

# Vaccine Excipient Summary

## Excipients Included in U.S. Vaccines, by Vaccine

In addition to weakened or killed disease antigens (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. **Note: 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."

### 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 a date contains an asterisk (\*), the PI was not dated and this is the date the PI was reviewed for this table.

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>

All influenza vaccine in this table are 2019-20 northern hemisphere formulation.

Vaccine	Date	Contains
Adenovirus	10/2019	monosodium glutamate, sucrose, D-mannose, D-fructose, dextrose, human serum albumin, potassium phosphate, plasdone C, anhydrous lactose, microcrystalline cellulose, polacrilin 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)	2/2009	glycerin, asparagine, citric acid, potassium phosphate, magnesium sulfate, iron ammonium citrate, lactose
Cholera (Vaxchora)	6/2016	ascorbic acid, hydrolyzed casein, sodium chloride, sucrose, dried lactose, sodium bicarbonate, sodium carbonate
Dengue (Dengvaxia)	6/2019	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)	6/2018	aluminum phosphate, isotonic sodium chloride, formaldehyde
DTaP (Daptacel)	12/2018	aluminum phosphate, formaldehyde, glutaraldehyde, 2-phenoxyethanol
DTaP (Infanrix)	12/2018	formaldehyde, aluminum hydroxide, sodium chloride, polysorbate 80 (Tween 80)
DTaP-IPV (Kinrix)	12/2018	Formaldehyde, aluminum hydroxide, sodium chloride, polysorbate 80 (Tween 80), neomycin sulfate, polymyxin B
DTaP-IPV (Quadracel)	1/2019	formaldehyde, aluminum phosphate, 2-phenoxyethanol, polysorbate 80, glutaraldehyde, neomycin, polymyxin B sulfate, bovine serum albumin
DTaP-HepB-IPV (Pediarix)	2/2020*	formaldehyde, aluminum hydroxide, aluminum phosphate, sodium chloride, polysorbate 80 (Tween 80), neomycin sulfate, polymyxin B, yeast protein
DTaP-IPV/Hib (Pentacel)	1/2019	aluminum phosphate, polysorbate 80, sucrose, formaldehyde, glutaraldehyde, bovine serum albumin, 2-phenoxyethanol, neomycin, polymyxin B sulfate
DTaP-IPV-Hib-HepB (Vaxelis)	12/2018	polysorbate 80, formaldehyde, glutaraldehyde, bovine serum albumin, neomycin, streptomycin sulfate, polymyxin B sulfate, ammonium thiocyanate, yeast protein, aluminum
Ebola Zaire (ERVEBO)	2/2020*	Tromethamine rice-derived recombinant human serum albumin, host cell DNA benzonase, rice protein
Hib (ActHIB)	5/2019	sodium chloride, formaldehyde, sucrose
Hib (Hiberix)	4/2018	formaldehyde, sodium chloride, lactose

<b>Vaccine</b>	<b>Date</b>	<b>Contains</b>
Hib (PedvaxHIB)	10/2018	amorphous aluminum hydroxyphosphate sulfate, sodium chloride
Hep A (Havrix)	2/2020*	MRC-5 cellular proteins, formalin, aluminum hydroxide, amino acid supplement, phosphate-buffered saline solution, polysorbate 20, neomycin sulfate, aminoglycoside antibiotic
Hep A (Vaqta)	12/2018	amorphous aluminum hydroxyphosphate sulfate, non-viral protein, DNA, bovine albumin, formaldehyde, neomycin, sodium borate, sodium chloride, other process chemical residuals
Hep B (Engerix-B)	2/2020*	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)	2017	yeast protein, yeast DNA, deoxycholate, phosphorothioate linked oligodeoxynucleotide, sodium phosphate, dibasic dodecahydrate, sodium chloride, monobasic dehydrate, polysorbate 80
Hep A/Hep B (Twinrix)	2/2020*	MRC-5 cellular proteins, formalin, aluminum phosphate, aluminum hydroxide, amino acids, sodium chloride, phosphate buffer, polysorbate 20, neomycin sulfate, yeast protein, water
Human Papillomavirus (HPV) (Gardasil 9)	10/2018	amorphous aluminum hydroxyphosphate sulfate, sodium chloride, L-histidine, polysorbate 80, sodium borate, yeast protein
Influenza (Afluria) Quadrivalent	12/2019	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)	4/2019	squalene, polysorbate 80, sorbitan trioleate, sodium citrate dehydrate, citric acid monohydrate, neomycin, kanamycin, barium, hydrocortisone, egg proteins, cetyltrimethylammonium bromide (CTAB), formaldehyde
Influenza (Fluarix) Quadrivalent	©2019	octoxynol-10 (TRITON X-100), $\alpha$ -tocopheryl hydrogen succinate, polysorbate 80 (Tween 80), hydrocortisone, gentamicin sulfate, ovalbumin, formaldehyde, sodium deoxycholate, sodium phosphate-buffered isotonic sodium chloride
Influenza (Flublok) Quadrivalent	4/2019	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 (Fluclavax) Quadrivalent	8/2019	Madin Darby Canine Kidney (MDCK) cell protein, phosphate buffered saline, protein other than HA, MDCK cell DNA, polysorbate 80, cetyltrimethylammonium bromide, and $\beta$ -propiolactone, Thimerosal (multi-dose vials)
Influenza (Flulaval) Quadrivalent	2/2020*	ovalbumin, formaldehyde, sodium deoxycholate, $\alpha$ -tocopheryl hydrogen succinate, polysorbate 80, thimerosal (multi-dose vials), phosphate-buffered saline solution
Influenza (Fluzone) Quadrivalent	2019	formaldehyde, egg protein, octylphenol ethoxylate (Triton X-100), sodium phosphate-buffered isotonic sodium chloride solution, thimerosal (multi-dose vials)
Influenza (Fluzone) High Dose	1/2019	egg protein, octylphenol ethoxylate (Triton X-100), sodium phosphate-buffered isotonic sodium chloride solution, formaldehyde
Influenza (FluMist) Quadrivalent	8/2019	monosodium glutamate, hydrolyzed porcine gelatin, arginine, sucrose, dibasic potassium phosphate, monobasic potassium phosphate, ovalbumin, gentamicin sulfate, ethylenediaminetetraacetic acid (EDTA)
Japanese Encephalitis (Ixiaro)	9/2018	aluminum hydroxide, protamine sulfate, formaldehyde, bovine serum albumin, Vero cell DNA, sodium metabisulphite, Vero cell protein
Meningococcal (MenACWY-Menactra)	4/26/18	sodium phosphate-buffered isotonic sodium chloride solution, formaldehyde, diphtheria toxoid
Meningococcal (MenACWY-Menveo)	2/2020*	formaldehyde, CRM <sub>197</sub> protein
Meningococcal (MenB – Bexsero)	2/2020*	aluminum hydroxide, sodium chloride, histidine, sucrose, kanamycin
Meningococcal (MenB – Trumenba)	2018	polysorbate 80, aluminum phosphate, histidine buffered saline

Vaccine	Date	Contains
MMR (MMR-II)	2/2020*	vitamins, amino acids, fetal bovine serum, sucrose, glutamate, recombinant human albumin, neomycin, sorbitol, hydrolyzed gelatin, sodium phosphate, sodium chloride, WI-38 human diploid lung fibroblasts
MMRV (ProQuad) (Frozen: Recombinant Albumin)	2/2020*	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
MMRV (ProQuad) (Frozen: Human Serum Albumin)	2/2020*	MRC-5 cells including DNA and protein, sucrose, hydrolyzed gelatin, sodium chloride, sorbitol, monosodium L-glutamate, sodium phosphate dibasic, human albumin, sodium bicarbonate, potassium phosphate monobasic, potassium chloride; potassium phosphate dibasic, neomycin, bovine calf serum
MMRV (ProQuad) (Refrigerator Stable)	10/2018	MRC-5 cells including DNA and protein, sucrose, hydrolyzed gelatin, urea, sodium chloride, sorbitol, monosodium L-glutamate, sodium phosphate, recombinant human albumin, sodium bicarbonate, potassium phosphate, potassium chloride, neomycin, bovine serum albumin
Pneumococcal (PCV13 – Prevnar 13)	8/2017	CRM <sub>197</sub> carrier protein, polysorbate 80, succinate buffer, aluminum phosphate
Pneumococcal (PPSV-23 – Pneumovax)	2/2020*	isotonic saline solution, phenol
Polio (IPV – Ipol)	2/2020*	calf bovine serum albumin, 2-phenoxyethanol, formaldehyde, neomycin, streptomycin, polymyxin B, M-199 medium
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)	2/2017	sucrose, sodium citrate, sodium phosphate monobasic monohydrate, sodium hydroxide, polysorbate 80, cell culture media, fetal bovine serum [ <i>DNA from porcine circoviruses (PCV) 1 and 2 has been detected in RotaTeq. PCV-1 and PCV-2 are not known to cause disease in humans.</i> ]
Rotavirus (Rotarix)	2/2020*	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 [ <i>Porcine circovirus type 1 (PCV-1) is present in Rotarix. PCV-1 is not known to cause disease in humans.</i> ]
Smallpox (Vaccinia) (ACAM2000)	3/2018	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, water
Td (TDVAX)	9/2018	aluminum phosphate, formaldehyde, thimerosal
Tdap (Adacel)	1/2019	aluminum phosphate, formaldehyde, 2-phenoxyethanol, glutaraldehyde, water
Tdap (Boostrix)	2/2020*	formaldehyde, aluminum hydroxide, sodium chloride, polysorbate 80
Typhoid (Typhim Vi)	3/2014	formaldehyde, phenol, polydimethylsiloxane, disodium phosphate, monosodium phosphate, sodium chloride, sterile water
Typhoid (Vivotif Ty21a)	9/2013	sucrose, ascorbic acid, amino acids, lactose, magnesium stearate. gelatin
Varicella (Varivax) <i>Frozen</i>	2/2020*	MRC-5 human diploid cells, including DNA & protein, sucrose, hydrolyzed gelatin, sodium chloride, monosodium L-glutamate, sodium phosphate dibasic, sodium phosphate monobasic, potassium phosphate monobasic, potassium chloride, EDTA, neomycin, fetal bovine serum
Varicella (Varivax) <i>Refrigerator Stable</i>	10/2018	MRC-5 human diploid cells, including DNA & protein, sucrose, hydrolyzed gelatin, sodium chloride, monosodium L-glutamate, urea, sodium phosphate dibasic, potassium phosphate monobasic, potassium chloride, neomycin, bovine calf serum
Yellow Fever (YF-Vax)	2/2019	sorbitol, gelatin, sodium chloride
Zoster (Shingles) (Zostavax) <i>Frozen</i>	1/2019	MRC-5 human diploid cells, including DNA & protein, sucrose, hydrolyzed porcine gelatin, sodium chloride, monosodium L-glutamate, sodium phosphate dibasic, potassium phosphate monobasic, potassium chloride; neomycin, bovine calf serum

<b>Vaccine</b>	<b>Date</b>	<b>Contains</b>
Zoster (Shingles) (Zostavax) <i>Refrigerator Stable</i>	8/2018	MRC-5 human diploid cells, including DNA & protein, sucrose, hydrolyzed porcine gelatin, urea, sodium chloride, monosodium L-glutamate, sodium phosphate dibasic, potassium phosphate monobasic, potassium chloride, neomycin, bovine calf serum
Zoster (Shingles) (Shingrix)	2/2020*	sucrose, sodium chloride, dioleoyl phosphatidylcholine (DOPC), 3- <i>O</i> -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

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>.

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## Vaccine Excipient & Media Summary, Part 2

### Excipients Included in U.S. Vaccines, by Vaccine

Includes vaccine ingredients (e.g., adjuvants and preservatives) as well as substances used during the manufacturing process, including vaccine-production media, that are removed from the final product and present only in trace quantities.

In addition to the substances listed, most vaccines contain Sodium Chloride (table salt).

Vaccine	Contains
Anthrax (BioThrax)	Aluminum Hydroxide, Amino Acids, Benzethonium Chloride, Formaldehyde or Formalin, Inorganic Salts and Sugars, Vitamins
BCG (Tice)	Asparagine, Citric Acid, Lactose, Glycerin, Iron Ammonium Citrate, Magnesium Sulfate, Potassium Phosphate
DTaP (Daptacel)	Aluminum Phosphate, Ammonium Sulfate, Casamino Acid, Dimethyl-beta-cyclodextrin, Formaldehyde or Formalin, Glutaraldehyde, 2-Phenoxyethanol
DTaP (Infanrix)	Aluminum Hydroxide, Bovine Extract, Formaldehyde or Formalin, Glutaraldehyde, 2-Phenoxyethanol, Polysorbate 80
DTaP (Tripedia)	Aluminum Potassium Sulfate, Ammonium Sulfate, Bovine Extract, Formaldehyde or Formalin, Gelatin, Polysorbate 80, Sodium Phosphate, Thimerosal*
DTaP/Hib (TriHIBit)	Aluminum Potassium Sulfate, Ammonium Sulfate, Bovine Extract, Formaldehyde or Formalin, Gelatin, Polysorbate 80, Sucrose, Thimerosal*
DTaP/HepB/IPV (Pediarix)	Aluminum Hydroxide, Aluminum Phosphate, Bovine Protein, Lactalbumin Hydrolysate, Formaldehyde or Formalin, Glutaraldehyde, Monkey Kidney Tissue, Neomycin, 2-Phenoxyethanol, Polymyxin B, Polysorbate 80, Yeast Protein
DT (sanofi)	Aluminum Potassium Sulfate, Bovine Extract, Formaldehyde or Formalin, Thimerosal (multi-dose) or Thimerosal* (single-dose)
DT (Massachusetts)	Aluminum Hydroxide, Formaldehyde or Formalin
Hib (ACTHib)	Ammonium Sulfate, Formaldehyde or Formalin, Sucrose
Hib (PedvaxHib)	Aluminum Hydroxyphosphate Sulfate
Hib/Hep B (Comvax)	Amino Acids, Aluminum Hydroxyphosphate Sulfate, Dextrose, Formaldehyde or Formalin, Mineral Salts, Sodium Borate, Soy Peptone, Yeast Protein
Hep A (Havrix)	Aluminum Hydroxide, Amino Acids, Formaldehyde or Formalin, MRC-5 Cellular Protein, Neomycin Sulfate, 2-Phenoxyethanol, Phosphate Buffers, Polysorbate
Hep A (Vaqta)	Aluminum Hydroxyphosphate Sulfate, Bovine Albumin or Serum, DNA, Formaldehyde or Formalin, MRC-5 Cellular Protein, Sodium Borate
Hep B (Engerix-B)	Aluminum Hydroxide, Phosphate Buffers, Thimerosal*, Yeast Protein
Hep B (Recombivax)	Aluminum Hydroxyphosphate Sulfate, Amino Acids, Dextrose, Formaldehyde or Formalin, Mineral Salts, Potassium Aluminum Sulfate, Soy Peptone, Yeast Protein
HepA/HepB (Twinrix)	Aluminum Hydroxide, Aluminum Phosphate, Amino Acids, Dextrose, Formaldehyde or Formalin, Inorganic Salts, MRC-5 Cellular Protein, Neomycin Sulfate, 2-Phenoxyethanol, Phosphate Buffers, Polysorbate 20, Thimerosal*, Vitamins, Yeast Protein

<b>Vaccine</b>	<b>Contains</b>
Human Papillomavirus (HPV) (Gardasil)	Amino Acids, Amorphous Aluminum Hydroxyphosphate Sulfate, Carbohydrates, L-histidine, Mineral Salts, Polysorbate 80, Sodium Borate, Vitamins
Influenza (Afluria)	Beta-Propiolactone, Calcium Chloride, Neomycin, Ovalbumin, Polymyxin B, Potassium Chloride, Potassium Phosphate, Sodium Phosphate, Sodium Taurodeoxychoalate.
Influenza (Fluarix)	Egg Albumin (Ovalbumin), Egg Protein, Formaldehyde or Formalin, Gentamicin, Hydrocortisone, Octoxynol-10, $\alpha$ -Tocopheryl Hydrogen Succinate, Polysorbate 80, Sodium Deoxycholate, Sodium Phosphate, Thimerosal*
Influenza (Flulaval)	Egg Albumin (Ovalbumin), Egg Protein, Formaldehyde or Formalin, Sodium Deoxycholate, Phosphate Buffers, Thimerosal
Influenza (Fluvirin)	Beta-Propiolactone , Egg Protein, Neomycin, Polymyxin B, Polyoxyethylene 9-10 Nonyl Phenol (Triton N-101, Octoxynol 9), Thimerosal (multidose containers), Thimerosal* (single-dose syringes)
Influenza (Fluzone)	Egg Protein, Formaldehyde or Formalin, Gelatin, Octoxinol-9 (Triton X-100), Thimerosal (multidose containers)
Influenza (FluMist)	Chick Kidney Cells, Egg Protein, Gentamicin Sulfate, Monosodium Glutamate, Sucrose Phosphate Glutamate Buffer
IPV (Ipol)	Calf Serum Protein, Formaldehyde or Formalin, Monkey Kidney Tissue, Neomycin, 2-Phenoxyethanol, Polymyxin B, Streptomycin,
Japanese Encephalitis (JE-Vax)	Formaldehyde or Formalin, Gelatin, Mouse Serum Protein, Polysorbate 80, Thimerosal
Measles (Attenuvax)	Amino Acid, Bovine Albumin or Serum, Chick Embryo Fibroblasts, Gelatin, Glutamate, Human Albumin, Neomycin, Phosphate, Sodium Phosphate, Sorbitol, Sucrose, Vitamins
Meningococcal (Menactra)	Formaldehyde or Formalin, Phosphate Buffers
Meningococcal (Menomune)	Lactose, Thimerosal (10-dose vials only)
Mumps (Mumpsvax)	Amino Acid, Bovine Albumin or Serum, Chick Embryo Fibroblasts, Human Serum Albumin, Gelatin, Glutamate, Neomycin, Phosphate Buffers, Sorbitol, Sucrose, Vitamins
MMR (MMR-II)	Amino Acid, Bovine Albumin or Serum, Chick Embryo Fibroblasts, Human Serum Albumin, Gelatin, Glutamate, Neomycin, Phosphate Buffers, Sorbitol, Sucrose, Vitamins
MMRV (ProQuad)	Bovine Albumin or Serum, Gelatin, Human Serum Albumin, Monosodium L-glutamate, MRC-5 Cellular Protein, Neomycin, Sodium Phosphate Dibasic, Sodium Bicarbonate, Sorbitol, Sucrose, Potassium Phosphate Monobasic, Potassium Chloride, Potassium Phosphate Dibasic
Pneumococcal (Pneumovax)	Bovine Protein, Phenol
Pneumococcal (Prevnar)	Aluminum Phosphate, Amino Acid, Soy Peptone, Yeast Extract
Rabies (Imovax)	Human Serum Albumin, Beta-Propiolactone, MRC-5 Cellular Protein, Neomycin, Phenol Red (Phenolsulfonphthalein), Vitamins

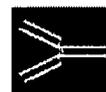
<b>Vaccine</b>	<b>Contains</b>
Rabies (RabAvert)	Amphotericin B, Beta-Propiolactone, Bovine Albumin or Serum, Chicken Protein, Chlortetracycline, Egg Albumin (Ovalbumin), Ethylenediamine-Tetraacetic Acid Sodium (EDTA), Neomycin, Potassium Glutamate
Rotavirus (RotaTeq)	Cell Culture Media, Fetal Bovine Serum, Sodium Citrate, Sodium Phosphate Monobasic Monohydrate, Sodium Hydroxide Sucrose, Polysorbate 80
Rotavirus (Rotarix)	Amino Acids, Calcium Carbonate, Calcium Chloride, D-glucose, Dextran, Ferric (III) Nitrate, L-cystine, L-tyrosine, Magnesium Sulfate, Phenol Red, Potassium Chloride, Sodium Hydrogenocarbonate, Sodium Phosphate, Sodium L-glutamine, Sodium Pyruvate, Sorbitol, Sucrose, Vitamins, Xanthan
Rubella (Meruvax II)	Bovine Albumin or Serum, Gelatin, Human Serum Albumin, Neomycin, Phosphate Buffers, Sodium Phosphate, Sorbitol
Td (Decavac)	Aluminum Potassium Sulfate, Bovine Extract, Formaldehyde or Formalin, 2-Phenoxyethanol, Peptone, Thimerosal*
Td (Massachusetts)	Aluminum Hydroxide, Aluminum Phosphate, Formaldehyde or Formalin, Thimerosal (some multidose containers)
Tdap (Adacel)	Aluminum Phosphate, Formaldehyde or Formalin, Glutaraldehyde, 2-Phenoxyethanol
Tdap (Boostrix)	Aluminum Hydroxide, Bovine Extract, Formaldehyde or Formalin, Glutaraldehyde, Polysorbate 80
Typhoid (inactivated – Typhim Vi)	Disodium Phosphate, Monosodium Phosphate, Phenol, Polydimethylsiloxane, Hexadecyltrimethylammonium Bromide
Typhoid (oral – Ty21a)	Amino Acids, Ascorbic Acid, Bovine Protein, Casein, Dextrose, Galactose, Gelatin, Lactose, Magnesium Stearate, Sucrose, Yeast Extract
Vaccinia (ACAM2000)	Glycerin, Human Serum Albumin, Mannitol, Monkey Kidney Cells, Neomycin, Phenol, Polymyxin B
Varicella (Varivax)	Bovine Albumin or Serum, Ethylenediamine-Tetraacetic Acid Sodium (EDTA), Gelatin, Monosodium L-Glutamate, MRC-5 DNA and Cellular Protein, Neomycin, Potassium Chloride, Potassium Phosphate Monobasic, Sodium Phosphate Monobasic, Sucrose
Yellow Fever (YF-Vax)	Egg Protein, Gelatin, Sorbitol
Zoster (Zostavax)	Bovine Calf Serum, Hydrolyzed Porcine Gelatin, Monosodium L-glutamate, MRC-5 DNA and Cellular Protein, Neomycin, Potassium Phosphate Monobasic, Potassium Chloride, Sodium Phosphate Dibasic, Sucrose

April 2008

\*Where “thimerosal” is marked with an asterisk (\*) it indicates that the product should be considered equivalent to thimerosal-free products. This vaccine may contain trace amounts (<3 mcg) of mercury left after post-production thimerosal removal, but these amounts have no biological effect. *JAMA* 1999;282(18) and *JAMA* 2000;283(16)

Adapted from Grabenstein JD. *ImmunoFacts: Vaccines & Immunologic Drugs*. St. Louis, MO: Wolters Kluwer Health Inc.; 2006 and individual products’ package inserts.

All reasonable efforts have been made to ensure the accuracy of this information, but manufacturers may change product contents before that information is reflected here.



## Vaccine Excipient & Media Summary

This section begins with a summary of the excipients included in licensed vaccines in the United States, as of the revision date at the bottom of the page.

Excipients are inactive ingredients of a drug product necessary for production of a finished pharmaceutical formulation.

After the list of excipients is a list of culture media used in the manufacturing process of vaccines licensed in the United States.

Growth media are culture materials used to produce mass quantities of a microorganism anti-body, or other immunologic agent, suitable for further processing into a finished pharmaceutical product.

All reasonable efforts have been made to ensure the accuracy of this information, but manufacturers may change product contents before that information is reflected here.

Excipients Included in US Licensed Vaccines*		
Excipient	Use	Vaccine
Albumin, egg (Ovalbumin)	Growth medium	Rabies ( <i>RabAvert</i> )
Albumin, human serum	Component of growth medium, protein stabilizer	Measles ( <i>Attenuvax</i> ), MMR ( <i>MMR-II</i> ), Mumps ( <i>Mumpsavax</i> ), Rabies ( <i>Imovax</i> ), Rubella ( <i>Meruvax II</i> )
Albumin or serum, bovine	Component of growth medium, protein stabilizer	Hepatitis A ( <i>Havrix</i> , <i>Vaqta</i> ), Measles ( <i>Attenuvax</i> ), MMR ( <i>MMR-II</i> ), Mumps ( <i>Mumpsavax</i> ), Rabies ( <i>Imovax</i> , <i>RabAvert</i> ), Rubella ( <i>Meruvax II</i> ), Vaccinia ( <i>Dryvax</i> ), Varicella ( <i>Varivax</i> )
Aluminum hydroxide	Adjuvant	Anthrax ( <i>BioThrax</i> ), DTaP ( <i>Infanrix</i> ), DTaP-Hep B-IPV ( <i>Pedia-rix</i> ), DT (Massachusetts), Td (Massachusetts), Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hepatitis B ( <i>Engerix-B</i> )
Aluminum phosphate	Adjuvant	DTaP ( <i>Daptacel</i> ), Td (Aventis Pasteur, Massachusetts), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Pneumococcal ( <i>Prevnar</i> ), Rabies ( <i>BioRab</i> )
Aluminum potassium sulfate	Adjuvant	DTaP ( <i>Tripedia</i> , <i>Daptacel</i> ), DT (Aventis Pasteur)
Amino acids	Component of growth medium	Anthrax ( <i>BioThrax</i> ), Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Td (Aventis Pasteur), Typhoid oral ( <i>Vivotif</i> )
Ammonium sulfate	Protein fractionation	Hib ( <i>Act-HIB</i> )
Amphotericin B	Antibacterial	Rabies ( <i>RabAvert</i> )
Ascorbic acid	Antioxidant	Typhoid oral ( <i>Vivotif</i> )
Bactopectone	Component of growth medium	Influenza (varies seasonally)
Beta-propiolactone	Viral inactivator	Influenza ( <i>Fluvirin</i> ), Rabies ( <i>Imovax</i> , <i>RabAvert</i> )

This table appears courtesy of Grabenstein JD. *ImmunoFacts: Vaccines & Immunologic Drugs*. St. Louis, MO: Walters Kluwer Health Inc.; 2005.

# Appendix A

## Vaccine Excipient & Media Summary

Excipients Included in US Licensed Vaccines*		
Excipient	Use	Vaccine
Benzethonium chloride	Preservative	Anthrax ( <i>BioThrax</i> )
Brilliant green	Dye	Vaccinia ( <i>Dryvax-historic</i> )
Chlortetracycline	Antibacterial	Rabies ( <i>RabAvert</i> ), Vaccinia ( <i>Dryvax</i> )
DNA	Manufacturing residue	Hepatitis A ( <i>Vaqta</i> )
Ethylenediamine-tetraacetic acid sodium (EDTA)	Preservative	Rabies ( <i>RabAvert</i> ), Varicella ( <i>Varivax</i> )
Egg protein	Manufacturing residue	Influenza (all brands), Yellow fever ( <i>YF-Vax</i> )
Formaldehyde, formalin	Antimicrobial, preservative	Anthrax ( <i>BioThrax</i> ), DTaP (all brands), DTaP-Hep B-IPV ( <i>Pediarix</i> ), DT (all brands), Td (all brands), Hepatitis A ( <i>Havrix</i> , <i>Vaqta</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hib ( <i>ActHIB</i> ), Hib-Hepatitis B ( <i>Comvax</i> ), Influenza ( <i>Fluzone</i> ), Japanese encephalitis ( <i>JE-Vax</i> ), Poliovirus inactivated ( <i>Ipol</i> )
Gelatin	Stabilizer in freeze-drying, solvent	DTaP ( <i>Tripedia</i> ), Influenza ( <i>Fluzone</i> ), Japanese encephalitis ( <i>JE-Vax</i> ), Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsvax</i> ), Rubella ( <i>Meruvax II</i> ), MMR ( <i>MMR-II</i> ), Rabies ( <i>RabAvert</i> ), Typhoid oral ( <i>Vivotif</i> ), Varicella ( <i>Varivax</i> ), Yellow fever ( <i>YF-Vax</i> )
Gentamicin	Antibacterial	Influenza ( <i>FluMist</i> )
Glutaraldehyde	Toxin detoxifier	DTaP ( <i>Infanrix</i> ), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Glycerin	Solvent	Vaccinia ( <i>DryVax</i> )
Glycine	Protein stabilizer	DT (most brands), Td (most brands)
Hydrochloric acid	Adjust pH	DTaP (most brands), DT (most brands)
Lactose	Stabilizer in freeze-drying, filling	BCG ( <i>Tice</i> ), Hib (some packages), Meningococcal ( <i>Menomune</i> ), Typhoid oral ( <i>Vivotif</i> )
Magnesium stearate	Lubricant for capsule filling	Typhoid oral ( <i>Vivotif</i> )
Monosodium glutamate	Stabilizer	Influenza ( <i>FluMist</i> ), Varicella ( <i>Varivax</i> )
Mouse serum protein	Manufacturing residue	Japanese encephalitis ( <i>JE-Vax</i> )
MRC-5 cellular protein	Manufacturing residue	Hepatitis A ( <i>Havrix</i> , <i>Vaqta</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Rabies ( <i>Imovax</i> ), Poliovirus inactivated ( <i>Poliovax</i> ), Varicella ( <i>Varivax</i> )

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## Vaccine Excipient &amp; Media Summary

Excipients Included in US Licensed Vaccines*		
Excipient	Use	Vaccine
Neomycin	Antibacterial	DTaP-Hep B-IPV ( <i>Pediarix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Influenza ( <i>Fluvirin</i> ), Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsavax</i> ), Rubella ( <i>Meruvax II</i> ), MMR ( <i>MMR-II</i> ), Poliovirus inactivated ( <i>Ipol</i> ), Rabies ( <i>Imovax, RabAvert</i> ), Vaccinia ( <i>DryVax</i> ), Varicella ( <i>Varivax</i> )
Phenol	Preservative, antibacterial	Pneumococcal ( <i>Pneumovax-23</i> ), Typhoid inactivated ( <i>Typhim Vi</i> ) Vaccinia ( <i>Dryvax</i> )
Phenol red (phenolsulfonphthalein)	pH indicator, dye	Rabies ( <i>Imovax</i> )
2-Phenoxyethanol	Preservative	DTaP ( <i>Infanrix, Daptacel</i> ), DTaP-Hep B-IPV ( <i>Pediarix</i> ), Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Poliovirus inactivated ( <i>Ipol</i> ), Td ( <i>Aventis Pasteur</i> )
Phosphate buffers (eg, disodium, monosodium, potassium, sodium dihydrogen phosphate)	Adjust pH	DTaP (most brands), DT (most brands), Hib ( <i>Act-Hib</i> ), Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hepatitis B ( <i>Engerix-B</i> ), Influenza ( <i>FluMist</i> ), Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsavax</i> ), Poliovirus inactivated ( <i>Ipol</i> ), Rabies ( <i>BioRab</i> ), Rubella ( <i>Meruvax II</i> ), MMR ( <i>MMR-II</i> ), Typhoid inactivated ( <i>Typhim Vi</i> ), Varicella ( <i>Varivax</i> )
Polydimethylsiloxane	Antifoaming agent	Typhoid inactivated ( <i>Typhim Vi</i> )
Polyethylene glycol p-isooctylphenyl ether (Triton X-100)	Nonionic surfactant (viral inactivation)	Influenza ( <i>Fluzone</i> )
Polymyxin B	Antibacterial	DTaP-Hep B-IPV ( <i>Pediarix</i> ), Influenza ( <i>Fluvirin</i> ), Poliovirus inactivated ( <i>Ipol</i> ), Vaccinia ( <i>Dryvax</i> )
Polyoxyethylene 9-10 nonyl phenol (Triton N-101, octoxynol 9)	Nonionic surfactant (viral inactivation)	Influenza ( <i>Fluvirin</i> )
Polysorbate 20	Surfactant	Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> )
Polysorbate 80	Surfactant	DTaP ( <i>Infanrix, Tripedia</i> ), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Potassium glutamate	Stabilizer	Rabies ( <i>RabAvert</i> )
Sodium acetate	Adjust pH	DT (some brands), Td (some brands)
Sodium borate	Adjust pH	Hepatitis A ( <i>Vaqta</i> ), Hib-Hepatitis B ( <i>Comvax</i> )

**Vaccine Excipient & Media Summary**

Excipients Included in US Licensed Vaccines*		
Excipient	Use	Vaccine
Sodium chloride	Adjust tonicity	Most vaccines, including Anthrax, BCG, Measles, Mumps, MMR, Pneumococcal, Polio inactivated, Rabies, Rubella, Typhoid inactivated, Varicella, Yellow fever
Sodium hydroxide	Adjust pH	DT (most brands), Td (most brands)
Sorbitol	Stabilizer, solvent	Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsvax</i> ), Rubella ( <i>Meruvax II</i> ), MMR ( <i>MMR-II</i> ), Yellow fever ( <i>YF-Vax</i> )
Streptomycin	Antibacterial	Poliovirus inactivated ( <i>Ipol</i> ), Vaccinia ( <i>Dryvax</i> )
Sucrose	Stabilizer	Hib ( <i>Act-HIB</i> ), Influenza ( <i>Flu-Mist</i> ), Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsvax</i> ), MMR ( <i>MMR-II</i> ), Typhoid oral ( <i>Vivotif</i> ), Varicella ( <i>Varivax</i> )
Thimerosal	Preservative in some multi-dose containers (see package labeling for precise content)	DTaP (some multidose containers), DT (some multidose containers), Td (some multidose containers), Hepatitis B (some multidose containers), Hib (some multidose containers), Influenza (some multidose containers), Japanese encephalitis ( <i>JE-Vax</i> ), Meningococcal ( <i>Menomune</i> ), Rabies ( <i>BioRab</i> ). Some single-dose containers contain trace amounts of thimerosal from the production process, but substantially lower concentrations than if used as a preservative. Consult product monographs and labeling for details.
Vitamins unspecified	Component of growth medium	Anthrax ( <i>BioThrax</i> ), Rabies ( <i>Imovax</i> ), Td ( <i>Aventis Pasteur</i> )
Yeast protein	Component of growth medium	DTaP-Heb B-IPV ( <i>Pediarix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hepatitis B ( <i>Engerix-B</i> , <i>Recombivax-HB</i> ), Hib ( <i>HibTiter</i> ), Hib-Hepatitis B ( <i>Comvax</i> )

\* Proprietary names appear in italics.

## Vaccine Excipient &amp; Media Summary

Vaccine-Production Media*	
Vaccine Culture Media	Vaccine(s)
Bovine protein	DTaP-Hep B-IPV (poliovirus component, <i>Pediarix</i> ), Pneumococcal ( <i>Pneumovax-23</i> ), Typhoid oral ( <i>Vivotif</i> )
Calf skin	Vaccinia ( <i>Dryvax</i> )
Chick embryo fibroblast tissue culture	Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsavax</i> ), combination vaccines containing them, Rabies ( <i>RabAvert</i> )
Chick kidney cells	Influenza (master viruses for <i>FluMist</i> )
Chicken embryo (fertilized egg)	Influenza (all brands), Yellow fever ( <i>YF-Vax</i> )
Cohen-Wheeler, modified (pertussis components)	DTaP (alternate is Stainer-Scholte media)
Human diploid tissue culture, MRC-5	Hepatitis A ( <i>Havrix</i> , <i>Vaqta</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Poliovirus inactivated ( <i>Poliovax</i> ), Rabies ( <i>Imovax</i> ), Varicella ( <i>Varivax</i> )
Human diploid tissue culture, WI-38	Rubella ( <i>Meruvax II</i> ), combination vaccines containing it, Varicella ( <i>Varivax</i> )
Latham medium derived from bovine casein	DTaP ( <i>Infanrix</i> , tetanus component), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Linggoud-Fenton media containing bovine extract	DTaP ( <i>Infanrix</i> diphtheria component), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Monkey kidney tissue culture, Vero (Vervet or African green monkeys)	DTaP-Hep B-IPV (poliovirus component, <i>Pediarix</i> ), Poliovirus inactivated ( <i>Ipol</i> )
Mouse brain	Japanese encephalitis ( <i>JE-Vax</i> )
Mueller-Miller media	Diphtheria and tetanus vaccines (most brands)
Rhesus fetal lung tissue culture	Rabies ( <i>BioRab</i> )
Stainer-Scholte	DTaP ( <i>Daptacel</i> , <i>Infanrix</i> , pertussis component), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Soy peptone broth	Pneumococcal ( <i>Pprevnar</i> )
Synthetic/semi-synthetic	Anthrax ( <i>BioThrax</i> ), BCG ( <i>Tice</i> ), DT (all brands), Td (all brands), Hib (all brands), Meningococcal ( <i>Menomune</i> ), Pneumococcal ( <i>Pneumovax-23</i> ), Typhoid inactivated ( <i>Typhim Vi</i> )
Yeast or yeast extract (typically <i>Saccharomyces cerevisiae</i> )	Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hepatitis B ( <i>Engerix-B</i> , <i>Recombivax-HB</i> ), Hib ( <i>HibTiter</i> ), Hib-Hepatitis B ( <i>Comvax</i> ), Medium for growing <i>Corynebacterium diphtheriae</i> strain C7 (b197) to obtain CRM <sub>197</sub> protein for conjugation to polysaccharides ( <i>HibTiter</i> , <i>Pprevnar</i> ).

\* Proprietary names appear in italics.

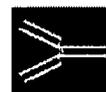
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Grabenstein JD. Clinical management of hypersensitivities to vaccine components. *Hosp Pharm*. 1997;32:77-84,87.

Offit PA, Jew RK. Addressing parents's concerns: Do vaccines contain harmful preservatives, adjuvants, additives, or residuals. *Pediatrics*. 2003;112:1394-1401.



## Vaccine Excipient & Media Summary

This section begins with a summary of the excipients included in licensed vaccines in the United States, as of the revision date at the bottom of the page.

Excipients are inactive ingredients of a drug product necessary for production of a finished pharmaceutical formulation.

After the list of excipients is a list of culture media used in the manufacturing process of vaccines licensed in the United States.

Growth media are culture materials used to produce mass quantities of a microorganism anti-body, or other immunologic agent, suitable for further processing into a finished pharmaceutical product.

All reasonable efforts have been made to ensure the accuracy of this information, but manufacturers may change product contents before that information is reflected here.

Excipients Included in US Licensed Vaccines*		
Excipient	Use	Vaccine
Albumin, egg (Ovalbumin)	Growth medium	Rabies ( <i>RabAvert</i> )
Albumin, human serum	Component of growth medium, protein stabilizer	Measles ( <i>Attenuvax</i> ), MMR ( <i>MMR-II</i> ), Mumps ( <i>Mumpsavax</i> ), Rabies ( <i>Imovax</i> ), Rubella ( <i>Meruvax II</i> )
Albumin or serum, bovine	Component of growth medium, protein stabilizer	Hepatitis A ( <i>Havrix</i> , <i>Vaqta</i> ), Measles ( <i>Attenuvax</i> ), MMR ( <i>MMR-II</i> ), Mumps ( <i>Mumpsavax</i> ), Rabies ( <i>Imovax</i> , <i>RabAvert</i> ), Rubella ( <i>Meruvax II</i> ), Vaccinia ( <i>Dryvax</i> ), Varicella ( <i>Varivax</i> )
Aluminum hydroxide	Adjuvant	Anthrax ( <i>BioThrax</i> ), DTaP ( <i>Infanrix</i> ), DTaP-Hep B-IPV ( <i>Pedia-rix</i> ), DT (Massachusetts), Td (Massachusetts), Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hepatitis B ( <i>Engerix-B</i> )
Aluminum phosphate	Adjuvant	DTaP ( <i>Daptacel</i> ), Td (Aventis Pasteur, Massachusetts), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Pneumococcal ( <i>Prevnar</i> ), Rabies ( <i>BioRab</i> )
Aluminum potassium sulfate	Adjuvant	DTaP ( <i>Tripedia</i> , <i>Daptacel</i> ), DT (Aventis Pasteur)
Amino acids	Component of growth medium	Anthrax ( <i>BioThrax</i> ), Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Td (Aventis Pasteur), Typhoid oral ( <i>Vivotif</i> )
Ammonium sulfate	Protein fractionation	Hib ( <i>Act-HIB</i> )
Amphotericin B	Antibacterial	Rabies ( <i>RabAvert</i> )
Ascorbic acid	Antioxidant	Typhoid oral ( <i>Vivotif</i> )
Bactopectone	Component of growth medium	Influenza (varies seasonally)
Beta-propiolactone	Viral inactivator	Influenza ( <i>Fluvirin</i> ), Rabies ( <i>Imovax</i> , <i>RabAvert</i> )

This table appears courtesy of Grabenstein JD. *ImmunoFacts: Vaccines & Immunologic Drugs*. St. Louis, MO: Walters Kluwer Health Inc.; 2005.

## Appendix A

### Vaccine Excipient & Media Summary

Excipients Included in US Licensed Vaccines*		
Excipient	Use	Vaccine
Benzethonium chloride	Preservative	Anthrax ( <i>BioThrax</i> )
Brilliant green	Dye	Vaccinia ( <i>Dryvax-historic</i> )
Chlortetracycline	Antibacterial	Rabies ( <i>RabAvert</i> ), Vaccinia ( <i>Dryvax</i> )
DNA	Manufacturing residue	Hepatitis A ( <i>Vaqta</i> )
Ethylenediamine-tetraacetic acid sodium (EDTA)	Preservative	Rabies ( <i>RabAvert</i> ), Varicella ( <i>Varivax</i> )
Egg protein	Manufacturing residue	Influenza (all brands), Yellow fever ( <i>YF-Vax</i> )
Formaldehyde, formalin	Antimicrobial, preservative	Anthrax ( <i>BioThrax</i> ), DTaP (all brands), DTaP-Hep B-IPV ( <i>Pediarix</i> ), DT (all brands), Td (all brands), Hepatitis A ( <i>Havrix</i> , <i>Vaqta</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hib ( <i>ActHIB</i> ), Hib-Hepatitis B ( <i>Comvax</i> ), Influenza ( <i>Fluzone</i> ), Japanese encephalitis ( <i>JE-Vax</i> ), Poliovirus inactivated ( <i>Ipol</i> )
Gelatin	Stabilizer in freeze-drying, solvent	DTaP ( <i>Tripedia</i> ), Influenza ( <i>Fluzone</i> ), Japanese encephalitis ( <i>JE-Vax</i> ), Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsvax</i> ), Rubella ( <i>Meruvax II</i> ), MMR ( <i>MMR-II</i> ), Rabies ( <i>RabAvert</i> ), Typhoid oral ( <i>Vivotif</i> ), Varicella ( <i>Varivax</i> ), Yellow fever ( <i>YF-Vax</i> )
Gentamicin	Antibacterial	Influenza ( <i>FluMist</i> )
Glutaraldehyde	Toxin detoxifier	DTaP ( <i>Infanrix</i> ), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Glycerin	Solvent	Vaccinia ( <i>DryVax</i> )
Glycine	Protein stabilizer	DT (most brands), Td (most brands)
Hydrochloric acid	Adjust pH	DTaP (most brands), DT (most brands)
Lactose	Stabilizer in freeze-drying, filling	BCG ( <i>Tice</i> ), Hib (some packages), Meningococcal ( <i>Menomune</i> ), Typhoid oral ( <i>Vivotif</i> )
Magnesium stearate	Lubricant for capsule filling	Typhoid oral ( <i>Vivotif</i> )
Monosodium glutamate	Stabilizer	Influenza ( <i>FluMist</i> ), Varicella ( <i>Varivax</i> )
Mouse serum protein	Manufacturing residue	Japanese encephalitis ( <i>JE-Vax</i> )
MRC-5 cellular protein	Manufacturing residue	Hepatitis A ( <i>Havrix</i> , <i>Vaqta</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Rabies ( <i>Imovax</i> ), Poliovirus inactivated ( <i>Poliovax</i> ), Varicella ( <i>Varivax</i> )

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## Vaccine Excipient &amp; Media Summary

Excipients Included in US Licensed Vaccines*		
Excipient	Use	Vaccine
Neomycin	Antibacterial	DTaP-Hep B-IPV ( <i>Pediarix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Influenza ( <i>Fluvirin</i> ), Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsvax</i> ), Rubella ( <i>Meruvax II</i> ), MMR ( <i>MMR-II</i> ), Poliovirus inactivated ( <i>Ipol</i> ), Rabies ( <i>Imovax, RabAvert</i> ), Vaccinia ( <i>DryVax</i> ), Varicella ( <i>Varivax</i> )
Phenol	Preservative, antibacterial	Pneumococcal ( <i>Pneumovax-23</i> ), Typhoid inactivated ( <i>Typhim Vi</i> ) Vaccinia ( <i>Dryvax</i> )
Phenol red (phenolsulfonphthalein)	pH indicator, dye	Rabies ( <i>Imovax</i> )
2-Phenoxyethanol	Preservative	DTaP ( <i>Infanrix, Daptacel</i> ), DTaP-Hep B-IPV ( <i>Pediarix</i> ), Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Poliovirus inactivated ( <i>Ipol</i> ), Td ( <i>Aventis Pasteur</i> )
Phosphate buffers (eg, disodium, monosodium, potassium, sodium dihydrogen phosphate)	Adjust pH	DTaP (most brands), DT (most brands), Hib ( <i>Act-Hib</i> ), Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hepatitis B ( <i>Engerix-B</i> ), Influenza ( <i>FluMist</i> ), Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsvax</i> ), Poliovirus inactivated ( <i>Ipol</i> ), Rabies ( <i>BioRab</i> ), Rubella ( <i>Meruvax II</i> ), MMR ( <i>MMR-II</i> ), Typhoid inactivated ( <i>Typhim Vi</i> ), Varicella ( <i>Varivax</i> )
Polydimethylsiloxane	Antifoaming agent	Typhoid inactivated ( <i>Typhim Vi</i> )
Polyethylene glycol p-isooctylphenyl ether (Triton X-100)	Nonionic surfactant (viral inactivation)	Influenza ( <i>Fluzone</i> )
Polymyxin B	Antibacterial	DTaP-Hep B-IPV ( <i>Pediarix</i> ), Influenza ( <i>Fluvirin</i> ), Poliovirus inactivated ( <i>Ipol</i> ), Vaccinia ( <i>Dryvax</i> )
Polyoxyethylene 9-10 nonyl phenol (Triton N-101, octoxynol 9)	Nonionic surfactant (viral inactivation)	Influenza ( <i>Fluvirin</i> )
Polysorbate 20	Surfactant	Hepatitis A ( <i>Havrix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> )
Polysorbate 80	Surfactant	DTaP ( <i>Infanrix, Tripedia</i> ), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Potassium glutamate	Stabilizer	Rabies ( <i>RabAvert</i> )
Sodium acetate	Adjust pH	DT (some brands), Td (some brands)
Sodium borate	Adjust pH	Hepatitis A ( <i>Vaqta</i> ), Hib-Hepatitis B ( <i>Comvax</i> )

**Vaccine Excipient & Media Summary**

Excipients Included in US Licensed Vaccines*		
Excipient	Use	Vaccine
Sodium chloride	Adjust tonicity	Most vaccines, including Anthrax, BCG, Measles, Mumps, MMR, Pneumococcal, Polio inactivated, Rabies, Rubella, Typhoid inactivated, Varicella, Yellow fever
Sodium hydroxide	Adjust pH	DT (most brands), Td (most brands)
Sorbitol	Stabilizer, solvent	Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsvax</i> ), Rubella ( <i>Meruvax II</i> ), MMR ( <i>MMR-II</i> ), Yellow fever ( <i>YF-Vax</i> )
Streptomycin	Antibacterial	Poliovirus inactivated ( <i>Ipol</i> ), Vaccinia ( <i>Dryvax</i> )
Sucrose	Stabilizer	Hib ( <i>Act-HIB</i> ), Influenza ( <i>Flu-Mist</i> ), Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsvax</i> ), MMR ( <i>MMR-II</i> ), Typhoid oral ( <i>Vivotif</i> ), Varicella ( <i>Varivax</i> )
Thimerosal	Preservative in some multi-dose containers (see package labeling for precise content)	DTaP (some multidose containers), DT (some multidose containers), Td (some multidose containers), Hepatitis B (some multidose containers), Hib (some multidose containers), Influenza (some multidose containers), Japanese encephalitis ( <i>JE-Vax</i> ), Meningococcal ( <i>Menomune</i> ), Rabies ( <i>BioRab</i> ). Some single-dose containers contain trace amounts of thimerosal from the production process, but substantially lower concentrations than if used as a preservative. Consult product monographs and labeling for details.
Vitamins unspecified	Component of growth medium	Anthrax ( <i>BioThrax</i> ), Rabies ( <i>Imovax</i> ), Td ( <i>Aventis Pasteur</i> )
Yeast protein	Component of growth medium	DTaP-Heb B-IPV ( <i>Pediarix</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hepatitis B ( <i>Engerix-B</i> , <i>Recombivax-HB</i> ), Hib ( <i>HibTiter</i> ), Hib-Hepatitis B ( <i>Comvax</i> )

\* Proprietary names appear in italics.

## Vaccine Excipient &amp; Media Summary

Vaccine-Production Media*	
Vaccine Culture Media	Vaccine(s)
Bovine protein	DTaP-Hep B-IPV (poliovirus component, <i>Pediarix</i> ), Pneumococcal ( <i>Pneumovax-23</i> ), Typhoid oral ( <i>Vivotif</i> )
Calf skin	Vaccinia ( <i>Dryvax</i> )
Chick embryo fibroblast tissue culture	Measles ( <i>Attenuvax</i> ), Mumps ( <i>Mumpsavax</i> ), combination vaccines containing them, Rabies ( <i>RabAvert</i> )
Chick kidney cells	Influenza (master viruses for <i>FluMist</i> )
Chicken embryo (fertilized egg)	Influenza (all brands), Yellow fever ( <i>YF-Vax</i> )
Cohen-Wheeler, modified (pertussis components)	DTaP (alternate is Stainer-Scholte media)
Human diploid tissue culture, MRC-5	Hepatitis A ( <i>Havrix</i> , <i>Vaqta</i> ), Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Poliovirus inactivated ( <i>Poliovax</i> ), Rabies ( <i>Imovax</i> ), Varicella ( <i>Varivax</i> )
Human diploid tissue culture, WI-38	Rubella ( <i>Meruvax II</i> ), combination vaccines containing it, Varicella ( <i>Varivax</i> )
Latham medium derived from bovine casein	DTaP ( <i>Infanrix</i> , tetanus component), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Linggoud-Fenton media containing bovine extract	DTaP ( <i>Infanrix</i> diphtheria component), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Monkey kidney tissue culture, Vero (Vervet or African green monkeys)	DTaP-Hep B-IPV (poliovirus component, <i>Pediarix</i> ), Poliovirus inactivated ( <i>Ipol</i> )
Mouse brain	Japanese encephalitis ( <i>JE-Vax</i> )
Mueller-Miller media	Diphtheria and tetanus vaccines (most brands)
Rhesus fetal lung tissue culture	Rabies ( <i>BioRab</i> )
Stainer-Scholte	DTaP ( <i>Daptacel</i> , <i>Infanrix</i> , pertussis component), DTaP-Hep B-IPV ( <i>Pediarix</i> )
Soy peptone broth	Pneumococcal ( <i>Prevnar</i> )
Synthetic/semi-synthetic	Anthrax ( <i>BioThrax</i> ), BCG ( <i>Tice</i> ), DT (all brands), Td (all brands), Hib (all brands), Meningococcal ( <i>Menomune</i> ), Pneumococcal ( <i>Pneumovax-23</i> ), Typhoid inactivated ( <i>Typhim Vi</i> )
Yeast or yeast extract (typically <i>Saccharomyces cerevisiae</i> )	Hepatitis A-Hepatitis B ( <i>Twinrix</i> ), Hepatitis B ( <i>Engerix-B</i> , <i>Recombivax-HB</i> ), Hib ( <i>HibTiter</i> ), Hib-Hepatitis B ( <i>Comvax</i> ), Medium for growing <i>Corynebacterium diphtheriae</i> strain C7 (b197) to obtain CRM <sub>197</sub> protein for conjugation to polysaccharides ( <i>HibTiter</i> , <i>Prevnar</i> ).

\* Proprietary names appear in italics.

**References:** Canadian National Advisory Committee on Immunization. Statement on thimerosal. *Can Comm Dis Rep*. 2003;29(ACS-1):1-10.

CDC. Thimerosal in vaccines: a joint statement of the American Academy of Pediatrics and the Public Health Service. *MMWR*. 1999;48:563-565.

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Grabenstein JD. Clinical management of hypersensitivities to vaccine components. *Hosp Pharm*. 1997;32:77-84,87.

Offit PA, Jew RK. Addressing parents's concerns: Do vaccines contain harmful preservatives, adjuvants, additives, or residuals. *Pediatrics*. 2003;112:1394-1401.

## Vaccines

### **World Vaccine Market Nears \$28 Billion.**

Revenues earned by manufacturers of vaccines worldwide reached \$27.6 billion in 2015, up from \$24.7 billion in 2014 as sales in all segments expanded. This according to our most recent study Kalorama Information's report: *Vaccines 2016:World Market Analysis* Kalorama finds that sales of pediatric vaccines constitute the larger market according to the report, accounting for 57.6% of the total vaccines market..

When it comes to the volatile area of Political Immunology, reporting deaths and bad reactions from vaccination has been a very sensitive area, right from the start. Obviously those selling vaccines are not going to want to advertise their failures - that's just business. But creating false data and omitting reports of adverse reactions, that gets into a whole other area of fraud and misrepresentation. Interesting to see how author George Bernard Shaw picked up on this game a century ago: "During the last epidemic at the turn of the century, I was a member of the Health Committee of London Borough Council. I learned how the credit of vaccination is kept up statistically by diagnosing all the re-vaccinated cases of smallpox as pustular eczema, varioloid, or whatnot - [anything] except smallpox." ([205] p 64 ) It's your standard re-classification technique: like calling polio 'aseptic meningitis,' or calling smallpox 'Monkeypox' after the diseases were declared "eradicated" by some agency or other. (M.Dorey [224], [235] The numbers have to look good.

The other smokescreen commonly used by statisticians and writers is the Too Much Data trick. They'll divide the raw data up into so many subgroups, like age, sex, and race, that the main idea gets obscured. In this way, simple facts like an overall increase in US cancer deaths in the past 50 years, or the natural decline in deaths from diseases before vaccinations came out - things like this get conveniently lost. (Yiamouyiannis, p 78) [210]

Most people don't read medical journals and books; they skim enews and magazines, and form their opinions from a few pixels of what they find there. Pop media tend to support the agenda of the main advertisers - the drug companies.

### **REPORTING ADVERSE REACTIONS**

As far as physicians' responsibility for reporting adverse reactions, fathom this: mass vaccination programs have been rolling in the US since 1902. But until 1991, there was "no central record keeping agency in the U.S. to which physicians could report vaccine reactions." (p88 [227]) In 1991, the VAERS 72 62 (Vaccine Adverse Effect Reporting System) was set up in the US. The system is an offshoot of the National Childhood Vaccine

Injury Act enacted by Congress in 1986. The NCVIA was the 1986 law signed by Ronald Reagan that let

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drug companies totally off the hook when children died from side effects by decreeing: “no vaccine manufacturer shall be liable in a civil action for damages arising from a vaccine-related injury or death.” ( [256] p. 499)

Before 1991, any statement about the safety of vaccines was meaningless because there was no central reporting agency keeping track of adverse reactions! Everyone was saying how safe vaccinations were, but how would they know if no one were tracking the reactions? If a kid dropped dead 5 minutes after a vaccine, no one kept count of it before 1991. So we have no idea of the actual numbers. Then as now, the majority of doctors simply don't report vaccines reactions. The FDA estimates that doctors only report 10% of adverse reactions to vaccinations.

(Orient, Null) [177, 220, 245]

### **HOW MANY REACTIONS REALLY?**

As of 2004, 200,000 adverse event reports were recorded in the VAERS database following more than one billion doses of more than 30 different types of vaccines administered as part of the U.S. National Immunization Program. (Geier, [77]) If this represents only 10% of actual, that's 2 million serious vaccine reactions since 1991. Now if the true figure is really 1% of actual reactions, as FDA Commissioner Kessler stated it was [346], that means that there could have been 20 million serious adverse reactions to vaccines since 1991, involving either death, permanent injury or hospitalization. Such an epidemic could actually be in place in the US at the present time and no one is even clocking it!

### **Excipients in vaccines:**

- \* aluminum hydroxide
- \* aluminum phosphate
- \* ammonium sulfate
- \* amphotericin B
- \* animal tissues: pig blood, horse blood, rabbit brain,
- \* dog kidney, monkey kidney,
- \* chick embryo, chicken egg, duck egg
- \* calf (bovine) serum
- \* betapropiolactone
- \* fetal bovine serum
- \* formaldehyde
- \* formalin
- \* gelatin
- \* glycerol
- \* human diploid cells (originating from human aborted fetal tissue)

## Vaccines

- \* hydrolyzed gelatin
- \* mercury thimerosal (thimerosal, Merthiolate(r))
- \* monosodium glutamate (MSG)
- \* neomycin
- \* neomycin sulfate
- \* phenol red indicator
- \* phenoxyethanol (antifreeze)
- \* potassium diphosphate
- \* potassium monophosphate
- \* polymyxin B
- \* polysorbate 20
- \* polysorbate 80
- \* porcine (pig) pancreatic hydrolysate of casein
- \* residual MRC5 proteins
- \* sorbitol
- \* tri(n)butylphosphate,
- \* VERO cells, a continuous line of monkey kidney cells, and
- \* washed sheep red blood

### **So let's bring it into focus:**

- Some 68 vaccines are mandated in this country for children under 18 years of age. And now the same for adults.
- No one knows how many thousands have died or suffered adverse reactions from the vaccines, since there was no reporting agency in place until 1991.
- The drug companies are exempt from prosecution
- less than 10% of actual ill effects are reported
- There is no follow-up on the reported cases, some of which involve death or permanent neurological damage.
- Compensation for vaccine injuries is borne by the taxpayers

Yes, yes, it's staggering. Mr. Orwell, may I present Mr. Huxley?

Jonas Salk's polio vaccine only lasted for 17 months because of all the deaths and paralysis it caused. Its replacement was the Sabin oral vaccine, which has been in use ever since. Here's what Albert Sabin, MD, the inventor of that vaccine, had to say 30 years later:

“Official data has shown that the large scale vaccinations undertaken in the US have failed to obtain any significant improvement of the diseases for which they were supposed to

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provide immunization. In essence it was and is a failure." [294] - International Assn of Scientists & Biologists 7 Dec 85

### **DISEASE FROM VACCINE**

Polio vaccine is still unsafe today. In the Caribbean during 2002 there were 21 cases of polio and 2 deaths caused by the oral polio vaccine. [117, 113] The big news is that all these cases were traced from a dose given to one child! That means the vaccine itself has created a new disease, capable of spreading from patient to patient, according to the CDC. (Jones, 18 Mar 02)

[129] A CDC scientist, Olin Kew tells us that in this case:

"...the virus, originating in the vaccine ...had undergone a series of genetic mutations ..., had reverted to a virulent form and caused the very disease it was meant to prevent." [142]

The Wall Street Journal said:

"Scientists had long speculated that the virus contained in the vaccine might re-emerge ... in a virulent form. But this had never been seen ..until Kew analyzed the changes in the Hispaniola

bug....they saw the alarming manner in which the virus had 'back-mutated.' " [117]

### **BACKWATER VACCINE DUMPS**

Hostility against US vaccine programs is becoming more and more evident in Third World places who grasp the true politics of being the market for the first world's drug throwaways. In

Pakistan during much of 2008, fighting broke out among groups who were resisting mandatory polio shots from UNICEF [9], seeing vaccination as a genocidal effort.

Difficult to justify trying

to vaccinate half a million people in an area with only 32 cases of polio in all of 2007, especially with polio vaccine's track record of fatal reactions. Polio vaccine is clearly perpetuating a disease that would have disappeared completely on its own by now.

### **SIDS AND DPT**

Australian researcher Viera Scheibner PhD stumbled onto the link between sudden infant death syndrome (SIDS) and DPT by accident. Her husband had developed a breathing monitor for

infants, to try and prevent SIDS. The Scheibners noticed distinct patterns of distress after

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monitoring hundreds of babies. They discovered a 16-day crisis following DPT shots - the pattern was unmistakable. Then they correlated their findings with many other studies, including the 200 SIDS babies in Tennessee, and found the exact same pattern. Scheibner's work has been vigorously suppressed in many places. In Australia however, Scheibner's unrelenting efforts put an end to mandatory DPT shots. [243] In 1983 there was a study done at the Los Angeles County Coroner's Office correlating DPT with SIDS (sudden infant death syndrome). Researchers were intrigued by a recent CDC investigation of 200 Tennessee babies who died 24 hours after DPT shots, and wanted to see if there were any correlation. So the Los Angeles group interviewed parents of 145 recent SIDS victims. Here's what they found: Of the 145 SIDS deaths, 53 had been recently DPT-immunized, at the following intervals:

51% had been given DPT within 4 weeks of death

32% within 1 week of death

11% within 1 day of death

Researchers decided these numbers were "statistically significant." (Baraff) [230] Very astute.

## **FACT SHEET FOR RECIPIENTS AND CAREGIVERS**

### **EMERGENCY USE AUTHORIZATION (EUA) OF THE PFIZER-BIONTECH COVID-19 VACCINE TO PREVENT CORONAVIRUS DISEASE 2019 (COVID-19) IN INDIVIDUALS 16 YEARS OF AGE AND OLDER**

You are being offered the Pfizer-BioNTech COVID-19 Vaccine to prevent Coronavirus Disease 2019 (COVID-19) caused by SARS-CoV-2. This Fact Sheet contains information to help you understand the risks and benefits of the Pfizer-BioNTech COVID-19 Vaccine, which you may receive because there is currently a pandemic of COVID-19.

The Pfizer-BioNTech COVID-19 Vaccine is a vaccine and may prevent you from getting COVID-19. There is no U.S. Food and Drug Administration (FDA) approved vaccine to prevent COVID-19.

Read this Fact Sheet for information about the Pfizer-BioNTech COVID-19 Vaccine. Talk to the vaccination provider if you have questions. It is your choice to receive the Pfizer-BioNTech COVID-19 Vaccine.

The Pfizer-BioNTech COVID-19 Vaccine is administered as a 2-dose series, 3 weeks apart, into the muscle.

The Pfizer-BioNTech COVID-19 Vaccine may not protect everyone.

This Fact Sheet may have been updated. For the most recent Fact Sheet, please see [www.cvdvaccine.com](http://www.cvdvaccine.com).

## **WHAT YOU NEED TO KNOW BEFORE YOU GET THIS VACCINE**

### **WHAT IS COVID-19?**

COVID-19 disease is caused by a coronavirus called SARS-CoV-2. This type of coronavirus has not been seen before. You can get COVID-19 through contact with another person who has the virus. It is predominantly a respiratory illness that can affect other organs. People with COVID-19 have had a wide range of symptoms reported, ranging from mild symptoms to severe illness. Symptoms may appear 2 to 14 days after exposure to the virus. Symptoms may include: fever or chills; cough; shortness of breath; fatigue; muscle or body aches; headache; new loss of taste or smell; sore throat; congestion or runny nose; nausea or vomiting; diarrhea.

### **WHAT IS THE PFIZER-BIONTECH COVID-19 VACCINE?**

The Pfizer-BioNTech COVID-19 Vaccine is an unapproved vaccine that may prevent COVID-19. There is no FDA-approved vaccine to prevent COVID-19.

The FDA has authorized the emergency use of the Pfizer-BioNTech COVID-19 Vaccine to prevent COVID-19 in individuals 16 years of age and older under an Emergency Use Authorization (EUA).

For more information on EUA, see the “**What is an Emergency Use Authorization (EUA)?**” section at the end of this Fact Sheet.

### **WHAT SHOULD YOU MENTION TO YOUR VACCINATION PROVIDER BEFORE YOU GET THE PFIZER-BIONTECH COVID-19 VACCINE?**

**Tell the vaccination provider about all of your medical conditions, including if you:**

- have any allergies
- have a fever
- have a bleeding disorder or are on a blood thinner
- are immunocompromised or are on a medicine that affects your immune system
- are pregnant or plan to become pregnant
- are breastfeeding
- have received another COVID-19 vaccine

### **WHO SHOULD GET THE PFIZER-BIONTECH COVID-19 VACCINE?**

FDA has authorized the emergency use of the Pfizer-BioNTech COVID-19 Vaccine in individuals 16 years of age and older.

### **WHO SHOULD NOT GET THE PFIZER-BIONTECH COVID-19 VACCINE?**

You should not get the Pfizer-BioNTech COVID-19 Vaccine if you:

- had a severe allergic reaction after a previous dose of this vaccine
- had a severe allergic reaction to any ingredient of this vaccine.

### **WHAT ARE THE INGREDIENTS IN THE PFIZER-BIONTECH COVID-19 VACCINE?**

The Pfizer-BioNTech COVID-19 Vaccine includes the following ingredients: mRNA, lipids ((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 2 [(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 1,2-Distearoyl-sn-glycero-3-phosphocholine, and cholesterol), potassium chloride, monobasic potassium phosphate, sodium chloride, dibasic sodium phosphate dihydrate, and sucrose.

### **HOW IS THE PFIZER-BIONTECH COVID-19 VACCINE GIVEN?**

The Pfizer-BioNTech COVID-19 Vaccine will be given to you as an injection into the muscle.

The Pfizer-BioNTech COVID-19 Vaccine vaccination series is 2 doses given 3 weeks apart.

If you receive one dose of the Pfizer-BioNTech COVID-19 Vaccine, you should receive a second dose of this same vaccine 3 weeks later to complete the vaccination series.

### **HAS THE PFIZER-BIONTECH COVID-19 VACCINE BEEN USED BEFORE?**

The Pfizer-BioNTech COVID-19 Vaccine is an unapproved vaccine. In clinical trials, approximately 20,000 individuals 16 years of age and older have received at least 1 dose of the Pfizer-BioNTech COVID-19 Vaccine.

### **WHAT ARE THE BENEFITS OF THE PFIZER-BIONTECH COVID-19 VACCINE?**

In an ongoing clinical trial, the Pfizer-BioNTech COVID-19 Vaccine has been shown to prevent COVID-19 following 2 doses given 3 weeks apart. The duration of protection against COVID-19 is currently unknown.

### **WHAT ARE THE RISKS OF THE PFIZER-BIONTECH COVID-19 VACCINE?**

Side effects that have been reported with the Pfizer-BioNTech COVID-19 Vaccine include:

- injection site pain
- tiredness
- headache
- muscle pain
- chills
- joint pain
- fever
- injection site swelling
- injection site redness
- nausea
- feeling unwell
- swollen lymph nodes (lymphadenopathy)

There is a remote chance that the Pfizer-BioNTech COVID-19 Vaccine could cause a severe allergic reaction. A severe allergic reaction would usually occur within a few minutes to one hour after getting a dose of the Pfizer-BioNTech COVID-19 Vaccine. For this reason, your vaccination provider may ask you to stay at the place where you received your vaccine for monitoring after vaccination. Signs of a severe allergic reaction can include:

- Difficulty breathing
- Swelling of your face and throat
- A fast heartbeat
- A bad rash all over your body
- Dizziness and weakness

These may not be all the possible side effects of the Pfizer-BioNTech COVID-19 Vaccine. Serious and unexpected side effects may occur. Pfizer-BioNTech COVID-19 Vaccine is still being studied in clinical trials.

### **WHAT SHOULD I DO ABOUT SIDE EFFECTS?**

If you experience a severe allergic reaction, call 9-1-1, or go to the nearest hospital.

Call the vaccination provider or your healthcare provider if you have any side effects that bother you or do not go away.

Report vaccine side effects to FDA/CDC Vaccine Adverse Event Reporting System (VAERS). The VAERS toll-free number is 1-800-822-7967 or report online to <https://vaers.hhs.gov/reportevent.html>. Please include “Pfizer-BioNTech COVID-19 Vaccine EUA” in the first line of box #18 of the report form.

In addition, you can report side effects to Pfizer Inc. at the contact information provided below.

Website	Fax number	Telephone number
<a href="http://www.pfizersafetyreporting.com">www.pfizersafetyreporting.com</a>	1-866-635-8337	1-800-438-1985

You may also be given an option to enroll in v-safe. V-safe is a new voluntary smartphone-based tool that uses text messaging and web surveys to check in with people who have been vaccinated to identify potential side effects after COVID-19 vaccination. V-safe asks questions that help CDC monitor the safety of COVID-19 vaccines. V-safe also provides second-dose reminders if needed and live telephone follow-up by CDC if participants report a significant health impact following COVID-19 vaccination. For more information on how to sign up, visit: [www.cdc.gov/vsafe](http://www.cdc.gov/vsafe).

#### **WHAT IF I DECIDE NOT TO GET THE PFIZER-BIONTECH COVID-19 VACCINE?**

It is your choice to receive or not receive the Pfizer-BioNTech COVID-19 Vaccine. Should you decide not to receive it, it will not change your standard medical care.

#### **ARE OTHER CHOICES AVAILABLE FOR PREVENTING COVID-19 BESIDES PFIZER-BIONTECH COVID-19 VACCINE?**

Currently, there is no approved alternative vaccine available for prevention of COVID-19. Other vaccines to prevent COVID-19 may be available under Emergency Use Authorization.

#### **CAN I RECEIVE THE PFIZER-BIONTECH COVID-19 VACCINE WITH OTHER VACCINES?**

There is no information on the use of the Pfizer-BioNTech COVID-19 Vaccine with other vaccines.

#### **WHAT IF I AM PREGNANT OR BREASTFEEDING?**

If you are pregnant or breastfeeding, discuss your options with your healthcare provider.

#### **WILL THE PFIZER-BIONTECH COVID-19 VACCINE GIVE ME COVID-19?**

No. The Pfizer-BioNTech COVID-19 Vaccine does not contain SARS-CoV-2 and cannot give you COVID-19.

## KEEP YOUR VACCINATION CARD

When you get your first dose, you will get a vaccination card to show you when to return for your second dose of Pfizer-BioNTech COVID-19 Vaccine. Remember to bring your card when you return.

## ADDITIONAL INFORMATION

If you have questions, visit the website or call the telephone number provided below.

To access the most recent Fact Sheets, please scan the QR code provided below.

Global website	Telephone number
<a href="http://www.cvdvaccine.com">www.cvdvaccine.com</a> 	1-877-829-2619 (1-877-VAX-CO19)

## HOW CAN I LEARN MORE?

- Ask the vaccination provider.
- Visit CDC at <https://www.cdc.gov/coronavirus/2019-ncov/index.html>.
- Visit FDA at <https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization>.
- Contact your local or state public health department.

## WHERE WILL MY VACCINATION INFORMATION BE RECORDED?

The vaccination provider may include your vaccination information in your state/local jurisdiction's Immunization Information System (IIS) or other designated system. This will ensure that you receive the same vaccine when you return for the second dose. For more information about IISs visit: <https://www.cdc.gov/vaccines/programs/iis/about.html>.

## WHAT IS THE COUNTERMEASURES INJURY COMPENSATION PROGRAM?

The Countermeasures Injury Compensation Program (CICP) is a federal program that may help pay for costs of medical care and other specific expenses of certain people who have been seriously injured by certain medicines or vaccines, including this vaccine. Generally, a claim must be submitted to the CICP within one (1) year from the date of receiving the vaccine. To learn more about this program, visit [www.hrsa.gov/cicp/](http://www.hrsa.gov/cicp/) or call 1-855-266-2427.

## WHAT IS AN EMERGENCY USE AUTHORIZATION (EUA)?

The United States FDA has made the Pfizer-BioNTech COVID-19 Vaccine available under an emergency access mechanism called an EUA. The EUA is supported by a Secretary of Health and Human Services (HHS) declaration that circumstances exist to

justify the emergency use of drugs and biological products during the COVID-19 pandemic.

The Pfizer-BioNTech COVID-19 Vaccine has not undergone the same type of review as an FDA-approved or cleared product. FDA may issue an EUA when certain criteria are met, which includes that there are no adequate, approved, available alternatives. In addition, the FDA decision is based on the totality of scientific evidence available showing that the product may be effective to prevent COVID-19 during the COVID-19 pandemic and that the known and potential benefits of the product outweigh the known and potential risks of the product. All of these criteria must be met to allow for the product to be used in the treatment of patients during the COVID-19 pandemic.

The EUA for the Pfizer-BioNTech COVID-19 Vaccine is in effect for the duration of the COVID-19 EUA declaration justifying emergency use of these products, unless terminated or revoked (after which the products may no longer be used).



Manufactured by  
Pfizer Inc., New York, NY 10017

**BIONTECH**

Manufactured for  
BioNTech Manufacturing GmbH  
An der Goldgrube 12  
55131 Mainz, Germany

LAB-1451-1.1

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Scan to capture that this Fact Sheet was provided to vaccine recipient for the electronic medical records/immunization information systems.

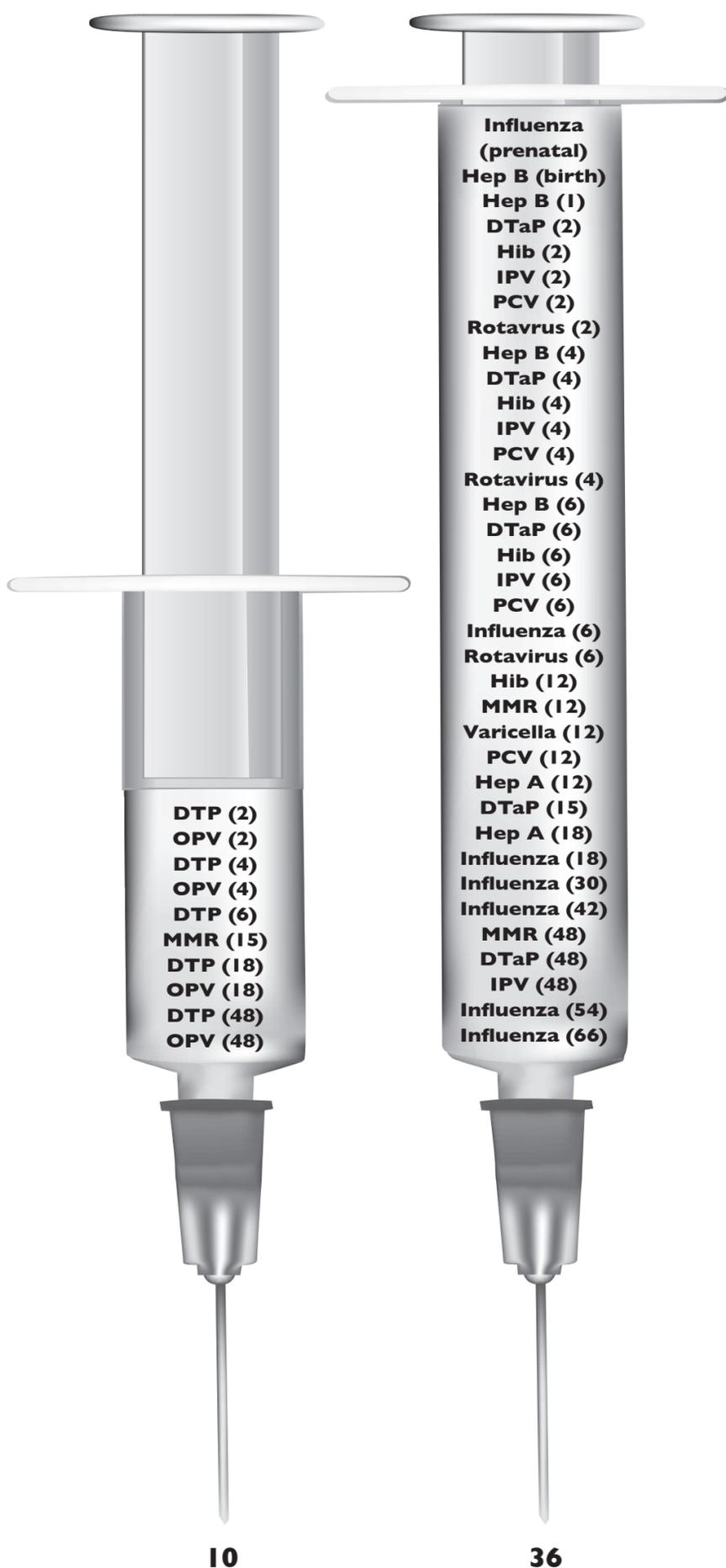
Barcode Date: 12/2020

# ARE WE POISONING OUR KIDS IN THE NAME OF PROTECTING THEIR HEALTH?

COMPARISON OF CDC MANDATORY SCHEDULE  
*Children birth to six years (recommended month)*

**USA 1983  
AUTISM RATE:  
1 in 10,000**

**USA 2008  
AUTISM RATE:  
1 in 150**



Green our vaccines.  
And administer them  
with greater care.

**Mercury. Aluminum. Formaldehyde. Ether. Antifreeze.** Not exactly what you'd expect—or want—to find in your child's vaccinations. Vaccines that are supposed to safeguard their health yet, according to our studies, can also do harm to some children.

The statistics speak for themselves. Since 1983, the number of vaccines the CDC recommends we give to our kids has gone from 10 to 36, a whopping increase of 260%. And, with it, the prevalence of neurological disorders like autism and ADHD has grown exponentially as well.

Just a coincidence? We don't think so. Thousands of parents believe their child's regression into autism was triggered, if not caused, by over-immunization with toxic ingredients and live viruses found in vaccines. The Centers for Disease Control and the American Academy of Pediatrics dispute this but independent research and the first-hand accounts of parents tell a different story.

### Why are we giving our children so many more vaccines so early in life?

Why do we only test vaccines individually and never consider the combination risk of vaccines administered together? Given the dramatic rise of autism to epidemic levels, isn't it time for the scientific community to seriously consider the anecdotal evidence of so many parents? We urge the CDC and AAP to help us find the answers to these questions and learn why the increase in the number and composition of so many vaccinations has led to a surge in neurodevelopmental disorders. Our children deserve no less.

**GENERATION RESCUE**  
[www.generationrescue.org](http://www.generationrescue.org)