

Use of Non-Invasive Total Hemoglobin Measurement as a Screening Tool for Anemia in Children.
Amano I., Murakami A. *Pediatr Int.* 2013 Dec;55(6):803-5.

Universal screening for anemia is important in children, but invasive blood sampling is required. A new device (Radical-7® Pulse CO-Oximeter™, Masimo, Irvine, CA, USA) now enables non-invasive hemoglobin concentration (SpHb) measurement to be done, but the usefulness of this device for anemia screening in children is unclear. The objective of this study was to compare SpHb with complete blood count (CBC) using a hematology analyzer (Microsemi® LC-667CRP; Fukuda Denshi, Tokyo, Japan).

SpHb measurement with Radical-7® was done as part of a medical check-up in 3-year-old children (n = 110). Another 43 pediatric patients were checked for CBC using Microsemi® and monitored with Radical-7®.

The mean SpHb level of the 3-year-old children was 12.1 ± 0.64 g/dL (range, 10.8-13.7 g/dL). The correlation of Radical-7® and Microsemi® was 0.602 ($P < 0.0001$). On Bland-Altman comparison, bias was -0.6 ± 1.1 g/dL. Even though further improvement is required, Radical-7® offers many possibilities in the context of primary screening.