How Safe and Effective Are Current COVID-19 Vaccines: When and How Often Should Vascular Surgeons Get Them if They Are <50, >50, >65 Or >75



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Conflicts of Interest

■none

Vaccine Development

- COVID-19 vaccines reached consumers in record time.
- Process typically takes 10 to 15 years.
- Before COVID-19, the fastest-ever vaccine—for mumps—took four years to develop in the 1960s.
- US govt has invested >32 billion in mRNA vaccines, ONLY \$337 million pre-pandemic.

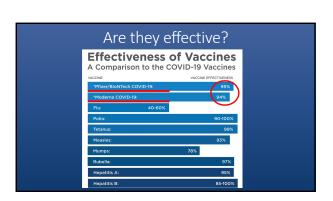
Is COVID Still a Problem?

- •COVID remains a source of serious illness in the U.S.
- ■2023: >916,300 people were hospitalized in the U.S. due to COVID, with >75,500 deaths.
- ■By comparison, MI yields 800,000 hospitalizations

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What vaccines are currently available?

- \blacksquare Two major subtypes available in the U.S.:
- mRNA Vaccines (Pfizer and Moderna) remain the most widely used and effective, particularly with continuously updated versions targeting new variants.
- Protein Subunit Vaccines (Novavax) are an alternative for those who prefer non-mRNA vaccines.
- As of Oct. 12, only around 12 percent of adults reported receiving an updated vaccine, according to data from the C.D.C.





Are they safe? Typical side effects

- mRNA vaccines (Pfizer-BioNTech and Moderna):
- Pain, soreness, redness at injection site
- Fatigue, Headache
- Muscle pain, Joint pain
- Chills, Fever
- Nausea/vomiting (Moderna)
- In infants and toddlers, common symptoms include irritability or crying, decreased appetite, and sleepiness.

Do the vaccines cause myocarditis? Extensively studied, and a source of consistent misinformation throughout the pandemic. The risk of myocarditis and pericarditis after a Covid-19 vaccine is very low. up to 1 in 10,000 people for Pfizer's Comirnaty vaccine up to 1 in 10,000 people for Moderna's Spikevax vaccine For comparison, the risk for myo- or pericarditis with COVID-19 infection is on the order of 50-100x HIGHER.



What are the expanded recommendations?

- Summary of recent changes as of 10/31/2024:
- People >65 years and older recommended to receive TWO doses of any 2024–2025 COVID-19 vaccine (i.e., Moderna, Novavax, or Pfizer-BioNTech).
- Repeat doses should separated by six months (minimum interval two months) regardless of vaccination history.

Conclusions

- Vaccine development has been extremely effective, efficient.
- ■mRNA vaccines are quite safe.
- Vascular surgeons considered increased risk by CDC.
- Vascular surgeons of any age should receive the updated mRNA vaccine due to our inherent elevated exposure risk and threat of new variants.
- Surgeons >65 years should receive *a second dose* about six months after the initial vaccine per updated CDC recommendations.

