



Prioritizing Adult Immunization to Promote Cardiovascular Health

Quick Reference Guide to Vaccines Recommended For Patients With Heart Disease

Routine vaccination is an effective way to prevent infection; however, immunization rates for adults remain low in the U.S. and are declining.

Of particular concern, many vaccine-preventable infections raise cardiovascular risk and place added stress on the heart. As such, there is an urgent need to discuss vaccination as part of cardiovascular visits.

WHY TALK VACCINES? EVIDENCE FOR CARDIOVASCULAR BENEFIT

- Many infections increase the risk of developing cardiovascular disease, including myocardial infarction or stroke.
- Patients with cardiovascular disease are at high risk for severe illness and complications, hospitalization and death following infection.
- Vaccines reduce the risk of severe illness, related hospitalizations, cardiac events, and deaths.

Vaccines should be:

- Recommended for most patients with cardiovascular disease to reduce the risk of acute cardiac events, worsening disease
- Considered in the suite of secondary therapies for patients with recent myocardial infarction

**Despite benefits of vaccination,
very few adults get the vaccines
they need.**

*Only 1 in 4 adults
have received
recommended
vaccines.*



**There is an increasing need for
cardiology care providers to help
bridge gaps, improve vaccine uptake.**

*Fewer than 1 in 3 primary
care providers assess
vaccination status of adult
patients during clinical visits.*



This reference tool supports the American College of Cardiology's 2025 Concise Clinical Guidance: *An ACC Expert Consensus Statement on Adult Immunizations as Part of Cardiovascular Care.*

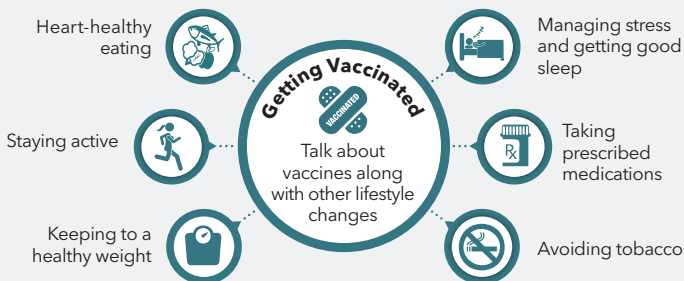
* The principal focus of this CCG is on respiratory vaccination.

Scan the QR
code to access
the full document
and additional
vaccination
resources.



VACCINES AS ESSENTIAL TO HEART-HEALTHY LIVING

Talk about vaccines within the context of other heart-healthy and prevention interventions.



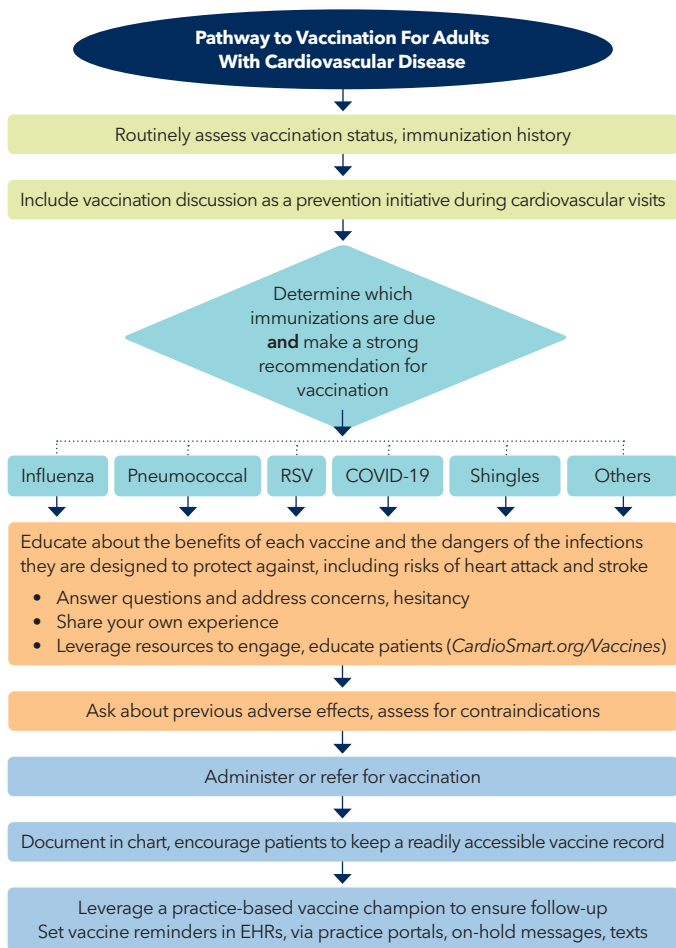
VACCINES RECOMMENDED FOR PATIENTS WITH HEART DISEASE

Disease/Virus	Frequency	Additional notes
Influenza	Annual for persons aged ≥ 6 mo	Nasal vaccine not recommended for patients aged >50 y. Specific vaccines are recommended for those aged ≥ 65 y.
Pneumococcal	1-time vaccination with PCV20 or PCV21 for adults aged ≥ 19 y	Other vaccines require 2 vaccinations.
COVID-19	Initial and 2024-2025 vaccine for persons aged ≥ 6 mo	Recommendations for annual vaccination may change as circulating virus biology changes.
RSV	1-time vaccination for adults aged ≥ 60 y	
Zoster	2 doses of recombinant zoster vaccine 2-6 mo apart for those adults aged ≥ 50 y	
Other		Multiple other vaccines are recommended by the CDC for all adults (regardless of heart disease).

CDC = Centers for Disease Control and Prevention; COVID-19 = coronavirus disease-2019; PCV = pneumococcal conjugate vaccine; RSV = respiratory syncytial virus.

Source: 2025 Concise Clinical Guidance: An ACC Expert Consensus Statement on Adult Immunizations as Part of Cardiovascular Care. Table 1.

ALGORITHM: STEPS TO PRIORITIZE VACCINATION



6 TIPS TO ENCOURAGE VACCINATION



1. Make a clear and strong recommendation for vaccination.

Patients trust and listen to their health care teams. For most patients, a clear recommendation for a vaccine is often what tips the balance to get vaccinated.



2. Put the risks of non-vaccination into perspective.

Discuss the risks and benefits of influenza, COVID-19, RSV, and other vaccine-preventable diseases, and the safety and benefits of the vaccines in preventing serious illness and related complications.



3. Communicate the heart benefits.

Relay research that has shown influenza vaccination may also prevent downstream cardiovascular events.



4. Address common questions and concerns, including vaccine hesitancy, without judgment and correct misinformation. For example, debunk false beliefs about vaccines causing the diseases they are intended to prevent, and explain natural immunity, the risks of the vaccine.



5. Educate patients and post vaccine information in high-visibility areas in your practice and send text or portal reminders to encourage vaccination.



6. Assign a vaccine champion to optimize vaccine uptake, bridge gaps, reduce morbidity. They can help incorporate vaccine education and assessments into visits, implement reminder and recall interventions, and other creative solutions.

Research shows that, above all else, patients are more likely to get a vaccine if their doctor or health care team recommends it.

Adverse health effects from vaccination are exceedingly rare and are far outweighed by the benefits, particularly in patients with heart disease.



INFLUENZA VACCINE



Heart risks of infection

- People with cardiovascular disease or previous stroke are at higher risk for influenza illness, secondary infections and acute cardiovascular events.
Data show:
 - 6x higher risk of heart attack in the week after being infected
 - 1 out of 2 adults in the hospital due to the flu also have heart disease

How influenza vaccination protects the heart

- Helps prevent serious illness and related complications, including pneumonia
- Lowers the risk of adverse sequelae such as acute myocardial infarction, decompensated heart failure, and other major adverse cardiovascular events (MACE)
 - Influenza vaccination has been associated with lower rates of some cardiac events among people with heart disease, especially those who've had a cardiac event in the previous year.

Influenza vaccination recommendations

- Annual influenza vaccination is recommended to reduce cardiovascular morbidity, cardiovascular mortality, and all-cause death.
- Best timing: Ideally in October and continuing as long as influenza viruses are circulating. Remind patients it takes about two weeks for protection to develop after vaccination; if illness develops during this time, it's not due to the vaccine.
- For patients ≥ 65 , an enhanced vaccine formulation (high dose, recombinant or adjuvanted formulations) is recommended.

Side effects usually mild

- Most common: pain, erythema at the injection site
- Less frequent: short-lived systemic adverse effects (low-grade fever, headache, myalgias)
- Very rare: Guillain-Barré syndrome (1 to 2 cases per 1 million of influenza doses given)

Contraindications

- A history of Guillain-Barré syndrome, severe egg allergy or allergic reaction to the vaccine

COVID-19 VACCINE



Heart risks of infection

- Increases the risk of myocardial injury, arrhythmia, pericarditis, and thrombosis
 - Data showed that people with any type of COVID-19 infection were 2x as likely to have a major cardiac event (myocardial infarction, stroke, even death), for up to three years after diagnosis, and the risk was even higher for those hospitalized for COVID-19.
 - Sustained risk in cardiac mortality
- Long COVID may double the risk of developing cardiovascular problems.

How COVID vaccination protects the heart

- Reduces the risk of severe illness and death
- Protects against associated cardiovascular complications:
 - Myocardial infarction
 - Pericarditis/myocarditis
 - Stroke
 - Atrial fibrillation
- Lowers risk of long COVID symptoms

COVID vaccination recommendations

- Routine vaccination is recommended for patients with chronic medical conditions, including cardiovascular disease.

Side effects usually mild

- Most common: redness, swelling or pain at the injection site
- **Myocarditis** is a very rare side effect of COVID-19 vaccination, primarily for the mRNA vaccines:
 - 1 to 19 cases per 1 million persons after the first two doses
 - Typically mild and resolves
 - Mostly affects adolescent males/young men

The course of vaccine-associated myocarditis is more benign than COVID-19-infection-related myocarditis with almost universal complete recovery.

Contraindications

- History of a severe allergic reaction after a previous dose or a component of the COVID-19 vaccine
- Caution needed if myocarditis or pericarditis diagnosed within three weeks after a dose of the vaccine

RESPIRATORY SYNCYTIAL VIRUS (RSV) VACCINE



Heart risks of infection

- Similar impact to influenza
- Heightened risk of heart complications, including heart failure and arrhythmias
- Underlying cardiovascular disease has been linked to as many as 2 out of 3 hospitalizations for RSV

How RSV vaccination protects the heart

- Similar efficacy across the three RSV vaccines
 - Cuts the risk of lower respiratory tract infection 80% during the first year, diminishing slightly to ~70% the next year
- For older adults, vaccination helps prevent serious RSV infection, hospitalization and complications that can exacerbate cardiovascular conditions

Vaccination recommendations

- All adults aged ≥ 75 years who have not yet received RSV vaccine
- Adults aged 50-74 years at increased risk of severe RSV, including those with cardiovascular disease

Note: RSV vaccine is **not** an annual vaccine. For now, just a **single dose** of RSV vaccine is recommended. Reimmunization recommendations are pending.

The vaccine can be given anytime. The ideal time to vaccinate is in late summer and early fall before RSV usually starts to spread in the community.

Side effects usually mild

- Most common: local injection site reactions
- Less frequent: headache or fatigue for a day or so
- Very rare: The two protein subunit vaccines have been associated with a small increased risk of Guillain-Barré syndrome during the 42 days after vaccination (7-9 cases per 1 million doses). This has not been seen with the mRNA vaccine.

Contraindications

- A history of severe allergic reaction to any components of the vaccine

PNEUMOCOCCAL VACCINE



Heart risks of infection

Pneumococcal infections, particularly pneumonia:

- Can worsen existing heart conditions
- Significantly increases the risk of cardiovascular complications
 - Acute cardiovascular events, heart failure, arrhythmias, and stroke
 - Cardiovascular mortality
 - All-cause death – fatality rate ranges from 10-20%, increasing with older age

How pneumococcal vaccination protects the heart

- Reduces the severity of infections
 - Vaccination reduced the risk of pneumonia by 28% in all adults aged >65, nursing home residents and in those with lung disease
- Lowers associated cardiovascular risks

Vaccination recommendations

- All adults aged ≥ 50
 - Adults who are 19 to 49 years old with heart disease, congestive heart failure and cardiomyopathies, among other chronic conditions
- Conjugate vaccine (PCV15, PCV20 or PCV21) is recommended; these are more immunogenic and largely replace the use of PPSV23
 - PCV20 and PCV21 vaccines do not require subsequent vaccination
 - PCV15 vaccine must be followed by vaccination with PPSV23
- Can be given concurrently with influenza, COVID and RSV vaccines

Side effects usually mild

- Most common: pain, swelling, redness at the injection site for up to 10%, resolve in a day or two
- Very rare: serious adverse reactions

Contraindications

- Patients with a history of allergic reaction after any type of PCV or diphtheria toxoid-containing vaccine



SHINGLES (ZOSTER) VACCINE

Heart risks of infection

- Can increase the risk of stroke and heart attack
 - Having shingles, caused by a reactivation of the varicella-zoster virus, is associated with a nearly 30% jump in the risk of a future heart attack or stroke

How vaccination protects the heart

- Over 90% effective at preventing shingles among those aged ≥ 50
- Lowers the risk of associated cardiovascular complications
- New data show a 23% lower risk of cardiovascular events (heart failure, coronary artery disease, stroke) following vaccination, and this protective effect lasts for up to eight years

Vaccination recommendations

- Two doses of recombinant zoster vaccine spaced 2 to 6 months apart for:
 - Adults aged ≥ 50
 - Adults aged ≥ 19 years who are or will be immunodeficient or immunosuppressed
- Remind patients it takes about two weeks after the second dose to build up full protection against shingles

Side effects usually mild

- Common: pain, redness, and swelling at the injection site, as well as muscle pain, tiredness, headache, shivering, fever, upset stomach
- Rare: allergic reaction, fast heartbeat

Contraindications

- History of severe allergic reactions to vaccine components, those with weakened immune systems

COMMUNICATION APPROACHES TO HELP MAKE A STRONG VACCINE RECOMMENDATION

The Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) outline suggested approaches to help health care professionals have conversations with patients about vaccinations.



SHARE (developed by the CDC for influenza vaccination)

Share the reasons why a vaccine is right for the patient

Highlight positive experiences with the vaccine (personal or in your practice), as appropriate, to reinforce the benefits and strengthen confidence in vaccination

Address patient questions and any concerns about vaccines, including side effects, safety and effectiveness in plain and understandable language

Remind patients that vaccines help protect them and their loved ones from serious illness and complications that can result in prolonged illness, hospitalization and even death in some people

Explain the potential costs of getting sick (for example, missing work or family obligations, financial costs, spreading it to older family members and others at increased risk of serious illness or friends)

How to Have Conversations About Vaccination (WHO suggested framework)

Listen with empathy and let patients know it is OK to have questions or want more information.

Ask open-ended questions, especially if someone expresses doubts. For example, "What have you heard about the [COVID, flu, RSV, etc.] vaccines?" or "Can you tell me more about why you feel that way?" or "What are you worried about?" to better understand their concerns.

Share trusted information. When you don't know the answer or if you're unsure about how to address their concern, offer to help look for information. Facts about risk reduction can be useful.

Explore reasons for wanting to get vaccinated.

Share your own reasons or motivations for wanting to get vaccinated and what helped you overcome concerns. Explain the benefits of vaccination, whether it's being able to visit family and friends again, returning to work, getting children back to school, spending time with classmates or other interactions and activities that have been strained because of [COVID-19, illness].

REFERENCES

1. Heidenreich PA, Bhatt A, Nazir NT, Schaffner W, Vardeny O. 2025 concise clinical guidance: an ACC expert consensus statement on adult immunizations as part of cardiovascular care: a report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol*. 2025. 10.1016/j.jacc.2025.07.003
2. American College of Cardiology. How to talk with our heart patients about adult vaccinations. CardioSmart. Published May 15, 2025. Accessed August 6, 2025. <https://www.cardiosmart.org/assets/discussion-guide/how-to-talk-with-our-heart-patients-about-adult-vaccinations>
3. Hilser JR, Spencer NJ, Afshari K, et al. COVID-19 is a coronary artery disease risk equivalent and exhibits a genetic interaction with ABO blood type. *Arterioscler Thromb Vasc Biol*. 2024;44(11). doi:10.1161/ATVBAHA.124.321001
4. Lu PJ, Hung MC, Srivastav A, et al. Surveillance of vaccination coverage among adult populations - United States, 2018. *MMWR Surveill Summ*. 2021;70:1-26.
5. National Foundation for Infectious Diseases (NFID). A call to action: strategies to improve adult immunization rates in the United States. Immunization Summit Partners; 2024. <https://www.izsummitpartners.org/call-to-action-adult-immunizations>
6. Kwong JC, Schwartz KL, Campitelli MA, et al. Acute myocardial infarction after laboratory-confirmed influenza infection. *N Engl J Med*. 2018;378(4):345-353. doi:10.1056/NEJMoa1702090
7. American Heart Association. Vaccines and CVD fact sheet. March 13, 2025. Accessed August 6, 2025. <https://www.heart.org/en/health-topics/vaccines/fact-sheet>
8. Byambasuren O, Stehlik P, Clark J, et al. Effect of COVID-19 vaccination on long COVID: systematic review. *BMJ Med*. 2023;2(1):e000385. doi:10.1136/bmjmed-2022-000385
9. Curhan SG, Kawai K, Yawn B, et al. Herpes zoster and long-term risk of cardiovascular disease. *J Am Heart Assoc*. 2022;11(23):e027451. doi:10.1161/JAHA.122.027451
10. Lal H, Cunningham AL, Godeaux O, et al. Efficacy of an adjuvanted herpes zoster subunit vaccine in older adults. *N Engl J Med*. 2015;372(22):2087-2096. doi:10.1056/NEJMoa1501184
11. Lee S, Lee K, Oh J, et al. Live zoster vaccination and cardiovascular outcomes: a nationwide, South Korean study. *Eur Heart J*. 2025;46(20):ehaf230. doi:10.1093/eurheartj/ehaf230

ADDITIONAL RESOURCES TO USE IN PRACTICE



How To Talk With Our Heart Patients About Adult Vaccinations

This discussion guide is intended to help encourage routine assessment and conversation about the importance of adult vaccines and includes best practices and tips.



Increasing Vaccination Rates For Patients With Cardiovascular Disease 9 Quick Tips for Your Practice

Cardiologists, cardiology nurses and PAs can serve as an essential advocate and referral source for timely vaccination. This 2-page handout outlines steps to help increase vaccination for adults with cardiovascular disease.



Protect Your Heart With the Vaccines You Need

This poster helps reinforce how staying up to date with vaccines is an important part of heart-healthy interventions.

Scan the QR code or visit
CardioSmart.org/ToolkitAdultVax
to find these tools and more.



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