

PAEDIATRIC NURSING PRACTICE MANUAL
SECTION 11

CARE OF THE CHILD WITH DIABETES

11.4 BLOOD GLUCOSE

11.4.1 BLOOD GLUCOSE MONITORING

Aim

To ensure that blood glucose monitoring outside the laboratory provides clinically useful and accurate results, in order to make informed treatment decisions.

Key points

1. Blood glucose monitoring serves the purpose of monitoring daily blood glucose levels and detecting acute changes such as hypoglycaemia and hyperglycaemia.¹
2. Nurses working in areas where blood glucose monitoring is routinely carried out must receive formal instruction in the procedure before undertaking it.
3. **Calibration:** Optium Xceed[®] and Optium Freestyle[®] blood glucose meters are currently used across WA Health. It is important that the meters are correctly calibrated and have ongoing quality control. Check ward or unit based control - using control solutions daily. An additional external monthly quality control (Medi Pro) is also performed. Control solutions can be ordered from pharmacy.
4. Unless otherwise clinically indicated or documented, check blood glucose levels before all meals and snacks, midnight and 0300 hours,.

Equipment

Optium (Xceed or Freestyle) blood glucose monitor
Hospital approved safety lancet (single use)
Sharp disposal container
Non sterile gloves
Tissue

PROCEDURE	ADDITIONAL INFORMATION
<p>Ensure that the calibration (LOT) codes of the meter and test strip match.²</p> <p>Ensure that the correct time and date is displayed on the meter.</p>	<p>The monitor should be coded with the calibration test strip found with each new box of blood test strips.</p> <p>An error will be displayed if out of date test strips are used.</p>
<p>Ensure that the child/adolescent's hands are washed, completely dry and warm.</p>	<p>This minimises risk of contamination. Warm water helps the flow of blood.²</p> <p>Do not use alcohol swabs.</p>
<p>Don gloves - as per infection control policy.</p>	

PROCEDURE	ADDITIONAL INFORMATION
Insert the test strip into the blood glucose meter.	
Place lancet gently to the outer edge of the tip of the finger.	A patient may use their own lancet device (<i>single person</i>), but <i>must</i> dispose of their own lancet to prevent needle stick injury. A new sterile lancet must be used each time.
If there is inadequate blood, gently massage the finger from the base to the tip. Avoid squeezing the finger. ^{2,3}	
Touch the drop of blood to the test strip, hold finger in place until the test starts. ² If the test fails to start, apply a second drop of blood within 30 seconds.	Meter will automatically start the test if sufficient blood is obtained.
Wipe excess blood off finger with a tissue.	
Once the result is shown, record on the blood glucose monitoring chart. If BGL >15mmol/L check for ketones, as per section 11.2. If BGL < 4mmol/L treat as per section PNPM 11.7.1 or Treatment of Mild to Moderate Hypoglycaemia in Children with Type One Diabetes or section PNPM 11.7.3 Mild and Moderate Hypoglycaemia – Insulin Pumpers, if the child is using an insulin pump.	
Dispose of lancet as per hospital protocol.	

References:

1. Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long term complications in insulin dependent diabetes mellitus [Level II]. New England Journal of Medicine.329(14):977-86; 1993.
2. Abbott Diabetes Care. Freestyle Optium Blood Glucose test strips; Information leaflet. [Manufacturer's instructions]. Witney, UK: Abbott Diabetes Care Ltd; 2010.
3. Abbott Diabetes Care. Easy Touch Lancing Device: Instruction leaflet. [Manufacturer's instructions]. Alameda, USA: Abbott Diabetes Care Inc; 2006.

Bibliography:

Australasian Paediatric Endocrine Group. Clinical practice guidelines: Type 1 Diabetes in Children and adolescents. [Expert opinion] NHMRC. 2005.