

An Ocean of Knowledge in a Drop of Blood



HemoCue – a company with 25 years of knowledge in anemia testing

Anemia is a huge health problem with serious consequences.

According to the World Health Organization (WHO) it affects one quarter to one third of the world's population. One million people die from it every year. Anemia monitoring done today – if done at all – is to a large extent lacking in precision and accuracy. The result is a bad foundation for decision-making in health care as well as impaired quality of life for a great number of people and on a larger scale, socio-economic consequences for countries. The first step toward solving the problem is to make use of the ocean of knowledge that exists in only one single drop of blood.

Expertise and dedication in hemoglobin testing

Speed, simplicity and lab-quality results available where they are needed are the corner stones in the HemoCue way of thinking. HemoCue focuses on clinically relevant tests that make a difference in the quality of life for patients. Now, after over 25 years of intense research and development in hemoglobin testing, HemoCue owns a wealth of knowledge and is an expert in the field. A close collaboration with the users of the systems and a sensitivity to their needs has enabled HemoCue to steadily improve their systems and help fill the gaps in the clinical every day life. HemoCue can now offer five products in hemoglobin testing to cover different needs. The most recent one, the HemoCue Hb 301, is developed to cope with tough conditions in locations where temperature and humidity are difficult to control, without compromising accuracy in the test results.

Point-of-care testing has always been the focus for HemoCue. The company is now a leader in the development, manufacturing, and marketing of advanced medical testing systems that bring lab quality results to near-patient testing. For HemoCue reliable results with clinical accuracy, time after time, is the only acceptable outcome in order to protect patients' health and give caregivers a reliable basis for diagnosis and treatment decisions. Since point-of-care testing supports a close interaction between the health care provider and the patient allowing a more effective treat-

ment there has been a general shift from centralized laboratory testing toward testing at the point-of-care.

The HemoCue systems are widely used and well established within the medical community. More than 150 000 systems are in use globally giving HemoCue a leading position in their segments. The global presence of HemoCue with affiliated companies and distributing partners in more than 120 countries ensures good service and support to the customers wherever in the world they are.

HemoCue applies its expertise and high standards in point-of-care testing in the areas of hemoglobin, blood glucose and urine albumine testing.

New method for simple, cost-effective and precise Hb measurements

In order to fulfill an until now unmet medical need in hemoglobin testing HemoCue has developed a completely



Three tests are performed each second using HemoCue's test systems.



new hemoglobin testing system providing accurate results also in tough conditions. HemoCue Hb 301 is designed for use and storage in environments with high temperature and humidity which makes lab-quality hemoglobin testing possible even in demanding climate. With the new cost-effective cuvettes outdated technologies like colour comparators and the copper sulfate method can be replaced with a high standard method producing quantitative results with superior performance. The system is portable which makes it ideal for mobile settings and is so simple it can be handled by anyone after just a brief instruction. No mixing of reagents, dispensing, pipetting or calibration is needed and a reliable result is obtained after only ten seconds.

The robust design in combination with the cost-effectiveness make HemoCue Hb 301 the perfect tool for anemia screening programs that are key to reaching the UN Millennium Development Goals.

Anemia is a serious health concern for developing countries

In developing countries anemia accounts for a large part of maternal and perinatal deaths. An increased awareness is necessary to detect and treat not only severe but also mild and moderate cases of anemia, conditions that may otherwise progress to life-threatening severe anemia. Less dramatic, but still serious consequences of anemia, are low birth weights, premature births and impaired

cognitive development in small children followed by impaired learning at school. It is also well known that anemia in adults causes fatigue and reduces physical capacity and work productivity.

WHO lists iron deficiency as one of the top ten risk factors in developing countries for "lost years of healthy life". It accounts for more than half of all anemia. Other causes of anemia are malaria, parasitic worms or other infections such as HIV/AIDS.

Current methods for anemia screening are far from optimal

Current methods for anemia screening are either not suitable for use on a larger scale or accurate enough. Even if anemia tests performed at clinical laboratories give correct and reliable test results, they are costly, complicated and time-consuming. There are other methods, simpler and less costly but unfortunately also very unreliable. Some of them give only semi-quantitative results and are sensitive to subjective judgment by the performer of the test. Examples of such methods are comparative color scales and the copper sulphate method. However, still the most common way to spot anemia is by clinical diagnosis alone. This is a very insensitive method with high risks of missing especially cases of mild and moderate anemia.

The United Nations has identified eight Millennium Development Goals addressing some of the world's most serious humanitarian problems to be solved in 2015. Three of the goals are directly related to health improvements. One is to reduce child mortality. Another is to improve maternal health and yet another one is to combat HIV/AIDS, malaria and tuberculosis.

In fulfilling these goals detection and treatment of anemia is central. Therefore, simple, reliable and affordable methods suitable for population screening are needed.

- For each 0.1 gram increase in hemoglobin level between 5 and 12 g/dL the risks of maternal and perinatal deaths decreases by 25 and 28 percent respectively.
- Anemia causes 25 percent of maternal and perinatal deaths in developing countries.
- Groups at highest risk of developing anemia:
 - Pregnant women
 - Small children
 - Women of reproductive age
- For adults a 10 percent increase in hemoglobin level is associated with an increased work output of 10 to 20 percent.
- Globally, the World Bank is estimating that USD 50 billion in GDP is lost annually on account of anemia.

Why HemoCue's test systems are used every day by health care professionals all over the world:

- Can be used by non-laboratory personnel after a brief training session.
- Produce lab quality results within moments.
- The disposable microcuvettes automatically draw a precise volume of specimen.
- The analyzers are factory calibrated and require a minimum of maintenance.
- No calibration needed between cuvette batches.



Three simple steps

1. The cuvette is brought into contact with the sample and the exact volume needed is drawn into it by means of capillary action.
2. The cuvette is placed in a pre-calibrated, portable analyzer for measurement.
3. Within a short moment the accurate result is shown in the display.

HemoCue is a leader in Point-of-Care testing with products for the measurement of hemoglobin and glucose in whole blood and low levels of albumin in urine.



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