

Hemocue Hb 201 DM

Hemoglobin Analyzer

*** READ POLICY PRIOR TO
STARTING TUTORIAL**



Before Testing a Patient

❖ ORIENT YOURSELF TO YOUR WORKING AREA

- Locate testing meter & docking station
- Locate testing supplies
 - Microcuvettes
 - Liquid Quality Control solutions
 - Lancets
 - Alcohol swabs
 - 2x2 gauze
 - Gloves
 - Biohazard container
 - Refrigerator for QC solutions
 - IDA Page for your testing location





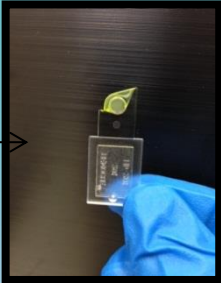

- ❖ Performing a hemoglobin test using the HemoCue Hb 201 DM analyzer is considered **WAIVED** in complexity by the FDA.
- ❖ **PURPOSE:** Rapid quantitative measurement of hemoglobin concentration in peripheral blood at the point of care.
- ❖ -The HemoCue Hb 201 DM system consists of a photometer analyzer with specially designed microcuvettes containing dry reagents in the optical eye.
- ❖ -The hemoglobin measurement takes place in the analyzer, which follows the progress of the reaction until the end point has been reached.
- ❖ -Ten microliters of blood are drawn into the optical eye by capillary action and spontaneously mixed with the reagents.
- ❖ -The HemoCue reader derives hemoglobin results in grams per deciliter from the reaction using Spectrophotometry.

Barcode ID



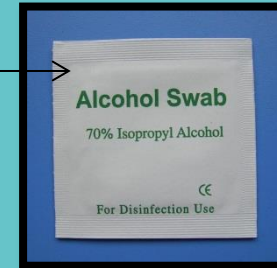
- ❖ Testing personnel are required to take this Initial Orientation and Training, the Initial Competency Exam, and a second Competency Exam within the first year.
- ❖ Competency Exams are then required annually thereafter.
- ❖ Upon completion of the Initial Orientation and Training and Competency Exam, approved staff will be issued a barcode to be able to use the HemoCue Analyzer.
- ❖ This barcode is embedded with unique identifiers specific to each staff member.
- ❖ Barcodes should **never**, under any circumstance, be shared.

Equipment, Reagents and Materials

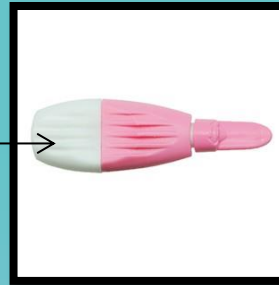
- Analyzer 
- Docking station 
 - ★ Keep meter in docking station when not in use.
- Microcuvettes 
- Liquid Quality control: Level 1 (Lo) and Level 3 (Hi) 

Equipment , Reagents and materials

- Alcohol swab



- Lancet



- 2x2 sterile gauze



- Gloves



Equipment, Reagents and Materials

- ❖ Biohazard container
- ❖ 70% isopropanol or mild soap solution for cleaning the analyzer and laser scan window
- ❖ Refrigerator for Liquid Quality Control storage
- ❖ **Daily Temperature Log** (room and refrigerator)
- ❖ **Daily Maintenance Log**



HemoCue Hb 201 Microcuvettes

- ❖ Microcuvettes are stored at room temperature away from any direct heat source.
- ❖ Microcuvettes are moisture sensitive. **Always keep the container properly closed.**
- ❖ Unopened containers of microcuvettes may be used until the expiration date listed on bottle.
- ❖ Open containers of microcuvettes are stable for three months (90 days) if they are tightly sealed between use.
- ❖ **Always label each opened container with the open date, initials, and the new three month expiration date.**



HemoCue Liquid Quality Control

- ❖ Two Levels: Level 1 (Low control) & Level 3 (High control).
- ❖ An open vial is stable for 30 days when stored at room temperature: 15–30°C.
- ❖ Or is also stable for 30 days when stored in the refrigerator at 2–8°C.
- ❖ **Always write the open date, initials, and new expiration date on the vial.**
- ❖ Unopened controls are stable if refrigerated at 2–8°C until the expiration date on the vial.
- ❖ Control solutions are replaced every 3 months by POCT Services.



Specimen



- ❖ Capillary whole blood (obtained by fingerstick) required and must be tested immediately.
- ❖ Specimen labeling is not required when testing is **performed in the presence of the patient** and **only the sample from one patient is tested at a time.**
- ❖ Otherwise, label all specimens with 2 patient identifiers (patient's full name and date of birth).

Quality Control Testing

❖ Internal Electronic Quality Control (EQC)

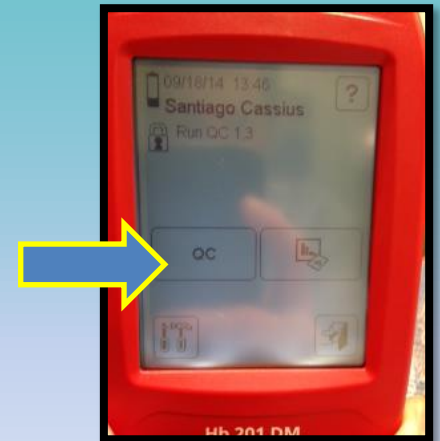
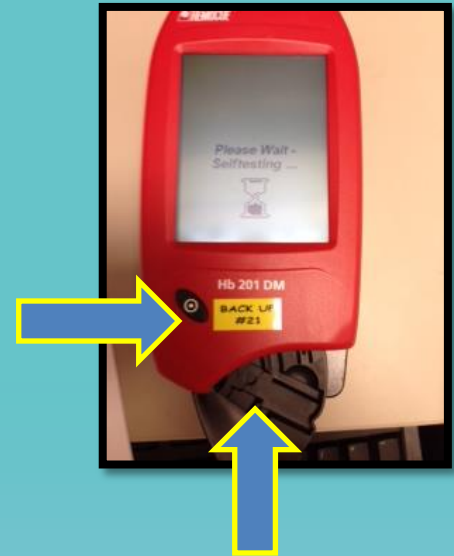
- The HemoCue Hb 201 DM analyzer has an internal Electronic Quality Control performed when analyzer displays “Selftesting...”
- Every time the analyzer is turned on, it will automatically verify the performance of the optronic unit during the “Selftesting” period.



Quality Control Testing

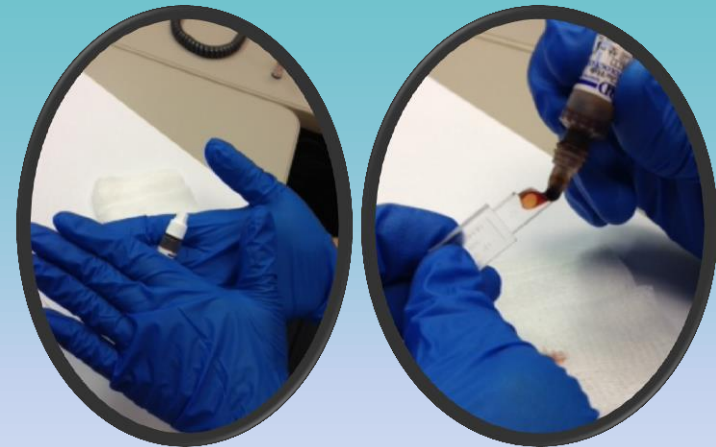
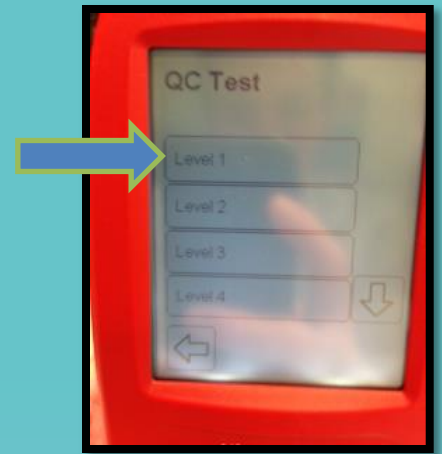
❖ Liquid Quality Controls (LQC)

- Quality Control tests should be performed and passed **every day prior to patient testing.** (The analyzer will lock down at 0300 and will remain locked until QC is performed.)
- Push black button to turn on.
- Pull out cuvette holder.
- After Selftesting is complete, scan your barcode ID.
- Click the QC icon.



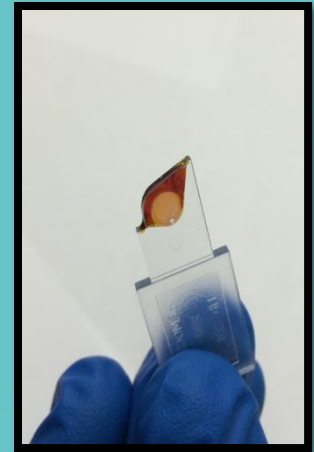
Quality Control Testing

- Click level 1 test.
- Observe universal precautions.
- Wear gloves.
- Take one microcuvette out of the vial.
- Mix the liquid QC thoroughly by gently rolling the vial between your palms.
- Touch the tip of the microcuvette to the hanging drop from the solution vial.



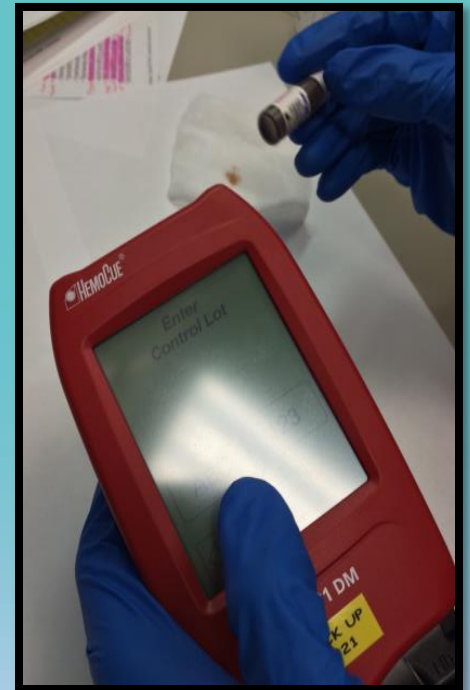
Quality Control Testing

- Gently wipe the edges of the microcuvette on the gauze - avoid touching the opening.
- Examine microcuvette for bubbles.
- Place the filled microcuvette in the cuvette holder.
- Push the cuvette holder into the measuring position (closed).



Quality Control Testing

- Scan the liquid QC barcode.
- Scan microcuvette vial.
- Analyzer will beep and display a numeric result.
- If the result are acceptable press ok.
- You may add predefined comments or add your own if desired.
- If the result failed, QC must be repeated.



Quality Control Testing

- Pull the cuvette holder out to the “loading” position.
- Dispose microcuvette in the biohazard waste container.
- Repeat above procedure for Level 3 QC.



Patient Testing

- Using two patient identifiers (patient's full name and date of birth), verify patient identification, and explain the procedure to patient and/or family.
- Observe universal precautions.
- Turn on the analyzer.



Patient Testing

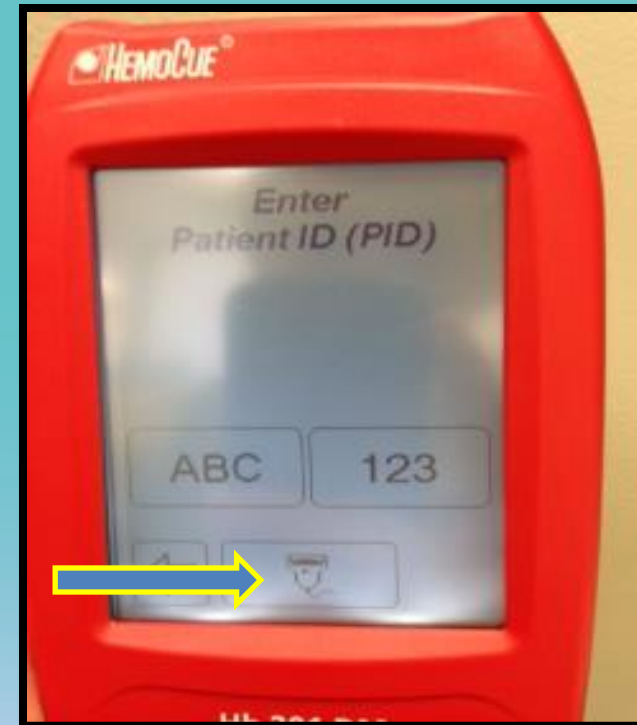
- Scan Operator Bar Code ID.
- Run Liquid Quality Control if it has not been performed.
- To run a patient test, press the Microcuvette symbol.



Patient Testing

- The analyzer will display “Enter patient ID”. Click on the icon to scan the patient ID.
- Scan the patient’s ID band (barcode) or manually enter the patient’s MRN.
- The analyzer will display “Please Fill and Insert a Cuvette”.
- Remove a microcuvette from its vial by sliding it out onto a clean surface.

Reseal container immediately.



Patient Testing

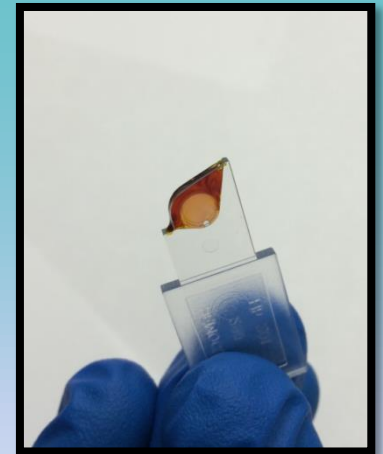
❖ Obtain patient sample by fingerstick:

- After cleaning the patient's finger with alcohol swab and letting dry use a lancet to prick it.
- Wipe away the first 2 or 3 drops of blood with a lint free wipe (gauze).
Do not use cotton balls!
- Apply light pressure towards the fingertip until another drop of blood appears. Do not squeeze the finger.
- Hold the microcuvette with the pointed end away from you.
- Touch the pointed tip of the microcuvette to the drop of the blood droplet.
- Allow the microcuvette to fill by capillary action. **Do not attempt to refill.**



Patient Testing

- Gently wipe the outside of the microcuvette with gauze using a sideways motion. **Do not touch the opening of the microcuvette.**
- Examine the microcuvette for bubbles. If bubbles are present, use a new microcuvette and repeat sampling.
- Place the filled microcuvette in the black cuvette holder and push the cuvette holder to the "MEASURING" position.
- During the measurement the screen will read "Please Wait Measuring ..."



Patient Testing

- The analyzer will beep and the patient test result will be displayed.
- Read and record (document) result.
- If results are out of the normal range, repeat the test.
- Values >23.5 g/dL must be confirmed by sending a STAT patient specimen to the Clinical Laboratory.
- Pull out the black cuvette holder and dispose of the microcuvette in a biohazard waste container.




Limitations

- Air bubbles in the microcuvette will result in erroneously low values. The microcuvette should be inspected for bubbles before testing.
- The microcuvette should be filled in a continuous process. It should never be topped off after the initial filling.
- Blood inside the analyzer will interfere with hemoglobin measurement.

Limitations

- If the analyzer displays an error code, refer to the **Troubleshooting Guide located in the Reference Manual**, or notify the Point of Care Testing Services in the Clinical Laboratory.
- **Liquid QC contain human red cells.** Use Universal Precaution when handling the solutions.
- Excessive squeezing of the finger can dilute the sample with tissue fluid / interstitial fluid, and may give lower results.

MSDS – Located on the SFGH-POCT.org website under “HemoCue”.

A vertical decorative bar on the left side of the slide, featuring a gradient from yellow at the top to orange at the bottom, with several out-of-focus circular bokeh lights in shades of yellow, green, and blue.

For Further Questions or
Information
Contact POCT Services

SFGH-POCT.org