



Immunization Toolkit for WIC Staff 2019



Immunization Office Culture

- Vaccines have been scientifically proven to save lives and prevent the spread of many diseases.
- Client confidence about the safety and importance of immunizations increases when consistent information and messaging is received from multiple sources.
- A strong office culture of immunization starts at the front desk and extends into the waiting room, into the exam room and finally to the check out desk.



- **ALL staff should put forth the message that vaccines are safe and effective and an imperative piece to childhood and prenatal health.**
- Most parents have questions, even if they plan to vaccinate.
- Questions do not necessarily equal concerns.
- Learn how to answer common questions from parents (parent FAQ resources included in Immunization Recommendation section of the WIC toolkit).
- If you are unsure how to answer a question, refer them to their pediatrician, obstetrician, primary care provider or other reputable information source (examples of reputable information sources included in Immunization Recommendation section of the WIC toolkit).

Immunization Assessment

Nevada WebIZ Viewing and Navigating Basics for WIC Staff

Nevada WebIZ WIC Staff Quick Start Guide

STEP 1

- To access Nevada WebIZ type in the following URL: <https://webiz.nv.gov>.
- Log into Nevada WebIZ using *your* unique Username and Password. First time users automatically must establish a password unique to them and answer password security questions.
- Home Screen appears – **Note:** News etc. Your assigned provider and clinic will be listed at the top left of your screen.

STEP 2

PATIENT - Select the Plus (+) sign next to patient.

- Select Search.
- Type in a combination of First Name, Last Name and Date of Birth (Note: Must fill in at least two fields; may also search with only Patient ID# if known).
- Didn't find your patient? Try again with a different combination. If you still don't find your patient - Search again!
- No result indicates record may not have been created in Nevada WebIZ.

STEP 3

SEARCH RESULT SCREEN - appears below the search criteria.

- Review the information listed on the screen to determine which record is the one you wish to view.
- If none of the records listed match your search criteria try searching again.
- If you have successfully located the record you wish to view, there are two options available for accessing the record:

Option One:

- Double click on the record and you will be taken to the demographics screen and to view the Immunization record.
- Select **Immunizations** under the patient menu to view the selected individual's immunization history.

Option Two: Select the button that is located next to the record:

- Just below the last record is a row of buttons. Select the **Immunization** button and you will be taken to the **Patient Immunization** screen.

STEP 4

View/Print Immunization Record - Select the **Official Immunization Record** link located on the upper left or lower left hand side of the Patient Immunization Screen. Print immunization record. You can also access the IZ record from multiple screens within Nevada WebIZ.

STEP 5

Return to Step 2 to search for more records or logout.

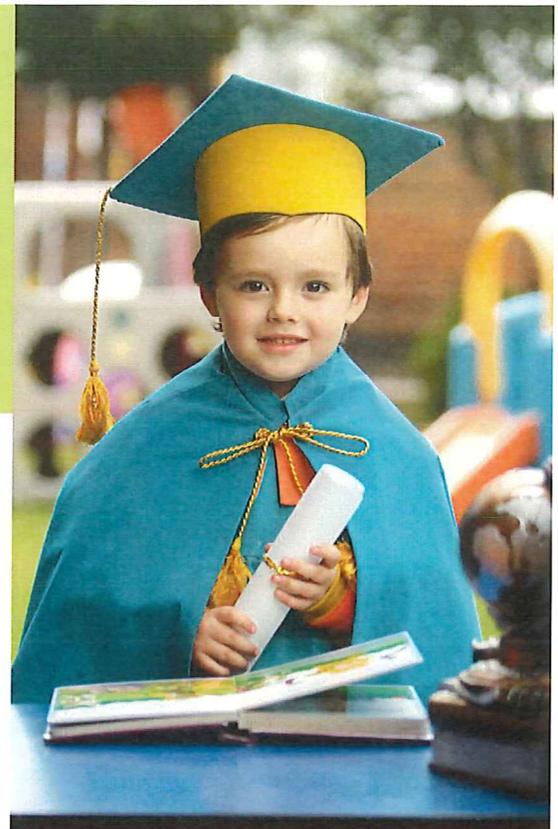
Protect Your Children

2019

Immunizing your child at the earliest recommended age is not only required, but protects them and others at child care facilities from diseases.

Per Nevada law, it is required that parents submit their child's immunization record before enrollment into a childcare facility for proof of immunity to the following diseases:

Age	Vaccine
 At birth	Hep B
 2 months	Hep B (1-2 mos), DTaP, PCV, Hib, IPV
 4 months	DTaP, PCV, Hib, IPV
 6 months	DTaP, PCV, Hep B, IPV, Hib (depending on brand)
 12 months	MMR, PCV, Varicella, Hep A, Hib (12-15 mos depending on the brand)
 15 months-18 months	DTaP and Hep A (18 mos)
 4 years	DTaP, MMR, IPV, Varicella



Childhood Immunizations

- Delaying vaccines for your child may cause them to be exposed to serious diseases.
- Vaccines also help develop a stronger immune system for children early in life.
- Unless excused because of a religious belief or medical condition, your child **MUST** be up-to-date with their immunizations.
- Not up-to-date or exempt children will be excluded from childcare during an outbreak of a vaccine preventable disease.
- Talk to your child's doctor regarding the catch-up immunization schedule if your child is behind in his or her vaccinations.

Getting a flu vaccine lowers your child's chance of contracting the flu this season. Flu vaccination is recommended, every year, for children 6 months and older. The flu can be a serious illness for children, so talk to your doctor today about receiving the flu vaccine.

Vaccine Abbreviations

AVA	Anthrax Vaccine Adsorbed
BCG	Bacille Calmette-Guérin (Tuberculosis) Vaccine
ccIIV3	Cell-Culture Inactivated Influenza Vaccine, Trivalent (Flucelvax®)
DPT	Replaced by the term DTP (see <i>DTP</i> for description)
DT	Diphtheria and tetanus toxoids, pediatric formulation
DTaP	Diphtheria and tetanus toxoids and acellular pertussis vaccine, pediatric formulation (<i>replaced DTP</i>)
DTP or (DTwP)	Diphtheria and tetanus toxoids and whole-cell pertussis vaccine, pediatric formulation (<i>no longer available</i>)
eIPV	Enhanced inactivated polio vaccine
HAV	Hepatitis A Virus
HbOC	Haemophilus b Oligosaccharide Conjugate (Hib) Vaccine (<i>no longer available</i>)
HBV	Hepatitis B Virus
HepA	Hepatitis A Vaccine
HepB	Hepatitis B Vaccine
Hib	<i>Haemophilus influenzae</i> type b
Hib-MenCY-TT	Hib-Meningococcal (Bivalent) Conjugate Vaccine (MenHibrix®)
HPV	Human Papillomavirus
HPV2	Human Papillomavirus vaccine, bivalent (Cervarix®)
2vHPV	Bivalent HPV vaccine (Cervarix®)
HPV4	Human Papillomavirus vaccine, quadrivalent (Gardasil®)
4vHPV	Quadrivalent HPV vaccine (Gardasil®)
9vHPV	9-valent HPV vaccine (Gardasil®)
IPV	Inactivated Poliovirus Vaccine
IIV	Inactivated Influenza Vaccine (<i>formerly called TIV</i>)
IIV3	Inactivated Influenza Vaccine, Trivalent
IIV4	Inactivated Influenza Vaccine, Quadrivalent
JE	Japanese Encephalitis
JE-MB	Inactivated, mouse brain-derived Japanese encephalitis vaccine (JE-Vax®) (<i>no longer available</i>)
JE-VC	Inactivated, Vero cell culture-derived Japanese encephalitis vaccine (Ixiaro®)

Vaccine Abbreviations

LAIV	Live, Attenuated Influenza Vaccine (Nasal Spray)
LAIV4	Live, Attenuated Influenza Vaccine (Quadrivalent)
MCV	Measles antigen-containing vaccines
MCV4	Meningococcal Conjugate Vaccine (Quadrivalent)
MenACWY-CRM	Meningococcal Conjugate Vaccine, Quadrivalent (Menveo®)
MenACWY-D	Meningococcal Conjugate Vaccine, Quadrivalent (Menactra®)
MenB	Serogroup B meningococcal vaccine
MenB-FHbp	Serogroup B meningococcal vaccine (Trumenba®)
MenB-4C	Serogroup B meningococcal vaccine (Bexsero®)
MMR	Measles, Mumps & Rubella Vaccine
MMRV	Measles, Mumps, Rubella & Varicella Vaccine
MPSV4	Meningococcal Polysaccharide Vaccine (Quadrivalent)
MR	Measles-rubella Vaccine
OPV	Oral Polio Vaccine (<i>no longer available</i>)
PCV7 (or PCV)	Pneumococcal Conjugate Vaccine (7-valent) (<i>no longer available</i>)
PCV13	Pneumococcal Conjugate Vaccine (13-valent) (<i>replaced PCV7</i>)
PPV23 (or PPV)	Pneumococcal Polysaccharide Vaccine (23-valent) (<i>replaced by the term PPSV23</i>)
PPSV23	Pneumococcal Polysaccharide Vaccine (23-valent) (<i>formerly called PPV or PPV23</i>)
PRP	Polyribosylribitol Phosphate Polysaccharide (Hib) Vaccine (<i>no longer available</i>)
PRP-D	Polyribosylribitol Phosphate-Diphtheria Conjugate (Hib) Vaccine (<i>no longer available</i>)
PRP-OMP	Polyribosylribitol Phosphate-Outer Membrane Protein Conjugate (Hib) Vaccine
PRP-T	Polyribosylribitol Phosphate-Tetanus Conjugate (Hib) Vaccine
PRV	Pentavalent Rotavirus Vaccine (i.e., RotaTeq®) (<i>replaced by the term ROTA, then by RV5</i>)
RIV3	Recombinant Influenza Vaccine, Trivalent (Flublok®)
ROTA	Rotavirus Vaccine (<i>replaced by the terms RV1 and RV5</i>)
RRV-TV	Live, tetravalent rotavirus vaccine (RotaShield™) (<i>no longer available</i>)
RV1	Rotavirus Vaccine, monovalent (Rotarix®) (<i>formerly called ROTA</i>)
RV5	Rotavirus Vaccine, pentavalent (RotaTeq®) (<i>formerly called ROTA</i>)
RZV	Recombinant Zoster Vaccine

Vaccine Abbreviations

Td	Tetanus & diphtheria Vaccine, adult/adolescent formulation
Tdap	Tetanus, diphtheria & acellular pertussis vaccine, adult/adolescent formulation
TIV	Trivalent (Inactivated) Influenza Vaccine (<i>replaced by the term IIV</i>)
TT	Tetanus Toxoid (<i>no longer available</i>)
Ty21a	Live Oral Typhoid Vaccine
VAR	Varicella Vaccine
ViCPS	Vi Capsular Polysaccharide (Inactivated Typhoid) Vaccine
VZV	Varicella Zoster Virus
YF	Yellow Fever
ZVL	Zoster Vaccine Live



Technical Bulletin

Division of Public and Behavioral Health



Date: December 13, 2018

Topic: Vaccine Required at Minimum Recommended Age for Students Enrolling into Early Education Programs, Preschool and Kindergarten

Contact: Shannon Bennett, Immunization Program Manager or Pam Forest, MD, Provider Quality Assurance Manager

To: Immunization Providers, School Nurses, County Health Officers, Health Care Quality and Compliance, Local Health Districts and Nevada Child Care Facilities, Department of Education, School District Administrators, Boards of Trustees of School Districts, Charter School Officials, and Private School Officials

According to Nevada Revised Statutes (NRS) 392.435, 394.192, and Nevada Administrative Codes (NAC) 392.105, children must prove immunity to Diphtheria, Tetanus, Pertussis, Poliomyelitis, Rubella, Rubeola (Measles), Mumps, Hepatitis A, Hepatitis B, and Varicella prior to enrollment into a public, private, or charter school in Nevada, unless excused because of a religious belief or medical condition.

Starting at the beginning of the 2019/2020 school year, in addition to these requirements, it is now necessary for students enrolling into early education programs, preschool and kindergarten in Nevada to receive all required vaccines at the youngest recommended age per the recommendations of the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP). For example, the fifth dose of DTaP is recommended between four (4) and six (6) years of age. Starting at the beginning of the 2019/2020 school year, the fifth dose of DTaP vaccine is now required at age four (4) years if the child is enrolled in a school in Nevada. Please review the table on the next page for further examples. **Any child who is behind on Nevada's required immunizations must be brought up-to-date utilizing the ACIP Catch Up Schedule.**

Immunizing students at the youngest recommended age further protects the students and their peers at the earliest time possible. For example, the fifth dose of DTaP, when given at four (4) years of age, increases antibody levels and decreases the risk of older children transmitting the disease to younger siblings and/or classmates who are too young to have completed the vaccine series.

For more information regarding the ACIP immunization schedule please visit:

<https://www.cdc.gov/vaccines/schedules/index.html>.

Required Immunization	Age Range	Dose Number	Age Required*
Hepatitis B	6-18 months	3	6 months
DTaP	15-18 months	4	15 months
DTaP	4-6 years	5	4 years
Polio (IPV)	6-18 months	3	6 months
Polio (IPV)	4-6 years	4	4 years
MMR	12-15 months	1	12 months
MMR	4-6 years	2	4 years
Varicella	12-15 months	1	12 months
Varicella	4-6 years	2	4 years
Hepatitis A	12-23 months	1	12 months
Hepatitis A	18-23 months	2	18 months

*Age required if minimum interval has passed



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Technical Bulletin

Division of Public and Behavioral Health



Date: January 30, 2018

Topic: Vaccine Required at Minimum Recommended Age for Child Care Enrollment

Contact: Shannon Bennett, Immunization Program Manager or Pam Forest, MD, Provider Quality Assurance Manager

To: Health Care Quality and Compliance, Division of Public and Behavioral Health, Local Health Districts, and Nevada Child Care Facilities

According to Nevada Revised Statutes (NRS) 432A.230, 432A.235, and Nevada Administrative Codes (NAC) 432A.500-.505, children must prove immunity to Diphtheria, Tetanus, Pertussis, Poliomyelitis, Rubella, Rubeola (Measles), Mumps, Hepatitis A, Hepatitis B, Varicella, Streptococcus Pneumoniae, and Haemophilus Influenza type B (Hib) prior to admission to a child care or accommodation facility in Nevada, unless excused because of a religious belief or medical condition.

In addition to these requirements, it is now necessary for children being admitted to child care or accommodation facilities in Nevada to receive all required vaccines at the youngest recommended age per the recommendations of the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP). For example, the fifth dose of DTaP is recommended between four (4) and six (6) years of age. As of the date of this Bulletin, the fifth dose of DTaP vaccine is now required at age four (4) years if the child is attending a child care or accommodation facility in Nevada. Please review the table on the next page for further examples. **Any child who is behind on Nevada's required immunizations must be brought up-to-date utilizing the ACIP Catch Up Schedule to continue to attend the child care/accommodation facility.**

Immunizing children at the youngest recommended age when in a child care or accommodation facility further protects the child and their peers at the earliest time possible. For example, the fifth dose of DTaP, when given at four (4) years of age, increases antibody levels and decreases the risk of older children transmitting the disease to younger siblings and/or classmates who are too young to have completed the vaccine series.

For more information regarding the ACIP immunization schedule please visit:

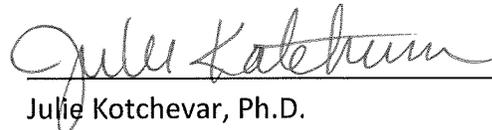
<https://www.cdc.gov/vaccines/schedules/index.html>.

Required Immunization	Age Range	Dose Number	Age Required*
Hepatitis B	6-18 months	3	6 months
DTaP	15-18 months	4	15 months
DTaP	4-6 years	5	4 years
Hib	12-15 months	3 or 4	12 months
PCV13	12-15 months	4	12 months
Polio (IPV)	6-18 months	3	6 months
Polio (IPV)	4-6 years	4	4 years
MMR	12-15 months	1	12 months
MMR	4-6 years	2	4 years
Varicella	12-15 months	1	12 months
Varicella	4-6 years	2	4 years
Hepatitis A	12-23 months	1	12 months
Hepatitis A	18-23 months	2	18 months

*Age required if minimum interval has passed



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Immunization Recommendation



RECOMMENDED IMMUNIZATIONS FOR WIC STAFF USE

BIRTH-6 YEARS

Child's Name _____ **Child's Age** _____ **Date** _____

Your child is not up to date with his/her childhood immunizations. Based on a search of his/her immunization history as entered in Nevada WebIZ, the "WebIZ Recommender" indicates the following vaccine(s) is/are due today:

<u>DTaP/DT</u>	<u>Polio (IPV)</u>	<u>Hepatitis B</u>	<u>Hepatitis A</u>	<u>MMR</u>	<u>Varicella*</u>	<u>Influenza**</u>
<input type="checkbox"/> Dose 1						
<input type="checkbox"/> Dose 2						
<input type="checkbox"/> Dose 3	<input type="checkbox"/> Dose 3	<input type="checkbox"/> Dose 3				
<input type="checkbox"/> Dose 4	<input type="checkbox"/> Dose 4					
<input type="checkbox"/> Dose 5						

<u>PCV13</u>	<u>Hib***</u>	<input type="checkbox"/> Please add immunization history to NV WebIZ NV WebIZ Record # _____
<input type="checkbox"/> Dose 1	<input type="checkbox"/> Dose 1	
<input type="checkbox"/> Dose 2	<input type="checkbox"/> Dose 2	
<input type="checkbox"/> Dose 3	<input type="checkbox"/> Dose 3	
<input type="checkbox"/> Dose 4	<input type="checkbox"/> Dose 4	

*Varicella – If your child has had varicella disease (i.e., chickenpox) or herpes zoster disease (i.e., shingles) either diagnosed or verified by a physician, varicella vaccine is not required. Ask your provider to make a note of it on the demographic screen in NV WebIZ.

**Flu season runs September through June every year

*** Number of doses required to complete series varies based on vaccine brand used to initiate series.

TO PATIENTS/PARENTS: Please do not rely solely on NV WebIZ to forecast immunizations. Please consult with your health care professional.

TO VACCINE ADMINISTRATORS: Please do not rely solely on NV WebIZ to forecast immunizations. Utilize clinical judgement and consult both the ACIP recommended immunization schedules and the CDC Pink Book. www.cdc.gov/vaccines/pubs/pinkbook/index.html#chapters



RECOMMENDED IMMUNIZATIONS FOR WIC STAFF USE

PRENATAL

Name _____

Today's Date _____

Is the patient between 27-36 weeks gestation? Yes No

Our records indicate you are not up to date with all recommended immunizations. Based on a search of your immunization history as entered in NV WebIZ, the Advisory Committee on Immunization Practices (ACIP) indicates the following vaccine(s) is/are due today:

Tdap Influenza (September - June)

NV WebIZ indicates that postpartum:

- patient may need other recommended vaccines
- patient is up to date on recommended vaccines

TO PATIENTS/PARENTS: Please do not rely solely on NV WebIZ to forecast immunizations. Please consult with your health care professional.

TO VACCINE ADMINISTRATORS: Please do not rely solely on NV WebIZ to forecast immunizations. Utilize clinical judgement and consult both the ACIP recommended immunization schedules and the CDC Pink Book.

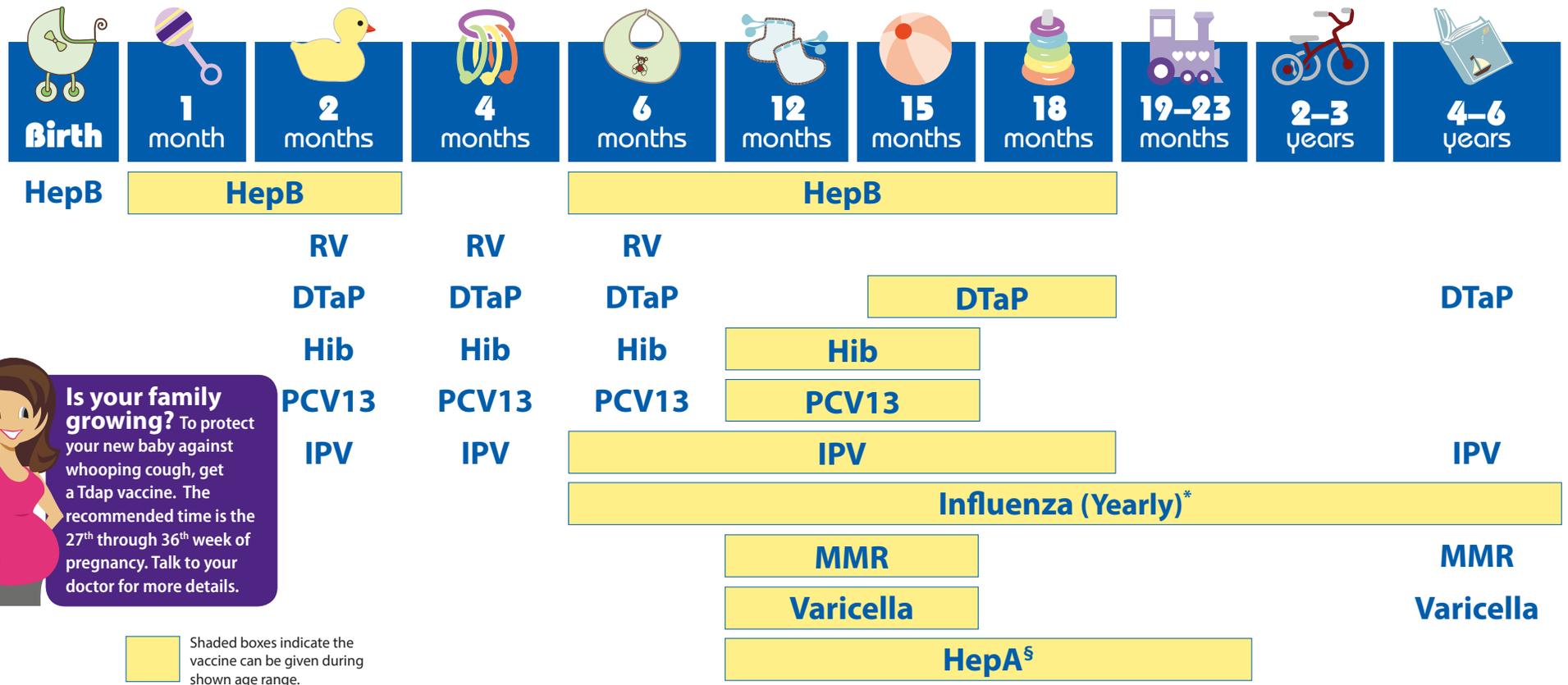
Please add immunization history to NV WebIZ

NV WebIZ Record # _____

www.cdc.gov/vaccines/pubs/pinkbook/index.html#chapters



2019 Recommended Immunizations for Children from Birth Through 6 Years Old



Is your family growing? To protect your new baby against whooping cough, get a Tdap vaccine. The recommended time is the 27th through 36th week of pregnancy. Talk to your doctor for more details.

Shaded boxes indicate the vaccine can be given during shown age range.

NOTE:

If your child misses a shot, you don't need to start over. Just go back to your child's doctor for the next shot. Talk with your child's doctor if you have questions about vaccines.

FOOTNOTES:

- * Two doses given at least four weeks apart are recommended for children age 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.
- § Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 months after the last dose. HepA vaccination may be given to any child 12 months and older to protect against hepatitis A. Children and adolescents who did not receive the HepA vaccine and are at high risk should be vaccinated against hepatitis A.

If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he or she may need.

See back page for more information on vaccine-preventable diseases and the vaccines that prevent them.

For more information, call toll-free **1-800-CDC-INFO** (1-800-232-4636) or visit www.cdc.gov/vaccines/parents



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



American Academy of Pediatrics



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Vaccine-Preventable Diseases and the Vaccines that Prevent Them

Disease	Vaccine	Disease spread by	Disease symptoms	Disease complications
Chickenpox	Varicella vaccine protects against chickenpox.	Air, direct contact	Rash, tiredness, headache, fever	Infected blisters, bleeding disorders, encephalitis (brain swelling), pneumonia (infection in the lungs)
Diphtheria	DTaP* vaccine protects against diphtheria.	Air, direct contact	Sore throat, mild fever, weakness, swollen glands in neck	Swelling of the heart muscle, heart failure, coma, paralysis, death
Hib	Hib vaccine protects against <i>Haemophilus influenzae</i> type b.	Air, direct contact	May be no symptoms unless bacteria enter the blood	Meningitis (infection of the covering around the brain and spinal cord), intellectual disability, epiglottitis (life-threatening infection that can block the windpipe and lead to serious breathing problems), pneumonia (infection in the lungs), death
Hepatitis A	HepA vaccine protects against hepatitis A.	Direct contact, contaminated food or water	May be no symptoms, fever, stomach pain, loss of appetite, fatigue, vomiting, jaundice (yellowing of skin and eyes), dark urine	Liver failure, arthralgia (joint pain), kidney, pancreatic and blood disorders
Hepatitis B	HepB vaccine protects against hepatitis B.	Contact with blood or body fluids	May be no symptoms, fever, headache, weakness, vomiting, jaundice (yellowing of skin and eyes), joint pain	Chronic liver infection, liver failure, liver cancer
Influenza (Flu)	Flu vaccine protects against influenza.	Air, direct contact	Fever, muscle pain, sore throat, cough, extreme fatigue	Pneumonia (infection in the lungs)
Measles	MMR** vaccine protects against measles.	Air, direct contact	Rash, fever, cough, runny nose, pink eye	Encephalitis (brain swelling), pneumonia (infection in the lungs), death
Mumps	MMR** vaccine protects against mumps.	Air, direct contact	Swollen salivary glands (under the jaw), fever, headache, tiredness, muscle pain	Meningitis (infection of the covering around the brain and spinal cord), encephalitis (brain swelling), inflammation of testicles or ovaries, deafness
Pertussis	DTaP* vaccine protects against pertussis (whooping cough).	Air, direct contact	Severe cough, runny nose, apnea (a pause in breathing in infants)	Pneumonia (infection in the lungs), death
Polio	IPV vaccine protects against polio.	Air, direct contact, through the mouth	May be no symptoms, sore throat, fever, nausea, headache	Paralysis, death
Pneumococcal	PCV13 vaccine protects against pneumococcus.	Air, direct contact	May be no symptoms, pneumonia (infection in the lungs)	Bacteremia (blood infection), meningitis (infection of the covering around the brain and spinal cord), death
Rotavirus	RV vaccine protects against rotavirus.	Through the mouth	Diarrhea, fever, vomiting	Severe diarrhea, dehydration
Rubella	MMR** vaccine protects against rubella.	Air, direct contact	Sometimes rash, fever, swollen lymph nodes	Very serious in pregnant women—can lead to miscarriage, stillbirth, premature delivery, birth defects
Tetanus	DTaP* vaccine protects against tetanus.	Exposure through cuts in skin	Stiffness in neck and abdominal muscles, difficulty swallowing, muscle spasms, fever	Broken bones, breathing difficulty, death

* DTaP combines protection against diphtheria, tetanus, and pertussis.

** MMR combines protection against measles, mumps, and rubella.

Talk to your child’s doctor or nurse about the vaccines recommended for their age.

	Flu Influenza	Tdap Tetanus, diphtheria, pertussis	HPV Human papillomavirus	Meningococcal		Pneumococcal	Hepatitis B	Hepatitis A		Polio	MMR Measles, mumps, rubella	Chickenpox Varicella
				MenACWY	MenB							
7-8 Years	Green	Orange		Purple		Purple	Orange	Purple	Orange	Orange	Orange	Orange
9-10 Years	Green	Orange	Purple, Blue	Purple		Purple	Orange	Purple	Orange	Orange	Orange	Orange
11-12 Years	Green	Green, Orange	Green	Green, Orange		Purple	Orange	Purple	Orange	Orange	Orange	Orange
13-15 Years	Green	Orange	Orange	Orange		Purple	Orange	Purple	Orange	Orange	Orange	Orange
16-18 Years	Green	Orange	Orange	Green, Orange		Purple	Orange	Purple	Orange	Orange	Orange	Orange

More information:

Everyone 6 months and older should get a flu vaccine every year.

All 11- through 12-year olds should get one shot of Tdap.

All 11- through 12-year olds should get a 2-shot series of HPV vaccine. A 3-shot series is needed for those with weakened immune systems and those who start the series at 15 years or older.

All 11- through 12-year olds should get one shot of meningococcal conjugate (MenACWY). A booster shot is recommended at age 16.

Teens 16–18 years old **may** be vaccinated with a serogroup B meningococcal (MenB) vaccine.



These shaded boxes indicate when the vaccine is recommended for all children unless your doctor tells you that your child cannot safely receive the vaccine.



These shaded boxes indicate the vaccine should be given if a child is catching up on missed vaccines.



These shaded boxes indicate the vaccine is recommended for children with certain health or lifestyle conditions that put them at an increased risk for serious diseases. See vaccine-specific recommendations at www.cdc.gov/vaccines/hcp/acip-recs/.



This shaded box indicates children not at increased risk may get the vaccine if they wish after speaking to a provider.



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Vaccine-Preventable Diseases and the Vaccines that Prevent Them

Diphtheria (Can be prevented by Tdap vaccination)

Diphtheria is a very contagious bacterial disease that affects the respiratory system, including the lungs. Diphtheria bacteria can be spread from person to person by direct contact with droplets from an infected person's cough or sneeze. When people are infected, the bacteria can produce a toxin (poison) in the body that can cause a thick coating in the back of the nose or throat that makes it hard to breathe or swallow. Effects from this toxin can also lead to swelling of the heart muscle and, in some cases, heart failure. In serious cases, the illness can cause coma, paralysis, or even death.

Hepatitis A (Can be prevented by HepA vaccination)

Hepatitis A is an infection in the liver caused by hepatitis A virus. The virus is spread primarily person to person through the fecal-oral route. In other words, the virus is taken in by mouth from contact with objects, food, or drinks contaminated by the feces (stool) of an infected person. Symptoms can include fever, tiredness, poor appetite, vomiting, stomach pain, and sometimes jaundice (when skin and eyes turn yellow). An infected person may have no symptoms, may have mild illness for a week or two, may have severe illness for several months, or may rarely develop liver failure and die from the infection. In the U.S., about 100 people a year die from hepatitis A.

Hepatitis B (Can be prevented by HepB vaccination)

Hepatitis B causes a flu-like illness with loss of appetite, nausea, vomiting, rashes, joint pain, and jaundice. Symptoms of acute hepatitis B include fever, fatigue, loss of appetite, nausea, vomiting, pain in joints and stomach, dark urine, grey-colored stools, and jaundice (when skin and eyes turn yellow).

Human Papillomavirus (Can be prevented by HPV vaccination)

Human papillomavirus is a common virus. HPV is most common in people in their teens and early 20s. About 14 million people, including teens, become infected with HPV each year. HPV infection can cause cervical, vaginal, and vulvar cancers in women and penile cancer in men. HPV can also cause anal cancer, oropharyngeal cancer (back of the throat), and genital warts in both men and women.

Influenza (Can be prevented by annual flu vaccination)

Influenza is a highly contagious viral infection of the nose, throat, and lungs. The virus spreads easily through droplets when an infected person coughs or sneezes and can cause mild to severe illness. Typical symptoms include a sudden high fever, chills, a dry cough, headache, runny nose, sore throat, and muscle and joint pain. Extreme fatigue can last from several days to weeks. Influenza may lead to hospitalization or even death, even among previously healthy children.

Measles (Can be prevented by MMR vaccination)

Measles is one of the most contagious viral diseases. Measles virus is spread by direct contact with the airborne respiratory droplets of an infected person. Measles is so contagious that just being in the same room after a person who has measles has already left can result in infection. Symptoms usually include a rash, fever, cough, and red, watery eyes. Fever can persist, rash can last for up to a week, and coughing can last about 10 days. Measles can also cause pneumonia, seizures, brain damage, or death.

Meningococcal Disease (Can be prevented by meningococcal vaccination)

Meningococcal disease has two common outcomes: meningitis (infection of the lining of the brain and spinal cord) and bloodstream infections. The bacteria that cause meningococcal disease spread through the exchange of nose and throat droplets, such as when coughing, sneezing, or kissing. Symptoms include sudden onset of fever, headache, and stiff neck. With bloodstream infection, symptoms also include a dark purple rash. About one of every 10 people who gets the disease dies from it. Survivors of meningococcal disease may lose their arms or legs, become deaf, have problems with their nervous systems, become developmentally disabled, or suffer seizures or strokes.

Mumps (Can be prevented by MMR vaccination)

Mumps is an infectious disease caused by the mumps virus, which is spread in the air by a cough or sneeze from an infected person. A child can also get infected with mumps by coming in contact with a contaminated object like a toy. The mumps virus causes swollen salivary glands under the ears or jaw, fever, muscle aches, tiredness, abdominal pain, and loss of appetite. Severe complications for children who get mumps are uncommon, but can include meningitis (infection of the lining of the brain and spinal cord), encephalitis (inflammation of the brain), permanent hearing loss, or swelling of the testes, which rarely results in decreased fertility.

Pertussis (Whooping Cough) (Can be prevented by Tdap vaccination)

Pertussis spreads very easily through coughing and sneezing. It can cause a bad cough that makes someone gasp for air after coughing fits. This cough can last for many weeks, which can make preteens and teens miss school and other activities. Pertussis can be deadly for babies who are too young to receive the vaccine. Often babies get whooping cough from their older brothers or sisters, like preteens or teens, or other people in the family. Babies with pertussis can get pneumonia, have seizures, become brain damaged, or even die. About half of children under 1 year of age who get pertussis must be hospitalized.

Pneumococcal Disease (Can be prevented by pneumococcal vaccination)

Pneumonia is an infection of the lungs that can be caused by the bacteria called "pneumococcus." These bacteria can cause other types of infections, too, such as ear infections, sinus infections, meningitis (infection of the lining of the brain and spinal cord), and bloodstream infections. Sinus and ear infections are usually mild and are much more common than the more serious forms of pneumococcal disease. However, in some cases, pneumococcal disease can be fatal or result in long-term problems like brain damage and hearing loss. The bacteria that cause pneumococcal disease spread when people cough or sneeze. Many people have the bacteria in their nose or throat at one time or another without being ill—this is known as being a carrier.

Polio (Can be prevented by IPV vaccination)

Polio is caused by a virus that lives in an infected person's throat and intestines. It spreads through contact with the stool of an infected person and through droplets from a sneeze or cough. Symptoms typically include sore throat, fever, tiredness, nausea, headache, or stomach pain. In about 1% of cases, polio can cause paralysis. Among those who are paralyzed, about 2 to 10 children out of 100 die because the virus affects the muscles that help them breathe.

Rubella (German Measles) (Can be prevented by MMR vaccination)

Rubella is caused by a virus that is spread through coughing and sneezing. In children, rubella usually causes a mild illness with fever, swollen glands, and a rash that lasts about 3 days. Rubella rarely causes serious illness or complications in children, but can be very serious to a baby in the womb. If a pregnant woman is infected, the result for the baby can be devastating, including miscarriage, serious heart defects, mental retardation, and loss of hearing and eyesight.

Tetanus (Lockjaw) (Can be prevented by Tdap vaccination)

Tetanus mainly affects the neck and belly. When people are infected, the bacteria produce a toxin (poison) that causes muscles to become tight, which is very painful. This can lead to "locking" of the jaw so a person cannot open his or her mouth, swallow, or breathe. The bacteria that cause tetanus are found in soil, dust, and manure. The bacteria enter the body through a puncture, cut, or sore on the skin. Complete recovery from tetanus can take months. One to two out of 10 people who get tetanus die from the disease.

Varicella (Chickenpox) (Can be prevented by varicella vaccination)

Chickenpox is caused by the varicella zoster virus. Chickenpox is very contagious and spreads very easily from infected people. The virus can spread from either a cough or sneeze. It can also spread from the blisters on the skin, either by touching them or by breathing in these viral particles. Typical symptoms of chickenpox include an itchy rash with blisters, tiredness, headache, and fever. Chickenpox is usually mild, but it can lead to severe skin infections, pneumonia, encephalitis (brain swelling), or even death.

If you have any questions about your child's vaccines, talk to your child's doctor or nurse.



Growing Up with Vaccines: What Should Parents Know?

Why Vaccinate?

On-time vaccination throughout childhood is essential because it helps provide immunity *before* children are exposed to potentially life-threatening diseases. Vaccines are tested to ensure that they are safe and effective for children to receive at the recommended ages.

Pregnancy

By staying up to date with vaccines before and during pregnancy, you can pass along immunity that will help protect your baby from some diseases during the first few months after birth.

Vaccines given before pregnancy may also help protect you from serious disease while you are pregnant, including rubella, which can cause miscarriages and birth defects.

Recommended vaccines:

- Measles, mumps, rubella (MMR) vaccine:** At least a month before becoming pregnant
- Tetanus, diphtheria, and pertussis (Tdap) vaccine:** During the third trimester of every pregnancy
- Yearly seasonal flu vaccine:** By the end of October, if possible



Infant and Toddler Years: Birth to Age 2



Vaccination helps give infants and toddlers a healthy start.

More than one dose is necessary for many vaccines, to build and boost immunity.

Because influenza viruses are constantly changing and the body's immune response declines over time, everyone over the age of 6 months needs a flu shot every year.

Recommended vaccines:

- Chickenpox (varicella) vaccine:** At 12 through 15 months
- Diphtheria, tetanus, and pertussis (DTaP) vaccine:** At 2 months, 4 months, 6 months, and 15 through 18 months
- Flu vaccine:** Every year by the end of October, if possible, starting at 6 months
- Haemophilus influenzae type b (Hib) vaccine:** At 2 months, 4 months, 6 months (if needed; depends on brand), and 12 through 15 months
- Hepatitis A vaccine:** At 12 through 23 months and a second dose 6 months following first dose
- Hepatitis B vaccine:** Shortly after birth, at 1 through 2 months, and at 6 through 18 months
- Measles, mumps, rubella (MMR) vaccine:** At 12 through 15 months; however, infants 6 through 11 months old should have one dose of MMR vaccine before traveling abroad
- Pneumococcal (PCV13) vaccine:** At 2 months, 4 months, 6 months, and 12 through 15 months
- Polio (IPV) vaccine:** At 2 months, 4 months, and 6 through 18 months
- Rotavirus (RV) vaccine:** At 2 months and 4 months (for Rotarix brand); or 2 months, 4 months, and 6 months (for RotaTeq brand)



Preschool and Elementary School Years: Ages 3 through 10

Your child needs additional doses of some vaccines from ages 3 through 6.

You may need a certificate of immunization to enroll your child in school.

Recommended vaccines:

- Chickenpox (varicella) vaccine:** At 4 through 6 years
- Diphtheria, tetanus, and pertussis (DTaP) vaccine:** At 4 through 6 years
- Flu vaccine:** Every year by the end of October, if possible
- Measles, mumps, rubella (MMR) vaccine:** At 4 through 6 years
- Polio (IPV) vaccine:** At 4 through 6 years



Preteen and Teen Years: Ages 11 through 18

As protection from childhood vaccines wears off, adolescents need additional vaccines to extend protection.

Adolescents need protection from additional infections as well, before the risk of exposure increases.

As your child heads to college, make sure all vaccinations are up to date and he or she has a copy of all immunization records.

If your child travels outside of the United States, [check](#) if he or she needs any additional vaccines.

Recommended vaccines:

- Flu vaccine:** Every year by the end of October, if possible
- Human papillomavirus (HPV) vaccine:** At 11 through 12 years and a second dose 6-12 months following the first dose
- Meningococcal conjugate vaccine:** At 11 through 12 years and at 16 years
- Serogroup B meningococcal vaccine:** May be given at 16 through 23 years; if interested, talk to your child's doctor
- Tetanus, diphtheria, and pertussis (Tdap) vaccine:** At 11 through 12 years



Into Adulthood

Everyone should get a flu vaccine every year before the end of October, if possible.

Adults need a Td vaccine every ten years.

Healthy adults 50 years and older should get shingles vaccine.

Adults 65 years or older need one dose of pneumococcal conjugate vaccine followed by one dose of pneumococcal polysaccharide vaccine.

Adults younger than 65 years who have certain health conditions like heart disease, diabetes, cancer, or HIV should also get one or both of these vaccines.

Adults may need other vaccines based on health conditions, job, lifestyle, or travel habits.



More About Childhood & Adolescent Vaccines



Chickenpox (varicella) vaccine

Varicella vaccine protects against chickenpox, which can be serious and even life-threatening, especially in babies, adults, and people with weakened immune systems. Symptoms include tiredness, a fever, and an itchy rash of blisters.

Diphtheria, tetanus, and pertussis (DTaP) vaccine

DTaP vaccine protects against three serious diseases:

- Diphtheria is a serious infection that causes a thick covering in the back of the nose or throat. It can lead to difficulty breathing, heart failure, paralysis, and even death.
- Tetanus is a potentially deadly infection that causes painful muscle stiffness and lockjaw.
- Whooping cough, or pertussis, is a highly contagious disease known for uncontrollable, violent coughing that often makes it hard to breathe. It can be deadly for babies.

Flu vaccine

Seasonal flu vaccine protects against flu, a potentially serious, contagious respiratory illness caused by influenza viruses. Changes in immune, heart, and lung functions during pregnancy make pregnant women more likely to get seriously ill from the flu. The flu may also increase the chances that the developing baby will have serious problems. Everyone 6 months and older should get a flu vaccine every year by the end of October, if possible.

Haemophilus influenzae type b (Hib) vaccine

Hib vaccine protects against Hib disease, which ranges from mild ear infections to serious bloodstream infections, pneumonia (infection in the lungs), and meningitis (infection of the covering around the brain and spinal cord). Hib disease can cause brain damage, hearing loss, or even death.

Hepatitis A vaccine

Hepatitis A vaccine protects against a serious, contagious liver disease caused by the hepatitis A virus. Symptoms can include fever, loss of appetite, tiredness, stomach pain, vomiting, dark urine, and yellow skin and eyes. Infected children may not have symptoms, but may still pass the disease to others.

Hepatitis B vaccine

Hepatitis B vaccine protects against hepatitis B, a virus that can cause chronic swelling of the liver and possible lifelong complications. Nine out of 10 infants who contract hepatitis B from their mothers become chronically infected.

Human papillomavirus (HPV) vaccine

HPV vaccine protects against a common infection that can cause certain cancers in men and women. While most HPV infections go away on their own, infections that don't go away can cause

- cancers of the cervix, vagina, and vulva in women;
- cancers of the penis in men;
- and cancers of the anus and back of the throat (oropharynx) in men and women.

Some HPV infections can also cause genital warts.

Measles, mumps, rubella (MMR) vaccine

Measles, mumps, rubella (MMR) vaccine protects against three serious diseases:

- The measles virus can cause a fever that can get very high, a distinctive rash, cough, runny nose, and red eyes. Sometimes, it can also cause diarrhea and ear infection. It can also lead to pneumonia (infection in the lungs), brain damage, deafness, and death.
- Mumps typically starts with a fever, headache, muscle aches, tiredness, and loss of appetite. Then, most people's salivary glands swell, which causes puffy cheeks and a swollen jaw. Mumps is pretty mild in most people but can sometimes cause lasting problems, such as deafness, meningitis (infection of the covering around the brain and spinal cord), and swelling of the brain, testicles, ovaries, or breasts.
- Rubella may cause a rash or fever, but many people have no symptoms. Rubella can cause miscarriage or serious birth defects in a developing baby if a woman is infected while she is pregnant. Infected children can spread rubella to pregnant women.

Meningococcal conjugate vaccine

Meningococcal conjugate vaccine protects against some types of meningococcal bacteria, which can cause serious and even deadly infections, including meningitis (infection of the covering around the brain and spinal cord) and bloodstream infections.

Pneumococcal conjugate vaccine (PCV13) and pneumococcal polysaccharide vaccine (PPSV23)

PCV13 protects against 13 strains of pneumococcal bacteria and PPSV23 protects against 23 strains of pneumococcal bacteria. Both vaccines provide protection against illnesses like meningitis and bacteremia. PCV13 also provides protection against pneumonia. Talk to your doctor and child's doctor about which vaccines they recommend.

Polio (IPV) vaccine

IPV vaccine protects against polio, a highly infectious disease caused by a virus that can invade the brain and spinal cord. Polio can cause lifelong paralysis and even death.

Rotavirus (RV) vaccine

RV vaccine protects against a contagious virus that causes severe diarrhea, often with vomiting, fever, and abdominal pain, requiring hospitalization. It is most common in infants and young children. Adults who get rotavirus tend to have milder symptoms.

Serogroup B meningococcal vaccine

Serogroup B meningococcal vaccine protects against one type of meningococcal bacteria, which can cause serious and even deadly infections, including meningitis (infection of the covering around the brain and spinal cord) and bloodstream infections.

Tetanus, diphtheria, and pertussis (Tdap) vaccine

Tdap vaccine is a booster vaccine that protects older children and adults from tetanus, diphtheria, and pertussis (whooping cough). When you get Tdap vaccine during pregnancy, your body will create protective antibodies against whooping cough and pass some of them to your baby before birth, providing some short-term, early protection.

Immunizations and Developmental Milestones for Your Child from Birth Through 6 Years Old

Child's Name _____

Birth Date _____

		Birth	1 MONTH	2 MONTHS	4 MONTHS	6 MONTHS
Recommended Immunizations	Hepatitis B	<input type="radio"/> HepB	<input type="radio"/> HepB ¹			<input type="radio"/> HepB
	Rotavirus			<input type="radio"/> RV	<input type="radio"/> RV	<input type="radio"/> RV ²
	Diphtheria, Tetanus, Pertussis			<input type="radio"/> DTaP	<input type="radio"/> DTaP	<input type="radio"/> DTaP
	<i>Haemophilus influenzae</i> type b			<input type="radio"/> Hib	<input type="radio"/> Hib	<input type="radio"/> Hib
	Pneumococcal			<input type="radio"/> PCV	<input type="radio"/> PCV	<input type="radio"/> PCV
	Inactivated Poliovirus			<input type="radio"/> IPV	<input type="radio"/> IPV	<input type="radio"/> IPV
	Influenza (Flu)					<input type="radio"/> Influenza, first dose ³ <input type="radio"/> second dose
Milestones*	<p>Milestones should be achieved by the age indicated.</p> <p>Talk to your child's doctor about age-appropriate milestones if your child was born prematurely.</p>	<input type="radio"/> Recognizes caregiver's voice <input type="radio"/> Turns head toward breast or bottle <input type="radio"/> Communicates through body language, fussing or crying, alert and engaged <input type="radio"/> Startles to loud sounds	<input type="radio"/> Starts to smile <input type="radio"/> Raises head when on tummy <input type="radio"/> Calms down when rocked, cradled or sung to <input type="radio"/> Pays attention to faces	<input type="radio"/> Begins to smile at people <input type="radio"/> Coos, makes gurgling sounds <input type="radio"/> Begins to follow things with eyes <input type="radio"/> Can hold head up	<input type="radio"/> Babbles with expression <input type="radio"/> Likes to play with people <input type="radio"/> Reaches for toy with one hand <input type="radio"/> Brings hands to mouth <input type="radio"/> Responds to affection <input type="radio"/> Holds head steady, unsupported	<input type="radio"/> Knows familiar faces <input type="radio"/> Responds to own name <input type="radio"/> Brings things to mouth <input type="radio"/> Rolls over in both directions <input type="radio"/> Strings vowels together when babbling ("ah", "eh", "oh")
Growth	At each well child visit, enter date, length, weight, and percentile information to keep track of your child's progress.	WEIGHT / PERCENTILE	WEIGHT / PERCENTILE	WEIGHT / PERCENTILE	WEIGHT / PERCENTILE	WEIGHT / PERCENTILE
		LENGTH / PERCENTILE	LENGTH / PERCENTILE	LENGTH / PERCENTILE	LENGTH / PERCENTILE	LENGTH / PERCENTILE
		HEAD CIRCUMFERENCE	HEAD CIRCUMFERENCE	HEAD CIRCUMFERENCE	HEAD CIRCUMFERENCE	HEAD CIRCUMFERENCE

continues on back page

 Shaded boxes indicate the vaccine can be given during shown age range.

VISIT DATE

VISIT DATE

VISIT DATE

VISIT DATE

VISIT DATE

¹ The second dose of HepB may be given either at the 1 month or 2 month visit.

² A third dose of rotavirus vaccine is only needed for RotaTeq.

³ Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting a flu vaccine for the first time and for some other children in this age group.

* Milestones adapted from *Caring for your baby and young child: Birth to age 5*, Fifth Edition, edited by Steven Shelov and Tanya Remer Altmann © 1991, 1993, 1998, 2004, 2009 by the American Academy of Pediatrics and *Bright Futures: Guidelines for health supervision of infants, children, and adolescents*, Third Edition, edited by Joseph Hagan, Jr., Judith S. Shaw, and Paula M. Duncan, 2008, Elk Grove Village, IL: American Academy of Pediatrics.

This is not an exhaustive list of milestones from 0-6 years. See more at www.cdc.gov/milestones

If your child has any medical conditions that put him at risk for infections or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.



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Immunizations and Developmental Milestones for Your Child from Birth Through 6 Years Old

Child's Name _____

Birth Date _____

		12 MONTHS	15 MONTHS	18 MONTHS	19-23 MONTHS	2-3 YEARS	4-6 YEARS
Recommended Immunizations	Hepatitis B	<input type="radio"/> HepB (Final dose administered between 6 and 18 months)					
	Diphtheria, Tetanus, Pertussis		<input type="radio"/> DTaP				<input type="radio"/> DTaP
	Haemophilus influenzae type b	<input type="radio"/> Hib					
	Pneumococcal	<input type="radio"/> PCV					
	Inactivated Poliovirus	<input type="radio"/> IPV (Third dose administered between 6 and 18 months)					<input type="radio"/> IPV
	Influenza (Flu)	<input type="radio"/> Influenza , first dose ² <input type="radio"/> second dose (if needed)				Age 2 Age 3 <input type="radio"/> <input type="radio"/> Influenza , first dose ² <input type="radio"/> <input type="radio"/> second dose (if needed)	Age 4 Age 5 Age 6 <input type="radio"/> <input type="radio"/> <input type="radio"/> Influenza , first dose ² <input type="radio"/> <input type="radio"/> <input type="radio"/> second dose (if needed)
	Measles, Mumps, Rubella	<input type="radio"/> MMR					<input type="radio"/> MMR
	Varicella	<input type="radio"/> Varicella					<input type="radio"/> Varicella
Hepatitis A	<input type="radio"/> <input type="radio"/> Hep A³						
Milestones*	Milestones should be achieved by the age indicated. Talk to your child's doctor about age-appropriate milestones if your child was born prematurely.	<input type="radio"/> Cries when mom or dad leaves <input type="radio"/> Says "mama" and "dada" <input type="radio"/> Copies gestures (for example, waves "bye bye") <input type="radio"/> May stand alone <input type="radio"/> Looks at right picture or thing when named	<input type="radio"/> Imitates what you are doing <input type="radio"/> Drinks from a cup <input type="radio"/> Scribbles on his own <input type="radio"/> Walks well <input type="radio"/> Says a couple of words other than "mama" and "dada"	<input type="radio"/> Points to show others something interesting <input type="radio"/> Says several single words <input type="radio"/> Points to one body part <input type="radio"/> May walk up steps and run	<input type="radio"/> Plays mainly beside other children <input type="radio"/> Follows two-step commands <input type="radio"/> Plays simple make-believe games <input type="radio"/> Throws ball overhand	<input type="radio"/> Can name most familiar things <input type="radio"/> Shows affection for friends without prompting <input type="radio"/> Turns book pages one at a time <input type="radio"/> Kicks a ball	<input type="radio"/> Speaks very clearly <input type="radio"/> Tells stories <input type="radio"/> Can print some letters or numbers <input type="radio"/> Hops; may be able to skip <input type="radio"/> Enjoys playing with other children
	Growth	At each well child visit, enter date, length, weight, and percentile information to keep track of your child's progress.	_____ WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE	_____ WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE	_____ WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE	_____ WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE	_____ WEIGHT _____ HEIGHT _____ BMI

 Shaded boxes indicate the vaccine can be given during shown age range.

VISIT DATE

VISIT DATE

VISIT DATE

VISIT DATE

VISIT DATE

VISIT DATE

² Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting a flu vaccine for the first time and for some other children in this age group.

³ Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 months after the first dose. HepA vaccination may be given to any child 12 months and older to protect against HepA. Children and adolescents who did not receive the HepA vaccine and are at high-risk, should be vaccinated against HepA.

* Milestones adapted from AAP *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents* Third Edition.

This is not an exhaustive list of milestones from 0-6 years. See more at www.cdc.gov/Milestones and download the Milestone Tracker App at www.cdc.gov/MilestoneTracker

If your child has any medical conditions that put him at risk for infections or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.



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Pregnancy and Vaccination



Information for pregnant women

Vaccines help protect you and your baby against serious diseases.



You probably know that when you are pregnant, you share everything with your baby. That means when you get vaccines, you aren't just protecting yourself—you are giving your baby some early protection too. You should get a flu shot and whooping cough vaccine (also called Tdap) during each pregnancy to help protect yourself and your baby.

Whooping Cough Vaccine

Whooping cough (or pertussis) can be serious for anyone, but for your newborn, it can be life-threatening. Up to 20 babies die each year in the United States due to whooping cough. About half of babies younger than 1 year old who get whooping cough need treatment in the hospital. The younger the baby is when he or she gets whooping cough, the more likely he or she will need to be treated in a hospital. It may be hard for you to know if your baby has whooping cough because many babies with this disease don't cough at all. Instead, it can cause them to stop breathing and turn blue.

When you get the whooping cough vaccine during your pregnancy, your body will create protective antibodies and pass some of them to your baby before birth. These antibodies will provide your baby some short-term, early protection against whooping cough.

Learn more at www.cdc.gov/pertussis/pregnant/.

Flu Vaccine

Changes in your immune, heart, and lung functions during pregnancy make you more likely to get seriously ill from the flu. Catching the flu also increases your chances for serious problems for your developing baby, including premature labor and delivery. *Get the flu shot if you are pregnant during flu season—it's the best way to protect yourself and your baby for several months after birth from flu-related complications.*

Flu seasons vary in their timing from season to season, but CDC recommends getting vaccinated by the end of October, if possible. This timing helps protect you before flu activity begins to increase.

Find more on how to prevent the flu by visiting www.cdc.gov/flu/.

Pregnancy and Vaccination

Keep Protecting Your Baby after Pregnancy

Your ob-gyn or midwife may recommend you receive some vaccines right after giving birth. Postpartum vaccination will help protect you from getting sick and you will pass some antibodies to your baby through your breastmilk. Vaccination after pregnancy is especially important if you did not receive certain vaccines before or during your pregnancy.

Your baby will also start to get his or her own vaccines to protect against serious childhood diseases. You can learn more about CDC's recommended immunization schedule for children and the diseases vaccines can prevent at www.cdc.gov/vaccines/parents/.

Even before becoming pregnant, make sure you are up to date on all your vaccines. This will help protect you and your child from serious diseases. For example, rubella is a contagious disease that can be very dangerous if you get it while you are pregnant. In fact, it can cause a miscarriage or serious birth defects. The best protection against rubella is MMR (measles-mumps-rubella) vaccine, but if you aren't up to date, you'll need it before you get pregnant.

Keep in mind that many diseases rarely seen in the United States are still common in other parts of the world. Talk to your ob-gyn or midwife about vaccines if you are planning international travel during your pregnancy. More information is available at www.cdc.gov/travel/.

**Talk to your ob-gyn or midwife
about maternal vaccines and visit:
www.cdc.gov/vaccines/pregnancy/**



**U.S. Department of
Health and Human Services**
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Control and Prevention



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Frequently Asked Questions for Pregnant Women Concerning Tdap Vaccination

What is pertussis?

Pertussis (also called whooping cough) is a highly contagious disease that causes severe coughing and difficulty breathing. People with pertussis may make a “whooping” sound when they try to breathe and gasp for air. Pertussis can affect people of all ages, and can be very serious, even deadly, for babies less than a year old. In recent outbreaks, babies younger than 3 months have had the highest risk of severe disease and of dying from pertussis.

What is Tdap?

The tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine is used to prevent three infections: 1) tetanus, 2) diphtheria, and 3) pertussis.

I am pregnant. Should I get a Tdap shot?

Yes. All pregnant women should get a Tdap shot in the third trimester, preferably between 27 weeks and 36 weeks of gestation. The Tdap shot is a safe and effective way to protect you and your baby from serious illness and complications of pertussis.

When should I get the Tdap shot?

Experts recommend that you get the Tdap shot during the third trimester (preferably between 27 weeks and 36 weeks) of every pregnancy. The shot will help you make protective antibodies against pertussis. These antibodies are passed to your fetus and protect your baby until he or she begins to get vaccines against pertussis at 2 months of age. Receiving the shot early in the 27–36-weeks-of-gestation window is best because it maximizes the antibodies present at birth and will provide the most protection to the newborn.

Is it safe to get the Tdap shot during pregnancy?

Yes. The shot is safe for pregnant women.

Can newborns be vaccinated against pertussis?

No. Newborns cannot start their vaccine series against pertussis until they are 2 months of age because the vaccine does not work in the first few weeks of life. This is one reason why newborns are at a high risk of getting pertussis and becoming very ill.

What else can I do to protect my newborn against pertussis?

Getting your Tdap shot during pregnancy is the most important step in protecting yourself and your baby against pertussis. It also is important that all family members and caregivers are up-to-date with their vaccines. Adolescent family members or caregivers should receive the Tdap vaccine at 11–12 years of age. If an adult (older than 18 years) family member or caregiver has never received the Tdap vaccine, he or she should get it at least 2 weeks before having contact with your baby. This makes a safety “cocoon” of vaccinated caregivers around your baby.

I am breastfeeding my baby. Is it safe to get the Tdap shot?

Yes. The Tdap shot can be given safely to breastfeeding women if they did not get the Tdap shot during pregnancy and have never received the Tdap shot before. There also may be added benefit to your baby if you get the shot while breastfeeding.

(see reverse)

I did not get my Tdap shot during pregnancy. Do I still need to get the vaccine?

If you have never had the Tdap vaccine as an adult, and you do not get the shot during pregnancy, be sure to get the vaccine right after you give birth, before you leave the hospital or birthing center. It will take about 2 weeks for your body to make protective antibodies in response to the vaccine. Once these antibodies are made, you are less likely to give pertussis to your baby. But remember, your newborn still will be at risk of catching pertussis from others. If you received a Tdap vaccination as an adolescent or adult but did not receive one during your pregnancy, you do not need to receive the vaccination after giving birth.

I got a Tdap shot during a past pregnancy. Do I need to get the shot again during this pregnancy?

Yes. All pregnant women should get a Tdap shot during each pregnancy, preferably between 27 weeks and 36 weeks of gestation. Receiving the vaccine as early as possible in the 27–36-weeks-of-gestation window is best. This is important to make sure that each newborn receives the highest possible protection against pertussis at birth.

I received a Tdap shot early in this pregnancy, before 27–36 weeks of gestation. Do I need to get another Tdap shot between 27 weeks and 36 weeks of gestation?

No. A Tdap shot later in the same pregnancy is not necessary if you received the Tdap shot before the 27th week of your current pregnancy.

Can I get the Tdap shot and influenza shot at the same time?

Yes. You can get these two shots, Tdap and influenza, in the same visit. Receiving these vaccinations at the same time is safe.

What is the difference between DTaP, Tdap, and Td?

Children receive the diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine. Adolescents and adults are given the Tdap vaccine as a booster to the vaccines they had as children. Adults receive the tetanus and diphtheria (Td) vaccine every 10 years to protect against tetanus and diphtheria. The Td vaccine does not protect against pertussis.

RESOURCES

The American College of Obstetricians and Gynecologists
www.acog.org

Immunization for Women
www.immunizationforwomen.org

Centers for Disease Control and Prevention
<https://www.cdc.gov/vaccines/vpd/pertussis/index.html>

Society for Maternal–Fetal Medicine
www.smfm.org

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The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Frequently Asked Questions for Patients Concerning Influenza (Flu) Vaccination During Pregnancy

I am pregnant. Should I get the influenza vaccine (flu shot)?

Yes. Getting a flu shot is the best way to protect you and your baby from serious illness from the flu. Pregnant women and their fetuses have a higher risk of serious complications from the flu. The flu shot given during pregnancy protects women and their newborns. You need a flu shot each year because the flu viruses targeted by the vaccine can change from year to year. The flu shot has been safely given to millions of pregnant women for many years.

How does my flu shot protect my newborn?

When you get a flu shot, your body makes antibodies that also pass to your fetus. This means your baby has protection against the flu after birth. This is important because infants less than 6 months of age are too young to get the flu shot.

Why is it important for pregnant women to get the flu shot?

The flu is a mild-to-severe illness that also often includes fever, body aches, sore throat, cough, and fatigue. Pregnant women who get the flu can become much sicker than women who get the flu when they are not pregnant. Pregnant women who get the flu have a higher chance of the flu turning into pneumonia than women who are not pregnant. Pneumonia is a serious infection in the lungs that usually requires treatment in the hospital. Pregnant women who get the flu often need more medical visits and frequently need to be admitted to the hospital for observation and treatment.

During which trimester is it safe to get a flu shot?

The flu shot can be safely given during any trimester. Pregnant women can get the flu shot at any point during the flu season (typically October through May). Pregnant women should get the shot as soon as possible when it becomes available. If you are pregnant, talk with your obstetrician–gynecologist (ob-gyn) or other health care provider about getting the flu shot.

Which flu vaccine should pregnant women get?

Pregnant women should receive any licensed, recommended, age-appropriate inactivated flu vaccine. The Advisory Committee on Immunization Practices and the American College of Obstetricians and Gynecologists do not recommend one type of flu shot over another.

Will the flu shot give me the flu?

No. You cannot get the flu from getting the flu shot.

I got the flu shot, so why did I still get sick?

The flu shot does not protect against all strains of the flu virus. Experts do their best to determine the virus strains that are most likely to cause illness the following season. Sometimes additional strains end up causing illness. After your flu shot, it takes about 2 weeks for your body to develop antibodies, which are what protects you from the flu. So, if you are exposed to the flu during the time immediately after your flu shot, you can still get the flu. That is why it is important to get the flu shot before flu season becomes very active. The flu shot does not protect against the common cold or other respiratory viruses. During the flu season, you can still get a respiratory illness that is not the flu, even though you got a flu shot.

What are the side effects of the flu shot?

Low-grade fevers, headaches, and muscle aches can occur as temporary (1–2 days) side effects in some people after getting the flu shot. According to the Centers for Disease Control and Prevention, these risks are outweighed by the risks of the flu, which is a serious illness that can make you or your baby seriously ill for much longer.

(see reverse)

Is there any reason I should not get the flu shot?

There are very few reasons that a pregnant woman should not get a flu shot. A history of egg allergy, including hives, is not a reason to avoid the flu shot. However, if you have had a severe allergic reaction after a previous flu shot, you should not get another flu shot. Talk with your ob-gyn or other health care provider about any reactions you may have had with past flu shots.

Are preservatives in flu vaccines safe for my baby?

Yes. Thimerosal is a mercury-containing preservative used in very small amounts in some flu shots. There is no scientific evidence that thimerosal causes health or developmental problems for pregnant women or children born to women who received thimerosal-containing shots during pregnancy. Thimerosal-free types of the flu shot also are available. Pregnant women can get the flu shot with or without the preservative.

What else can I do to keep my baby healthy and free of the flu?

Getting your flu shot while you are pregnant is the best step in protecting yourself and your fetus against the flu. Data show that babies born to women who got the flu shot while pregnant have much lower rates of flu compared with babies whose mothers did not get the shot. Breastfeeding your baby and making sure family members and caregivers get the flu shot also will protect your baby.

I am breastfeeding my baby. Is it safe for me to get the flu shot?

Yes. It is safe and recommended if you did not get a flu shot during pregnancy. The antibodies your body makes after the flu shot can be passed to your baby through breast milk. This reduces your baby's chance of getting sick with the flu.

Is it safe to get a flu shot at my local pharmacy?

Yes. Pharmacists are well trained to give immunizations. Flu shots are available at most major pharmacies. You can find a location for a flu shot at www.vaccinefinder.org. This is a good option if your ob-gyn or other health care provider does not offer the flu shot in his or her office. Be sure to let your ob-gyn or other health care provider know when you have gotten the flu shot so that your medical record can be updated. The pharmacy also should provide you with documentation of your flu shot.

What should I do if I think I have the flu?

Although the flu shot is the most effective way to prevent the flu, there is still a chance you might get the flu. If you think you have the flu, contact your ob-gyn or other health care provider right away. Be sure to tell your health care provider that you are pregnant. If you have severe symptoms, such as a fever higher than 100.0°F and trouble breathing, dizziness when standing, or pain in your chest, contact your ob-gyn or other health care provider and seek immediate medical attention. You also should contact your ob-gyn or other health care provider if you have had close contact with someone likely to have been infected with the flu.

Can I get the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis shot and flu shot at the same time?

Yes. You can get the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) shot and the flu shot in the same visit. Receiving these shots at the same time is safe and effective.

Resources

American College of Obstetricians and Gynecologists

Immunization for Women: Influenza Overview for Patients

www.immunizationforwomen.org/patients/diseases-vaccines/influenza/influenza.php

American College of Obstetricians and Gynecologists

Immunization for Women

www.immunizationforwomen.org

Centers for Disease Control and Prevention

Seasonal influenza: Pregnant Women and Influenza (Flu)

www.cdc.gov/flu/protect/vaccine/pregnant.htm

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Preparing for Questions Parents May Ask about Vaccines

Many parents won't have questions about vaccines when you give your strong recommendation and use language that assumes parents will accept vaccines for their child.

If a parent questions your recommendation, this does not necessarily mean they will not accept vaccines. They consider you their most trusted source of information when it comes to vaccines and sometimes parents simply want your answers to their questions. This sheet outlines some of the topics most parents ask about and tips for how to answer their questions.

Questions about the vaccine schedule and number of vaccines

Some parents may be concerned that there are too many vaccines or that their child will receive too many at one time. But, they may not understand that following the recommended vaccine schedule provides the best protection at the earliest possible time against serious diseases that may affect infants early in life.

PARENTS MAY ASK: *Can it harm my child to get several vaccines at one time? Does my child need all of the vaccines recommended?*

To respond, you can:

- Share that no evidence suggests that receiving several vaccines at one time will damage or overwhelm a healthy child's immune system.
- Explain what antigens are (parts of germs) and emphasize the small amount of antigens in vaccines compared to the antigens babies encounter every day in their environment.
- Remind parents that they must start each vaccine series on time to protect their child as soon as possible and their child must complete each multi-dose series for the best protection. There are no data to support that spacing out vaccines offers safe or effective protection from these diseases.

"There's no proven danger in getting all recommended vaccines today. Any time you delay a vaccine, you leave your baby vulnerable to disease. It's really best to stay on schedule."

Questions about whether vaccines are more dangerous for infants than the diseases they prevent

Because vaccines are very effective, many parents have not seen a case of a vaccine-preventable disease firsthand. Therefore, they may wonder if vaccines are necessary and if the risks of vaccinating infants outweigh the benefits of protection from vaccine preventable diseases.

PARENTS MAY ASK: *Are these diseases that dangerous? Is it likely that my baby will catch this disease? Will ingredients in vaccines hurt my baby more than possibly getting the disease could?* To respond, you can:

- Share your experience of how these serious diseases still exist and explain that outbreaks still occur in the U.S. For example:
 - From year to year, measles cases in the U.S. can range from roughly less than 100 to a couple hundred. However, in 2014, health departments reported cases in 667 people from 27 states.
 - Between 1970-2000, health officials reported fewer than 8,000 cases of whooping cough each year in the U.S. But since 2010, health officials have reported between 15,000 and 50,000 cases of whooping cough each year to CDC.
- Teach parents that diseases eliminated in the U.S. can infect unvaccinated babies if travelers bring the diseases from other countries. If you need up-to-date information on specific diseases, share *Disease Fact Sheets* with parents.
- Remind parents that many vaccine preventable diseases can be especially dangerous for young children and there's no way to tell in advance if their child will get a severe or mild case. Without vaccines, their child is at risk for getting seriously ill and suffering pain, disability, and even death from diseases like measles and whooping cough.

"I know you didn't get all these vaccines when you were a baby. Neither did I. However, we were both at risk of serious diseases like Hib and pneumococcal meningitis that can lead to deafness or brain damage. Today, we're able to protect your baby from 14 serious diseases before his second birthday with vaccines."

Questions about known side effects

It is reasonable for parents to be concerned about possible reactions or side effects listed on *Vaccine Information Statements*. Vaccines, like any medication, can cause some side effects. Many of these effects are minor, treatable, and last only a few days.

PARENTS MAY ASK: *Will my child be okay if she has a side effect? I know someone whose baby had a serious reaction—will my baby too?* To respond, you can:

- Remind parents that most side effects are mild and go away within a few days.
- Reassure parents that you and your staff are prepared to deal with serious vaccine reactions.
- Encourage parents to watch for possible side effects (fussiness, low-grade fever, soreness where the shot was given) and provide information on how they should treat them and how to contact you if they observe something they are concerned about.
- Share your own experience, or lack thereof, of seeing a serious side effect from a vaccine. Explain that serious side effects are very rare.

Reassure parents that the disease-prevention benefits of getting vaccines are much greater than the risks of possible side effects.



"I'll worry if your child doesn't get vaccines today, because the diseases can be very dangerous—most, including Hib, whooping cough, and measles, are still infecting children in the U.S. We can look at the Vaccine Information Statements together and talk about how rare serious vaccine side effects are."

Questions about unknown serious long-term side effects

Parents who look for information about vaccine safety will likely encounter information that says vaccines can lead to serious long-term side effects from vaccines. It is understandable that parents may find this alarming.

PARENTS MAY ASK: *Do vaccines cause long-term side effects? Will getting a vaccine permanently hurt my child's health?*

To respond, you can share that:

- Vaccines are not linked to increases in health problems such as autism, asthma, or auto-immune diseases.
- There is no evidence to suggest that vaccines threaten a long, healthy life. Conversely, we know lack of vaccination threatens a long and healthy life.

"We have years of experience with vaccines and no reason to believe that vaccines cause long-term harm. I understand your concern, but I truly believe that the risk of diseases is greater than any risks posed by vaccines. Vaccines will get your baby off to a great start for a long, healthy life."

Questions about vaccine ingredients

Parents may ask about the ingredients contained in vaccines. Let them know that vaccines contain very small amounts of the ingredients listed below and that all ingredients play necessary roles either in making the vaccine or in ensuring that the final product is safe and effective.

PARENTS MAY ASK: *Are the ingredients in vaccines safe? Aren't aluminum and mercury dangerous?*

- Preservatives prevent contamination of the vaccine. Thimerosal, a compound containing mercury, is a preservative only found in multi-dose vials of flu vaccine.
- Adjuvants or enhancers, such as aluminum salts, are used to help the body develop immunity and a better immune response.
- Stabilizers, such as sugars and gelatin, are used to keep the vaccine potent during transportation and storage.
- Residual cell culture materials, such as egg protein, are used to grow enough of the virus or bacteria to make the vaccine.
- Residual inactivating ingredients, such as formaldehyde, are used during the production process to kill viruses or inactivate toxins during the manufacturing process.
- Residual antibiotics, such as neomycin, are used during the vaccine manufacturing process to prevent contamination by bacteria.

"Each vaccine ingredient plays an important role in either making the vaccine or ensuring that it is safe and effective so it will protect your child."

Questions about whether vaccines cause autism

Although many parents are aware that numerous studies show vaccines do not cause autism, some parents have lingering questions and concerns.

PARENTS MAY ASK: *I've heard some parents say their child's behavior changed after vaccines; how do you know vaccines don't cause autism?* Many rigorous studies show that there is no link between MMR vaccine or thimerosal and autism. If parents raise other possible hypotheses linking vaccines to autism, three items are key:

- Give patient and empathetic reassurance that you understand their infant's health is their top priority, and it also is your top priority, so putting children at risk of vaccine-preventable diseases without scientific evidence of a link between vaccines and autism is a risk you are not willing to take.
- Share that the onset of autism symptoms often coincides with the timing of vaccines but is not caused by vaccines.
- Give your personal and professional opinion that vaccines are very safe.

"Autism is a challenge for many families and people want answers—including me. But well designed and conducted studies that I can share with you show that MMR vaccine is not a cause of autism."

Resources for questions about vaccines and autism:

- [Understanding Thimerosal, Mercury, and Vaccine Safety](#)
- [Understanding MMR Vaccine Safety](#)

Additional questions parents may ask

- *Isn't natural immunity better than the kind from vaccines?*
- *Do I have to vaccinate my baby on schedule if I'm breastfeeding him?*
- *Why are so many doses needed for each vaccine?*

If you have additional questions from parents, reference [Infant Immunization FAQs](#) for regularly updated answers to common questions.

For information on vaccines, vaccine safety, and vaccine preventable diseases, visit: www.cdc.gov/vaccines/conversations

Tips for a Less Stressful Shot Visit



Making the choice to vaccinate your child is vital for their health and well-being. Even so, getting shots can still be stressful for you and your little one. Fortunately, there are simple ways you can support your child before, during, and after shots.

Before Getting Shots

Come prepared! Take these steps before your child gets a shot to help make the immunization visit less stressful on you both.

- Read any vaccine materials you received from your child's health care professional and write down any questions you may have.
- Find your child's personal immunization record and bring it to your appointment. An up-to-date record tells your doctor exactly what shots your child has already received.
- Pack a favorite toy or book, and a blanket that your child uses regularly to comfort your child.

For older children

- Be honest with your child. Explain that shots can pinch or sting, but that it won't hurt for long.
- Engage other family members, especially older siblings, to support your child.
- Avoid telling scary stories or making threats about shots.

At the Doctor's Office

If you have questions about immunizations, ask your child's doctor or nurse. Before you leave the appointment, ask your child's doctor for advice on using non-aspirin pain reliever and other steps you can take at home to comfort your child.

Try these ideas for making the shots easier on your child.

- Distract and comfort your child by cuddling, singing, or talking softly.
- Smile and make eye contact with your child. Let your child know that everything is ok.
- Comfort your child with a favorite toy or book. A blanket that smells familiar will help your child feel more comfortable.
- Hold your child firmly on your lap, whenever possible.

Help children see vaccines as a good thing. Never threaten your child with shots, by saying "If you misbehave I will have the nurse give you a shot." Instead, remind children that vaccines can keep them healthy.

Ways to soothe your baby:

- Swaddling
- Skin-to-skin contact
- Offering a sweet beverage, like juice (when the child is older than 6 months)
- Breastfeeding

Your health care professional may cool or numb the injection site to reduce the pain associated with your child's shots.

The Centers for Disease Control and Prevention (CDC), the American Academy of Family Physicians (AAFP), and the American Academy of Pediatrics (AAP) adapted this information from *Be There for Your Child during Shots*, California Department of Public Health Immunization Branch.

For older children

- Take deep breaths with your child to help “blow out” the pain.
- Point out interesting things in the room to help create distractions.
- Tell or read stories.
- Support your child if he or she cries. Never scold a child for not “being brave.”

Once your child has received all of the shots, be especially supportive. Hold, cuddle, and, for infants, breastfeed or offer a bottle. A soothing voice, combined with praise and hugs will help reassure your child that everything is ok.

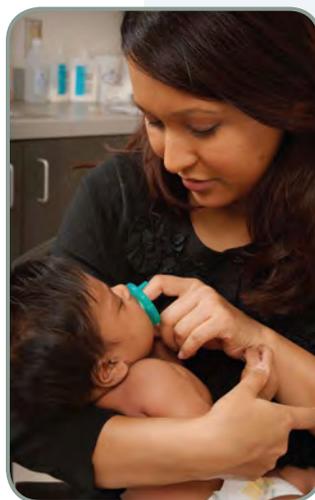
After the Shots

Sometimes children experience mild reactions from vaccines, such as pain at the injection site, a rash or a fever. These reactions are normal and will soon go away. The following tips will help you identify and minimize mild side effects.

- Review any information your doctor gives you about the shots, especially the Vaccine Information Statements or other sheets that outline which side effects might be expected.
- Use a cool, wet cloth to reduce redness, soreness, and swelling in the place where the shot was given.
- Reduce any fever with a cool sponge bath. If your doctor approves, give non-aspirin pain reliever.
- Give your child lots of liquid. It’s normal for some children to eat less during the 24 hours after getting vaccines.
- Pay extra attention to your child for a few days. If you see something that concerns you, call your doctor.

*Remember to schedule your next visit!
Staying current with your child’s immunizations
provides the best protection against disease.*

*Take a moment to read the Vaccine Information
Sheet your health care professional gives you
during your visit. This sheet has helpful
information and describes possible side effects
your child may experience.*



Infant Immunizations FAQs

It's natural you have questions about your child's vaccines. Read answers to common questions to learn more about vaccine safety, the recommended schedule, how vaccines protect your child from 14 diseases by age two, and more. CDC regularly updates this document to ensure frequently asked questions from parents are answered with the most current information.

Q: Are vaccines safe?

A: Yes. Vaccines are very safe. The United States' long-standing vaccine safety system ensures that vaccines are as safe as possible. Currently, the United States has the safest vaccine supply in its history. Millions of children safely receive vaccines each year. The most common side effects are typically very mild, such as pain or swelling at the injection site.

Q: What are the side effects of the vaccines? How do I treat them?

A: Vaccines, like any medication, may cause some side effects. **Most of these side effects are very minor, like soreness where the shot was given, fussiness, or a low-grade fever.** These side effects typically only last a couple of days and are treatable. For example, you can apply a cool, wet washcloth on the sore area to ease discomfort.

Serious reactions are very rare. However, if your child experiences any reactions that concern you, call the doctor's office.

Q: What are the risks and benefits of vaccines?

A: Vaccines can prevent infectious diseases that once killed or harmed many infants, children, and adults. Without vaccines, your child is at risk for getting seriously ill and suffering pain, disability, and even death from diseases like measles and whooping cough. The main risks associated with getting vaccines are side effects, which are almost always mild (redness and swelling at the injection site) and go away within a few days. Serious side effects after vaccination, such as a severe allergic reaction, are very rare and doctors and clinic staff are trained to deal with them. **The disease-prevention benefits of getting vaccines are much greater than the possible side effects for almost all children. for almost all children.** The only exceptions to this are cases in which a child has a serious chronic medical condition like cancer or a disease that weakens the immune system, or has had a severe allergic reaction to a previous vaccine dose.

Q: Is there a link between vaccines and autism?

A: No. Scientific studies and reviews continue to show no relationship between vaccines and autism.

Some people have suggested that thimerosal (a compound that contains mercury) in vaccines given to infants and young children might be a cause of autism. Others have suggested that the MMR (measles-mumps-rubella) vaccine may be linked to autism. However, numerous scientists and researchers have studied and continue to study the MMR vaccine and thimerosal, and they reach the same conclusion: there is no link between MMR vaccine or thimerosal and autism.

Q: Can vaccines overload my baby's immune system?

A: Vaccines do not overload the immune system. Every day, a healthy baby's immune system successfully fights off thousands of germs. Antigens are parts of germs that cause the body's immune system to go to work to build antibodies, which fight off diseases.

The antigens in vaccines come from the germs themselves, but the germs are weakened or killed so they cannot cause serious illness. **Even if babies receive several vaccinations in one day, vaccines contain only a tiny fraction of the antigens they encounter every day in their environment.** Vaccines give your child the antibodies they need to fight off serious vaccine-preventable diseases.



CDC recommends all children receive vaccines according to the recommended immunization schedule to protect them from 14 diseases by age two. Read below to get answers to 19 common questions about how vaccines benefit your child, the vaccine schedule, and more.

Q: Why are so many doses needed for each vaccine?

A: Getting every recommended dose of each vaccine provides your child with the best protection possible. Depending on the vaccine, your child will need more than one dose to build high enough immunity to prevent disease or to boost immunity that fades over time. Your child may also receive more than one dose to make sure they are protected if they did not get immunity from a first dose, or to protect them against germs that change over time, like flu. Every dose is important because each protects against infectious diseases that can be especially serious for infants and very young children.

Q: Why do vaccines start so early?

A: The recommended schedule protects infants and children by providing immunity early in life, before they come into contact with life-threatening diseases. Children receive immunization early because they are susceptible to diseases at a young age. The consequences of these diseases can be very serious, even life-threatening, for infants and young children.

Q: What do you think of delaying some vaccines or following a non-standard schedule?

A: Children do not receive any known benefits from following schedules that delay vaccines. Infants and young children who follow immunization schedules that spread out or leave out shots are at risk of developing diseases during the time you delay their shots. Some vaccine-preventable diseases remain common in the United States and children may be exposed to these diseases during the time they are not protected by vaccines, placing them at risk for a serious case of the disease that might cause hospitalization or death.



Infant Immunizations FAQs

Q: Haven't we gotten rid of most of these diseases in this country?

A: Some vaccine-preventable diseases, like pertussis (whooping cough) and chickenpox, remain common in the United States. On the other hand, other diseases vaccines prevent are no longer common in this country because of vaccines. **However, if we stopped vaccinating, the few cases we have in the United States could very quickly become tens or hundreds of thousands of cases.** Even though many serious vaccine-preventable diseases are uncommon in the United States, some are common in other parts of the world. Even if your family does not travel internationally, you could come into contact with international travelers anywhere in your community. Children who don't receive all vaccinations and are exposed to a disease can become seriously sick and spread it through a community.

Q: What are combination vaccines? Why are they used?

A: Combination vaccines protect your child against more than one disease with a single shot. They reduce the number of shots and office visits your child would need, which not only saves you time and money, but also is easier on your child.

Some common combination vaccines are Pediarix®, which combines DTap, Hep B, and IPV (polio), and ProQuad®, which combines MMR and varicella (chickenpox).

Q: Can't I just wait until my child goes to school to catch up on immunizations?

A: Before entering school, young children can be exposed to vaccine-preventable diseases from parents and other adults, brothers and sisters, on a plane, at child care, or even at the grocery store. Children under age 5 are especially susceptible to diseases because their immune systems have not built up the necessary defenses to fight infection. **Don't wait to protect your baby and risk getting these diseases when he or she needs protection now.**

Q: Why does my child need a chickenpox shot? Isn't it a mild disease?

A: Your child needs a chickenpox vaccine because chickenpox can actually be a serious disease. In many cases, children experience a mild case of chickenpox, but other children may have blisters that become infected. Others may develop pneumonia. There is no way to tell in advance how severe your child's symptoms will be.

Before vaccine was available, about 50 children died every year from chickenpox, and about 1 in 500 children who got chickenpox was hospitalized.

Q: My child is sick right now. Is it okay for her to still get shots?

A: Talk with your child's doctor, but children can usually get vaccinated even if they have a mild illness like a cold, earache, mild fever, or diarrhea. If the doctor says it is okay, your child can still get vaccinated.

Q: What are the ingredients in vaccines and what do they do?

A: Vaccines contain ingredients that cause the body to develop immunity. Vaccines also contain very small amounts of other ingredients. **All ingredients play necessary roles either in making the vaccine, or in ensuring that the final product is safe and effective.**

Q: Don't infants have natural immunity? Isn't natural immunity better than the kind from vaccines?

A: Babies may get some temporary immunity (protection) from mom during the last few weeks of pregnancy, but only for diseases to which

mom is immune. Breastfeeding may also protect your baby temporarily from minor infections, like colds. **These antibodies do not last long, leaving your baby vulnerable to disease.**

Natural immunity occurs when your child is exposed to a disease and becomes infected. It is true that natural immunity usually results in better immunity than vaccination, but the risks are much greater. A natural chickenpox infection may result in pneumonia, whereas the vaccine might only cause a sore arm for a couple of days.

Q: Can't I just wait to vaccinate my baby, since he isn't in child care, where he could be exposed to diseases?

A: No, even young children who are cared for at home can be exposed to vaccine preventable diseases, so it's important for them to get all their vaccines at the recommended ages. Children can catch these illnesses from any number of people or places, including from parents, brothers or sisters, visitors to their home, on playgrounds or even at the grocery store. Regardless of whether or not your baby is cared for outside the home, she comes in contact with people throughout the day, some of whom may be sick but not know it yet.

If someone has a vaccine preventable disease, they may not have symptoms or the symptoms may be mild, and they can end up spreading disease to babies or young children. Remember, many of these diseases can be especially dangerous to young children so it is safest to vaccinate your child at the recommended ages to protect her, whether or not she is in child care.

Q: Do I have to vaccinate my baby on schedule if I'm breastfeeding him?

A: Yes, even breastfed babies need to be protected with vaccines at the recommended ages. The immune system is not fully developed at birth, which puts newborns at greater risk for infections.

Breast milk provides important protection from some infections as your baby's immune system is developing. For example, babies who are breastfed have a lower risk of ear infections, respiratory tract infections, and diarrhea. However, breast milk does not protect children against all diseases. Even in breastfed infants, vaccines are the most effective way to prevent many diseases. Your baby needs the long-term protection that can only come from making sure he receives all his vaccines according to the CDC's recommended schedule.

Q: What's wrong with delaying some of my baby's vaccines if I'm planning to get them all eventually?

A: Young children have the highest risk of having a serious case of disease that could cause hospitalization or death. Delaying or spreading out vaccine doses leaves your child unprotected during the time when they need vaccine protection the most. For example, diseases such as Hib or pneumococcus almost always occur in the first 2 years of a baby's life. And some diseases, like Hepatitis B and whooping cough (pertussis), are more serious when babies get them at a younger age. Vaccinating your child according to the CDC's recommended immunization schedule means you can help protect him at a young age.

Q: I got the whooping cough and flu vaccines during my pregnancy. Why does my baby need these vaccines too?

A: The protection (antibodies) you passed to your baby before birth will give him some early protection against whooping cough and flu. However, these antibodies will only give him short-term protection. It is very important for your baby to get vaccines on time so he can start building his own protection against these serious diseases.

Talking with Parents about Vaccines for Infants

Doctors, nurses, physician assistants, and office staff all play a key role in establishing and maintaining a practice-wide commitment to communicating effectively about vaccines and maintaining high vaccination rates. You can all answer parents' questions, provide educational materials, and ensure that families make and keep vaccine appointments.

Parents consider their child's health care professionals to be their most trusted source of information when it comes to vaccines. This is true even for parents who are vaccine-hesitant or who have considered delaying one or more vaccines. Therefore, you have a critical role in helping parents choose vaccines for their child.

With all you do, you may feel that long vaccine conversations are stressful when you also need to check physical and cognitive milestones and have a full schedule of patients. Because of this, we designed this resource to guide you with conversational techniques and resources for discussing vaccines with parents.

Assume parents will vaccinate

State which vaccines the child needs to receive.

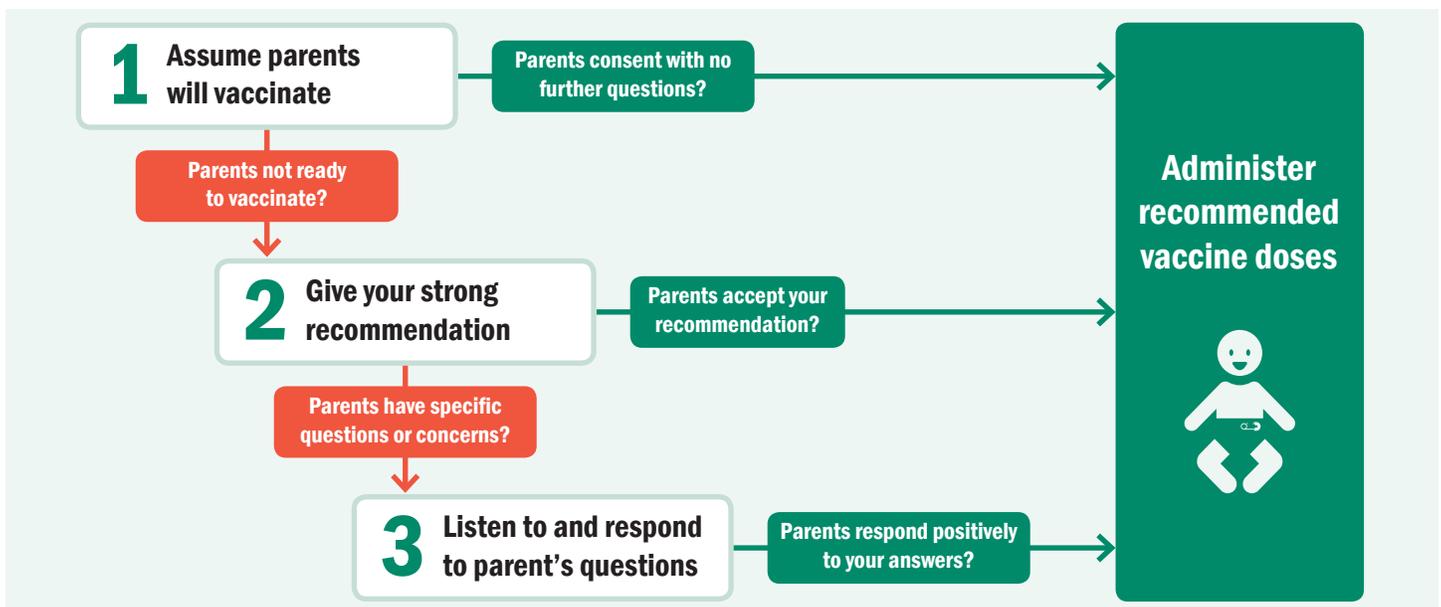
When discussing vaccines for children, it is best to remember most parents are planning to accept vaccines and to introduce the topic with that in mind. State the child will receive

vaccines as though you presume that parents are ready to accept recommended vaccines for their child during that visit. For example:

Instead of saying *"What do you want to do about shots?"*, say *"Your child needs three shots today."*

Instead of saying *"Have you thought about the shots your child needs today?"*, say *"Your child needs DTaP, Hib, and Hepatitis B shots today."*

A research study looking at health care professionals' (HCPs) and parents' interactions during vaccine visits showed that parents were more likely to express concerns when providers used language that asked parents about their vaccination plans. In this study, the presumptive approach resulted in significantly more parents accepting vaccines for their child, especially at first-time visits¹. However, if parents still hesitate or express concerns, move to the next step and give your strong recommendation.



Give your strong recommendation

If parents express concerns, then share your strong vaccine recommendation.

Although parents frequently consult family members, friends, and webpages for information on vaccines, parents consistently rank their child's doctor as their most trusted source for vaccine information. With this unique position, your strong recommendation is critical for vaccine acceptance.

Clearly state your strong recommendation. If appropriate, you can add a brief supporting statement that uses a mix of science and anecdote, depending on what you think will be most effective with that parent. Share the importance of vaccines to protect children from potentially life threatening diseases, or talk about your personal experiences with vaccination. For example:

"I strongly recommend your child get these vaccines today..."
"...These shots are very important to protect him from serious diseases."
"...I believe in vaccines so strongly that I vaccinated my own children on schedule."
"...This office has given thousands of doses of vaccines and we have never seen a serious reaction."

Listen to and respond to parents' questions

Seek to understand parents' concerns and provide requested information.

Although research shows most parents in the U.S. support vaccines, you will encounter parents with questions. If a parent has concerns, resists following the recommended vaccine schedule, or questions your strong recommendation, this doesn't necessarily mean they won't accept vaccines. Sometimes parents simply want *your* answers to their questions. Your willingness to listen to their concerns will play a major role in building trust in you and your recommendation.

When listening, seek to understand the concerns behind parents' questions before responding with information the parent may not be asking about. If you encounter questions you do not know the answer to, or information from sources you are unfamiliar with, it is best to acknowledge the parent's concerns and share what you *do know*. Offer to review the information they have found and, if necessary, schedule another appointment to discuss it further.

What if parents refuse to vaccinate?

If parents decline immunizations after your strong recommendation and conversation, use the following strategies:

- Continue the conversation about vaccines during the next visit and restate your strong recommendation.
- Inform parents about clinical presentations of vaccine-preventable diseases, including early symptoms.
- Remind parents to call before bringing their child into the office, clinic, or emergency department when the child is ill so health care professionals can take precautions to protect others. Explain that when scheduling an office visit for an ill child who has not received vaccines, you will need take all possible precautions to prevent contact with other patients, especially those too young to be fully vaccinated and those who have weakened immune systems.
- Share *If You Choose Not to Vaccinate Your Child, Understand the Risks and Responsibilities* with parents. This fact sheet explains the risks involved with their decision, including risks to other members of their community, and additional precautionary responsibilities for parents.
- You may wish to have parents sign *AAP's Refusal to Vaccinate form* each time a vaccine is refused so that you have a record of their refusal in their child's medical file.

Wrapping up the conversation

Remember that success comes in many forms. It may mean that parents accept all vaccines when you recommend them, or that they schedule some vaccines for another day. For very vaccine-hesitant parents, success may simply mean agreeing to leave the door open for future conversations.

Work with parents to agree on at least one action, such as:

- Scheduling another appointment or
- Encouraging the parent to read additional information you provide them.

If a parent declines vaccines once, it does not guarantee they always will. Continue to remind parents about the importance of keeping their child up to date on vaccines during future visits and work with them to get their child caught up if they fall behind.

Find resources for specific parent questions:

Preparing For Vaccine Questions Parents May Ask

For information on vaccines, vaccine safety, and vaccine preventable diseases:

www.cdc.gov/vaccines/conversations

¹ Opel, D. J., MD, MPH. (2015). The Influence of Provider Communication Behaviors on Parental Vaccine Acceptance and Visit Experience. *The American Journal of Public Health*, 105(10), 1998-2004.

Q&A TOO MANY VACCINES? WHAT YOU SHOULD KNOW

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Today, young children receive vaccines to protect them against 14 different diseases. Because some vaccines require more than one dose, children can receive as many as 27 inoculations by 2 years of age and five shots at one time. For this reason, some parents ask their doctors to space out, separate or withhold vaccines. The concern that too many vaccines might overwhelm a baby's immune system is understandable, but the evidence that they don't is reassuring.

Q. What are the active components in vaccines?

A. Vaccines contain parts of viruses or bacteria that induce protective immune responses. These active ingredients are called immunological components.

Vaccines that protect against bacterial diseases are made from either inactivated bacterial proteins (e.g., diphtheria, tetanus and pertussis [whooping cough]) or bacterial sugars called polysaccharides (e.g., *Haemophilus influenzae* type b [Hib] and pneumococcus). Each of these bacterial proteins or polysaccharides is considered an immunological component, meaning that each evokes a distinct immune response.

Vaccines that protect against viral diseases (e.g., measles, mumps, rubella, polio, rotavirus, hepatitis A, hepatitis B, chickenpox and influenza) are made of viral proteins. Just like bacterial proteins, viral proteins induce an immune response.

Q. Do children encounter more immunological components from vaccines today than they did 30 years ago?

A. No. Although children receive more vaccines now than ever before, most people would probably be surprised to learn that the number of immunological components in vaccines has dramatically decreased.

In the late 1980s and early 1990s, children received vaccines that protected against eight diseases: measles, mumps, rubella, diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b and polio. The total number of bacterial and viral proteins contained in these vaccines was a little more than 3,000.

Today, children receive vaccines that protect against 14 diseases, but the total number of immunological components in these vaccines is only about 150. This dramatic reduction is the result of scientific advances in protein chemistry and protein purification that have allowed for purer, safer vaccines.

Q. Can too many vaccines overwhelm an infant's immune system?

A. No. Compared with the immunological challenges that infants handle every day, the challenge from the immunological components in vaccines is minuscule. Babies begin dealing with immunological challenges at birth. The mother's womb is a sterile environment, free from viruses, bacteria, parasites and fungi. But after babies pass through the birth canal and enter the world, they are immediately colonized with trillions of bacteria, which means that they carry the bacteria on their bodies but aren't infected by them. These bacteria live on the skin, nose, throat and intestines. To make sure that colonizing bacteria don't invade the bloodstream and cause harm, babies constantly make antibodies against them.

Colonizing bacteria aren't the only issue. Because the food that we eat, the water that we drink and the dust that we inhale contain bacteria, immunological challenges from the environment are unending. Viruses are also a problem. In the first few years of life, children are constantly exposed to a variety of different viruses that cause runny noses, cough, congestion, fever, vomiting or diarrhea.

Given that infants are colonized with trillions of bacteria, that each bacterium contains between 2,000 and 6,000 immunological components, and that infants are infected with numerous viruses, the challenge from the 150 immunological components in vaccines is minuscule compared to what infants manage every day. Indeed, a scraped knee is probably a greater immunological challenge than all childhood vaccines combined.

continued >

Q&A TOO MANY VACCINES? WHAT YOU SHOULD KNOW

Q. How many vaccines can children effectively handle at one time?

A. A lot more than they're getting now. The purpose of vaccines is to prompt a child's body to make antibodies, which work by preventing bacteria and viruses from reproducing themselves and causing disease. So, how many different antibodies can babies make? The best answer to this question came from a Nobel Prize-winning immunologist at the Massachusetts Institute of Technology named Susumu Tonegawa, who first figured out how people make antibodies, and Mel Cohn and Rod Langman, immunologists at the University of California, San Diego, who figured out how many different immunological challenges people could handle at one time.

Tonegawa discovered that antibodies are made by rearranging and recombining many different genes. People can make about 10 billion different antibodies. Cohn and Langman calculated that given the number of antibody-producing cells in a child's bloodstream and the number of immunological components contained in vaccines, babies could effectively respond to about 100,000 vaccines at one time. Although this number sounds overwhelming, remember that every day children are defending themselves against a far greater number of immunological challenges in their environment. The difference is that while we are aware of immunologic challenges from vaccines, we are unaware of the challenges encountered during every day activities.

Q. How do we know that multiple vaccines can be given safely?

A. The Food and Drug Administration (FDA) requires extensive safety testing before vaccines are licensed. Before a new vaccine can be licensed by the FDA, it must first be tested by something called "concomitant use studies." Concomitant use studies require new vaccines to be tested with existing vaccines.

These studies are performed to make sure the new vaccine doesn't affect the safety or effectiveness of existing vaccines given at the same time, and vice versa. Because concomitant use studies have been required for decades, many studies have been performed showing that children can be inoculated with multiple vaccines safely.

This information is provided by the Vaccine Education Center at Children's Hospital of Philadelphia. The Center is an educational resource for parents and healthcare professionals and is composed of scientists, physicians, mothers and fathers who are devoted to the study and prevention of infectious diseases. The Vaccine Education Center is funded by endowed chairs from Children's Hospital of Philadelphia. The Center does not receive support from pharmaceutical companies. ©2017 Children's Hospital of Philadelphia, All Rights Reserved. 17032-12-17.

Q. What is the harm of separating, spacing out or withholding vaccines?

A. Delaying vaccines can be risky. The desire by some parents to separate, space out or withhold vaccines is understandable. This choice, however, is not necessarily without consequence.

First, delaying vaccines only increases the time during which children are susceptible to certain diseases, some of which are still fairly common. Chickenpox, whooping cough (pertussis), *Haemophilus influenzae* type b, influenza and pneumococcus still cause hospitalizations and deaths in previously healthy children every year. Although some people may not realize it, before the chickenpox vaccine, every year between 70 and 100 children died from the disease. And, because some children are not vaccinated against influenza, each year in the U.S. about 75 to 150 children die from influenza. Many of these were previously healthy children who were not considered to be at increased risk of influenza.

Second, spacing out or separating vaccines will require children to visit the doctor more often for shots. Researchers have found that children experience similar amounts of stress, as measured by secretion of a hormone called cortisol, whether they are getting one or two shots at the same visit. These findings suggest that although children are clearly stressed by receiving a shot, two shots aren't more stressful than one. For this reason, more visits to the doctor created by separating or spacing out vaccines will only increase the stress of getting shots. The choice to separate or space out vaccines also increases the risk of vaccine administration errors.

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Some parents are concerned about ingredients in vaccines, specifically aluminum, mercury, gelatin and antibiotics. However, parents can be reassured that ingredients in vaccines are minuscule and necessary.

Q. Why is aluminum in vaccines?

A. Aluminum is used in vaccines as an *adjuvant*. Adjuvants enhance the immune response by allowing for lesser quantities of active ingredients and, in some cases, fewer doses. Until recently, aluminum salts were the only class of adjuvants approved for use in the United States. In 2009, a second adjuvant, known as monophosphoryl lipid A, was also approved for use in the United States.

Aluminum

Aluminum salts have been used as adjuvants in vaccines in the United States since the 1930s. Some people wonder whether aluminum in vaccines is harmful — the facts are reassuring.

First, aluminum is present in our environment; the air we breathe, the water we drink and the food we eat all contain aluminum.

Second, the quantity of aluminum in vaccines is small. For example, in the first six months of life, babies receive about 4 milligrams* of aluminum if they get all of the recommended vaccines. However, during this same period they will ingest about 10 milligrams of aluminum if they are breastfed, 40 milligrams if they are fed regular infant formula, and up to 120 milligrams if they are fed soy-based infant formula.

Some people wonder about the difference between aluminum injected in vaccines versus aluminum ingested in food. Typically, infants have between 1 and 5 nanograms (billionths of a gram) of aluminum in each milliliter of blood. Researchers have shown that after vaccines are injected, the quantity of aluminum detectable in an infant's blood does not change and that about half of the aluminum from vaccines is eliminated from the body within one day. In fact, aluminum causes harm only when kidneys are not functioning properly or at all (so aluminum cannot be effectively eliminated) AND large quantities of aluminum, such as those in antacids, are administered.

Monophosphoryl lipid A

Monophosphoryl lipid A was isolated from the surface of bacteria and detoxified, so that it cannot cause harm. This adjuvant has been tested for safety in tens of thousands of people.

*A milligram is one-thousandth of a gram, and a gram is the weight of one-fifth of a teaspoon of water.

Q. Why is formaldehyde in vaccines?

A. Formaldehyde is a by-product of vaccine production. Formaldehyde is used during the manufacture of some vaccines to inactivate viruses (like polio and hepatitis A viruses) or bacterial toxins (like diphtheria and tetanus toxins). While most formaldehyde is purified away, small quantities remain.

Because formaldehyde is associated with the preservation of dead bodies, its presence in vaccines seems inappropriate. However, it is important to realize that formaldehyde is also a by-product of protein and DNA synthesis, so it is commonly found in the bloodstream. The quantity of formaldehyde found in blood is 10 times greater than that found in any vaccine.

Q. Why is gelatin in vaccines?

A. Gelatin is used in some vaccines as a *stabilizer*. Stabilizers are added to vaccines to protect the active ingredients from degrading during manufacture, transport and storage. Gelatin, which is made from the skin or hooves of pigs, is concerning because some people (about 1 of every 2 million) might have a severe allergic reaction to it.

Also, because religious groups, such as Jews, Muslims and Seventh Day Adventists, follow dietary rules that prohibit pig products, some parents are concerned about using vaccines that contain gelatin. However, all religious groups have approved the use of gelatin-containing vaccines for their followers for several reasons: First, vaccines are injected, not ingested (except the rotavirus vaccine, which does not contain gelatin). Second, gelatin in vaccines has been highly purified and hydrolyzed (broken down by water), so that it is much smaller than that found in nature; therefore, religious leaders believe it to be different enough that it does not break the religious dietary laws. Finally, leaders from these religious groups believe that the benefits of receiving vaccines outweigh adherence to religious dietary laws.

Q. What about the cumulative effect of vaccine ingredients when my child receives multiple vaccines in a single day?

A. Questions about the cumulative effect when multiple vaccines are given on the same day are reasonable. However, several sources of information provide reassurance:

- A study by Michael Smith and Charles Woods showed that 7- to 10-year-old children who had received vaccines according to the recommended schedule as infants did not have neuropsychological delays, such as speech and language delays, verbal memory, fine motor coordination, motor or phonic tics, and intellectual functioning.
- If a new vaccine is added to the schedule at a time when other vaccines are given, studies must be completed to show that neither vaccine interferes with the safety or ability of the other to work. Known as concomitant use studies, these studies are numerous and extensive, offering additional information regarding interference of vaccine ingredients or effects caused by too much of an ingredient.
- Studies of the immune system estimate that we can respond to about 10,000 different immunologic components at any one time; the number of immunologic components contained in all of the vaccines recommended for young children today is less than 200 immunologic components.
- Finally, additives in vaccines, such as aluminum, have been studied regarding how they are processed in the body as well as what levels are toxic. For example, people who suffer toxic effects of aluminum must have had long-term exposure to aluminum (months or years) as well as non-functioning or improperly functioning kidneys.

With all of this information, we can conclude that multiple vaccines given in one day are not overwhelming an infant's immune system.

Vaccine Ingredients: What you should know

Q. Why is mercury in vaccines?

A. Mercury is contained in some multidose preparations of influenza vaccine as a preservative. Preservatives prevent contamination with bacteria. Early in the 20th century, most vaccines were packaged in vials that contained multiple doses. Doctors and nurses would draw up a single dose and place the vaccine back in the refrigerator. Unfortunately, sometimes bacteria would inadvertently enter the vial and cause abscesses at the site of injection or bloodstream infections that were occasionally fatal. Preservatives, originally added in the 1930s, solved this problem.

The most common preservative used was thimerosal, a mercury-containing compound. As more vaccines were given, children received greater quantities of thimerosal. By the late 1990s, the American Academy of Pediatrics and the Public Health Service requested that mercury be removed from vaccines to make “safe vaccines safer.” No evidence existed to suggest that thimerosal was causing harm, but they wanted to be cautious. Unfortunately, their caution worried parents who wondered whether mercury in vaccines was causing subtle signs of mercury poisoning or autism. Addressing these concerns, scientists

performed several studies, all of which showed that thimerosal at the level contained in vaccines hadn't caused harm.

Further, because mercury is a naturally occurring element found in the earth's crust, air, soil and water, we are all exposed to it. In fact, infants who are exclusively breastfed ingest more than twice the quantity of mercury than was contained in vaccines. Today, breastfed infants ingest 15 times more mercury in breast milk than is contained in the influenza vaccine.



Q. Are some vaccines made using fetal cells?

A. Fetal cells are used to make five vaccines: rubella, chickenpox, hepatitis A, shingles and rabies. Fetal cells used to grow the vaccine viruses were isolated from two elective abortions performed in Sweden and England in the early 1960s. Further abortions are not necessary as the cells isolated in the 1960s continue to be maintained in laboratory cultures.

Some parents wonder why scientists would choose to use fetal cells at all. There are several reasons for this. First, viruses, unlike bacteria, require cells to grow, and human cells are often better than animal cells at supporting the growth of human viruses. Second, fetal cells are different from other types of cells in that they are virtually immortal, meaning they can reproduce many, many times before dying. Other cells reproduce only a limited number of times before they die.

Some questions have been raised regarding the use of vaccines grown in fetal cells by people whose religious beliefs are against abortions. In 2005, when Pope Benedict XVI was head of the Catholic Church's Congregation of the Doctrine of Faith, this question was addressed; it was determined that because of the life-saving nature of vaccines, Catholic parents could reasonably give these vaccines to their children. Similarly, the National Catholic Bioethics Center determined that use of vaccines grown in fetal cells isolated from historic abortions was morally acceptable.

This information is provided by the Vaccine Education Center at The Children's Hospital of Philadelphia. The Center is an educational resource for parents and healthcare professionals and is composed of scientists, physicians, mothers and fathers who are devoted to the study and prevention of infectious diseases. The Vaccine Education Center is funded by endowed chairs from The Children's Hospital of Philadelphia. The Center does not receive support from pharmaceutical companies.

Q. Do ingredients in vaccines cause allergic reactions?

A. In addition to gelatin, other ingredients in vaccines such as egg proteins, antibiotics and yeast proteins might cause an allergic reaction. Latex used in vaccine packaging is also a concern related to allergies.

Egg proteins

Because the influenza and yellow fever vaccines are grown in eggs, the final products may contain egg proteins. Advances in protein chemistry have resulted in significantly lower quantities of egg proteins in the influenza vaccine; therefore, people with egg allergies can now get influenza vaccine. However, it is recommended that severely egg-allergic vaccine recipients remain in the office for 15 minutes after getting the influenza vaccine in case of any reaction.

Antibiotics

Antibiotics are used to prevent bacterial contamination during production of some vaccines. However, the types of antibiotics used in vaccines, such as neomycin, streptomycin, polymyxin B, chlortetracycline and amphotericin B, are not those to which people are usually allergic.

Yeast proteins

A couple of viral vaccines are made in yeast cells; these include hepatitis B vaccine and the human papillomavirus vaccine. Although the vaccine is purified away from the yeast cells, about 1 to 5 millionths of a gram remain in the final product. The good news is that people who are allergic to bread or bread products are not allergic to yeast, so the risk of allergy from yeast is theoretical.

Latex packaging

A small number of vaccines are packaged with materials that include latex. While it is rare that patients have a reaction to latex in vaccine packaging, people with latex allergies should consult with their allergy doctor before getting any vaccines packaged in this way.

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vaccine.chop.edu

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If You Choose Not to Vaccinate Your Child, Understand the Risks and Responsibilities.

Reviewed March 2012

If you choose to delay some vaccines or reject some vaccines entirely, there can be risks. Please follow these steps to protect your child, your family, and others.

With the decision to delay or reject vaccines comes an important responsibility that could save your child's life, or the life of someone else.

Any time that your child is ill and you:

- call 911;
- ride in an ambulance;
- visit a hospital emergency room; or
- visit your child's doctor or any clinic

you must tell the medical staff that your child has not received all the vaccines recommended for his or her age.

Keep a vaccination record easily accessible so that you can report exactly which vaccines your child has received, even when you are under stress.

Telling health care professionals your child's vaccination status is essential for two reasons:

- When your child is being evaluated, the doctor will need to consider the possibility that your child has a vaccine-preventable disease. Many of these diseases are now uncommon, but they still occur.
- The people who help your child can take precautions, such as isolating your child, so that the disease does not spread to others. One group at high risk for contracting disease is infants who are too young to be fully vaccinated. For example, the measles vaccine is not usually recommended for babies younger than 12 months. Very young babies who get measles are likely to be seriously ill, often requiring hospitalization. Other people at high risk for contracting disease are those with weaker immune systems, such as some people with cancer and transplant recipients.

Before an outbreak of a vaccine-preventable disease occurs in your community:

- Talk to your child's doctor or nurse to be sure your child's medical record is up to date regarding vaccination status. Ask for a copy of the updated record.
- Inform your child's school, childcare facility, and other caregivers about your child's vaccination status. -
- Be aware that your child can catch diseases from people who don't have any symptoms. For example, Hib meningitis can be spread from people who have the bacteria in their body but are not ill. You can't tell who is contagious.



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When there is vaccine-preventable disease in your community:

- It may not be too late to get protection by getting vaccinated. Ask your child's doctor.
- If there are cases (or, in some circumstances, a single case) of a vaccine-preventable disease in your community, you may be asked to take your child out of school, childcare, or organized activities (for example, playgroups or sports).
- Your school, childcare facility, or other institution will tell you when it is safe for an unvaccinated child to return. Be prepared to keep your child home for several days up to several weeks.
- Learn about the disease and how it is spread. It may not be possible to avoid exposure. For example, measles is so contagious that hours after an infected person has left the room, an unvaccinated person can get measles just by entering that room. -
- Each disease is different, and the time between when your child might have been exposed to a disease and when he or she may get sick will vary. Talk with your child's doctor or the health department to get their guidelines for determining when your child is no longer at risk of coming down with the disease.

Be aware.

- 🦠 Any vaccine-preventable disease can strike at any time in the U.S. because all of these diseases still circulate either in the U.S. or elsewhere in the world.
- 🦠 Sometimes vaccine-preventable diseases cause outbreaks, that is, clusters of cases in a given area.
- 🦠 Some of the vaccine-preventable diseases that still circulate in the U.S. include whooping cough, chickenpox, Hib (a cause of meningitis), and influenza. These diseases, as well as the other vaccine-preventable diseases, can range from mild to severe and life-threatening. In most cases, there is no way to know beforehand if a child will get a mild or serious case.
- 🦠 For some diseases, one case is enough to cause concern in a community. An example is measles, which is one of the most contagious diseases known. This disease spreads quickly among people who are not immune.

If you know your child is exposed to a vaccine-preventable disease for which he or she has not been vaccinated:

- Learn the early signs and symptoms of the disease.
- Seek immediate medical help if your child or any family members develop early signs or symptoms of the disease. -

IMPORTANT: Notify the doctor's office, urgent care facility, ambulance personnel, or emergency room staff that your child has not been fully vaccinated before medical staff have contact with your child or your family members. They need to know that your child may have a vaccine-preventable disease so that they can treat your child correctly as quickly as possible. Medical staff also can take simple precautions to prevent diseases from spreading to others if they know ahead of time that their patient may have a contagious disease.

- Follow recommendations to isolate your child from others, including family members, and especially infants and people with weakened immune systems. Most vaccine-preventable diseases can be very dangerous to infants who are too young to be fully vaccinated, or children who are not vaccinated due to certain medical conditions.
- Be aware that for some vaccine-preventable diseases, there are medicines to treat infected people and medicines to keep people they come in contact with from getting the disease.
- Ask your health care professional about other ways to protect your family members and anyone else who may come into contact with your child.
- Your family may be contacted by the state or local health department who track infectious disease outbreaks in the community. -

If you travel with your child:

- Review the CDC travelers' information website (<http://www.cdc.gov/travel>) before traveling to learn about possible disease risks and vaccines that will protect your family. Diseases that vaccines prevent remain common throughout the world, including Europe. -
- Don't spread disease to others. If an unimmunized person develops a vaccine-preventable disease while traveling, to prevent transmission to others, he or she should not travel by a plane, train, or bus until a doctor determines the person is no longer contagious.

Reliable Sources of Immunization Information: Where Parents Can Go to Find Answers!

Websites

American Academy of Pediatrics (AAP)

www.aap.org/immunization

Centers for Disease Control and Prevention (CDC)

FOR PARENTS: www.cdc.gov/vaccines/parents

FOR HEALTHCARE PROVIDERS: www.cdc.gov/vaccines

Every Child by Two (ECBT)

www.vaccinateyourfamily.org

www.ecbt.org

History of Vaccines

www.historyofvaccines.org

Immunization Action Coalition (IAC)

FOR THE PUBLIC: www.vaccineinformation.org

FOR HEALTHCARE PROVIDERS: www.immunize.org

U.S. Dept of Health and Human Services (HHS)

www.vaccines.gov

Vaccine Education Center (VEC), Children's Hospital of Philadelphia

www.vaccine.chop.edu

Voices for Vaccines (VFV)

FOR PARENTS, OTHER ADULTS, AND HEALTHCARE PROVIDERS:

www.voicesforvaccines.org

Apps for Mobile Devices

Healthy Children – Parents can look up age-by-age health information for their children, check immunization schedules, and access other resources in a format designed for tablets and smartphones. A free app from the American Academy of Pediatrics.

Vaccines on the Go: What you should know – This app provides parents with reliable information about the science, safety, and importance of vaccines and the diseases they prevent. A free app from the Vaccine Education Center at the Children's Hospital of Philadelphia. Available for Android and Apple devices.

TravWell – Use this app to build a trip to get destination-specific vaccine recommendations, a checklist of what is needed to prepare for travel and much more. A free app from Centers for Disease Control and Prevention.

Books for Parents

Baby 411 by Denise Fields and Ari Brown, MD, Windsor Peak Press, 7th edition, 2015. Available from your favorite local or online bookstore.

Mama Doc Medicine: Finding Calm and Confidence in Parenting, Child Health, and World-Life Balance by Wendy Sue Swanson, MD (aka "Seattle Mama Doc"), 2014. Available from American Academy of Pediatrics at <http://shop.aap.org/for-parents>.

Parents Guide to Childhood Immunization from Centers for Disease Control and Prevention. Available at www.cdc.gov/vaccines/pubs/parents-guide/default.htm to download or order.

Vaccine-Preventable Diseases: The Forgotten Story by Texas Children's Hospital vaccine experts R. Cunningham, et al. Available at www.tchorderprocessing.com to order.

Vaccines and Your Child, Separating Fact from Fiction by Paul Offit, MD, and Charlotte Moser, Columbia University Press, 2011. Available at your favorite local or online bookstore.

Videos

IAC's Video Library – Go to the Immunization Action Coalition's website for parents and the public, www.vaccineinformation.org/videos, for hundreds of video clips about vaccines and vaccine-preventable diseases.

Shot by Shot Video Collection – Go to www.shotbyshot.org to read people's stories of vaccine-preventable diseases shared on the California Immunization Coalition website.

Phone Numbers

CDC-INFO Contact Center – Operated by the Centers for Disease Control and Prevention, this number is for consumers and healthcare professionals who have questions about immunization and vaccine-preventable diseases. Call (800) CDC-INFO or (800) 232-4636. TTY: (888) 232-6348. CDC-INFO's operating hours are Monday through Friday from 8:00 A.M. to 8:00 P.M. (ET).

Immunization Referral

Provider Locator Tools

- <https://www.vfcnevada.org/for-families/find-a-provider/>
- <https://vaccinefinder.org/>



- Medicaid Provider Locator -
<https://www.medicaid.nv.gov/hcp/provider/Resources/SearchProviders/tabid/220/Default.aspx>
- Health Plan of Nevada Provider Locator -
<https://myhpnmedicaid.com/Member/Doctor>
- Anthem Provider Locator -
<https://mss.anthem.com/nevada-medicaid/care/find-a-doctor.html>
- Silver Summit Health Plan -
<https://providersearch.silversummithealthplan.com/>

*May be best to call once a provider has been located to determine appointment schedule, fees, and accepted insurance

Local Health Department Referrals

Local health departments play a central role in providing essential public health services, including immunizations, in the communities they serve.

Local Health Department	Phone	Address	City	State	Zip
Northern Nevada					
Washoe County Health District https://www.washoecounty.us/health/programs-and-services/cchs/immunization-program/index.php#fees	(775) 328-2402	1001 East Ninth Street, Building B	Reno	NV	89512
Carson City Health and Human Services https://gethealthycarsoncity.org/immunizations/	(775) 887-2190	900 E Long St	Carson City	NV	89706
Southern Nevada					
Southern Nevada Health District Main Facility https://www.southernnevadahealthdistrict.org/clinic/immunization-clinic/	(702) 759-0850	280 S. Decatur Blvd.	Las Vegas	NV	89107
East Las Vegas Public Health Center	(702) 759-0900	570 N. Nellis Blvd., Suite D-1	Las Vegas	NV	89110
Southern Nevada Health District Henderson Clinic	(702) 759-0960	874 American Pacific Dr	Henderson	NV	89014
Mesquite Public Health Center	(702) 759-1682	830 Hafen Lane	Mesquite	NV	89027

Community Health Center Referrals

Community Health Centers (CHCs) are non-profit, community-based, and patient-directed organizations that deliver comprehensive, culturally competent, high-quality primary health care services. CHCs also often integrate access to pharmacy, mental health, substance use disorder, and oral health services in areas where economic, geographic, or cultural barriers limit access to affordable health care services. Anybody can receive care at a CHC. <https://www.nvpca.org/content.asp?contentid=158>

Northern Nevada Community Health Centers					
Community Health Alliance (CHA) Wells Ave Medical/Dental	1055 South Wells Avenue	Reno	NV	89502	(775) 329-6300
(CHA) Record Street Health Center for the Homeless	335 Record Street, Suite 254	Reno	NV	89512	(775) 329-6300
(CHA) Nell J. Redfield Health Center, Neil Road	3915 Neil Road	Reno	NV	89502	(775) 329-6300
(CHA) Nell J. Redfield Health Center, Sun Valley	5295 Sun Valley Boulevard	Sun Valley	NV	89433	(775) 329-6300
(CHA) Sparks Medical/Dental Center	2244 Oddie Boulevard	Sparks	NV	89431	(775) 329-6300
Northern Nevada HOPES	580 W 5th Street	Reno	NV	89503	(775) 786-4673
Sierra Nevada Health Center (NVHC - Nevada Health Centers)	3325 Research Way	Carson City	NV	89706	(775) 887-5140
Austin Medical Center (NVHC)	121 Main Street	Austin	NV	89310	(775) 964-2222
Carlin Community Health Center (NVHC)	310 Memory Lane	Carlin	NV	89822	(775) 754-2666
Elko Family Medical & Dental (NVHC)	762 14th Street	Elko	NV	89801	(775) 738-1553
Jackpot Community Health Center (NVHC)	950 Lady Luck Drive	Jackpot	NV	89825	(775) 755-2500
Wendover Community Health Center (NVHC)	925 Wells Ave	W. Wendover	NV	89883	(775) 664-2220
Virginia City Community Health Center (NVHC)	175 E. Carson St., Ste. A	Virginia City	NV	89440	(800) 787-2568

Southern Nevada Community Health Centers					
All For Health, Health For All #9 – General Practice Clinic	1735 N Nellis Blvd., Ste G	Las Vegas	NV	89115	(702) 342-8804
FirstMed Health and Wellness Centers	3343 South Eastern Avenue	Las Vegas	NV	89169	(702) 731-0909
FirstMed Health and Wellness Centers	400 Shadow Lane Suite #106	Las Vegas	NV	89106	(702) 731-0909
FirstMed Health and Wellness Centers	3940 North Martin Luther King Blvd #105B	North Las Vegas	NV	89032	(702) 731-0909
First Person Care Clinic #1 Downtown Location	1200 S 4th Street, Suite 111	Las Vegas	NV	89104	(702) 380-8118
First Person Care Clinic #2 Henderson Location	200 E Horizon Dr., Suite A-B	Henderson	NV	89015	(702) 380-8118
Hope Christian Health Center	4357 Corporate Center Drive, Ste 450	North Las Vegas	NV	89030	(702) 644-4673
Hope Christian Health Center (MLK)	4040 N M.L.K. Blvd, Ste A	North Las Vegas	NV	89032	(702) 644-4673
Silver State Health Services	1909 S Jones Blvd.	Las Vegas	NV	89146	(702) 471-0420
Amargosa Valley Medical Center (NVHC)	845 E. Amargosa Farm Rd	Amargosa Valley	NV	89020	(775) 372-5432
Cambridge Family Health Center (NVHC)	3900 Cambridge St., Ste. 102	Las Vegas	NV	89119	(702) 307-5415
Eastern Family Medical & Dental (NVHC)	2212 S. Eastern Ave.	Las Vegas	NV	89104	(800) 787-2568
Henderson Family Health Center (NVHC)	98 E. Lake Mead Pkwy, #103	Henderson	NV	89015	(702) 868-0327
Martin Luther King Family Health (NVHC)	1799 Mount Mariah Dr.	Las Vegas	NV	89106	(702) 383-1961
North Las Vegas Family Health (NVHC)	2225 Civic Center Dr., #224	N. Las Vegas	NV	89030	(702) 214-5948

Pharmacy Referrals

Pharmacy Chain Name	Accepts Medicaid?	Will immunize pregnant women with Tdap and Flu?	Will immunize children?	Store Locator
Raley's Pharmacy	yes	yes	yes (7 years and older)	https://www.raleys.com/store-locator/
CVS Pharmacy	yes	yes	yes (3 years and older)	https://www.cvs.com/store-locator/landing
CVS Minute Clinic	yes	With OB prescription	yes (18 months and older)	https://www.cvs.com/minuteclinic/clinic-locator/
Walmart Pharmacy	yes	yes	yes (8 years and older)	https://www.walmart.com/store/finder
Walgreens Pharmacy	yes	yes	yes (8 years and older)	https://www.walgreens.com/storelocator/find.jsp
Rite Aid Pharmacy	yes	With OB prescription	yes (10 years and older)	https://locations.riteaid.com/locations/search.html
Smiths Pharmacy	yes	yes	Depends on insurance	https://www.smithsfoodanddrug.com/stores/search
Safeway Pharmacy	yes	yes	yes (5 years and older)	https://local.safeway.com/search.html
Albertsons/Savon Pharmacy	yes	yes	yes (7 years and older)	https://local.albertsons.com/search.html



The Nevada VACCINES for CHILDREN program can help your child get vaccinated when cost is an issue.

The Vaccines for Children Program (VFC) helps provide vaccines at low or no cost to children whose parents or guardians may not be able to afford them. These vaccines protect babies, children and teens until they turn 19 from a variety of diseases. When children stay healthy, our community stays healthy.

Who is Eligible?

Children under 19 years of age who meet at least one of the following criteria are eligible to receive VFC vaccine:

- ☞ Nevada Check Up or Medicaid eligible – A child who is eligible for the Nevada Check Up or Medicaid program.
- ☞ Uninsured – A child who has no health insurance coverage
- ☞ American Indian or Alaska Native
- ☞ Underinsured – A child has health insurance, but it
 - Doesn't cover vaccines
 - Doesn't cover certain vaccines
 - Covers vaccines but has fixed dollar limit or cap for vaccines. Once that fixed dollar amount is reached, a child is then eligible.

Costs

There is no charge for vaccines given by a VFC provider to eligible children, but there may be other office visit fees. Please call ahead to learn about any possible fees for your visit. Some of these fees may be waived if you cannot afford them.



Little to no cost.



Easy to find providers.



Eligible kids are covered until their 19th birthday.

For more information and to find a VFC provider near you, visit

VFCNevada.org



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Quando el precio es un problema el programa en Nevada, **VACUNAS para NIÑOS**, puede ayudarte.

El programa de vacunas para niños ayuda a proporcionar vacunas a un precio bajado/bajo o por gratis a los niños de quienes padres que no podrían pagarlas. Esas vacunas protegen a bebés, niños y adolescentes hasta de que se cumplen 19 años de algunas variedades de enfermedades. Cuando los niños se mantienen saludables nuestra comunidad se mantiene saludable.

Quien tiene los requisitos para obtener las vacunas?

Niños de 19 años y menor tiene que tener unos de los siguientes requeridos para recibir una vacuna:

- ☞ Un niño que tiene los requisitos para el programa de Medicaid o un chequeo de rutina en Nevada
- ☞ Sin asegurar- un niño sin cobertura de seguro médico
- ☞ Nativo de América del norte o nativo de Alaska
- ☞ Un niño que tiene seguro médico pero el seguro:
 - No incluye vacunas
 - No incluye algunas vacunas
 - Incluye vacunas pero tiene un precio fijo o un límite para las vacunas. Una vez que la cantidad fija en dólares se alcanza, el niño está calificado.

Precios.

Las vacunas dadas por VFC son gratis para los niños que son calificados, pero podría haber honorarios para otras visitas de oficina. Por favor llama previamente para aprender sobre honorarios/precios posibles para su visita. Algunos de estos honorarios podrían ser prescindidos si no puedes pagarlos.

 **Poco a ningún coste.**

 **Fácil para encontrar operadores**

 **Los niños que tienen los requisitos están cubiertos hasta su 19th cumpleaños.**

Para más información y para encontrar a un operador de VFC cerca de ti, visita

VFCNevada.org



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Immunization Documentation

Historical Immunization Documentation

- If a client comes in with an official immunization record from a source other than NV WebIZ (another state, country, territory, VA record, etc.) check the add history box on the Recommender form and refer them to their provider or the local health authority with their NV WebIZ record number (if present) to have their historical immunization information entered into NV WebIZ

TO PATIENTS/PARENTS: Please do not rely solely on NV WebIZ to forecast immunizations. Please consult with your health care professional.

TO VACCINE ADMINISTRATORS: Please do not rely solely on NV WebIZ to forecast immunizations. Utilize clinical judgement and consult both the ACIP recommended immunization schedules and the CDC Pink Book.

Please add immunization history to NV WebIZ

NV WebIZ Record # _____

www.cdc.gov/vaccines/pubs/pinkbook/index.html#chapters

WIC Documentation

Notate all immunization referrals in WIC case notes for follow up at future WIC case management appointments.