

PAEDIATRIC NURSING PRACTICE MANUAL
SECTION 5

SPECIMEN COLLECTION

5.1 BLOOD

5.1.1 COLLECTION OF BLOOD SPECIMEN BY FINGER PRICK

Aims

1. To obtain a blood sample for diagnosis.
2. To obtain the best possible sample, minimise procedural pain/discomfort and avoid complications.

Key points

1. For blood glucose monitoring also refer to [PNPM 11.4.1](#).
2. For infants under 6 months refer to [PNPM 5.1.2](#) Collection of Blood Specimen by Heel Stab.
3. Lipids may interfere with blood samples. Refer to Parenteral Nutrition [PNPM 2.7](#) pg 4 for requirements to discontinue lipids before sampling.
4. In the absence of evidence, or consensus of experts regarding the ideal age for finger prick testing, your clinical judgement must be used to determine the most appropriate site. Consider the infants gestational age, tissue mass at proposed site and the suitability of a toe as an alternative site.
5. This is a clean aseptic technique. Follow Infection Control [Policy 2.1](#) Standard Infection Control Procedures.
6. Use of petroleum jelly eg. Vaseline® is not recommended as it can affect results and clog equipment.^{1,2}
7. If unsure about the specific test requirements contact the appropriate laboratory, [Pathology Handbook](#) and/or the [Pathology Test Directory](#).
8. Safety engineered lancet device is recommended.

Indications:

- blood gas analysis¹
- biochemistry tests ie. U&E's, antibiotics assays^{1,2}
- blood glucose monitoring³
- full blood picture

Relative Contraindications

Not recommended for:

- test(s) requiring a total sample size of >1mL^{2,3}
- coagulation samples³
- blood cultures
- chromosomal studies
- when a non haemolysed sample is required^{2,3}

Critical factors in preventing complications are:

- selecting the appropriate automated safety lancet device¹ – see table below
- selecting the correct puncture site
- rotating the sites; to avoid loss of sensitivity and/or painful and hard skin forming.¹
- avoiding bruises, broken skin, infection, impaired skin integrity, previous puncture holes, areas of poor perfusion and/or oedematous areas.

Suitable Automated Lancet Devices⁴**BD[®] Microtainer Contact-Activated Lancets**

Needle size 21g

Blade depth 1.8mm

Suggested use; medium blood volume

**BD[®] Microtainer Contact-Activated Lancets**

Blade width 1.5mm

Blade depth 1.8mm

Suggested use; high flow blood volume

**BD[®] Microtainer[®] Genie[™] Lancet**

Blade width 1.5mm

Blade depth 2.0mm

Suggested use; medium to high flow blood volume

**BD[®] Microtainer[®] Genie[™] Lancet**

Width 2.0mm

Depth 2.0mm

Suggested use; medium blood flow volume

**Accu-Chek[®] Safe-T-Pro Lance⁵**

Adjustable; 3 depth settings

Used for Diabetic patients; blood glucose and blood ketone testing

**Equipment**

70% isopropyl alcohol swab

Appropriate automated safety lancet device

Sterile cotton ball(s) or gauze

Disposable gloves

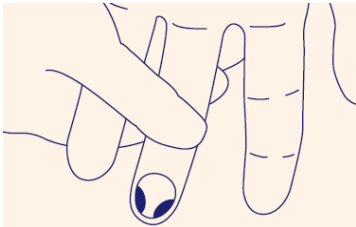
Pathology request form – *to be completed by medical staff*Relevant blood specimen bottle(s)/capillary tube(s)/glucose stix – *check expiry dates*

+/- Elastoplast

+/- Adhesive tape

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Collection of Blood Specimen by Finger Prick
 Blood
 Paediatric Nursing Practice Manual (PNPM)
 Princess Margaret Hospital
 Perth, Western Australia

PROCEDURE	ADDITIONAL INFORMATION
Positively identify the patient.	Refer to the Pathology Handbook Section 2 for guidance.
Consider need for appropriate comfort measures/pain relief.	
Ensure the finger is warm enough. ^{4, 6} If cool or poorly perfused, apply extra clothing or warm the finger with a soft cloth moistened with warm water prior to the procedure.	Blood taken from cool, poorly perfused sites can result in inaccurate results. ⁴ Warming the limb will dilate the capillaries and increase blood flow.
Position patient to allow easy access to the chosen site. Select a puncture site on the lateral aspect of a finger. Don gloves.	Do not use little finger, as tissue depth is insufficient to prevent bone injury. ⁴ 
Wipe the finger with alcohol swab. Do not use alcohol swabs for diabetic patients see PNPM 11.4.1 Allow to dry.	Puncturing the skin before the finger is dry may adversely affect the test results by diluting the sample and/or causing haemolysis. ^{1, 4, 6, 7}
Hold puncture site downward to aid flow via gravity. ^{4, 6}	
Puncture the finger at 90° angle to the skin with one continuous deliberate motion. Note; Safety lancets will self activate when pressed onto the finger. Do not remove the device until the audible click has been heard.	Do not use a scalpel blade. Never reuse a lancet.
Relax tension and wipe away initial blood flow with cotton wool or gauze. ^{6, 8}	Eliminates cellular debris and residual alcohol which can alter test results. ^{1, 6, 7}
As drops of blood form at the puncture site, collect into tube by touching the feeder to the droplet. ⁶	Do not use the collection tube to scoop along the skin, as this will damage the cells and cause inaccurate results.

PROCEDURE	ADDITIONAL INFORMATION
<p>For a capillary blood gas sample ensure there are no air bubbles.</p> <p>Rotate capillary blood gas tube back and forth between the tips of your fingers.</p> <p>Fill tube at least 2/3rds full.</p> <p>Note: For heparinised capillary blood gas tubes collect 1/3rd and then mix, by gently running the blood up and down the tube several times.²</p> <p>Continue collection until tube is 2/3rds full.</p>	<p>Keeping the capillary tube horizontal or angling the tube upwards can help to prevent air bubbles.</p> <p>To dissolve the dried heparin off the wall of the tube into the blood.²</p> <p>To distribute the dissolved heparin along the tube this mixing process can be repeated several times; during and after collection.²</p>
<p>Intermittently release and reapply the pressure to aid blood flow.</p> <p>Avoid excessive squeezing.</p>	<p>Excessive squeezing can cause haemolysis leading to inaccurate results.^{1, 4, 6}</p>
<p>Wipe the puncture site as required to ensure drops remain well formed and to remove any clots that may be forming.^{7, 9}</p>	
<p>Gently flick or swirl the collection tube to mix the blood as it is collected.</p>	<p>Do not shake as this will damage the blood cells and lead to inaccurate results.</p>
<p>If more than one sample is required, fill the blood tubes in the order specified in the Pathology Handbook.</p>	<p>Refer to the Pathology Handbook for specific requirements (order of draw, pathology manual, general guidelines section 2.6 pg 12-13).</p> <p>Avoids contamination from tube additives.^{8, 9}</p>
<p>Cap and gently invert a few times once correct quantity obtained.⁶</p>	
<p>Once the sample is obtained</p> <p>Place a dry cotton wool ball against the site and apply pressure for 1-2 minutes.¹⁰</p>	<p>For children who are thrombocytopenic or on anti-coagulant therapy a longer period of gentle pressure may be required.¹¹</p>
<p>If the site is bleeding, apply an elastoplast or cotton wool and tape.</p>	<p>If used on an infant, remove as soon as no longer required to avoid accidental choking.</p>
<p>At the bedside; label samples correctly, complete the collection details on the request form.</p>	<p>Refer to Pathology Handbook, General Guidelines Section 2.</p>
<p>Transport to laboratory in a Biohazard bag.</p>	

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