



NDSU

CENTER FOR
COLLABORATION AND
ADVANCEMENT IN PHARMACY

Pharmacy Based Pediatric Immunization Delivery: What You Need to Know!



The COVID-19 pandemic **considerably disrupted routine childhood immunization rates**. As a result, rates have declined in North Dakota, leaving children and their communities at increased risk of vaccine-preventable disease outbreaks. To improve vaccination rates, North Dakota legislation **allows pharmacists and pharmacy technicians to administer vaccines** to children as young as 3 years old.

Who can provide pediatric immunization to children 3 years and older in the pharmacy?



Pharmacists



Pharmacy Technicians

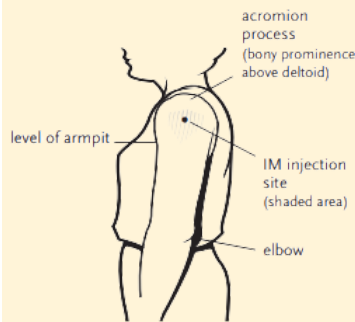
(under supervision of a qualified pharmacist either live or via telepharmacy)

How do you administer vaccines to children 3 years and older?

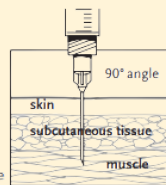
Every vaccine has a recommended administration route and site. This information is included in the vaccine manufacturer's package insert. Deviating from the recommended route may reduce vaccine efficacy or increase local adverse reactions

Administration by the Intramuscular (IM) Route

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.



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.

[†] CDC. "General Best Practices Guidelines for Immunization: Best Practices Guidance of the ACIP" at <https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf>

PATIENT AGE	INJECTION SITE	NEEDLE SIZE
Newborn (0–28 days)	Anterolateral thigh muscle	5/8" (22–25 gauge)
Infant (1–12 mos)	Anterolateral thigh muscle	1" (22–25 gauge)
Toddler (1–2 years)	Anterolateral thigh muscle	1–1 1/4" (22–25 gauge)
	Alternate site: Deltoid muscle of arm if muscle mass is adequate	5/8"–1" (22–25 gauge)
Children (3–10 years)	Deltoid muscle (upper arm)	5/8"–1" (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1 1/4" (22–25 gauge)
Children and adults (11 years and older)	Deltoid muscle (upper arm)	5/8"–1" (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1 1/2" (22–25 gauge)

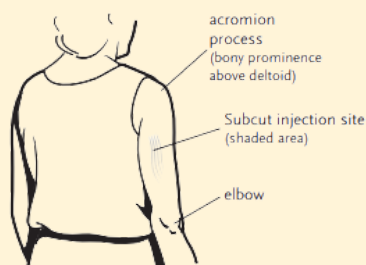
* A 5/8" needle usually is adequate for neonates (first 28 days of life), preterm infants, and children ages 1 through 18 years if the skin is stretched flat between the thumb and forefinger and the needle is inserted at a 90° angle to the skin.

† A 5/8" 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 flat between the

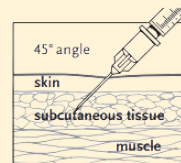
thumb and forefinger and the needle is inserted at a 90° angle to the skin; a 1" needle is sufficient in patients weighing 130–152 lbs (60–70 kg); a 1–1 1/2" needle is recommended in women weighing 153–200 lbs (70–90 kg) and men weighing 153–260 lbs (70–118 kg); a 1 1/2" needle is recommended in women weighing more than 200 lbs (91 kg) or men weighing more than 260 lbs (118 kg).

Administration by the Subcutaneous (Subcut) Route

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.



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".

[‡] CDC. "General Best Practices Guidelines for Immunization: Best Practices Guidance of the ACIP" at <https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf>

PATIENT AGE	INJECTION SITE	NEEDLE SIZE
Birth to 12 months	Fatty tissue overlying the anterolateral thigh muscle	5/8" (23–25 gauge)
12 months and older	Fatty tissue overlying the anterolateral thigh muscle or fatty tissue over triceps	5/8" (23–25 gauge)

Graphics taken from: How to administer intramuscular and subcutaneous vaccine injections (immunize.org)

Tips for Success

1

Instruct Caregivers to Hold Child Appropriately

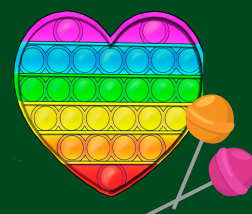
- Have child sit on the caregiver's lap
- Embrace the child (holding both arms over the child's arms)
- Anchor both of the child's legs between caregiver's thigh



2

Distraction Techniques

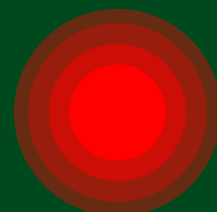
- Have the child bring their favorite toy or book
- Play a game with the child
 - Have a popit on hand and play a game to see if they can pop all the "pops" before you finish the shot
 - Have a sucker on hand and see if the child can unwrap the sucker before you finish giving the shot



3

Pain Relief

- Apply a vapocoolant spray to a cotton ball and apply it to the injection site prior to disinfecting the site
- Apply a Buzzy: a small vibrating bee with blue ice-pack wings. He helps block sharp pain and provides distraction when giving injections or other medical procedures.



4

Reward the child

- Suckers
- Stickers
- Fun Band-aids



Want More Information?

Check Out the Following Resources:

- [North Dakota Board of Pharmacy](#)
- [Comfort and Restraint Techniques Video](#)
- [Vaccine Administration - APhA](#)
- [Administering the Vaccine\(s\) - CDC](#)
- [How to Administer Injections - IAC](#)
- [You Call The Shots - CDC](#)

Injection Site and Supplies Videos:

- [Intermuscular \(IM\) Injection: Sites](#)
- [Subcutaneous \(SC or Subcut\) Injection: Sites](#)
- [Intramuscular \(IM\) Injection: Supplies \(Children Birth Through 18 Year of Age\)](#)

Questions?

Contact us at NDSU.CAPCenter@ndsu.edu