



TRANSLATING SCIENCE AND TECHNOLOGY INTO PUBLIC HEALTH SOLUTIONS

ILSI Shares Lessons from Micronutrient Programs in Asia

Plant Polyphenols – Scientific Updates for Nutrition and Health

Latest Findings from Australia on Children's Nutrition and Physical Activity

Addressing Infant and Early Childhood Nutrition in Southeast Asia



MESSAGE FROM THE EXECUTIVE DIRECTOR

In order to improve human health, scientific research and discoveries need to be translated into practical applications and solutions. To bridge the gap, translational science and research, a new and rapidly developing domain, is gaining prominence as a bridge between basic and applied research. Translational research removes barriers to multi-disciplinary collaboration, and accelerates both the translation of data into knowledge as well as clinical and healthcare outcomes.

Outside of the medical domain, applying the continuum process of translational research will enable greater interaction between academe and industry, such as in community-based programs or in transforming early-stage innovations into new health products. It will also lead to better understanding of the interaction between food, diet and genome, where more efficient and effective interventions can be developed for greater public health impact.

In this issue of ILSI SEA Region's Newsletter, the theme of Translating Science and Technology into Public Health Solutions underpins the importance of science-based approaches to developing policies and sound strategies for public health impact. The diversity in human nutritional response to diet and consequent health is amply demonstrated in the series of seminars conducted in the region, from the complexity of salt in the diet, to the efficacies of different plant polyphenols and their actions on health. Together with other ILSI Branches, ILSI SEA Region is committed to taking an active role in harnessing new scientific knowledge that leads to tangible, effective public health solutions.



Yeong Boon Yee
Executive Director
ILSI Southeast Asia Region

ILSI SEA REGION GOVERNANCE & LEADERSHIP 2009 – 2010

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Bridging the Gaps between Science, Technology and Public Health



Professor Peter Gluckman

To ensure that science and technology ultimately translate into solutions and benefits for the public, ILSI SEA Region's role is to provide a neutral platform where science-based knowledge can be shared and discussed among various stakeholders in government, academia and industry. Thus, ILSI SEA Region organized a half-day Science Symposium to address this very issue, in conjunction with its 2009 Annual Meeting.

Barriers and Strategies to Translating Science and Research into Policies and Programs

We were privileged to have invited Prof Peter Gluckman, who is Founding Director of The Liggins Institute and one of New Zealand's best known scientists. Prof Gluckman is also concurrently the Program Director of Growth Development and Metabolism at the Singapore Institute of Clinical Sciences. Prof Gluckman acknowledged that there is often an obscure and slow path to the assimilation of good knowledge into public policy, and added that in part this is because public policy actions require the scientific knowledge itself, public acceptance of that knowledge, the cost-benefit and fiscal implications, and the political context of the society.

Focusing on recent research on conditions of pregnancy and long-

term health outcomes, Prof Gluckman said that progress of knowledge in this area would argue for a greater focus on nutritional and other public health interventions during pregnancy. However, he also high-lighted the potential barriers to translating research results into responsive health and nutrition policies and programs. Using this as an example, Prof Gluckman discussed the approaches being pursued to overcome such barriers, and to incorporate this knowledge into policy and action.

Dr Emorn Wasantwisut, Senior Advisor at the Institute of Nutrition, Mahidol University, Thailand, then shared her experiences and lessons learnt from applying research to public health policy. In the developing countries of Asia, the prevalence of child undernutrition contributes significantly to the burden of disease and child mortality. Major intervention programs to tackle micronutrient

deficiencies include supplementation, food fortification, bio-fortification and dietary diversification.

However, while scientific knowledge points to the benefits of these strategies, there are many challenges in bringing them to scale. The process of doing so would require the gaining of national commitment and government leadership; establishing strategic communication and cooperation among key stakeholders; implementing an effective monitoring and evaluation system; as well as developing capacity in technical abilities and program management.

Data and Research Gaps to be Bridged for Better Policy Formulation and Regulation

Dr Tee E Siong, of TES NutriHealth Strategic Consultancy in Malaysia, pointed out that the Southeast Asia region has seen marked changes to the health and nutrition scenarios of its populations. To cope with these changes, governments are reviewing and revising their National Plans of Action for nutrition, and participating actively in aligning their

food regulations with international standards and guidelines on food safety.

Yet, it has become clear that much needed scientific data is lacking in several critical areas. For example, significant gaps exist regarding in-depth understanding of effective food and nutrition intervention measures; continued monitoring of food consumption pattern and nutritional status of all segments of the population; database of health hazards in foods, and community exposure to these hazards; better knowledge of nutrients and components in foods and their role in health and disease etc.

Dr Tee concluded that it is vital to work towards bridging the gaps in knowledge and data. All stakeholders, including the food industry, must be actively involved in meeting this need.

Ways to Harness Science and Technology to Meet Public Health Needs

In his presentation, Dr Roger Bektash, Director of Scientific Affairs for Mars Asia-Pacific, remarked that in an increasingly interconnected world, the improved availability and quantity of food supply has benefited many. However, this is also accompanied by increased risk of greater and wider impact in the event of failures in food safety or nutritional composition. It is

thus necessary to find ways to provide an early warning of impending public health issues, and just as important to provide the scientific basis for remedial actions.

So, how can science and technology be harnessed in response to trends and emerging health issues? Dr Bektash's answer was that monitoring of changing patterns of disease, nutritional status, lifestyle and eating behaviors, and production practices, can provide important "signposts" to future issues. However, the key is to utilize such information effectively. Care must also be taken with the interpretation and communication of such information. Combined with open communication and engagement with stakeholders and partners, the potential impact of trends and emerging issues can be correctly identified.

Mr John Nielson, Associate Director of Scientific Affairs, Regulatory and Nutrition at Kraft Foods Asia Pacific, agreed that advancements in science and technology have helped the food industry to provide consumers with food that not only satisfy their basic nutritional needs, but also delight their senses. However, he added that the food industry must also cater to the consumers' intellectual decisions relating to food choices. In this regard, consumer science and the utilization of new technologies play a very

important role in improving public health.

Understanding consumers and establishing insights into factors that influence their behavior is complicated, with multiple factors potentially playing a role. Research into consumer behavior and new technologies also require substantial investment, and the food industry needs to see commercial viability in such efforts.

Mr Nielson encouraged the food industry to partner with government, regulators, the public health sector, nutritionists/dietitians and the media in such research, to gain better understanding of how to meet consumer needs for safe, nutritious food in a responsible way.

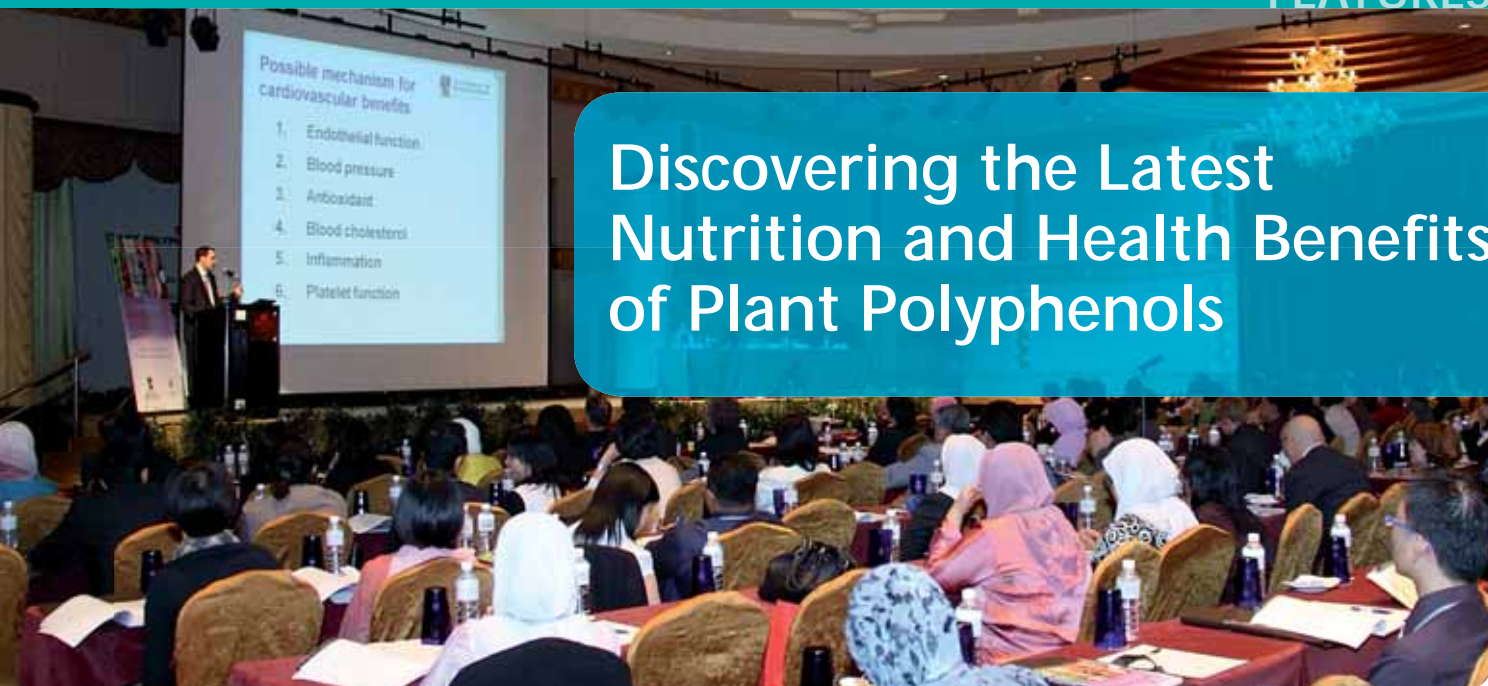
Important Role of Capacity-Building in Translating Research into Action

In the final presentation of the Science Symposium, Mr Peter Sousa Hoejskov, Food Quality and Safety Office of the FAO Regional Office for Asia and the Pacific, addressed the important issue of improving national capacity and best practices in the pursuit of improving food safety in the Asia. He shared that many countries in the region encounter great difficulties in addressing the challenges related to the spread of food-borne illnesses due to limited capacity in the national food control systems and public health sectors. To tackle this problem, Mr Hoejskov presented on how FAO, in collaborating with development partners and donors, assists countries in Asia to strengthen their national food control systems through capacity-building and training.

In her concluding remarks at the end of the Science Symposium, Mrs Yeong Boon Yee, Executive Director of ILSI SEA Region, thanked all the distinguished speakers and chairs of the symposium. She reiterated the organization's commitment to promote the use of science-based knowledge in seeking effective, sustainable solutions that address the region's public health challenges.



Participants of the Science Symposium



Discovering the Latest Nutrition and Health Benefits of Plant Polyphenols

The Symposium was attended by over 100 participants from various countries

There has been an increasing interest in polyphenols and their role in human health over the past 10 years. A significant volume of literature has been published on the potential role of polyphenols in the prevention of chronic degenerative diseases, such as cardiovascular diseases and some types of cancers.

A two-day international symposium on Plant Polyphenols : Nutrition, Health and Innovations was recently held by the ILSI SEA Region and the Nutrition Society of Malaysia (NSM). The event took place on June 22-23, 2009 at Crowne Plaza Mutiara, Kuala Lumpur, Malaysia. The extensive symposium reviewed and discussed the current state of knowledge of plant polyphenols in relation to their nutritive and health properties, the harnessing of technology, product innovation, claims regulation, and consumer education. Many of the leading scientists conducting research in the fields of tea, coffee, nuts and seeds, cocoa, soy, fruits, vegetables and spices shared their findings and issues to be addressed with over 100 participants from various countries, institutes and industries.

The symposium started with two keynote papers, first, an overview of the vast varieties of polyphenols and the complex links between polyphenols and health by Prof Gary Williamson of the University of Leeds, UK. He highlighted the importance of the bioavailability and the dosage of polyphenols, and discussed the absorption and utilization of these compounds as well as the mechanisms of action. The second keynote paper by Prof Kevin Croft of the University of Western Australia elaborated on the analytical methods and the assessment of biological activities of dietary polyphenols. Key methodological elements to be considered include: (a) the need to consider flavonoid metabolism as an important factor influencing the biological activity in using the *in vitro* studies; (b) appropriate assays for antioxidant activity assessment; (c) animal models for assessing effects of dietary polyphenols on atherosclerosis and cardiovascular disease; and (d) human intervention studies and assays using specific biomarkers for assessing the polyphenol absorption, oxidative stress, inflammation, endothelial function, blood pressure, and lipid metabolism. The rest of the symposium covered specific fields.

Tea

Tea, being the most widely consumed beverage in the world next to water, was the major contributor to total flavonoid intake. Made from the leaf of *Camelia sinensis*, the processing method applied to these leaves resulted in different types of tea i.e. green tea (non-fermented), black tea (fermented), and oolong tea (half fermented), all of which possess different polyphenols compositions.

Prof Jonathan Hodgson of the University of Western Australia shared that tea consumption might inhibit atherosclerosis development and reduce the cardiovascular disease risk by improving endothelial function, probably due to the tea flavonoid's effects on nitric oxide (NO) metabolism. Others suggested that tea flavonoids might protect against cancer. According to Dr Keiichi Abe of Cerebos Pacific Limited Singapore, in Japan, tea has been recognized as

Foods for Specified Health Use (FOSHU) and claims have been made on the health benefits of tea in relation to "body fat", "serum cholesterol", "blood pressure", and "blood glucose".

Coffee

Unlike tea which has always been regarded as a health promoting beverage, coffee was even once considered to have toxic effects for several decades before its potential

health benefits were recognized. According to Prof Koh Woon Puay of National University of Singapore and Dr Thomas Hatzold of Kraft Food R&D Germany, studies have now shown that moderate coffee consumption was not only harmless to health but might also improve mental performance and reduce the risk of type 2 diabetes, Parkinson and Alzheimer diseases, possibly attributed to its chlorogenic acids or caffeine content. Coffee also contains many other bioactive components such as Maillard reaction products, oligosaccharides, N-methylpyridinium, trigonellin, cafestol, kahveol, etc. In vitro and human studies have shown that coffee phenolic acids were absorbed efficiently, and that many metabolites were found in blood and plasma.

Nuts and Seeds

Dr Oliver Chen of Tufts University, USA and Dr Karen Lapsey of Almond Board of California, USA showed that nuts and seeds are good sources of several nutrients, including vitamins and minerals, unsaturated fatty acids, and fibre. They also contain numerous phytochemicals such as carotenoids, phenols (phenolic acids, flavonoids, and stilbenes), and phytosterols. The highest total flavonoid concentrations are found in pecans, almonds, pistachios, and hazelnuts. Flavonoid content in seeds is however less well studied. Several large-scale prospective population studies have shown that consuming tree nuts (e.g. walnuts, almonds and hazelnuts) provided protective effect against certain chronic diseases. The World Health Organisation (WHO) has suggested consuming 30g/day of a combination of nuts, seeds, and pulses as part of overall recommendations to reduce risk of some types of cancer and heart disease. More data on the consumption patterns of nuts and seeds, especially among Asians, are required to enable a better understanding of the contribution of these important food groups to the health of various cultures.

Olives and olive oil, important in the Mediterranean diet, have also been suggested to reduce heart disease risk, possibly attributed to their

polyphenols content. According to Dr Karin Wertz of DSM Nutritional Product, Switzerland, the olive fruit contains a number of phenolic compounds such as cresols, phenolic acids, phenolic alcohols, flavonoids, and secoiridoids. Hydroxytyrosol is the major olive polyphenol consumed and has the highest antioxidant potency. Olive polyphenols have been shown to beneficially influence risk factors and early markers for cardiovascular disease as well as to possess potent anti-inflammatory activities.

Cocoa and Chocolate

Cocoa, one of the richest dietary sources of flavonoids, is rich in catechins, anthocyanins, and proanthocyanidins. Its flavonoids however are often lost during the processing of cocoa to chocolate, according to Dr Roger Bektash of Mars Australia. Gentler handling and innovative processing technology could retain much of the natural cocoa flavonoids. Many *in vitro* and *in vivo* studies and randomized controlled trials in humans, including those conducted in Malaysia, have attempted to fully understand the hypoglycaemic and hypocholesterolaemic effects of

which are diphenolic compounds that possess both hormonal and non hormonal properties. The two main isoflavones are genistein and daidzein. An overview by Dr Mark Messina of Soy Nutrition Institute, USA showed that soy isoflavone intake has been shown to protect against breast cancer especially when consumed at an early age. It also reduced the frequency and severity of hot flushes in menopausal women. Studies also did not associate soy intake with harmful effects in breast cancer survivors or with feminization of males. There is also no evidence that isoflavones affect thyroid function in euthyroid individuals consuming adequate iodine. Daily intake of 1-3 servings of soy foods was recommended based on clinical and epidemiological studies.

Asian Fruits, Vegetables, and Spices

The evidence of protective effect of high vegetable and fruit consumption was consistent for many diseases. Dark green leafy and brightly-colored vegetables tend to contain a high level of antioxidants. Dr Myung-Hee Kang of Hannam University, Korea, showed that supplementation with



Panel of Speakers for the Plenary Session on Cocoa and Chocolate

cocoa and cocoa flavonoids. Largely consistent evidence suggests that flavonoids and flavonoid-rich cocoa or dark chocolate can improve endothelial function in humans and perhaps other outcomes related to cardiovascular disease risk.

Soy

Soy foods have been researched extensively due to its isoflavones,

fruit or vegetable juices such as grape and carrot improved the antioxidant status and the degree of cellular DNA damage of subjects. Turmeric, extensively used in Indian cuisine, has been dubbed as the spice of life by Indians due to the health protective effects of its curcuminoids. Dr Kamala Khrisnaswamy of National Institute of Nutrition, India, elaborated on a great deal of research on curcuminoids,

particularly investigating their potential role as an anti-inflammatory, antiatherosclerotic and anticancer agent. Polyphenolic compounds on the other hands, are well known inhibitors of dietary iron absorption. Studies on Thai herbs and spices by Dr Siriporn Tuntipopipat of Mahidol University,

Thailand, showed that specific types of dietary polyphenols, if consumed in large amounts, might affect iron nutriture through the chelation of non-heme iron with catechol groups of phenolic compounds. In Asia, there are over 100 types of unique fruits, vegetables and spices, many of which

remain insufficiently studied. More studies should be done to characterize the polyphenol contents of these produces and to establish the role and mechanism of these polyphenols in disease prevention.

SCIENCE FRONTIERS – FROM RESEARCH TO CONSUMERS

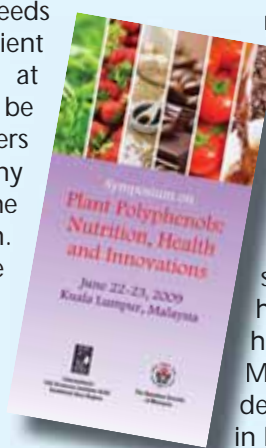
Various speakers highlighted that epidemiological results were not always in agreement. Conflicting results might be due to different study designs and the dosages as well as the varieties of produces used, be it tea, coffee, cocoa, etc. Polyphenol compositions and levels in these produces varied significantly depending on the genetic variations, growing conditions, and processing methods. Consumption pattern, bioavailability and metabolism of the polyphenols would also affect their bioefficacy. The polyphenol levels of the products administered and the polyphenol absorption and metabolism should be monitored in *in vivo* studies.

Conducting the appropriate human intervention trial to validate the health benefits of the food produce remained a challenge to be overcome. Unlike trial with medicinal products where active substances could often be administered in the form of pills, it was rather difficult to recruit subjects who needed to refrain completely from a certain food or drink and be willing to be randomized in consuming the test product or placebo for several years. To overcome the need for long intervention study in order to observe

the development of a disease as the outcome, other possible alternatives included the use of biomarkers that has been validated to predict a certain disease risk, or the use of high-risk populations, to shorten the time needed for the study. Valid biomarkers however, were not available in many cases and using high-risk populations might not allow the results of the study to be extrapolated to the whole population. Metabolomic techniques that could identify individual subject's response to the polyphenol intake might be a promising way to study the mechanism of action of the polyphenol.

Dr Trevor Webb of FSANZ Australia stated that, as it stands, a food product remains a food which needs to be tasty, safe, convenient to consume and sold at reasonable price to be accepted by consumers before it can yield any health benefit in the general population. Constant innovations are necessary to preserve or enhance the polyphenol contents of the product and the delivery system while still retaining

a satisfactory organoleptic quality. More creative ways of introducing food containing polyphenols into public diet are necessary to increase its consumption. One example was the culinary demonstration of a recipe of "Earl Grey Tea Chicken" showcased during the symposium. In the interest of public health, the public should be informed of the potential beneficial effect of consuming food containing polyphenols. However, Dr Tee E Siong of the Nutrition Society of Malaysia emphasized that such information needs to be properly regulated and the nutritive and health protective functions need to be reasonably substantiated before a claim can be made. Codex Guidelines on Use of Nutrition and Health Claims 2004 makes a provision for making health claims. In several Asian countries, health claims are permitted and they relate to several bioactive components including several dietary fibers and non-digestible oligosaccharides, and plant sterols. None of the current health claims in the region however relate to polyphenols. More studies need to be done to determine the role of polyphenols in human health.



A Scientific Report of the Symposium is under currently preparation for submission to **Nutrition Reviews**.



Speakers and organizers of the Symposium



Dr Suzanne Harris, Executive Director of ILSI

This year marks Dr Suzanne Harris' 20 years of dedicated service to the International Life Sciences Institute. As Executive Director, Dr Harris guides the strategic and scientific direction of ILSI as charted by its Board of Trustees; interacts with ILSI's branches around the world as well as international organizations to foster and coordinate collaborative programs. Dr Harris is also the Executive Director of ILSI Research Foundation. Prior to joining ILSI in 1989, Dr Harris was the Deputy Assistant Secretary of Agriculture of Food and Consumer Services (USA) where she assisted in the development of national nutrition and consumer policies, as well as in the oversight of the Food and Nutrition Service, the Human Nutrition Information Services and the Office of Consumer Advisor.

Question (Q): What made you take the big step to move from the public sector to ILSI?

Dr Suzanne Harris (SH): As a biochemist, my work prior to ILSI was mostly confined to the laboratory but just the same I felt like I needed to do something to make people's lives better. ILSI has provided me this platform, and while we may not be talking of rocket science, we contribute towards moving the discussions all the way to action. Various stakeholders are brought together to discuss issues that affect the lives of people. Our harmonization efforts – such as those in the area of food safety standards and recommended dietary intakes, among others – have contributed to improving lives. I also like working with people and ILSI has given me a lot of opportunities for this.

Q: Given your 20 years of experience with ILSI, what would you consider as some of the significant milestones in ILSI's history?

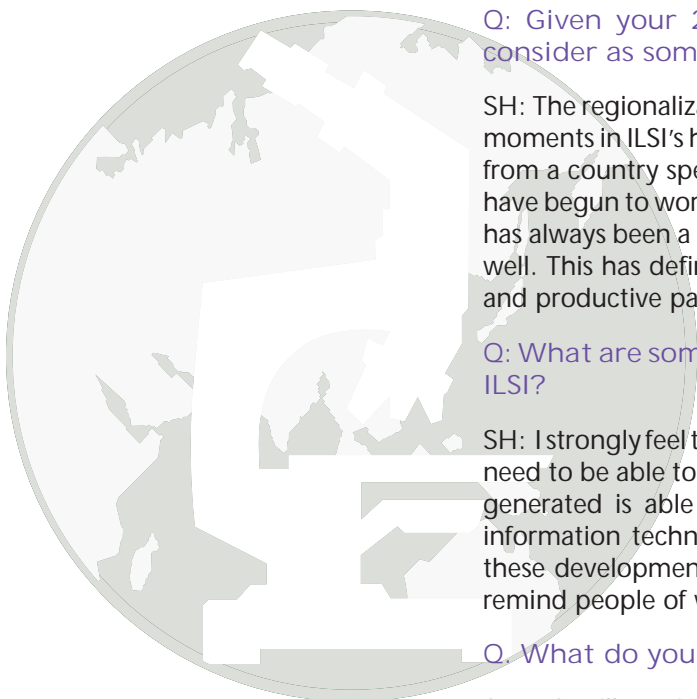
SH: The regionalization of some of the ILSI branches is one of the many defining moments in ILSI's history. For example, when ILSI Southeast Asia Region moved from a country specific to a regional approach. Then Latin American branches have begun to work together on specific regional programs. ILSI Europe, which has always been a regional branch, is working with the two African branches as well. This has definitely led to a consolidation of efforts and more meaningful and productive partnerships.

Q: What are some of the areas which still need to be improved within ILSI?

SH: I strongly feel that we need to improve on our communication strategies. We need to be able to re-package science in a way that the information constantly generated is able to influence policies and programs. The development of information technology is rapid but we at ILSI have not fully capitalized on these developments. Another aspect that we should work on is to constantly remind people of what ILSI is all about and what and how we do things.

Q: What do you think is ILSI's role in the future?

SH: ILSI will continue to play a crucial role in promoting science-based decision-making. More and more, we will see a new kind of science – one that promotes applications and a better understanding of consumer behavior. In short, we will see ILSI play trail-blazing roles in promoting applied science or translational research.



Latest Findings on Children's Nutrition and Physical Activity in Australia



On May 20 -21, 2009, ILSI SEA Region's Australasia Country Office held two seminars – one in Sydney and the other in Melbourne – to share the latest findings on the food and nutrition intakes, and physical activity levels of Australia's children. Organized jointly with the Nutrition Society of Australia, the seminars were attended by more than 180 representatives from the food industry, dietitians, nutritionists and health care personnel.

Findings of the 2007 Australian National Children's Nutrition and Physical Activity Survey

Findings from the Survey were presented by Dr Rebecca Golley, a paediatric research dietitian and NHMRC Postdoctoral Fellow. She highlighted that the previous survey in 1995 and the recent 2007 survey determined diet, anthropomorphic characteristics, demographics and physical activity in the same sample of children, with age ranges of 2-3 yrs, 4-8 yrs, 9-13 yrs and 14-16 yrs. Based on Body Mass index (BMI), it was found that 18-30% of the children could be classified as overweight or obese. These findings were similar to other recent surveys around Australia. There was a tendency for those in the overweight or obese category to have lower physical activity levels.

In reporting the intakes of core foods, it was found that children in the older age groups fell well below the recommended servings for fruit and vegetables. Bread and cereal

intakes were also below the number of recommended serves. In terms of intake of dairy foods, girls consumed less than boys and their intakes decreased with age. In contrast, snack food consumption and soft drink consumption increased with age. In terms of nutrients, intakes of saturated fat, salt and sugar were higher than recommended. Both calcium and sodium intakes increased with age. In the 14-16 yr group, girls were taking insufficient dairy foods to meet calcium requirements.

The physical activity data showed a decrease with age in the number of steps per day and a decrease in moderate to vigorous activity. It also revealed that, at all ages, girls took fewer steps than boys. Sedentary behaviour outside of the usual hours of school accounted for up to 3.5 hrs/day. Additionally, on non-school days children were exposed to a high amount of "screen time".

In summary, the key findings were that relative to the 1995 Survey, these latest findings demonstrate no significant change in the total energy, saturated

fat and salt intake of Australian children. Nonetheless, the new data has provided opportunities to dissect further aspects of children's eating, highlighting the predominance of carbohydrate-based baked goods, the low intake of vegetables and the considerable periods of sedentary behaviour that typify today's children.



KIDS EAT KIDS PLAY - SOME SURPRISING FINDINGS

Professor Tim Olds, a Professor of Health Sciences at the University of South Australia and Project Director of the 2007 Australian National Children's Nutrition and Physical Activity Survey, presented on some of the more surprising findings of the Survey in relation to use of time and weight status.

1. The prevalence of overweight and obesity has not increased. Using data on 265,000 Australian children from 41 surveys conducted since 1985, the trend shows increases in prevalence of about 0.4% per annum for obesity and 1% per annum for overweight and obesity until the mid-to-late 1990s, but a clear flattening and plateau over the last 10 years. Prevalence has settled at 20-25% for overweight and obesity, and 5-7% for obesity.
2. There are no socio-economic gradients in physical activity when physical activity is quantified as pedometer steps or self-reported activity. However, when the energy cost of activities is considered, there are clear gradients, with children from wealthier families showing higher energy expenditure due to higher sports participation.
3. Non-screen sedentary time (NSST) shows opposite socio-demographic, weight status and day type gradients to screen time. However, screen time remains a good surrogate for total sedentary behaviour.
4. Family structure is associated with different activity patterns even when controlling for SES. Children from families with more children, particularly when they are close in age, have higher levels of physical activity and lower screen time.
5. In the hour before bedtime, about half of all children watch TV or play videogames. However, children with later bedtimes actually get less TV (but more videogame time) in the hour before bedtime than children with early bedtimes.

Why Do Children Eat the Way They Do and is There Capacity to Change This?

Dr Karen Campbell, a VicHealth Public Health Research Fellow in the Centre for Physical Activity and Nutrition Research at Deakin University, delivered a provocative presentation that challenged the current thinking about how best to promote healthy eating among children. Dr Campbell painted a popular view which placed blame for poor diets on parents, the food industry, food advertising and the high availability of energy dense foods.

Without dismissing the importance of some of these factors, Dr Campbell sought to expand our thinking about the complexity of the issues involved in determining how it is that our children learn to eat in the ways they do. She noted that the genesis of food preferences was likely to be complex and involve many factors, some of which might start even before birth (*in utero*). These include the development of taste, first exposure to food, timing of introduction to solid food, child-

parent feeding interactions, eating family meals together, maternal nutrition knowledge, food availability, as well as accessibility and effects of food advertising on adults.

Dr Campbell stated that attending to only one of many likely promoters of children's eating behaviours was unlikely to bear successful outcomes. She highlighted that research showed that dietary behaviours learnt in childhood appear to track into adulthood, and that many noncommunicable adult diseases appear to have their origins early in life. She strongly emphasised the notion that interventions to promote healthy eating in children must occur right from the start of a child's life. Dr Campbell highlighted that a focus on early life is likely to receive strong support from new parents who were keen to receive information, and were actively looking for advice and assistance.

Dr Campbell is also currently involved in a study among 560 families across Melbourne that seeks to support parents in developing positive strategies for feeding, promoting fruits



and vegetables, limiting energy-dense snacks, foods and drinks, limiting television viewing and promoting active play among their children.

Improving Infant and Early Childhood Nutrition in Southeast Asia

ILSI SEA Region establishes new Task Force and Expert Panel

Recognizing that there are research and data gaps in knowledge on maternal, infant and early childhood nutrition among populations in Southeast Asia, ILSI SEA Region has established a new Task Force to focus on addressing this issue. To identify the objectives and framework of action for the Task Force, an Expert Consultation and Planning Meeting on Infant and Early Childhood Nutrition was organized from March 12 – 13, 2009 in Singapore. The meeting was attended by experts from several Asian countries, namely China, Indonesia, Malaysia, Philippines, Singapore and Thailand.

Through a fruitful discussion and sharing session, the Expert Panel agreed that they would focus on three priority areas:

Current Status of Nutrition of Mothers, Infants and Young Children in Southeast Asia

It was agreed that both under and overnutrition will be looked into since many Asian countries now face these twin problems. In terms of micronutrient deficiencies, the Expert Panel considered that there are already a number of international bodies and organizations addressing deficiencies in vitamin A, iodine and iron. As such, ILSI SEA Region will focus on emerging

micronutrients of concern such as zinc, vitamin D, B-complex vitamins etc. Part of the work to be done will include examining how these deficiencies are being monitored.

Nutritional Requirements for Asian Infants and Young Children

While Recommended Dietary Allowances (RDAs) or Dietary Reference Intakes (DRIs) were previously seen as guidelines for supporting normal growth and development, there has been a paradigm shift whereby RDAs and DRIs are now considered to be potential means for disease prevention or achieving optimal health. To what extent this has been

applied in Asia remains to be studied. The development and harmonization of Food-based Dietary Guidelines for infants and children will also be one of the Expert Panel's focus areas.

Infant and Young Child Feeding

This topic revealed a number of issues that remain unresolved. The experts felt that this broad category should include:

- Breastfeeding and related issues
- Breast milk substitutes and related issues
- Complementary foods
- Feeding of young children between 24-36 months
- Supplementation (infants, young children and mothers)

While it is clear that ILSI SEA Region, by working closely with its Expert Panel, can play a significant contributing role in this field, the Expert Panel also acknowledged that limited knowledge and limited availability of science-based, area-specific information that will be useful for program planning is a challenge that needs to be addressed.

Experts in the Philippines Explore What's New in Nutrition and Bone Health

ILSI SEA Region's Philippine Country Committee organized a half-day symposium that looked into the latest scientific knowledge on Nutrition and Bone Health. The symposium was held on April 24, 2009 at the Nutrition Foundation of the Philippines Building in Quezon City, Philippines.

Opening the scientific session of the symposium was Dr Julie Li-Yu from the Osteoporosis Society of the Philippines Foundation, who touched on the rising problem of osteoporosis in the country. Dr Li-Yu also examined the evidence for this trend and approaches to address this public health problem.

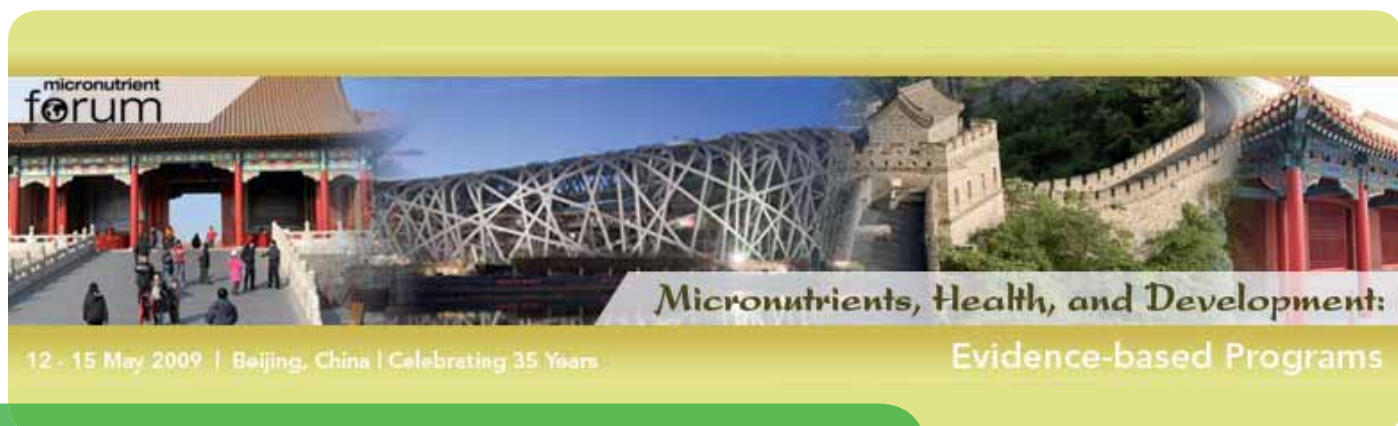
The next speaker was Dr Emilie Flores from the College of Public Health, University of the Philippines Manila, who presented on the latest research on the key nutrients – calcium, vitamin D and vitamin K – which have an effect on bone health.

Looking at the broader picture, Dr Celeste Tanchoo from the Food and Nutrition Research Institute (FNRI) of the Department of Science and Technology explored the role of diet in the prevention and control of osteoporosis. Can the fortification of foods be a potential solution for the prevention of osteoporosis? Dr Imelda



Agdeppa, also from FNRI, discussed the prospects of food fortification in tackling this health issue.

The symposium concluded with an open forum, and synthesis by Dr Rodolfo Florentino, Senior Scientific Advisor of ILSI SEA Region.



ILSI Shares Lessons from Micronutrient Programs in Asia Satellite Symposium at Micronutrient Forum 2009

It is estimated that more than 2 billion people all over the world today may suffer from micronutrient deficiencies. Although needed only in small amounts, micronutrients are essential nutrients needed for growth and development. In developing countries in Asia, micronutrient deficiencies (such as in iodine, vitamin A and iron) are prevalent and represent a major threat to the health and development of populations in the region.

On May 19, 2009, ILSI SEA Region, in collaboration with ILSI Japan Center for Health Promotion (ILSI CHP Japan), organized and sponsored a satellite symposium **“From Action-oriented Research to National Micronutrient Program”** in conjunction with the Micronutrient Forum 2009 in Beijing, China to share the latest updates on the micronutrient situation in Asia, lessons learned from intervention programs, as well as to showcase best practices for translating research results into national programs. The symposium was well-attended by about 80 participants from various countries.

Mr Takashi Togami, Director of ILSI Japan CHP, opened the session by introducing ILSI's signature Project IDEA, a food-based program that aims to reduce iron deficiency anemia in developing countries through iron fortification in commonly-eaten and commercially-produced foods such as staples and condiments, based on

the dietary patterns of each country. ILSI Japan CHP has conducted research works in more than 10 countries and several of its projects, such as fortification of soy sauce in China, fish sauce in Vietnam and Cambodia, and rice in the Philippines, have been implemented.

The assessment of micronutrient situation as well as past and ongoing efforts to address micronutrient deficiencies in Asia was shared by Dr Corazon Barba, Resident Advisor of A2Z Philippines. She shared the alarming data on the prevalence of vitamin A deficiency, anemia, and iodine deficiency around the world especially in Asia and the need for nutrition intervention. Some interventions such as supplementation with vitamin A, iodization of salt, fortification of vitamin A in oil, margarine, and sugar as well as iron-fortification in soy sauce, fish sauce and flour have been proven to work. Evidence-based policies, clear guidelines, public awareness and cost-effective delivery mechanisms are some keys to a successful intervention strategy. There is also a need for monitoring and a robust regulatory system for surveillance of the intervention process.

Focusing on the iron-fortification of foods from research into national program, Dr Junshi Chen of ILSI Focal Point in China and Dr Pham Van Thuy of the National Institute of Nutrition

Vietnam shared their experiences in the fortification of soy sauce, while Dr Mario Capanzana of the Food and Nutrition Research Institute in the Philippines presented on the iron-fortification of rice in the Philippines. Their sharing highlighted the importance of government support and policy, partnership and technology transfer from research institutes to the industry, quality control, intensive media communication, health education and social marketing in the efficacy and success of these programs.

A panel discussion on fast-tracking and sustaining actions for micronutrient prevention and control through tripartite partnerships concluded the symposium. Chaired by Mr Geoffrey Smith, President of ILSI SEA Region, the panel discussion highlighted that evidence-based policies, clear guidelines and practical tools for streamlining cost-effective delivery mechanisms are important strategies for national programs. For sustainability in the market place, public awareness programs to create demand, as well as partnerships with private industry will be key success factors. The sharing of best practices and the significant impact that public-private partnerships among government, industry, and academia could deliver, provided the audience with valuable lessons in ensuring the effectiveness of future national programs for addressing micronutrient deficiencies.

Taking a Closer Look at Salt and Health

How the Food Industry can Contribute to Reducing Salt Intake

On July 2, 2009, ILSI SEA Region's Australasia Office organized a one-day symposium on *The Science of Salt: Industry Innovation and Best Practice in Reducing Salt in Foods* at the George Institute for International Health in Sydney. The symposium explored the challenges and opportunities faced by food industries and the technical solutions in reducing salt in processed foods. Over 100 delegates including representatives from most Australian states and New Zealand from industry, academic, health and medical organizations attended this symposium.

Setting the Scene – Salt and Health

Prof Bruce Neal, Senior Director at the George Institute for International Health and Chairman of the Australian Division of World Action on Salt and Health (AWASH), acknowledged that the food industry has a unique position in reducing population salt intakes and hence saving lives. Although only 1 to 2g of salt is required for health, most people are eating 5 to 10 times of this amount. Reducing salt intake by 3g/day would lower population systolic blood pressure by about 5mmHg resulting in a 15% reduction of stroke risk and a 9% reduction of CHD risk. Prof Neal stressed that the only effective way to reduce salt intakes was through changing the environment rather than persuading people to make different choices. He outlined main strategies such as food industry action to reduce salt in foods, government leadership to establish targets for salt levels in foods, front of pack labeling and school canteen policies.

Salt Reduction Across the Australian Food Industry

Dr Geoffrey Annison, Deputy Director of the Australian Food and Grocery Council, shared on the progress by the food industry in reducing salt in foods. In general, food industry agrees that reducing salt in food products is important to tackle hypertension problem and is prepared to face the challenge. However, reduced salt and low salt options still had relatively small market share compared with standard products. Rather than aiming to reduce salt in all products, he suggested to reduce the salt content in high salt products to an acceptable level. He also highlighted the pros and

cons of population approach to salt reduction (gradual reductions across all product categories) versus the individual approach (providing low salt options and raising consumer awareness).

Technical Approaches to Salt Reduction

Dr Ingrid Appelqvist of CSIRO Food Futures Flagship discussed the opportunities and challenges in relation to technical approaches to salt reduction. Different foods with similar salt contents may have different saltiness and the challenge was to maintain the saltiness level using less salt. Common salt reduction technologies are salt substitutes, taste modifiers and enhancers, novel ingredients and spray coating. Dr Appelqvist shared on CSIRO research approach in salt reduction: examining the product microstructure to enable putting salt in food where it would be detected; studying the eating process to determine how to keep the brain interested; and analyzing consumer perception of taste to ensure no perceivable change.

Salt Reduction in Practice

Dr Jennifer Moss of Unilever Australia shared on their commitment to salt reduction across its products to target a dietary salt intake of 6g/day by 2010, and 5g/day by 2015. Making the healthy choice the tasty choice is the ongoing challenge as consumers still perceive less salt to be less tasty. With 75-80% of salt in the Australian diet coming from processed food products, the food industry has a social responsibility to reduce the salt content of the food supply. Public education to create a consumer demand for low salt foods and technical assistance from government would help the cause.

Salt – the Sensory Perspective

Dr Russell Keast of Deakin University discussed the appetitive response to salt, the flavour effects of salt, salt taste over a lifespan and the implications of salt sensitivity. Humans have a diminished response to salt as they grow older thus, preferring higher salt concentrations. Meanwhile, people more sensitive to salt tastes are more likely to like low salt foods. As our tastes will adapt to the food environment whether it is high or low in salt, the idea of mandated salt levels for different food categories is desirable to reduce intake.

Salt Replacers and Enhancers

Ms Melinda Currie of Firmenich outlined two technical solutions for reducing salt in foods: salt replacers and salt enhancers. Potassium chloride, the most popular salt replacer, has a salty taste with metallic bitter note; masking agents are needed to cover this adverse taste. Meanwhile, salt enhancers such as yeast extracts, nucleotides, amino acids, lactates and MSG work by activating receptors in the mouth and throat, which help compensate for the salt reduction and enhance flavour. The performance of salt enhancers depends on the application and the target level of salt reduction. Whilst salt reduction provides challenges for food manufacturers, salt replacers and salt enhancers can overcome some of these challenges.

Panel Discussion

Panel discussion chaired by Prof Andrew Sinclair of Deakin University raised issues such as whether to address sodium level instead of salt level in food or the sodium/potassium ratio as potassium was shown to reduce blood pressure. While it was the sodium ion and not the chloride in salt that caused high blood pressure, over 90% of sodium in the diet was derived from salt. As consumers are more familiar with the term salt than sodium, public education on the need to reduce salt intake is better understood. The discussion concluded that it was important to single out salt for the time being for immediate action. The food industry remained committed to continue its action on salt reduction in foods as an effort to reduce population salt intake.

Upcoming Activities

Symposium on Vegetable Nutrition – Why your Mum was Right when She Told You to Eat Your Vegetables!



On November 12, 2009, ILSI SEA Region's Australasia Country Office will organize a one-day symposium in Melbourne, Australia that will bring together the latest findings in vegetable nutrition research, insights into vegetable consumption, and consumer communication strategies for health professionals, dietitians, food technologists and educators to promote the benefits of vegetables in the diet.

Experts who will be presenting at the symposium include representatives from government and scientific

research organizations Food Standards Australia New Zealand, Department of Primary Industries in Victoria, the Commonwealth Scientific and Industrial Research Organisation, Horticulture Australia; public health sector (Royal North Shore Hospital); academia (University of Western Australia), and industry (Campbell Soup Company, Vic Cherikoff Food Services).

For more information or to register for this symposium, please contact ILSI SEA Region's Australasia Country Office at ilsi@ghapl.com.au

Seminar on Dietary Fibre – Current Science and Regulatory Update



On September 28, 2009, ILSI SEA Region and The Food Safety & Quality Division of the Ministry of Health Malaysia will be organizing a one-day seminar in Crowne Plaza Mutiara Hotel, Kuala Lumpur to provide:

- Updates on current understandings in dietary fibre, characteristics, physiological role, and effects on human health;
- Updates on international and regional regulatory status of dietary fibre definition and conditions for claims; and
- A forum for discussion among all stakeholders on regulatory definition of dietary fibre and conditions for claims.

Aimed at nutritionists, dietitians, food scientists, government regulatory officers, academia, research organizations, and the food industry, the seminar will feature experts in the field of dietary fibre, notably Dr Julie Jones from St. Catherine's University, USA and Dr Peter Ellis from University of London, UK.

Food Safety Meetings around the Region

Symposium on Food Safety – Challenges and Opportunities

On September 18, 2009, ILSI SEA Region's Philippine Country Committee will be organizing a half-day symposium in Shangri-La Hotel, Manila to highlight recent food safety and food poisoning issues. Various speakers from academic (University of Philippines), government (Department of Health and Bureau of Food and Drugs), and industry will address topics such as the epidemiology of food poisoning outbreaks, responses to recent food microbial outbreaks, lesson learned from the melamine and energy drink issues and best practices in managing food safety in the food industry.

Seminar on Hot Topics on Food Safety and 8th ASEAN Food Safety Standards Harmonization Workshop

ILSI SEA Region, in collaboration with Southeast Asian Food and Agricultural Science and Technology (SEAFST) Center at Bogor Agricultural University, Indonesia and The Food and Drug Monitoring Agency (BPOM), is organizing a seminar and workshop in Borobudur Hotel, Jakarta. The half-day public seminar on September 30, 2009 will address "hot topics" in food safety related to risk communication, analytical methodologies, sampling techniques, food safety standards and thresholds, microbial food safety management, exposure assessment, and update on recent surveys on food colours and sweeteners.

The following one-and-a-half day 8th ASEAN Food Safety Standards Harmonization Workshop on September 30 - October 1, 2009 will be a closed door meeting where regulatory representatives from the 10 ASEAN countries, ILSI SEA Region's Food Safety Task Force, experts, and representatives from international agencies will be invited to share scientific updates and international and regional regulatory developments on food safety.

Upcoming Activities

Seminar on Early Child Nutrition:
Improving Nutrition and Health
Status of Young Children in Indonesia

On November 12, 2009, ILSI SEA Region will organize a one-day seminar in Jakarta, Indonesia, with the aim of sharing the latest updates on the nutritional and health status, and developmental trends of young children in Indonesia.

The meeting will also help to identify the key nutrient deficiencies found to affect the optimal growth of these children and discuss strategies to improve feeding practices through the development of science-based dietary guidelines and effective nutrition education. Relevant experiences, approaches, strategies, as well as findings from intervention studies from France, New Zealand and Malaysia will also be discussed at the seminar.

For more information or to register for this seminar, please contact ILSI SEA Region at ilsisea@singnet.com.sg

Upcoming Publication

Report on Plant Polyphenols
Symposium to be Published in
Nutrition Reviews

A scientific report based on presentations shared by experts at the Symposium on Plant Polyphenols held on June 22-23, 2009 is under preparation for submission to *Nutrition Reviews*. This report will address the interest in the nutritional value of polyphenols in recognition of their link to health promotion and the prevention of diseases.

The current scientific evidence, including the consumption of polyphenols in the general population, their bioavailability, and development of technology and innovations to measure and increase consumption are highlighted. The polyphenol sources of ubiquitous consumption, with high scientific interest that will be emphasized in the report are polyphenols from tea, coffee and soy. The importance and key polyphenols present in tea, coffee and soy with their evidence on disease prevention will be summarized. Other polyphenols of increasing consumption and scientific interest such as nuts and seeds, olive oil, cocoa and chocolate as well as other Asian fruits, vegetables, and spices will be addressed in relation to the polyphenols present and their effects in interventional studies.

The justification of regulatory measures and consumer education following the available scientific evidence on health benefits will serve as an important conclusion to the report.

Calendar of
Activities

Sept 2009 – Mar 2010

September 2009

Symposium on Food Safety :
Opportunities and Challenges
September 18, 2009, Philippines

Seminar on Dietary Fibre:
Current Science and
Regulatory Update
September 28, 2009, Malaysia

Seminar on Hot Topics in
Food Safety
September 30, 2009, Indonesia

8th ASEAN Food Safety
Standards Harmonization
Workshop
September 30 – October 1, 2009,
Indonesia

October 2009

19th International Congress
of Nutrition

- Seminar & Workshop
on Fundamentals of
Nutrigenomics and its
Applications
October 4, 2009, Thailand
- Seminar on Hydration
and Health
October 4, 2009, Thailand

November 2009

Symposium on Vegetable
Nutrition
November 12, 2009, Australia

Seminar on Early Childhood
Nutrition
November 12, 2009, Indonesia

1st Quarter 2010

Seminar and Workshop on
Physical Activity and Dietary
Behavior
1st Quarter 2010, Singapore

Seminar on Biotechnology
1st Quarter 2010, Singapore

Visit us at www.ilsis.org to find out more about our upcoming activities and programs.



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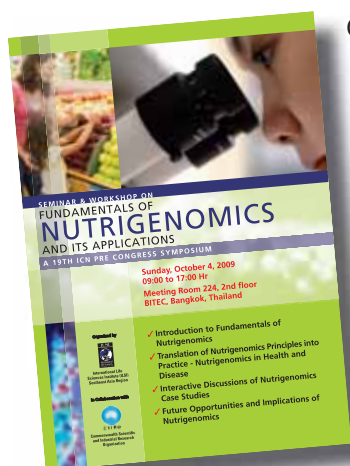
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Join us for ILSI Activities at ICN 2009!

For over 50 years, ICN has been the primary scientific meeting of the International Union of Nutritional sciences held every four years. ILSI SEA Region together with ILSI branches from all over the world will play a significant role in ICN 2009, which will be held in Bangkok International Trade and Exhibition Centre (BITEC), Thailand.

Seminar and Workshop on Fundamentals of Nutrigenomics and Its Applications



On October 4, 2009, ILSI SEA Region, in collaboration with the Commonwealth Scientific and Industrial Research Organization (CSIRO) of Australia, will be organizing a one-day pre-Congress seminar and workshop on nutrigenomics, a field of study that examines how the interaction between genetics and nutrition affects human health. This interactive program will introduce nutrigenomics to practicing nutritionists and dietitians

new to this field, starting from the fundamentals to the application of nutrigenomics in health optimization and disease prevention and treatment. The workshop will also discuss several case studies to equip participants with basic skills on how to read, understand and interpret nutrigenomics research. Distinguished international speakers from CSIRO, University of Toronto, University of Auckland, National University of Singapore and National Institute of Health USA will share their nutrigenomics expertise. It is a program not to be missed by health professionals keen to know how nutrigenomics has the potential to transform nutrition and dietetics practice.

Seminar on Hydration and Health

On October 4, 2009, ILSI North America together with ILSI SEA Region and ILSI Europe will organize a pre-Congress seminar on Hydration and Health. The hydration session will provide the latest scientific evidence behind recommendations for fluid consumption and hydration for health, wellbeing and optimal performance. The following health session will share about ILSI Europe's Nutrition and Obesity Program, obesity data in Europe as well as nutrition and inflammation in relation to metabolic syndrome.

Session on Obesity Prevention – Effective Interventions using Public-Private Partnerships

As part of ICN symposia, on October 7, 2009, ILSI Research Foundation together with ILSI Brazil and ILSI Focal Point in China is organizing an afternoon session to address the obesity issue that has reached global epidemic proportions. This session will share on intervention programs that have been implemented in Japan, Mexico, China, Brazil, Philippines, and Thailand, evaluate advantages and challenges related to public-private partnerships and conclude with a panel discussion on opportunities for future intervention research and sustainability strategies.

As a follow up to this session, ILSI will also hold an obesity strategy discussion among its staffs, advisors, and members from different branches to explore how to translate research programs to sustainable action-oriented obesity prevention programs, how to engage private entities to form sustainable partnerships, and future intervention research and collaborations

Session on Micronutrients Requirements

On October 8, 2009, European Micronutrient Recommendations Aligned (EURRECA) Network of Excellence in coordination with ILSI Europe will also organize a morning session as part of ICN symposia. The session will focus on micronutrients requirements, approaches to harmonize requirements and different kinds of evidence used to make dietary recommendations.

ILSI Exhibition Booth at ICN

To highlight ILSI's achievements as a worldwide foundation committed to advancing the understanding of scientific issues relating to nutrition, food safety, toxicology, risk assessment and the environment, as well as to promote future activities, ILSI from all branches will come together to set up our very own ILSI exhibition booth from October 4 to 9, 2009. The booth will provide various publications by ILSI, the latest information on ILSI activities, and information of different ILSI branches. **Do come and visit the ILSI Exhibition Booth at ICN!**