

# Intramuscular Injection

Infants and children may require an intramuscular injection for a variety of reasons, such as intramuscular antibiotics or routine vaccinations. Paediatric intramuscular injections must be administered into muscles large enough to accommodate the medication and avoid major nerves or blood vessels. All injections require consent from the caregiver. For most medications, verbal consent will suffice. Immunisations must have documented written consent.

## 1 GATHER EQUIPMENT



alcohol wipe



drawing up needle



needle for injection  
(23 or 25 gauge)



syringe



dressing

\*ensure you don the appropriate PPE prior to undertaking the procedure

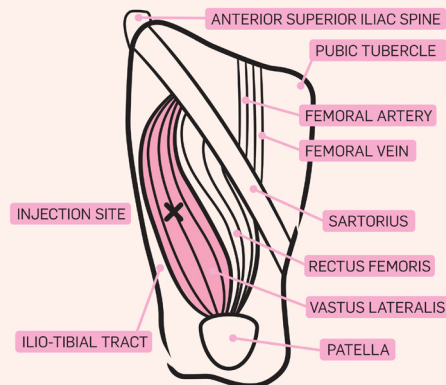
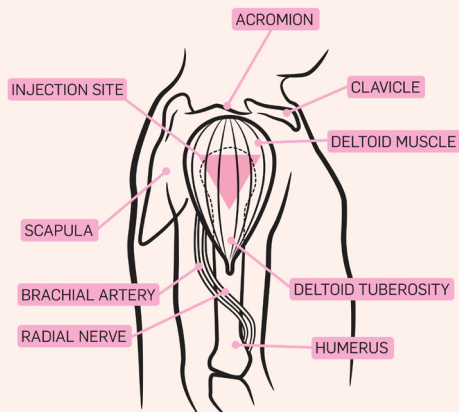
## Guide to maximum volume of to be injected into muscular tissue.

Muscle Group		Birth to 18 months	18 months to 3yrs	3 - 6 years	6 - 15 years	> 15 years
	Vastus Lateralis	0.5 mL	1 mL	1.5 mL	1.5 - 2mL	2-2.5 mL
	Deltoid	Not Recommended	0.5ml (only if vastus lateralis unavailable)	0.5 mL	0.5 mL	1 mL

For information on anatomical markers used to identify the Vastus Lateralis and Deltoid injection sites:

[Australian Immunisation Handbook: Vastus Lateralis injection site on the anterolateral thigh](#)

[Australian Immunisation Handbook: Deltoid injection site](#)




**2** PREPARE

Prepare medication according to instructions in the relevant medication preparation guide.




**3** PROCEDURE

Position the child to allow for access to the appropriate muscle site (see table from page 1).




**4**

Clean the skin with an alcohol wipe. Wait for the skin to dry.



**5**

With the injecting needle, pierce the skin at an angle of 90 degrees. Inject the medication into the muscle.




**6**

Remove and discard needle and syringe into sharps container.



**7**

Apply dressing to injection site.



It is recommended that filter needles are used to draw up medications in glass vials.

Lidocaine (lignocaine) may be used as the diluent for some medications if compatible. It must be ordered by the medical officer.

It is not recommended to aspirate needle on insertion.

The online version of the [RCH Paediatric Injectable Guideline](#) provides directions for the preparation of intramuscular medications. The hard copy does not.

**ALERT**

Always check for allergies prior to medication administration.

Seek the prompt advice of a senior clinician if child displaying any adverse effects suggestive of anaphylaxis. These include but are not limited to: facial swelling, vomiting and rash. Refer to the [Allergy and Anaphylaxis Guideline](#) for management of anaphylaxis.

**Tips in Children**

- Topical anaesthetics can be used in advance to minimize procedural discomfort.
- To minimise discomfort, consider the use of Sucrose 24% in infants. A medical order and parental consent is required prior to use. At some sites Sucrose 24% is a nurse initiated medication - check your local policy or procedure. See the [Sucrose 24% Skill Sheet](#) for more information. If the solution amount is greater than the recommended volume the muscle can take (see table on page 1), the volume may need to be administered across two separate sites in two separate needle and syringes.



## For further information:

### Information on Intramuscular Medication Preparation:

[The Australian Immunisation Handbook - Administration of Vaccines](#)  
[Australian Medicines Handbook: Children's Dosing Companion \(QH only\)](#)  
[CHQ Procedure: Medication Administration \(QH only\)](#)  
[RCH: Paediatric Injectable Guidelines \(QH only\)](#)

### Clinical Guidelines, Procedures & Forms:

[Queensland Paediatric Emergency Care Guideline: Allergy and Anaphylaxis Guideline](#)  
 Queensland Paediatric Emergency Care: Adrenaline Skill Sheet (in production)  
[CHQ Immunisation Consent Form](#)  
[CHQ Pre-Vaccination Screening Checklist](#)  
[CHQ Tetanus Prophylaxis in Wound Management Guideline \(QH only\)](#)

### Video:

[Paediatric Intramuscular Injection](#)

## References:

- Australian Technical Advisory Group on Immunisation (ATAGI). (2022) Administration of vaccines. The Australian Immunisation Handbook. Accessed February 15, 2023 from <https://immunisationhandbook.health.gov.au/contents/vaccination-procedures/administration-of-vaccines>.
- Australian Technical Advisory Group on Immunisation (ATAGI). (2018) Figure. Figure. Anatomical markers used to identify the deltoid injection site. The Australian Immunisation Handbook. Accessed February 15, 2023 from <https://immunisationhandbook.health.gov.au/resources/figures/figure-anatomical-markers-used-to-identify-the-deltoid-injection-site>.
- Australian Technical Advisory Group on Immunisation (ATAGI). (2018) Figure. Vastus lateralis injection site on the anterolateral thigh. The Australian Immunisation Handbook. Accessed February 15, 2023 from <https://immunisationhandbook.health.gov.au/resources/figures/figure-vastus-lateralis-injection-site-on-the-anterolateral-thigh>.
- Children's Health Queensland Hospital and Health Service. (2022, July 25). Medication Administration. Accessed February 15, 2023 from [https://qheps.health.qld.gov.au/\\_data/assets/pdf\\_file/0015/2122224/proc\\_01039.pdf](https://qheps.health.qld.gov.au/_data/assets/pdf_file/0015/2122224/proc_01039.pdf).
- Children's Health Queensland Hospital and Health Service. (2021, November 29). Pharmacological Procedural Pain Management. Accessed February 15, 2023 from [https://qheps.health.qld.gov.au/\\_data/assets/pdf\\_file/0031/2372755/proc-00303.pdf](https://qheps.health.qld.gov.au/_data/assets/pdf_file/0031/2372755/proc-00303.pdf).
- Hockenberry, M. & Wilson, D. (2018). Wong's Nursing Care of Infants and Children. (11th ed.) St Louis: Mosby.
- Plover, C. (2021). Paediatric Injectable Guidelines. 2021 Ed. The Royal Children's Hospital. Accessed February 15, 2023 from <https://pig.rch.org.au/monographs/>.

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- Providing care within the context of locally available resources, expertise, and scope of practice.
- Supporting consumer rights and informed decision making in partnership with healthcare practitioners including the right to decline intervention or ongoing management.
- Advising consumers of their choices in an environment that is culturally appropriate and which enables comfortable and confidential discussion. This includes the use of interpreter services where necessary.
- Ensuring informed consent is obtained prior to delivering care.
- Meeting all legislative requirements and professional standards.
- Applying standard precautions, and additional precautions as necessary, when delivering care.
- Documenting all care in accordance with mandatory and local requirements.

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