



## SECTION 11: CARE OF THE CHILD WITH DIABETES

### 11.3 Administration of Insulin

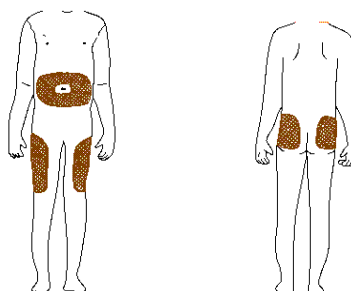
#### 11.3.1 Administration of Single Dose Insulin

##### Aim

1. To administer single dose insulin so as to reduce the risk of complications.
2. To educate the child and/or parent/s in the safe administration of insulin.

##### Key Points

1. **Do not inject insulin if the patient has a blood glucose level of less than 4 mmol/L.**
2. Insulin vials/pens/cartridges are *single patient* use only. The insulin must be labelled for the specific patient it is intended. Label with date and time of opening.<sup>1</sup>
3. Store new (unopened) insulin in the refrigerator and remove 30 minutes prior to administration. Insulin injected at room temperature reduces the risk of local irritation and pain.<sup>2</sup>
4. Insulin currently in use can be kept at room temperature (below 25°C) but must be discarded 28 days after opening.<sup>3</sup> Humulin® cartridges, when stored at room temperature must be discarded after 21 days after opening.<sup>4</sup>
5. When the vial/cartridge/pen is no longer required by the patient it must be disposed of immediately.<sup>1</sup>
6. Where possible use a needle length of 6mm and inject at a 90° angle to the skin<sup>5</sup>
7. If using an 8mm needle it is essential to use a lifted skin fold and inject at an angle of 45° to the skin.<sup>6-9</sup>
8. Rotate the sites of insulin injection. Usual sites in children are the abdomen, thigh and buttocks.



**Equipment**

Insulin syringe 0.5 mL (1.0mL syringe may be needed if the dose is greater than 50 units.)

Vial of prescribed insulin

Medication chart

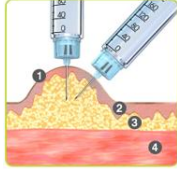
Sharps Container

Diabetes Ward Monitoring Chart

**Procedure**

Apply principles of aseptic non touch technique for this procedure.

Steps	Additional Information
Use only insulin labelled with the patient's name. Ensure the insulin is in date.	Each patient should have a labelled container with their personal insulin.
If using Protaphane or Humulin NPH, rotate the bottle.	Required to re-suspend the insulin.
Clean the rubber top of the insulin bottle with alcohol swab.	Minimises the risk of contamination by the needle when passing through the rubber.
Pull back plunger of syringe and draw in air equal to dose of insulin.	This step is not required if using a 3mL cartridge.
Insert needle into the insulin bottle and inject the air.	This step is not required if using a 3mL cartridge.
Leaving needle in bottle, invert bottle, draw back insulin to 5 units.	
Push the volume back into the bottle.	This removes air from the dead space of the syringe, preventing air bubbles.
Holding the syringe at eye level; draw down correct dose of insulin.	
Remove the needle from the bottle.	
Select injection site: <ul style="list-style-type: none"> <li>• front and sides of thighs</li> <li>• upper outer aspects of buttocks</li> <li>• area around umbilicus</li> </ul> <b>Note:</b> Upper arms are not recommended for use in children.	Injection sites should be rotated to prevent lipohypertrophy or lipoatrophy. Lipohypertrophy delays the absorption of Insulin. <sup>2, 5, 10, 11</sup> See diagram of sites.

Steps	Additional Information
Clean skin only if visibly soiled or dirty.	Allow skin to dry if alcohol swab is used.
<p>Inject insulin:</p> <ul style="list-style-type: none"> <li>• Lift a skin fold at the injection site.</li> <li>• Inject the insulin at: <ul style="list-style-type: none"> <li>– 90° angle for shorter needles 4-6mm<sup>5</sup></li> <li>– 45° angle if using 8mm needle<sup>7-9</sup></li> </ul> </li> <li>• Hold the syringe in the skin tissue for six seconds.<sup>3</sup></li> <li>• Withdraw the needle</li> <li>• Release the skin fold</li> <li>• Dispose of needle immediately into sharps container</li> </ul> 	<p>To avoid inadvertent intramuscular injection;</p> <p>IM insulin is absorbed more quickly and may lead to hypoglycaemia.<sup>11, 12</sup></p> <p>Ensures all the insulin is delivered. Limits the risk of insulin leaking.</p>
Record on the Diabetes Ward Monitoring Chart and sign the medication chart.	

Related policy, procedures and guidelines.

[PNPM 2.5.5](#) Subcutaneous Injections

[PNPM 11.3.2](#) To Administer Mixed Insulins in One Injection

[PNPM 2.1.2](#) Checking and Administration of Medications.


Useful resources.

[Australasian Paediatric Endocrine Group. \(APEG\)](#) National evidence based clinical guidelines for type 1 diabetes in children, adolescents and adults

### References:

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Document Owner:	Clinical Nurse Consultant, Diabetes		
Reviewer / Team:	Diabetes Educators; Endocrine Team; Ward 9A CNM		
Document Sponsor:	Nursing Director, PMCCU		
Date First Issued:	January 1974	Version: 2	
Last Revised:	May 2014	Review Date:	May 2017
Endorsed by:	Paediatric Nursing Practice Committee	Date: 3 June 2014	
Standards Applicable:	NSQHS Standards: 		
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