?~~**

The recommended treatment is rest, drinking plenty of fluids and use of paracetamol for the relief of pain and fever. You should see your local doctor if you are concerned about your symptoms or if your symptoms are getting worse. Antiviral medication may be prescribed by your doctor if you are at risk of complications from the flu, but it does need to be started within 48 hours from the onset of flu symptoms. Antibiotics are not effective for treating the flu.

Your symptoms may include headache, muscle aches, rapid onset of fever, fatigue, sneezing, running nose, sore throat, and cough.

## **~~WILL ANTIBIOTICS HELP TO TREAT THE FLU?~~**

Antibiotics are ineffective against the influenza virus, and so in severe flu cases and for people at risk of complications, antiviral medications may be prescribed.

## **~~WHO SHOULD GET THE FLU VACCINATION?~~**

Annual flu vaccination is recommended for any person from six months of age who wishes to reduce the chance of being ill with the flu. For anyone in a high-risk category, the flu can be a serious and potentially fatal illness.

The National Health and Medical Research Council strongly recommends annual vaccinations for people with:

- Heart disease
- Asthma

- Lung disease
- Diabetes
- Kidney or liver disease
- Impaired immunity
- Pregnant women
- Chronic neurological disorders (such as Multiple sclerosis)
- Metabolic disorders
- Blood diseases

## **~~WILL I CATCH THE 'FLU' FROM THE VACCINE?~~**

The vaccine is composed of inactivated or dead viruses, and so, despite claims, it does not actually cause the flu. However, it is understandable that some people may be concerned about this risk as up to 10% of recipients may develop fever, fatigue and muscle aches. These symptoms will last only a few days, whereas influenza can make you unwell for far longer.

## **~~ARE YOU ABLE TO GET THE FLU SHOT IF YOU ARE FEELING UNWELL?~~**

You can still get the flu vaccine if you have a mild illness, such as a cold or sinus infection. People who have a fever or a moderate or severe illness may need to delay vaccination until they've recovered. If you're sick and are unsure if you should receive a flu shot, talk to your doctor about your symptoms.

## **~~ARE THERE ANY SIDE EFFECTS FROM THE FLU VACCINATION?~~**

Generally, if there are any mild reactions, they will begin within 6 to 12 hours.

Post-vaccination symptoms may mimic influenza infection, however, are generally mild and may include: pain, redness and swelling at the injection site, fever, lethargy and muscle aches.

Studies have shown that people over the age of 65 years who have received either the high dose or adjuvanted flu vaccines experience slightly higher rates of injections site reactions compared to the other formulations. There were also more mild/moderate systemic reactions reported among the high-dose recipients.

Adverse events from cell-based vaccines occurred at similar rates to the standard flu vaccines, with only slightly higher rates of injection site reactions.

As with any medication, there is a rare risk of having a severe allergic reaction that usually occurs within 15 minutes of receiving the vaccination. For this reason, it is important for you to wait for 15 minutes after receiving the vaccination before leaving the immediate area.

## **~~ARE ANY SERIOUS REACTIONS POSSIBLE WHEN HAVING THE VACCINATION?~~**

As with all vaccinations and medication, there is the possibility of an anaphylactic reaction. These reactions are rare when the following groups are excluded through pre-vaccination screening:

- Individuals who have previously reacted to the vaccine or a vaccine component
- Individuals who have ever had Guillain-Barré Syndrome
- Individuals with a history of anaphylaxis or a severe reaction to eggs or egg products, although an allergy to eggs is not a contraindication to influenza vaccination.

## **~~IS THE FLU VACCINATION SAFE FOR PREGNANT WOMEN?~~**

Yes. The flu vaccination can be safely given during any stage of pregnancy. Pregnant women are at an increased risk of severe disease or complications from the flu. Vaccinating against the flu during pregnancy can not only protect pregnant women but provide ongoing protection to a newborn baby for the first six months after birth.

## **INFLUENZA VACCINE IN PREGNANCY SIDE EFFECTS**

As with other people pregnant women can experience side effects from the influenza vaccine, including:

- Redness and swelling at the injection site.
- Fever
- Headache
- Nausea
- Aching muscles
- Tiredness

In general, any side effects experienced after receiving an egg-based influenza vaccine will usually start soon after the injection administered and last for 24 to 48 hours – the same applies when the vaccine is administered during pregnancy. Studies have not shown any adverse birth outcomes for the baby when the flu vaccine is administered during pregnancy, and in fact it offers protection to the baby as flu infection in the mother can be harmful for her unborn child. With cell-based flu vaccines, Australian immunisation experts have stated, ‘there are no theoretical concerns regarding their safety in pregnant women’.

## **CAN THE INFLUENZA VACCINE BE GIVEN AT THE SAME TIME AS THE COVID-19 VACCINE?**

The Australian Technical Advisory Group on Immunisation (ATAGI) has advised that influenza vaccines can be given at the same time as COVID-19 vaccines.

## **DOES MY COVID-19 VACCINE COVER ME FOR FLU?**

No, each disease is caused by a different virus, so the COVID-19 vaccine will not protect you from contracting the flu.

## **IS THE INFLUENZA VACCINE MANDATORY?**

The best way to protect yourself from days off work, or spending time in bed feeling very sick and passing it on to others, is to be vaccinated against influenza viruses. But, no, in general the flu vaccine is not mandatory, but it may be required for people working with vulnerable groups. It is, however, highly recommended since it is very effective and safe. If more people are immunised against the flu and other vaccine-preventable diseases, the less chance they can spread in the community.

The Australian Immunisation Register (AIR) records the vaccines all people in Australia receive so there's no need to add your vaccination history to the AIR since it's done automatically by the provider if you're enrolled in Medicare.

## **WHAT VACCINE IS USED FOR INFLUENZA?**

Influenza vaccine formulations change each year as the flu virus mutates (antigenic drift), so the vaccine used in the last year may well be different to the one for this year. The Australian Influenza Vaccine Committee (AIVC) reviews epidemiology data, genetic and antigenic characteristics of the isolates circulating in Australia and the Southern Hemisphere. The flu strains predicted to affect Australians are reviewed and the available vaccines changed according to the strains.



For example, based on this review and the WHO's recommendation, the AIVC recommended the viral strains to be used for the 2022 southern hemisphere influenza season to include the addition of a new A (H3N2)-like flu strain and a new B Victoria-like strain.

The egg-based quadrivalent influenza vaccines for 2022 cover the following 4 viral strains:

- an A/Darwin/9/2021 (H3N2)-like strain
- an A/Victoria/2570/2019 (H1N1)pdm09-like strain
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like strain
- a B/Austria/1359417/2021-like (B/Victoria lineage) strain

Cell-based quadrivalent influenza vaccines contain the following 4 viral strains:

- an A/Wisconsin/588/2019 (H1N1)pdm09-like strain
- an A/Darwin/6/2021 (H3N2)-like strain
- a B/Austria/1359417/2021 (B/Victoria lineage)-like strain
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like strain.

## **WHEN WAS THE FLU VACCINE INVENTED?**

Flu vaccine development began about one hundred years ago. In the 1930s, the Influenza A virus was isolated from animals in order to find out how it could be weakened/neutralised for vaccine development purposes. Then:

- In the early 1940s: With support from the US Army, the doctor who developed the polio vaccine, Jonas Salk MD, worked with others to produce the first inactivated flu vaccine. The Army's effort was in response to the mass casualties suffered during the 1918 flu pandemic in the wake of World War 1.
- 1942: An Influenza A and B vaccine was developed after the B strain was discovered.
- 1945: The first Influenza A vaccine was licensed in the US.

The science is still based on the discoveries of 100 years ago, although the vaccines now cover 2 types of influenza A and 2 of influenza B viruses. New technology has emerged and there are more developments in the pipeline.

## **INFLUENZA VACCINE: HOW LONG TO BE EFFECTIVE?**

Influenza is a very contagious respiratory disease, and the vaccines are crucial to keeping people safe and healthy. But how long does it take for the jab to take effect? About a fortnight on average for the vaccine to effectively offer good protection against contracting the flu. By choosing to be vaccinated, you protect yourself, your loved ones and the vulnerable members of your community.

**More information on Influenza is available during your pre-travel consultation with Travelvax.  
Call 1300 360 164 for the location of the clinic nearest to you.**