



Welcome

When do We Reach the Frontiers of Nutrition?

I am glad that *Frontiers in Nutrition* is not a protected topic. Typing it into the well-known search engine reveals 26,000 hits. The theme has been widely used for conferences, book titles, and postgraduate courses, and most recently, *Frontiers in Nutrition* was added to the “Frontiers in” journal series of the Nature Publishing Group with the mission: “No subject pertains more to human life than nutrition. The aim of *Frontiers in Nutrition* is to integrate major scientific disciplines in this vast field in order to address the most relevant and pertinent questions and developments.”

What are the most pertinent questions and developments in nutrition, however? The last edition of this magazine was dedicated to implementation science, which we at *Sight and Life* believe is the new *Frontier in Nutrition* if we are to successfully apply in programs the vast body of reliable evidence that already exists and build new evidence further downstream during the implementation process.

From MDGs to SDGs

At the dusk of the Millennium Development Goals (MDGs) and the dawn of the Sustainable Development Goals (SDGs) – the final edition of *Sight and Life* in 2015 will be dedicated to the MDGs and SDGs – we wanted to give leading thinkers in nutrition science the opportunity to share with our readers where they think the *Frontiers* are located. You will find the products of their thought in this edition of the magazine, in whose pages you can explore a wide variety of topics including multiple micronutrients in pregnancy, epigenetics, biomarkers and bio-indicators, benefit-risk assessment, inflammation, nutrigenetics and nutrigenomics, proteomics and metabolomics, mobile health, systems nutrition, and food systems, as well as early life nutrition and the developmental origins of adult disease.

Why these topics are so dominated by basic sciences will become evident in the thought-provoking commentary by Andrew Prentice entitled “Discovery Science for Global Health.” Being a nutrition think tank and, as such, engaging a wide range of thinkers, carries with it the risk that the editor may not fully agree with all the opinions these contributors express. The very fact that they promote thinking and dialogue is in itself, however, positive.

In Andrew’s piece, I struggle with his opinion that with regard to the recommendation for the use of prenatal multiple micronutrient supplements, the glass is half-empty rather than half-full. I concur rather with the opinion of many in the field that the evidence is compelling enough to change policies and guidelines regarding prenatal multiple micronutrient supplements. I fully agree with Andrew, however, that the nutrition community has to re-invent itself in some way and make better use of trials and programs to advance the science. Understanding the biology of malnutrition and growth, for instance, will help us to design more effective interventions. It is not enough to continually state that more research is warranted when we have another inconclusive study result. I have seen too many underpowered RCTs based on incorrect assumptions as to the malnutrition problem. Ideally, basic and applied scientists and programmers will work together to ask the right questions and find the right answers to (unexpected) results. As a minimum requirement, let’s agree to gather sufficient information on the magnitude of the malnutrition problem before initiating research and/or programs; this will give adequate room for response to the intervention.

.....
“It is not enough to continually state that more research is warranted when we have another inconclusive study result”
.....

Bridging the nutrient gap

At the recent Asian Congress on Nutrition (ACN) in Yokohama, Japan, Regina Moench-Pfanner and I organized a symposium entitled “Bridging the nutrient gap – which delivery channels can effectively provide the missing nutrients?” This symposium emphasized the need for quality data in order to make informed decisions. Junsheng Huo presented implementation experience with iron-fortified soy sauce in China, and Van Khanh Tran shared the Vietnamese micronutrient deficiency control program. Both China and Vietnam based their micronutrient control programs

on thorough efficacy testing linked to available national nutrition data. Both countries also monitor the progress of their mitigation strategies. However, countries should place more emphasis on the elucidation of the etiology of anemia when anemia is a key public health concern, particularly when it is no longer a severe or moderate problem. Alternative strategies, such as targeted multiple micronutrient interventions for populations at risk (for example, micronutrient powder for infants and young children and/or inflammation control through improved water, sanitation and hygiene) should be sought. Here again, we can expect major gains from discovery science.

Giving nutrition the voice it deserves

Frontiers in the Nutrition Sciences was also the topic of the annual symposium of the US Food and Nutrition Board (FNB) of the Institute of Medicine almost 30 years ago in 1987. In the proceedings, the Chairman and Director of the FNB stated: “*It [the topic] symbolizes the Board’s concern about declining attention to nutrition ... but more importantly it expresses the Board’s conviction that nutrition research has a bright and challenging future. Realization of this potential, however, requires cognizance of advances in molecular biology and related biological and physical sciences ...*” The symposium provided insights into basic and applied sciences for nutrition in the US and internationally as well as research and training in nutrition sciences. The volume included a commentary by Joan D Gussow with a remarkable statement on how impotent the nutrition community felt at that time to influence nutrition messages and policy: “*We nutrition educators have seen ourselves as a relatively powerless voice shouting into the wind of information that sells ... information that may or may not have consequences for eaters’ nutritional status.*” Some might say that this is US-specific and does not apply to the nutrition context in low- and middle-income countries. I would argue, however, that the global nutrition community didn’t have a real voice until recently. Thankfully, nutrition has a bright and challenging future and has gained a voice.

Scaling up effective nutrition programs

Significant milestones in nutrition advocacy have been achieved in the past 25 years (please see table), but it is perhaps the 2008 Lancet series on Maternal and Child Nutrition and the subsequent formation of the Scaling Up Nutrition (SUN) Movement that have been most instrumental in giving nutrition the voice it deserves. The SUN has been outstandingly successful in advocacy and political mobilization, raising the profile of nutrition at the global level: 55 countries have signed up to the movement. However, according to the Independent Comprehensive Evaluation (ICE) report of the SUN, there has been only limited translation of this raised awareness into action at country level. For the scaling-up of effective nutrition programs, it will be essential to

increase capacity at country level, particularly leadership development and support in program design and delivery, as well as monitoring & evaluation through implementation research.

At *Sight and Life*, we are concerned about capacity building, leadership development and implementation science in nutrition. In March 2014, the World Food Programme, the Institute of Human Nutrition of Columbia University and *Sight and Life* convened thought leaders from multiple sectors on capacity development. This initiative will lead to a publication entitled “Educating and training a workforce for nutrition in a post-2015 world.” Other important initiatives of *Sight and Life* include the long-term partnership with the African Nutrition Leadership Programme, and, last but not least, our support for the creation of a new society fostering implementation science in nutrition. In February of this year, we hosted a planning workshop with key individuals from leading organizations with a stake in implementation science; a report is forthcoming.

.....
“At *Sight and Life*, we are concerned about capacity building, leadership development and implementation science in nutrition”

Encouraging smarter and more effective interventions

But when do we reach the frontiers of nutrition? This is largely context-specific. In low-income countries and fragile states, with limited individual and institutional capacity, the frontier may be reached when dietary intakes are assessed and the results have to be converted into programs. In other, more sophisticated, contexts, the frontier may only be reached when 5,000–10,000 proteins are classified in proteomics. The instrumentation is here not the limit: the interpretation is the frontier, using bioinformatics. And the frontiers are not static. As the German scientist Georg Christoph Lichtenberg stated in the last quarter of the 18th century, “*Where the frontier of science once was is now the center.*” Therefore it is up to us, the nutrition community, to define the *Frontiers in Nutrition* based on context and need, working in partnership across sectors and disciplines, considering the whole continuum of evidence and gathering more evidence downstream in programs so as to give discovery science a role for smarter and more efficacious interventions.

With warm regards,



Klaus Kraemer

“

Frontier: “A border between two countries”,
“a distant area where few people live”, or
“the limits of knowledge in a particular field”

Merriam Webster

”

- 1990 > World Summit for Children
.....
- 1991 > 1st Hidden Hunger Conference, Montreal, Canada
.....
- 1992 > International Conference on Nutrition I, Rome, Italy
.....
- 1992 > Micronutrient Initiative formed
.....
- 2000 > United Nations establish Millennium Development Goals
.....
- 2000 > Bill & Melinda Gates Foundation founded
.....
- 2002 > Global Alliance for Improved Nutrition (GAIN) created
.....
- 2004 | 08 | 12 > Copenhagen Consensus
.....
- 2006 > Repositioning Nutrition as Central to Development,
World Bank
.....
- 2008 | 13 > The Lancet series on Maternal and Child Nutrition
.....
- 2010 > Scaling Up Nutrition (SUN) formed
.....
- 2013 > Nutrition for Growth global summit, London, UK
.....
- 2014 > 1st revitalized Micronutrient Forum
.....
- 2014 > International Conference on Nutrition II, Rome, Italy
.....
- 2014 > Global Nutrition Report
.....
- 2015 > Sustainable Development Goals

**Nutrition
Advocacy:
Key
Milestones**

“

“Where the frontier of science once was
is now the center”

Georg Christoph Lichtenberg (1742–1799)

”

Share your thoughts with us – and with the world!

Sight and Life encourages scientific discourse. We therefore invite you to share with us your views on what are the real frontiers in nutrition.

Social Media

Social media such as blogs, Facebook or LinkedIn have enabled the nutrition community to share its voice far beyond peer-reviewed publications and presentations at conferences and workshops. This has provided more opportunity to engage with policy-makers, media and the public at large.

These new possibilities come with risks and benefits. Risks, as more anecdotal evidence and myths can be circulated. Benefits, because the voice of nutrition can be better heard, and can exert a greater positive influence. For the benefits to outweigh the risks requires a much greater level of responsibility from those of us nutrition professionals who are active on social media.

This development has, however, ensured that we are no longer “*a relatively powerless voice shouting into the wind.*” We have the tools to share messages about what works and what doesn’t. At the same time, the level of “noise” in the online environment has increased tremendously, and the recipient may be hopelessly overwhelmed in the attempt to identify reliable information.

Monthly Blog

We at *Sight and Life* are excited to announce the launch of a new monthly blog on nutrition and health-related topics. Please visit our website to read it: we hope it will prove interesting, and that it will stimulate your own nutrition advocacy efforts. We will continue to disseminate impartial information using this new platform, and we look forward to receiving your feedback on it.