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Sutter Health
Sutter Roseville Medical Center

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| Origination | 1/4/2021 | Owner | Alex Alba: Supervisor, Laboratory Analytic |
| Final Approved | 9/12/2022 | | |
| Effective | 9/12/2022 | Policy Area | Lab - Coag |
| Last Revised | 9/12/2022 | Applicability | Sutter Roseville Medical Center |
| Next Review | 9/11/2024 | | |

# Running Specimens on the TEG 6s Hemostasis Analyzer



## PURPOSE

This procedure describes how to run patient blood specimens on the Haemonetics TEG 6s hemostasis analyzer which is used to monitor and analyze the coagulation state of a blood specimen.

## POLICY

- Blood specimens may be sent to the laboratory using the pneumatic tube system or walked to the laboratory

## SCOPE

- All CLS and MLT staff assigned to the Hematology/Coagulation department

## TEG 6S ORDER CODES

- TEGSTD - use Citrated Global Hemostasis with CKH Test Cartridge (purple stripe test cartridge)
- TEGRPD - use Citrated Global Hemostasis with Lysis 30 Test Cartridge (yellow stripe test cartridge)
- TEGPM - use Platelet Mapping Test Cartridge (red stripe test cartridge)

## SPECIMEN COLLECTION and REQUIREMENTS

| Test Cartridges | Specimen Collection (Phlebotomy) | Specimen Collection (Line Draw) |
|---|---|---|
| Citrated Global Hemostasis | • Use no smaller than 21 gauge | • Use no smaller than 21 |

| | | |
|---|---|---|
| Test Cartridges | needle<br>• Draw discard tube with no additive ( do Not use red top)<br>• If syringe is used, discard 3-5 ml prior to collecting blood<br>• 3.2 % citrate tube completely filled by vacuum<br>• Mixed by gentle inversion 5 times<br>• Properly labeled tube<br>• Do not refrigerate of freeze<br>• Do not centrifuge<br>• Blood tube is allowed to equilibriate at RT for 10 minutes in a horizontal position | gauge needle<br>• Use 2 syringes, first syringe to discard blood 3 times the dead space<br>• Second syringe the required amount of blood<br>• Use safe transfer device to allow 3.2 % citrate blood tube to completely fill by vacuum<br>• Mix by gentle inversion 5 times<br>• Properly labeled tube<br>• Do not refrigerate or freeze<br>• Do not centrifuge |
| Platelet Mapping Test Cartridge | • Use no smaller than 21 gauge needle<br>• Draw discard tube with no additive ( do Not use red top)<br>• If syringe is used, discard 3-5 ml prior to collecting blood<br>• Non gel lithium or sodium heparin tube with ≥ 14.5 IU but ≤ 20 IU heparin/ml and completely filled by vacuum<br>• Mixed by inversion 5 times<br>• Properly labeled tube<br>• Do not refrigerate of freeze<br>• Do not centrifuge<br>• Blood tube is allowed to equilibriate at RT for 30 minutes in a horizontal position | • Refer to line draw specimen collection above<br>• Use non gel lithium or sodium heparin tube with ≥ 14.5 IU but ≤ 20 IU |

# SPECIMEN REJECTION CRITERIA

| Test Cartridges | Specimen Interferences |
|---|---|
| Citrated Global Hemostasis Test Cartridges | • Clotted specimen<br>• Hemolysis |

| | |
|---|---|
| | • Incorrect blood container<br>• Under filled blood tube<br>• Refrigerated or Frozen specimen<br>• Centrifuged specimen<br>• Unlabeled specimen<br>• Protamine contamination<br>• Hemodilution<br>• Heparin concentration above 1 IU/ml<br>• Specimen stability exceeded |
| Platelet Mapping Test Cartridge | • Clotted specimen<br>• Hemolysis<br>• Incorrect blood container<br>• Under filled blood tube<br>• Refrigerated or Frozen specimen<br>• Centrifuged specimen<br>• Unlabeled specimen<br>• Specimen stability exceeded |



# SPECIMEN STABILITY

| Test Cartridge | Specimen stability |
|---|---|
| Citrated Global HemostasisTest Cartridges | • Specimen can be tested after 10 minutes incubation at room temp in a horizontal position and within 4 hrs of collection<br>• In an urgent or emergent situation, citrate specimen may be run immediately |
| Platelet Mapping Test Cartridge | • Specimen can be tested after 30 minutes incubation at room temp in a horizontal position and within 2 hrs of collection |

# EQUIPMENT and SUPPLIES

- Haemonetics TEG 6s hemostasis analyzer
- Scanner and thermal printer
- printer paper
- UPS

- Functional Fibrinogen kit
- Citrated Global Hemostasis Test Cartridge
- Citrated Global Hemostasis with Lysis (Trauma)Test Cartridge
- Platelet Mapping Test Cartridge
- Level 1 Normal QC Vial Test Kit
- Level 2 Abnormal QC Vial Test Kit
- Personal Protective Equipment

# PROCEDURE A

Follow the procedure below to run TEG 6s patient test cartridge

| Step | Action |
|---|---|
| 1. | Log into the TEG 6s analyzer using your unique log-in ID then touch Log In.<br>• On the login screen, enter your user name in the username box using the keyboard<br>• press tab on the keyboard to move to the password box<br>• enter your password then press the return key on the keyboard<br>• If TEG 6s analyzer is left unused for a period of time, the display will dim<br>• If display is dimmed, touch the screen to remove from stand by |
| 2. | From the home screen, touch new test |
| 3. | Touch the (+) symbol |
| 4. | On the Add Patient Screen, manually enter the patient's MRN |
| 5. | Verify the patient's MRN on the display screen with the patient's MRN on the LIS barcode label |
| 6. | Select OK |
| 7. | At the Confirm Patient Data Screen, Select Confirm to validate the patient's information |
| 8. | At the Preparing Test Screen, insert test cartridge as displayed on the screen<br>• Remove the patient test cartridge from its sealed pouch, manually inspect for any damage, and insert with the barcode on the left side<br>• The cartridge opening on the instrument will be lit and flashing when the instrument is ready to receive the cartridge<br>• DO NOT remove the cartridge until prompted to do so, either after normal completion of<br>the test or as a result of choosing to stop the test |
| 9. | Once test cartridge is inserted, verify that you have selected the correct test cartridge and have the correct sample type then touch Next to confirm<br>• When cartridge is inserted the analyzer performs the Pre Test internal QC to verify the integrity of the cartridge-analyzer interface |

- Any failure will result in an error

10. On the Test Information Screen, enter the patient name ( last name then first name)
11. At the Preparing Test-Load sample screen display:
    - Ensure blood sample has met minimum equilibrium time in a horizontal position at RT dependent on test cartridge
    - Ensure the blood sample is mixed by gentle inversion 5-7 times
    - Use the transfer pipette included in the test kit to load blood into the cartridge sample port, filling up to or above the line marked on the side of the test cartridge
    - DO NOT under fill the test reservoir
    - When loading blood into the cartridge sample port, Do Not release the transfer pipette bulb prior to removing the pipette tip from the cartridge reservoir to avoid inadvertently drawing the blood sample out
    - NOTE: Precise measurement is not necessary as any excess blood is moved to a sealed waste area within the cartridge during the test
12. Touch Next to start the test and display the Results Screen.
13.
    - The touch tracings button is used to view a graphic representation of the result and to cycle through superimposed, offset, and the single-tracing views until the desired view is displayed
    - The touch results button is used to return to the results screen
    - When the test is complete, the following changes occur on the results screen: The test timer is replaced by the date and time that the test started, the stop button is replaced by a done button, the print button is enabled
14. Log into the TEG manager:
    - At the TEG manager patient viewer screen, enter the patient's MRN or click Today then click search to view the patient's TEG tracings
    - In the patient's tracings screen, click the clipboard icon at the upper left hand corner to display the charting notes screen
    - In the Accession ID prompt, scan the LIS barcode to document the CID then scan the barcode again to confirm ( CID should now display in the Accession ID prompt)
    - Click the Done button
15. When the analyzer displays the "Remove cartridge" prompt and the cartridge port flashes, pull the used cartridge out of the slot and immediately dispose of it in a marked, biohazard waste receptacle
16. In the TEG manager and patient tracing display screen, print 2 copies of the patient's test report
    - In the toolbar at the top of screen, click the Export button
    - Click the Create report button

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| | • Click the open button<br>• Click File at the upper left hand then click print<br>• Retrieve the patient's test report<br>• Using the pneumatic tube system, send one copy of the patient's test report to the appropriate nursing unit<br>• Place the other copy of the patient's test report in the bin labeled "Epic to be scanned" located by the Epic scanner in OP processing |

# PROCEDURE B

Follow the procedure below to startup and shutdown the TEG 6s analyzer when necessary

| Step | Action |
|---|---|
| 1. | To power on the analyzer:<br>• Ensure that the TEG 6s analyzer is connected to a power outlet<br>• Turn on the analyzer by moving the power switch at the rear of the analyzer from the "O" to the "I" position<br>◦ analyzer will startup and perform a power on self test<br>◦ when power on self test is succcessful, the login screen displays<br>• Log into the analyzer ( refer to procedure A step 1) |
| 2. | To power off the analyzer:<br>• Press logout in the lower left corner of the screen to log out of the home screen<br>• Make sure to remove any existing test cartridge from the cartridge slot prior to turning off the analyzer<br>• Turn off the analyzer by moving the power switch at the rear of the analyzer to the off position ( "O") |



# REFERENCE RANGES AND REPORTABLE TESTS

| **Citrated Global Hemostasis Test Cartridge** | | |
|---|---|---|
| **Test Assay** | **Test Parameter** | **Reference Range** |
| CK | R (min) | 4.6 - 9.1 |
| | K (min) | 0.8 - 2.1 |
| | Angle (deg) | 63 - 78 |
| | MA (mm) | 52 - 69 |
| CRT | MA (mm) | 52 - 70 |
| CKH | R (min) | 4.3 - 8.3 |
| CFF | MA (mm) | 15 - 32 |

| | | |
|---|---|---|
| | FLEV (mg/dl) | 278 - 581 |
| **Citrated Global Hemostasis with Lysis Test Cartridge (Trauma)** | | |
| **Test Assay** | **Test Parameter** | **Reference Range** |
| CK | R (min) | 4.6 - 9.1 |
| | LY30 (%) | 0.0 -0 2.6 |
| CRT | MA (mm) | 52 - 70 |
| CFF | MA (mm) | 15 - 32 |
| **Platelet Mapping Test Cartridge** | | |
| **Test Assay** | **Test Parameter** | **Reference Range** |
| HKH | MA (mm) | 53 - 68 |
| ActF | MA (mm) | 2 - 19 |
| ADP | MA (mm) | 45 - 69 |
| | % Inhibition | 0 - 17 |
| | % Aggregation | 83 -100 |
| AA | MA (mm) | 51 - 71 |
| | % Inhibition | 0 - 11 |
| | % Aggregation | 89 - 100 |



# REPORTING RESULTS

When the TEG test is complete, the TEG order code is reported by following the steps below

- Sunquest manual entry function MEM
- Worksheet RVKM
- Under the ACC number, result with ETC "ROTEMI" ( translated to "Thromboelastograph scanned to patient record")

# RELATED DOCUMENTS

- TEG 6s Citrated and Platelet Mapping test cartridge package inserts

# REFERENCES


- Haemonetics TEG 6s User Manual


## All Revision Dates

9/12/2022, 1/4/2021

## Approval Signatures

| Step Description | Approver | Date |
|---|---|---|
| Medical Director | Lindsey Westerbeck: Director, Laboratory Services | 9/12/2022 |
| Laboratory Director | Lindsey Westerbeck: Director, Laboratory Services | 8/15/2022 |