

LET'S VACCINATE!

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Kentucky Public Health
Prevent. Promote. Protect.



TEAM 
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CABINET FOR HEALTH
AND FAMILY SERVICES

Working together to provide safe and up to date guidance on immunization administration for Kentucky's children



Image Source: [Happy Group Of Kids - Harbor Health Services \(hhsi.us\)](https://www.hhsi.us)

Agenda

- 🛡️ Vaccination facts
 - Immunity from vaccines
 - Type of vaccines
 - Vaccine timing and spacing
- 🛡️ ACIP recommended vaccination schedules
- 🛡️ Vaccine specific information
 - Polio
 - Varicella
 - DTaP/Tdap
 - Pneumococcal
 - Hepatitis A
 - Hepatitis B
 - Hib
 - Rotavirus
 - MMR
 - Men ACWY/Men B
 - HPV
 - Influenza
 - COVID-19
 - RSV Immunization
- 🛡️ Vaccine administration
 - Vaccine information sheets (VIS)
 - Vaccine resources
 - Vaccine messaging
 - Infection control
 - Vaccine supplies
 - Preparing vaccines
 - Administration of vaccines
 - » IM
 - » SQ
 - Injection site pain control
 - Vaccine co-administration
 - Post vaccine monitoring
 - Required vaccine documentation
 - Reporting adverse events and errors

Childhood Vaccine: Immunity

Immunity to a disease is achieved through the presence of **antibodies** to that disease in a person's system

Immunity types:

- 🛡️ **Active** immunity is long lasting and results from exposure to a disease organism triggers the immune system to produce antibodies to that disease
 - Natural (exposure to the disease through infection)
 - Vaccine-induced (introduced through killed or weakened disease through vaccination)
- 🛡️ **Passive** immunity lasts only few weeks or months and results when a person is given antibodies to a disease
 - Infants acquire passive immunity from mother's antibodies during final months of pregnancy
 - May be acquired through antibody-containing blood products

For more information, visit: [Types of Immunity to a Disease | CDC](#)

Childhood Vaccines: Classification Types



Live, attenuated vaccines

- Derived from "wild" viruses or bacteria
- Replicate in the vaccinated person



Inactivated vaccines

- Not a live virus
- Cannot replicate
 - Inactivated vaccines include whole-cell inactivated vaccines (e.g., polio, hepatitis A, and rabies vaccines)
 - Subunit vaccines (e.g., influenza and pneumococcal vaccines)
 - Toxoids (e.g., diphtheria and tetanus toxoid)
 - Recombinant vaccines (e.g., hepatitis B, human papillomavirus [HPV], and influenza)

For more information, visit: [Pinkbook](#) | [Principles of Vaccination](#) | [Epidemiology of VPDs](#) | [CDC](#)

Childhood Vaccines: Timing & Spacing

Most vaccines in the immunization schedule require more than 2 or more doses

- 🛡 Interval between the same vaccine
 - For routine vaccination, vaccine doses should not be administered earlier than the minimum ages or at less than the minimum intervals
 - Exceptions may occasionally be necessary.
 - » Administering a dose up to 4 days before the minimum age or interval* to avoid missing an opportunity to vaccinate
 - » Administering doses in a vaccine series at shorter intervals than recommended when a person is behind schedule and needs to be brought up to date quickly or when international travel is pending

* *This 4-day “grace period” does not apply to the strict 28-day minimum interval between two different live vaccines (e.g., MMR and varicella vaccines)*

For more information, visit: [Pinkbook](#) | [General Recommendations](#) | [Epidemiology of VPDs](#) | [CDC](#)

Childhood Vaccines: Timing & Spacing *(continued...)*

As a general rule, almost all vaccines can be administered at the same visit.

 Exceptions to this include:

- Varicella (VAR [Varivax]) vaccine should not be administered simultaneously with smallpox vaccine
- If any combination of live, injected vaccines (MMR-II, ProQuad, Varivax) or live, attenuated influenza vaccine (LAIV [FluMist]) is not administered simultaneously, the vaccine doses should be separated by at least 4 weeks

Combination vaccines are preferred to single component.

 Exception to this rule:

- Due to increased risk of febrile seizures, MMR and varicella should be administered separately in children ages 12-47 months

For more information, visit: [Pinkbook](#) | [General Recommendations](#) | [Epidemiology of VPDs](#) | [CDC](#)

Recommended Pediatric Immunization Schedule by Age Group, United States, 2024

Vaccine	Birth- Within 24 hours	2 Months	4 Months	6 Months	12 Months	15 Months	18 Months	24 Months	4-6 Years	7-10 Years	11-12 Years	13-15 Years	16-18 Years
Hepatitis B (HepB)	1 st dose ¹	2 nd dose ²		3 rd dose ³									
Diphtheria, tetanus, acellular pertussis (DTaP/Tdap)		1 st dose DTaP ⁴	2 nd dose DTaP ⁴	3 rd dose DTaP ⁴		4 th dose DTaP ⁴			5 th dose DTaP ⁴		1 dose Tdap		
Haemophilus influenzae type b (Hib)		1 st dose	2 nd dose	3 rd dose ⁵		4 th dose ⁵							
Polio (IPV)		1 st dose	2 nd dose	3 rd dose					4 th dose				
Pneumococcal conjugate (PCV15, PCV20)		1 st dose	2 nd dose	3 rd dose	4 th dose								
Rotavirus		1 st dose	2 nd dose	3 rd dose ⁶									
Measles, mumps, rubella (MMR)					1 st dose				2 nd dose				
Varicella (VAR)					1 st dose				2 nd dose				
Hepatitis A (HepA)					2 doses ⁷								
Human papillomavirus (HPV)											2 doses ^{8,9}		
Meningococcal (MenACWY)											1 st dose		2 nd dose
Meningococcal B (MenB)											2 doses ⁹		
Influenza (Flu)					3 or 2 doses every year ¹⁰								
COVID-19					1 or more doses of updated (2023–2024 Formula) vaccine ¹¹								
Respiratory syncytial virus (RSV)		1 dose ¹²		1 dose (8–19 months) ¹⁰									

Footnotes:

Talk to your child's healthcare provider about the vaccines recommended for their age.

- 1st dose may be delayed due to birth weight and/or if medically unstable. 2nd dose of Hepatitis B may be given at 1-2 months old, if combination vaccine used after 1st dose, your child may receive 4 doses in total. Follow your healthcare provider's recommended schedule if mother has hepatitis B infection or suspected to be infected.
- This dose of DTaP may be given as early as age 12 months if it has been 6 months since the previous dose.
- Your child may not need this dose depending on the brand of vaccine that your healthcare provider uses.
- Your child may only receive 3 doses instead of 4 depending on the brand of vaccine your healthcare provider uses.
- Doses need to be administered at least 6 months apart.
- May start series at 9 years old.
- Depending on brand used, doses 1 and 2 should be separated by at least 1 month or 6 months. Your teen may need an additional dose(s) depending on your healthcare provider's recommendation. MenABCWY may be administered when MenACWY and MenB are recommended during the same visit.
- One dose each fall or winter to all people ages 6 months and older. Some children younger than age 9 years need 2 doses; ask your child's healthcare provider if your child needs more than 1 dose.
- Number of doses needed depends on previous vaccination history.
- Dose depends on mother's vaccination status and babies age entering RSV season.
- Your child may need 1 dose between 8-19 months old if considered high risk based on criteria listed by the CDC.



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



If your child is behind on vaccinations, schedule an appointment with your child's healthcare provider today! Your healthcare provider will follow the recommended catch-up schedule that best fits your child's needs. It's not too late to get up to date! Follow your healthcare provider's recommendations for special situations and during outbreaks.

1/4/2024

Image Source: [ChildVaccineSchedule.pdf \(ky.gov\)](#)

Recommended catch-up Immunization Schedule For children & Adolescents who start late or who are more than 1-month behind

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

Visit: [Birth-18 Years Immunization Schedule | CDC](#) for more information or view the schedule on your phone by getting the mobile app

Scan QR code for access to online schedule



CS310020-A

[Download the App](#)

Image Source: [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2024 \(cdc.gov\)](#)

Let's get started!

- 🛡️ The Actual Vaccines!
- 🛡️ The disease's they are protecting us from with some basic information and the vaccination schedules!

Childhood Vaccines: Polio

Clinical Features

- Incubation period
 - 3 - 6 days for nonparalytic poliomyelitis
 - 7 - 21 days in paralytic poliomyelitis for the onset of paralysis
- Paralysis is usually permanent

Transmission

- » Fecal-oral or oral-oral

Poliovirus Vaccination Schedule (IPV)

- Administered at age 2, 4, 6-18 months, and 4-6 years old
- Minimum interval between doses is 4 weeks*
 - Recommended interval is 2 months between the first 3 doses
 - Recommended interval is at least 6 months between 3rd and 4th dose
- Minimum age is 6 weeks* old for 1st dose
- A dose at 4 years old or after is recommended regardless of number of previous doses

*Recommended only if vaccine recipient is at risk for imminent exposure to circulating poliovirus

*For more detailed information, visit: [Pinkbook: Poliomyelitis | CDC](#) and [Polio Vaccine Information Statement | CDC](#)

Childhood Vaccines: Varicella

Clinical Features

- Incubation period 14 to 16 days (range, 10 to 21 days)
- Prolonged incubation period if received postexposure prophylaxis with varicella specific immune globulin
- Rash often first sign of disease in children; adults may have 1 to 2 days of fever and malaise before rash

Transmission

- Person-to-person
- Direct contact with vesicular fluid or inhalation of aerosols

Varicella Vaccine Schedule

- Routine 2-dose series at age 12 - 15 months and age 4 - 6 years
- Minimum age for dose 1 is 12 months
- Minimum interval between dose 1 & 2 is:
 - Children ages 1–12 years is 3 months (4-week interval is valid)
 - Adolescents and adults ages 13 years and older (VAR only) is 4 weeks

For more detailed information, visit: [Pinkbook: Varicella | CDC](#), [Varicella - Vaccine Preventable Diseases Surveillance Manual | CDC](#), [Chickenpox \(Varicella\) Vaccine Information Statement | CDC](#)

Childhood Vaccines: DTaP/Tdap

Diphtheria:

- Bacterial infection that commonly affects the pharynx and tonsils
- Incubation period 2-5 days but ranges 1-10 days

Transmission

- Person-to-person through respiratory droplets
- Exposure to infected skin lesions and fomites

Tetanus:

- Acute, bacterial infection affecting the nervous system and may cause death
- Incubation period 8 days but ranges 1 - 21 days

Transmission

- Contaminated wounds

Pertussis:

- Bacterial infection that affects the respiratory tract
- Incubation period 7-10 days but ranges 4-21 days

Transmission

- Person-to-person through respiratory droplets
- Contact with airborne droplets of respiratory secretions

For more detailed information visit: [Tetanus - Vaccine Preventable Diseases Surveillance Manual | CDC](#), [Pinkbook: Diphtheria | CDC](#); [Pinkbook: Tetanus | CDC](#); [Pinkbook: Pertussis | CDC](#)

Childhood Vaccines: DTaP/Tdap Vaccine Schedule



DTaP (Td if DTaP is contraindicated)

- 3-dose primary series at age 2, 4, and 6 months
- Primary series interval of 4- to 8-weeks and minimum interval 4 weeks
- Boosters at age 15 through 18 months and age 4 through 6 years
- Minimum interval for dose 4 is 6 months from dose 3 and minimum age is 12 months
- If dose 4 is given on or after 4th birthday, the 5th dose is optional
- Td is used in place of DTaP if child has a valid contraindication to pertussis vaccine



Tdap or Td if indicated

- 1 dose at age 11 through 18 for adolescents who have completed DTaP series
- Booster dose of Td or Tdap every 10 years for all persons

For more detailed information visit: [Tetanus - Vaccine Preventable Diseases Surveillance Manual | CDC](#), [Pinkbook: Diphtheria | CDC](#); [Pinkbook: Tetanus | CDC](#); [Pinkbook: Pertussis | CDC](#)

Childhood Vaccines: Pneumococcal (PCV/PPSV23)

Clinical Features

- Major clinical syndromes include pneumonia, bacteremia, and meningitis
- Incubation period of 1-3 days

Transmission

- Person-to-person through respiratory droplets or by autoinoculation

Pneumococcal Vaccination Schedule*

PCV15 or PCV20

- 3-dose primary series at age 2, 4 and 6 months w/ booster dose at 12-15 months
- Minimum age for 1st dose is 6 weeks
- Minimum interval for doses before age 1 year is 4 weeks and age 1 year or older is 8 weeks
- See [catch-up guidance](#) for additional information on children who have missed their shots or start the series late.

For more detailed information, visit [Pinkbook: Pneumococcal Disease | CDC](#) or [Pneumococcal Conjugate Vaccine Information Statement | CDC](#), [Vaccine Information Statement: Pneumococcal Conjugate Vaccine-What you need to know \(immunize.org\)](#), [Pneumococcal Vaccine Recommendations | CDC](#)

Childhood Vaccines: Hepatitis A

Clinical Features

- Incubation period 28 days (range, 15 to 50 days)
- Symptoms: Abrupt onset of fever, malaise, anorexia, nausea, abdominal discomfort, dark urine, jaundice
- Likelihood of symptoms with illness are related to age
- Children generally asymptomatic, adults symptomatic

Transmission

- Fecal-oral

Hepatitis A Vaccine Schedule

- All children age 12 through 23 months and all children and adolescents age 2 through 18 years who have not previously received HepA vaccine
 - 2-dose series at 0, 6–18 months (Vaqta)
 - 2-dose series at 0, 6–12 months (Havrix)
- Adults age 19 years or older with risk factors complete a 2 or 3 dose series*

*For more detailed information, visit: [Pinkbook: Hepatitis A | CDC](#), [Hepatitis A - Vaccine Preventable Diseases Surveillance Manual | CDC](#), [Hepatitis A Vaccine Information Statement | CDC](#)

Childhood Vaccines: Hepatitis B

Hepatitis B Clinical Features

- Incubation period 60 to 90 days
- Clinical signs and symptoms more common in adults
- Prodromal phase lasts 3 to 10 days*
- Icteric phase lasts 1 to 3 weeks*
- Convalescent phase lasts weeks to months*
- Most adults recover while most infants progress to chronic infection



Transmission

- Body fluids (highest concentration in blood and serous fluids)



Hepatitis B Vaccine Schedule

- Infants: See Hepatitis B vaccine schedule for infants
- Adolescents: All children and adolescents through age 18 years not previously vaccinated
 - 3-dose series at 0, 1, 6 months
 - Adolescents aged 11 through 15 years may use 2-dose series of Recombivax HB separated by 4 to 6 months

* For more detailed information visit: [Pinkbook: Hepatitis B | CDC](#); Hepatitis B - FAQs, Statistics, Data, & Guidelines | CDC

Childhood Vaccines: *Haemophilus Influenzae* type B (Hib)



Clinical Features:

- Usually requires hospitalization and 10 days of antimicrobial therapy
- Meningitis accounted for 50% to 65% of cases with a fatality ratio of 3% to 6% (pre-vaccine era)



Transmission

- Person-to-person through droplet inhalation or direct contact with respiratory tract secretions
- Neonates can acquire during delivery through amniotic fluid or contact with genital tract secretions



Hib Vaccination Schedule (Monovalent Vaccines)

- PRP-T (ActHIB and Hiberix) 3-dose primary series given at 2, 4, and 6 months old
- PRP-OMP (PedvaxHIB) 2-dose primary series given at 2 and 4 months old
- Booster dose given at 12-15 months old
- Recommended interval between primary series doses is 8 weeks with a minimum interval of 4 weeks
- Minimum age is 6 weeks for 1st dose
- Catch-up recommendations depend on child's age
- Vaccines are interchangeable and if more than 1 brand is used it should follow a 3-dose schedule

***See Pinkbook for special populations and older children.**

*For more detailed information visit: [Safety Information for Haemophilus Influenza Type B \(Hib\) Vaccines | CDC](#) and [Pinkbook: Haemophilus influenzae \(Hib\) | CDC](#)

Childhood Vaccines: Rotavirus



Clinical Features

- Short incubation period (usually less than 48 hours)
- May be asymptomatic or result in severe dehydrating diarrhea with fever and vomiting
- First infection after age 3 months generally most severe
- Gastrointestinal symptoms generally resolve in 3 to 7 days



Transmission

- Fecal-oral, person-to-person and fomites



Rotavirus Vaccine Schedule

- Routine vaccination of all infants without a contraindication
- 2-dose series for RV1 vaccine (at age 2 and 4 months)
- 3-dose series for RV5 vaccine (at age 2, 4, and 6 months)
- For both rotavirus vaccines
 - 1st dose may start at age 6 weeks
 - Maximum age for first dose is 14 weeks 6 days*
 - Minimum interval between doses is 4 weeks
 - Maximum age for any dose is 8 months 0 days*
- ACIP did not define a maximum interval between doses

*Off-label use recommendation for both vaccines

For more detailed information, visit: [Pinkbook: Rotavirus | CDC](#) and [Rotavirus - Vaccine Preventable Diseases Surveillance Manual | CDC](#)

Childhood Vaccines: MMR



Incubation Periods

- Measles
 - 11-12 days, with rash onset ranging from 7-21 days
- Mumps
 - Ranges from 12-25 days but usually 16-18 days
- Rubella
 - Ranges from 12-23 days but usually 14 days with rash onset usually 14-17 days after exposure



Transmission

- Measles
 - Person-to-person via large respiratory droplets
 - Airborne in closed areas for up to 2 hours
- Mumps
 - Infectious respiratory droplet secretions
 - Saliva
- Rubella
 - Person-to-person via droplets

For more detailed information, visit: [Pinkbook: List of Chapters | CDC](#) see Chapters 13,15, and 20, [Vaccine Preventable Diseases Surveillance Manual - Chapters | CDC](#) see Chapters 7,9, and 14 [Measles-Mumps-Rubella \(MMR\) Vaccine Information Statement | CDC](#)

Childhood Vaccines: MMR – Vaccine Schedule

- 🛡️ 2 dose series at age 12 through 15 months and at age 4 through 6 years
- 🛡️ Minimum age for dose 1 is 12 months
- 🛡️ Minimum interval from dose 1 to 2 is 4 weeks for MMR and 3 months for MMRV (although a 4-week interval is valid)
- 🛡️ MMR starting at 6 months for those with international travel
- 🛡️ Discuss risks and benefits of MMRV versus separate MMR and VAR
 - Separate MMR and VAR vaccines preferred for dose 1 in ages 12 through 47 months
 - MMRV preferred for dose 2 and dose 1 at age 48 months or older

For more detailed information, visit: [Pinkbook: List of Chapters | CDC](#) see Chapters 13,15, and 20, [Vaccine Preventable Diseases Surveillance Manual - Chapters | CDC](#) see Chapters 7,9, and 14 [Measles-Mumps-Rubella \(MMR\) Vaccine Information Statement | CDC](#)

Childhood Vaccines: MenACWY/MenB

Clinical Features

- Incubation period is 3 to 4 days but ranges 1-10 days)
- Most prevalent presentation of invasive disease is Meningitis
- Sudden onset of fever, headache, stiff neck, nausea, vomiting, photophobia, altered mental status
- Meningococcal septicemia
 - Abrupt onset of fever, chills, cold hands and feet, severe aches or pain, vomiting, diarrhea, rash
- Bacteremic pneumonia
- See Pinkbook for risk factors for invasive disease

Transmission

- Respiratory droplets or direct contact with respiratory secretions

Meningococcal Vaccination Schedule

- MenACWY (Required)
 - 1 dose at age 11 or 12 years
 - Booster dose at age 16 years
 - If healthy and receive first dose on or after 16 years old do not need a booster dose unless they are at higher risk for meningococcal disease
 - Schedule for high-risk persons for meningococcal disease varies by risk group and age
- Serogroup B Meningococcal Vaccines (Recommended)
 - Age 10 years or older who and are at increased risk of serogroup B meningococcal disease
 - » 2-dose series of Bexsero at 0 and 1 month or
 - » 3-dose series of Trumenba at 0, 1–2, and 6 months

For more detailed information, visit: [Pinkbook: Meningococcal Disease | CDC](#); [Meningococcal - Vaccine Preventable Diseases Surveillance Manual | CDC](#); [Meningococcal Vaccine Information Statement | CDC](#)

Childhood Vaccines: HPV

Clinical Features

- Most HPV infections are asymptomatic and result in no clinical disease
- Clinical manifestations of HPV infection include:
 - Anogenital warts
 - Recurrent respiratory papillomatosis
 - Cervical cancer precursors (HSIL)
 - Cancer (cervical, anal, vaginal, vulvar, penile, and oropharyngeal cancer)

Transmission

- Direct contact, usually sexual

HPV Vaccination Schedule

- 2-dose series
 - For immunocompetent persons who receive first valid dose before 15th birthday
 - 0, 6-12 month schedule
 - Minimum interval of 5 months
- 3-dose series
 - For persons who receive first valid dose on or after 15th birthday
 - For persons with primary or secondary immunocompromising conditions
 - 0, 1-2, 6 month schedule
- If schedule is interrupted, the series does not need to be restarted

For more detailed information, visit: [Pinkbook | HPV | Epidemiology of Vaccine Preventable Diseases | CDC](#); [HPV - Vaccine Preventable Diseases Surveillance Manual | CDC](#); [Vaccine Information Statement | HPV | VIS | CDC](#)

Childhood Vaccines: Influenza

Clinical Features

- Incubation period 2 days but ranges 1–4 days
- About 8% of U.S. population gets sick each season
- Sudden onset of respiratory, systemic, and GI symptoms which may include:
 - cough, sore throat, runny or stuffy nose, sneezing, fever, chills, headache, fatigue, body aches, muscle aches, vomiting, diarrhea
- Usually has rapid recovery but may result in death

Transmission

- Person-to-person via large droplets
- Aerosol transmission of small droplets
- Exposure to fomites

Influenza Vaccination Schedule

- 1 dose each influenza season for persons aged 9 years or older
- 1 or 2 doses each influenza season for children aged 6 months through 8 years
 - 1 dose if 2 or more doses are documented prior to July 1
 - 2 doses administered at least 4 weeks apart if 2 or more doses are not documented prior to July 1
- For most up to date schedule, refer to ACIP recommendations each season

For more detailed information, visit: [Pinkbook: Influenza | CDC](#); [Influenza - Vaccine Preventable Diseases Surveillance Manual | CDC](#); [Inactivated Influenza Vaccine Information Statement | CDC](#); [Live Intranasal Influenza Vaccine Information Statement | CDC](#)

Childhood Vaccines: COVID-19



Clinical Features

- Estimated Incubation period is average 5 days but ranges from 2-14 days
- Wide range of symptoms that may include:
 - Cough, sore throat, runny nose, congestion, sneezing, fever, chills, headache, fatigue, body aches, muscle aches, nausea, vomiting, diarrhea, loss of appetite, loss of smell or taste, shortness of breath, difficulty breathing
- May develop post-covid conditions that last up to months or longer after having covid-19 infection
- Complications may include pneumonia, respiratory failure, acute respiratory distress syndrome (ARDS), multisystem inflammatory syndrome (MIS), sepsis, cardiac injury, multiple organ failure, inflammation of heart, brain, or muscle tissues, secondary infections, blood clots in the veins/arteries, and death



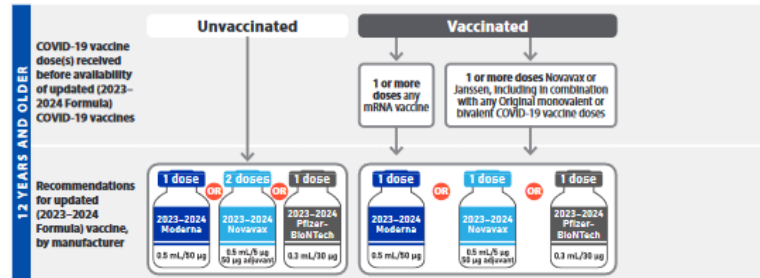
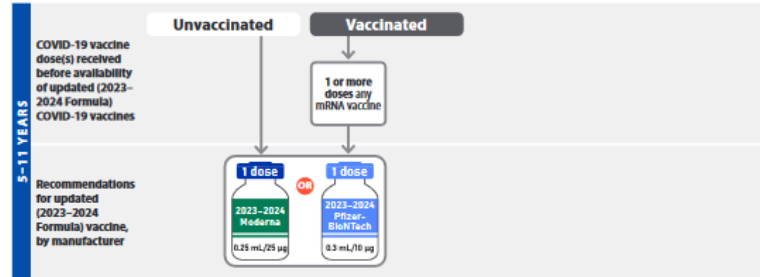
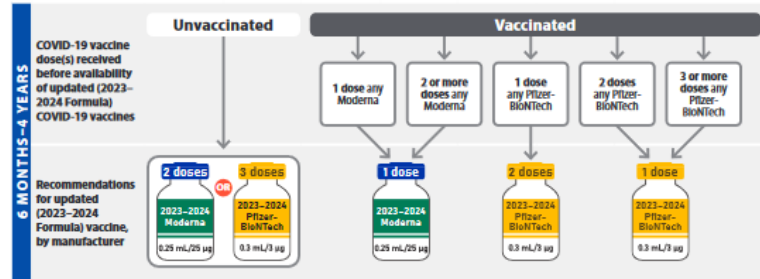
Transmission

- Person-to-person via droplets
- Aerosol transmission of small droplets

For more detailed information, see: [Clinical Care Quick Reference for COVID-19 | CDC](#), [Clinical Guidance for COVID-19 Vaccination | CDC](#), [COVID-19 Vaccine Effectiveness | CDC](#), [About COVID-19 Epidemiology | CDC](#)

Childhood Vaccines: COVID-19 Vaccination Schedule

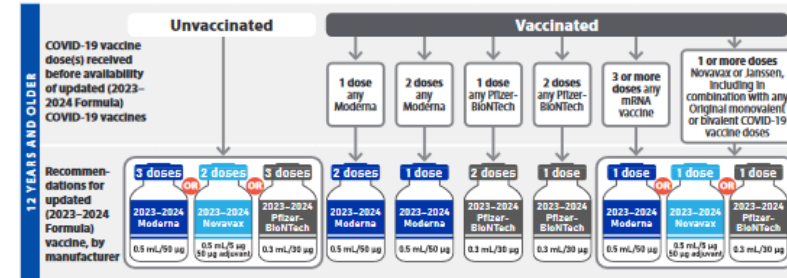
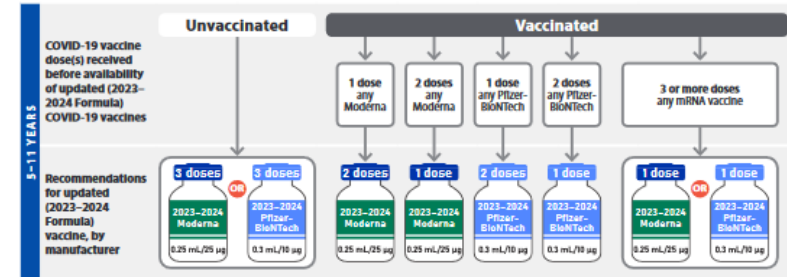
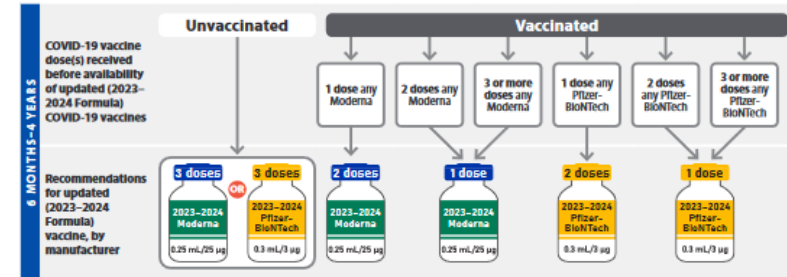
Recommended updated (2023–2024 Formula) COVID-19 vaccines for people who are **NOT** moderately or severely immunocompromised*†



*For information about administration intervals, children who transition from age 4 years to age 5 years, and 1 additional dose in people ages 65 years and older, see Table 1 in the Interim Clinical Considerations for Use of COVID-19 Vaccines.

†COVID-19 vaccination history refers to previous receipt of Original monovalent mRNA or bivalent mRNA vaccine or combination of the two, for people ages 12 years and older; Original monovalent Novavax COVID-19 vaccine, alone or in combination with any mRNA vaccine; and for people ages 18 years and older, Janssen COVID-19 vaccine, alone or in combination with any mRNA or Original monovalent Novavax vaccine.

Recommended updated (2023–2024 Formula) COVID-19 vaccines for people who **ARE** moderately or severely immunocompromised*†



*For information about administration intervals, children who transition from age 4 years to age 5 years or age 11 years to age 12 years during an mRNA vaccination series, and administration of additional doses, see Table 2 in the Interim Clinical Considerations for Use of COVID-19 Vaccines.

†COVID-19 vaccination history refers to previous receipt of Original monovalent mRNA or bivalent mRNA vaccine or combination of the two, for people ages 12 years and older; Original monovalent Novavax COVID-19 vaccine, alone or in combination with any mRNA vaccine doses; and for people ages 18 years and older, Janssen COVID-19 vaccine, alone or in combination with any mRNA or Original monovalent Novavax vaccine doses.

Childhood Immunizations: RSV



Clinical Features

- The incubation period ranges from 2 to 8 days; 4 to 6 days is most common
- Almost all children get an RSV infection by age 2
- Symptoms may include:
 - Runny nose, decrease in appetite, dehydration, coughing, sneezing, fever, wheezing, respiratory distress, wheezing, lethargy, irritability
- Complications may include:
 - Middle ear infection, bronchiolitis, pneumonia, asthma, hospitalization or death



Transmission

- Person-to-person via large droplets
- Aerosol transmission of small droplets
- Exposure to fomites

For more information, visit: [RSV Vaccination: What Parents Should Know | CDC](#) or [Frequently Asked Questions About RSV Immunization with Monoclonal Antibody for Children 19 Months and Younger | CDC](#)

Childhood Vaccines: RSV Immunization Schedule

RSV Immunization/Vaccine: to prevent RSV-associated LRTI in infants, CDC recommends either:

 **Beyfortus (nirsevimab)** is a long-acting monoclonal antibody **

1 dose recommended for:

- » All infants younger than age 8 months born shortly before or during their first RSV season if:
 - The mother did not receive RSV vaccine during pregnancy
 - The mother’s RSV vaccination status is unknown
 - The infant was born less than 14 days after maternal RSV vaccination*
- » Children aged 8-19 months old who are at increased risk for severe RSV disease entering their second RSV season*

*visit [Frequently Asked Questions About RSV Immunization with Monoclonal Antibody for Children 19 Months and Younger | CDC](#)

OR

 **Abrysvo (RSVpreF)** vaccine**

1 dose recommended during pregnancy:

- » Administered during weeks 32 through 36 (*In most of the continental United States, the vaccine should be administered from September through January.*)

**Most infants will not need protection from both products. Visit [Frequently Asked Questions About RSV Vaccine for Pregnant People | CDC](#) for more information.

For more information, visit: [RSV Vaccination: What Parents Should Know | CDC](#) or [Frequently Asked Questions About RSV Immunization with Monoclonal Antibody for Children 19 Months and Younger | CDC](#)

Vaccine Administration Statements (VIS)

Federal Law requires that a current/up to date VIS to be provided to all patients (parents/guardians) of ALL ages prior to administering the following vaccines:

- DTaP
- Hepatitis A
- Hib
- Rotavirus
- MMR and MMRV
- Pneumococcal conjugate
- Influenza (inactivated, live and intranasal)
- RSV vaccine
- Meningococcal (MenACWY, MenB)
- Td and Tdap
- Hepatitis B
- Polio
- Varicella (chickenpox)
- HPV
- COVID-19

An Immunization Information Statement (IIS) is available for RSV preventive monoclonal antibody Beyfortus (nirsevimab)

*For more detailed information, see: [You Must Provide Patients with Vaccine Information Statements :\(VISs\) -- It's Federal Law! \(immunize.org\)](https://www.immunize.org/vaccine-information-statements)

Vaccine Administration: Resources for Immunization and Vaccine Information Statements (VIS/IIS)

Additional resources on VISs and their use are available from the following organizations:

Immunization Action Coalition

- VIS general information and translations in more than 40 languages: www.immunize.org/vis
- Current Dates of Vaccine Information Statements: www.immunize.org/catg.d/p2029.pdf

Centers for Disease Control and Prevention

- VIS website: www.cdc.gov/vaccines/hcp/vis
- VIS Facts: www.cdc.gov/vaccines/hcp/vis/about/facts-vis.html
- VIS FAQs: <https://www.cdc.gov/vaccines/hcp/vis/about/vis-faqs.html>

Vaccine Administration: Talking with Parents about Vaccines for Infants

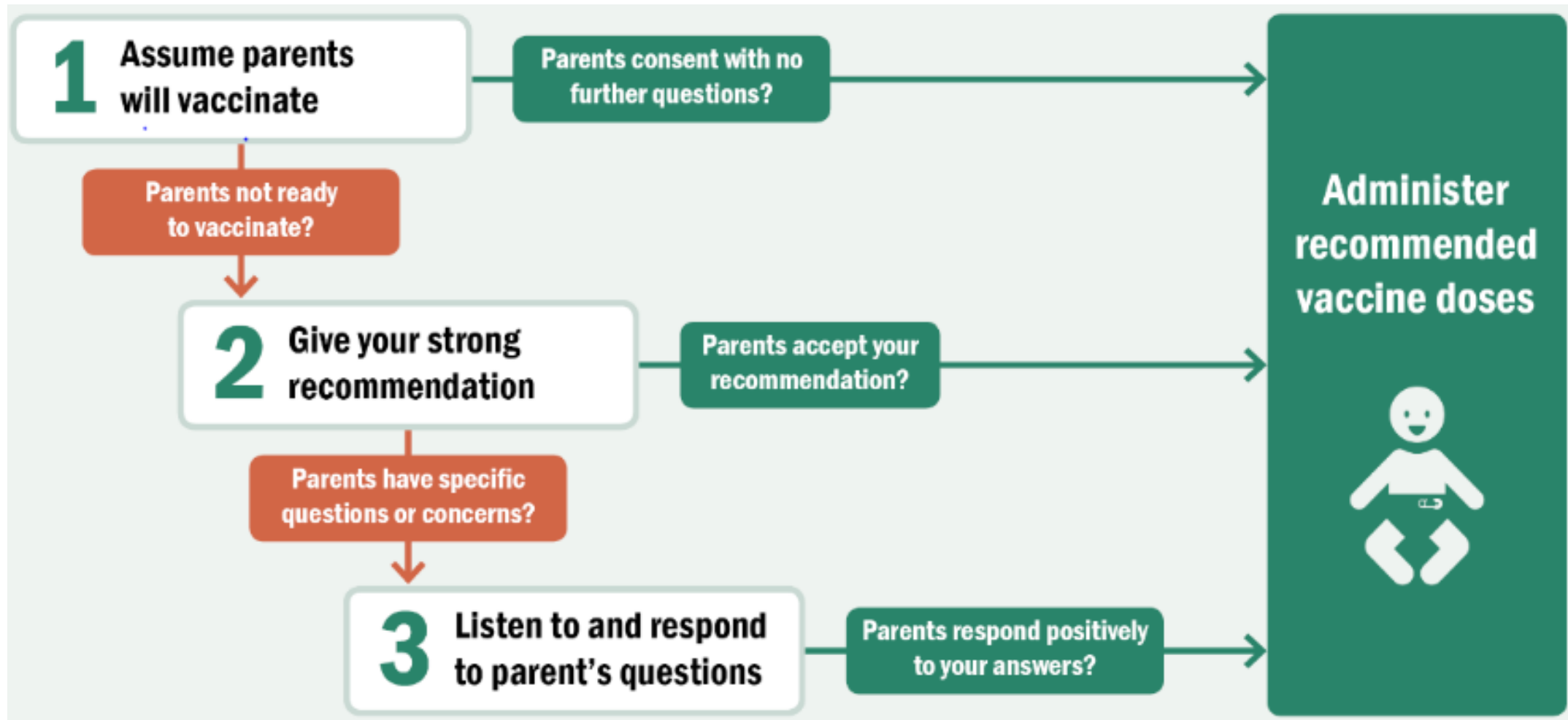


Image source: [Pinkbook: Vaccine Administration | CDC](#)

Vaccine Administration: Best Practice

- Administering all vaccines for which a person is eligible at the time of a visit increases the probability that a child, adolescent or adult will be vaccinated fully by the appropriate age
- Use combination vaccines (e.g., DTaP-IPV-HepB or DTaP-IPV/Hib) when appropriate to decrease number of injections
- Administer vaccines that are known to be painful when injected (e.g., MMR, HPV) last
- Administer vaccines that may be more likely to cause a local reaction (e.g., tetanus-toxoid-containing and PCV13) in different limbs, if possible.

For more information, visit: [ACIP Timing and Spacing Guidelines for Immunization | CDC](#) or [Vaccine Administration Route and Site | CDC](#)

Vaccine Administration: Infection Control

Follow standard infection control guidelines when administering vaccines.

- ✓ Perform good hand hygiene
- ✓ Wear gloves
- ✓ Sanitize/clean the work area used for Vaccine Preparation
- ✓ Pay close attention to choosing the correct vaccine(s)/check expiration date
- ✓ Inspect each vaccine for damage, particulate matter, or contamination
- ✓ Confirm that the vaccine has been stored at the proper temperatures per manufacturer guidelines
- ✓ Reconstitute Lyophilized Vaccine using diluent provided for that specific vaccine

See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information.

Vaccine Administration: Supplies

Use Correct Supplies




- ✓ Syringe: Use a 1mL or 3mL syringe (if not a PFS)
 - ✓ Needle Selection: Use clinical judgement when selecting needle length
 - Subcutaneous Injections (all ages) 5/8": 23-25 gauge
 - Intramuscular Injections (ages 3-10 years) 5/8"-1": 22-25 gauge
- *Only use 5/8" when the skin is stretched tightly, and the subcutaneous tissues are not bunched



Scan the QR codes to watch short training videos on how to select the equipment needed to prepare for a subcutaneous and intramuscular injections.

*See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information or [Vaccination Tools for Administering Vaccines \(immunize.org\)](#)

Vaccine administration: Drawing up Vaccines

-  CDC recommends using manufacturer-pre-filled syringes (Manufacturer PFSs) for large vaccination events.
-  Vaccines should only be drawn up at the time of administration
-  Follow CDC guidelines if vaccines must be pre-drawn*

*See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information.

Vaccine Administration: Route & Site for Vaccines

INJECTABLE VACCINES	ROUTE	SITE*
DTaP, DT, HepA, HepB, Hib, HPV, IIV4, RIV4, ccIIV4, IPV*†, MenACWY, MenB, MMR‡, PCV13, PPSV23*†, RZV, Td, Tdap, TT, VAR†	Intramuscular injection	Vastus Lateralis or Deltoid muscle
IPV*†, MMR‡, PPSV23*†, VAR†	Subcutaneous injection	Fatty tissue of thigh for infants younger or upper outer triceps area

COMBINATION VACCINES	ROUTE	SITE*
DTaP-IPV, DTaP-IPV-HepB, DTaP-IPV/Hib, DTaP-IPV-HepB/Hib, HepA-HepB, MMRV†	Intramuscular injection	Vastus Lateralis or Deltoid muscle
MMRV†	Subcutaneous injection	Fatty tissue of thigh for infants younger or upper outer triceps area

* Based on age. Detailed discussion can be found here: [Pinkbook: Vaccine Administration | CDC](#)

† Vaccine may administered by intramuscular or subcutaneous injection

‡ MMR vaccine injection route varies by brand. PRIORIX is administered by subcutaneous route only. M-M-R II may be administered by the subcutaneous or intramuscular route.

Image Source: [Vaccine Administration Route and Site | CDC](#)

Vaccine Administration: Subcutaneous Injections

When administering a vaccine subcutaneously (SC):

- ✓ Perform effective hand hygiene.
- ✓ Clean the skin at/around injection site with a sterile alcohol swab and allow time to dry.
- ✓ Pinch up the skin and underlying fatty tissue.
- ✓ Administer in the fatty tissue above the upper outer triceps of the arm.
- ✓ Insert the needle at a 45-degree angle into the subcutaneous tissue & inject the vaccine while avoiding reaching the muscle.
- ✓ Remove the needle.
- ✓ Apply a bandage to the injection site.

Sites for Subcutaneous Injection

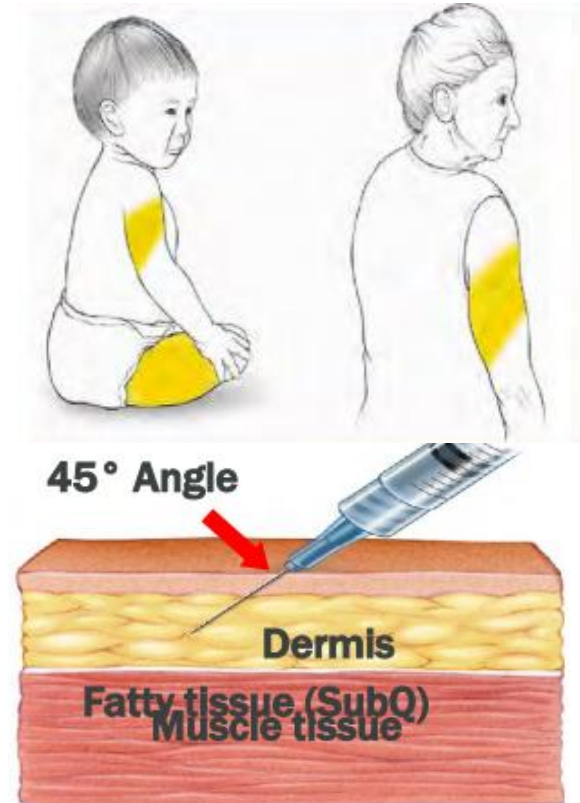


Image source: [Vaccine Storage and Handling and Vaccine Administration presentation by CDC](#)

See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information or [Vaccination Tools for Administering Vaccines \(immunize.org\)](#)

Vaccine Administration: Subcutaneous Injections



Scan the QR codes to watch short training videos on how to administer a subcutaneous injection.



See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information or [Vaccination Tools for Administering Vaccines \(immunize.org\)](#)

Vaccine Administration: Intramuscular Injections

When administering an IM injection:

- ✓ Perform effective hand hygiene.
- ✓ Identify the injection site by appropriate landmarks.
- ✓ Clean the skin at/around injection site with a sterile alcohol swab and allow time to dry.
- ✓ Spread the skin-tight to isolate the muscle. *Another acceptable technique for pediatric and geriatric patients is to grasp the tissue and “bunch up” the muscle.*
- ✓ Insert the needle at a 90-degree angle and inject the vaccine.
- ✓ Remove the needle.
- ✓ Apply a bandage to the injection site.

Preferred Site:

- The **deltoid muscle** for ages 3 and over
- The **vastus lateralis muscle** in the anterolateral thigh for infants and toddlers under age 3 years

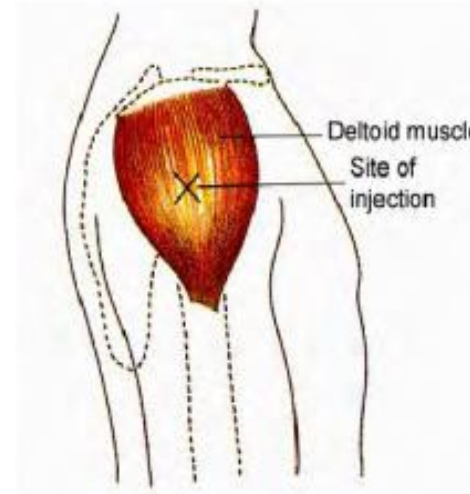
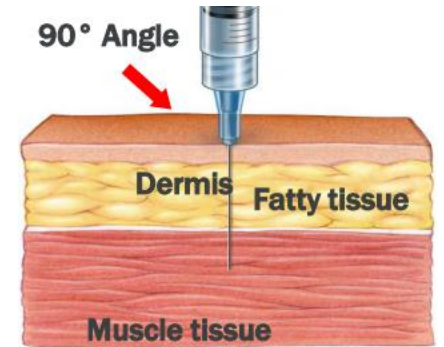


Image source: [Vaccine Storage and Handling and Vaccine Administration presentation by CDC](#)

See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information or [Vaccination Tools for Administering Vaccines \(immunize.org\)](#)

Vaccine Administration: Intramuscular Injections



Scan the QR codes to watch short training videos on how to administer an intramuscular injection.



See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information or [Vaccination Tools for Administering Vaccines \(immunize.org\)](#)

Vaccine Administration: Procedural Pain Management

A common procedure that causes pain in healthy children is getting vaccinations and may be a very stressful event for the child. *A fear of needles usually begins in early childhood.*




To help with pain relief:

- ✓ Inject vaccines rapidly w/o aspiration
- ✓ Inject vaccines that cause the MOST pain last
- ✓ Age-appropriate positioning best practices*
- ✓ Tactile stimulation*
- ✓ Use correct route and best site for each vaccine administered*
- ✓ Administer oral route vaccines before injectable vaccines

*See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information.

Vaccine Administration: Multiple Injections at One Visit

-  Administer each injection in a different injection site
 - For infants and younger children receiving 2 or more injections in a single limb=>the thigh should be used
 - For older children and adults, the deltoid can be used for more than 1 intramuscular injection.

For more information, visit: <https://www.cdc.gov/vaccines/hcp/admin/administer-vaccines.html>

Vaccine Administration: Vaccination Tips Co-Administration



When administering multiple injections:

- Prepare each injectable vaccine using a separate syringe:
 - » Do NOT mix more than one vaccine in the same syringe to create a “combination vaccine”
- Label each syringe
- Use different anatomical sites
- Space injections by at least 1”



Co-Administration notes:

- Do NOT administer PCV and PPSV23 simultaneously
- Administer vaccines that may be more likely to cause a local reaction (e.g., tetanus-toxoid-containing and PCV) in different limbs, if possible
- MMR and Varicella may be administered simultaneously

For more information, visit: [ACIP Timing and Spacing Guidelines for Immunization | CDC](#) or [Vaccine Administration Route and Site | CDC](#)

Vaccine Administration: Patient Care after Vaccine Administration

- 🛡️ Monitor for any symptoms of an adverse reaction and report any adverse event post-vaccination*
 - Observe patient for 15 minutes following vaccination
- 🛡️ Manage acute reactions such as severe allergic reactions and fainting
 - *(Note that following vaccination, severe allergic reactions are rare. To decrease chance of injury in an event of fainting, have patient lying down or in a seated position for vaccination)*

• See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information and for additional resources, please visit: [Vaccine Administration Resource Library | CDC](#)

Vaccine Administration: Documenting Vaccinations

Required documentation under the National Childhood Vaccine Injury Act:

- 🛡️ Date of administration
- 🛡️ Vaccine manufacturer
- 🛡️ Vaccine lot number
- 🛡️ Dosage amount
- 🛡️ The VIS edition date and the date it was provided to the patient
- 🛡️ Name/title of the person who administered the vaccine and the address of healthcare facility it was given

Recommended documentation by the American Academy of Pediatrics

- 🛡️ Route & Site used
- 🛡️ Expiration Date of Vaccine
- 🛡️ Adverse events*
- 🛡️ Vaccine Refusal*
- Professional organizations such as the American Academy of Pediatrics and others have developed forms to document when vaccines are refused https://www.aap.org/en-us/documents/immunization_refusaltovaccinate.pdf

* See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information or [Documenting Vaccinations | CD](#)

Reporting an Adverse Event

- 🛡️ Health care providers are required by law to report certain adverse events, and encouraged to report other events, following vaccination to the Vaccine Adverse Event Reporting System (VAERS).*
- 🛡️ Details on reporting adverse events after vaccination can be found at <https://vaers.hhs.gov/external> or [VAERS | Vaccine Safety | CDC](#)
- 🛡️ Review the VAERS Table of Reportable Events following vaccination at [Vaccine Injury Table Effective for Claims Filed on or After 1-3-2022 \(hrsa.gov\)](#)

* See [Pinkbook: Vaccine Administration | CDC](#) for more detailed information and for additional resources, please visit: [Vaccine Administration Resource Library | CDC](#)

Vaccine Administration: Errors











Common vaccine administration errors include:

- ✘ Doses administered too early
- ✘ Wrong vaccine
- ✘ Wrong dosage
- ✘ Wrong route
- ✘ Vaccine administered outside the approved age range
- ✘ Expired vaccine or diluent administered
- ✘ Improperly stored vaccine administered
- ✘ Vaccine administered to a patient with a contraindication
- ✘ Wrong diluent used to reconstitute the vaccine or only the diluent was administered

Guidance for handling some common vaccine administration errors is included in ACIP's *General Best Practice Guidelines for Immunization* at: [ACIP General Best Practice Guidelines for Immunization | CDC](#)

See [Pinkbook: Vaccine Administration | CDC](#), [Vaccine Administration: Preventing Vaccine Administration Errors \(cdc.gov\)](#) for more detailed information or [Documenting Vaccinations | CDC](#)

Vaccine Administration: Additional Resources

-  [AAP Red Book: General Instructions for Vaccine Administration](#) (Login required)
-  [Administering Vaccines: Dose, Route, Site, and Needle Size](#)
-  [IAC How to Administer Intramuscular \(IM\) Vaccine Injections and How to Administer Subcutaneous \(SC\) Injections](#)
-  [IAC Vaccines with Diluents: How to Use Them](#)
-  [IAC Administering Vaccine Clinic Tools](#)
-  [CDC Vaccine Administration Resource Library](#)
-  [CDC Safety Checklist](#)
-  [Vaccine Information Statement | Current VISs | CDC](#)
-  [Healthcare Workers: Information on COVID-19 | CDC](#)
-  [Immunize.org: Vaccine Information for Healthcare Professionals](#)

Questions?

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Kentucky Public Health

Prevent. Promote. Protect.



TEAM 
KENTUCKY®

CABINET FOR HEALTH
AND FAMILY SERVICES

Kentucky Department for Public Health

About Us



Kentucky Public Health
Prevent. Promote. Protect.



The Kentucky Department for Public Health (KDPH) is dedicated to improving the health and safety of Kentuckians through *prevention, promotion, and protection*.

As a major part of the Cabinet for Health and Family Services, KDPH provides guidance and support for health departments in all 120 counties.

Serving as Kentucky's dedicated public health resource, KDPH is responsible for identifying and allocating resources to communities and public health institutions to prevent and protect against diseases, outbreaks, and hazards statewide.