

Cardiovascular disease, respiratory infections and vaccinations



What is the link between CVD and respiratory infections?

People with common risk factors	<p>Cardiovascular disease (CVD) and respiratory infections share a number of risk factors, including:</p> <ul style="list-style-type: none">• diabetes• obesity• smoking• cholesterol disorders• chronic kidney disease• harmful use of alcohol <p>For example, people who smoke are 2 x more likely to develop a respiratory infection and 3 x more likely to have a heart attack.</p>
People with respiratory infections	<p>Respiratory infections can lead to CVD. People who have had a respiratory infection are:</p> <ul style="list-style-type: none">• 4 x more likely to have a heart attack and 5 x more likely to have a stroke in the month following a flu infection.• 3 x more likely to have a heart attack or stroke in the month following a COVID-19 infection.• 3 x more likely to have a heart attack in the week following a respiratory syncytial virus (RSV) infection.
People with pre-existing CVD	<p>Compared to people without CVD, people with pre-existing CVD are:</p> <ul style="list-style-type: none">• more likely to catch a respiratory infection and more likely to have a serious infection requiring hospitalisation.• more than 2 x as likely to die in hospital from COVID-19.• 4 x more likely to require care in the intensive care unit or die in hospital from RSV.

What benefit is there to vaccination?



Who should get vaccinated?



All people	<p>Vaccinations are recommended for:</p> <ul style="list-style-type: none">• RSV vaccination – neonates and infants aged up to 8 months whose mothers were not vaccinated, children aged 6 months and up to 17 years, pregnant women, First nations people aged 60+ and adults aged 75+.• Flu vaccination – all people aged 6 months+• COVID-19 vaccination – all people aged 6 months +• Pneumococcal vaccination - infants and children (as per routine vaccination schedule), First Nations people aged 50+ and adults aged 70+
People with pre-existing CVD	<p>The increased risk of severe respiratory infections makes it particularly important for adults with pre-existing CVD to be vaccinated. They may also require additional or earlier vaccination than other people.</p> <p>In addition to standard vaccine schedule recommendations, people living with CVD who should be vaccinated include:</p> <ul style="list-style-type: none">• RSV vaccination – adults aged 60+• Pneumococcal vaccination - everyone, including children, adolescents and adults.



For the most up-to-date information on vaccine availability, dosing and administration, consult the *Australian Immunisation Handbook*: immunisationhandbook.health.gov.au



What to look out for before vaccination?

People with pre-existing CVD

Immunocompromised

People who have had a heart transplant may be on immunosuppressants. Live vaccines are not recommended and non-live vaccines may require additional doses.

Anti-coagulant medicines

People may be given anti-coagulation therapy for acute coronary syndromes, atrial fibrillation or thrombosis. These people are at increased risk of haematoma at the injection site. Subcutaneous rather than intramuscular injection can reduce this risk. As this can impact efficacy, additional doses of vaccine given subcutaneously may be required.

Heart inflammation

People who have had recent non vaccine related pericarditis and myocarditis, or are living with acute rheumatic fever, rheumatic heart disease, or decompensated heart failure can have mRNA vaccine against COVID-19. Scheduling of doses may need to be altered.



What to look out for after vaccination?

All people

- Most side effects of vaccinations are mild and self limiting.
- Vaccinations may cause mild side effects including redness or pain at site of injection, tiredness, and muscle and joint pain.
- No cardiac-specific side effects have been reported for flu or RSV vaccines.
- Myocarditis and pericarditis are a very rare but known potential side effect of COVID-19 vaccination. Mostly reported in males aged <40 after the second dose of vaccine.
- The risk of developing myocarditis or pericarditis after a COVID-19 vaccination is 3 x higher than without the vaccine. But:
 - the risk of developing myocarditis or pericarditis after a COVID-19 infection is 18 x higher than someone that hasn't had the infection.
- Recipients of COVID-19 vaccination should be advised to monitor for signs of these conditions in the days following vaccination. These include:
 - Pericarditis – chest pain which is worse when lying down and relieved when sitting up or leaning forward, pain on deep inspiration.
 - Myocarditis – chest pain, fever, heart palpitations, shortness of breath.
 - Seek cardiologist advice when considering vaccination for COVID-19 following vaccination induced pericarditis or myocarditis.



What else should I remember?

People with pre-existing CVD

- **Fluid** – standard advice to increase fluid intake while experiencing a respiratory infection may not be suitable for people with heart failure. Any change in fluid intake for people living with heart failure should be closely monitored by a healthcare professional.
- **Over-the-counter medicine** – some over-the-counter medicines used to treat respiratory infections can negatively impact heart health and/or interact with heart medicines. This includes non-steroidal anti-inflammatories, decongestants containing pseudoephedrine/phenylephrine, and garlic-based supplements.



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References

- Australian Technical Advisory Group on Immunisation (ATAGI). *Australian Immunisation Handbook*. Australian Government Department of Health and Aged Care, 2022. immunisationhandbook.health.gov.au
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- Kawai K, et al. Viral infections and risk of cardiovascular disease: systematic review and meta-analysis. *JAHA*. 2025;14(21).
- Sedrak P, et al. Vaccination in patients with cardiovascular disease: a case-based approach and contemporary review. *CJC Open*. 2025;7(10):1375–88.