

# Influenza vaccines – Frequently Asked Questions

This fact sheet provides answers to common questions about influenza viruses and available vaccines, including the new influenza vaccine programs in 2021. More detailed information can be found in the NCIRS fact sheet [Influenza vaccines for Australians](#).

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## Questions about influenza virus and influenza vaccines

### Q1. What's the difference between influenza and the common cold?

Influenza is a respiratory illness that occurs after an infection with influenza viruses.<sup>1</sup> Influenza is often referred to as 'the flu'. Sometimes the term 'the flu' is used incorrectly to describe the common cold, other respiratory viruses or even gastrointestinal illnesses. This is because their symptoms can be similar to those caused by influenza. There are many different viruses and some bacteria that can cause these symptoms. The influenza vaccine will only protect you from the influenza virus.<sup>2</sup> The following table compares symptoms from the common cold and influenza. Usually influenza is more severe and lasts longer than a cold or other viral respiratory illness.

Cold	Symptom	Influenza
☹	Fever	☹☹☹
☹	Headache	☹☹☹
☹☹	General aches and pains	☹☹☹
☹☹	Tired and weak	☹☹☹
☹	Extreme fatigue	☹☹☹
☹☹☹	Runny, stuffy nose	☹☹
☹☹☹	Sneezing	☹☹
☹☹☹	Sore throat	☹☹☹
☹☹	Chest discomfort, coughing	☹☹☹

☹ = rarely; ☹☹ = sometimes; ☹☹☹ = often

Table adapted from: Immunize Canada - Is it a cold or influenza? Available from: [www.immunize.ca/sites/default/files/resources/176e.pdf](http://www.immunize.ca/sites/default/files/resources/176e.pdf) (Accessed March 2021)

### Q2. Is it worth getting the influenza vaccine? I'm a healthy person and have heard that influenza isn't serious.

Yes, it is important to get the influenza vaccine even if you are healthy. Most Australians who get influenza are quite sick for a few days with fever, aches and pains, and sore throat, and then recover without lasting effects (see Q1). However, influenza can cause serious illness in some people; this can lead to hospitalisation or even death.

It is not possible to predict who will be severely affected by influenza. Each year, previously healthy people are hospitalised and die from the virus. Although around 100 deaths and 5,100 hospitalisations due to influenza are reported each year,<sup>3</sup> many cases don't get identified, so the true impact of influenza is much greater.

Apart from becoming ill, having influenza can be a big inconvenience. People can miss time from work or school because either they are too sick to attend or they have to take time off to care for a sick child. One study has shown that parents of children under 3 years of age missed an average of 3 days of work to stay home and care for their sick child.<sup>4</sup> The estimated cost to the

Australian healthcare system for GP visits and hospitalisations was \$115 million per year for each year between April 2000 and March 2006.<sup>5</sup>

In addition to protecting you from influenza, vaccination also protects people around you. If you don't catch influenza, then you can't spread the infection. It is particularly important to protect vulnerable people who can't get the vaccine themselves or don't respond strongly to it, such as young babies under 6 months of age and people who have low immunity.<sup>6,7</sup>

The influenza vaccine is not completely protective because the circulating influenza strain may change and people's individual response to the vaccine may differ. However, it is our best protection against infection and potentially serious complications, including death.

Given SARS-CoV-2 (the virus that causes COVID-19) continues to circulate, it is even more important to get an influenza vaccine to stay healthy, to protect others from getting influenza and to reduce impact on our health systems (see [Q10](#)).

### **Q3. Why do healthy young children need an influenza vaccine?**

Compared with older children and adults, infants and children under 5 years of age, including those without pre-existing medical conditions, are more likely to get severe influenza infection, resulting in hospitalisation.<sup>3,8</sup> In 2017, approximately 1 in 400 children were diagnosed with laboratory-confirmed influenza. Previously healthy children can be severely ill and suffer from influenza-associated complications such as pneumonia and encephalitis.<sup>9-11</sup>

### **Q4. Why do children 6 months to <9 years of age who have never received influenza vaccine need two doses?**

Children 6 months to <9 years of age receiving influenza vaccine for the first time need two doses, given at least 4 weeks apart to maximise the immune response to the vaccine strains.

Children who received one or more doses of influenza vaccine in a previous season only need one dose in the current and future seasons.

### **Q5. If the influenza vaccine is recommended for everyone then why can only certain people get it for free?**

The influenza vaccine is funded by the government under the National Immunisation Program (NIP) for certain groups of people who are at the highest risk of severe influenza or are more likely to get complications from influenza than the general population.<sup>12</sup> These groups include:

- children aged 6 months to under 5 years
- all Aboriginal and Torres Strait Islander people older than 6 months
- all adults aged 65 years and older
- pregnant women
- people with certain underlying medical conditions.

Since 2005, decisions on what vaccines are provided for free, and for whom, are made following a process that involves the Pharmaceutical Benefits Advisory Committee.<sup>13</sup> This ensures any government spending on a health intervention is cost-effective. This is important as there is a limited amount of money that is available for healthcare in Australia and these funds need to be used for the greatest benefit for the whole population.

However, people who are not eligible for influenza vaccine on the NIP will still benefit from vaccination (see [Q2](#)). The [Australian Immunisation Handbook](#) (the national clinical guideline advising on the safest and most effective use of vaccines in Australia) recommends the influenza vaccine from 6 months of age.<sup>14</sup> Influenza vaccines can be purchased for around \$10–\$20 each.

**Q6. I'm travelling to the northern hemisphere and it is influenza season at my destination. How do I protect myself from influenza while travelling? What should I do if I have been travelling/living overseas and am coming back to Australia?**

Travellers may be exposed to the influenza virus at any time throughout the year regardless of their destination. The influenza season in the southern hemisphere is mostly from April to September; in the northern hemisphere, it is from October to May. Influenza activity in the tropics has been reported throughout the year.

People travelling in large tourist groups or those travelling in confined spaces for days to weeks, such as on a cruise ship, are at particular risk of influenza.<sup>15,16</sup> People can get infection either before departure or from travel to areas of the world where influenza may be circulating at that time.

Influenza vaccination is recommended if travelling, especially if it is known before travel that influenza is circulating in the destination region. Some brands of current southern hemisphere influenza vaccine are available from March through February the following year (when the vaccine expires). A northern hemisphere formulation of influenza vaccine may be preferred if travelling in the northern hemisphere during their influenza season, but is generally unavailable in Australia. The southern hemisphere formulation is considered as an acceptable alternative; a second dose late in the season may be given even if the person has received this vaccine earlier in the current season.

If you have returned to Australia from living or travelling overseas, consider getting vaccinated with the currently available local vaccine for optimal protection if you have not had it before, regardless of the time of the year.

**Q7. Does the influenza vaccine work? I've had the vaccine before and I still got sick that year.**

Extensive research has shown the influenza vaccine is effective. It takes 2 weeks after the influenza vaccination for you to develop immunity.

How well the influenza vaccine works can vary among different people and in different years, as it depends on several factors, such as age and health of the person receiving the vaccine and the match between the vaccine strains and those circulating in the community.

Influenza vaccination can prevent illness in about 50–60% of young children and healthy adults under the age of 65 years, although this figure varies year by year.<sup>17,18</sup>

People with an underlying medical condition, such as those with low immunity, or the elderly, may not respond as well to the influenza vaccine as healthy adults do and so the level of protection they get from the vaccine may be less. However, among high-risk individuals such as nursing home residents, the vaccine prevents pneumonia and hospitalisation due to influenza.<sup>19</sup> Because of the higher risk of severe influenza in the elderly, any protection provided by vaccination against influenza is worthwhile.

As the vaccine is not 100% effective, it means a small proportion of people may catch the influenza virus after getting the vaccine. People sometimes think they have caught influenza after getting vaccination but that is not the case. Influenza vaccine cannot give you influenza because it does not contain a live virus. Sometimes people catch influenza before getting the influenza vaccine but their symptoms don't appear until shortly after being vaccinated. This makes them think the vaccine didn't work or even (mistakenly) that the vaccine made them sick (see [Q7](#)).

Similarly, a person who is vaccinated against influenza may catch a different virus that is mistaken for influenza (see [Q1](#)). For instance, respiratory syncytial virus (RSV) and parainfluenza

are viruses that cause symptoms similar to those of influenza, spread in the community at the same time as influenza and can cause severe illness and complications just like influenza.<sup>20</sup>

### **Q8. What is an ‘enhanced’ influenza vaccine and how is it different from other influenza vaccines? Who should receive it?**

An enhanced influenza vaccine is one that is specifically designed to increase the immune system’s response to the vaccine. It contains the standard amount of antigen but with an adjuvant – a compound that stimulates a higher immune response to a vaccine.

The highest disease burden from influenza occurs in the elderly in terms of serious complications and death rates.<sup>3</sup> The elderly do not respond as well to the influenza vaccine as healthy adults do, as the immune system weakens with age. The level of protection they get from the influenza vaccine is usually less than that of a younger person. This underpins the need for ‘enhanced’ influenza vaccines for people 65 years of age and older to better protect them from influenza infection.

One ‘enhanced’ influenza vaccine (Fluad Quad) is available for people 65 years of age and older. Fluad Quad has been shown to be as immunogenic as Fluad (adjuvanted trivalent inactivated influenza vaccine) but the addition of the additional B strain means that it provides broader protection to older adults.<sup>21</sup>

Fluad Quad is only licensed for use in people 65 years of age and older, as the effectiveness and safety of this vaccine in younger populations has not been adequately examined. Studies have shown that people 65 years of age and older who receive an adjuvanted vaccine do not experience serious adverse events any more frequently than they do with a standard vaccine but they may experience slightly higher rates of injection site reactions.<sup>22</sup>

### **Q9. When should I get the influenza vaccine and when is it too late in the season to get it?**

It is recommended you get annual influenza vaccine before the influenza season starts. Immunisation providers should start giving vaccinations as soon as vaccine is available.

The peak of influenza activity in Australia can vary each year. Typically it occurs between June and September, but infections can occur year round.

It is never too late in the year to get influenza vaccine. Vaccination should continue to be offered throughout the influenza season, as long as vaccine is available (note: most years vaccine brands don’t expire until end of February the following year). Evidence suggests optimal protection occurs in the 3–4 months following vaccination; ideally vaccination before the expected winter peak is advisable.<sup>23,24</sup>

For pregnant women, influenza vaccine is recommended in every pregnancy and it is safe for the mother and the unborn baby to receive the vaccine at any stage of pregnancy. Women who are in their first trimester in the first quarter of the year may wish to wait until the current year’s seasonal influenza vaccine becomes available, rather than receiving the previous year’s influenza vaccine. Influenza vaccine can safely be given at the same time as pertussis vaccine.

### **Q10. What is the recommended timing of administering influenza and COVID-19 vaccines?**

The COVID-19 vaccine roll out will not affect the influenza vaccine supply. The influenza vaccine roll out will start and continue as normal.

People in phase 1a of the COVID-19 vaccination program should receive the COVID-19 vaccine as soon as it is available to them, and then receive their influenza vaccine at least 14 days later. People in later phases of the COVID-19 vaccination program should receive their influenza vaccine as soon as it is available, and then receive their COVID-19 vaccine when it becomes

available to them, at least 14 days later. This advice may change as further information becomes available. For more information, refer to [COVID-19 vaccination – ATAGI advice on influenza and COVID-19 vaccines](#).

### **Q11. Who needs to get more than one dose of influenza vaccine within a year?**

People recommended to receive a second dose of influenza vaccine within a year include:

- Children 9 years of age and younger receiving their influenza vaccine for the first time. Two doses 4 weeks apart are required for an adequate immune response.
- People who have had a haematopoietic stem cell transplant or solid organ transplant and are receiving influenza vaccine for the first time after transplant.
- Pregnant women, who may be vaccinated with the next season's influenza vaccine if it becomes available in the latter part of their pregnancy, even if they were vaccinated with the previous season's vaccine prior to or earlier in pregnancy (see [Q18](#)).
- Overseas travellers, who may benefit from a second dose of this season's influenza vaccine if going to the northern hemisphere winter and receiving the northern hemisphere formulation there is not feasible (see [Q6](#)).

There is not enough evidence to routinely support a second dose in the general population at this time, even if the influenza vaccine was given early in the season. The few studies of antibody responses (an indirect measure of protection) following a second dose of influenza vaccine in the same season in adults have not shown consistent results. For example, two studies in the elderly of a second vaccine dose at either 1 month or 3 months after the first dose did not show higher antibody levels,<sup>25-27</sup> while a third study suggested a better antibody response after a booster dose at 3 months in frail elderly patients.<sup>28</sup>

### **Q12. Is the influenza vaccine available all year round?**

The influenza vaccine is usually available from late March through February the following year (when the vaccine expires). This means there may be a gap of about 1–2 month where no influenza vaccine may be available.

### **Q13. What is a cell-based influenza vaccine?**

Cell-based influenza vaccines are prepared in Madin-Darby canine kidney (MDCK) cells. This method is different from the traditional method of producing standard influenza vaccines, which involves hens' eggs. In recent years, there has been concern that the replication of influenza viruses in eggs during vaccine production results in antigenic changes that could make them less closely related to the circulating strains. This 'antigenic mismatch' has been a particular problem for influenza A/H3N2 subtypes and is thought to have contributed to lower influenza vaccine effectiveness in some years (particularly when A/H3N2 was the predominant strain).<sup>29,30</sup>

Also, there is a logistical concern that supply of influenza vaccines could be compromised if there was a worldwide shortage of eggs, or if rapid increases in vaccines were needed (e.g. in an influenza pandemic). Cell-based influenza vaccine production diversifies the supply lines and theoretically mitigates the 'antigenic mismatch' issue of egg-based vaccine production.

Flucelvax Quad is currently the only cell-based inactivated influenza vaccine that has been registered for use in Australia. It is approved for use in people from 9 years of age. This vaccine is currently not funded under the NIP for any population.

### **Q14. Is the cell-based influenza vaccine preferred over standard (egg-based) influenza vaccines?**

Although there are some theoretical advantages of cell-based influenza vaccines (see [Q13](#)), studies have shown that the cell-based influenza vaccine has a similar efficacy and safety profile

to standard influenza vaccines.<sup>31-35</sup> There is no preferential recommendation for its use over the standard influenza vaccines.

Standard influenza vaccines are currently preferred for use in pregnancy because a large body of evidence supports their safety in pregnant women. While the use of cell-based influenza vaccines in pregnancy has not been assessed, there are no theoretical concerns regarding their safety in pregnant women.

The remaining eligible population can receive either standard influenza vaccine or cell-based influenza vaccine.

## Questions about the safety of influenza vaccines

### **Q15. I've heard one of the side effects after having the vaccine is getting sick with influenza. Is that true?**

It is not possible for the influenza vaccine to give you influenza. This is because all influenza vaccines in use in Australia are 'inactivated', which means the vaccine is only made with parts of the outside 'shell' of the influenza virus, and it is not alive or functioning like a whole virus.<sup>36</sup>

Sometimes the normal responses the body experiences after getting the vaccine (i.e. side effects) are similar to the early signs of influenza. This can make people think they have gotten influenza from the vaccine. For example, the expected side effects of the vaccine are swelling, redness and pain at the injection site but also fever, tiredness and muscle aches which also occur when you get influenza (see [Q1](#), [Q7](#)). However, these side effects are a sign that the vaccine is triggering an immune response, which is what it is designed to do. The symptoms can start within a few hours of being vaccinated, last 1–2 days, and are generally much milder than an actual influenza infection. These symptoms go away on their own once your body has successfully made an immune response to the vaccine, which will protect you from influenza virus.<sup>37</sup>

### **Q16. I've heard influenza vaccine causes seizures in young children. Is that true?**

Febrile seizures can be triggered by fever of any cause. A small proportion of children (2–4%) are susceptible to febrile seizures until they are 6 years old.<sup>38</sup> The seizures themselves usually last around 1 or 2 minutes with loss of consciousness. Nearly all children who have a febrile seizure, regardless of the cause, will recover quickly. Studies have shown that academic outcomes and behaviour in children who have febrile seizures are the same as in children without seizures.<sup>39</sup> The risk of epilepsy in children who have a simple febrile seizure is only slightly higher than in the general population and likely related to underlying genetic predisposition.<sup>40</sup>

Influenza infection itself can cause fever and results in many more febrile seizures than vaccination. Influenza is one of the most common infectious causes of febrile seizures in children hospitalised in the winter in Australia.<sup>41</sup> In one study 6% of children hospitalised with influenza suffered a febrile seizure.<sup>42</sup> Compare this with febrile seizures related to fever after influenza vaccination which occurred in approximately 1 in every 20,000 children who receive the vaccine.<sup>43</sup>

In Australia in 2010, higher than expected numbers of fever and febrile seizures following influenza vaccination were detected in children under 5 years of age, particularly in children under 3 years of age.<sup>44</sup> Upon investigation, the reports were linked to only one manufacturer's influenza vaccine and the issue was likely caused by the manufacturing process for that particular vaccine.<sup>45-47</sup> This vaccine is no longer available in Australia.

Enhanced safety monitoring systems for influenza vaccines introduced in recent years, such as [AusVaxSafety](#) (see [Q17](#)), have confirmed that influenza vaccine is safe in children under 5 years, reporting low rates of fever and medical attendance after vaccination.<sup>38</sup>

### **Q17. What is done in Australia to make sure vaccines are safe to give to the public?**

The safety of vaccines is reviewed and monitored at all stages of the vaccine development process, from initial lab-based research, vaccine registration, recommendations on the use of the vaccine to ongoing surveillance once the vaccine is being used in the population.

In Australia, the Therapeutic Goods Administration (TGA) is responsible for registering vaccines for use in the country. The TGA uses the latest research and testing information available to evaluate and ensure the safety and efficacy of vaccines. Independent medical and scientific advice on the safety, quality and efficacy of vaccines is provided by experts who make up the Advisory Committee on Vaccines (ACV).<sup>48</sup>

Once vaccines are registered and in use, the TGA continues to monitor their safety and effectiveness through a national monitoring system. If the TGA receives information that there are safety concerns about a vaccine, the issue is investigated immediately.<sup>49</sup>

Australia also conducts active safety monitoring of vaccines using a system called AusVaxSafety. AusVaxSafety collects adverse events data directly from patients via an SMS-based survey after vaccination at certain GPs and immunisation providers. Data are collected in near real-time and analysed for safety concerns. The latest safety data are available on the [AusVaxSafety website](#).

Another important body is the Australian Technical Advisory Group on Immunisation (ATAGI).<sup>50</sup> This group advises the government on existing, new and emerging vaccines in relation to their effectiveness and use in Australian populations. ATAGI produces the [Australian Immunisation Handbook](#), the national clinical guideline advising on the safest and most effective use of vaccines in Australia. ATAGI and the ACV work together with other bodies on the implementation of immunisation policies, procedures and vaccine safety.

### **Q18. I've been told to get the influenza vaccine when pregnant to protect me and my baby. Is this safe?**

Influenza vaccine is safe during pregnancy. The vaccine is recommended with every pregnancy and at any stage of pregnancy to protect both the mother and her unborn child against complications from influenza.

Influenza can cause severe disease in pregnant women and young babies. Getting sick with influenza while pregnant can lead to complications such as premature delivery and even perinatal death.<sup>51</sup> Young children, especially those younger than 6 months, are more likely to be hospitalised or die from influenza than older children.

During pregnancy, protective antibodies are transferred through the placenta from the mother to the baby. Babies born to women vaccinated against influenza while pregnant are less likely to be born prematurely or have a low birth weight.<sup>52,53</sup>

Maternal vaccination is estimated to reduce the risk of influenza in infants <6 months of age by 48%.<sup>54-56</sup> However, the protection wears off as babies get to 6 months of age, at which time babies can start to receive the vaccine themselves.<sup>57</sup>

A systematic review of multiple safety studies found no increase in foetal death, spontaneous abortion or congenital malformation after maternal influenza vaccination in pregnancy.<sup>52</sup> The frequency of expected adverse events after vaccination, like injection site reactions, is the same in both pregnant and non-pregnant women. Influenza vaccine is also safe when given to mothers



who are breastfeeding, and can provide protection to the baby through antibodies that are transferred to the baby in breastmilk.<sup>58</sup>

For pregnant women who received an influenza vaccine in 2020, revaccinate if the 2021 influenza vaccine becomes available before the end of pregnancy. For women who received an influenza vaccine before becoming pregnant, revaccinate during pregnancy to protect the unborn infant. Influenza vaccine can safely be given at the same time as pertussis vaccine.

## **Q19. Can I get the influenza vaccine if I have an egg or a latex allergy?**

### **Egg allergy**

People with egg allergy can safely receive the influenza vaccine (which usually contain less than 1 microgram of egg protein per dose).

Reactions such as hives, angioedema (a skin reaction with swelling similar to hives) or anaphylaxis (severe allergic reaction) are rare side effects following influenza vaccination. They can be due to an allergic response to something in the vaccines, such as egg protein.

Recent studies have shown that people with egg allergy, including egg-induced anaphylaxis, have safely received the influenza vaccine.<sup>59,60</sup>

The Australasian Society of Clinical Immunology and Allergy (ASCIA) guidelines should be referred to for additional information on influenza vaccination of individuals with an allergy to eggs, including risk, dosage and observation period.<sup>61</sup>

### **Latex allergy**

Influenza vaccines used in Australia are latex-free and safe for use by people with a latex allergy or sensitivity. Although the product information for Fluarix Tetra and Fluad Quad state that some presentations of the vaccine cannot be considered latex-free, these presentations are not supplied in Australia.

## **Q20. Can the influenza vaccine be given to someone who has had Guillain-Barré syndrome?**

Guillain-Barré syndrome (GBS) is a rare disorder in which the immune system damages nerve cells, causing muscle weakness and sometimes paralysis. The symptoms usually last for a few weeks followed by a full or partial recovery. In very rare cases people have died of GBS. The risk of the syndrome increases with age and is greatest for those aged 50 years or older. Diagnosis of GBS is complex and must be made by a doctor.

A small increased risk of GBS was found in people given a specific influenza vaccine in the United States in 1976.<sup>62</sup> Since then, close monitoring has shown that GBS has occurred at a very low rate of less than 1 in 1 million doses of influenza vaccine.<sup>63</sup> Studies suggest that a person is more likely to get GBS from infection with the influenza virus than from the influenza vaccine.<sup>64</sup>

People with a history of GBS whose first episode was not after vaccination have an extremely low risk of recurrence of GBS after vaccination.<sup>65-67</sup> Vaccination is recommended for these people.

Vaccination is generally not recommended for people with a history of GBS whose first episode occurred within 6 weeks of influenza vaccination. There are limited data in people where the first episode occurred within 6 weeks of influenza vaccination (i.e. the first episode was possibly triggered by the vaccine). In these people, discuss the potential for GBS recurrence if vaccinated, the potential for exacerbation following influenza infection, and other protective strategies (e.g. vaccination of household members). Vaccination can be considered in special circumstances.

## Q21. Can the influenza vaccine be given to someone taking immune checkpoint inhibitors?

Immune checkpoint inhibitors are a class of monoclonal antibodies currently used in the treatment of a number of cancers, including metastatic melanoma, renal clear cell carcinoma, non-Hodgkin lymphoma, non-small cell lung cancer and other solid organ tumours.

Checkpoint inhibitors include:

- CTLA-4 inhibitors (such as ipilimumab)
- PD-1 and PD-L1 inhibitors (such as nivolumab or pembrolizumab)

People taking checkpoint inhibitors may have a higher risk of immune-related adverse events following immunisation with influenza vaccine.<sup>68</sup> Consult the person's treating oncologist about the risks and benefits of influenza vaccination in people taking treatments.

## Additional resources for primary medical care/vaccination providers

- [NCIRS Influenza vaccines for Australians fact sheet](#)
- [Australian Technical Advisory Group on Immunisation \(ATAGI\) advice on seasonal influenza vaccines in 2021](#)
- [COVID-19 vaccination – ATAGI advice on influenza and COVID-19 vaccines](#)
- [Australian Government Department of Health immunisation website](#)
- [National Immunisation Program schedule](#)

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