



2020 Schedule Changes

.....Vaccinating



Prepared by Central Coast PHU
July 2020



Health
Central Coast
Local Health District

Vaccine administration



Administration of vaccines

How to identify injection sites and use the correct techniques to administer vaccines for infants, children and adults



[Expand all](#) / [Collapse all](#)

Preparing the vaccine	▼
Route of administration	▼
Preparing the person receiving the vaccine	▼
Vaccine injection techniques	▼
Recommended injection sites	▼
Identifying the injection site	▼
Positioning for vaccination	▼
Giving multiple vaccine injections at the same visit	▼

[About the Handbook](#)

[Fundamentals of immunisation](#)

[Vaccination procedures](#)

[Preparing for vaccination](#)

[Administration of vaccines](#)

[After vaccination](#)

[Catch-up vaccination](#)

[Vaccination for special risk groups](#)

[Vaccine preventable diseases](#)

Table. Recommended needle size, length and angle for administering vaccines



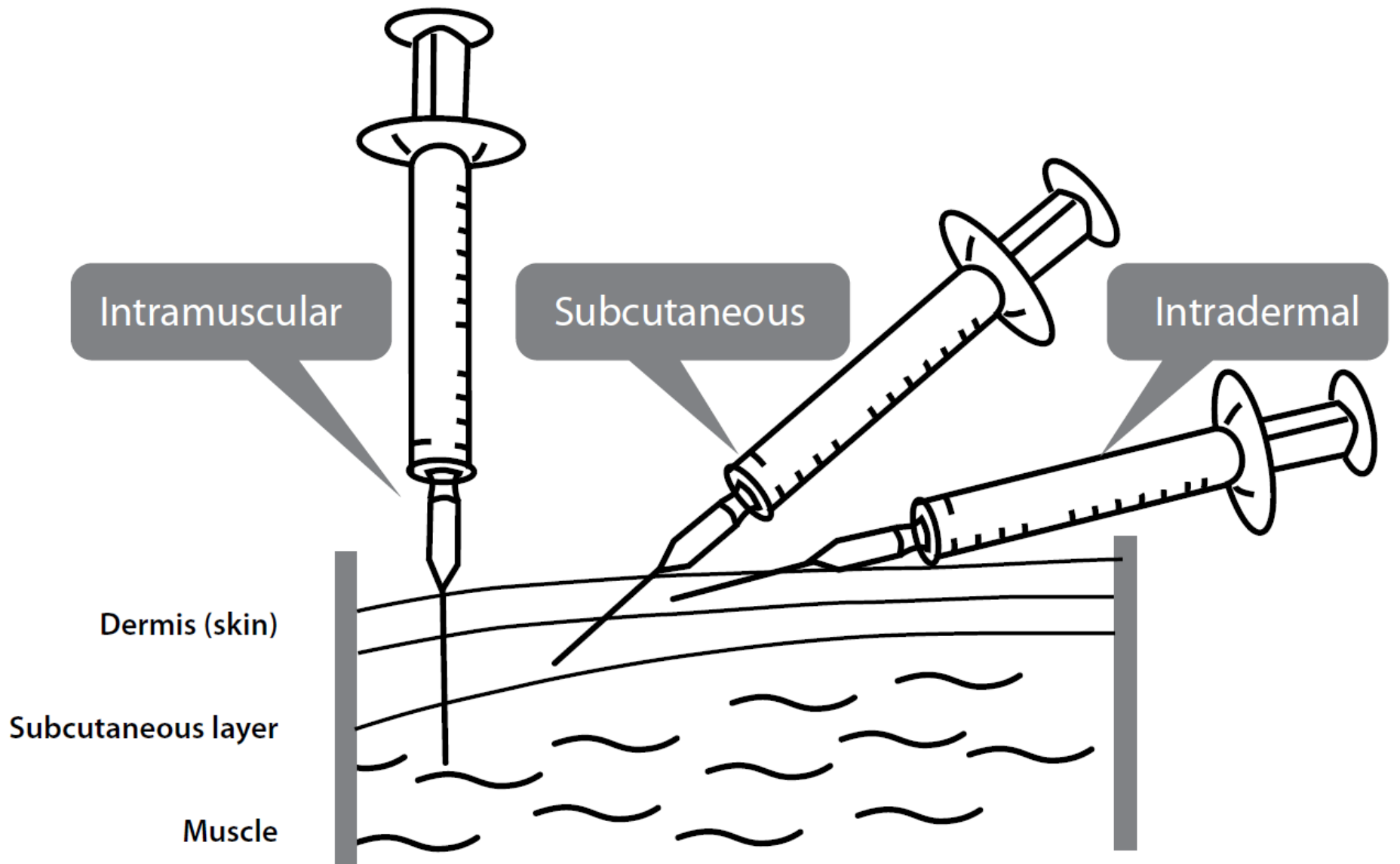
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Age or size of person to be vaccinated	Needle type	Angle of needle insertion
Infant, child or adult for intramuscular vaccines	22–25 gauge, 25 mm long	90° to skin plane
Preterm infant (<37 weeks gestation) up to 2 months of age, and/or very small infant	23–25 gauge, 16 mm long	90° to skin plane
Very large or obese person	22–25 gauge, 38 mm long	90° to skin plane
Subcutaneous injection in all people	25–27 gauge, 16 mm long	45° to skin plane

Sources: Kroger et al,¹⁴ Diggle and Deeks,¹⁸ Diggle et al,²⁰ Poland et al,²³ Cook et al²⁷



“WHO: Managing an Immunization session”

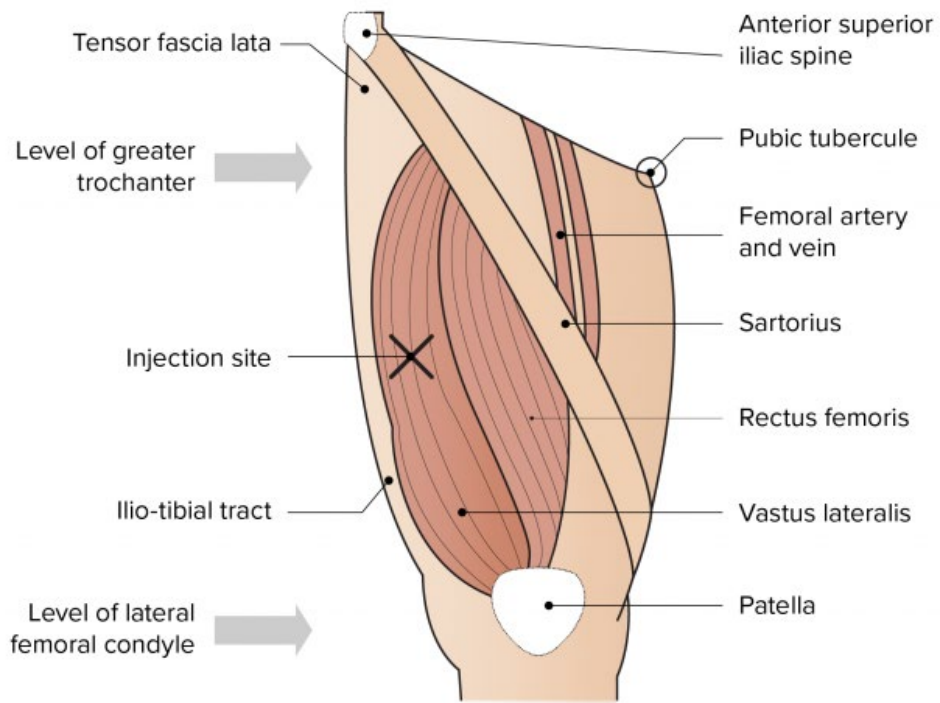
Subcutaneous imm. only

- *IPV* vaccine — is given SCI; combination vaccines containing *IPV* are given IMI
- Varicella vaccine (MMRV can be IMI or SCI)
- Japanese [encephalitis](#) vaccine (Imojev)
- Q fever vaccine — the vaccine is given SCI & only specially trained immunisation providers can do intradermal Q fever skin testing
- Zoster vaccine

Sites for vaccination

Infants aged <12 months

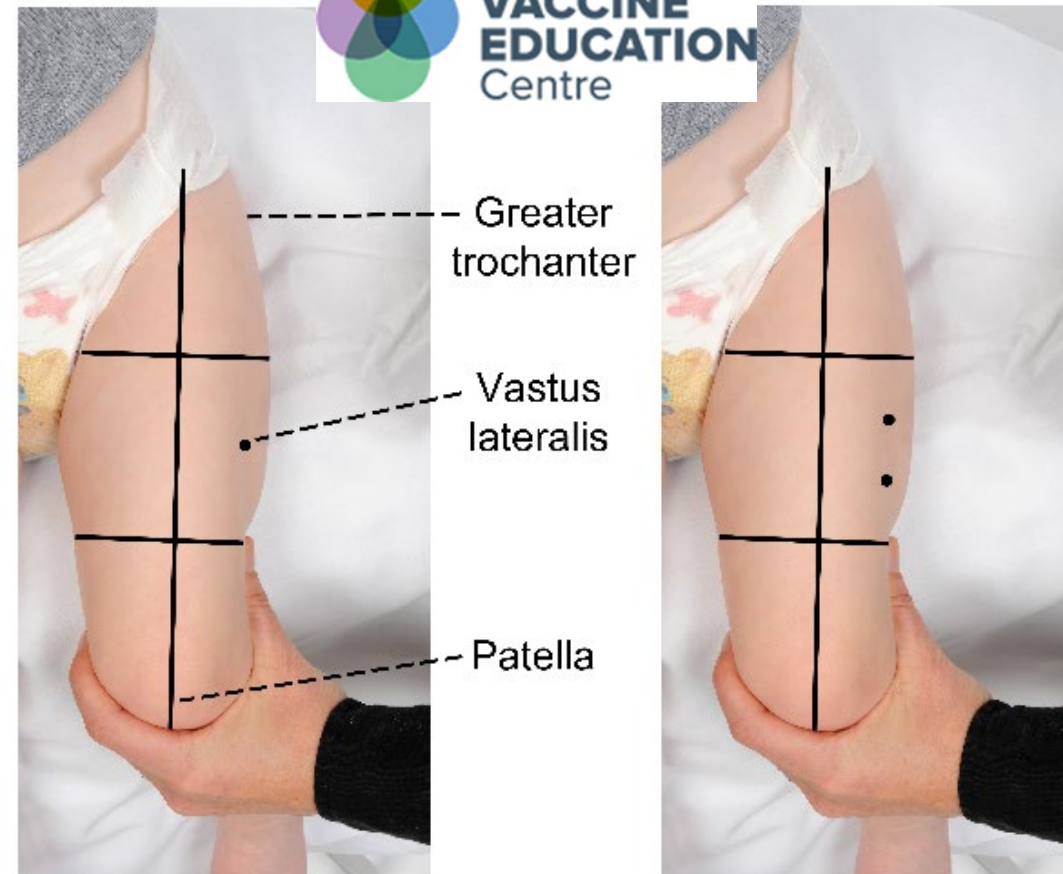
- The vastus lateralis muscle in the anterolateral thigh is the recommended site for IM vaccination.
- The ventrogluteal area is an alternative site
- Two vaccines may be given into each thigh ensuring they are separated by 2.5 cm.



Australian
Immunisation
Handbook



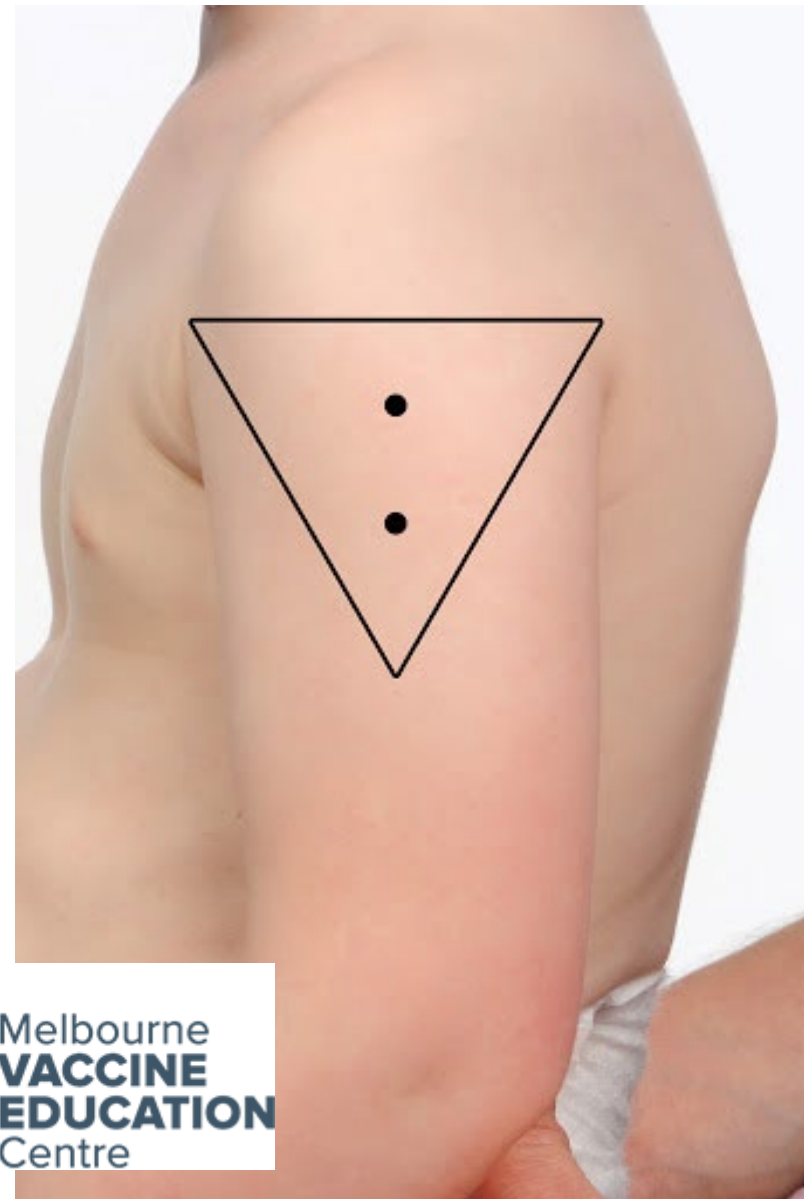
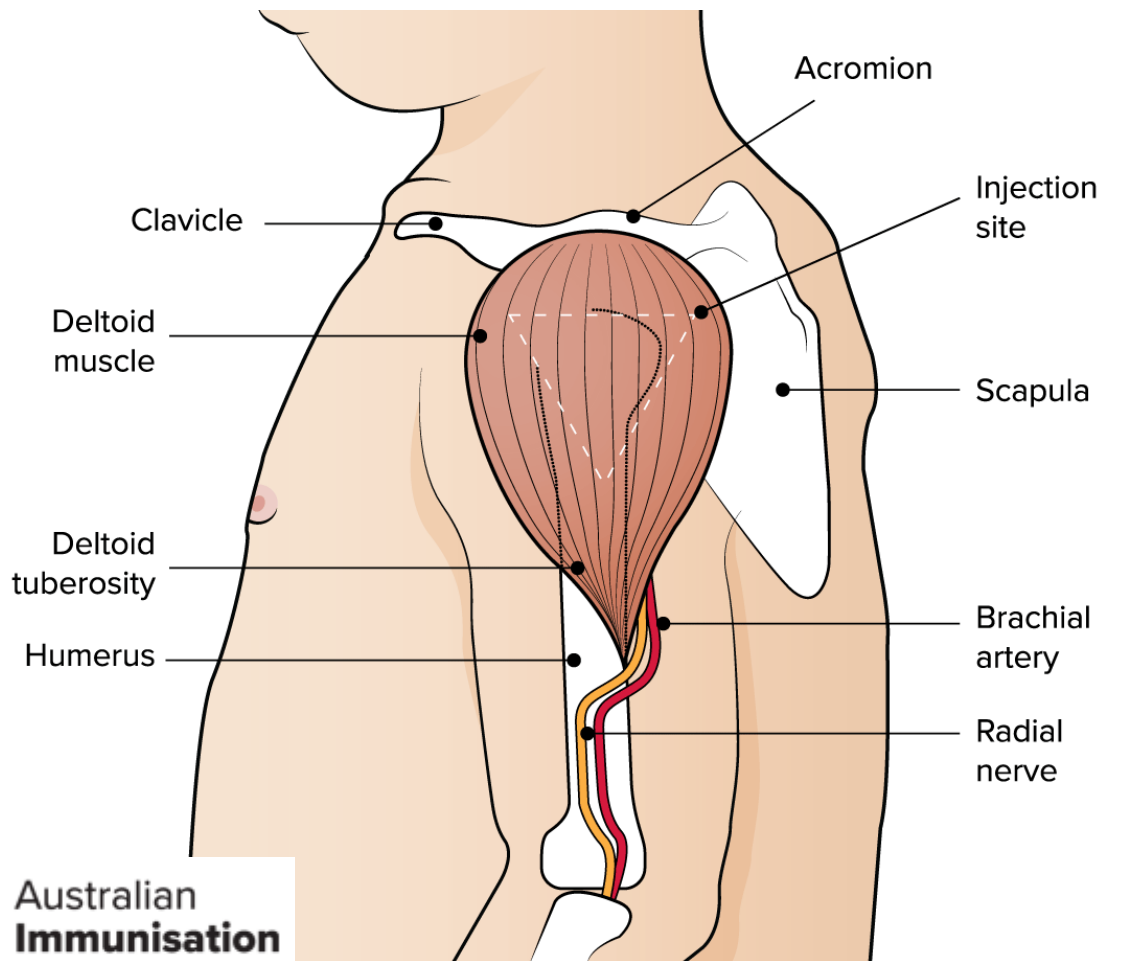
Melbourne
VACCINE
EDUCATION
Centre



Sites for vaccination

Children aged ≥ 12 months

- The deltoid muscle is the recommended site for IM vaccination.
- The vastus lateralis in the anterolateral thigh may also be used – less reactogenic vaccines only (eg MMR).
- The ventrogluteal area is an alternative site
- Two vaccines may be given into each deltoid ensuring they are separated by 2.5 cm.



Avoiding shoulder injury related to vaccine administration

Shoulder injury related to vaccine administration (SIRVA) is a rare complication of incorrect vaccine administration, when the vaccine is given too high into the shoulder joint. This can cause shoulder pain and restricted range of movement. Diagnoses include bursitis, tendinitis and rotator cuff tears. Bursitis is the most commonly reported diagnosis on ultrasound. Symptoms often begin at the time of injection and can last from weeks to years.

Correct injection technique and positioning will avoid SIRVA.

1 Choose the correct size needle

Use an appropriate needle length to improve vaccine delivery and reduce pain.

Age or size of person

Needle type

Child or adult – note that the deltoid muscle is not recommended for vaccination of infants less than 12 months of age	22–25 gauge, 25 mm long
Very large or obese person	22–25 gauge, 38 mm long

2 Expose the entire upper arm

Injection too high



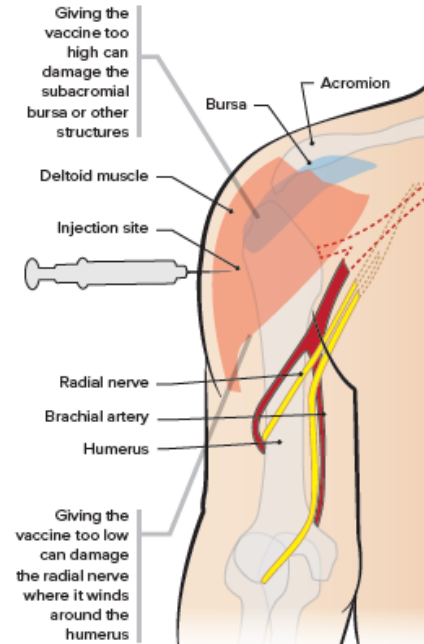
Injection too low



Correct site for injection



3 Find the correct injection site



Triangle method



Acromion

- ▶ Measure 2 finger widths down from the acromion process (the knobby top of the arm).
- ▶ Imagine an inverted triangle starting from this point (the width of the arm).
- ▶ The injection site is the centre of the triangle.

Fingertips method



- ▶ Place your index finger on the acromion process (the knobby top of the arm).
- ▶ Place your thumb at the bottom of the deltoid muscle (about halfway along the upper arm).
- ▶ The injection site is midway between these points.

Giving 2 vaccines into the deltoid muscle



- ▶ Leave 2.5 cm between injection sites.

4 Relax the muscle

Asking the patient to place their hand on their hip can help to relax the deltoid muscle.

5 Insert the needle at 90° to the skin, to the needle hub

6 Inject the vaccine

! Reporting SIRVA

If a vaccinee reports symptoms suggestive of SIRVA, advise them to see their general practitioner for further assessment, investigation and management, as required.

Report all cases of SIRVA to the Therapeutic Goods Administration (TGA) and the state or territory health department:

- ▶ TGA: <https://aems.tga.gov.au>

- ▶ ACT – ACT Health Department: 02 6205 2300
- ▶ NSW: 1300 066 055 (to connect to your local public health unit)
- ▶ NT – NT Department of Health: 08 8922 8044
- ▶ Qld – Queensland Health: 07 3328 9888; or complete an AEFI initial report form on the [Queensland Health website](#)
- ▶ SA – SA Health: 1300 232 272
- ▶ Tas – report direct to the TGA: 1800 020 653
- ▶ Vic – SAEFVIC: 03 9345 4143; or the [AEFI-CAN website](#)
- ▶ WA – WAVSSS: 08 6456 0208; or the [AEFI-CAN website](#)

Multiple vaccines: which vaccine where?

- If a child is receiving multiple vaccines, give the most painful vaccine last.
- Record the location of each separate injection, so the vaccine can be identified if the child has a local AEFI.
- Infants < 12mths needing 3 or 4 injectable vaccines:
 - 2 injections in the same anterolateral thigh, separated by at least 2.5 cm or
 - 1 injection into each anterolateral thigh and 1 injection into each ventrogluteal area.

Multiple vaccines: which vaccine where?

- Children aged ≥ 12 months, adolescents and adults
 - Options will depend on the deltoid muscle mass.
 - If deltoid mass is large enough, give up to 2 injections into each deltoid (separated by 2.5 cm).
 - If the deltoid muscle mass is small:
 - give further injections into anterolateral thigh/s or
 - give 1 injection into each ventrogluteal area

2 (from 6 weeks), 4 & 6 months

2 & 4 months

Rotarix® (oral)

from 6 weeks & 4 months only

Prevenar 13® (anterolateral thigh)

from 6 weeks & 4 months only

Infanrix hexa® (anterolateral thigh)

from 6 weeks, 4 & 6 months

Bexsero® (anterolateral thigh by itself)

from 6 weeks & 4 months*

6 months

Infanrix hexa®



12 months

M-M-R II® or Priorix® (anterolateral thigh)

Prevenar 13® (deltoid)

Nimenrix® (deltoid/anterolateral thigh)

Bexsero®* (deltoid by itself)



18 months

Priorix®-Tetra or ProQuad® (deltoid)

Infanrix® or Tripacel® (deltoid)

ActHIB (anterolateral thigh)



4 years

Infanrix IPV® or Quadracel® (deltoid)

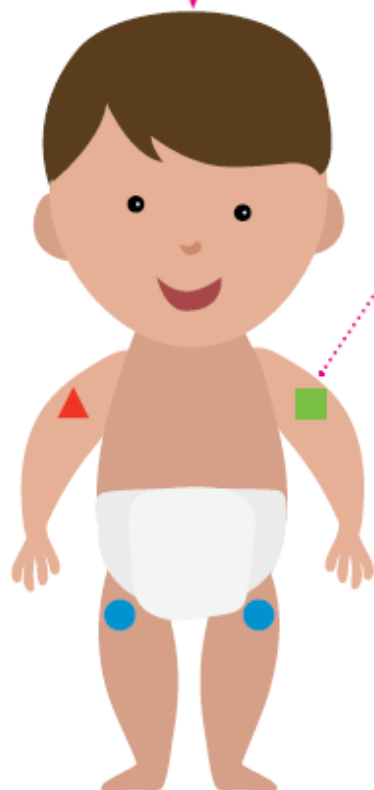


Health
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Principles for Vaccine Administration at 12 Month Schedule Point



- Administer Bexsero®
- ▲ Administer Prevenar 13®
- MMR II® or Priorix® and Nimenrix® in either leg

If administering 2 vaccines at the same site for additional vaccines, separate by 2.5cm

If other vaccines are required at the 12 month schedule point:

1. All vaccines recommended should be given in one visit, if possible
2. If all vaccines recommended cannot be given in one visit, prioritise administration of NIP* recommended vaccines
3. If all NIP vaccines recommended cannot be given, prioritise administration of antigens not previously given
4. If vaccine doses need to be deferred, all outstanding vaccines can be given a minimum of 3 days later
5. Contact the Immunisation Section 1300 232 272 for further advice where the above principles do not apply or do not meet the child's particular situation

Administration of paracetamol with every dose of Bexsero is recommended for children aged less than 2 years.



Government of South Australia

SA Health



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Remember.....

- **Never** mix multiple vaccines together in 1 syringe.
- Expose the whole muscle in order to identify “landmarks”
- For IM injections - **pierce the skin at a 90° angle.** If the injection angle is $>70^\circ$ the needle should reach the muscle layer.
- If using a 25 gauge needle for an IMI, inject the vaccine slowly **over a count of 5 seconds.** This avoids injection pain and muscle trauma.

References

- [Australian Immunisation Handbook](#)
- [Melbourne Vaccine Education Centre: “Administration of injected vaccines – correct technique”](#)
- [Vic Health – “Where should I inject vaccines?”](#)
- [WHO: “Managing an Immunization Session”](#)
- [SA Health: immunisation resources](#)