

user guide

ember

non invasive hemoglobin tracking system



Welcome!

We are very excited you have chosen Ember™ to fulfill your training and exercise needs. If at any time you have questions, please feel free to reach out to us at Cercacor. We are committed to doing what we can to ensure you become an advocate of Ember and Cercacor technology.

Sincerely,
The Ember Team at Cercacor

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Indication for Use

Ember is intended for use by athletes or their trainers to help measure and track hemoglobin and pulse rate. It is intended to be used by individuals 13 years or older with a finger width of 22mm or less. This product is not a medical device.*

The Ember system consists of the device, sensor, and mobile app. The Ember Device requires a smartphone with Bluetooth 4.0 capabilities to operate, running iOS8.2 or newer. For a list of devices and operating systems that the Ember system works with, please visit www.cercacor.com

*This product is not intended to monitor or alleviate a physiological condition or disease state. Individuals who need a device to monitor a medical condition should contact their physician.



Safety

WARNING:

- Reduce possibility of entanglement or strangulation when using and storing sensor cable.
- Explosion hazard. Do not use the Ember device in the presence of flammable substances, or in combination oxygen environments, or nitrous oxide.
- Avoid risk of an electric shock by only plugging in Cercacor compatible sensors into the device sensor port. Also, do not plug the Cercacor sensor into any other equipment except Cercacor devices.
- Only use a UL Listed power adapter that meets LPS or Class 2 limits rated 5V, minimum 2A.
- Do not incinerate battery.

CAUTION:

- Do not lift the Ember device by the cable or sensor.
- Discontinue use of the product if it appears to be damaged in any way. Immediately contact customer support.
- Do not attempt to adjust, repair, open, or disassemble the device and/or sensor in order to avoid injury or damage to device.
- Do not submerge device and/or sensor under water or cleaning solution, which will cause severe damage.
- To prevent electric shock, avoid placing device on surfaces with visible liquid spills. Do not soak or immerse the device in liquids, and only use cleaning solutions sparingly.
- Ember device and sensor should be properly disposed as electronic waste

Getting Started

Sensor Port: Mini DP 20 Pin



Button

Press once for Battery Status

Press and hold for 3 seconds for Bluetooth pairing

Press and hold for 6 seconds for a Hard Reset

Status Lights



full battery



low battery



needs charging



Charging Port: USB Type C

Create an Account

- Be sure to download the free Ember app from the Apple App Store.
- After you open the app, tap the Sign Up text at the bottom of the page to create an account. Follow the screen prompts until your account is created.
- Congratulations! You have now created an account. Next lets connect Ember to your smartphone.

Connecting Ember to your smartphone

- The Ember device is shipped in sleep mode when you first receive it. To wake it up press the button for 3 seconds and then a series of blinking rectangles will appear. Now it is visible for the Ember by Cercacor App.

Taking a Measurement

① Begin by placing the sensor on a finger free of deformities. It is best to use the ring or middle finger of your non dominant hand. It is recommended to not use nail polish for best accuracy and repeatability of consistent measurements. Blue and Green nail polish significantly affect the accuracy of the measurement. Always use the same finger for every measurement. To ensure proper placement:

- The cable should be on top of your hand in a straight line as far as possible.
- Your finger should be all the way in the sensor
- Use the same posture and remain still during measurement



② Once you are ready, tap the Start button within the app. The measurement time varies and can range from 60 to 90 seconds. Be patient, the system will ask you to try again if it cannot get a result within 120 seconds.

- During testing be sure to not move around
- Refrain from talking, coughing, or sneezing during measurement
- During the measurement, a question related to the activity will be displayed. Please be sure to answer all activity questions to allow you to get better data reviewing power in your graphs.

③ Your measurement result values will display on the screen. When you tap the Capture button, the numbers displayed will be saved in your history. The gauge to the right of the display tells you your target range based on your age and biological sex. You can customize the target range based on your individual goals by accessing the Options tab of the app.

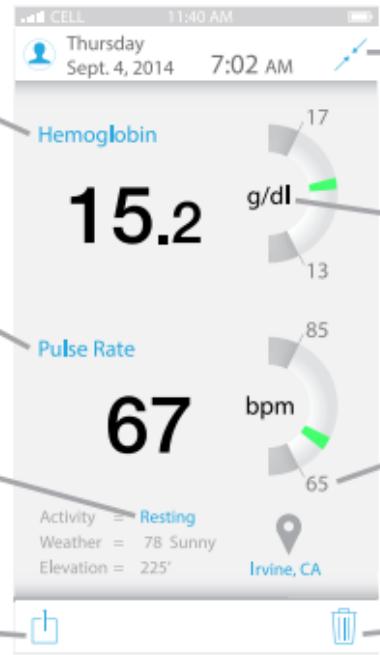
Viewing Results

Tap this to learn more about Hemoglobin

Tap this to learn more about Pulse Rate

Tap this to change the type of activity associated with this measurement

Tap this to share your result.



Tap this to minimize this test and return to the measure tab

Units of Measure can be adjusted in the Options tab

The ranges for normal can be adjusted in the Options tab

Tap this to delete this test.

Hgb and Pr - Descriptions

Hemoglobin (Hgb)

Is the protein contained in red blood cells that is responsible for delivery of oxygen to the tissues. The Ember device will display values between 10 - 24 g/dl

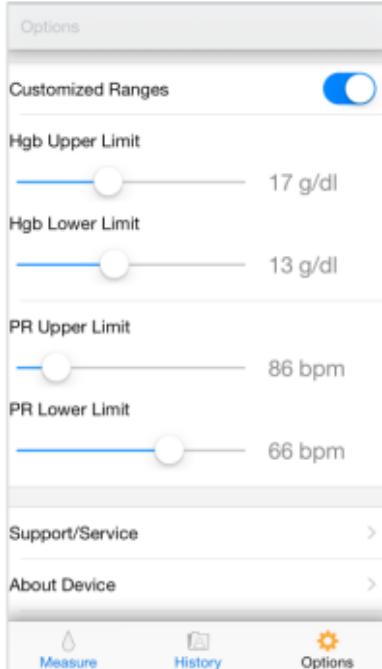
Pulse Rate (Pr)

The number of times your heart beats per minute as monitored from the pulsations at your fingertip. The Ember device can measure a range from 25 - 240 bpm.

Range Adjustment

The normal ranges displayed on your results screen can be adjusted within the Options area of the Ember app. The default values are from published sources on general population ranges based on biological sex and age.

We recommend you set your own custom ranges on input from your trainer or your own personal knowledge or goals.



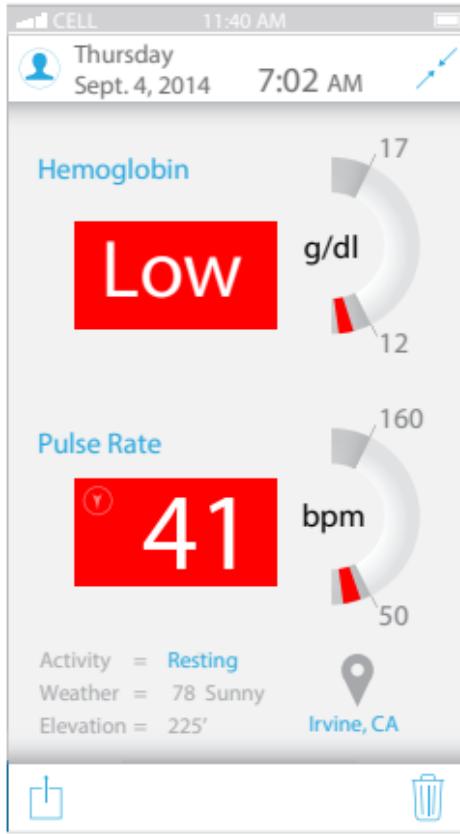
Inaccurate readings can be caused by:

- Externally applied coloring (such as nail polish)
- Any substance containing dyes, that change usual blood pigmentation may cause erroneous readings.
- Electromagnetic Interference (EMI) from items such as computer displays and/or LCD TVs
- High intensity lights (including pulsating strobe lights and sunlight) directed on the sensor
- Hemoglobin synthesis disorders, Hemoglobinopathy, Vascular disease
- Elevated Bilirubin, Carbon Monoxide (CO) and/or Methemoglobin (Met)
- Low arterial perfusion or low arterial oxygen saturation levels
- Moving or talking during a measurement
- Improperly placed sensor on finger
- Using the sensor on a deformed finger

Out of Range Results

If you take a measurement and receive the phrase Low instead of a numeric value for Hemoglobin, it indicates that your value was below 10 g/dl and is too low to present a number. If you receive the phrase High instead of a numeric value, it indicates that your value was above 24 g/dl and is too high to present a number.

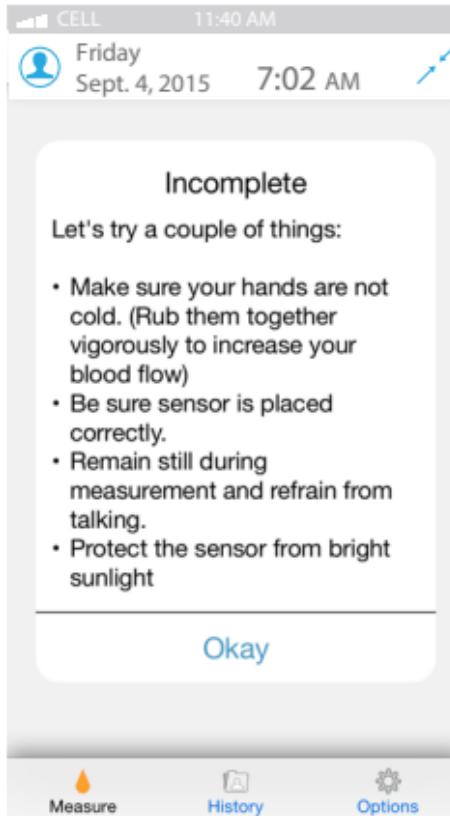
If your Pulse Rate result has a red box behind it the value is out of your set ranges. These ranges can be adjusted to your specific needs in the Options area of the App.



Incomplete Measurement

If you take a test and receive the incomplete popup dialogue, please check the following and try your measurement again.

- Reduce excessive motion or interference to the device and sensor during test.
- Check sensor placement, reduce ambient light, and remove nail polish
- Use a finger with no deformities or nail abnormalities and always use the same finger.
- Make sure your hands are not cold by rubbing your hands together vigorously for 10 seconds.



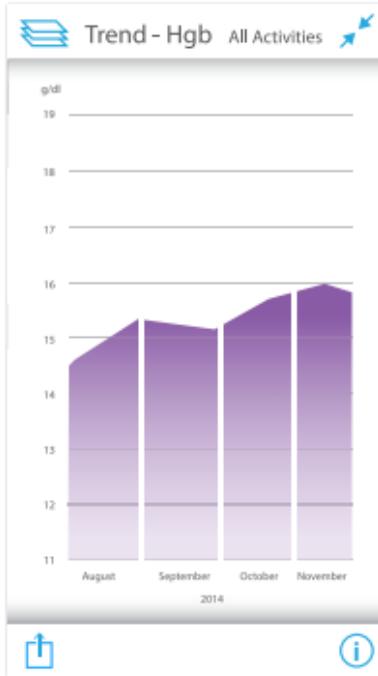
Reviewing Features

A very exciting feature about the Ember device is the ability to review your historical data in different ways. The more you participate, by measuring frequently and choosing activities associated with each measurement, the more powerful your graphs become. We recommend you measure 3 times per day. Using these activities: 1st of day, Pre Workout, and Post Workout.

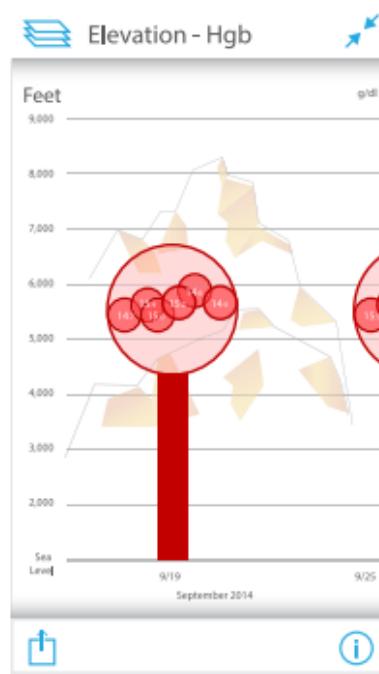
Explore and enjoy graphs by using pinch to zoom, pan and even rotate your device to take advantage of landscape view. Graphs can be shared via SMS, email, and popular social networking sites to share your progress with friends, coaches, trainers, and teammates.

Sharing test results can be done one at a time or by sharing all results from the history table view. To share all results, tap the share button and a .csv file can then be sent via email.

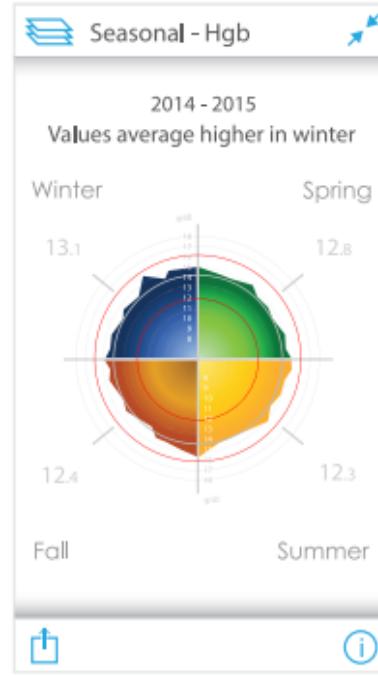
Trend Graph



Elevation Graph



Seasonal Graph



Activities

Every time you take a measurement, the app will ask you to associate an activity with your measurement. By using a consistent finger and by practicing consistency in your measuring technique, along with associating measurements with activities, this will allow you to have a more powerful and precise historical review of your data. Consistency is vitally important to get reliable trends in Hemoglobin.

We recommend measuring the first thing every day before you get out of bed. We also recommend measuring 5 minutes before a workout and then 1 minute Post Workout. All of the graphs and tables in the History tab allow you to filter your measurement data by the activities associated with your measurements. For example, if you always take a measurement right after a heavy training session around the same time every day and associate that measurement with "Post Workout", then you can observe the historical trend just for those measurements.



All Activities

When this is selected it will display all the data points you have collected.



First of Day

Select this activity for your first of day measurement. This should be performed when you first wake up and before your feet touch the ground.



Pre Workout

Select this activity for measurements taken within 5 minutes before you begin a workout.



Between Sets

Select this activity if you are between any sets or intervals of your training.



Post Workout

Select this activity for tests that are taken within 1 minute after you stop your workout.



Resting

Select this activity for your resting measurements. This should be performed when you have not had an activity such as an exercise or hydration for at least one hour.



Pre Hydration

Select this activity within a few minutes before you drink 6 oz of fluid or have a meal.



Post Hydration

Select this activity when you take a measurement 30 minutes after drinking 6 oz or eating a meal.

Collected Data

All measurements are stored locally on your device. We recommend you create a Cercacor account so that your data is safely backed up and stored in the cloud automatically when your phone is connected to the internet.

Since your physiology is affected by environmental factors, your measurements will automatically capture various details based on your location for example the weather and elevation.

* To view the Cercacor privacy policy open the Cercacor App and tap Options and then privacy policy.

Troubleshooting

1. Check your battery level by pressing the button on the side of the Ember device to check if there is sufficient charge.
2. Make sure your Ember device is within a close range (approx. 50' of your smartphone).
3. If prior steps do not work, try force quitting the app. To force quit the app double click the home button on your iPhone then swipe up to close the app.
4. If your Ember device does not show within the “find device list”, press and hold the Ember button for 3 seconds until the LED lights blink in a sequence.

5. If prior steps do not work and your Ember device will not connect to the app or is still having trouble taking measurements, then press and hold the button on the side of the Ember device for 6 seconds, which will enable a hard reset of the Ember device.

If problem persists contact support@cercacor.com be sure to include a complete description of the problem and how you reproduce it.

Cleaning

The outer surface of the device can be cleaned with a soft cloth dampened with a mild detergent and warm water solution or Isopropyl Alcohol.

- Do not allow liquids to enter the interior of the device.
- Do not soak or immerse the device or sensor in any liquid.
- Use the cleaning solution sparingly. Excessive solution can flow into the device or sensor and cause damage to internal components.
- Do not touch, press, or rub the device or sensor with abrasive cleaning compounds, devices, brushes, or rough-surface materials.
- Do not use petroleum-based or acetone solutions, or other harsh solvents, to clean the Ember. These substances erode the device's materials and device failure can result.

Specifications

Battery Type	3.7V nominal, 500mAh
Hours of Operation, Charging Time	120 measurements, 2.5 hours
Standby Power Mode	20 days
Storage Temperature Range	-40° to 149°F (-40° to 65°C)
Operating Temperature Range	41° to 113°F (5° to 45°C)
Operating Humidity Range	20 - 95% (non-condensing)
Dimensions	115mm x 56mm x 12.9 mm
Approx. Weight	75g

*For more information on Regulatory and Safety Notices open the “Options” tab in the Ember App and then go to “Regulatory” section.



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