Immunisation Advisory Centre

VERSION 5

A guide to vaccine administration

Before vaccinating, complete pre-vaccination screening

Check if the consumer:

- is well (delay vaccination if they are acutely unwell and/or have a fever over 38˚C)
- has ever had a serious reaction to any vaccine
- has any severe allergies to vaccine components (e.g., gelatin, egg protein, yeast, neomycin)
- check immunisation history, including appropriate spacing between doses of the same vaccine (confirm from records when the last vaccinations were given)
- is pregnant or planning pregnancy
- is taking immune suppressing medication (currently or in the past).

Additional precautions to check prior to immunisation with a live vaccine - check if the consumer:

- has lowered immunity (due to medication or illness)
- has had any live vaccines in the last 4 weeks
- has been given immunoglobulin or blood products within last 12 months
- if an infant's māmā has been on immune suppressing medication during pregnancy

Provide an opportunity for consumer and whānau to ask questions.

Post-vaccination wait time

The standard wait time is 15 minutes, with the option to reduce to 5 minutes if set criteria is met, or to extend wait times if considered appropriate.
See IMAC factsheet - post-vaccination wait times.

Pre-vaccination screening tool

See immune.org.nz/factsheets/pre-vaccination-screening-tool

Consent

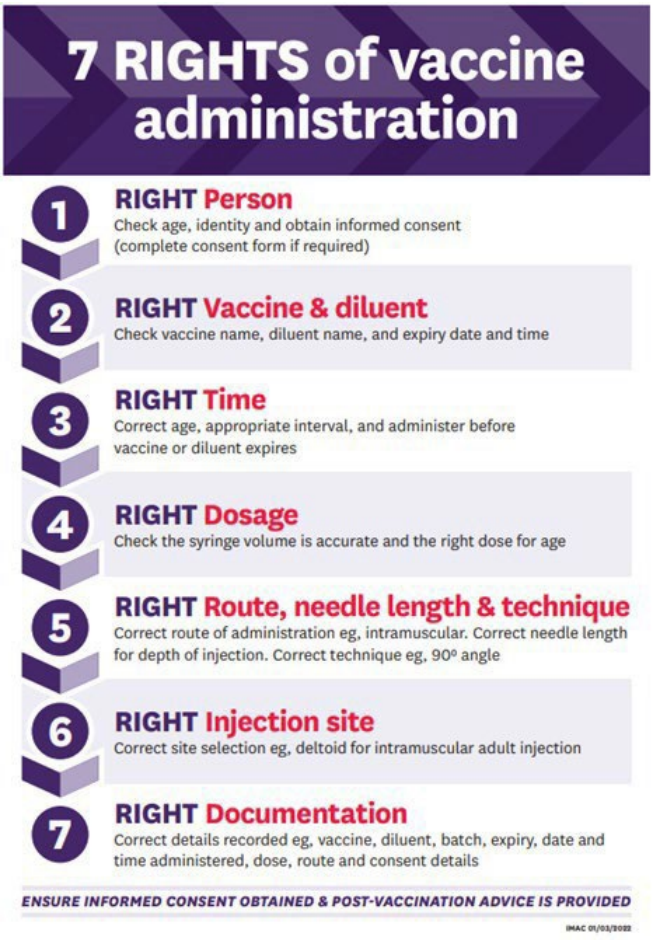
- Informed consent must be gained at every vaccination event or for each antigen
- Cover all aspects of the informed consent process
- Ensure the consumer and/or whānau understands all the information.

Vaccine timing

On-time vaccination supports best protection. For information on guidance for early administration, see Early administration of vaccine factsheet or contact 0800 IMMUNE (0800 466 863) for advice.

Guidance on vaccine administration

- Injectable vaccines should be administered in healthy, well-developed muscle, in a site as free as possible from the risk of local, neural, vascular and tissue injury. Incorrectly administered vaccines can contribute to poor vaccine uptake, injection site nodules or sterile abscesses, and increased local reactions.
- For needle length and gauge guide see page 3 or refer to Table 2.8 in the *Immunisation Handbook*.
- Administer intramuscular (IM) injections at a 90-degree angle to the skin and subcutaneous (SC) injections at a 45-degree angle to the skin.
- Cleaning of the site is not required unless the site is visibly dirty; a dirty injection site may be washed with soap, water and then dried before use. If an alcohol swab is used, allow it to dry for 2 minutes.
- Plasters are not used routinely but should be available for site identification or if requested.

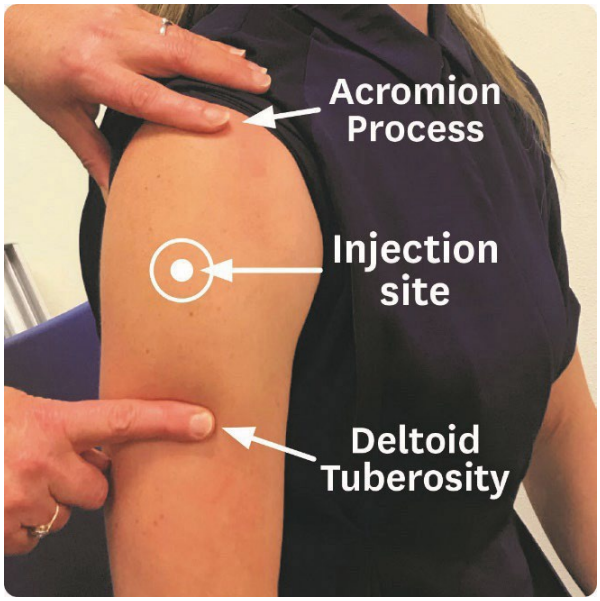


Deltoid landmarking

From 3 years of age to adulthood, the deltoid muscle is the preferred administration site for vaccination, and can be used from 12 months if there is sufficient muscle bulk.

The consumer should be seated with their arm fully exposed and hanging loosely at their side.

- Vaccinator landmarks the vaccination site by locating the acromion process (highest point of the shoulder) and the deltoid tuberosity (lower deltoid attachment point)
- Injection site is halfway between these landmarks
- Visually check this is the bulkiest part of the muscle



Needle enters at 90-degree angle to skin. Inject vaccine smoothly, pause before needle withdrawal to prevent tracking of vaccine.

Avoid bunching (unless required due to consumer size) as this increases risk of inadvertent (SC) injection.

If giving two IM injections into the deltoid, separate by at least 2cm and document upper/lower or anterior/posterior.

Usually, a maximum of two IM injections would be given into the deltoid at any one event.

Vastus lateralis (VL) landmarking

When preparing an infant or young child for vaccination, it is important that the vaccinator is confident in their approach and gives clear instructions on how to hold the infant and what to expect.

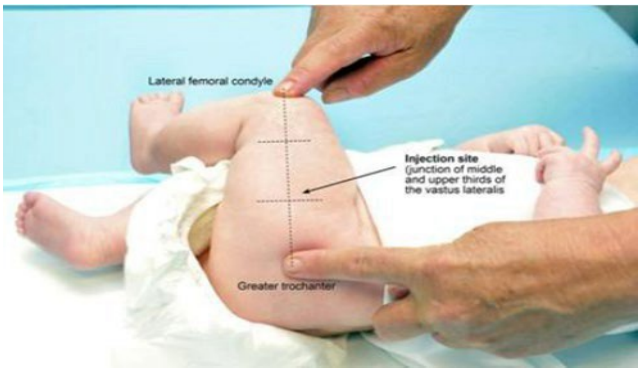
It is recommended that pēpi and tamariki are held comfortably by a parent/caregiver during vaccination.

Giving the opportunity to feed pēpi is recommended before, during and after immunisation.

To locate the injection site, undo the nappy, gently adduct the flexed knee and landmark the vaccination site:

- Find the greater trochanter and the lateral femoral condyle
- Section this into thirds and run an imaginary line between the centres of the two markers
- Injection site is at the junction of the upper and middle thirds and slightly above the imaginary line, in the bulkiest part of the muscle (as pictured below).

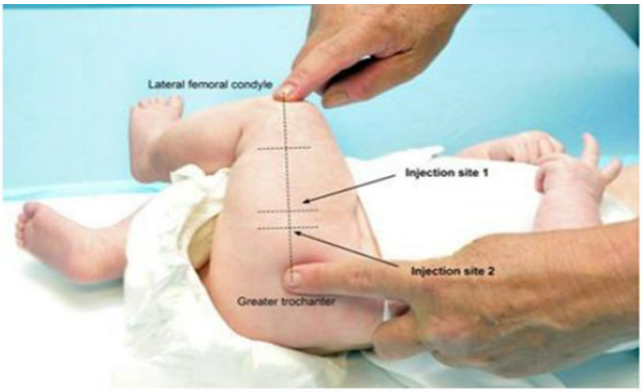
In circumstances such as hip spica, call 0800 IMMUNE for advice.



Concomitant vaccination in the same VL

If giving three IM vaccinations to pēpi under 12 months of age (e.g., 5-month immunisation), you will need to give two of the injections in the same leg. Separate each by at least 2cm, above and just below the top and middle junction, as indicated on picture below.

Note: Do not use the deltoid in infants under 12 months of age.



VL site and adults

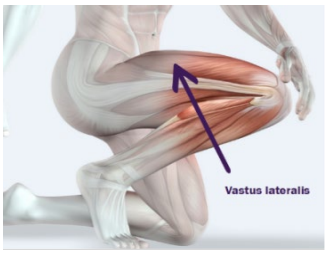
Consideration may be given to the VL site as an alternative vaccination site in older tamariki and adults.

This is usually requested by consumers following breast cancer surgery and/or lymph node removal.

Landmarking details follow same principles as for pēpi.

A 21-22 G x 38mm needle is usually used for adults.

Note: this is also the site for adrenaline administration, so all vaccinators should be familiar with it.



Age	Site	Gauge & length	Rationale
Intramuscular injection			
Birth	Vastus lateralis	23-25 G x 16mm	
6 weeks	Vastus lateralis	23-25 G x 16 or 25mm	Choice of needle length will be based on the vaccinator's clinical judgement
3-12 months	Vastus lateralis	23-25 G x 25mm	A 25mm needle will ensure deep IM vaccine deposition
12 months – 3 years	Deltoid Vastus lateralis	23-25 G x 16mm 23-25 G x 25mm	The vastus lateralis site remains an option in young children when the deltoid muscle bulk is small and multiple injections necessary
3–7 years	Deltoid Vastus lateralis (alternative)	23-25 G x 16mm 23-25 G x 25mm	A 16mm needle should be sufficient to effect deep IM deposition in the deltoid
Children >7yrs adolescents and adults	Deltoid Vastus lateralis (alternative) Very large or obese	23-25 G x 16mm or 23-25 G x 25mm As per IHB: Deltoid 21-22G X 38mm	A 25mm needle will usually affect deep IM deposition in the deltoid Use clinical judgment to ensure needle length is appropriate to reach muscle
***Note:** Longer needles do not cause more discomfort, because skeletal muscle has a poor supply of pain fibres compared with skin and subcutaneous tissue. Good deposition into the muscle is important for vaccine effectiveness, so select a longer needle (e.g., 38mm) for larger arms.*			
Subcutaneous injection			
From 12 months	Deltoid	25-26 G x 16mm	Insertion angle of 45° is recommended

After vaccination

All sharps must be disposed of immediately in an approved sharps container. Never place a used syringe and needle into the kidney dish.

If you forget to take the sticker off the syringe prior to vaccine administration, never reach into the sharps bin to retrieve it. Refer to the batch number and expiry date on the vaccine box instead.

Document the following information in the consumer notes or on the vaccine record:

- that the consumer was well
- any known allergies or contraindications
- informed consent obtained (including from who)
- that they were advised to wait 15 minutes
- resources provided
- vaccine name, batch and expiry, injection site, route, needle length and gauge
- details of any adverse event(s) following immunisation.

Record details in the Well Child Tamariki Ora book or other consumer-held records: vaccines given, injection site, and route used. Vaccines given are also recorded on AIR. Prompt data entry at the time of the vaccination event is strongly recommended.

Provide post-vaccination advice

Advice needs to be given verbally and in writing.

- Review expected responses and what to do
- Discuss when and how to seek help, including Healthline and after-hours medical service if concerned. This must include contact details
- Provide immunisation information (e.g., Aftercare sheet NIP8866 or HE2505 or resource appropriate for that immunisation event)
- Check on consumer and whānau prior to leaving and check the injection site if appropriate.

Common questions

Do I need to expel the air in a prefilled syringe?

No. Do not expel air if the needle is fixed (e.g., with an influenza vaccine). This prevents tracking the vaccine through the skin and subcutaneous tissue, thereby reducing the risk of local reactions.
When the needle is not fixed, attach an appropriate administration needle. Do not expel the air.

Do I expel air in a reconstituted vaccine?

For reconstituted vaccines, expel the air until the vaccine is at the level of the syringe hub, then change the needle. Do not expel the air contained in the new needle (giving needle) as this may increase reactogenicity.
For COVID-19 3mcg vaccine, follow specific advice.

How do we administer vaccines to consumers with bleeding disorders or who on blood thinning medication?

Vaccines can be administered to people on anticoagulants such as dabigatran, enoxaparin, heparin, ticagrelor and warfarin. SC route is the preferred option where the datasheet allows, to reduce risk of haematoma.
Note: Site selection and landmarking is the same for IM or SC deposition, deltoid is the preferred option. For vaccines that do not have the SC option, administer IM. After vaccination, ask consumer to apply firm pressure over the injection site without rubbing for 10 minutes to reduce the risk of bruising.
For consumers with haemophilia who are receiving clotting factor replacement or a similar therapy, vaccines should be given as soon as possible after the treatment. Vaccines should be given in the same way as they would be for those on anticoagulants. Specialist advice is recommended.

Anaphylaxis kit minimum requirements:

All vaccinators must hold a current appropriate CPR and be familiar with and have access to adrenaline and associated administration equipment in their clinical area. As a minimum, an emergency kit should contain:

- adrenaline 1:1,000 (at least 3 ampoules) and dosage chart
- syringes: 1.0mL (a minimum of 3; tuberculin not insulin, as the insulin needle is too short for IM injection)
- needles: a range of needle lengths and gauges, including 23 or 25 G × 25mm, 22 G × 38mm

It is also necessary to have on hand:

- adult and paediatric bag valve mask resuscitator (e.g., Ambu bag)
- access to a telephone

All vaccinators providing immunisation services need to have a minimum of two people present. Of these, one must be an authorised or pharmacist vaccinator; the other must be a competent adult who is able to call for emergency support and has a CPR basic life support certificate.

For more information see Chapter Two of the *Immunisation Handbook*.

CALL 0800 IMMUNE (0800 466 863) for clinical advice