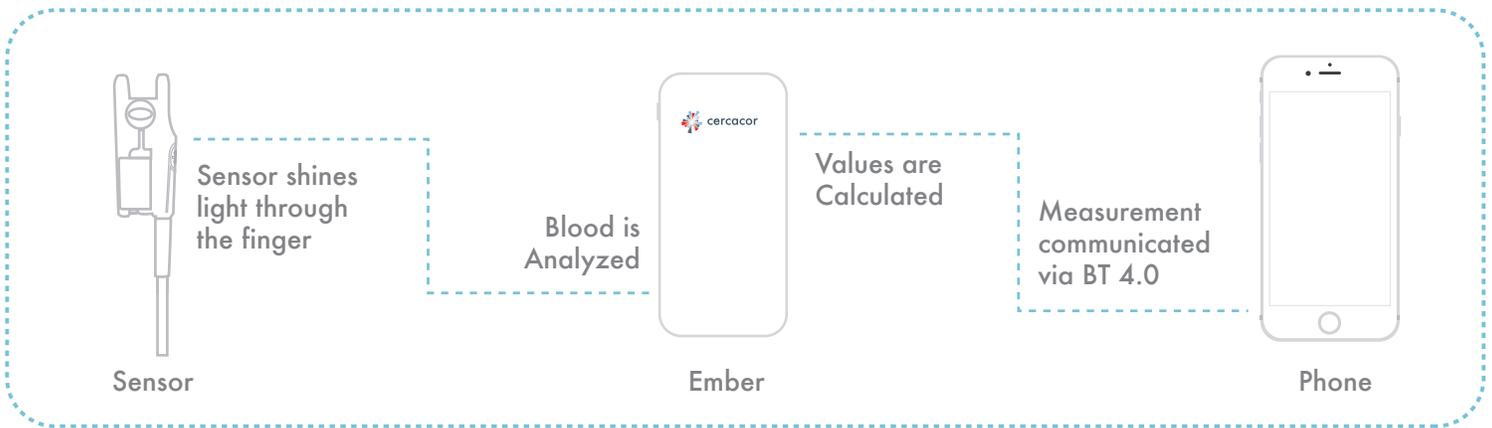


# HOW DOES IT WORK?

Ember's technology is based on a scientific technique called absorption spectroscopy. Light in various wavelengths (hence the term spectroscopy) is shined through the arterial blood and the amount of light that is absorbed is measured. Since the hemoglobin molecules in both the oxygenated and deoxygenated state have a unique absorption curve, Ember is able to calculate the hemoglobin levels by examining the amount of light that is absorbed at each specific wavelength. The mobile app then pulls the information from the Ember device and displays it on your smartphone.



## How does Ember differ from a standard pulse oximeter?

The Ember sensor has 8 light emitting diodes (LEDs) located within the top of the sensor to shine light of different wavelengths through the fingertip. Photodetectors located on the bottom of the sensor receive the light, convert it into an electronic signal and send it to the Ember device. Traditional pulse oximeters use only 2 wavelengths of light and cannot measure hemoglobin. They can only provide the oxygen saturation of hemoglobin.



## Is Ember safe to use?

Yes. The Ember sensor utilizes LEDs only in the visible and infrared wavelength spectrum. On one end of the spectrum are radio waves that have a longer wavelength and lower frequency. On the opposite end of this spectrum are X-rays, ultraviolet light and gamma rays that have a shorter wavelength and higher frequency.

Wavelengths that are shorter and with a higher frequency are harmful to humans. Visible and infrared light, like those utilized in the Ember sensor, fall in the middle of the spectrum. These are comprised of wavelengths that are longer and with lower frequency and thus lower energy considered safe for humans.