



# CAPILLARY BLOOD GLUCOSE MONITORING

## Key Terms

Capillary blood glucose

Glycaemia

Hypoglycemia

Hyperglycemia

Polydipsia

Polyphagia

Polyuria

## CAPILLARY BLOOD GLUCOSE MONITORING

### INTRODUCTION:

Blood glucose monitoring is a way of testing the concentration of glucose in the blood (glycemia). Particularly important in the care of diabetes mellitus, a blood glucose test is performed by piercing the skin (typically, on the finger) to draw blood, then applying the blood to a chemically active disposable 'test-strip'. Most people with Type 2 diabetes test at least once per day. Diabetics who use insulin (all Type 1 diabetes and many Type 2s) usually test their blood sugar more often (3 to 10 times per day), both to assess the effectiveness of their prior insulin dose and to help determine their next insulin dose. Capillary blood glucose monitoring is most frequently recommended for people with diabetes. Capillary blood glucose tests are simple and quick to perform; they require just a simple stick to the fingertip, a small drop of blood and a few minutes of patience.

### DEFINITION:

Measuring the blood glucose level with the help of a portable glucometer.



**Picture 1: Blood Glucose Testing**

**PURPOSE:**

- Capillary blood glucose are used to check the blood glucose level
- Capillary blood glucose tests are simple and quick to perform

**EQUIPMENTS REQUIRED:****A clean tray containing,**

- Blood glucose meter
- Testing strips/reagent strips
- Sterile lancet
- Cotton balls
- Alcohol swabs
- Disposable gloves



**Picture 2: Equipment'srequiredfor Capillary Blood Glucose Monitoring**

**PROCEDURE:****S.NO NURSING ACTION**

1. Check physician's order
2. Review manufacturer's instructions for glucometer use.

**RATIONALE**

- Confirms time for checking blood glucose
- Helps in doing procedure accurately.

- |    |                                                                                                                |                                                                                                     |
|----|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 3. | Gather articles at the bedside                                                                                 | Provides an organized approach during the procedure                                                 |
| 4. | Explain the procedure to the patient.                                                                          | Helps to gain patient's co-operation.                                                               |
| 5. | Have the patient wash hands with soap and water. Use warm water if available.                                  | Washing hands reduces transmission of microorganisms.                                               |
| 6. | Position the patient comfortably in a semi-fowlers position or upright position.                               | Increases blood flow to puncture site.                                                              |
| 7. | Wash hands. Don disposable gloves.                                                                             | Prevents spread of microorganisms.<br>Gloves protects from exposure to blood and body fluids.       |
| 8. | Remove test strip from the container and recap container immediately.                                          | Immediate recapping protects strips from exposure to light and discoloration.                       |
| 9. | Turn monitor on and check whether the code number on strip matches with the code number on the monitor screen. | Matching the code numbers on the strip and glucometer ensures that matches is calibrated correctly. |



**Picture: Check the Code Number on the Monitor  
Screen**

10. Take the lancet without contaminating it. Select appropriate puncture site. Aseptic technique maintains sterility.
11. Massage side of finger for adults (heel for children) toward puncture site and wipe with alcohol swab. Massage increases blood flow to the area.
12. Hold lancet perpendicular to skin and prick site with lancet. Holding lancet in proper position facilitates proper skin penetration.



**Picture 3 : Pricking the finger with use of lancet**

13. Wipe away the 1<sup>st</sup> drop of blood from the site. The first drop may impede accurate result because it may contain large amount of serous fluid.
14. Lightly squeeze or milk the puncture site until hanging drop of blood has formed. The blood droplet should be large enough to cover the test pad on the strip and it also facilitates accurate test results.

 **Watch out**

**Patients who require regular blood glucose monitoring, shallow penetration should be encouraged to avoid tissue damage.**

15. Gently touch the drop of blood to pad on the test strip without smearing it. Smearing of the blood will alter results.



**Picture 4: Touching drop of blood to test strip**

16. Insert strip into glucometer according to directions for that specific device. Some devices require that the drop of blood is applied to a test strip that has already been inserted in the monitor. Correctly inserted strip allows glucometer to read blood glucose level accurately.
17. Apply pressure to puncture site using a dry cotton ball. This will stop bleeding at the site.
18. Read blood glucose results displayed on the monitor and inform the patient about results.
19. Turn off the glucometer.
20. Dispose supplies appropriately and discard lancet in sharp's container. Reduces contamination by blood. Sharps must always be handled properly to protect others from accidental injury.



**Watch out**

**Rotate or change sites to allow time for the penetrated site to heal.**

21. Remove gloves and discard. Wash hands.
22. Record blood glucose level in the chart. This facilitates documentation of procedure and provides for comprehensive care.



**Patients should compare their personal glucometer reading with the laboratory measured blood glucose level, every 6-12 months.**

### DOCUMENTATION:

- Document blood glucose level on diabetic chart/critical care master chart.
- Document doctor's order for administration of insulin. [ **Strictly Follow Read Back Policy** ]
- Document the type of insulin and amount of insulin used for the patient.
- Document assessment of capillary blood glucose level after administration of insulin and record it in the nurse's notes in detail.
- Document any signs and symptoms of hypoglycaemia or hyperglycaemia in the nurse's notes.
- Document in nurse's notes, if continuous or intermittent Capillary blood glucose monitoring is used.
- Report if any abnormal findings to the physician.



### PATIENT FAMILY EDUCATION:

Educate the patient and family regarding,

- the significance of monitoring capillary blood glucose level
- the main three signs and symptoms of diabetes Mellitus such as polyuria (increased urination), polydipsia (increased thirst) and polyphagia (increased appetite). Other symptoms include fatigue and weakness, sudden vision changes, tingling or numbness in

hands or feet, dry skin, skin lesions or wounds that are slow to heal, and recurrent infections.

- the use of glucometer for capillary blood glucose in home care set up. This process involves washing hands before the procedure, wearing gloves during the procedure and while handling any devices contaminated with the person's blood, including the test strip and needle. Dispose of the lancet and test strip in appropriate containers and wash hands after the procedure. If the blood glucose meter will be used for multiple people, it should be thoroughly cleaned and disinfected between tests.
- The importance of nutritional management, exercise, pharmacologic therapy.