

Appendix B: Vaccines

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Appendix B

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Appendix B-2

United States Vaccine Names

United States Vaccines

Vaccine	Trade Name	Abbreviation	Manufacturer	Route	Doses in Routine Series	Approved Ages	Comments
Adenovirus	Adenovirus Type 4 & Type 7	N/A	Teva Pharmaceutical Industries Ltd.	Oral (2 Tablets)	1	17-50 years	Live: Approved for military populations; not approved for pregnant women
Anthrax	BioThrax®	AVA	Emergent BioSolutions	IM	3	18-65 years	Cell-free filtrate from avirulent strain, Adj.
Cholera	Vaxchora™†	N/A	Emergent BioSolutions	Oral (Liquid)	1	18-64 years	Live Attenuated
DTaP	Daptacel®	DTaP	Sanofi	IM	5	6 weeks-6 years	Inactivated, Adj.
	Infanrix™	DTaP	GlaxoSmithKline	IM	5	6 weeks-6 years	Inactivated, Adj.
DT	N/A (Generic)	DT	Sanofi	IM	5	6 weeks-6 years	Inactivated, Adj.: Use when pertussis is contraindicated
<i>Haemophilus influenzae type b</i> (Hib)	ActHIB®	Hib (PRP-T)	Sanofi	IM	4	2 months-5 years	Inactivated (Tetanus toxoid conjugate)
	Hiberix™	Hib (PRP-T)	GlaxoSmithKline	IM	4	6 weeks- 4 years	Inactivated (Tetanus toxoid conjugate)
	PedvaxHIB®	Hib (PRP-OMP)	Merck	IM	3	2-71 months	Inactivated, Adj. (Meningococcal conjugate)
Hepatitis A	Havrix™	HepA	GlaxoSmithKline	IM	2	Pediatric: 12 months-18 years; Adult: ≥19 years	Inactivated, Adj.
	Vaqta®	HepA	Merck	IM	2	Pediatric: 12 months-18 years; Adult: ≥19 years	Inactivated, Adj.
Hepatitis B	Engerix-B™	HepB	GlaxoSmithKline	IM	3	Pediatric: Birth-19 years Adult: ≥20 years	Recombinant, Adj.
	Recombivax HB®	HepB	Merck	IM	3	Pediatric: Birth-19 years Adult: ≥20 years	Recombinant, Adj.
	Heplisav-B®	HepB	Dynavax Technologies	IM	2	≥18 years	Recombinant, Adj.
Herpes Zoster (Shingles)	Shingrix™	RZV	GlaxoSmithKline	IM	2	≥50 years	Recombinant, Adj.

Vaccine	Trade Name	Abbreviation	Manufacturer	Route	Doses in Routine Series	Approved Ages	Comments
Human Papillomavirus (HPV)	Gardasil® 9	9vHPV	Merck	IM	2 or 3	9-45 years	Recombinant, Adj. ACIP recommends 9-26 years
Influenza*	Afluria Quadrivalent®	IIV4	Seqirus	IM	1 or 2	≥6 months	Inactivated
	Fluad® Quadrivalent	aIIV4	Seqirus	IM	1	≥65 years	Inactivated, Adj.
	Fluarix™ Quadrivalent	IIV4	GlaxoSmithKline	IM	1 or 2	≥6 months	Inactivated
	Flublok® Quadrivalent	RIV4	Sanofi	IM	1	≥18 years	Recombinant, Egg-Free
	Flucelvax® Quadrivalent	ccIIV4	Seqirus	IM	1 or 2	≥2 years	Cell-culture, Egg-free
	FluLaval™ Quadrivalent	IIV4	GlaxoSmithKline	IM	1 or 2	≥6 months	Inactivated
	FluMist® Quadrivalent	LAIV4	AstraZeneca	Intranasal	1 or 2	2-49 years	Live Attenuated
	Fluzone® Quadrivalent	IIV4	Sanofi	IM	1 or 2	≥6 months	Inactivated
	Fluzone® High-Dose Quadrivalent	HD-IIV4	Sanofi	IM	1	≥65 years	Inactivated
Japanese encephalitis	Ixiaro®	JE	Valneva	IM	2	≥2 months	Inactivated, Adj.
Measles, Mumps, Rubella	M-M-R® II	MMR	Merck	SC	2	≥12 months	Live Attenuated
Meningococcal (serogroups A, C, W, and Y)	Menactra®	MenACWY-D	Sanofi	IM	2	9 months-55 years	Inactivated (Polysaccharide diphtheria toxoid conjugate)
	Menquadfi™	MenACWY-TT	Sanofi	IM	2	≥2 years	Inactivated (Polysaccharide tetanus toxoid conjugate)
	Menveo™	MenACWY-CRM	GlaxoSmithKline	IM	2	2 months-55 years	Inactivated (Polysaccharide CRM ₁₉₇ conjugate)
Meningococcal (serogroup B)	Trumenba®	MenB-FHbp	Pfizer	IM	2 or 3	10-25 years	Recombinant, Adj.
	Bexsero™	MenB-4C	GlaxoSmithKline	IM	2	10-25 years	Recombinant, Adj.

Vaccine	Trade Name	Abbreviation	Manufacturer	Route	Doses in Routine Series	Approved Ages	Comments
Pneumococcal	Pneumovax® 23	PPSV23	Merck	IM or SC	1	≥2 years	Inactivated Polysaccharide
	Prevnar 13®	PCV13	Pfizer	IM	4 (pediatric) 1 (adult)	Pediatric: ≥6 weeks Adult: >65 years	Inactivated, Adj. (CRM ₁₉₇ conjugate)
Polio	Ipol®	IPV	Sanofi	IM or SC	4	≥6 weeks	Inactivated
Rabies	Imovax®	N/A	Sanofi	IM	2-3 (pre-exposure) 4 (post-exposure)	All ages	Inactivated
	RabAvert®	N/A	Bavarian Nordic	IM	2-3 (pre-exposure) 4 (post-exposure)	All ages	Inactivated
Rotavirus	RotaTeq®	RV5	Merck	Oral (Liquid)	3	6-32 weeks	Live, Pentavalent
	Rotarix™	RV1	GlaxoSmithKline	Oral (Liquid)	2	6-24 weeks	Live, Monovalent
Tetanus, (reduced) Diphtheria	Tenivac®	Td	Sanofi	IM	1 (Every 10 years)	≥7 years	Inactivated, Adj.
	TdVax™	Td	Massachusetts Biological Labs	IM	1 (Every 10 years)	≥7 years	Inactivated, Adj.
Tetanus, (reduced) Diphtheria, (reduced) Pertussis	Boostrix™	Tdap	GlaxoSmithKline	IM	1	≥10 years	Inactivated, Adj.
	Adacel®	Tdap	Sanofi	IM	1	10-64 years	Inactivated, Adj.
Typhoid	Typhim Vi®	N/A	Sanofi	IM	1	≥2 years	Inactivated Polysaccharide
	Vivotif®	N/A	Emergent BioSolutions	Oral (Capsules)	4	≥6 years	Live Attenuated
Varicella	Varivax®	VAR	Merck	SC	2	≥12 months	Live Attenuated
Smallpox (Vaccinia)	ACAM2000®	—	Emergent BioSolutions	Percutaneous	1	All ages	Live Attenuated
Smallpox and Monkeypox	JYNNEOS®	—	Bavarian Nordic	SC	2	≥18 years	Live, Non-replicating
Yellow Fever	YF-Vax®	YF	Sanofi	SC	1	≥9 months	Live Attenuated

The abbreviations on this table (Column 3) were standardized jointly by staff of the Centers for Disease Control and Prevention, Advisory Committee on Immunization Practices (ACIP) Work Groups, the editor of the Morbidity and Mortality Weekly Report (MMWR), the editor of Epidemiology and Prevention of Vaccine-Preventable Diseases (the Pink Book), ACIP members, and liaison organizations to the ACIP. These abbreviations are intended to provide a uniform approach to vaccine references used in ACIP Recommendations and Policy Notes published in the MMWR, the Pink Book, and the American Academy of Pediatrics Red Book, and in the U.S. immunization schedules for children, adolescents, and adults. In descriptions of combination vaccines, a hyphen (-) indicates products in which the active components are supplied in their final (combined) form by the manufacturer; a slash (/) indicates products in which active components must be mixed by the user.

“Doses in a Routine Series” (Column 6) reflects doses administered to a healthy patient at the recommended ages. It does not necessarily reflect schedules for patients with health conditions or other high-risk factors, alternative schedules, catch-up schedules, or booster doses not part of an initial series. For some combination vaccines, this column represents the routine number of doses for that product, and not necessarily the total number of doses in a complete series for the components. (For example, Kinrix or Quadracel may be used for only 1 dose of multi-dose DTaP and IPV series.)

“Adj.” in the “Comments” column indicates that the vaccine contains an adjuvant.

A hyphen in an age range means “through” (i.e., “6 weeks-6 years” means 6 weeks through 6 years [to the 7th birthday]).

*All influenza vaccines in this table are 2021-2022 northern hemisphere formulations. For the most current recommendations on influenza, see: <https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html>

†May be limited in supply as manufacturer has temporarily stopped production



United States Combination Vaccines

Vaccine	Trade Name	Abbreviation	Manufacturer	Route	Doses in Routine Series	Approved Ages	Comments
DTaP, Polio	Kinrix™	DTaP-IPV	GlaxoSmithKline	IM	1	4-6 years	Inactivated, Adj.: Approved as 5th DTaP and 4th IPV.
	Quadracel®	DTaP-IPV	Sanofi	IM	1	4-6 years	Inactivated, Adj.: Approved as 5th DTaP and 4th IPV.
DTaP, hepatitis B, Polio	Pediarix™	DTaP-HepB-IPV	GlaxoSmithKline	IM	3	6 weeks-6 years	Inactivated, Adj.: Approved for 2, 4, 6 month doses.
DTaP, Polio, Haemophilus influenzae type b	Pentacel®	DTaP-IPV/Hib	Sanofi	IM	4	6 weeks-4 years	4 Inactivated, Adj.: Approved for 2, 4, 6, 15-18 month doses.
DTaP, Polio, Haemophilus influenzae type b, hepatitis B	Vaxelis™	DTaP-IPV-Hib-HepB	Sanofi	IM	3	6 weeks-4 years	Inactivated, Adj.: Approved for 2, 4, 6 month doses.
Hepatitis A, Hepatitis B	Twinrix™	HepA-HepB	GlaxoSmithKline	IM	3	≥18 years	Inactivated/Recombinant, Adj. Pediatric HepA + Adult HepB
Measles, Mumps, Rubella, Varicella	ProQuad®	MMRV	Merck	SC	2	12 months-12 years	Live Attenuated

The abbreviations on this table (Column 3) were standardized jointly by staff of the Centers for Disease Control and Prevention, Advisory Committee on Immunization Practices (ACIP) Work Groups, the editor of the Morbidity and Mortality Weekly Report (MMWR), the editor of Epidemiology and Prevention of Vaccine-Preventable Diseases (the Pink Book), ACIP members, and liaison organizations to the ACIP. These abbreviations are intended to provide a uniform approach to vaccine references used in ACIP Recommendations and Policy Notes published in the MMWR, the Pink Book, and the American Academy of Pediatrics Red Book, and in the U.S. immunization schedules for children, adolescents, and adults. In descriptions of combination vaccines, a hyphen (-) indicates products in which the active components are supplied in their final (combined) form by the manufacturer; a slash (/) indicates products in which active components must be mixed by the user.

“Doses in a Routine Series” (Column 6) reflects doses administered to a healthy patient at the recommended ages. It does not necessarily reflect schedules for patients with health conditions or other high-risk factors, alternative schedules, catch-up schedules, or booster doses not part of an initial series. For some combination vaccines, this column represents the routine number of doses for that product, and not necessarily the total number of doses in a complete series for the components. (For example, Kinrix or Quadracel may be used for only 1 dose of multi-dose DTaP and IPV series.)

“Adj.” in the “Comments” column indicates that the vaccine contains an adjuvant.

A hyphen in an age range means “through” (i.e., “6 weeks-6 years” means 6 weeks through 6 years [to the 7th birthday]).

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Vaccine Excipient Summary

Excipients Included in U.S. Vaccines, by Vaccine

In addition to weakened or killed disease antigens (such as weakened, killed, or parts of viruses or bacteria), vaccines contain very small amounts of other ingredients – excipients.

Some excipients are added to a vaccine for a specific purpose. These include:

- **Preservatives**, to prevent contamination. For example, thimerosal.
- **Adjuvants**, to help stimulate a stronger immune response. For example, aluminum salts.
- **Stabilizers**, to keep the vaccine potent during transportation and storage. For example, sugars or gelatin.

Others are residual trace amounts of materials that were used during the manufacturing process and removed. These can include:

- **Cell culture materials**, used to grow the vaccine antigens. For example, egg protein, various culture media.
- **Inactivating ingredients**, used to kill viruses or inactivate toxins. For example, formaldehyde.
- **Antibiotics**, used to prevent contamination by bacteria. For example, neomycin.

The following table lists substances, other than active ingredients (i.e., antigens), shown in the manufacturers' package insert (PI) as being contained in the final formulation of each vaccine. **Substances used in the manufacture of a vaccine but not listed as contained in the final product (e.g., culture media) can be found in each PI, but are not shown on this table.** Each PI, which can be found on the FDA's website (see below) contains a description of that vaccine's manufacturing process, including the amount and purpose of each substance. In most PIs, this information is found in Section 11: "Description." Please refer to the PI for a complete list of ingredients or excipients. A table listing vaccine excipients and media by excipient is published by the Institute for Vaccine Safety at Johns Hopkins University, and can be found at <http://www.vaccinesafety.edu/components-Excipients.htm>.

Appendix B

Vaccine Excipient Table

Vaccine (Trade Name)	Package Insert Date	Contains ^(a)
Adenovirus	10/2019	monosodium glutamate, sucrose, D-mannose, D-fructose, dextrose, human serum albumin, potassium phosphate, plasdione C, anhydrous lactose, microcrystalline cellulose, polacrillin potassium, magnesium stearate, cellulose acetate phthalate, alcohol, acetone, castor oil, FD&C Yellow #6 aluminum lake dye
Anthrax (Biothrax)	11/2015	aluminum hydroxide, sodium chloride, benzethonium chloride, formaldehyde
BCG (Tice)	02/2009	glycerin, asparagine, citric acid, potassium phosphate, magnesium sulfate, iron ammonium citrate, lactose
Cholera (Vaxchora)	06/2016	ascorbic acid, hydrolyzed casein, sodium chloride, sucrose, dried lactose, sodium bicarbonate, sodium carbonate
Dengue (Dengvaxia)	06/2019	sodium chloride, essential amino acids (including L-phenylalanine), non-essential amino acids, L-arginine hydrochloride, sucrose, D-trehalose dihydrate, D-sorbitol, trometamol, urea
DT (Sanofi)	06/2018	aluminum phosphate, isotonic sodium chloride, formaldehyde
DTaP (Daptacel)	01/2021 ^(b)	aluminum phosphate, formaldehyde, glutaraldehyde, 2-phenoxyethanol
DTaP (Infanrix)	01/2021 ^(b)	formaldehyde, aluminum hydroxide, sodium chloride, polysorbate 80 (Tween 80)
DTaP-IPV (Kinrix)	01/2021 ^(b)	formaldehyde, aluminum hydroxide, sodium chloride, polysorbate 80 (Tween 80), neomycin sulfate, polymyxin B
DTaP-IPV (Quadracel)	02/2021	formaldehyde, aluminum phosphate, 2-phenoxyethanol, polysorbate 80, glutaraldehyde, neomycin, polymyxin B sulfate, bovine serum albumin
DTaP-HepB-IPV (Pediatrix)	01/2021 ^(b)	formaldehyde, aluminum hydroxide, aluminum phosphate, sodium chloride, polysorbate 80 (Tween 80), neomycin sulfate, polymyxin B, yeast protein
DTaP-IPV/Hib (Pentacel)	12/2019	aluminum phosphate, polysorbate 80, sucrose, formaldehyde, glutaraldehyde, bovine serum albumin, 2-phenoxyethanol, neomycin, polymyxin B sulfate
DTaP-IPV-Hib-HepB (Vaxelis)	10/2020	polysorbate 80, formaldehyde, glutaraldehyde, bovine serum albumin, neomycin, streptomycin sulfate, polymyxin B sulfate, ammonium thiocyanate, yeast protein, aluminum
Ebola Zaire (ERVEBO)	01/2021 ^(b)	Tromethamine, rice-derived recombinant human serum albumin, host cell DNA, benzonase, rice protein
Hib (ActHIB)	05/2019	sodium chloride, formaldehyde, sucrose
Hib (Hiberix)	04/2018	formaldehyde, sodium chloride, lactose
Hib (PevaxHIB)	01/2021 ^(b)	amorphous aluminum hydroxyphosphate sulfate, sodium chloride
Hep A (Havrix)	01/2021 ^(b)	MRC-5 cellular proteins, formalin, aluminum hydroxide, amino acid supplement, phosphate-buffered saline solution, polysorbate 20, neomycin sulfate, aminoglycoside antibiotic
Hep A (Vaqta)	01/2021 ^(b)	amorphous aluminum hydroxyphosphate sulfate, non-viral protein, DNA, bovine albumin, formaldehyde, neomycin, sodium borate, sodium chloride, other process chemical residuals
Hep B (Engerix-B)	01/2021 ^(b)	aluminum hydroxide, yeast protein, sodium chloride, disodium phosphate dihydrate, sodium dihydrogen phosphate dihydrate
Hep B (Recombivax)	12/2018	formaldehyde, potassium aluminum sulfate, amorphous aluminum hydroxyphosphate sulfate, yeast protein
Hep B (Heplisav-B)	05/2020	yeast protein, yeast DNA, deoxycholate, phosphorothioate linked oligodeoxynucleotide, sodium phosphate, dibasic dodecahydrate, sodium chloride, monobasic dehydrate, polysorbate 80
Hep A/Hep B (Twinrix)	01/2021 ^(b)	MRC-5 cellular proteins, formalin, aluminum phosphate, aluminum hydroxide, amino acids, sodium chloride, phosphate buffer, polysorbate 20, neomycin sulfate, yeast protein
HPV (Gardasil 9)	08/2020	amorphous aluminum hydroxyphosphate sulfate, sodium chloride, L-histidine, polysorbate 80, sodium borate, yeast protein

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Vaccine (Trade Name)	Package Insert Date	Contains ^(a)
Influenza (Afluria) Quadrivalent ^(c)	03/2021	sodium chloride, monobasic sodium phosphate, dibasic sodium phosphate, monobasic potassium phosphate, potassium chloride, calcium chloride, sodium taurodeoxycholate, ovalbumin, sucrose, neomycin sulfate, polymyxin B, beta-propiolactone, hydrocortisone, thimerosal (multi-dose vials)
Influenza (Fluad) Quadrivalent ^(c)	03/2021	squalene, polysorbate 80, sorbitan trioleate, sodium citrate dihydrate, citric acid monohydrate, neomycin, kanamycin, hydrocortisone, egg protein, formaldehyde
Influenza (Fluarix) Quadrivalent ^(c)	2021	octoxynol-10 (TRITON X-100), α -tocopheryl hydrogen succinate, polysorbate 80 (Tween 80), hydrocortisone, gentamicin sulfate, ovalbumin, formaldehyde, sodium deoxycholate, sodium phosphate-buffered isotonic sodium chloride
Influenza (Flublok) Quadrivalent ^(c)	03/2021	sodium chloride, monobasic sodium phosphate, dibasic sodium phosphate, polysorbate 20 (Tween 20), baculovirus and <i>Spodoptera frugiperda</i> cell proteins, baculovirus and cellular DNA, Triton X-100
Influenza (Flucelvax) Quadrivalent ^(c)	10/2021 ^(b)	Madin Darby Canine Kidney (MDCK) cell protein, phosphate buffered saline, protein other than HA, MDCK cell DNA, polysorbate 80, cetyltrimethylammonium bromide, and β -propiolactone, thimerosal (multi-dose vials)
Influenza (Flulaval) Quadrivalent ^(c)	2021	ovalbumin, formaldehyde, sodium deoxycholate, α -tocopheryl hydrogen succinate, polysorbate 80, phosphate-buffered saline solution
Influenza (Fluzone) Quadrivalent ^(c)	2021	formaldehyde, egg protein, octylphenol ethoxylate (Triton X-100), sodium phosphate-buffered isotonic sodium chloride solution, thimerosal (multi-dose vials)
Influenza (Fluzone) High Dose ^(c)	07/2021	egg protein, octylphenol ethoxylate (Triton X-100), sodium phosphate-buffered isotonic sodium chloride solution, formaldehyde
Influenza (FluMist) Quadrivalent ^(c)	08/2021	monosodium glutamate, hydrolyzed porcine gelatin, arginine, sucrose, dibasic potassium phosphate, monobasic potassium phosphate, ovalbumin, gentamicin sulfate, ethylenediaminetetraacetic acid (EDTA)
IPV (Ipol)	01/2021 ^(b)	calf bovine serum albumin, 2-phenoxyethanol, formaldehyde, neomycin, streptomycin, polymyxin B, M-199 medium
Japanese Encephalitis (Ixiaro)	09/2018	aluminum hydroxide, protamine sulfate, formaldehyde, bovine serum albumin, host cell DNA, sodium metabisulphite, host cell protein
MenACWY (Menactra)	04/2018	sodium phosphate buffered isotonic sodium chloride solution, formaldehyde, diphtheria toxoid protein carrier
MenACWY (MenQuadfi)	01/2021 ^(b)	sodium chloride, sodium acetate, formaldehyde
MenACWY (Menveo)	07/2020	formaldehyde, CRM ₁₉₇ protein
MenB (Bexsero)	01/2021 ^(b)	aluminum hydroxide, sodium chloride, histidine, sucrose, kanamycin
MenB (Trumenba)	2018	polysorbate 80, aluminum phosphate, histidine buffered saline
MMR (MMR-II)	12/2020	sorbitol, sucrose, hydrolyzed gelatin, recombinant human albumin, neomycin, fetal bovine serum, WI-38 human diploid lung fibroblasts
MMRV (ProQuad) (Frozen: Recombinant Albumin)	01/2021 ^(b)	MRC-5 cells including DNA and protein, sucrose, hydrolyzed gelatin, sodium chloride, sorbitol, monosodium L-glutamate, sodium phosphate dibasic, recombinant human albumin, sodium bicarbonate, potassium phosphate monobasic, potassium chloride, potassium phosphate dibasic, neomycin, bovine calf serum, other buffer and media ingredients
PCV13 (Prenar 13)	08/2017	CRM ₁₉₇ carrier protein, polysorbate 80, succinate buffer, aluminum phosphate
PPSV-23 (Pneumovax)	09/2020	isotonic saline solution, phenol
Rabies (Imovax)	10/2019	human albumin, neomycin sulfate, phenol red, beta-propiolactone
Rabies (RabAvert)	2018	chicken protein, polygeline (processed bovine gelatin), human serum albumin, potassium glutamate, sodium EDTA, ovalbumin, neomycin, chlortetracycline, amphotericin B
Rotavirus (RotaTeq)	01/2021 ^(b)	sucrose, sodium citrate, sodium phosphate monobasic monohydrate, sodium hydroxide, polysorbate 80, cell culture media, fetal bovine serum

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Vaccine (Trade Name)	Package Insert Date	Contains ^(a)
Rotavirus (Rotarix)	01/2021 ^(b)	dextran, Dulbecco's Modified Eagle Medium (sodium chloride, potassium chloride, magnesium sulfate, ferric (III) nitrate, sodium phosphate, sodium pyruvate, D-glucose, concentrated vitamin solution, L-cystine, L-tyrosine, amino acids, L-glutamine, calcium chloride, sodium hydrogenocarbonate, and phenol red), sorbitol, sucrose, calcium carbonate, sterile water, xanthan [Porcine circovirus type 1 (PCV1) is present in Rotarix. PCV-1 is not known to cause disease in humans.]
Smallpox (Vaccinia) (ACAM2000)	03/2018	HEPES, 2% human serum albumin, 0.5 - 0.7% sodium chloride USP, 5% Mannitol USP, neomycin, polymyxin B, 50% Glycerin USP, 0.25% phenol USP
Td (Tenivac)	11/2019	aluminum phosphate, formaldehyde, sodium chloride
Td (TDVAX)	09/2018	aluminum phosphate, formaldehyde, thimerosal
Tdap (Adacel)	12/2020	aluminum phosphate, formaldehyde, 2-phenoxyethanol, glutaraldehyde
Tdap (Boostrix)	09/2020	formaldehyde, aluminum hydroxide, sodium chloride, polysorbate 80
Typhoid (Typhim Vi)	03/2020	formaldehyde, phenol, polydimethylsiloxane, disodium phosphate, monosodium phosphate, sodium chloride
Typhoid (Vivotif Ty21a)	9/2013	sucrose, ascorbic acid, amino acids, lactose, magnesium stearate, gelatin
Varicella (Varivax) Frozen	01/2021 ^(b)	sucrose, hydrolyzed gelatin, sodium chloride, monosodium L-glutamate, sodium phosphate dibasic, potassium phosphate monobasic, potassium chloride, MRC-5 human diploid cells including DNA & protein, sodium phosphate monobasic, EDTA, neomycin, fetal bovine serum
Yellow Fever (YF-Vax)	2/2019	sorbitol, gelatin, sodium chloride
Zoster (Shingles) (Shingrix)	01/2021 ^(b)	sucrose, sodium chloride, dioleoyl phosphatidylcholine (DOPC), 3-O-desacetyl-4'-monophosphoryl lipid A (MPL), QS-21 (a saponin purified from plant extract <i>Quillaja saponaria</i> Molina), potassium dihydrogen phosphate, cholesterol, sodium dihydrogen phosphate dihydrate, disodium phosphate anhydrous, dipotassium phosphate, polysorbate 80, host cell protein and DNA

Abbreviations: DT = diphtheria and tetanus toxoids; DTaP = diphtheria and tetanus toxoids and acellular pertussis; Hep A = Hepatitis A; Hep B = Hepatitis B; Hib = *Haemophilus influenzae* type b; HPV = human papillomavirus; IPV = inactivated poliovirus; LAIV = live, attenuated influenza vaccine; MenACWY = quadrivalent meningococcal conjugate vaccine; MenB = serogroup B meningococcal vaccine; MMR = measles, mumps, and rubella; MMRV = measles, mumps, rubella, varicella; PCV13 = pneumococcal conjugate vaccine; PPSV23 = pneumococcal polysaccharide vaccine; Td = tetanus and diphtheria toxoids; Tdap = tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis.

^(a)All information was extracted from manufacturers' package inserts. The date shown in the Date column of the table is the edition date of the PI in use in January 2021 by month and year. In some cases, only a year was printed on the PI. If in doubt about whether a PI has been updated since this table was prepared, check the FDA's website at:

<http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm093833.htm>

^(b)The PI was not dated and this is the date the PI was reviewed for this table.

^(c)All influenza vaccine in this table are 2021-22 northern hemisphere formulation.

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Latex in Vaccine Packaging

“Immediate-type allergic reactions due to latex allergy have been described after vaccination, but such reactions are rare. If a person reports a severe anaphylactic allergy to latex, vaccines supplied in vials or syringes that contain natural rubber latex should be avoided if possible. If not, if the decision is made to vaccinate, providers should be prepared to treat immediate allergic reactions due to latex, including anaphylaxis. The most common type of latex hypersensitivity is a delayed-type (type 4, cell-mediated) allergic contact dermatitis. For patients with a history of contact allergy to latex, vaccines supplied in vials or syringes that contain dry natural rubber or natural rubber latex may be administered.”

(ACIP General Best Practice Guidelines for Immunization)

Vaccine (Trade Name)	Package Insert Date	Latex (Yes/No) ^(a)
Adenovirus	10/2019	No
Anthrax (Biothrax)	11/2015	Yes
BCG (Tice)	02/2009	No
Cholera (Vaxchora)	06/2016	No
Dengue (Dengvaxia)	06/2019	No
DT (Sanofi)	06/2018	No
DTaP (Daptacel)	01/2021 ^(b)	No
DTaP (Infanrix)	01/2021 ^(b)	Yes – Syringe, No – Vial
DTaP-IPV (Kinrix)	01/2021 ^(b)	Yes – Syringe, No – Vial
DTaP-IPV (Quadracel)	02/2021	No
DTaP-HepB-IPV (Pediarix)	01/2021 ^(b)	Yes
DTaP-IPV/Hib (Pentacel)	12/2019	No
DTaP-IPV-Hib-HepB (Vaxelis)	10/2020	No
Ebola Zaire (ERVEBO)	01/2021 ^(b)	No
Hib (ActHIB)	05/2019	No
Hib (Hiberix)	04/2018	No
Hib (PedvaxHIB)	01/2021 ^(b)	Yes
Hep A (Havrix)	01/2021 ^(b)	Yes – Syringe, No – Vial
Hep A (Vaqta)	01/2021 ^(b)	Yes – Syringe, Yes – Vial
Hep B (Engerix-B)	01/2021 ^(b)	Yes – Syringe, No – Vial
Hep B (Recombivax)	12/2018	Yes – Syringe, Yes – Vial
Hep B (Heplisav-B)	05/2020	No
Hep A/Hep B (Twinrix)	01/2021 ^(b)	Yes
HPV (Gardasil 9)	08/2020	No
Influenza (Afluria) Quadrivalent ^(c)	03/2021	No
Influenza (Fluad) Quadrivalent ^(c)	03/2021	No
Influenza (Fluarix) Quadrivalent ^(c)	2021	No
Influenza (Flublok) Quadrivalent ^(c)	03/2021	No
Influenza (Flucelvax) Quadrivalent ^(c)	10/2021 ^(b)	No
Influenza (Flulaval) Quadrivalent ^(c)	2021	No
Influenza (Fluzone) Quadrivalent ^(c)	2021	No
Influenza (Fluzone) High Dose ^(c)	2021	No
Influenza (FluMist) Quadrivalent ^(c)	08/2021	No
IPV (Ipol)	01/2021 ^(b)	No

Appendix B

Vaccine (Trade Name)	Package Insert Date	Latex (Yes/No) ^(a)
Japanese Encephalitis (Ixiaro)	09/2018	No
MenACWY (Menactra)	04/2018	No
MenACWY(MenQuadfi)	01/2021 ^(b)	No
MenACWY (Menveo)	07/2020	No
MenB (Bexsero)	01/2021 ^(b)	Yes
MenB (Trumenba)	2018	No
MMR (M-M-R II)	12/2020	No
MMRV (ProQuad) (Frozen: Recombinant Albumin)	01/2021 ^(b)	No
PCV13 (Pneumovax 13)	08/2017	No
PPSV-23 (Pneumovax)	09/2020	No
Rabies (Imovax)	10/2019	No
Rabies (RabAvert)	2018	No
Rotavirus (RotaTeq)	01/2021 ^(b)	No
Rotavirus (Rotarix)	01/2021 ^(b)	Yes
Smallpox (Vaccinia) (ACAM2000)	03/2018	No
Td (Tenivac)	11/2019	Yes – Syringe, No – Vial
Td (TDVAX)	09/2018	No
Tdap (Adacel)	12/2020	Yes ^(d) – Syringe, No – Vial
Tdap (Boostrix)	09/2020	Yes – Syringe, No – Vial
Typhoid (Typhim Vi)	03/2020	No
Typhoid (Vivotif Ty21a)	09/2013	No
Varicella (Varivax) Frozen	01/2021 ^(b)	No
Yellow Fever (YF-Vax)	02/2019	No
Zoster (Shingles) (Shingrix)	01/2021 ^(b)	No

Abbreviations: DT = diphtheria and tetanus toxoids; DTaP = diphtheria and tetanus toxoids and acellular pertussis; Hep A = Hepatitis A; Hep B = Hepatitis B; Hib = *Haemophilus influenzae* type b; HPV = human papillomavirus; IPV = inactivated poliovirus; LAIV = live, attenuated influenza vaccine; MenACWY = quadrivalent meningococcal conjugate vaccine; MenB = serogroup B meningococcal vaccine; MMR = measles, mumps, and rubella; MMRV = measles, mumps, rubella, varicella; PCV13 = pneumococcal conjugate vaccine; PI = Package Insert; PPSV23= pneumococcal polysaccharide vaccine; Td = tetanus and diphtheria toxoids; Tdap = tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis.

^(a)All information was extracted from manufacturers' package inserts. The date shown in the Date column of the table is the edition date of the PI is use in February 2020. If in doubt about whether a PI has been updated since this table was prepared, check the FDA's website at: <http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm093833.htm>

^(b)The PI was not dated and this is the date the PI was reviewed for this table.

^(c) All influenza vaccine in this table are 2021-2022 northern hemisphere formulation.

^(d)The most current PI (12/2020) indicates no latex in any presentation of Adacel. Previous PIs indicate tip caps of some lots of Adacel prefilled syringes contain latex while others do not. Check the package insert that came with your vaccine, if necessary.

November 2021

B

Quick Chart of Vaccine-Preventable Disease Terms in Multiple Languages

Eastern European Languages								
English	Bosnian	Croatian	Polish	Romanian	Russian	Serbian	Slovak	Ukrainian
DTP (DTaP)	Detepe	Detepe	DTaP	Di-Te-Per	АКДС	Detepe	DiTePe	
Diphtheria	Difterija	Difterije	Błonica	Difteriei	Дифтерия	Дифтерије	Diftéria; záškrt	Дифтерії
<i>Haemophilus influenzae</i> type b	Hemofilčna influenza tipa B	Haemophilus influenzae tipa b	Haemophilus influenzae typu b	Haemophilus influenza tip b boala	гемофильная инфекция типа В	Хаемофилус инфлуензае тип Б болести	Haemophilus influenza typ b; ochorenia	Гемофільної інфекції типу В захворювань
Hepatitis A	Žutica A, Hepatitis A	Žutica A, hepatitis A	Wirusowe zapalenie wątroby typu A	Hepatita A	гепатит А	Хепатитиса А	Hepatitída A	Гепатиту S
Hepatitis B	Žutica B, Hepatitis B	Žutica B, hepatitis B	Wirusowe zapalenie wątroby typu B	Hepatita B	гепатит В	Хепатитиса В	Hepatitída B	Гепатиту В
Human papillomavirus	Ljudski papiloma virus	Papilomavirusi čovjeka	Wirus brodawczaka ludzkiego	Papilomavirus uman	вирус папилломы человека	Људски папилома вирус	L'udský papillomavírus	Вірус папіломи людини
Influenza	Gripa	Gripe	Grypa	Gripa	грипп	Грип	Chrípka	Грипу
MMR	MMR					MMR		кпк
Measles	Rubeola	Ospice	Odra	Pojarul	корь	Мале богиње	Morbilli; Osýpky	інФормација про Кір
Meningococcal ACWY	Meningokokal ACWY	Meningokoknog ACWY	Meningokoki ACWY	Meningococice ACWY	менингококковая ACWY	Менингококне ACWY	Meningokokove ACWY	Менінгококова Сполучених
Mumps	Zauške	Zaušnjaci	Świnka	Oreionul, Oreion	Свинка, паротит	Эаушке	Priusnica	Кір
Pertussis	Veliki kašalj	Kašalj hripavac	Krzusiec	Tusei convulsive	Коклюша	Пертусис	Čierny kašeľ	Кашлюку
Poliomyelitis	Dječja paraliza	Dječje paralize	Paraliż dziecięcy	Poliomielita	Полиомиелит	Полизомиелит	Detská obrna	Поліомієліту
Pneumococcal conjugate	Upala pluća	Pneumokoka konjugirano	Pneumokoki	Pneumococic conjugat	Конъюгированная пневмококковая	Пнеумоццал коњунговане	Konjugovaná pneumokoková	ПНЕВМОКОККОВОЙ коњюгированной
Rotavirus	Rotavirus	Rotavirus	Rotawirus	Rotavirus	Ротавирус	Ротавирусна инфекција	Ротавирус	Ротавірусної
Rubella	Male boginje	Rubeola	Różyczka	Pojar German	Краснуха	Рубеола	Rubeola	Краснуха
Shingles (Herpes zoster)	Herpes zoster	Šindra	Półpasiec	Herpes zoster (zona zoster)	Опоясывающий лишай	Херпес зостер (појасни херпес)	Pásového oparu; Pásový opar	Оперізуєчий герпес (Оперізуєчий лишай)
Smallpox	Veliki boginje	Veliki boginje	Ospa	Variola, variolei	Оспа	Veliki boginje	Kiahne	Віспа
Tetanus	Tetanus	Tetanus	Tężec	Tetanosului	столбняк	Тетануса	Tetanus	Правця
Tuberculosis	Tuberkuloza	Tuberkuloza	Gruźlica	Tuberculozei	Туберкулёз	Tuberkuloza	Tuberkulóza	Туберкульоз
Varicella (chickenpox)	Ospice	Vodene kozice	Ospa wietrzna	Varicelă	ветряная оспа (ветряная)	Варицелла (цицкен богиње)	Ovčím kiahňam; Ovčie kiahne	Вітряної віспи (Вітрянка)

Quick Chart of Vaccine-Preventable Disease Terms in Multiple Languages

Western European Languages								
English	Dutch	French	German	Italian	Norwegian	Portuguese	Spanish	Swedish
DTP	DKTP	DT Coq, DTC				Tríplice		Trippel
Diphtheria	Difterie	Diphthérie	Diphtherie	Difterite	Difteri	Difteria	Difteria	Difteri
<i>Haemophilus influenzae</i> type b	Haemophilus influenzae b	Haemophilus influenzae de type b	Haemophilus influenzae type b	Haemophilus influenzae b	Haemophilus influenzae tipe b	Doença Haemophilus influenzae tipo b	Hemófilo tipo b, Haemophilus influenzae tipo b	Haemophilus influenzae typ b
Hepatitis A	Hepatitis A	Hepatite A	Hepatitis A	Epatite A	Hepatitt A	Hepatite A	hepatitis A	Hepatit A
Hepatitis B	Hepatitis B	Hepatite B	Hepatitis B	Epatite B	Hepatitt B	Hepatite B	hepatitis B	Hepatit B
Human papillomavirus	Humaan papillovirus	Papillovirus humaines	Humanen papillovirus	Il papillovirus umano	Humant papillomavirus	Vírus do papiloma humano	Virus del papiloma humano	Mänskliga papillovirus
Influenza ("flu")	Griep	Grippe	Grippe	L'nfluenzae	Influenza	Gripe	Gripe	Influenza
MMR	BMR	ROR	MMR	MPR		VASPR	SRP	MPR
Measles	Mazelen	Rougeole	Masern	Morbillo	Meslinger	Sarampo	Sarampión, Sarampión comun	Mässling
Meningococcal ACWY	Meningokokken ACWY	Antiméningocoque ACWY	Meningokokken ACWY	Meningococcico ACWY	Meningokokksykdom ACWY	Meningocóccica ACWY	Meningococo ACWY	Meningokockinfektion ACWY
Mumps	Bof	Oreillons	Ziegenpeter	Parotite	Kusma	Caçhumba	Paperas, Parotiditis	Påssjuka
Pertussis (Whooping cough)	Kinkhoest	Coqueluche	Keuchhusten	Pertosse (tosse asinina)	Kikhoste	Coqueluche	Coqueluche (Tos ferina)	Kikhosta
Poliomyelitis	Kinderverlamming	Poliomyélite	Kinderlähmung	Poliomielite	Poliomyelitt	Poliomielite, paralisia Infantil	Poliomielitis	Poliomyelitis
Pneumococcal conjugate	Pneumokokken conjugaat	Antipneumococcique conjugué	Pneumokokken konjugat	Pneumococcico coniugato	Pneumokokk konjugatvaksine	Pneumocócica conjugada	Antineumocócica conjugada	Konjugerat pneumokock
Rotavirus	Rotavirus	Rotavirus	Rotavirus	Rotavirus	Rotavirus	Rotavírus	Rotavirus	Rotavirus
Rubella	Rode hond	Rubéole	Röteln	Rosolia	Røde hunder	Rubéola (sarampo alamão)	Rubéola, Sarampión aleman	Röda hund
Shingles (Herpes zoster)	Gordelroos (herpes zoster)	Zona (l'herpès zoster)	Gürtelrose (herpes zoster)	Fuoco di Sant'Antonion (l'herpes zoster)	Helvetesild (herpes zoster)	Zona (herpes zoster)	Zona de matojos (herpes)	Bältros (herpes zoste)
Smallpox	Pokken	Varirole	Pocken	Vaioloso	Kopper	Variola	Viruela	Smittkopper
Tetanus	Stijfkramp	Tétanos	Wundstarrkrampf	Tetano	Stivkrampe	Tétano, Tetânica	Tétanos, Tetánica, Tétano	Stelkramp
Tuberculosis	Tering	Tuberculose	Tuberkulose	Tubercolosi	Tuberkulose	Tuberculose	Tuberculínica	Tuberkulos
Varicella (chickenpox)	Varicella (waterpekkea)	Varicelle	Varizellen (windpocken)	Varicella	Vannkopper	Varicella (catapora)	Varicela	Vattkopper

Resources for Vaccines

Vaccine Excipients

- Food and Drug Administration (FDA) Vaccine Package Inserts: <https://www.fda.gov/vaccines-blood-biologics/vaccines/vaccines-licensed-use-united-states>
- Thimerosal and Vaccines (FDA): <https://www.fda.gov/vaccines-blood-biologics/safety-availability-biologics/thimerosal-and-vaccines>
- Thimerosal and Vaccines (CDC): <https://www.cdc.gov/vaccinesafety/concerns/thimerosal/index.html>
- Common Ingredients in U.S. Licensed Vaccines (FDA): <https://www.fda.gov/vaccines-blood-biologics/safety-availability-biologics/common-ingredients-us-licensed-vaccines>
- Excipients in Vaccines per 0.5 mL dose (Johns Hopkins): <https://www.vaccinesafety.edu/components-Excipients.htm>

Interpreting Vaccines from Other Countries

- World Health Organization (WHO) Country Profiles: https://apps.who.int/immunization_monitoring/globalsummary

Appendix B

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