How to Administer Intramuscular and Subcutaneous Vaccine Injections

Administration by the Intramuscular (IM) Route

Administer by IM route only

- COVID-19
- Dengue
- Diphtheria-tetanus-pertussis (DTaP, Tdap)
- Diphtheria-tetanus (DT, Td)
- *Haemophilus influenzae* type b (Hib)
- Hepatitis A (HepA)
- Hepatitis B (HepB)
- Human papillomavirus (HPV)
- Inactivated influenza vaccine (IIV)
- Meningococcal serogroups A,C,W, Y (MenACWY)
- Meningococcal serogroup B (MenB)
- Respiratory Syncytial Virus (RSV & RSV-mAb)
- Pneumococcal conjugate (PCV)
- Zoster (RZV)

Administer by IM or Subcutaneous (Subcut) route

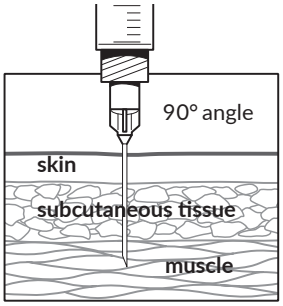
- Inactivated polio vaccine (IPV)
- Measles, mumps, and rubella (MMR II [Merck] only)
- Pneumococcal polysaccharide (PPSV23)
- Varicella (VAR)

PATIENT AGE	INJECTION SITE	NEEDLE SIZE
Newborn (0–28 days)	Anterolateral thigh muscle	⅝"* (22–25 gauge)
Infant (1–12 mos)	Anterolateral thigh muscle	1" (22–25 gauge)
Toddler (1–2 years)	Anterolateral thigh muscle	1–1¼" (22–25 gauge)
	Alternate site: Deltoid muscle of arm if muscle mass is adequate	⅝*–1" (22–25 gauge)
Children (3–10 years)	Deltoid muscle (upper arm)	⅝*–1" (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1¼" (22–25 gauge)
Children and adults (11 years and older)	Deltoid muscle (upper arm)	⅝†–1" (22–25 gauge)
	Alternate site: Anterolateral thigh muscle‡	1‡–1½" (22–25 gauge)

* A ⅝" needle usually is adequate for neonates (first 28 days of life), preterm infants, and children ages 1 through 18 years if the skin is stretched flat between the thumb and forefinger and the needle is inserted at a 90° angle to the skin.

† A ⅝" needle may be used in patients weighing less than 130 lbs (<60 kg) for IM injection in the deltoid muscle only if the skin is stretched tightly and subcutaneous tissues are not bunched; a 1" needle is sufficient in patients weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 153–200 lbs (70–90 kg) and men weighing 153–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing more than 200 lbs (91 kg) or men weighing more than 260 lbs (118 kg).

‡ A 1" needle may be used for an IM injection in the anterolateral thigh muscle of an adult of any weight if the skin is stretched tightly and subcutaneous tissues are not bunched. For more information on how to administer an IM injection in the anterolateral thigh of an adult, see www.immunize.org/catg.d/p2030.pdf.



Needle insertion

Use a needle long enough to reach deep into the muscle.

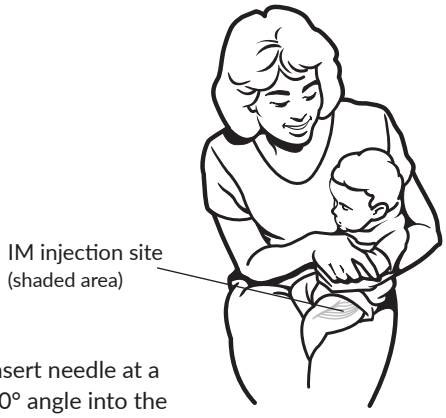
Insert needle at a 90° angle to the skin with a quick thrust.

(Before administering an injection of vaccine, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.)

Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.

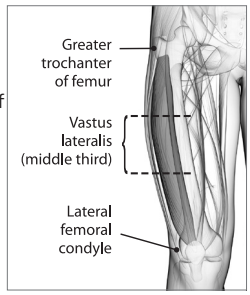
Reference: CDC. *Epidemiology and Prevention of Vaccine-Preventable Diseases.* Hall E., Wodi A.P., Hamborsky J., et al., eds. 14th ed. Washington, D.C., Public Health Foundation, 2021. "Vaccine Administration" at www.cdc.gov/vaccines/pubs/pinkbook/vac-admin.html

Intramuscular (IM) injection site for infants and toddlers

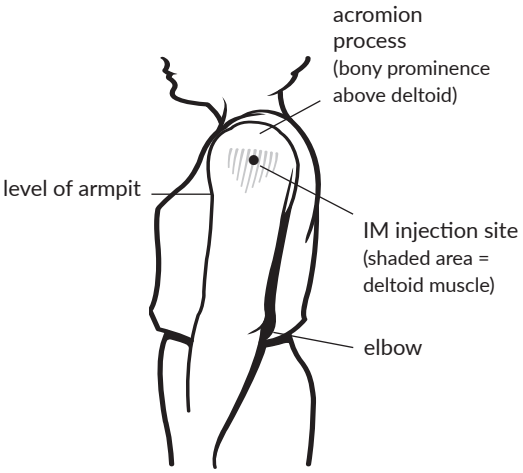


Insert needle at a 90° angle into the anterolateral thigh muscle.

Alternate injection site for adults (outer portion of middle third of thigh)



Intramuscular (IM) injection site for children and adults



Give in the central and thickest portion of the deltoid muscle — above the level of the armpit and approximately 2–3 fingerbreadths (~2") below the acromion process. See the diagram. To avoid causing an injury, do not inject too high (near the acromion process) or too low.

CONTINUED ON THE NEXT PAGE ▶

Administration by the Subcutaneous (Subcut) Route

Administer by Subcut route only

- Dengue
- MMR (Priorix [GSK])

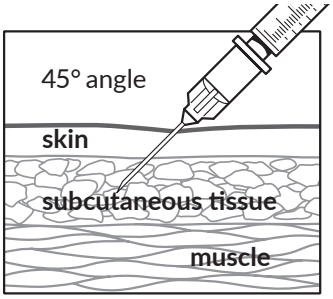
Administer by Subcut or IM route

- Inactivated polio vaccine (IPV)
- MMR (MMR II [Merck])
- Pneumococcal polysaccharide (PPSV23)
- Varicella (VAR)

Administer by Subcut or intradermal (ID) route

- Mpox vaccine (Jynneos)
  Note: *Subcut is indicated on the package insert. ID administration to adults (18+ years) is permitted under FDA emergency use authorization (see www.fda.gov/media/160774/download).*

PATIENT AGE	INJECTION SITE	NEEDLE SIZE
Birth to 12 months	Fatty tissue overlying the anterolateral thigh muscle	⅝" (23–25 gauge)
12 months and older	Fatty tissue overlying the anterolateral thigh muscle or fatty tissue over triceps	⅝" (23–25 gauge)



Needle insertion

Pinch up on subcutaneous tissue to prevent injection into muscle.

Insert needle at 45° angle to the skin.

(Before administering an injection of vaccine, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.)

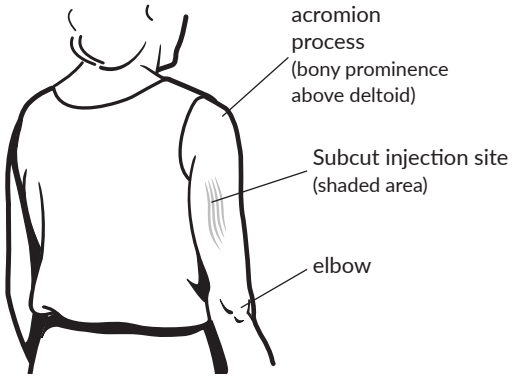
Multiple injections given in the same extremity should be separated by a minimum of 1".

Subcutaneous (Subcut) injection site for infants

Subcut injection site
(shaded area)

Insert needle at a 45° angle into fatty tissue of the anterolateral thigh. Make sure you pinch up on subcutaneous tissue to prevent injection into the muscle.

Subcutaneous (Subcut) injection site for children (after the 1st birthday) and adults



Insert needle at a 45° angle into the fatty tissue overlying the triceps muscle. Make sure you pinch up on the subcutaneous tissue to prevent injection into the muscle.

Handout 21

Screening Checklist for Contraindications to Vaccines for Adults

YOUR NAME _____

DATE OF BIRTH ____/____/____
month day year

For patients: The following questions will help us determine which vaccines you may be given today. If you answer "yes" to any question, it does not necessarily mean you should not be vaccinated. It just means we need to ask you more questions. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Are you sick today?	☐	☐	☐
2. Do you have allergies to medications, food, a vaccine component, or latex?	☐	☐	☐
3. Have you ever had a serious reaction after receiving a vaccine?	☐	☐	☐
4. Do you have any of the following: a long-term health problem with heart, lung, kidney, or metabolic disease (e.g., diabetes), asthma, a blood disorder, no spleen, a cochlear implant, or a spinal fluid leak? Are you on long-term aspirin therapy?	☐	☐	☐
5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem?	☐	☐	☐
6. Do you have a parent, brother, or sister with an immune system problem?	☐	☐	☐
7. In the past 6 months, have you taken medications that affect your immune system, such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments?	☐	☐	☐
8. Have you had a seizure or a brain or other nervous system problem?	☐	☐	☐
9. Have you ever been diagnosed with a heart condition (myocarditis or pericarditis) or have you had Multisystem Inflammatory Syndrome (MIS-A or MIS-C) after an infection with the virus that causes COVID-19?	☐	☐	☐
10. In the past year, have you received immune (gamma) globulin, blood/blood products, or an antiviral drug?	☐	☐	☐
11. Are you pregnant?	☐	☐	☐
12. Have you received any vaccinations in the past 4 weeks?	☐	☐	☐
13. Have you ever felt dizzy or faint before, during, or after a shot?	☐	☐	☐
14. Are you anxious about getting a shot today?	☐	☐	☐

FORM COMPLETED BY _____ DATE _____

FORM REVIEWED BY _____ DATE _____

Did you bring your immunization record card with you? **yes** ☐ **no** ☐

It is important to have a personal record of your vaccinations. If you don't have a personal record, ask your healthcare provider to give you one. Keep this record in a safe place and bring it with you every time you seek medical care. Make sure your healthcare provider records all your vaccinations on it.

Information for Healthcare Professionals about the Screening Checklist for Contraindications to Vaccines for Adults

Read the information below for help interpreting answers to the screening checklist. To learn even more, consult the references in ***Note*** *below.*

NOTE: For additional details, see CDC's "Adult Immunization Schedule" (www.cdc.gov/vaccines/schedules/hcp/imz/adult.html) and *General Best Practice Guidelines for Immunization* sections on "Contraindications and Precautions" (www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html) and "Altered Immunocompetence" (www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html). For more details on COVID-19 vaccines, see "Use of COVID-19 Vaccines in the United States: Interim Clinical Considerations" at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html.

1. **Are you sick today?** *[all vaccines]*

   There is no evidence that acute illness reduces vaccine efficacy or safety. However, as a precaution, all vaccines should be delayed until moderate or severe acute illness has improved. Mild illnesses with or without fever (e.g., otitis media, "colds," diarrhea) and antibiotic use are not contraindications to routine vaccination.

2. **Do you have allergies to medications, food, a vaccine ingredient, or latex?** *[all vaccines]*

   Gelatin: If a person has anaphylaxis after eating gelatin, do not give vaccines containing gelatin. **Latex:** An anaphylactic reaction to latex is a contraindication to vaccines with latex as part of the vaccine's packaging (e.g., vial stoppers, prefilled syringe plungers, prefilled syringe caps). For details on latex in vaccine packaging, refer to the package insert (listed at www.fda.gov/vaccines-blood-biologics/vaccines/vaccines-licensed-use-united-states). **COVID-19 vaccine:** History of a severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a COVID-19 vaccine component is a contraindication to use of the same vaccine type. People may receive the alternative COVID-19 vaccine type (either mRNA or protein subunit) if they have a contraindication or an allergy-related precaution to one COVID-19 vaccine type. Allergy-related precautions include history of 1) diagnosed non-severe allergy to a COVID-19 vaccine component; 2) non-severe, immediate (onset less than 4 hours) allergic reaction after a dose of one COVID-19 vaccine type (see **Note**). ***Not contraindications:*** **Eggs:** ACIP and CDC do not consider egg allergy of any severity to be a contraindication or precaution to any egg-based influenza vaccine. **Injection site reaction** (e.g., soreness, redness, delayed-type local-reaction) to a prior dose or vaccine component is not a contraindication to a subsequent dose or vaccine containing that component.

3. **Have you ever had a serious reaction after receiving a vaccine?** *[all vaccines]*
   - Anaphylaxis to a previous vaccine dose or vaccine component is a contraindication for subsequent doses of the vaccine or vaccine component. (See question 2.)
   - Usually, one defers vaccination when a precaution is present unless the benefit outweighs the risk (e.g., during an outbreak).

4. **Do you have any of the following: a long-term health problem with heart, lung, kidney, or metabolic disease (e.g., diabetes), asthma, a blood disorder, no spleen, a cochlear implant, or a spinal fluid leak? Are you on long-term aspirin therapy?** *[MMR, VAR, LAIV]*

   LAIV is not recommended for people with anatomic or functional asplenia, a cochlear implant, or cerebrospinal fluid (CSF) leak. Underlying health conditions that increase the risk of influenza complications such as heart, lung, kidney, or metabolic disease (e.g., diabetes) and asthma are precautions for LAIV. **MMR:** A history of thrombocytopenia or thrombocytopenic purpura is a precaution to MMR. **VAR:** Aspirin use is a precaution to VAR due to the association of aspirin use, wild type varicella infection, and Reye syndrome in children and adolescents.

5. **Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem?** *[LAIV, MMR, VAR]*

   Live virus vaccines are usually contraindicated in immunocompromised people, with exceptions. For example, MMR vaccine is recommended and VAR may be considered for adults with CD4+ T-cell counts of greater than or equal to 200 cells/mcL. See **Note**.

6. **Do you have a parent, brother, or sister with an immune system problem?** *[MMR, VAR]*

   MMR or VAR should not be administered to a patient with congenital or hereditary immunodeficiency in a first-degree relative (e.g., parent, sibling) unless the patient's immune competence has been verified clinically or by a laboratory.

7. **In the past 6 months, have you taken medicines that affect your immune system, such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments?** *[LAIV, MMR, VAR]*

   Live virus vaccines should be postponed until chemotherapy or long-term high-dose steroid therapy concludes. See **Note**. Some immune mediator and modulator drugs (especially anti-tumor necrosis factor [TNF] agents) may be immunosuppressive. Avoid live virus vaccines in people taking immunosuppressive drugs. A list of such drugs appears in CDCs Yellow Book at wwwwnc.cdc.gov/travel/yellowbook/2024/additional-considerations/immunocompromised-travelers.

8. **Have you had a seizure or a brain or other nervous system problem?** *[influenza, Td/Tdap]*

   Tdap: Tdap is contraindicated in people with a history of encephalopathy within 7 days following DTP/DTaP. An unstable progressive neurologic problem is a precaution to using Tdap. For people with stable neurologic disorders (including seizures) unrelated to vaccination, vaccinate as usual. **A history of Guillain-Barré syndrome (GBS):** 1) **Td/Tdap**: GBS within 6 weeks of a tetanus toxoid-containing vaccine is a precaution; if the decision is made to vaccinate, give Tdap instead of Td; 2) **all influenza vaccines**: GBS within 6 weeks of an influenza vaccine is a precaution; influenza vaccination should generally be avoided unless the benefits outweigh the risks (e.g., for those at high risk for influenza complications).

9. **Have you ever been diagnosed with a heart condition (myocarditis or pericarditis) or have you had Multisystem Inflammatory Syndrome (MIS-A or MIS-C) after an infection with the virus that causes COVID-19?**

   Precautions to COVID-19 vaccination include a history of myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine or a history of Multisystem Inflammatory Syndrome (MIS-C or MIS-A). Myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine is a precaution: the patient should generally not receive additional COVID-19 vaccine. A person with a history of myocarditis or pericarditis unrelated to vaccination may receive a COVID-19 vaccine once the condition has completely resolved. A person with a history of MIS-C or MIS-A may be vaccinated if the condition has fully resolved and it has been at least 90 days since diagnosis. Refer to CDC COVID-19 vaccine guidance for additional considerations for myocarditis, pericarditis, and MIS (see **Note**).

10. **In the past year, have you received immune (gamma) globulin, blood/blood products or an antiviral drug?** *[MMR, VAR, LAIV]*

    See **Note** (schedule) for antiviral drug information (VAR, LAIV). See "Timing and Spacing of Immunobiologics" (www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html#antibody) for intervals between MMR, VAR and certain blood/blood products, or immune globulin.

11. **Are you pregnant?** *[HPV, HepB, IPV, LAIV, MenB, MMR, VAR]*

    Live virus vaccines (e.g., LAIV, MMR, VAR) are contraindicated in pregnancy due to the theoretical risk of virus transmission to the fetus. People who could become pregnant and receive a live virus vaccine should be instructed to avoid pregnancy for 1 month after vaccination. **IPV and MenB** should not be given except to those with an elevated risk of exposure during pregnancy. **HepB:** Heplisav-B and PreHevbrio are not recommended during pregnancy, use Engerix-B or Recombivax-HB. **HPV** is not recommended during pregnancy.

12. **Have you received any vaccinations in the past 4 weeks?** *[LAIV, MMR, VAR, yellow fever]*

    People given live virus vaccines, such as those listed above, should wait 28 days before receiving another live virus vaccine (wait 30 days for yellow fever vaccine). Inactivated vaccines may be given at the same time or at any spacing interval.

13. **Have you ever felt dizzy or faint before, during, or after a shot?**

    Fainting (syncope) or dizziness is not a contraindication or precaution to vaccination; it may be an anxiety-related response to any injection. CDC recommends vaccine providers consider observing all patients for 15 minutes after vaccination. See Immunize.org's resource on vaccination and syncope at www.immunize.org/catg.d/p4260.pdf.

14. **Are you anxious about getting a shot today?**

    Anxiety can lead to vaccine avoidance. Simple steps can help a patient's anxiety about vaccination. Visit Immunize.org's "Addressing Vaccination Anxiety" clinical resources at www.immunize.org/handouts.

VACCINE ABBREVIATIONS

HepB = Hepatitis B vaccine
HPV = Human papillomavirus vaccine
IIV = Inactivated influenza vaccine
ccIIV = Cell culture inactivated influenza vaccine
IPV = Inactivated poliovirus vaccine
LAIV = Live attenuated influenza vaccine
MenB = Meningococcal B vaccine
MMR = Measles, mumps, and rubella vaccine
RIV = Recombinant influenza vaccine
Td/Tdap = Tetanus, diphtheria, (acellular pertussis) vaccine
VAR = Varicella vaccine

Handout 22

STATE OF MISSOURI
DEPARTMENT OF HEALTH AND SENIOR SERVICES

IMMUNIZATION CONSENT AND HISTORY

CLINIC IDENTIFICATION

LAST NAME	FIRST NAME	MI	DATE OF BIRTH	SEX
				☐ Male ☐ Female

STREET ADDRESS	CITY	STATE	ZIP CODE	TELEPHONE NO.

RACE (SELECT ALL THAT APPLY)

☐ Amer Indian or Alaska Native ☐ Native Hawaiian or Other Pacific Islander ☐ Asian ☐ Black or African American ☐ White

ETHNICITY

☐ Hispanic or Latino ☐ Not Hispanic or Latino

PARENT/GUARDIAN FULL NAME

I have been given copy and have read, or had explained to me, the information in the "Vaccine Information Statement(s)," where applicable, for the vaccine(s) indicated below. I have had a chance to ask questions and had them answered to my satisfaction. I understand the benefits and risks of the vaccine(s) requested and ask that the vaccine(s) currently due for which I have signed below be given to me or to the person named above for whom I am authorized pursuant to Section 431.058, RSMo to make this request.

VACCINE AND ROUTE (CIRCLE TYPE GIVEN WHERE APPLICABLE)	VISIT NO. & M/D/Y GIVEN	INJECTION SITE	VACCINE MANUFACTURER/ LOT NUMBER	VACCINE EXP. DATE	VIS REVISION DATE	DATE VIS GIVEN	SIGNATURE OF VACCINATOR
Hepatitis B Hep B IM							
Diphtheria, Tetanus, Pertussis DTap DTP DT IM							
Haemophilus influenzae type b Hib IM							
Polio Polio SQ IM							
Pneumococcal PCV 13 IM							

PATIENT OR PARENT/GUARDIAN CONSENT

VISIT #1 DATE

SIGNATURE

ELIGIBILITY STATUS
- ☐ Medicaid
- ☐ No health insurance
- ☐ Amer Indian/Alaska Native
- ☐ Underinsured (FQHC/RHC)
- ☐ **NOT VFC Eligible**

VISIT #2 DATE

SIGNATURE

ELIGIBILITY STATUS
- ☐ Medicaid
- ☐ No health insurance
- ☐ Amer Indian/Alaska Native
- ☐ Underinsured (FQHC/RHC)
- ☐ **NOT VFC Eligible**

VISIT #3 DATE

SIGNATURE

ELIGIBILITY STATUS
- ☐ Medicaid
- ☐ No health insurance
- ☐ Amer Indian/Alaska Native
- ☐ Underinsured (FQHC/RHC)
- ☐ **NOT VFC Eligible**

VISIT #4 DATE

SIGNATURE

ELIGIBILITY STATUS
- ☐ Medicaid
- ☐ No health insurance
- ☐ Amer Indian/Alaska Native
- ☐ Underinsured (FQHC/RHC)
- ☐ **NOT VFC Eligible**

COMMENTS

PATIENT NAME

IMMUNIZATION CONSENT AND HISTORY (CONTINUED)

VACCINE AND ROUTE (CIRCLE TYPE GIVEN WHERE APPLICABLE)	VISIT NO. & M/D/Y GIVEN	INJECTION SITE	VACCINE MANUFACTURER/ LOT NUMBER	VACCINE EXP. DATE	VIS REVISION DATE	DATE VIS GIVEN	SIGNATURE OF VACCINATOR	PATIENT OR PARENT/GUARDIAN CONSENT
Pneumococcal polysaccharide PPSV 23 SQ IM								**VISIT #5** DATE SIGNATURE
Measles, Mumps, Rubella MMR SQ								**ELIGIBILITY STATUS** ☐ Medicaid ☐ No health insurance ☐ Amer Indian/Alaska Native ☐ Underinsured (FQHC/RHC) ☐ **NOT VFC Eligible**
Varicella Varicella SQ								
Rotavirus RV1 Oral RV5 Oral								**VISIT #6** DATE SIGNATURE
Hepatitus A Hep A IM								**ELIGIBILITY STATUS** ☐ Medicaid ☐ No health insurance ☐ Amer Indian/Alaska Native ☐ Underinsured (FQHC/RHC) ☐ **NOT VFC Eligible**
Human papilloma-virus HPV IM								**VISIT #7** DATE SIGNATURE
Meningococcal MenACWY IM								**ELIGIBILITY STATUS** ☐ Medicaid ☐ No health insurance ☐ Amer Indian/Alaska Native ☐ Underinsured (FQHC/RHC) ☐ **NOT VFC Eligible**
Meningococcal B MenB IM								**VISIT #8** DATE SIGNATURE
Tetanus, Diphtheria, Pertussis (7 years old and above) Tdap IM Td IM								**ELIGIBILITY STATUS** ☐ Medicaid ☐ No health insurance ☐ Amer Indian/Alaska Native ☐ Underinsured (FQHC/RHC) ☐ **NOT VFC Eligible**
Influenza IIV (inactive) IM RIV (recombinant) IM LAIV (live attenuated intranasal) IN								**VISIT #9** DATE SIGNATURE
Zoster (Shingles) RVZ (recombinant) IM ZVL (live) SQ								**ELIGIBILITY STATUS** ☐ Medicaid ☐ No health insurance ☐ Amer Indian/Alaska Native ☐ Underinsured (FQHC/RHC) ☐ **NOT VFC Eligible**
								VISIT #10 DATE SIGNATURE
Other								**ELIGIBILITY STATUS** ☐ Medicaid ☐ No health insurance ☐ Amer Indian/Alaska Native ☐ Underinsured (FQHC/RHC) ☐ **NOT VFC Eligible**
Other								

COMMENTS

How to Administer Intranasal and Oral Vaccinations

While most vaccines are administered by either intramuscular or subcutaneous injection, there are several vaccines that are administered through other means. These include the intradermal route, the intranasal route, and the oral route. Here are some simple instructions to use as a guide. Complete information is available in the package inserts and can also be obtained at www.immunize.org/fda.

Nasal spray: Influenza vaccine

■ *FluMist by MedImmune, Live Attenuated Influenza Vaccine (LAIV)*

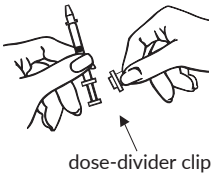
1 FluMist (LAIV) is for intranasal administration only. Do not inject FluMist.

2 Remove the rubber tip protector. Do not remove the dose-divider clip at the other end of the sprayer.

3 With the patient in an upright position, place the tip just inside the nostril to ensure LAIV is delivered into the nose. The patient should breathe normally.

4 With a single motion, depress the plunger as rapidly as possible until the dose-divider clip prevents you from going further.

5 Pinch and remove the dose-divider clip from the plunger.



6 Place the tip just inside the other nostril, and with a single motion, depress plunger as rapidly as possible to deliver the remaining vaccine.

7 Dispose of the applicator in a sharps container.

Oral drops: Rotavirus vaccines

■ *Rotarix by GSK – available in two presentations:*
(a) a vial and oral dosing applicator (requires reconstitution) and
(b) a fully liquid oral dosing applicator only.

If using the fully liquid presentation,

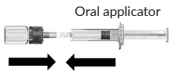
1 Remove the cap from the oral dosing applicator.

2 Follow steps 6 and 7 below.

If using vial and oral dosing applicator (requires reconstitution),

1 Remove the cap of the vial and push the transfer adapter onto the vial (lyophilized vaccine).

2 Shake the diluent in the oral applicator (white, turbid suspension). Connect the oral applicator to the transfer adapter.



3 Push the plunger of the oral applicator to transfer the diluent into the vial. The suspension will appear white and cloudy.

4 Withdraw the vaccine into the oral applicator.

5 Twist and remove the oral applicator from the vial.

6 Administer the dose by gently placing the applicator plunger into the infant's mouth toward the inner cheek and gently expelling the contents until the applicator is empty.

7 Discard the empty vial (if lyophilized vaccine was used), cap, and oral applicator in an approved biological waste container according to local regulations.

■ *Rotateq by Merck*

1 Tear open the pouch and remove the dosing tube. Clear the fluid from the dispensing tip by holding the tube vertically and tapping the cap.

2 Open the dosing tube in two easy motions:

a) Puncture the dispensing tip by screwing cap **clockwise** until it becomes tight.

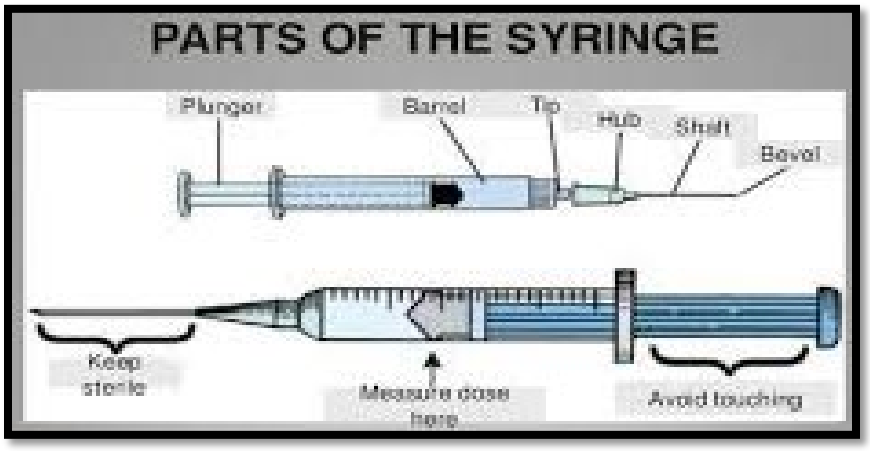
b) Remove the cap by turning it **counter-clockwise**.

3 Administer the dose by gently squeezing liquid into infant's mouth toward the inner cheek until dosing tube is empty. (A residual drop may remain in the tip of the tube.)

4 Discard the empty tube and cap in an approved biological waste container according to local regulations.

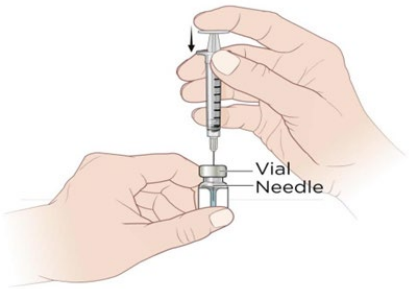
Note: If, for any reason, an incomplete dose is administered (e.g., infant spits or regurgitates the vaccine), a replacement dose is not recommended.

Steps to Draw Up Vaccine

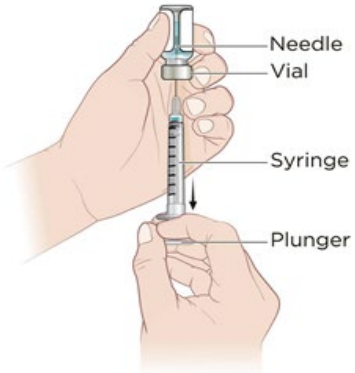


1. Remove the cap from the vial and cleanse the top of the rubber stopper with an alcohol pad.

2. Start by removing the needle cap and pulling back on the plunger, filling the syringe with the same amount of air as you want vaccine. Insert the needle through the rubber stopper and when you see the needle tip in the vial push down on the plunger.



3. Invert the syringe and needle, making sure the needle remains under the line of fluid and slowly pull on the plunger allowing the vaccine to enter the syringe until you reach the desired amount.



4. Check the barrel of the syringe for air bubbles.

5. Holding the syringe barrel with the needle pointing up gently tap on the barrel of the syringe using the thumb and index finger to allow the air bubbles to rise to the top and once there slowly push on the plunger to expel them. Recheck to make sure that there are no air bubbles and the syringe has the correct amount of vaccine.

6. End by replacing the needle cap on the unused needle.