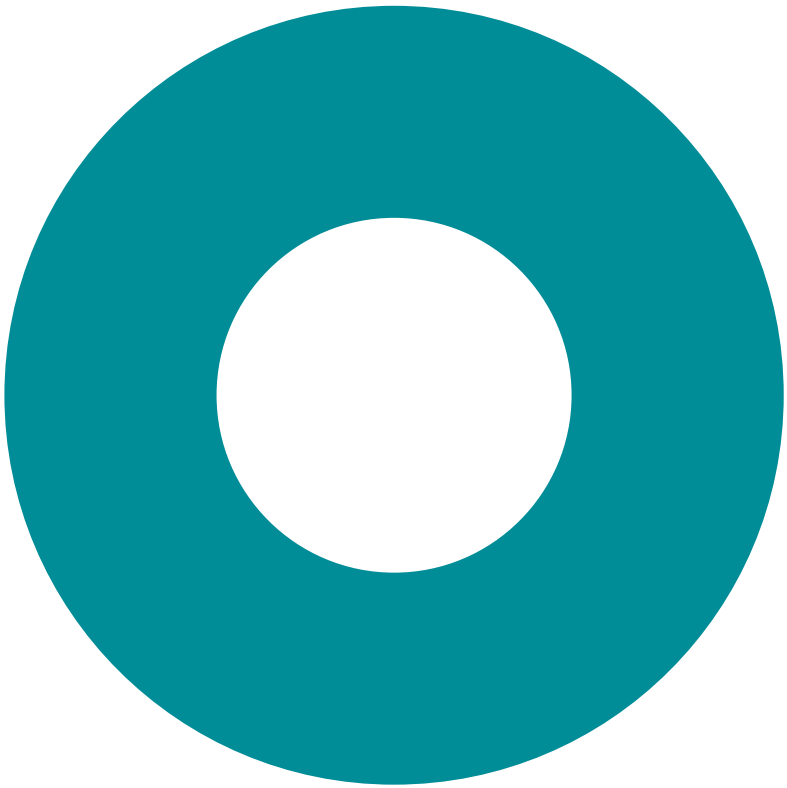
Make Nutrition **Visible**



Make the health impact that matters!

BioAnalyt

TOP 100 INNOVATOR 2014

Development, manufacture and sales of all BioAnalyt test kits (devices, reagent vials) are carried out in accordance with ISO 9001:2015 and have been certified by TÜV NORD, Germany.

This material has been developed with support from Global Alliance for Improved Nutrition.

We are passionate about making **nutrition visible**

At BioAnalyt, we believe that knowledge about nutrients empowers the decisions to change people's health and lives for the better.

This knowledge is derived from measuring the nutrients and understanding their role in the body. To measure the nutrients you need measurement tools.

It is these tools that we develop and deliver for fast and on-the-spot measurement of nutrients. In this booklet we exemplify the application areas of iCheck and the way in which it can support you.

With the measurement data from iCheck you can take the informed decisions to make the real impact in the global fight against malnutrition!

We are happy to receive your questions and comments at ***contact@bioanalyt.com***!

Sincerely,
Your BioAnalyt team!

www.bioanalyt.com

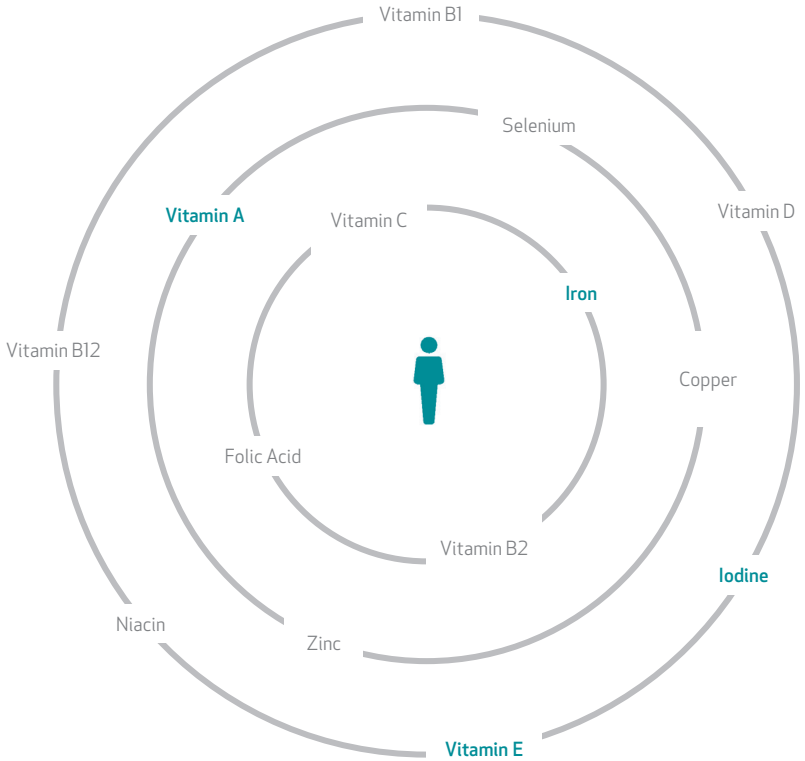
www.facebook.com/bioanalyt

www.linkedin.com/company/bioanalyt

Our world is **not well-fed**

Good health is not possible without good nutrition. Collectively, malnutrition is responsible for more ill health than any other cause and cost global society up to US$3.5 trillion per year. Undernutrition explains around 45% of deaths among children under five, while overweight and obesity contribute to an estimated 4 million deaths or 7.1% of all deaths (Global Nutrition Report, 2018).

106 million children globally are stunted or will not reach their full potential largely due to malnutrition. The foods consumed may have enough calories but without crucial micronutrients, such as minerals and vitamins, a child will not reach its full physical and mental potential. Iron, zinc, vitamin A, folate and iodine deficiencies effect an estimated third of global population as they are the most difficult to satisfy without diverse diets.



Bring the **nutrients** to the **malnourished**

There are programs that can, when implemented properly, effectively deliver the much needed nutrients to the malnourished. These programs encompass direct micronutrient supplementation for women and children at the highest risk of severe malnourishment, micronutrient fortification of staple foods, school feeding, food diversification and education.

Nutrition Programs

Direct micronutrient supplementation

Micronutrient fortification of staple foods

Food diversification
School feeding projects

Ensure that programs **save lives**

You cannot manage what you cannot measure

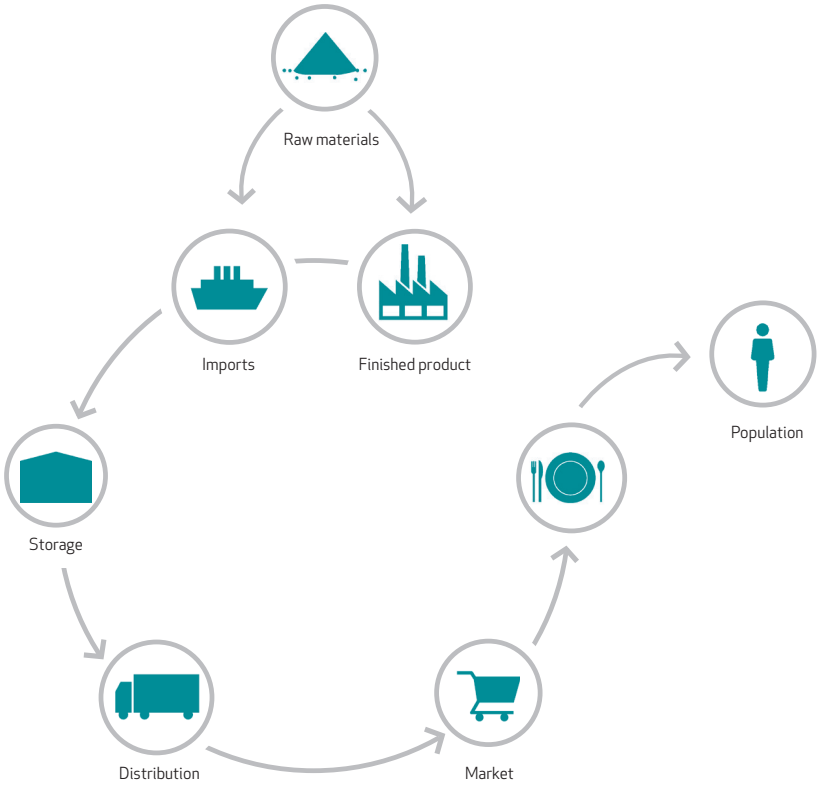
In the Sustainbale Development Goals (SDGs) the United Nations set a very clear target to end all forms of malnutrition by 2030. Furthermore, World Health Organization (WHO) set targets for 2025 to reduce stunting in children under-5 by 40%, and to reduce aneamia by 50% in women of reproductive age. Eliminating malnutrition means saving those lives. Many nutrition programs were implemented and large investments made. But why are we still lagging behind in reaching the set target?

The key to success in any nutrition program is effective and robust monitoring. When done accurately, it provides you with valuable data about your performance and enables you to correct the program and stay on the right track. Accurate monitoring saves you time, money and resources, builds the trust with the sponsor supporting the program, and ultimately saves lives!

Track the **nutrients** to the **spoon**

To monitor a nutrition program implies making sure that the micronutrients actually reach a child's plate and in the right amount. To ensure that this is the case you must measure the nutrients at each and every point of the value chain.

iCheck enables you to do just that, and at a fraction of the cost and resources needed when using standard laboratory methods.

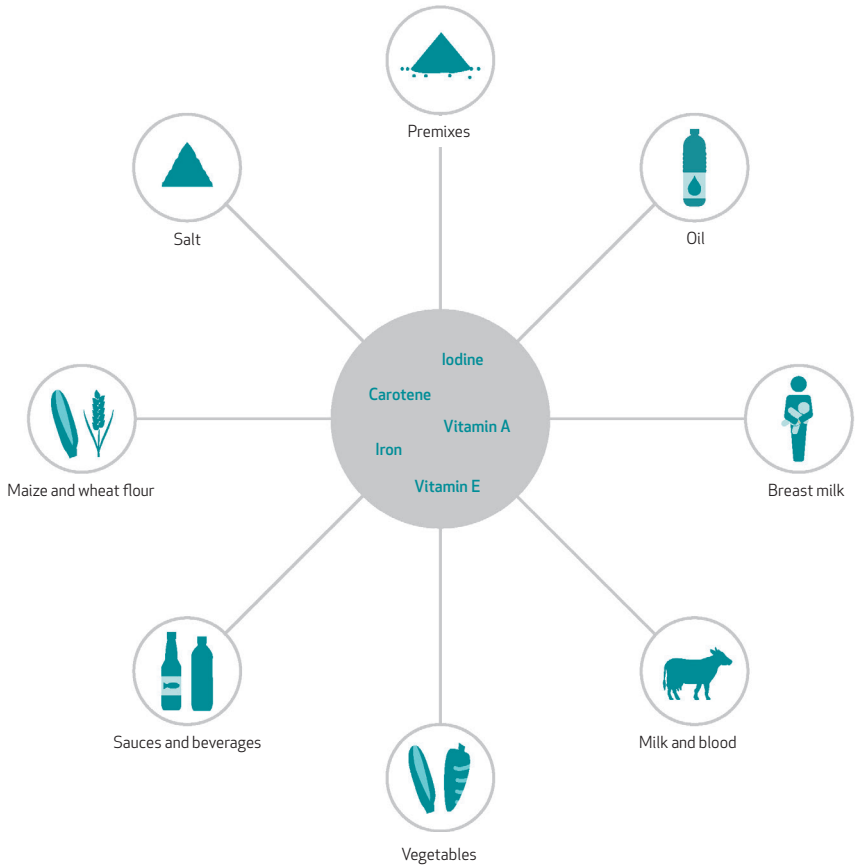


Know where the nutrients are **now with iCheck**

iCheck enables you to know, here and now, how much of the nutrients are in the sample. It is an all-inclusive test kit for rapid measurement of nutrients in food and biological fluids. It gives you immediate result and empowers you take the right action at a time and location it is needed.

Measure **key micronutrients** with iCheck

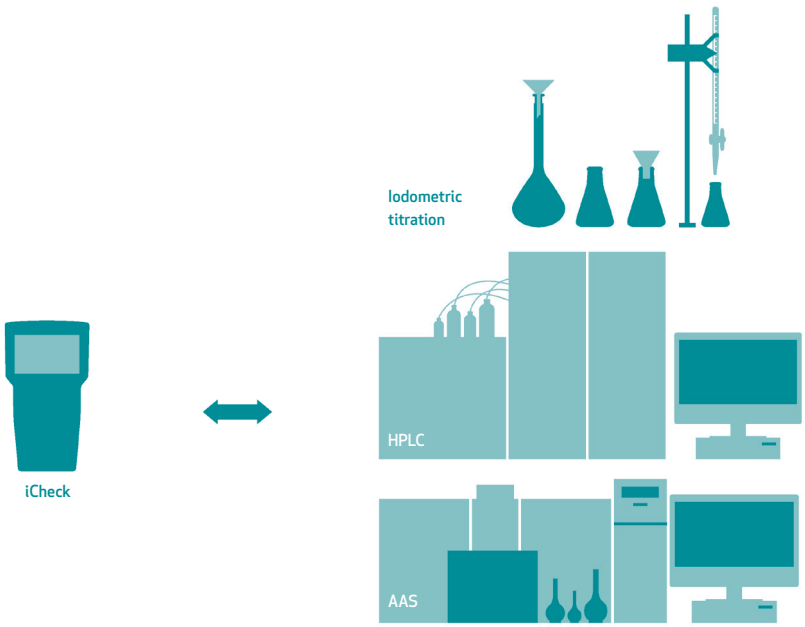
The most important nutrients in the fight against malnutrition are iodine, iron, vitamin A, zinc and folic acid. With iCheck you can now quantitatively measure four of the five: vitamin A, iron, iodine and vitamin E in a wide range of staple foods, vitamin premixes and in biological fluids.



Trust your **results**

We develop, produce and control each iCheck following a rigorous standardized process in accordance with ISO 9001:2015. Each iCheck is further internally and externally validated to assure performance and accuracy of the results.

The validation combines assessment of precision, trueness and comparison to an accepted reference method. The validation terminology and validationare described in detail in our ***Performance Guides***.



Get the **support** you need

Training

On-site support:

- To ensure that iCheck performs accurately in the hands of the operator our technical experts provide extensive hands-on trainings and workshops at user's site.

On-line support:

- Training is also offered via video-conference. Furthermore we are continuously available to respond to technical inquiries via WhatsApp, e-mail and phone.

Coverage studies

- For stakeholders that are conducting large-scale surveys to assess coverage at the market or household of fortified food, we offer in-house testing services in cooperation with accredited lab service providers.

- When the samples cannot be shipped to us in Germany, we can provide training and administration of testing on-site.

Fit-for-purpose testing

- To ensure that our products accurately measure a specific type of sample we offer in house feasibility tests and sample preparation protocol development.

- For complex samples that may require extra sample preparation steps we offer development of customized sample preparation protocols.

Validation

Each method, sample type and analyte must be validated to correctly assess accuracy of results before any decision can take place. We offer planning and execution of validation studies for iChecks vs. reference methods with specific samples and analytes. The studies are conducted in collaboration with academic institutions and accredited labs.

Save **time, money** and **resources**

What do you need to make a measurement with standard laboratory method:

- laboratory with stable power supply
- expensive analytical instrument
- chemicals and standards
- refrigerator
- several months of training
- scientist to interpret the results correctly

To get the results with standard laboratory may take you weeks. These are the weeks lost when you could have taken action and saved lives!

What do you need to make a measurement with iCheck:

- iCheck device
- iCheck reagent vial
- water
- a day of training

And it takes about 10 minutes to get most of the results with iCheck.

RESOURCE	STANDARD LABORATORY METHOD	iCHECK
Equipment	Fully equipped laboratory	iCheck device
	Analytical instrument	
	Stable power supply	
	Refrigerator	
Chemicals	Chemicals and standards	iCheck reagent vial
Personnel	Highly educated lab technician	1 day trained operator
Cost per sample	50 – 200 Dollars	3 – 15 Dollars
Time per sample	Weeks	>10 minutes

iCheck is used in over **80 countries**

"When assessing the national coverage of adequately iodized salt, our partners report that iCheck Iodine is easy to use and suitable for large-scale surveys where large numbers of salt samples need to be analyzed."
Dr. Fabian Rohner & James Wirth
Co-founder/President and Managing Director, GroundWork LLC

"BioAnalyt truly revolutionized quantitative Vitamin A measurement in fortified foods."
Dr. Andreas Bluethner
Director Food Fortification & Partnerships BASF

"iCheck is a real breakthrough innovation that brings the lab to the field, making point-of-care nutrient status assessment a reality at last."
Dr. Klaus Kraemer
Sight and Life

"iCheck enables us to effectively and efficiently monitor the amount of Vitamin A in our vegetable cooking oil products at the processing stage as well as samples from trade."
Moses Adade
Quality Assurance Manager, Wilmar Africa Limited

"Guatemala is one of the countries with obligatory fortification of granulated table sugar with vitamin A. We have been able to verify that the readings the iCheck Fluoro gives for sugar vitamin A concentrations conforms to level mandated by the national norm".
Dr. Noel W. Solomons
Scientific Director, CeSSIAM Guatemala City

The significance of the iCheck FLUORO cannot be overemphasized. It is easier to operate, the method is faster, produces results in time for process control purposes just to mention a few. If process control is done in time, losses are minimized and production is optimized. If results are reliable, it reduces rework and increases confidence"
Kingsley Phiri
Laboratory Manager, Illovo Sugar Limited

"Partnering with BioAnalyt made sense because we needed a rapid and reliable way to test fortified foods to assess coverage and improve the delivery of national fortification programs."
Greg Garrett
Large Scale Food Fortification Director, GAIN

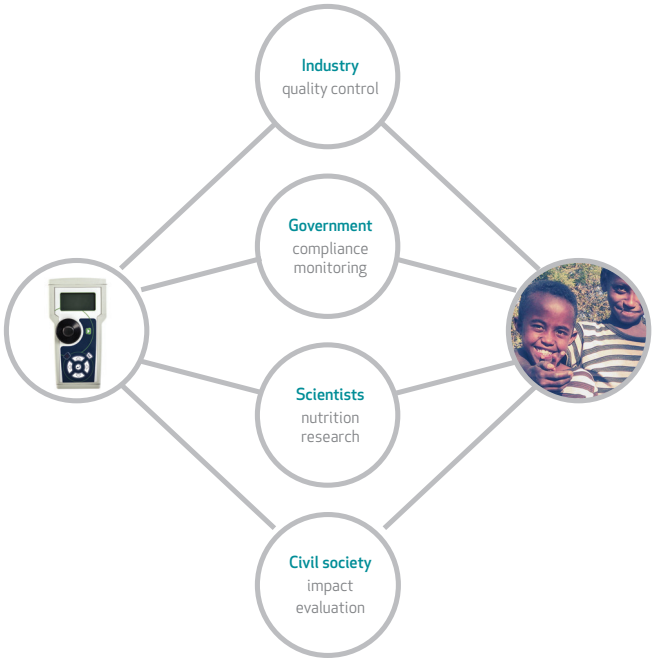
Together we make the **impact that matters**

Only together we can eliminate malnutrition and save the lives of millions!

We support each and every stakeholders to ensure the success of nutrition programs. These stakeholders include:

- Food producers, who test the quality of vitamin premixes and the finished product on-the-spot
- Government food inspectors, who monitor the compliance of food producers and imports
- Scientists in research institutes and labs, who require scalable and fast results in nutrition research
- Civil society and NGOs, who monitor the progress of nutrition programs.

Common measurement tools, such as iCheck, are easy to operate and can be used by stakeholders with varying technical skills. Having fast, quality and comparable data enables all of us to take decisions and actions to optimize the nutrition programs and ultimately save lives.



iChecks in **peer-reviewed journals**

A comparison study of five different methods to measure carotenoids in biofortified yellow cassava (Manihot esculenta). A.M. Jaramillo et al., PLOS One, 13 (12), 2018.

Household Coverage with Adequately Iodized Salt Varies Greatly between Countries and by Residence Type and Socioeconomic Status within Countries: Results from 10 National Coverage Surveys. J.M. Knowles et al., ASN The Journal of Nutrition, 147 (Suppl.), 2017.

Household Coverage of Fortified Staple Food Commodities in Rajasthan, India. G.J. Aaron et al., PLOS One, 11 (19), 2016.

Comparative Validation of Five Quantitative Rapid Test Kits for the Analysis of Salt Iodine Content: Laboratory Performance, User- and Field-Friendliness. F. Rohner et al., PLOS One, 10 (9), 2015.

Proxy markers of serum retinol concentration, used alone and in combination, to assess population vitamin A status in Kenyan children: a cross-sectional study. E.F. Talsma, BMC Medicine, 13 (30), Additional File, 2015.

Assessment of a portable device to quantify vitamin A in fortified foods (flour, sugar, and milk) for quality control.
A. Laillouet al. Food and Nutrition Bulletin, 35 (4), 2014 .

Comparison of breast milk vitamin A concentration measured in fresh milk by a rapid field assay (iCheck Fluoro) with standard measurement of stored milk by HPLC. R. Engle-Stone. European Journal of Clinical Nutrition, vol. 68 (8), 2014.

Food fortification and vitamin A analysis. A. de Jaeger of South African Grain Laboratory (SAGL). FST Magazine (South African Food Science and Technology), 2014.

Rapid quantification of iron content in fish sauce and soy sauce: a promising tool for monitoring fortification programs.
A. Laillou et al. Food and Nutrition Bulletin, 34, no. 2 (supplement), 2013.

Quantification of vitamin A in fortified rapeseed, groundnut and soya oils using a simple portable device: comparison to High Performance Liquid Chromatography. C. Renaud et al. International Journal for Vitamin and Nutrition Research, 83 (2), 2013.

Retinol assessment among women and children in Sahelian mobile pastoralists. M. Bechir. Eco Health, 9, 2012.

Progress in screening pro-vitamin A enhanced cassava genotypes using iCheck Carotene. E.Y. Parkes et al. IITA Nigeria, abstract at ISTRC -AB, 2012.

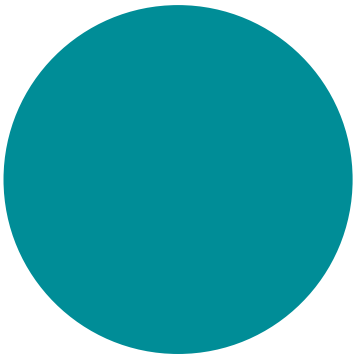
Validation of a user-friendly and rapid method for quantifying iodine content of salt. F. Rohner et al. Food and Nutrition Bulletin, vol. 33, no. 4 (supplement), 2012.

Vitamin A in sugar determined by a rapid assay device. J. D. Sanchez-Meneet al. Center for Studies of Sensory Impairment, Aging and Metabolism (CeSSIAM) Bulletin of Research Abstracts, vol. 23 (1), 2012.

A new test kit's potential for the rapid analysis of vitamin A in human and cow milk. F. J. Schweigert. Sight and Life, vol. 25 (3), 2011.

Quantification of vitamin A in palm oil using a fast and simple portable device: method validation and comparison to High-Performance Liquid ChromatographyF. Rohneret al.International Journal for Vitamin and Nutrition Research, 81 (5), 2011.

BioAnalyt



measure for life
Bio**Analyt** GmbH • Rheinstraße 17 • 14513 Teltow, Germany • T +49 (0)33 283 51 5 000
contact@bioanalyt.com • www.bioanalyt.com