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Guest Editors: Savanna Metzler, Abby Obakpolor, Madison Sanders, Pharm.D. Candidates, 2023, Bernie R. Olin, Pharm.D.

Key Inforbits

- National Immunization Awareness Month
- 2022 Adult Pneumococcal Vaccine Updates
- COVID-19 Vaccine Overview
- Current COVID-19 Vaccine Recommendations

National Immunization Awareness Month (NIAM)

August marks the beginning of National Immunization Awareness Month (NIAM) and provides the opportunity to remind the community the importance of vaccinations.[1,2] Through the advancement of immunization, vaccines have been able to prevent numerous diseases including varicella, hepatitis A and B, diphtheria, human papillomavirus (HPV), measles, polio, mumps, rubella, pneumococcal, tetanus, rotavirus, and meningitis.[1,3] Immunizations do not start at infancy and end at the age of 18. Routine vaccination should occur throughout a person's lifetime as some childhood vaccine protections wane over time, vaccine indications occur at different ages, and certain health conditions may qualify an individual for additional vaccinations.[4] As the development of vaccines continue to evolve, updates and recommendation changes are made as well. This issue focuses on recent recommendation updates for the pneumococcal and COVID-19 vaccines, specifically those who are immunocompromised as they remain a vulnerable population.

National Immunization Awareness Month

https://www.cdc.gov/vaccines/events/niam/graphics.html

2022 Adult Pneumococcal Vaccine Updates[5,6]

In 2021, a 15-valent pneumococcal conjugate vaccine (PCV15) and a 20-valent pneumococcal conjugate vaccine (PCV20) were FDA approved for use in adults ≥18 years old. Both vaccines contain all serotypes from the 13-valent pneumococcal conjugate vaccine (PCV13), as well as the additional serotypes 22F and 33F in the PCV15 and serotypes 8, 10A, 11A, 12F, 15B, 22F, and 33F for the PCV20. These two new pneumococcal vaccines were tested against PCV13 to examine immunogenicity via antibody response and safety. Both PCV15 and PCV20 met the criteria for non-inferiority for all serotypes shared with the PCV13 vaccine, as well as additional antibody response for the non-shared serotypes. The most frequently reported adverse events from both vaccines were injection site pain, fatigue, muscle pain/myalgia, joint pain (PCV20), and headache (PCV 20). The rates of serious adverse events within 6 months of vaccination were similar between both vaccines against PCV13 at 2.5% versus 2.4% for PCV15 trials and 1.5% versus 1.8% for PCV20 trials. However, no serious adverse reactions or deaths were considered to be related to the study vaccines. In late 2021, the Advisory Committee on Immunization Practices (ACIP) updated their recommendations for pneumococcal vaccination, replacing PCV13 with PCV15 or PCV20. Details regarding these changes are reflected in the ACIP's 2022 Immunization Schedules. Currently, eligible adults may receive either PCV15 in series with PPSV23, or PCV20 alone, though availability may be a factor.

Population	ACIP Recommendation
Adults ≥65 years without previous PCV or whose previous vaccination history is unknown	1 dose PCV (either PCV20 or PCV15); when PCV15 is used, it should be followed by a dose of PPSV23 ≥1 year later*
Adults 19-64 years with certain underlying medical conditions or other risk factors† without previous PCV or whose previous vaccination history is unknown	1 dose PCV (either PCV20 or PCV15); when PCV15 is used, it should be followed by a dose of PPSV23 ≥1 year later*
Adults with previous PPSV23 only	1 dose PCV (either PCV20 or PCV15) ≥1 year after last PPSV23 dose; use of PCV15 is not required to be followed by another dose of PPSV23
Adults with previous PCV13	Health benefits have not been evaluated; should complete previously recommended PPSV23 (1 dose PCV20 may be used if PPSV23 is not available)

*Minimum interval of 8 weeks can be considered for adults with an immunocompromising condition, cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups

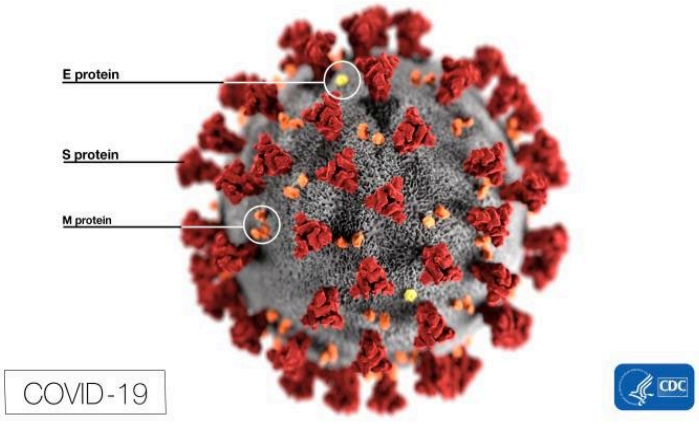
† Include alcoholism, chronic heart/liver/lung disease, chronic renal failure, cigarette smoking, cochlear implant, congenital or acquired asplenia, CSF leak, diabetes mellitus, generalized malignancy, HIV, Hodgkin disease, immunodeficiency, iatrogenic immunosuppression, leukemia, lymphoma, multiple myeloma, nephrotic syndrome, solid organ transplants, or sickle cell disease or other hemoglobinopathies

COVID-19 Vaccine Overview

There are currently four COVID-19 vaccines available: Pfizer-BioNTech (COMIRNATY), Moderna (Spikevax), Johnson & Johnson's Janssen, and Novavax. The Pfizer-BioNTech and Moderna vaccines are both messenger RNA (mRNA) vaccines, while the Johnson & Johnson's Janssen is a viral vector vaccine, and the Novavax is a protein subunit vaccine. All four vaccines have been granted Emergency Use Authorizations (Janssen and Novavax) or full FDA approval (Pfizer-BioNTech and Moderna) and are currently approved for use in adults ≥18 years old, while only Pfizer-BioNTech and Moderna vaccines are currently approved for use in pediatric and adolescent patients ≥6 months old. The utilization of Emergency Use Authorizations has allowed the FDA to provide sufficient medical countermeasures during the COVID-19 pandemic.[7-12]

COVID-19 Vaccine Myths vs Facts

Myth	Fact
COVID-19 vaccines create variants of COVID-19.	Variants of a virus is due to mutations and the more contagious the virus is, the greater opportunity it has to mutate.[7]
The mRNA vaccines are made with live viruses in order to produce an immune response.	The mRNA vaccines do not utilize live viruses. They create an immune response in the body by producing a spike protein on the cells.[7]
COVID-19 vaccines can alter DNA.	The genetic material of mRNA vaccines does not enter the nucleus of the cells; therefore, they do not interact with DNA. While the genetic material of viral vector vaccines does enter the nucleus, they are incapable of integrating genetic material into the DNA of the cell.[7]



https://www.cdc.gov/media/subtopic/images.htm

Current Recommendations for COVID-19 Vaccination in Immunocompetent Adults[8-13]

Brand	Vaccine Type	Primary Series	Booster	Fully Vaccinated
Pfizer-BioNTech *(COMIRNATY)*	Messenger RNA (mRNA)	2 doses; 3–8 weeks apart	1st Booster: ▫ Pfizer-BioNTech or Moderna; 5 months after final dose in primary series 2nd Booster: ▫ For adults ≥50 years only; Pfizer-BioNTech or Moderna; 4 months after 1st booster	2 weeks after final dose in primary series
Moderna *(Spikevax)*	Messenger RNA (mRNA)	2 doses; 4–8 weeks apart	1st Booster: ▫ Pfizer-BioNTech or Moderna; 5 months after final dose in primary series 2nd Booster: ▫ For adults ≥50 years only; Pfizer-BioNTech or Moderna; 4 months after 1st booster	2 weeks after final dose in primary series
Johnson & Johnson's Janssen	Viral vector	1 dose	1st Booster: ▫ Pfizer-BioNTech or Moderna; 2 months after primary series 2nd Booster: ▫ For adults ≥50 years only; Pfizer-BioNTech or Moderna; 4 months after 1st booster	2 weeks after vaccination
Novavax	Protein subunit	2 doses; 3-8 weeks apart	None currently recommended	2 weeks after final dose in primary series

The CDC also has an online tool that patient can use to determine if they are currently eligible for a COVID-19 vaccine booster. Patients can search for CDC "Find Out When You Can Get Your Booster" or visit www.cdc.gov/coronavirus/2019-ncov/vaccines/booster-shot.html. This tool provides an easy resource for patients to check on their own if they are eligible based on age, immune system status (immunocompetent versus immunocompromised), and previous COVID-19 vaccination history.[14]

Current Recommendations for COVID-19 Vaccination in Immunocompetent Children and Adolescents[8-10]

Brand	Primary Series	Booster	Fully Vaccinated
Pfizer-BioNTech *(COMIRNATY)*	12-17 years: 2 doses; 3–8 weeks apart 5-11 years: 2 doses; 3–8 weeks apart 6 months - 4 years: 3 doses; 2nd dose 3-8 week later and 3rd at least 8 weeks after 2nd dose	12-17 years: 1 booster Pfizer-BioNTech 5 months after final dose in primary series 5-11 years: 1 booster Pfizer-BioNTech 5 months after final dose in primary series 6 months - 4 years: None currently recommended	2 weeks after final dose in primary series
Moderna *(Spikevax)*	12-17 years: 2 doses; 4–8 weeks apart 6-11 years: 2 doses; 4–8 weeks apart 6 months - 5 years: 2 doses; 4–8 weeks apart	12-17 years: None currently recommended 6-11 years: None currently recommended 6 months - 5 years: None currently recommended	2 weeks after final dose in primary series

Current Recommendations for COVID-19 Vaccination in Moderately to Severely Immunocompromised Individuals[15,16]

Brand	Primary Series	Booster
Pfizer-BioNTech *(COMIRNATY)*	≥12 years: 3 doses; 2nd dose 3 weeks later and 3rd dose at least 4 weeks after 2nd dose 5-11 years: 3 doses; 2nd dose 3 weeks later and 3rd dose at least 8 weeks after 2nd dose 6 months – 4 years: 3 doses; 2nd dose 3 weeks later and 3rd dose at least 8 weeks after 2nd dose	≥12 years: ▫ 4th dose (booster dose) 3 months after 3rd dose ▫ 5th dose (booster dose) 4 months after 4th dose 5-11 years: ▫ 4th dose (booster dose) 3 months after 3rd dose 6 months – 4 years: None currently recommended
Moderna *(Spikevax)*	≥18 years: 3 doses; 2nd dose 4 weeks later and 3rd dose at least 4 weeks after 2nd dose 12-17 years: 3 doses; 2nd dose 4 weeks later and 3rd dose at least 4 weeks after 2nd dose 6 months – 11 years: 3 doses; 2nd dose 4 weeks later and 3rd dose at least 4 weeks after 2nd dose	≥18 years: ▫ 4th dose (booster dose) 3 months after 3rd dose ▫ 5th dose (booster dose) 4 months after 4th dose 12-17 years: None currently recommended 6 months – 11 years: None currently recommended
Johnson & Johnson's Janssen	≥18 years: 2 doses; 2nd dose should be Pfizer-BioNTech or Moderna at least 4 weeks after initial Johnson & Johnson's Janssen vaccine	≥18 years: ▫ 3rd dose (booster dose) 2 months after 2nd dose; Pfizer-BioNTech or Moderna preferred ▫ 4th dose (booster dose) 4 months after 3rd dose; Pfizer-BioNTech or Moderna required
Novavax	≥18 years: 2 doses; 3 weeks apart	≥18 years: None currently recommended. Trial underway for children 6 months through 11 years

Summary

National Immunization Awareness Month is a great time to be reminded and informed of recent updates and the importance of vaccines. With the recent ACIP update, eligible adults may receive either PCV15 in series with PPSV23, or PCV20 alone. The US currently has 4 Covid-19 vaccines available with either Emergency Use Authorizations or full FDA approval. There are also Covid-19 vaccination options available for children 6 months old and above, and immunocompromised individuals. Routine vaccinations are essential for the continued promotion of personal and public health.

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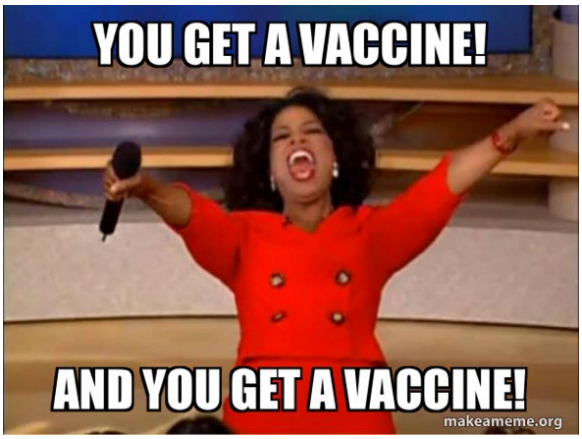
The last "dose" …

"The best preparation for tomorrow is doing your best today."
– H. Jackson Brown Jr. [American author, 1940-2021]



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