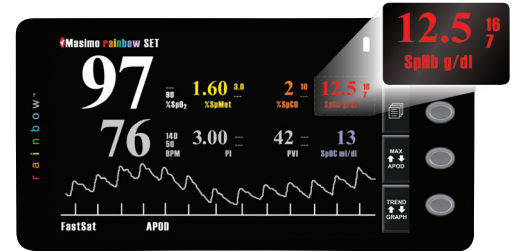


## First-ever Noninvasive and Continuous Total Hemoglobin

**Product** Masimo noninvasive and continuous total hemoglobin (SpHb™) is the first-and-only technology that enables healthcare professionals to perform rapid and continuous hemoglobin measurements without drawing blood—potentially making it easier to detect and monitor anemia, respond to internal bleeding in emergency and outpatient settings, and better assess the need for blood transfusions in surgery.



**Hemoglobin Monitoring** More than 400 million invasive hemoglobin blood tests are performed each year in the U.S. alone, making it one of the most common lab tests. However, current methods require an invasive and painful needle stick to draw a blood sample, which is then sent to a laboratory for analysis, with results reported back to the physician later. This method is delayed and only offers an intermittent snapshot of hemoglobin levels at a particular point in time, potentially resulting in diagnosis and treatment delays.



**Benefits** When compared to traditional hemoglobin monitoring, Masimo's breakthrough noninvasive and continuous hemoglobin monitoring technology may enable earlier and better clinical decision-making, improved patient safety, and reduced costs in a variety of clinical settings, potentially enabling:

- **More efficient transfusion management during surgery in the OR**—allowing doctors to initiate timely blood transfusions and avoid unnecessary blood transfusions.
- **Earlier detection of hidden bleeding in ICU, trauma, and emergency settings**—allowing clinicians to identify internal hemorrhaging sooner and initiate treatment earlier.
- **Real-time anemia detection in the ED, clinics, and doctors' offices**—allowing clinicians to quickly identify chronic or acute anemia and initiate timely treatment.

**Availability** Cleared by the U.S. Food and Drug Administration on May 14, 2008, Masimo noninvasive and continuous total hemoglobin is now available as part of the Masimo Rainbow SET® Pulse CO-Oximetry™ technology platform.

**How It Works** Masimo Pulse CO-Oximetry technology uses multiple wavelengths of light and advanced signal processing algorithms to identify and quantify hemoglobin in the blood without removing a drop.

- **Acquisition**
  - Innovative noninvasive sensor technologies housed in a single, easy-to-apply sensor that painlessly slips onto a patient's finger.
  - 12 wavelengths of light are employed to acquire blood constituent data based on light absorption.
- **Processing**
  - Advanced signal processing algorithms and unique adaptive filters work together to isolate, identify, and quantify various hemoglobin constituents.
- **Display**
  - Blood measurement results are then displayed numerically as a concentration per volume of blood (in grams per deciliter, g/dL).