

EMT Basic and Intermediate
Use of Electronic Blood Glucose Monitoring Devices

Topic: Use of Electronic Blood Glucose Monitoring Devices by Basic and Intermediate Personnel When Assisting an EMT Paramedic

Student Eligibility: Student must be currently certified Massachusetts EMT/B or I. The student must have completed the Paramedic Assistant program (or the course may be presented as part of the Paramedic Assistant program).

Course Format: This will be a one hour course utilizing lecture, demonstration and handout materials, and a hands-on experience with the equipment involved.

Faculty: EMT/P, RN, PA, NP, MD or DO familiar with the Massachusetts Statewide EMS Treatment Protocols regarding the use of Glucose Measuring Devices by EMT/B or I, and with the device utilized by the service.

Reference Material: Massachusetts Statewide EMS Treatment Protocols, Owner's manual supplied by the manufacturer of the equipment.

Testing/Evaluation: Each student will be evaluated through oral means and by observation of the student's performance during the skills phase of the training.

Certification: Although no formal certification is granted, students who complete the program will be permitted to utilize an Electronic Glucose Measuring Device, while working with a Paramedic, in accordance with the Massachusetts Statewide EMS Treatment Protocols.

Curriculum:

Purpose: The purpose of this program is to prepare the student to utilize an Electronic Glucose Measuring Device to measure the blood glucose level of patients identified as appropriate within the Massachusetts Statewide EMS Treatment Protocols.

Learning Objectives: At the conclusion of this program, the student will be able to:

- a) List the protocols where use of an Electronic Glucose Measuring Device is permitted for
EMT-Basic and Intermediate personnel
- b) Identify reasons for and advantages of measuring a patient's blood sugar in the field
- c) Discuss the need to include all elements of the patient assessment in the decision-making process, rather than relying on a single piece of information or test result.
- d) List requirements for device calibration and maintenance for the Electronic Glucose Measuring Device
- e) Demonstrate the ability to accurately calibrate the device
- f) Using the test strips provided, demonstrate the ability to measure a patient's blood glucose using the device
- g) List the steps and describe the technique for obtaining a blood sample from a patient for use with the device

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Program Outline

- I. Why Measure Blood Glucose? 0:05 (0:05)
- A. May identify severity of condition with patient who is suspected of having a blood sugar problem
 - B. May identify problem in patient who is otherwise suffering from “cause unknown” ALOC
 - C. Provides information important in the total evaluation of the patient
 - D. Provides the paramedic with pre-medication information on the patient’s blood glucose
- II. How does the Electronic Blood Glucose Monitor work? 0:15 (0:20)
- *NOTE: this information should be tailored to the device used by the service and should include review of the manufacturer’s instructions*
 - A. Principles of operation
 - 1. How does the machine analyze the sample?
 - B. Maintenance and Calibration Procedures
 - 1. Techniques of calibration
 - 2. How often?
 - 3. Battery maintenance
 - 4. Care and storage : machine and test strips
 - 5. Documentation
 - C. Obtaining a blood sample with the Auto-Let
 - 1. Careful attention to BSI, safety procedures
 - 2. Technique for obtaining the sample
 - 3. Transferring the sample to the machine
 - 4. Disposal of sharps
 - 5. Don’t forget to bandage the patient’s finger!
 - D. Analyzing the blood sample
 - 1. Device operation
 - 2. Importance of time
 - 3. Recording the results
 - E. Completing the process
 - 1. Removal/disposal of blood sample
 - 2. Preparing the machine for its next use
- III. What do the results mean? 0:05 (0:25)
- A. Normal blood glucose range is generally considered to be 80-120 (fasting)
 - B. Be sure to record the result of your test
 - C. We do NOT treat patient’s based on numbers
 - 1. The paramedic will provide treatment based on the TOTAL assessment of the patient’s condition

IV. Practice Session

0:25 (0:50)

Each student will complete a calibration procedure and test sequence under the direct supervision of the instructor. Students may practice use of the Auto-Let device on each other, or may use an appropriate object (apple or other thin-skinned fruit) to simulate obtaining the sample.

V. Conclusion, Q & A

0:10 (1:00)

- A. Blood glucose measurement gives the paramedic an additional piece of information when confronted with a patient who has altered mental status or who has suffered a seizure.
- B. The information obtained can be valuable in determining whether the administration of glucose is appropriate, and may be helpful to the physician in identifying the underlying cause of a patient's problem.
- C. Blood glucose measuring equipment must be properly maintained and calibrated in accordance with the manufacturer's recommendations. Failure to do so may lead to false readings.
- D. EMT's must be cautious when using these devices, since they involve potential exposure to the patient's blood and to the sharp device used to obtain the blood sample. Body substance isolation and proper sharps disposal techniques are important.
- E. While a useful tool, Blood Glucose Measurement provides only one piece of information, and must be combined with the findings of the entire patient assessment in order to provide appropriate patient care.