



LIFEPAK 15

- Monitoring with the Rainbow Cable
 - ❖ SpO2
 - ❖ SpCO

Virginia Beach Fire Department
EMS Coordinator April Achesinski

Indications for Use

- Rainbow Cable Indications— Patients or VBFD personnel with potential exposure to carbon monoxide or other Carcinogens.
- Also available for VBFD personnel during live burn training evolutions.



The cable looks the same as the pulsox cable but will have SpO₂, SPCO written on the red part that plugs into the monitor.

- Rainbow parameters can require a longer acquisition time to obtain both readings.
- Movement can increase the amount of time required to get a reading, so having the patient remain still can also help minimize acquisition time.

Normal Ranges for SpO₂, SpCO



- Preferred site for monitoring is non-dominant hand ring finger
- Shield the sensor from ambient light while calibrating, this can take 15-30 seconds.

- Normal Ranges
 - SpO₂- Oxygen saturation 95-100%
 - SpCO- Carbon monoxide poisoning <9%
-
- Elevated SpMet levels in the blood can result in a false elevated SpCO reading.
 - A true high SpCO can be distinguished from a falsely-elevated SpCO, when the SpMet reading is not elevated above normal levels, usually 3% or less.

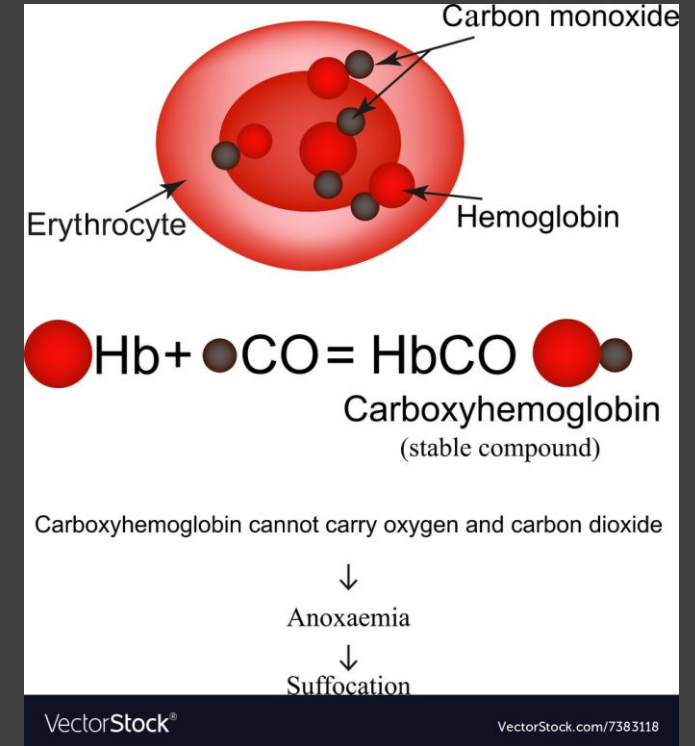
Rainbow Sensor Display

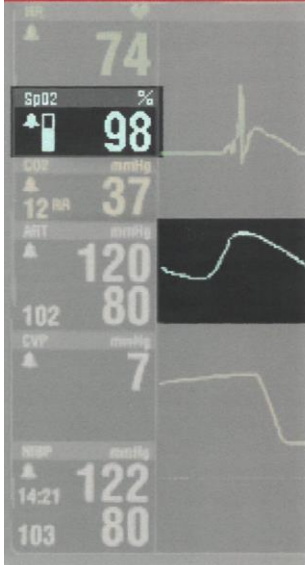
- When the rainbow cable sensor is on the patient SPCO is monitored in the background.
- If SPCO reading is over 10% an advisory warning will sound and be displayed on the screen in the SPO2 box.
- You can press the alarm button to silence the sound but the advisory will stay at the bottom of the screen until the SpCO drops below 10%.
- If you do not see an advisory or hear an alarm the SPCO is within normal ranges.



Carboxyhemoglobin

- CO competes with oxygen for the oxygen-binding sites on hemoglobin. The binding of CO to hemoglobin results in the formation of the compound called Carboxyhemoglobin (COHb).
- This compound is unable to transport or transfer oxygen. Lack of oxygen can lead to tissue inflammation, reduced cardiac function and vasodilatation.
- Small amounts of CO are produced from normal metabolism, however most CO exposure is from exogenous causes such as house fires, automobile exhaust fumes, heaters, indoor stoves, cigarettes and ovens.





SpO₂ Monitoring

- 1 Press ON
- 2 Connect pulse oximeter cable to monitor
- 3 Attach sensor to patient
- 4 Orient the sensor so the cable is on the back of the patient's hand
- 5 Place the sensor's emitter (red light) directly over the nail bed
- 6 Observe pulse bar for fluctuation. Amplitude indicates relative signal quality.
- 7 Use SPEED DIAL to adjust volume, sensitivity and averaging time, if necessary



SpO₂ Monitoring

TIPS:

If signal is unstable or value is questionable, consider:

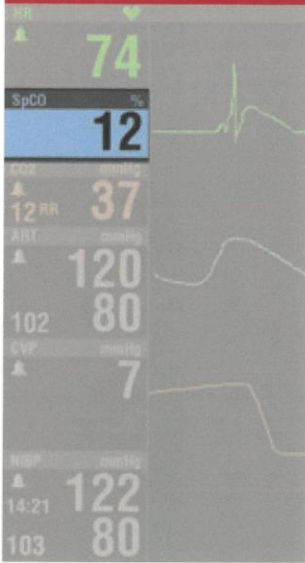
- Sensor size
- Sensor alignment
- Site perfusion
- Excessive or strobe lighting interference
- Sensor tightness



This information is based on factory default settings and is an abridged reference for SpO₂ monitoring. See the LIFEPAK 15 Monitor/Defibrillator Operating Instructions for complete directions for use, indications, contraindications, warnings, precautions, and potential adverse events.

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MN 3208198-002 USA Rx Only

Use of SPO2 Sensor



SpCO and SpMet Monitoring

SpCO or SpMet Monitoring:

- 1 Press ON
- 2 Connect Rainbow® sensor to monitor
- 3 Attach sensor to patient
- 4 Encourage patient to remain still
- 5 To quickly obtain SpCO or SpMet value, press PRINT

OR

To display SpCO or SpMet:

- Use the SPEED DIAL to select SpO2 area
- Select PARAMETER from menu
- Select SpCO or SpMet; selected value displays for 10 seconds and then reverts to SpO2

SpCO and SpMet Monitoring

If SpCO or SpMet is abnormally elevated, the following message occurs:
ADVISORY: SpCO > 10% or ADVISORY: SpMet > 3%

If signal or value is questionable, consider:

- **Light interference:** cover hand with opaque material. The presence of ambient or strobe light can interrupt or interfere with the SpCO reading.
- **Sensor size:** use slender digit sensor as needed. Incorrect sensor size may cause incorrect reading.
- **Sensor alignment:** the tip of the finger should touch the raised digit stop inside the sensor.
- **Site perfusion:** choose a well-perfused site.

Failure to apply sensor properly may cause falsely elevated SpCO. If an elevated SpCO is detected, **ALWAYS** confirm by checking two additional fingers and average the readings. Readings may vary from finger to finger.

This information is based on factory default settings and is an abridged reference for SpCO and SpMet monitoring. See the *LIFEPAK 15 Monitor/Defibrillator Operating Instructions* for complete directions for use, indications, contraindications, warnings, precautions, and potential adverse events.

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Use of SPCO/SPMet Sensor

The new Lifepaks have bluetooth capability to transmit 12 Lead EKG's to the hospital without the EMR and cable.

