**ESPEN Forum**

Against clinical malnutrition

The European Society for Clinical Nutrition and Metabolism (ESPEN) Forum, held last Sunday, focused discussion on malnutrition in health care institutions, screening tools and nutritional intervention strategies for old and fragile adults and for cancer patients. **Page 5**

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**Interview**

How diet influences health

The findings from the NHLBI/ UHG Global Network were presented yesterday; poor diet is known to be associated with major causes of morbidity and mortality. **Page 2**

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**Reminder**

The Special Lecture “Modulation of the gut microbiota by nutrients with prebiotic and probiotic properties” by Dr. Nathalie Delzenne that was initially scheduled from 16:00 - 16:30 in Room C on Monday, September 16th; has been rescheduled to Thursday, September 19th from 11:30 to 13:30 at PS4-54 in Room C. !

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**Interview with Alfredo Martínez**

The Chairman of the Scientific Committee of the 20th ICN talks about talks about this event and the role of the Congress in promoting networking. **Page 7**

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**Lifestyle and childhood obesity**

ISCOLE will provide evidence to inform the development of lifestyle and policy interventions to address obesity that can be culturally adapted for implementation. **Page 6**

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**Controversies about iron nutrition**

How much is too little and how much is too much when it comes to iron nutrition in infants? Bö Lönnerdal, from the University of California, gave a special lecture on this subject yesterday. “There’s no doubt that children need iron, but I think that too many studies have been overambitious, giving too much iron to prevent iron deficiency and we have to be cautious.” **Page 8**

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**Biotechnology and its relevance to pediatric nutrition**

Ronald Ellis Kleinman Chief of the Department of Pediatrics at MassGeneral Hospital for Children in Boston (USA), addressed the Congress yesterday in a talk entitled “Genetic engineering, biotechnology and its relevance to pediatric nutrition”. As a pediatrician he is particularly interested in how biotechnology and food production can help the millions of children who suffer from malnutrition. With the rapid increase in the world population, a corresponding rapid expansion of food production is required. **Page 2**

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**Micronutrient Research: From Meta-analyses to Metabolomics**

Lindsay Allen gave yesterday’s plenary lecture, focused on micronutrient research programs and policy. As she reminded her audience, since the 1980s there has been a tremendous increase in research into the prevention and treatment of micronutrient deficiencies in developing countries. “It has developed into a global movement supported by governments, NGOs, and bilateral and multinational organizations. There is no doubt that micronutrient interventions save lives, reduce morbidity and improve child development. However there are still important gaps in our knowledge. For example we do not know the causes of two major nutrition-related problems - low birth weight and growth faltering - nor do we have very effective nutrition interventions that will prevent these adverse outcomes”. **Page 4**
Biotechnology and food production can help prevent malnutrition in children

Professor Ronald Ellis Kleinman, Chief of the Department of Pediatrics at Mass General Hospital for Children in Boston, addressed the Congress yesterday in a talk entitled “Genetic engineering/biotechnology and its relevance to pediatric nutrition”. As a pediatrician he is particularly interested in how biotechnology and food production can help the millions of children who suffer from malnutrition. With the rapid increase in the world population, a corresponding rapid expansion of food production is required. Dr Kleinman believes that science has an important role to play by helping “develop plants that can grow in drought conditions, that are more nutritious and that can appeal to the people who will be eating them.” He began by giving a brief explanation of what it is that kills young children, citing among other causes low family income and education and food insecurity in families. He then went on to trace the history of the fruit and vegetables we eat today and “how we can take the science and the technology to be safe. He added that “develop plants that can grow in drought conditions, that are more nutritious and that can appeal to the people who will be eating them.” He began by giving a brief explanation of what it is that kills young children, citing among other causes low family income and education and food insecurity in families. He then went on to trace the history of the fruit and vegetables we eat today and “how we can take the science and the technology to be safe. He added that “develop plants that can grow in drought conditions, that are more nutritious and that can appeal to the people who will be eating them.” He began by giving a brief explanation of what it is that kills young children, citing among other causes low family income and education and food insecurity in families. He then went on to trace the history of the fruit and vegetables we eat today and “how we can take the science and the technology to be safe. He added that “develop plants that can grow in drought conditions, that are more nutritious and that can appeal to the people who will be eating them.”

For farmers in poor, largely agricultural countries where it is most needed, genetically modified crops can help bring this shift about. He mentioned a number of specific crops which could help us achieve this goal. These included golden rice, which provides additional Vitamin A and iron, both vital for children. He also mentioned BT corn, which is resistant to insects, and other plants which are resistant to weed-killers, to drought and to excessive salt content in soil.

Dr Kleinman explained that the alleged health risks associated with GMO food often raised in particular in Europe were unfounded, in that at least 15 major international health organizations had reviewed this question and judged GMO technology to be safe. He added that GMO had now been around for 25–30 years and there was a huge body of research in support of this view. He said that an analysis of this research would almost certainly lead one to the conclusion that GMO was safe and that opposition to it was more a question of politics, of feelings and perceptions rather than of scientific evidence. He said that over a billion hectares of land had been planted with GMO crops and that this would not have happened if farmers were not happy with the results. For farmers in poor, largely agricultural economies in Africa and Asia to be able to produce enough food, they need plants that can withstand drought and resist attacks from locusts and other pests. In this way their output will increase. In the US output per hectare has increased dramatically since GMO corn was introduced and around 90% of the corn planted today is GMO, whereas in the countries where it is most needed, the poorest countries with the worst environmental conditions and a rapidly increasing population, uptake has been slower.

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ELPOZO BienStar, un compromiso con la alimentación saludable

ELPOZO trabaja desde hace años en el desarrollo de productos saludables adaptados a las personas con necesidades específicas, siendo pionero en la creación de los productos Sin Sal en cárnicos.

La gama BienStar está compuesta por una amplia variedad de productos con un PERFIL NUTRICIONAL OPTIMIZADO, que además de tener todos los beneficios de la carne (proteínas, fósforo y vitaminas de Grupo B), destacan también por ser:

- Bajos en Grasa, lo que disminuye el contenido calórico.
- Bajos en Grasas Saturadas, lo que contribuye a mantener niveles normales de colesterol sanguíneo.
- Reducidos en Sal en las variedades de Jamón Cocido y Pechuga de Pavo, ideales para dietas que requieren la restricción de sodio.
- Sin Lactosa y Sin Gluten, aptos para personas intolerantes.

La última incorporación a la gama es una destacada INNOVACIÓN dentro del mundo cárnicos: LA MORTADELA BAJA EN GRASA Y REDUCIDA EN COLESTEROL, con una composición nutricional similar a un jamón cocido.

<table>
<thead>
<tr>
<th>Valor energético</th>
<th>Mortadela Baja en Grasa BienStar</th>
<th>Mortadela tradicional ElPozo</th>
<th>Jamón Cocido Extra tradicional ElPozo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grasas</td>
<td>2,5g</td>
<td>22g</td>
<td>3g</td>
</tr>
<tr>
<td>Grasas saturadas</td>
<td>0,9g</td>
<td>7g</td>
<td>1,4g</td>
</tr>
<tr>
<td>Colesterol</td>
<td>25mg</td>
<td>44,5mg</td>
<td>45mg</td>
</tr>
<tr>
<td>Hidratos de carbono</td>
<td>3g</td>
<td>3,3g</td>
<td>3,3g</td>
</tr>
<tr>
<td>Proteínas</td>
<td>12g</td>
<td>11g</td>
<td>18g</td>
</tr>
</tbody>
</table>

- Reducida en Calorías debido a la reducción del contenido en grasa.
- Baja en Grasa, con un 85% menos de grasa que la mortadela tradicional.
- Baja en Grasas Saturadas (0,9g/100g).
- Reducida en Colesterol.
- Sin Lactosa y Sin Gluten.

¿Por qué recomendar Mortadela Baja en Grasa BienStar?

Grandes beneficios nutricionales con el sabor más auténtico de la mortadela tradicional. Muy recomendable en la alimentación equilibrada de toda la familia y alimento perfecto para los bocadillos de los niños. Adecuada para grupos con intolerancias específicas: SIN LACTOSA y SIN GLUTEN.

Un Estudio de Intervención Nutricional llevado a cabo por la Universidad de Navarra mostró que el consumo de Mortadela Baja en Grasa BienStar, como parte de una dieta equilibrada durante 10 semanas, puede considerarse compatible con una estrategia dietética dirigida al control del peso corporal.
How important is the balance of fatty acids in determining the risk of allergic disease?

Last Sunday DOHad forum centered on nutrition and early life origins of allergic disease, by Philip C. Calder, Professor of Nutritional Immunology, Human Development & Health Academic Unit in University of Southampton, United Kingdom. As Professor Calder showed, there may be a causal relationship between n-6 polyunsaturated fatty acid (PUFA) intake and allergic disease and there are biologically plausible mechanisms, involving eicosanoid mediators of the n-6 PUFA arachidonic acid, which could explain this. “There is some evidence that high linoleic acid intake is linked with increased risk of atopic sensitization and allergic manifestations. Fish and fish oils are sources of long chain n-3 PUFAs and these fatty acids act to oppose the actions of n-6 PUFAs. It is considered that n-3 PUFAs will protect against atopic sensitization and against the clinical manifestations of atopy” he explained.

Epidemiological studies investigating the effect of maternal fish intake during pregnancy on atopic or allergic outcomes in infants/children of those pregnancies have demonstrated protective associations. But epidemiological studies investigating the effects of fish intake during infancy and childhood on atopic outcomes are inconsistent, although the majority of the studies showed that fish had a protective effect.

“Fish oil provision to pregnant women is associated with immunological changes in cord blood. Provision of fish oil during pregnancy may reduce sensitisation to common food allergens and reduce prevalence and severity of atopic dermatitis in the first year of life. This effect may persist until adolescence with a reduction in prevalence and/or severity of eczema, hayfever and asthma. Fish oil supplementation in infancy may decrease the risk of developing some manifestations of allergic disease, but whether this benefit persists as other factors come into play remains to be determined”, he remarked.

Physical activity: Can it help prevent cognitive impairment and Alzheimer’s disease?

CHAIRS: Noël C. Barengo, Unit of Non-Communicable Diseases, Department of Prevention and Health Promotion, Ministry of Health and Social Protection, Colombia
Jonatan Ruiz, Department of Physical Education and Sport, School of Sport Sciences, University of Granada, Granada, Spain

- Nutrition, brain function and cognitive performance
  Jose Alejandro Luchsinger, Columbia University Medical Center, New York, USA

- Physiological mechanisms of physical activity in the prevention of Alzheimer’s disease
  Denise Head, Department of Psychology, Washington University, St Louis, USA

- Lifestyle interventions to prevent Alzheimer’s disease: Experiences from the FINGER
  Tiia Ngandu, National Institute of Health and Welfare, Helsinki, Finland

- Physical activity in the prevention of Alzheimer’s disease
  Jaakko O. Tuomilehto, MPOSc. Department of Vascular Prevention, Danube-University Krems, Krems, Austria

- Concepts of exercise prescription in clinical practice
  Noël C. Barengo, Unit of Non-Communicable Diseases, Department of Prevention and Health Promotion, Ministry of Health and Social Protection, Colombia

**Allen Keynote McCollum International Lecture**

Micronutrient Research, Programs and Policy: From Meta-analyses to Metabolomics

Professor Allen gave yesterday’s plenary lecture, focused on micronutrient research, programs and policy. As she reminded her audience, since the 1980s there has been a tremendous increase in research into the prevention and treatment of micronutrient deficiencies in developing countries. “It has developed into a global movement supported by governments, NGOs, and bilateral and multilateral organizations. There is no doubt that micronutrient interventions save lives, reduce morbidity and improve child development. However there are still important gaps in our knowledge. For example we do not know the causes of two major nutrition-related problems - low birth weight and growth faltering - nor do we have very effective nutrition interventions that will prevent these adverse outcomes”.

The main objective of many micronutrient intervention studies and programs is the reduction of child growth stunting, but meta-analyses of the trials show this is extremely difficult to achieve through improved nutrition alone. As Professor Allen put it, “this raises the risk that organizations which have been investing in micronutrient nutrition research and programs could decide that all that is needed is to include supplements, and/or fortified complementary and staple foods as part of the maternal and child health care package, and that no more research is needed. However much could still be learned by moving beyond the usual outcomes measured in micronutrient research, namely growth, morbidity and mortality, and less often, child development”. In her opinion, modern tools and techniques should be used to measure the effects of micronutrients on a range of new outcomes – a “systems biology” approach. “In the same individual we can study metabolism using metabolomics, inflammation and immune function, hormones, cardiovascular and liver function, changes in the intestinal flora, and gene expression as examples. This will require new collaborations between investigators located in wealthier and poorer countries, but it can provide an excellent opportunity to understand better how our nutritional phenotype is affected by nutrient deficiencies, and the true effects of increasing micronutrient intake”, she explained.

**Lindsay H. Allen** Professor Emerita · Nutritionist in Agricultural Experiment Station, Department of Nutrition · Director, USDA ARS Western Human Nutrition Research Center.
The ESPEN Forum against clinical malnutrition has brought together different European experts in this field, who discussed a range of issues such as malnutrition in health care institutions, screening tools and nutritional intervention strategies for old and fragile adults and for cancer patients. They stressed the importance of Nutrition Day, a European initiative promoted by the University of Vienna, which gathers data about different hospital units from the patients admitted there. The patients fill in a questionnaire, with their demographic details, in which they describe what they have eaten that day. Miguel León from the Medical School at the Complutense University in Madrid and Chairman of the Spanish Parenteral and Enteral Nutrition Society (SENPE) explained that “this research seeks to present a picture of the current situation of the nutritional status and the food intake of patients staying in hospitals, senior citizens’ homes and intensive care units. Now this study is beginning to be performed all over the world”. Nutrition Day has already given rise to various publications and, according to León, the results show that patients with a poorer nutritional intake have higher morbidity and mortality rates during their stay.

The forum also highlighted the pioneering role of Denmark in the organization of national strategies to fight malnutrition, and the fact that they are now implementing measures in hospitals to help staff identify and treat patients who may suffer from malnutrition during their stay.

Another subject discussed was nutritional therapy in cancer patients within the framework of the EPAAC (European Partnership for Action Against Cancer) project, which seeks to improve the treatment and prognosis of these patients with clinical practice guides, which are currently being prepared and will be published at the end of 2013 or the beginning of 2014. Lastly, the experts debated the cost effectiveness of nutritional interventions to prevent and treat clinical malnutrition, in order to raise awareness amongst health professionals, managers and politicians, as well as policy changes to fight against clinical malnutrition.

The results of Nutrition Day indicate that clinical nutrition must improve in hospitals, senior citizens’ homes and ICUs.
New perspectives to understand links between lifestyle and childhood obesity

ISCOLE’s results will provide new evidence to inform the development of lifestyle, environmental, and policy interventions to address childhood obesity that can be culturally adapted for implementation around the world. Preliminary data will be presented today at Lorca Auditorium from 11.30-13.30 pm.

Today will take place the parallel symposium dedicated to the International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE). The primary aim of the ISCOLE is to determine the relationship between lifestyle characteristics and obesity in a large multi-national study of 10 years old children, and to investigate the influence of behavioral settings and physical, social and policy environments on the observed relationships within each country.

The results of this study will provide a robust examination of the correlates of body weight and obesity in children. The physical characteristics of the children are being directly measured in order to classify their body weight and adiposity status, and physical activity and dietary patterns are being measured with the most objective techniques currently available. A concise set of environmental measures that are feasible, valid and meaningful across the international settings included in this research are also being employed. Unites States, Australia, Brazil, Canada, China, Colombia, Finland, India, Kenya, Portugal, South Africa, and United Kingdom are the most important locations of the international study. Some results from Portugal, Kenya or Colombia will be presented today.

Peter T. Katzmarzyk, Associate Executive Director for Preventive Medicine and Healthy Aging in PENNINGTON Biomedical Research Center (USA), provides the rationale and design of the study. “The targeted sample includes 6000 ten years old children from twelve countries in all major regions of the world (Asia, Africa, Europe, South America, North America, and Oceania). The protocol includes procedures to collect data at the individual level: lifestyle, diet and physical activity questionnaires, family and neighborhood level, and the school environment”, says Katzmarzyk. The results of this study will provide a robust examination of the correlates of body weight and obesity in children. “The results will also provide new information to inform the development of lifestyle, environmental, and policy interventions to address childhood obesity that can be culturally adapted for implementation around the world”, Katzmarzyk explains.

Jose Maia, Professor at University of Porto, Portugal, will present preliminary data analysis linking weight status and environment. Thereby, “will be presented concerning the prevalence of overweight and obesity, and their dependence of environmental conditions, namely school settings and family surroundings, using a multilevel approach”, adds. Maia will offer a first overview of ’Cine Wizard’, a user-friendly software that is being developed to analyze and graphically display several capabilities of dealing with the complexities of physical activity patterns and their eventual links to obesity in children. For his part, professor Olga Sarmento, from University of Bogotá, Colombia, will talk about her cross-sectional school-based multilevel study conducted in the year 2012. The study included 905 ten years old children with a response rate of 75.5%. “An ancillary study to assess reproducibility and validity of the ISCOLE Food Frequency Questionnaire (FFQ) was conducted in a subsample of 128 children with a response rate of 89.1%. Children, parents, and teachers received feed-back reports regarding nutrition status and physical activity. In addition, a course of healthy habits was given to children after finishing data collection”, Vincent Onywera. Profesor in Kenyatta University, Nairobi (Kenya), will present also preliminary results from this country. “The problem is currently on a rapid increase in developing countries, including Kenya and the problem is thought to be exacerbated by the emergence of western lifestyle which increases sedentarism and access to nutrient-poor, energy dense foods”, Onywera says.

A solid progress to increase research capacity

The presentation of these preliminary results of ISCOLE study represents the first solid progress of an international collaboration among all world regions, and represents a global effort to increase research capacity and infrastructure in childhood obesity. A standard protocol has been developed for implementation in all regions of the world. Quality control is addressed through the training and certification of personnel, active monitoring of remote data entry, and site visits. A rigorous system of training and certification of personnel has been developed and implemented, including web-based training modules and regional in-person training meetings.

Unique features of the ISCOLE study include the global representation of study sites with a range of low to high income countries at different stages of nutritional transition, robust, standardized training and data collection methods, and the multi-level nature of data being collected, including individual, family, neighborhood, and school levels.

Reminder

Today at Lorca Auditorium
From 11:30 to 13:30
“Our ultimate objective is nutrition research and how it can be applied to human health”

Alfredo Martínez, Chairman of the Scientific Committee of the 20th International Congress of Nutrition, explains some of the key features of the programme and describes the value of this event as a forum to enhance coordination and networking between nutrition specialists in order to enable research in nutrition sciences to bring about improvements in public health.

How would you define this event in a few words?
Over 100 countries are represented in the Adhering Bodies of the Congress of the International Union of Nutritional Science (IUNS). Every four years we nutrition specialists get together for this meeting. The last one was in Thailand and the next one will be in Argentina. The 2013 edition is taking place in Granada. As Chairman of the Scientific Committee and of the Council, I would like to welcome everyone to the Congress. I have been a member of the Scientific Committee of the IUNS for the last 8 years.

What does the organization of the Congress mean for the hosts?
It is an opportunity for Spain, Europe, Latin America and the Mediterranean to receive and play host to 4000 congress participants from all over the world. The programme has been prepared thanks to support from the Council and from the members of the Scientific and Organizing Committee, who have also put forward many ideas. The aim has been to define eight main subject areas or tracks covering all the key topics in our profession, those considered most important in the clinical, teaching, academic and research fields and in terms of health applications.

Which subject areas did you select?
The Congress has been designed to enable us to study the advances made in research and nutrition. There are tracks dealing with nutrition in the life cycle, in public health, clinical nutrition, nutritional variations, its socioeconomic aspects, and its role in the food industry and agriculture. Each track has four to six sections which approach our specialist field of study from a global perspective. The central theme of the Congress can be summarized in the sentence ‘Joining nutrition cultures to active health’. In the end the ultimate objective is nutrition research and its application to human health.

How would you define the role of the Congress in promoting networking?
We have a large number of international forums and meetings that serve this function, offering support for coordination and networking. At this Congress there are scientists from universities and representatives of international institutions such as the WHO, the FAO and other very representative institutions such as the International Union of Food Science and Technology. We have tried hard to attract experts, scientists and professionals without neglecting other important sociological, political and public health aspects. It is important to bear in mind that this is the most important congress in our field. The Congress is also grateful for the collaboration of various different companies at a national and international level.

Do you think the Congress can help forge a better relationship between the industry and institutions?
The Congress brings together professionals and experts from various different fields. It is important not only for the large amount of scientific advances and applications for the consumer. It is also a forum that brings the different professionals closer together, so allowing key public policies relating to food and nutrition to come out of the Congress. It is also a chance for companies to establish relationships with scientists and develop and implement projects in both the public and private sectors. In fact this event is not only for the dissemination and construction of our science but also to find practical applications for health policies.

And how can these ideas and proposals be applied in the real world of action on public health?
The ultimate goal of this Congress is for what we do to have a positive influence on public health and diet in epidemiological terms. It is a slow process, but congresses of this kind, with the special forums and sessions they play host to, are a great opportunity. As Chairman of the Scientific Committee I can assure you that a very significant effort has been made to ensure that all the most important aspects of food and health are being covered. For example research and nutrition, perinatal diet, children’s diet, the prevention of obesity and the implementation of dietary recommendations at an international level. We will also be tackling questions such as the role of nutrition in obesity, in diabetes, in cardiovascular disease and cancer. We will be exchanging information about current assessment methods, identification of the different minerals, micronutrients and vitamins. Special emphasis will be placed on functional foods, which means that food safety specialists will also be taking part. We will also be looking at questions of nutrition education in different societies and cultures, issues which will also involve economic aspects related with food safety and agriculture.

Do you think that research is in danger in the current economic climate?
The organization of this Congress has required great efforts in the current complex economic situation in Spain in particular and at an international level. The organization has gone to great lengths to ensure that men and women from all over the world can take part. Specialists from all 5 continents will be attending. We have strived to make sure that many nations are represented. One of our main goals was to highlight the global nature of this Congress and we hope that we have achieved this in spite of the economic situation.

Latin America, under the double burden of undernutrition and obesity

Dr. Juan Rivera Dommarco, Director of the Nutrition and Health Research Center of the National Public Health Institute (INSP) in Mexico, co-chaired the Satellite Symposium held yesterday on the double burden of undernutrition and obesity in Latin America. The speakers discussed the evidence about the possible causes and consequences of this double burden, including the association between early undernutrition and future risk of obesity and chronic diseases throughout the life course and the possible steps that can be taken to prevent the double burden. Dr. Rivera presented the information from Mexico about the magnitude and distribution of the double burden, as well as the degree to which food and nutrition policies and programs are addressing the coexistence of undernutrition and obesity in his country. “Ten other Latin American countries presented similar information on where they stand in relation to the double burden of malnutrition in the region, identifying whether or not their policies and programs address the issue of the double burden. In some countries it seems that the double burden is not a problem and that the current epidemiological profile presents other challenges”, he stated.

* Satellite Symposium

Latin America, under the double burden of undernutrition and obesity
Controversies about iron nutrition in infants: food-based approaches preferred

How much is too little and how much is too much when it comes to iron nutrition in infants? Bö Lönnerdal, from the University of California, Davis, USA, gave a special lecture on this subject yesterday.

There is no doubt that children need iron, but I think that too many studies have been overambitious, giving too much iron to prevent iron deficiency and we have to be cautious: the way to address this is that you can either work from a higher level and go down, or you can work from a lower level and go up. Or you can find a level, I think, that will benefit infants without causing them any harm", he proposed.

In his opinion, before six months of age, all infants "who are not compromised - and that's a matter of definition - need extra iron: whether they be breast fed or formula fed. After that they need more iron, because they're growing more quickly and they don't have as much iron in their body. But I think we have to be very careful about how much iron we give them at that time!

The next question is whether the iron should be administered in food or in pills. As he reminds us, "iron drops have been used for some time now and most of the negative effects of iron supplements have been detected with iron drops. I think it may be better to use food-based approaches because the food biologically dampens the effect of iron. The trouble is that it's not as well absorbed, so therefore you may have to give them a little bit more iron and that's where we are right now: how much should that be?"

One key issue in this field is the difficulty of performing clinical trials with children. "They take time and often when it comes to iron, since we have so much iron deficiency both in Europe and the USA and indeed worldwide, researchers often do not check iron status when they start their studies or when they're looking at the benefits. You will certainly see benefits if you give iron to a population with iron deficiency. But in any given population, there may be 30%, or perhaps 50% or in Sweden around 95% who are not iron deficient. The question is: are you going to harm them?" he asked.