

Presep Cather (Continuous ScvO2)

Monitoring:

- The real time ScvO2 is displayed in the right hand corner of the screen.
- Record the ScvO2 on the HD record. Change "SvO2" to ScvO2.
- Normal ScvO2 is $\geq 70\%$ and is drawn from a central venous line (generally subclavian or jugular).
- A reading $< 70\%$ indicates the patient is extracting more than normal (indicating that the cardiac output alone is not high enough to meet tissue oxygen need).
- ScvO2 has a slightly different normal value than a mixed venous saturation (SvO2). SvO2 is drawn from the pulmonary artery port of a ganz and reflects a mixture of venous blood from the SVC, IVC and coronary sinus. Normal SvO2 is 60-80%.
- Continuous monitoring allows us to evaluate the adequacy of therapies aimed at raising oxygen delivery (including therapies to increase cardiac output such as fluids, vasopressor and/or inotropes; or therapies to increase oxygen content such as interventions to optimize arterial oxygen saturation or hemoglobin).
- The 4 vertical boxes display the quality of the signal. If one or two green boxes are highlighted, this indicates good signal quality. If 3 or 4 boxes are displayed, signal quality is poor and the reading may be inaccurate (*see troubleshooting below*).

Management:

- Change tycos solution q 24 hours.** Check q 6 h to make sure tycos is tight. Flush well after blood drawing. The Presep catheter has smaller intravascular lumens that may increase risk for clotting of the catheter.
- Once per shift, draw a venous blood gas and perform an "INVIVO" calibration. To perform an invivo calibration:**
 1. Get ice for blood gas sample before beginning.
 2. Turn the large knob and highlight the ScvO2 feature (Top right hand corner of screen).
 3. Press the knob to select ScvO2
 4. Select INVIVO calibration and confirm
 5. Wait till the screen count down ends. Choose "continue".
 6. The word "Draw" appears.
 7. When you are ready to draw a venous blood gas sample from the distal port (other ports can be used if the distal port is blocked), press "DRAW".
 8. When you select "DRAW", the machine remembers the ScvO2 reading at that moment in time
 9. The screen will change to the ScvO₂ data entry screen. Leave this screen open until your results are back from the lab.
- 10. **Draw the sample in a heparinized syringe and IMMEDIATELY place it on ice.**

Blood gas samples should be placed on ICE immediately, to decrease red blood cell metabolism. Metabolizing cells consume oxygen, a potential cause for a low PaO₂ reading. As long as the PaO₂ is > 60 mmHg, oxygen will continue to bind tightly to hemoglobin (producing SpO₂ readings $\sim \geq 92$). The bond rapidly weakens as the PaO₂ falls < 60 mmHg. Thus, a small change in PaO₂ due to delayed cooling may significantly alter a venous oxygen saturation.

11. Once you select draw, the screen will change to allow you to enter the lab result. Leave this screen open until the results are back from the lab.

12. When results are available, enter the SvO₂ reported in PowerChart.
13. If you have a Hb to update, enter it now.
14. Select “calibrate”.
15. Return to the main screen when calibration is completed.

□ Once per shift and prn, update the Hb.

1. Go to main menu and select “update hemoglobin”
2. Enter the Hb. You will need to scroll to the gm/Dl and enter a Hb of 110 as 11.0.
3. Confirm.

Troubleshooting a Poor Signal (3 or 4 boxes highlighted):

1. Flush the CVP port of the catheter. A poor signal may indicate a clot at the tip.
2. Reposition the catheter; if the catheter tip is pressing against the vessel wall, a poor signal quality will appear.
3. Repeat the INVIVO calibration.
4. Repeat the Hb and update it in the computer (if the Hb has changed by >10%, the signal quality will deteriorate).
5. If the problem persists, select the “optical module” feature from the main menu.

Transport:

- Do not disconnect the optical module from the catheter. Disconnect the cable at the back of the machine and take on transport.
- Leave the machine “On” at the bedside
- When you return, perform an INVIVO calibration
- Note, the memory is stored in the optical module. If you disconnect, you will lose stored memory, however, you can resume using the catheter once you reconnect and perform an INVIVO calibration.
- If you wish to move the machine, follow these steps:
 - Unplug ScvO₂ cable from the back of the machine (do not disconnect the optical module from the catheter).
 - Turn off machine, unplug and relocate as required.
 - Plug cable into back of machine.
 - Turn machine on.
 - The message “delete previous patient data”, “no” or “yes” will appear.
 - Select “No” to retain previous data.
 - In the main menu: If the “in vitro” calibration option is active, do not choose this option (in vitro calibration is only performed before the catheter is inserted into the patient). Instead, choose “Recall OM Data”.
 - Data will return and in vitro option will become unavailable.
 - If you have a continuous cardiac output device:
 - Enter the main menu for the cardiac output. Open the stopcock on the transducer and select “zero cardiac output”.
 - Rezero bedside monitor as usual.
 - You need to wait ~ 1 minute for the CI data to reappear.

PROTECT THE OPTICAL MODULE CABLE FROM DAMAGE: IT IS VERY EXPENSIVE.