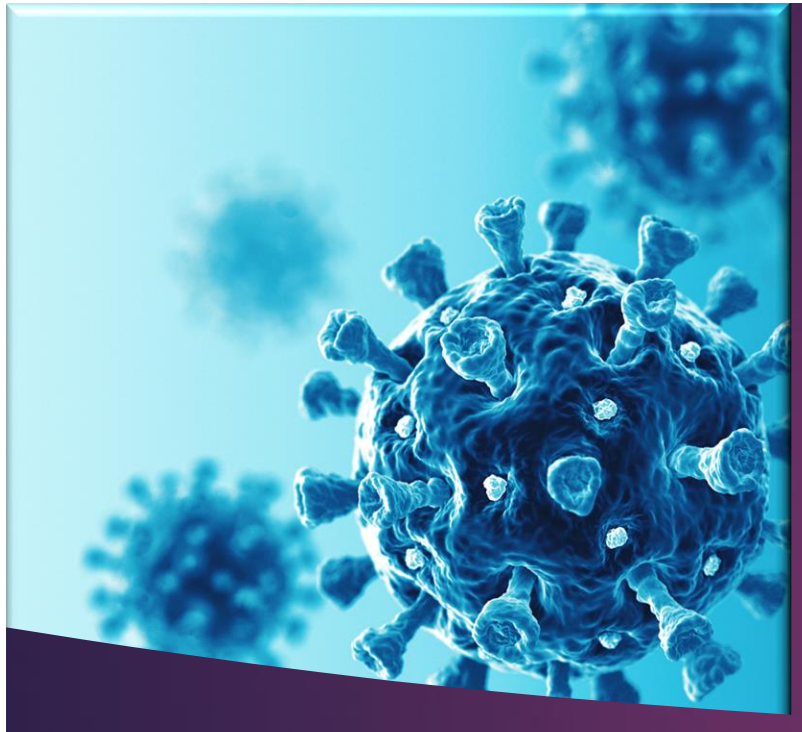

Actualizaciones en la Inmunización 2023

Convención Anual del Colegio De Farmacéuticos De Puerto Rico

- BLANCA I. ORTIZ B.S.PH., PHARM D., GCG
- FRANCES M. COLÓN PRATTS, PHARM D., CDCES

Divulgación de Conflicto de Interés

"Dr. Blanca I. Ortiz and Dr. Frances Colón Pratts have no relevant financial relationship (s) with ineligible companies to disclose"

Objetivos

- Discutir los itinerarios de vacunación recomendados por los Centros para el Control y la Prevención de Enfermedades (CDC) en 2023.
- Enumerar los principales cambios en los itinerarios de vacunación de 2023 para adultos y niños.
- Revisar las nuevas vacunas aprobadas e información relevante sobre las vacunas actuales y emergentes.
- Valorar el papel del personal farmacéutico en los esfuerzos de inmunización.

Agenda

- Recomendaciones de los CDC y el el Comité Asesor sobre Prácticas de Inmunización (ACIP) 2023 para niños y adultos
- Actualizaciones: COVID-19
- Actualizaciones: virus sincitial respiratorio , sarampión, paperas y rubéola, hepatitis B, neumonía, influenza,
- Rol del personal farmacéutico en el mejoramiento de las tasas de vacunación

Itinerarios de Vacunación 2023

Itinerarios de Vacunación

- Se realizan revisiones anuales para incorporar nuevas vacunas, recomendaciones para vacunas y mejorar la legibilidad (comprensión)
- Dos Itinerarios
  - Niños y Adolescentes
  - Adultos de 19 años o más
- En febrero de 2023, los CDC publicaron sus itinerarios de vacunación para 2023

Comité Asesor sobre Prácticas de Inmunización (ACIP)

- Establece recomendaciones sobre cómo usar las vacunas para controlar enfermedades
  - Recomendaciones incluyen: edad para vacunar, número de dosis, intervalos entre dosis, precauciones y contraindicaciones
- Basadas en estas recomendaciones los CDC realizan cambios en los itinerarios anualmente.

19 de abril de 2023 → 21-22 de junio de 2023 → 25-26 de octubre de 2023

Información General: Itinerario de Vacunación de Niños y Adolescentes

- Las interrupciones en los servicios de atención médica durante la pandemia de COVID-19 resultaron en una disminución en la administración de vacunas
  - Aumentando el riesgo de contraer enfermedades prevenibles con vacunas.
- Cambios generales en el Itinerario
  - Se agregaron:
    - Las vacunas de COVID-19
    - Priorix® – nueva vacuna de sarampión, paperas y rubéola
    - Vacuna antineumocócica 15-valente conjugada (PCV15)
  - Actualización en la sección de notas
    - ***Vacuna contra el dengue se recomienda para niños seropositivos que viven en áreas endémicas, NO para niños que viajan o visitan áreas endémicas de dengue***

Itinerario de Vacunación de Niños y Adolescentes por Edad

Recomendaciones para menores de 18 años, Estados Unidos, 2023

https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

COVID-19 vaccination recommendations have changed. Find the latest recommendations at www.cdc.gov/covidschedule

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger

UNITED STATES 2023

Vaccines in the Child and Adolescent Immunization Schedule*

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19	1vCOV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine
		SPIKEVAX®/Moderna COVID-19 Vaccine
	2vCOV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent
		Moderna COVID-19 Vaccine, Bivalent
	1vCOV-aPS	Novavax COVID-19 Vaccine
Dengue vaccine	DEN4CYD	Dengvaxia®
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel® Infanrix®
Diphtheria, tetanus vaccine	DT	No trade name
Haemophilus influenzae type b vaccine	Hib (PRP-T)	ActHIB® Hiberix®
	Hib (PRP-OMP)	PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis B vaccine	HepB	Engerix-B® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	Multiple
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II® Priorix®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra®
	MenACWY-CRM	Menveo®
	MenACWY-TT	MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C	Bexsero®
	MenB-FHbp	Trumenba®
Pneumococcal conjugate vaccine	PCV13 PCV15	Prevnar 13® Vaxneuvance™
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23®
Poliovirus vaccine (inactivated)	IPV	IPOL®
Rotavirus vaccine	RV1 RV5	Rotarix® RotaTeq®
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Tetanus and diphtheria vaccine	Td	Tenivac® Tdvax™
Varicella vaccine	VAR	Varivax®
Combination vaccines *(use combination vaccines instead of separate injections when appropriate)*		
DTaP, hepatitis B, and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediarix®
DTaP, inactivated poliovirus, and *Haemophilus influenzae* type b vaccine	DTaP-IPV/Hib	Pentacel®
DTaP and inactivated poliovirus vaccine	DTaP-IPV	Kinrix® Quadracel®
DTaP, inactivated poliovirus, *Haemophilus influenzae* type b, and hepatitis B vaccine	DTaP-IPV-Hib-HepB	Vaxelis®
Measles, mumps, rubella, and varicella vaccine	MMRV	ProQuad®

*Administer recommended vaccines if immunization history is incomplete or unknown. Do not restart or add doses to vaccine series for extended intervals between doses. When a vaccine is not administered at the recommended age, administer at a subsequent visit. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

How to use the child and adolescent immunization schedule

1. Determine recommended vaccine by age **(Table 1)**
2. Determine recommended interval for catch-up vaccination **(Table 2)**
3. Assess need for additional recommended vaccines by medical condition or other indication **(Table 3)**
4. Review vaccine types, frequencies, intervals, and considerations for special situations **(Notes)**
5. Review contraindications and precautions for vaccine types **(Appendix)**

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American Academy of Pediatrics (www.aap.org), American Academy of Family Physicians (www.aafp.org), American College of Obstetricians and Gynecologists (www.acog.org), American College of Nurse-Midwives (www.midwife.org), American Academy of Physician Associates (www.aapa.org), and National Association of Pediatric Nurse Practitioners (www.napnap.org).

Report

- Suspected cases of reportable vaccine-preventable diseases or outbreaks to your state or local health department
- Clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov or 800-822-7967

Questions or comments

Contact www.cdc.gov/cdc-info or 800-CDC-INFO (800-232-4636), in English or Spanish, 8 a.m.–8 p.m. ET, Monday through Friday, excluding holidays

Download the CDC Vaccine Schedules app for providers at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html

Helpful information

- Complete Advisory Committee on Immunization Practices (ACIP) recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- *General Best Practice Guidelines for Immunization* (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): www.cdc.gov/vaccines/pubs/surv-manual
- ACIP Shared Clinical Decision-Making Recommendations www.cdc.gov/vaccines/acip/acip-scdm-faqs.html

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U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CS310020-C

Table 1 COVID-19 vaccination recommendations have changed. Find the latest recommendations at www.cdc.gov/covidschedule

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2023

These recommendations must be read with the notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars. To determine minimum intervals between doses, see the catch-up schedule (Table 2).

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2–3 yrs	4–6 yrs	7–10 yrs	11–12 yrs	13–15 yrs	16 yrs	17–18 yrs
Hepatitis B (HepB)	1st dose	←2nd dose→			←3rd dose→												
Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)			1st dose	2nd dose	See Notes												
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1st dose	2nd dose	3rd dose			←4th dose→				5th dose					
Haemophilus influenzae type b (Hib)			1st dose	2nd dose	See Notes		←3rd or 4th dose, See Notes→										
Pneumococcal conjugate (PCV13, PCV15)			1st dose	2nd dose	3rd dose		←4th dose→										
Inactivated poliovirus (IPV <18 yrs)			1st dose	2nd dose	←3rd dose→							4th dose					See Notes
COVID-19 (1vCOV-mRNA, 2vCOV-mRNA, 1vCOV-aPS)					2- or 3- dose primary series and booster (See Notes)												
Influenza (IIV4)					Annual vaccination 1 or 2 doses									Annual vaccination 1 dose only			
or													or				
Influenza (LAIV4)											Annual vaccination 1 or 2 doses			Annual vaccination 1 dose only			
Measles, mumps, rubella (MMR)					See Notes		←1st dose→					2nd dose					
Varicella (VAR)							←1st dose→					2nd dose					
Hepatitis A (HepA)					See Notes		2-dose series, See Notes										
Tetanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)														1 dose			
Human papillomavirus (HPV)														See Notes			
Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM ≥2 mos, MenACWY-TT ≥2years)			See Notes											1st dose		2nd dose	
Meningococcal B (MenB-4C, MenB-FHbp)														See Notes			
Pneumococcal polysaccharide (PPSV23)											See Notes						
Dengue (DEN4CYD; 9-16 yrs)														Seropositive in endemic dengue areas (See Notes)			

Range of recommended ages for all children | Range of recommended ages for catch-up vaccination | Range of recommended ages for certain high-risk groups | Recommended vaccination can begin in this age group | Recommended vaccination based on shared clinical decision-making | No recommendation/ not applicable

https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Table 2 Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More than 1 Month Behind, United States, 2023

The table below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. **Always use this table in conjunction with Table 1 and the Notes that follow.**

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Children age 4 months through 6 years					
Hepatitis B	Birth	**4 weeks**	**8 weeks *and* at least 16 weeks after first dose** minimum age for the final dose is 24 weeks		
Rotavirus	6 weeks Maximum age for first dose is 14 weeks, 6 days.	**4 weeks**	**4 weeks** maximum age for final dose is 8 months, 0 days		
Diphtheria, tetanus, and acellular pertussis	6 weeks	**4 weeks**	**4 weeks**	**6 months**	**6 months**
Haemophilus influenzae type b	6 weeks	**No further doses needed** if first dose was administered at age 15 months or older. **4 weeks** if first dose was administered before the 1st birthday. **8 weeks (as final dose)** if first dose was administered at age 12 through 14 months.	**No further doses needed** if previous dose was administered at age 15 months or older **4 weeks** if current age is younger than 12 months ***and*** first dose was administered at younger than age 7 months ***and*** at least 1 previous dose was PRP-T (ActHib®, Pentacel®, Hiberix®), Vaxelis® or unknown **8 weeks *and* age 12 through 59 months (as final dose)** if current age is younger than 12 months ***and*** first dose was administered at age 7 through 11 months; OR if current age is 12 through 59 months ***and*** first dose was administered before the 1st birthday ***and*** second dose was administered at younger than 15 months; OR if both doses were PedvaxHIB® and were administered before the 1st birthday	**8 weeks (as final dose)** This dose only necessary for children age 12 through 59 months who received 3 doses before the 1st birthday.	
Pneumococcal conjugate	6 weeks	**No further doses needed** for healthy children if first dose was administered at age 24 months or older **4 weeks** if first dose was administered before the 1st birthday **8 weeks (as final dose for healthy children)** if first dose was administered at the 1st birthday or after	**No further doses needed** for healthy children if previous dose was administered at age 24 months or older **4 weeks** if current age is younger than 12 months and previous dose was administered at <7 months old **8 weeks (as final dose for healthy children)** if previous dose was administered between 7–11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was administered before age 12 months	**8 weeks (as final dose)** this dose is only necessary for children aged 12 through 59 months regardless of risk, or age 60 through 71 months with any risk, who received 3 doses before age 12 months.	
Inactivated poliovirus	6 weeks	**4 weeks**	**4 weeks** if current age is <4 years **6 months (as final dose)** if current age is 4 years or older	**6 months (minimum age 4 years for final dose)**	
Measles, mumps, rubella	12 months	**4 weeks**			
Varicella	12 months	**3 months**			
Hepatitis A	12 months	**6 months**			
Meningococcal ACWY	2 months MenACWY-CRM 9 months MenACWY-D 2 years MenACWY-TT	**8 weeks**	See Notes	See Notes	
Children and adolescents age 7 through 18 years					
Meningococcal ACWY	Not applicable (N/A)	**8 weeks**			
Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis	7 years	**4 weeks**	**4 weeks** if first dose of DTaP/DT was administered before the 1st birthday **6 months (as final dose)** if first dose of DTaP/DT or Tdap/Td was administered at or after the 1st birthday	**6 months** if first dose of DTaP/DT was administered before the 1st birthday	
Human papillomavirus	9 years	**Routine dosing intervals are recommended.**			
Hepatitis A	N/A	**6 months**			
Hepatitis B	N/A	**4 weeks**	**8 weeks *and* at least 16 weeks after first dose**		
Inactivated poliovirus	N/A	**4 weeks**	**6 months** A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella	N/A	**4 weeks**			
Varicella	N/A	**3 months** if younger than age 13 years. **4 weeks** if age 13 years or older			
Dengue	9 years	**6 months**	6 months		

https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Table 3 Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2023

Always use this table in conjunction with Table 1 and the Notes that follow.

VACCINE	INDICATION									
	Pregnancy	Immunocompromised status (excluding HIV infection)	HIV infection CD4+ count[a]		Kidney failure, end-stage renal disease, or on hemodialysis	Heart disease or chronic lung disease	CSF leak or cochlear implant	Asplenia or persistent complement component deficiencies	Chronic liver disease	Diabetes
			<15% or total CD4 cell count of <200/mm³	≥15% and total CD4 cell count of ≥200/mm³						
Hepatitis B										
Rotavirus		SCID[b]								
Diphtheria, tetanus, and acellular pertussis (DTaP)										
Haemophilus influenzae type b										
Pneumococcal conjugate										
Inactivated poliovirus										
COVID-19		See Notes	See Notes							
Influenza (IIV4) or Influenza (LAIV4)						Asthma, wheezing: 2–4yrs[c]				
Measles, mumps, rubella	*									
Varicella	*									
Hepatitis A										
Tetanus, diphtheria, and acellular pertussis (Tdap)										
Human papillomavirus	*									
Meningococcal ACWY										
Meningococcal B										
Pneumococcal polysaccharide										
Dengue										

- Vaccination according to the routine schedule recommended
- Recommended for persons with an additional risk factor for which the vaccine would be indicated
- Vaccination is recommended, and additional doses may be necessary based on medical condition or vaccine. See Notes.
- Precaution–vaccine might be indicated if benefit of protection outweighs risk of adverse reaction
- Contraindicated or not recommended–vaccine should not be administered
- No recommendation/not applicable

*Vaccinate after pregnancy

a. For additional information regarding HIV laboratory parameters and use of live vaccines, see the *General Best Practice Guidelines for Immunization*, "Altered Immunocompetence," at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html and Table 4-1 (footnote J) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.
b. Severe Combined Immunodeficiency
c. LAIV4 contraindicated for children 2–4 years of age with asthma or wheezing during the preceding 12 months

https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Información General: Itinerario de Vacunación para Adultos

- Cambios generales en el Itinerario
  - Se agregaron las vacunas:
    - COVID-19
    - PreHevbrio™
    - Priorix®
  - La sección de notas:
    - Para la vacuna de influenza se actualizó para reflejar las recomendaciones para la temporada de influenza 2022-23.

Itinerario de Vacunación para Adultos por Edad

Recomendaciones para adultos de 19 años o más, Estados Unidos, 2023

https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf

COVID-19 vaccination recommendations have changed. Find the latest recommendations at www.cdc.gov/covidschedule

Recommended Adult Immunization Schedule for ages 19 years or older 2023

How to use the adult immunization schedule

1. Determine recommended vaccinations by age **(Table 1)**
2. Assess need for additional recommended vaccinations by medical condition or other indication **(Table 2)**
3. Review vaccine types, dosing frequencies and intervals, and considerations for special situations **(Notes)**
4. Review contraindications and precautions for vaccine types **(Appendix)**

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American College of Physicians (www.acponline.org), American Academy of Family Physicians (www.aafp.org), American College of Obstetricians and Gynecologists (www.acog.org), American College of Nurse-Midwives (www.midwife.org), American Academy of Physician Associates (www.aapa.org), American Pharmacists Association (www.pharmacist.com), and Society for Healthcare Epidemiology of America (www.shea-online.org).

Vaccines in the Adult Immunization Schedule*

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19 vaccine	1vCOV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine SPIKEVAX®/Moderna COVID-19 Vaccine
	2vCOV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent Moderna COVID-19 Vaccine, Bivalent
	1vCOV-aPS	Novavax COVID-19 Vaccine
Haemophilus influenzae type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix®
Hepatitis B vaccine	HepB	Engerix-B® Heplisav-B® PreHevbrio® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Influenza vaccine (recombinant)	RIV4	Flublok® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II® Priorix®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D MenACWY-CRM MenACWY-TT	Menactra® Menveo® MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero® Trumenba®
Pneumococcal conjugate vaccine	PCV15 PCV20	Vaxneuvance™ Prevnar 20™
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23®
Poliovirus vaccine	IPV	IPOL®
Tetanus and diphtheria toxoids	Td	Tenivac® Tdvax™
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Varicella vaccine	VAR	Varivax®
Zoster vaccine, recombinant	RZV	Shingrix

*Administer recommended vaccines if vaccination history is incomplete or unknown. Do not restart or add doses to vaccine series if there are extended intervals between doses. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Report

- Suspected cases of reportable vaccine-preventable diseases or outbreaks to the local or state health department
- Clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or 800-822-7967

Injury claims

All vaccines included in the adult immunization schedule except PPSV23, RZV, and COVID-19 vaccines are covered by the National Vaccine Injury Compensation Program (VICP). COVID-19 vaccines that are authorized or approved by the FDA are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see www.hrsa.gov/vaccinecompensation or www.hrsa.gov/cicp.

Questions or comments

Contact www.cdc.gov/cdc-info or 800-CDC-INFO (800-232-4636), in English or Spanish, 8 a.m.–8 p.m. ET, Monday through Friday, excluding holidays.

Download the CDC Vaccine Schedules app for providers at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html.

Helpful information

- Complete Advisory Committee on Immunization Practices (ACIP) recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- *General Best Practice Guidelines for Immunization* (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): www.cdc.gov/vaccines/pubs/surv-manual
- Travel vaccine recommendations: www.cdc.gov/travel
- Recommended Child and Adolescent Immunization Schedule, United States, 2023: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html
- ACIP Shared Clinical Decision-Making Recommendations: www.cdc.gov/vaccines/acip/acip-scdm-faqs.html

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CS310021-C

Table 1 COVID-19 vaccination recommendations have changed. Find the latest recommendations at www.cdc.gov/covidschedule

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID-19	2- or 3- dose primary series and booster (See Notes)			
Influenza inactivated (IIV4) or **Influenza recombinant** (RIV4)	1 dose annually			
or	or			
Influenza live, attenuated (LAIV4)	1 dose annually			
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			For healthcare personnel, see notes
Varicella (VAR)	2 doses (if born in 1980 or later)	2 doses		
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)	1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)			See Notes
				See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
***Haemophilus influenzae* type b** (Hib)	1 or 3 doses depending on indication			

- Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
- Recommended vaccination for adults with an additional risk factor or another indication
- Recommended vaccination based on shared clinical decision-making
- No recommendation/ Not applicable

https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2023

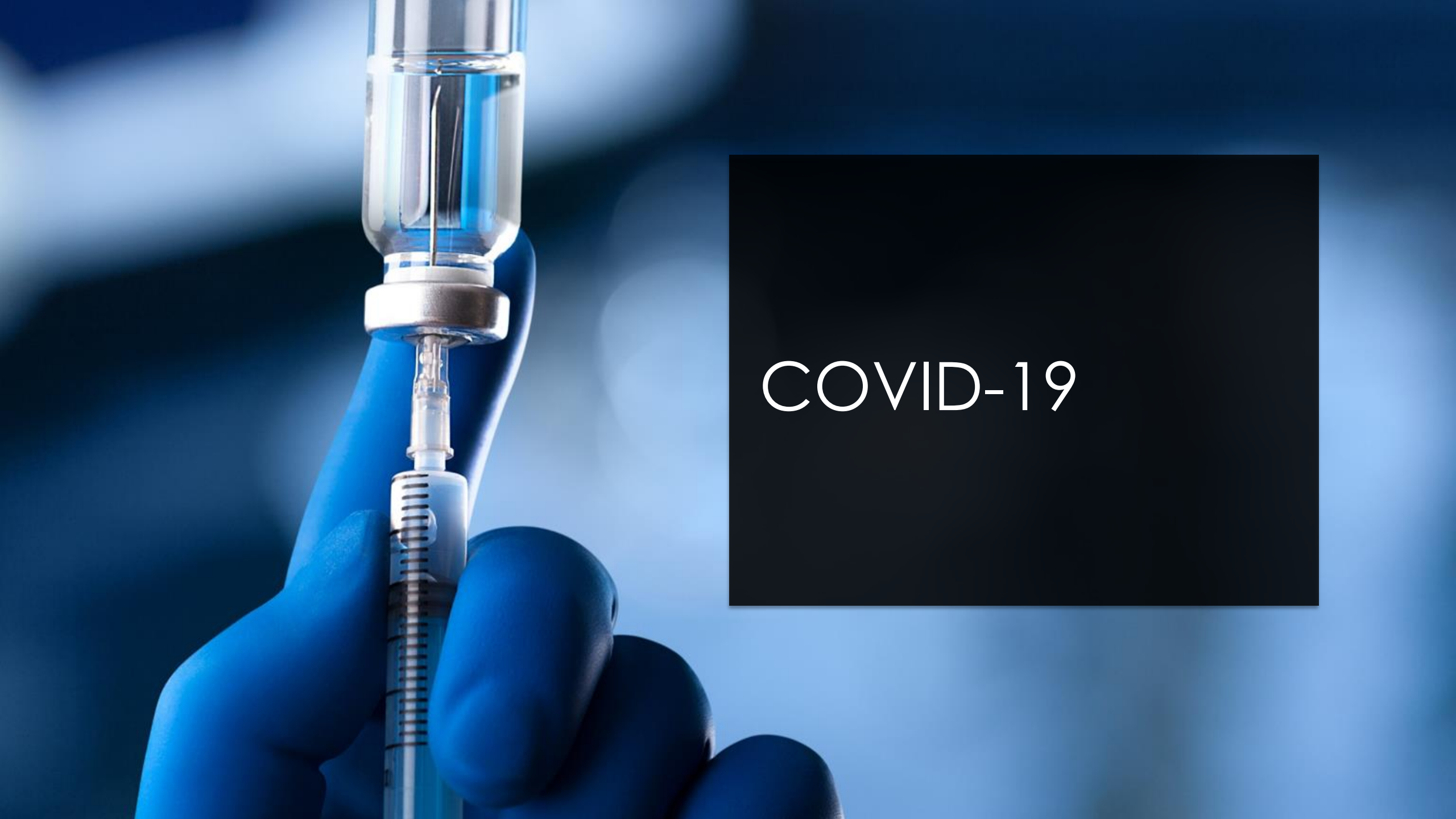
Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 percentage and count		Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism[a]	Chronic liver disease	Diabetes	Health care personnel[b]	Men who have sex with men
			<15% or <200 mm³	≥15% and ≥200 mm³							
COVID-19		See Notes									
IIV4 or RIV4	1 dose annually										
or										or	
LAIV4	Contraindicated					Precaution				1 dose annually	
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Contraindicated*	Contraindicated		1 or 2 doses depending on indication							
VAR	Contraindicated*	Contraindicated			2 doses						
RZV		2 doses at age ≥19 years			2 doses at age ≥50 years						
HPV	Not Recommended*	3 doses through age 26 years			2 or 3 doses through age 26 years depending on age at initial vaccination or condition						
Pneumococcal (PCV15, PCV20, PPSV23)		1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)									
HepA					2, 3, or 4 doses depending on vaccine						
HepB	3 doses (see notes)	2, 3, or 4 doses depending on vaccine or condition									
MenACWY	1 or 2 doses depending on indication, see notes for booster recommendations										
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib		3 doses HSCT[c] recipients only			1 dose						

- Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
- Recommended vaccination for adults with an additional risk factor or another indication
- Recommended vaccination based on shared clinical decision-making
- Precaution–vaccination might be indicated if benefit of protection outweighs risk of adverse reaction
- Contraindicated or not recommended–vaccine should not be administered.
  *Vaccinate after pregnancy.
- No recommendation/ Not applicable

a. Precaution for LAIV4 does not apply to alcoholism. **b.** See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. **c.** Hematopoietic stem cell transplant.

https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf

Recomendaciones 2023



COVID-19

Actualizaciones de la vacuna de Covid

- Añadidas al itinerario regular de vacunación
- Vacunas monovalentes de RNAm NO deben ser utilizadas
- Vacuna actualizada disponible para vacunación
- Vacuna Janssen no disponible en Estados Unidos
- Vacuna Novavax es la única monovalente disponible (solo en circunstancias especiales)

Vacuna actualizada para COVID-19

- También conocida como “bivalente”
- Ingredientes: componentes de cepa de virus original y de la variante Ómicron.
- *NO previene el COVID-19*
- Atributos: previene enfermedad grave, disminuye hospitalizaciones y muertes por COVID-19
- Indicadas para personas ≥ 6 meses de edad
- Pacientes inmunocomprometidos pueden requerir dosis adicionales

Guide to COVID-19 Vaccination Schedules

APhA

APhA COVID-19 RESOURCES: KNOW THE FACTS

This resource summarizes key information about COVID-19 vaccine products. Reference CDC's COVID-19 Vaccination Recommendations Infographics for people without immunocompromise and moderately or severely immunocompromised for detailed dispensing information.

Table 1: FDA Authorized COVID-19 Vaccines

	Moderna, bivalent Spikevax		Pfizer-BioNTech, bivalent Comirnaty			Novavax, adjuvanted
EUA	Fact Sheet		Fact Sheet			Fact Sheet
Vial cap color	Dark Blue	Dark Pink	Maroon	Orange	Gray	Royal Blue
Label color	Gray	Yellow	Maroon	Orange	Gray	No color
Dosage	0.25 mL (25 mcg) for 6 months – 4 years, 5*–11 years years 0.5 mL (50 mcg) for ≥ 12 years	0.2 mL (10 mcg) for 6 months – 5 years	0.2 mL (3 mcg) for 6 months – 4† years)	0.2 mL (10 mcg) for 5 years, 6 – 11 years	0.3 mL (30 mcg) for ≥ 12 years	Primary: 0.5 mL (5 mcg rS/50 mcg Matrix-M) for ≥ 12 years Booster‡: 0.5 mL (5 mcg rS/50 mcg Matrix-M) for ≥ 18 years
Doses per vial	10 doses if 0.25 mL (25 mcg) or 5 doses if 0.5mL (50 mcg)	2	10	10	Multi-dose: 6 doses or single dose	Two multi-dose options available: either 5 doses or 10 doses
Dilution required	No		Yes (2.2 mL 0.9% NaCl)	Yes (1.3 mL 0.9% NaCl)	No	No
Storage	Freezer until expiration date; Refrigerator for 30 days (provided expiration date is not exceeded); Room temperature for 24 hours		Ultra-cold freezer until the expiration date (expires 18 months after the manufacture date on the vial); Refrigerator up to 10 weeks; Room temperature up to 12 hours			Do not freeze; Refrigerator until expiration date; Room temperature for 6 hours
Thaw time required	Refrigerator for 2 hours followed by 15 minutes at room temperature; OR room temperature for 45 minutes. Amount of time needed to thaw varies based on the temperature and number of vials.	Refrigerator for 45 minutes followed by 15 minutes at room temperature; OR room temperature for 15 minutes. Amount of time needed to thaw varies based on the temperature and number of vials.	Refrigerator for 2 hours Or Room temperature 30 minutes. Amount of time needed to thaw varies based on the temperature and number of vials.	Refrigerator for 4 hours Or Room temperature 30 minutes. Amount of time needed to thaw varies based on the temperature and number of vials.	Refrigerator for 6 hours for multi-dose vial; refrigerator 2 hours for single dose vial; Room temperature 30 minutes. Amount of time needed to thaw varies based on the temperature and number of vials.	N/A
Beyond-use date	12 hours after first puncture	8 hours after first puncture	12 hours after first puncture			6 hours after first puncture

* *Children who transition from age 5 years to 6 years during the Moderna vaccination series should receive 2 doses of Moderna COVID-19 vaccine (0.25 mL [25 mcg]; dark blue cap and label with a gray border).*

† *FDA EUA requires that children who transition from age 4 years to 5 years during the Pfizer-BioNTech vaccination series receive the 0.2 mL (3 mcg) dosage (maroon cap and label with a maroon border) for all doses.*

‡ *Novavax authorized as a first booster dose for those age 18 years and older whom an mRNA bivalent COVID-19 vaccine is not accessible or clinically appropriate or those who elect to receive Novavax because they would not otherwise receive a booster dose of a COVID-19 vaccine.*

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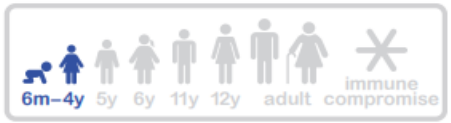
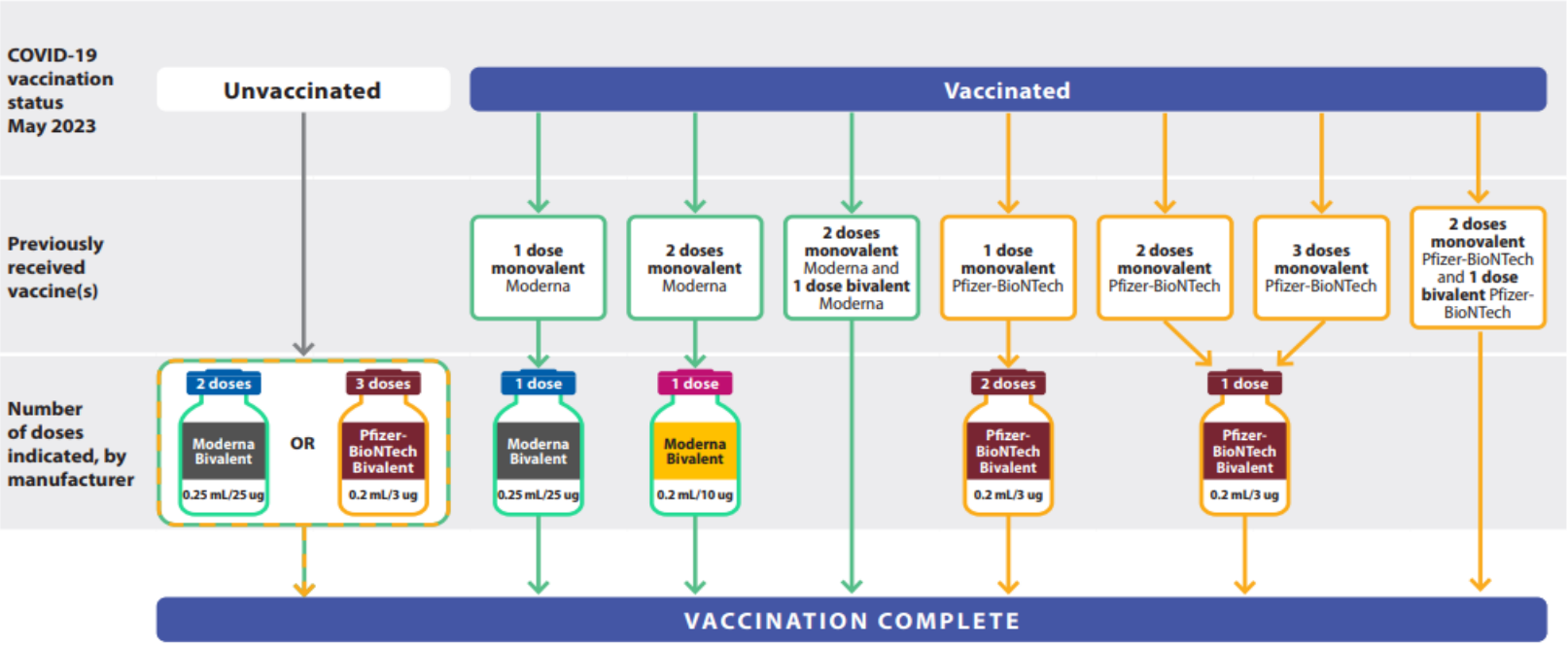
https://s3.amazonaws.com/filehost.pharmacist.com/CDN/PDFS/APhA%20Guide%20to%20Vaccination%20Schedules%20Resource%20Final.pdf?AWSAccessKeyId=AKIAYICBVAN2V7IWVG4T&Expires=1691166974&Signature=b1%2FqXhJ8qeRwsn9jVGSWsyXfv7Y%3D

Recommended COVID-19 vaccines for **people without immunocompromise, aged 6 months–4 years**, mRNA vaccines, *with vial icons and dosages*, May 2023*†





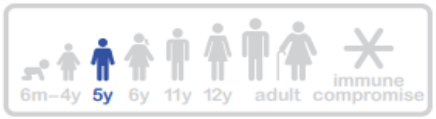
*For administration intervals, see Table 1 in the Interim Clinical Considerations for Use of COVID-19 Vaccines.
†Children who receive the Pfizer-BioNTech COVID-19 Vaccine and transition from age 4 years to 5 years during the 3-dose vaccination series must complete the series they start (i.e., receive the 0.2 mL/3 ug dosage supplied in vials with a maroon cap and label with a maroon border for all 3 doses).

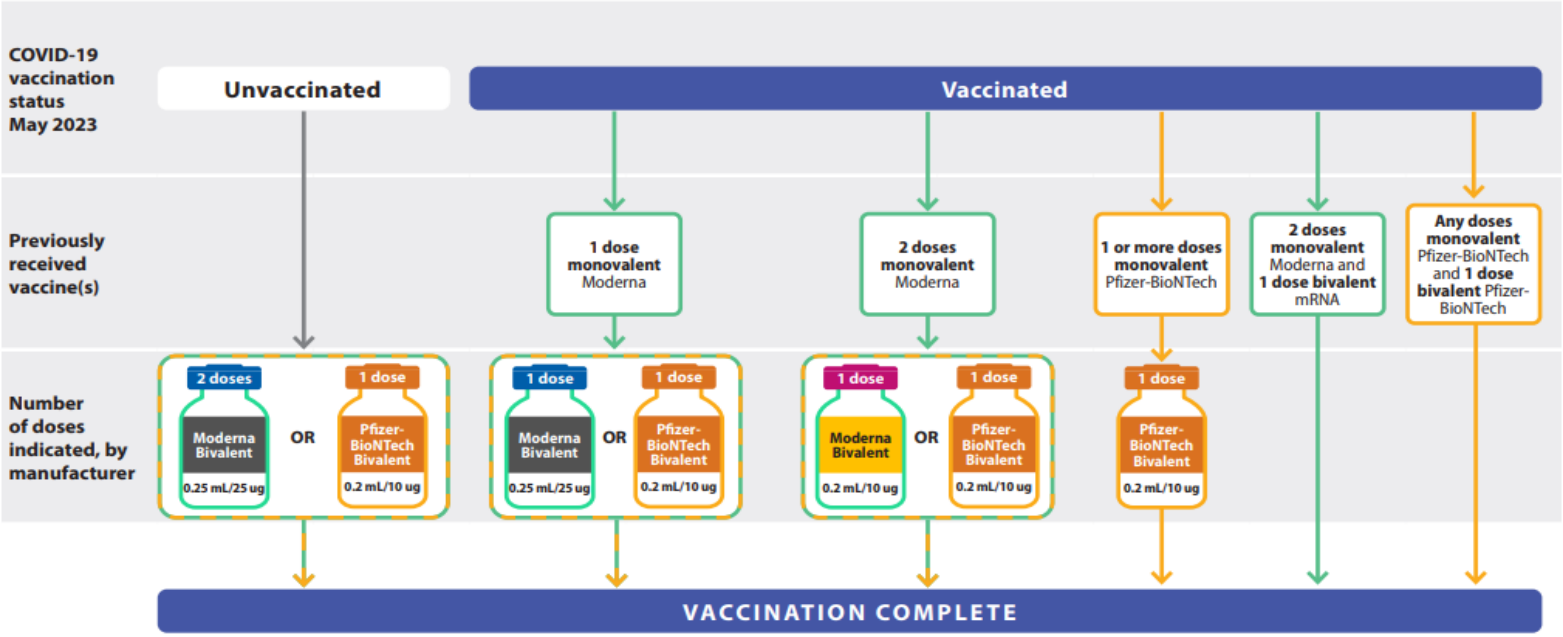
Key

Moderna | Pfizer-BioNTech | Moderna **OR** Pfizer-BioNTech

https://www.cdc.gov/vaccines/covid-19/downloads/COVID19-vaccination-recommendations-most-people.pdf

Recommended COVID-19 vaccines for **people without immunocompromise, aged 5 years,** mRNA vaccines, *with vial icons and dosages*, May 2023*†





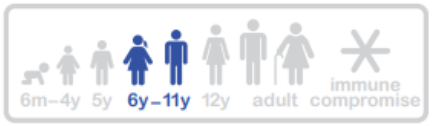
*For administration intervals, see Table 1 in the Interim Clinical Considerations for Use of COVID-19 Vaccines.
†Children who receive the Pfizer-BioNTech COVID-19 Vaccine and transition from age 4 years to 5 years during the 3-dose vaccination series must complete the series they start (i.e., receive the 0.2 mL/3 ug dosage supplied in vials with a maroon cap and label with a maroon border for all 3 doses).
Children who transition from age 5 years to 6 years during the Moderna vaccination series should receive 2 doses of Moderna COVID-19 Vaccine (0.25 mL/25 ug; dark blue cap and label with a gray border).

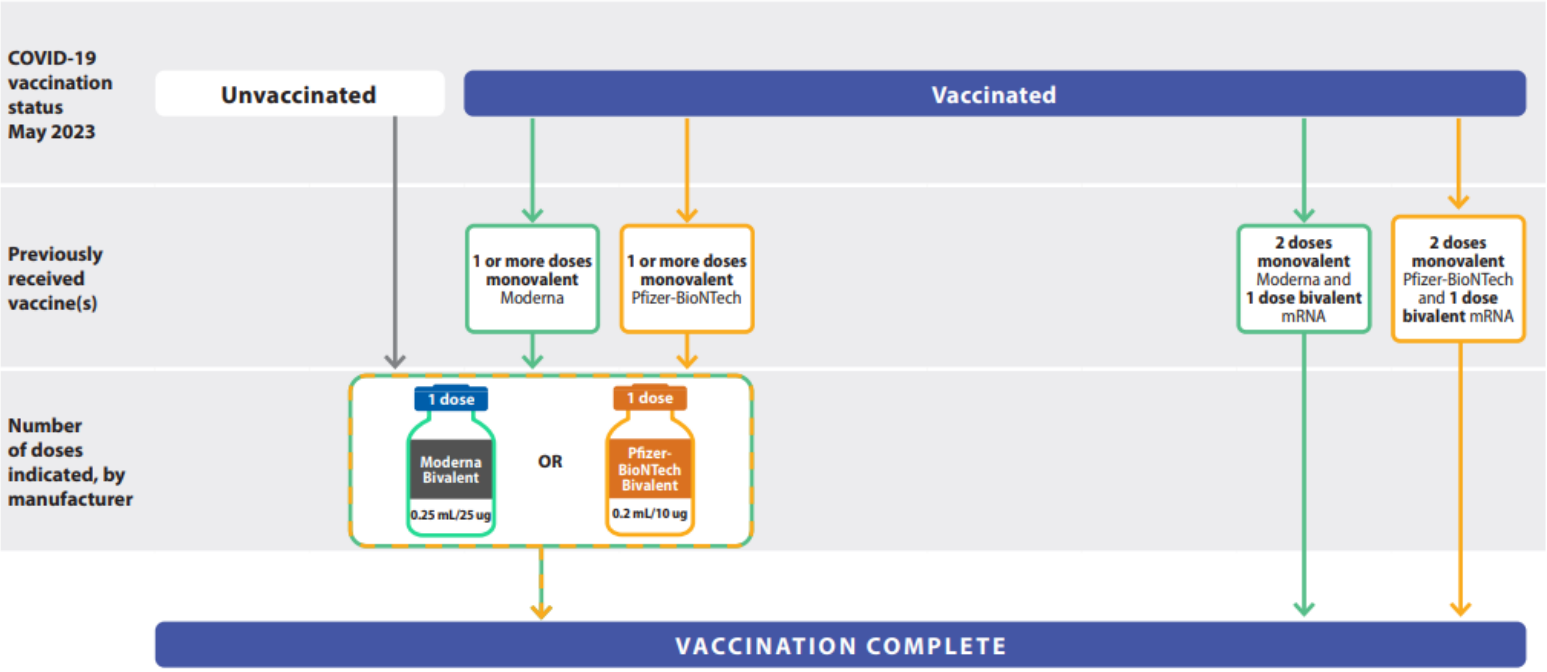
Key

Moderna | Pfizer-BioNTech | Moderna **OR** Pfizer-BioNTech

https://www.cdc.gov/vaccines/covid-19/downloads/COVID19-vaccination-recommendations-most-people.pdf

Recommended COVID-19 vaccines for **people without immunocompromise, aged 6–11 years,** mRNA vaccines, *with vial icons and dosages,* May 2023*†





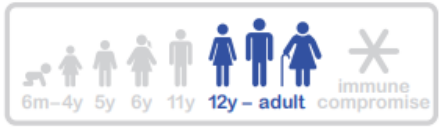
*For administration intervals, see Table 1 in the Interim Clinical Considerations for Use of COVID-19 Vaccines.
†Children who transition from age 5 years to 6 years during the Moderna vaccination series should receive 2 doses of Moderna COVID-19 Vaccine (0.25 mL/25 ug; dark blue cap and label with a gray border).

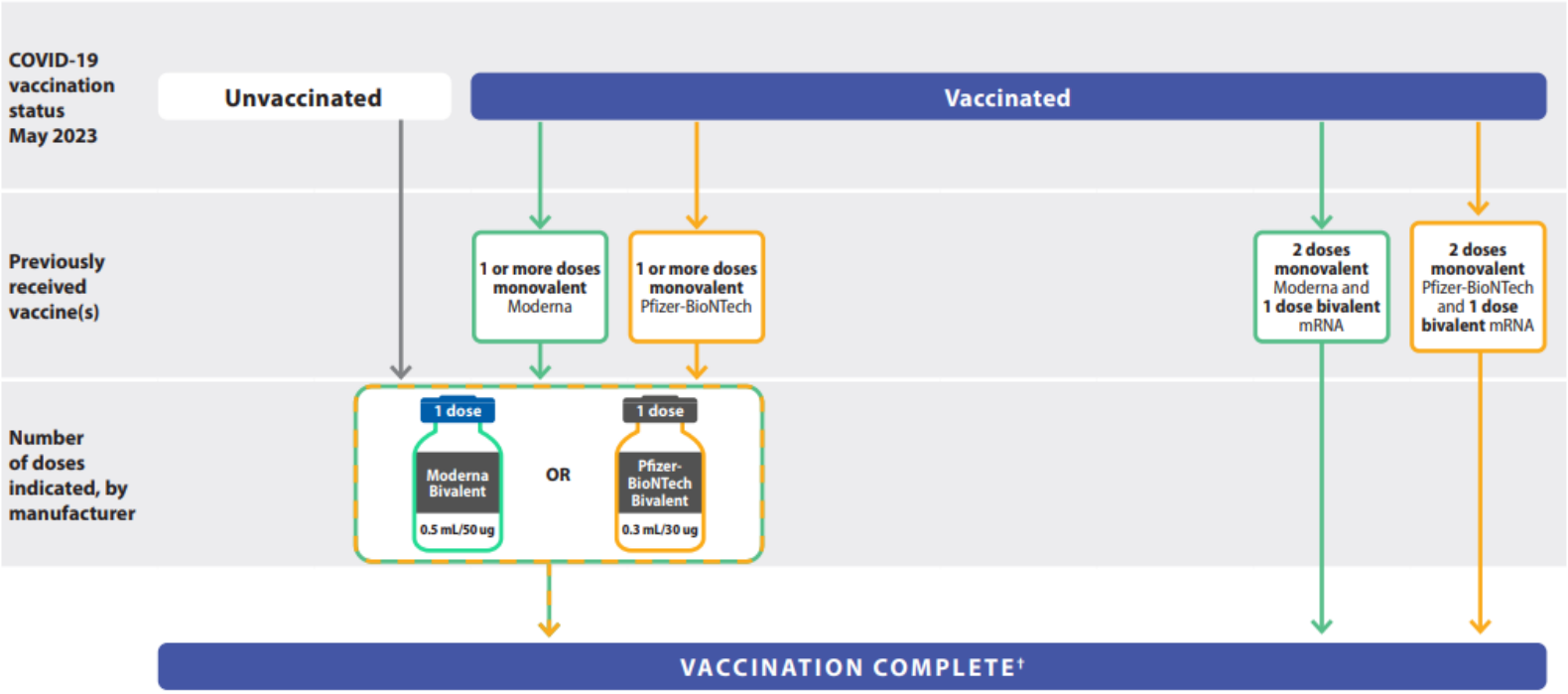
Key

Moderna | Pfizer-BioNTech | Moderna **OR** Pfizer-BioNTech

https://www.cdc.gov/vaccines/covid-19/downloads/COVID19-vaccination-recommendations-most-people.pdf

Recommended COVID-19 vaccines for **people without immunocompromise, aged 12 years and older,** mRNA vaccines, *with vial icons and dosages,* May 2023*†





*For administration intervals, see Table 1 in the Interim Clinical Considerations for Use of COVID-19 Vaccines.
†People ages 65 years and older have the option to receive 1 additional bivalent mRNA dose at least 4 months after the first dose of a bivalent mRNA vaccine; see Table 1 in the Interim Clinical Considerations for Use of COVID-19 Vaccines.

Key

Moderna | Pfizer-BioNTech | Moderna **OR** Pfizer-BioNTech

https://www.cdc.gov/vaccines/covid-19/downloads/COVID19-vaccination-recommendations-most-people.pdf

Pregunta

- Según los CDC, “vacuna COVID-19 actualizada” se refiere a:

a. La vacuna que protege contra el virus original que causa el COVID-19 y la variante Ómicron.
b. La vacuna que protege contra el virus original que causa el COVID-
c. La vacuna monovalente COVID-19.
d. Ninguna de las anteriores.

Virus Sincitial Respiratorio (VSR)

Virus respiratorio sincitial (VRS)

Virus de cadena simple de ARNm que afecta mayormente el tracto respiratorio inferior

Afecta principalmente a niños pequeños (< 5 años) y ancianos (> de 65 años)

Causa principal de bronquiolitis y pulmonía en niños menores de 1 año

Virus estacional (pico en otoño-invierno)

Casos disminuyeron durante la pandemia de COVID-19 pero aumentaron al levantar las restricciones

(Hansen, 2022) (NCIRD,2022) (OMS, 2022)

Síntomas y complicaciones

Síntomas

Complicaciones:

- Bronquiolitis
- Neumonía

Imagen tomada de: https://www.bbc.com/mundo/noticias-internacional-51946700

Crédito: Roberto J. Vázquez- Vázquez Pharm.Dc NSU-COP Clase 2024

Estrategias aprobadas para la inmunización contra el VRS

- Vacunas (Adultos ≥ 60 años)
- Anticuerpo monoclonal (infantes < 8 meses *

Vacunas contra el VRS aprobadas por la FDA en adultos ≥ 60 años

1. Arexvy® (vacuna contra el Virus Respiratorio Sincitial, con adyuvante), suspensión	
Fecha de aprobación:	3 de mayo de 2023
Manufacturero:	GlaxoSmithKline
Indicación:	Adultos de 60 años o más
Dosis:	0.5 ml IM (deltoides) x 1 dosis
Efectos secundarios comunes:	Dolor en lugar de inyección, cansancio, dolor de cabeza
Almacenamiento protegido de la luz:	Vial y Adyuvante sin reconstituir: 2°C - 8°C (36°F - 46°F)- Refrigerados Vial reconstituido: 2°C- 8°C (36°F -46°F) o temperatura ambiente (hasta 77 °F) Descartar luego de 4 horas de la reconstitución.

Arexvy® - Preparación

Figure 1. Cleanse both vial stoppers. Using a sterile needle and sterile syringe, withdraw the entire contents of the vial containing the adjuvant suspension component (liquid) by slightly tilting the vial. Vial 1 of 2.

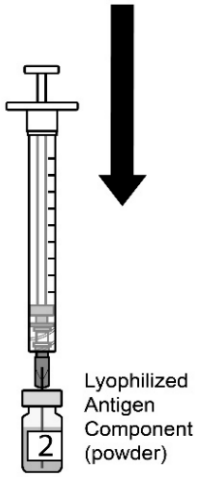


Figure 2. Slowly transfer entire contents of syringe into the lyophilized antigen component vial (powder). Vial 2 of 2.

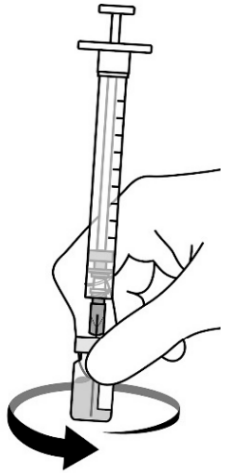


Figure 3. Gently swirl the vial until powder is completely dissolved. **Do not shake vigorously.**

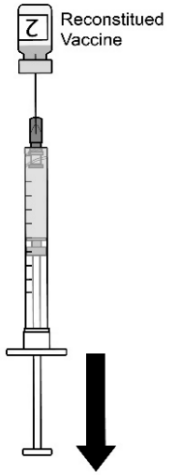


Figure 4. After reconstitution, withdraw 0.5 mL from the vial containing the reconstituted vaccine and administer intramuscularly.

Arexvy. Package insert. GlaxoSmithKline Biologicals; 2023

Crédito: Roberto J. Vázquez- Vázquez Pharm.Dc NSU-COP Clase 2024

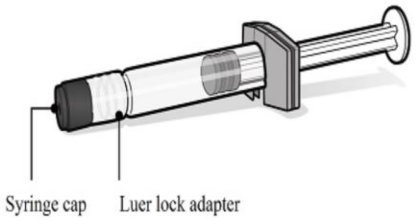
Vacunas contra el VRS aprobadas por la FDA en adultos

2. Abrysvo™ (vacuna bivalente contra el Virus Respiratorio Sincitial), solución	
Fecha de aprobación:	**31 de mayo de 2023**
Manufacturero:	**Pfizer**
Indicación:	**Adultos de 60 años o más**
Dosis:	**0.5 ml IM (deltoides) x 1 dosis**
Efectos secundarios comunes:	**Dolor en lugar de inyección, cansancio, dolor de cabeza**
Almacenamiento protegido de la luz:	**Vial sin reconstituir: 2°C - 8°C (36°F - 46°F)/ Vial reconstituido: temperatura ambiente (hasta 59-86 °F). No guardar vial reconstituido en nevera. Descartar luego de 4 horas de la reconstitución.**

Abrysvo™ Preparación

Vial of Lyophilized Antigen Component

Syringe of Sterile Water Diluent Component



Vial Adapter

To form ABRYSVO, reconstitute the Lyophilized Antigen Component with the accompanying Sterile Water Diluent Component as described in the panels below.

Step 1. Preparation of vial and vial adapter

- Remove plastic flip off cap from vial and cleanse the rubber stopper.
- Without removing the vial adapter from its packaging, peel off the top cover.

Step 2. Attachment of vial adapter

- Hold the base of the vial on a flat surface.
- Keep the vial adapter in the packaging and orient it vertically over the center of the vial so that the adapter spike aligns with the center of the vial's rubber stopper.
- Connect the vial adapter to the vial with a straight downward push. The vial adapter will lock into place.
- Do not push vial adapter in at an angle as this may result in leaking during use.
- Remove the vial adapter packaging.

Step 3. Removal of syringe cap

- For all syringe assembly steps, hold the syringe only by the Luer lock adapter located at the tip of the syringe. This will prevent the Luer lock adapter from detaching during use.
- Remove the syringe cap by slowly turning the cap counter-clockwise while holding the Luer lock adapter.

Step 4. Connection of syringe to vial adapter

- Hold the syringe's Luer lock adapter and connect it to the vial adapter by turning clockwise.
- Stop turning when you feel resistance, overtightening the syringe may result in leaking during use.
- Once the syringe is securely attached to the vial adapter, there will be a small space between the top of the vial adapter and the Luer lock adapter of the syringe.

Abrysvo. Package insert. Pfizer Laboratories Div Pfizer Inc; 2023

Abrysvo™ Preparación

Step 5. Reconstitution of Lyophilized Antigen Component to form ABRYSVO

- Inject the entire contents of the syringe containing the Sterile Water Diluent Component into the vial.
- Do not remove the empty syringe.
- While holding the plunger rod down, gently swirl the vial in a circular motion until the powder is completely dissolved (less than 1 minute).
- Do not shake.

Step 6. Withdrawal of reconstituted vaccine

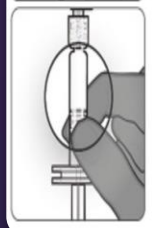
- Invert the vial completely with the vial adapter and syringe still attached.
- Slowly withdraw the entire contents into the syringe to ensure an approximately 0.5 mL dose of ABRYSVO for administration.
- Do not pull the plunger rod out.

Step 7. Disconnection of syringe

- Hold the Luer lock adapter of the syringe and disconnect the syringe from the vial adapter by turning counter-clockwise.

Step 8. Attachment of needle

- Attach a sterile needle suitable for intramuscular injection to the syringe containing ABRYSVO.



Step 9. Visual inspection

- ABRYSVO is a clear and colorless solution.
- Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. Discard if either condition is present.

Efectividad y Seguridad

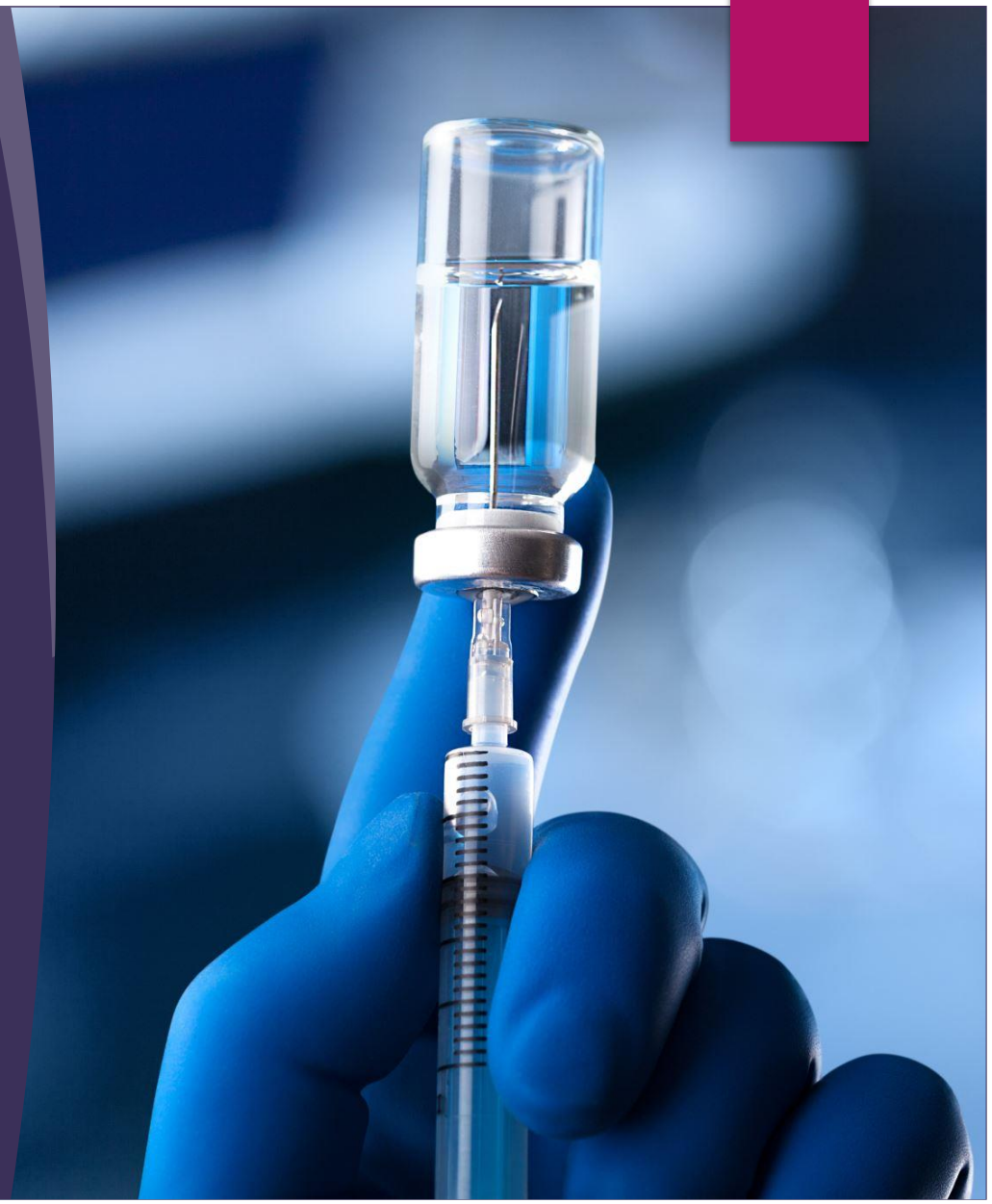
- Los CDC informan que una dosis de las vacunas de VRS para adultos ha demostrado ser de moderada a altamente efectiva en la prevención de la enfermedad sintomática del tracto respiratorio inferior durante dos temporadas consecutivas de VRS en pacientes de 60 años o más.

- Las vacunas de VRS fueron generalmente bien toleradas con un buen perfil de seguridad.
  - Sin embargo, se informaron 6 casos de eventos neurológicos
  - Se desconoce si estos eventos ocurrieron por casualidad o si la vacunación contra el VRS aumenta el riesgo de estos

Frellick M. CDC Offers Guidance on RSV Vaccines for Adults – Medscape Website. Disponible en: https://www.medscape.com/viewarticle/994702?ecd=WNL_trdalrt_pos1_230726_etid5687425&uac=98236CR&impID=5687425. Publicado el 24-julio-2023. {Accesado el 27-julio-2023)

RECOMENDACIÓN DE LOS CDC

- **Los CDC recomiendan a los adultos de 60 años o más recibir la vacuna contra el VRS, luego de consultar su proveedor de salud y llegar a una decisión en conjunto, donde se evalúen los riesgos vs. beneficios de recibir la vacuna.**



Nirsevimab (Beyfortus™)

- Anticuerpo monoclonal de larga duración
- Provee anticuerpos para protegercontra enfermedad severa por VRS
- Aprobado por la FDA (17/07/23) para prevención de VRS para neonates o infantes que nacen durante la temporada de VRS o entran a su primera temporada de VRS o niños hasta los 24 meses que permanecen vulnerables a enfermedad severa por VRS durante su segunda temporada de VRS

CDC Recommends a Powerful New Tool to Protect Infants from the Leading Cause of Hospitalization

New immunization is the first approved and recommended in the U.S. to prevent severe RSV disease in all infants

Print

Press Release

For Immediate Release: Thursday, August 3, 2023

Contact: Media Relations
(404) 639-3286

CDC is recommending a new immunization starting this fall to help protect all infants under 8 months and some older babies at increased risk of severe illness caused by respiratory syncytial virus (RSV).

https://www.cdc.gov/media/releases/2023/p-0803-new-tool-prevent-infant-hospitalization-.html

Recomendacion de los CDC

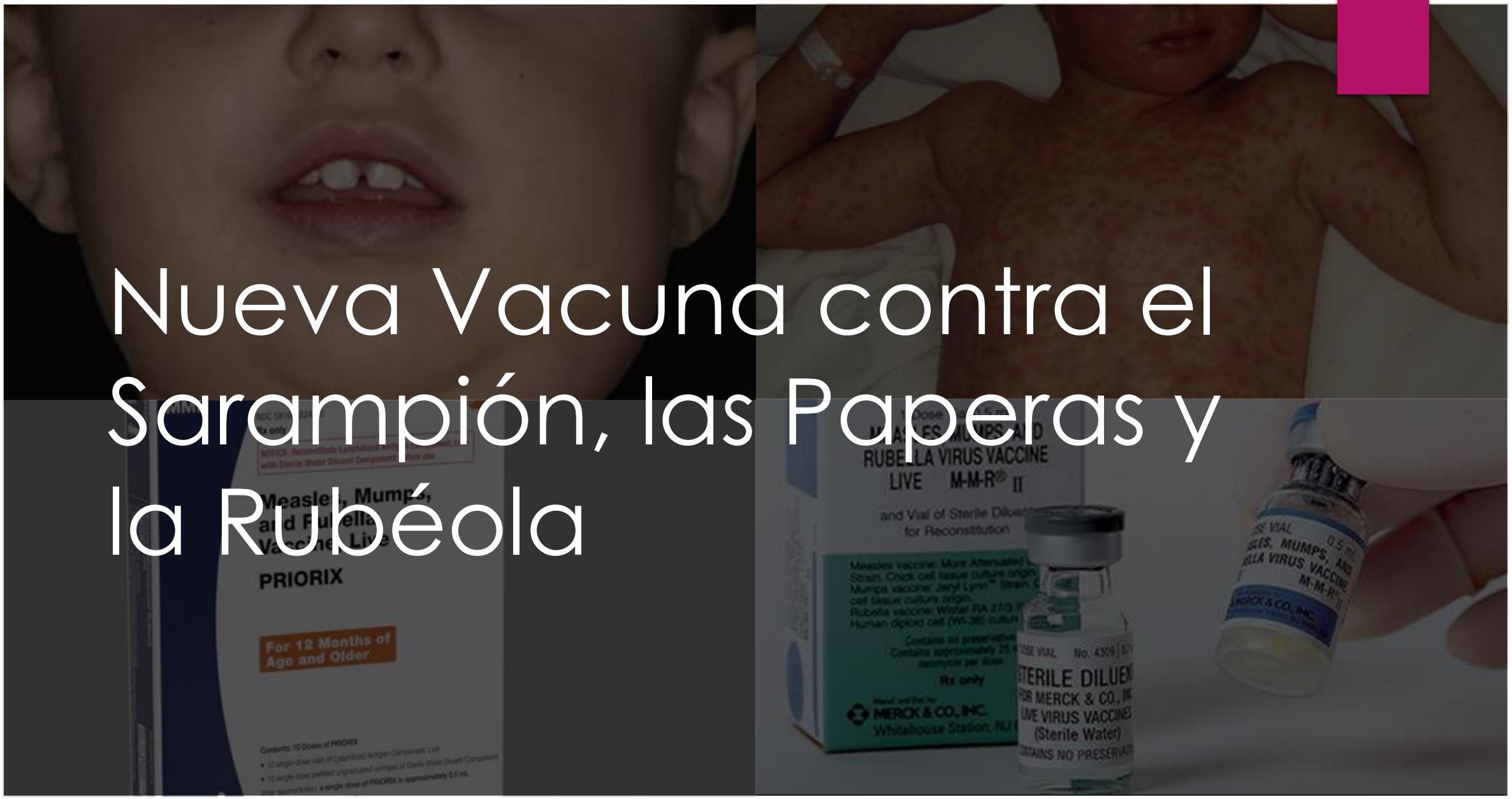
- Administrar dosis única de 50mg IM a todos los infantes <8 meses de edad nacidos durante o que enfrentan su primra temporada de VRS
- También se recomienda para grupo selecto de niños entre las edades de 8-19 meses que se encuentran a riesgo de enfermedad severa por VRS en su Segunda temporada de VRS (Ej. Inmunocomprometidos)
- Nirsevimab ha demostrado reducir en hasta un 80% el riesgo de hospitalizaciones y visitas a instituciones de salud en infantes

Proyecciones futuras

- **El FDA, decidirá en agosto sobre la administración de la vacuna Abrysvo™ a embarazadas en su último trimestre, para que haya una inmunidad pasiva hacia el feto.**

Crédito: Roberto J. Vázquez- Vázquez Pharm.Dc NSU-COP Clase 2024

Nueva Vacuna contra el Sarampión, las Paperas y la Rubéola



Vacuna contra contra el sarampión, las paperas y la rubéola

- Priorix®
  - Aprobada por el FDA en Junio 2022
  - El ACIP recomienda la vacuna en Noviembre 2022
  - Uso:
    - Inmunización activa para la prevención del sarampión, las paperas y la rubéola en pacientes ≥ 12 meses de edad
  - Contraindicaciones:
    - Reacción alérgica grave a cualquier componente de la vacuna, o después de una dosis previa de cualquier vacuna que contenga el virus del sarampión, las paperas y la rubéola.
    - Inmunodeficiencia severa
    - Embarazo

Vacuna contra contra el sarampión, las paperas y la rubéola

- Uso fuera de la etiqueta:
  - Pacientes de 6 a 11 meses de edad que viajarán o vivirán en el extranjero durante brotes de sarampión.
  - Tercera dosis de MMR en personas previamente vacunadas con 2 dosis de una vacuna que contiene el virus de las paperas que se identifican por autoridades de salud pública como parte de un grupo o población con mayor riesgo de contraer paperas debido a un brote.
  - Profilaxis posterior a la exposición al sarampión.

Vacuna contra contra el sarampión, las paperas y la rubéola

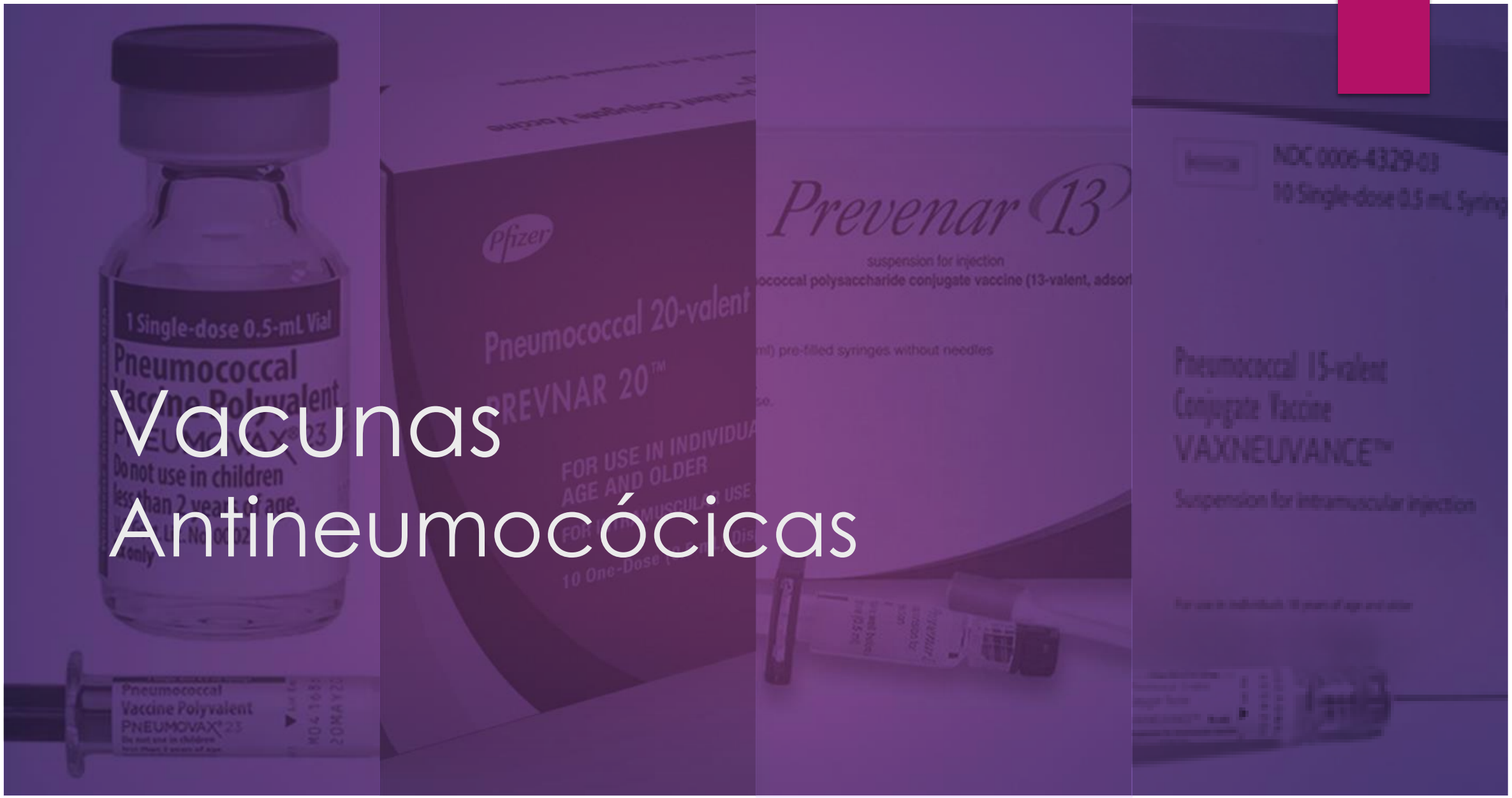
Tipo	• Viva atenuada
Dosis	• Dos Dosis: 0.5ml
Ruta de Administración	• Subcutánea
Itinerario	• Primera Dosis: 12 a 15 meses de edad • Segunda Dosis: 4 a 6 años de edad
Preparación	• Reconstitución • Después de la reconstitución, administrar inmediatamente o refrigerar entre 36° y 46° F (2° y 8°C) y administrar dentro de las 8 horas.
Almacenamiento	• Refrigerador, entre 36 a 46ºF (Vacuna y Diluyente) • Temperatura ambiente hasta 77ºF (25ºC) el diluyente
Efectos Adversos	• Dolor, enrojecimiento e hinchazón en el lugar de la inyección, irritabilidad, falta de apetito, sueño, fiebre

Pregunta

- ¿Cuál de las siguientes afirmaciones es VERDADERA con respecto a la vacuna contra el sarampión, las paperas y la rubéola, Priorix®?

a. Se puede administrar a mujeres embarazadas.
b. No requiere reconstitución antes de su administración.
c. Es una vacuna viva atenuada.
d. Se debe almacenar en el congelador.

Vacunas Antineumocócicas



Caso

- HL es fémina de 67 años que acude a tu farmacia preguntando por la vacuna antineumocócica. Nunca antes había recibido una vacuna antineumocócica.
- ¿Qué vacuna antineumocócica se debe recomendar?

Vacunas Antineumocócicas

- Hasta mediados de 2021, había dos vacunas neumocócicas disponibles en los Estados Unidos
  - PCV13 (vacuna conjugada neumocócica- Prevnar 13)
  - PPSV23 (vacuna polisacárida neumocócica - Pneumovax 23)
- Actualmente existe cuatro vacunas de neumonía
  - Dos vacunas conjugadas adicionales
    - PCV15 (Vaxneuvance 15)
    - PCV20 (Prevnar 20)

Polisacárida

- PPSV23
  - Cobertura de serotipos más amplia

Conjugadas

- PCV
  - Conducen a mejor y mayor duración de la inmunidad

Vacuna Antineumocócica: Vaxneuvance 15® (PCV15)

Jul. 2021

Inicialmente aprobada por la FDA, para la prevención de enfermedades invasivas en ≥ 18 años

Jun. 2022

La FDA aprueba la recomendación de edad ampliada a aquellos con ≥ 6 semanas de edad

- Serie de vacunación de 4 dosis a los 2, 4, 6 y 12 a 15 meses de edad

Ene. 2022

El ACIP recomienda el uso de PCV15 para ≥ 65 años, seguida de una dosis de PPSV23

Sep. 2022

El ACIP recomienda el uso de PCV15 como una opción para la vacunación neumocócica para niños menores de 19 años, utilizando las dosis y los horarios recomendados para PCV13

Vacuna Antineumocócica en Niños

- En Septiembre 2022, ACIP recomendó el uso de PCV15 como una opción para la vacunación antineumocócica de rutina en niños.
- Por lo tanto, PCV13 o PCV15 se pueden utilizar indistintamente, para vacunar a los pacientes usando el programa de dosificación tradicional de:
  - 4 dosis a los 2 meses, 4 meses , 6 meses y 12 a 15 meses
- Los niños que ya han recibido 4 dosis de PCV13 en los intervalos recomendados no necesitan una dosis suplementaria de PCV15.

Vacuna Antineumocócica: Prevnar 20® (PCV20)

Jun. 2021

Inicialmente aprobada por la FDA para la prevención de la neumonía y la enfermedad invasiva para personas mayores de 18 años.

Ene. 2022

El ACIP recomienda el uso de una sola dosis de PCV20 para ≥ 65 años.

Abr. 2023

El FDA la aprueba para la prevención:

- De neumonía y enfermedad invasiva para la para personas de 6 semanas a 17 años de edad
- De la otitis media para niños de 6 semanas a 5 años de edad

Vacunas de Neumonía

	Prevnar 13	Vaxneuvance 15	Prevnar 20	Pneumovax 23
Tipo de Vacuna (Abreviación)	Conjugada (PCV13)	Conjugada (PCV15)	Conjugada (PCV20)	Polisacárido (PPSV23)
Mes y año de aprobación por FDA	Febrero 2010	Julio 2021	Junio 2021	1983
Edad aprobada por FDA	≥ 6 semanas	**≥ 6 semanas**	**≥ 6 semanas**	≥ 2 años
Serotipos Incluidos	1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C y 23F	1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F	1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F, 8, 10A, 11A, 12F, 15BC, 22F y 33F	1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19F, 19A, 20, 22F, 23F y 33F
Ruta de Administración	IM	IM	IM	IM o SC
Dosis	0.5ml	0.5ml	0.5ml	0.5ml

Recomendaciones de Vacunas Antineumocócicas en Adultos

- Tanto PCV15 como PCV20 pueden usarse para la vacunación antineumocócica en adultos.
- Adultos Elegibles:
  - Pacientes sin antecedentes de vacunas neumocócica:
    - 65 años o más
    - 19 a 64 años con ciertas afecciones o factores de riesgos
  - Dos opciones:
    - Una dosis de PCV20
    - Una dosis de PCV15 seguida de PPSV23
      - La dosis de PPSV23 se debe administrar:
        - 1 año luego de PCV15 en la mayoría de los pacientes
        - 8 semanas luego en pacientes con ciertas afecciones

Cambio en el Itinerario de Vacunas Antineumocócicas en Adultos 2022 vs. 2023

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2022

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
Influenza inactivated (IIV4) or **Influenza recombinant** (RIV4)	1 dose annually			
or	or			
Influenza live, attenuated (LAIV4)	1 dose annually			
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			
Varicella (VAR)	2 doses (if born in 1980 or later)	2 doses		
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)	1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)			1 dose PCV15 followed by PPSV23 OR 1 dose PCV20
Hepatitis A (HepA)	2 or 3 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
***Haemophilus influenzae* type b** (Hib)	1 or 3 doses depending on indication			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
Recommended vaccination for adults with an additional risk factor or another indication
Recommended vaccination based on shared clinical decision-making
No recommendation/ Not applicable

Table 1 COVID-19 vaccination recommendations have changed. Find the latest recommendations at www.cdc.gov/covidschedule
Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID-19	2- or 3- dose primary series and booster (See Notes)			
Influenza inactivated (IIV4) or **Influenza recombinant** (RIV4)	1 dose annually			
or	or			
Influenza live, attenuated (LAIV4)	1 dose annually			
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			For healthcare personnel, see notes
Varicella (VAR)	2 doses (if born in 1980 or later)	2 doses		
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)	1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)			See Notes
				See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
***Haemophilus influenzae* type b** (Hib)	1 or 3 doses depending on indication			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
Recommended vaccination for adults with an additional risk factor or another indication
Recommended vaccination based on shared clinical decision-making
No recommendation/ Not applicable

www.cdc.gov

Recomendaciones de vacunación contra el neumococo en Adultos ≥65 años

Historial de Vacunas	Opción A	Opción B
Ninguna*	PCV20	PCV15 → ≥1año† → PPSV23
PPSV23 solamente A cualquier edad	≥ 1 año → PCV20	≥ 1 año → PCV15
PCV13 solamente A cualquier edad	≥ 1 año → PCV20	≥ 1 año → PPSV23
PCV13 a cualquier edad & **PPSV23** <65 años	≥ 5 años → PCV20	≥ 5 años → PPSV23

- También se aplica a las personas que recibieron PCV7 a cualquier edad y ninguna otra vacuna antineumocócica
- † Considere el intervalo mínimo (8 semanas) para adultos con una afección inmunocomprometida, implante coclear o fuga de líquido cefalorraquídeo (LCR)
- § Para adultos con inmunodepresión, implante coclear o fuga de LCR, el intervalo mínimo para PPSV23 es ≥8 semanas desde la última dosis de PCV13 y ≥5 años desde la última PPSV23 dosis; para otros, el intervalo mínimo para PPSV23 es ≥1 año desde la última dosis de PCV13 y ≥5 años desde la última dosis de PPSV23

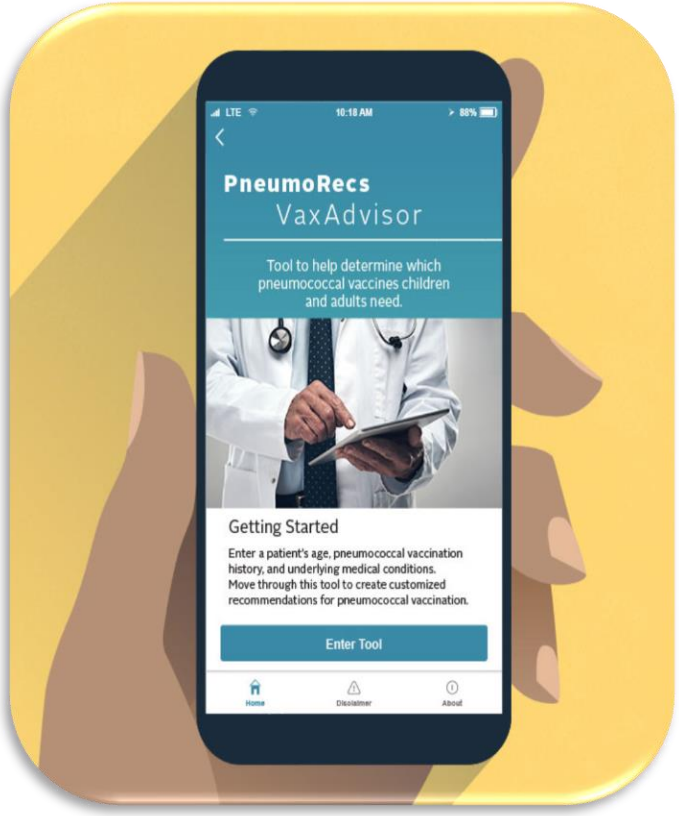
Toma de decisiones clínicas compartida para quienes ya completaron la serie con PCV13 y PPSV23

Historial de Vacunas	Opción de toma de decisiones clínicas compartidas	
Serie completa: **PCV13** a cualquier edad y **PPSV23** a ≥65 años	≥ 5 años → PCV20	Junto con el paciente, los proveedores de vacunas pueden optar por administrar PCV20 a adultos ≥65 años que ya recibieron PCV13 (pero no PCV15 o PCV20) a cualquier edad y PPSV23 a la edad de 65 años o después.

Adaptado de https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf

Evolución de las Recomendaciones

- Mantenerse al día
- Seguir las recomendaciones
- Recursos Adicionales de los CDC
  - Algoritmo de Vacunación Neumocócica en Adultos
    - https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf
  - Aplicación PneumoRecs VaxAdvisor
    - Edad del Paciente
    - Condiciones Médicas
    - Historial de Vacunación Antineumocócica



https://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html

Caso

- FA es un caballero de 68 años que acude a tu farmacia preguntando por la vacuna antineumocócica. A sus 55 años recibió la vacuna PPSV23 por un diagnóstico de diabetes tipo 2 y a sus 65 años recibió la vacuna PCV13.
- ¿Qué vacuna antineumocócica se debe recomendar?

Pregunta

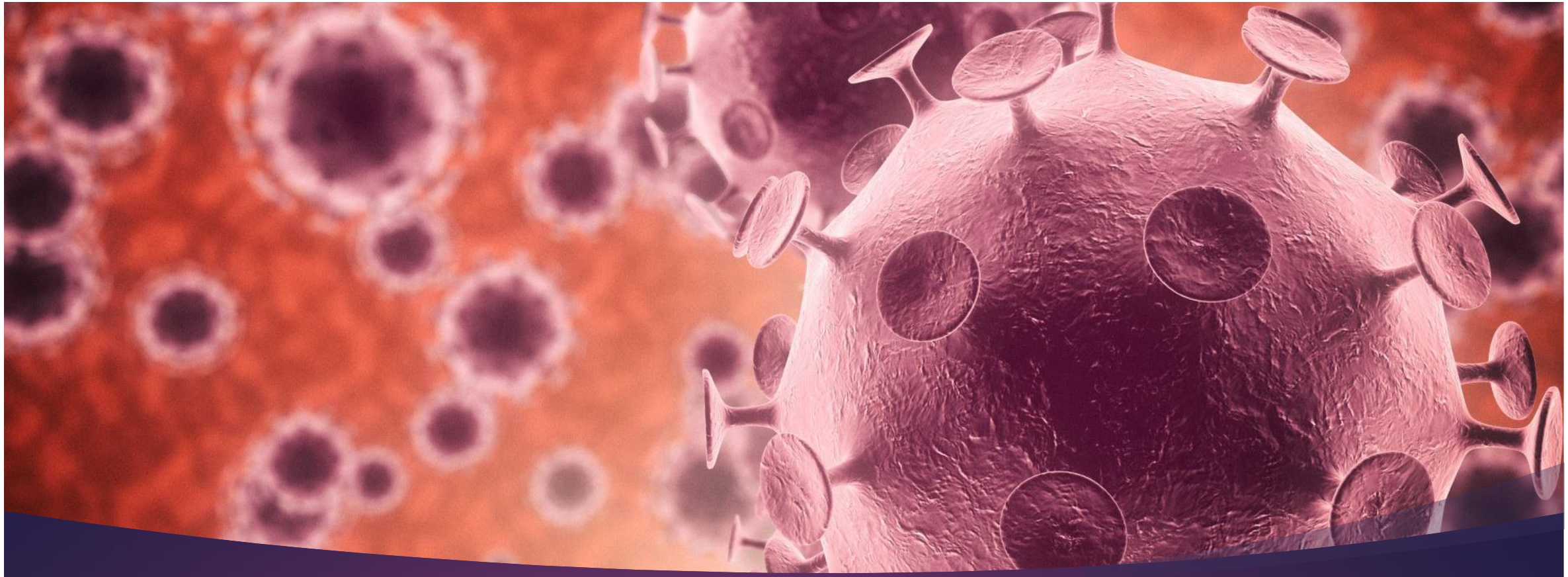
- La siguiente es la vacuna antineumocócica recomendada para una mujer adulta de 66 años con hipertensión que no ha recibido previamente ninguna vacuna antineumocócica:

a. PPSV23 seguida de una dosis de PCV13 al menos 8 semanas después.
b. PCV15 seguida de una dosis de PPSV23 al menos 1 año después.
c. Una dosis de PCV13.
d. Una dosis de PCV15.

Pregunta

- Los siguientes pacientes no tienen historial de vacunación en contra de la neumonía ¿cuál de los siguientes pacientes es candidato a recibir esta vacuna?

a. Mujer embarazada de 28 años
b. Hombre de 47 años con asma
c. Hombre de 63 años con hipertensión
d. Ninguna de las anteriores



Influenza

Vacuna de la Influenza

- Composición de la vacuna de influenza para la temporada 2023-2024
- La OMS recomienda la siguiente composición para las vacunas:

	Las producidas a partir de huevos embrionados:
Trivalente	•A/Victoria/4897/2022 (H1N1)pdm09, •A/Darwin/9/2021 (H3N2), •B/Austria/1359417/2021 (linaje B/Victoria)
Tetravalente	B/Phuket/3073/2013 (linaje B/Yamagata).
	Las recombinantes o producidas a partir de cultivos celulares:
Trivalente	•A/Wisconsin/67/2022 (H1N1)pdm09m, •A/Darwin/6/2021 (H3N2), •B/Austria/1359417/2021 (linaje B/Victoria) y
Tetravalente	•B/Phuket/3073/2013 (linaje B/Yamagata)

Recomendaciones de la Vacuna de Influenza

- Recomendación general para adultos:
  - 1 dosis de cualquier vacuna contra la influenza apropiado para la edad anualmente.

Edad de 65 años o más:

- Vacuna contra la influenza:
  - Tetravalente inactivada de dosis alta (HD-IIV4)
  - Recombinante tetravalente (RIV4)
  - Inactivada con adyuvante tetravalente (aIIV4).
- No hay una recomendación preferencial para una de estas tres vacunas.
- Si ninguna de estas tres vacunas no está disponible, las personas de este grupo deberán recibir la vacuna que esté disponible que este indicada para apropiada para su edad.

Recomendaciones del Momento de la Administración de la Vacuna de Influenza

- Septiembre y octubre son el mejor momento para vacunar a la mayoría de las personas.
- Evitar la vacunación en julio y agosto, excepto que no vayan a tener posibilidad de vacunarse en septiembre u octubre
  - Adultos (especialmente los de 65 años de edad o más)
  - Personas embarazadas cursando el primer o segundo trimestre, se debe evitar la vacunación en julio y agosto

Recomendaciones del Momento de la Administración de la Vacuna de Influenza

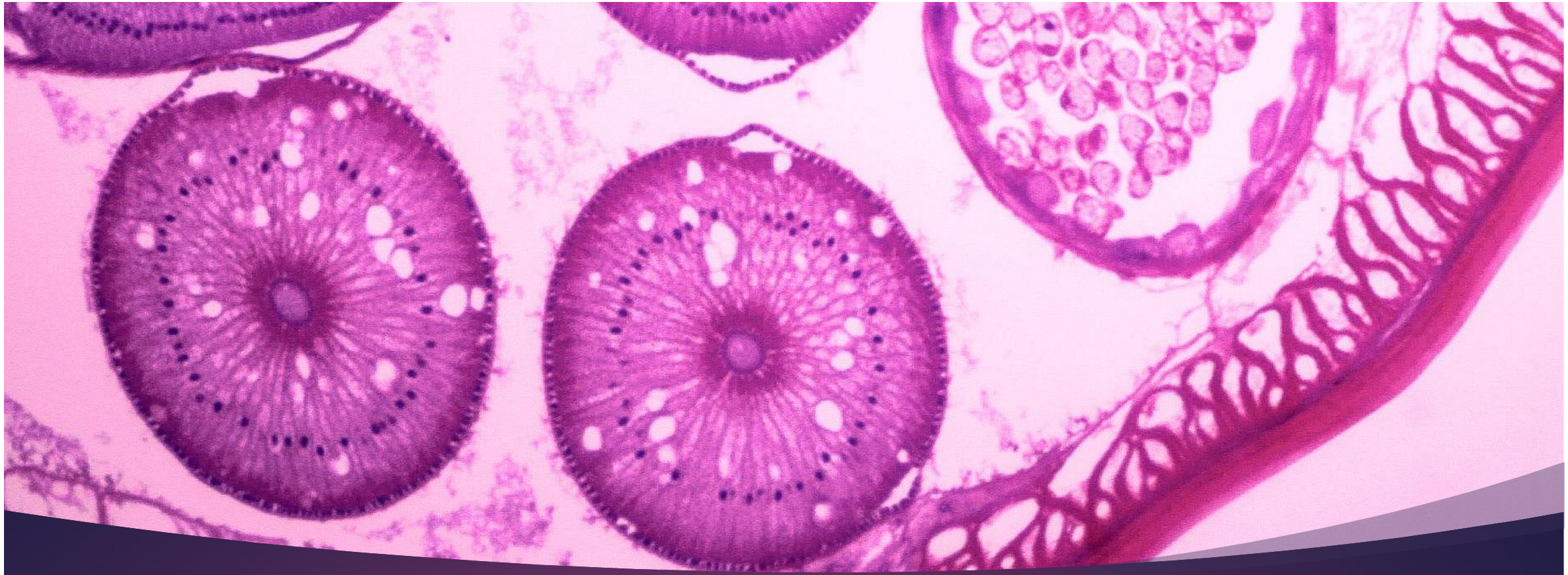
- Vacunación en julio y agosto
  - Personas embarazadas cursando el tercer trimestre
  - Los niños que necesitan dos dosis de la vacuna contra la influenza deben recibir su primera dosis de la vacuna tan pronto como esté disponible. La segunda dosis se debe administrar al menos cuatro semanas después de la primera.
  - Niños que tienen consultas médicas en estos meses, si no habrá otra oportunidad de vacunarlos en septiembre y octubre.
- Los CDC siguen recomendando vacunarse mientras haya circulación de virus de la influenza que representan un riesgo.

Vacunas de Inlfuenza Temporada 2023-2024- Verificar en Agosto			
Nombre	Indicaciones FDA según la edad	Dosis	Ruta
IIV4 (vacuna inactivada contra la influenza, tetravalente)			
Afluria Quadrivalent	6 – 35 meses ≥ 3 años	0.25 ml 0.5 ml	IM
Fluarix Quadrivalent	≥ 6 meses	0.5 ml	IM
FluLaval Quadrivalent	≥ 6 meses	0.5 ml	IM
Fluzone Quadrivalent	6 – 35 meses ≥ 3 años	0.25 ml 0.5 ml	IM
ccIIV4 (vacuna inactivada a base de cultivo de células, tetravalente)			
Flucelvax Quadrivalent	≥ 6 meses	0.5 ml	IM
HD-IIV4 (vacuna inactivada contra la influenza, tetravalente, dosis alta)			
Fluzone High-Dose Quadrivalent	≥ 65 años	0.7 ml	IM
aIIV4 (vacuna a base de huevo de dosis estándar con coadyuvante MF59)			
Fluad Quadrivalent	≥ 65 años	0.5 ml	IM
RIV4 (vacuna recombinante contra la influenza, tetravalente)			
Flublock Quadrivalent	≥ 18 años	0.5 ml	IM
LAIV4 (vacuna contra la influenza con virus vivo atenuado, tetravalente)			
FluMist Quadrivalent	2 – 49 años	0.2 ml (0.1ml por fosa nasal)	NASAL

Pregunta

- De acuerdo con los calendarios de inmunización de los CDC 2023, las siguientes son las vacunas contra la influenza preferidas en adultos de 65 años o más:

a. Vacuna de influenza inactivada de dosis alta
b. Vacuna recombinante contra la influenza
c. Vacuna de influenza inactivada con adyuvante
d. Todas las anteriores

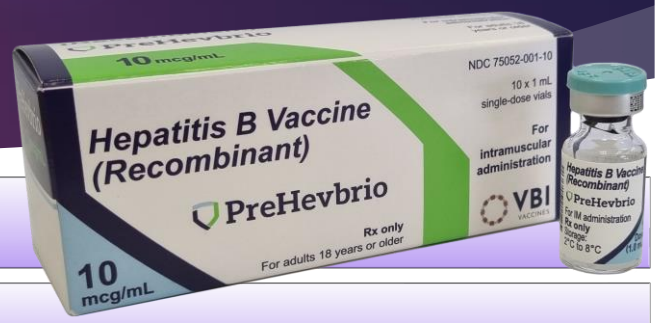


Hepatitis B

Recomendaciones de vacunas contra la hepatitis B

- La vacunación universal contra la hepatitis B en niños ha estado en vigor desde 1991.
- Antes de 2022, los CDC recomendaban la vacunación contra la hepatitis B en adultos que estaban en riesgo de contraer la enfermedad.
- En 2022, los CDC ampliaron la vacunación universal contra la hepatitis B para incluir a todos los adultos de 19 a 59 años que no habían sido vacunados previamente.
- Aún existe una recomendación basada en el riesgo para los adultos mayores de 60 años, aquellos que no cumplen con los criterios de riesgo todavía pueden recibir la vacuna contra la hepatitis B si así lo desean.
- No hay preferencia por ninguna vacuna específica para la inmunización de adultos contra la hepatitis B.

Nueva Vacuna en contra la Hepatitis B: PreHevbrio®



Tipo	• Inactiva, recombinante
Dosis	• Dos Dosis: 1 ml
Ruta de Administración	• Intramuscular, musculo deltoides
Itinerario	• Serie de tres dosis: 0, 1 y 6 meses
Preparación	• Agitar bien antes de usar.
Almacenamiento	• Refrigerador, entre 36 a 46ºF (Vacuna y Diluyente) • No congelar. Proteger del sol.
Efectos Adversos	• Dolor y sensibilidad en el lugar de la inyección, dolor de cabeza, fatiga, mialgia

Pregunta

- La Administración de Drogas y Alimentos de los Estados Unidos (FDA) aprobó en 2023, las primeras vacunas contra el virus respiratorio sincitial en adultos:

a. Cierto
b. Falso

Rol del personal farmacéutico en el mejoramiento de las tasas de vacunación

- Proveer educación basada en evidencia en relación a las vacunas
  - Combatir la desinformación
- Ser facilitadores del proceso de vacunación
- Establecer alianzas con la comunidad
- Demostrar empatía
  - Reconocer los miedos y preocupaciones de pacientes y cuidadores
  - Respetar la autonomía del paciente

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¡Gracias por su atención!