

Meeting Report

Report on the 15th International Congress of Nutrition

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The 15th Congress of the International Union of Nutritional Sciences (IUNS) was held in Adelaide, South Australia, from September 26 to October 1, 1993. Over 2,600 delegates from 100 countries attended the Congress, which was held at the Adelaide Convention Centre. The Congress was also the forum for meetings of various committees within the IUNS, as well the Nutrition Society of Australia and the Dietetics Association of Australia.

The Congress theme was "Nutrition in a Sustainable Environment." The program included four major plenary lectures, lunch-time lectures (including public lectures), memorial and other special lectures, 50 symposia organized around 10 major themes, 44 workshops, and over 1,100 posters. Six satellite meetings were also associated with the Congress. The Congress President was Professor Paul Nestel, and the Congress Secretary General was Dr. Richard Smith, both from the CSIRO (Commonwealth Scientific and Industrial Research Organization), Division of Human Nutrition, which was the major host institute and organizational center for the Congress.

Plenary lectures were presented by A. Rerat (France), Food, Nutrition, and the Environment; W. James (UK), Matching Nutritional Knowledge to Nutritional Need; P. Fürst (Germany), Clinical Nutrition: Its Critical Feature—New Strategies; R. Rucker (USA), The Molecular Biology of Nutrition; and Chen Xiaoshu (China), From Undernutrition to Diseases of Affluence—Problems of Transition. Other special lectures were given by V. Ramalin gaswami (World Health Organization/Food and Agriculture Organization), New Global Perspectives in Overcoming Malnutrition; U. Jonssen (United Nations Children's Fund or UNICEF), Halving Child Malnutrition by the Year 2000: an Ethical Imperative; J. Hautvast (McCollum Lecture),

Food, Glorious Food: A Challenge for Nutritionists; R. Chandra (Hiroshi Nakajima Lecture), Nutrition and the Immune System—New Observations and Practical Applications; and D. Beitz (USA), Impact of Biotechnology on Production of Raw Food Materials.

In the McCollum lecture, Dr. Hautvast (The Netherlands) outlined new areas for development in human nutrition and emphasized the need for nutritionists to consider the impact of biotechnology, food processing techniques, and increasingly complex foods often containing non-nutritive, bioactive substances on human nutrition. Dr. Chandra (Canada) in the Nakajima lecture highlighted the fact that undernutrition can weaken the immune system by influencing a number of aspects of immune function including cell-mediated immunity, antibody function and affinity, secretory mucosal immunity, and the function of the complement system, as well as the production of interleukins and interferons. Dr. Fürst discussed the concept of molecular nutrition and the use of tailored/structural molecules to modify the body's response to disease in the clinical setting.

In his plenary lecture Dr. Rucker reviewed the rapid advances that have been made in molecular biology and how this technology can interface between nutrition and human disease states. Nutrient-gene interactions at the transcriptional and post-transcriptional levels were discussed along with transgenic techniques and the use of antisense oligonucleotides.

The 50 Thematic Symposia embraced the following areas: Nutrition and the Environment, Nutrition Policies and Programs, Prevention of Chronic Disease by Nutritional Means, Nutrition Through the Life Cycle, Nutrition and Nutritional Anthropology of Aboriginal Peoples, Cell Biology and Molecular Biology in Nutrition, Nutrition and Performance, Animal Nutrition, Food Science, and Clinical Nutrition.

Nearly half of the symposia would have been of direct interest to nutritional biochemists. The following is a list of symposia and topics within symposia that are considered to fulfill the above. In the Symposium on the Prevention of Cardiovascular Disease, P. Nestel (Australia) in "Preventing coronary artery disease" reviewed the emerging coronary heart disease incidence in Eastern European countries in

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which fat consumption is relatively high; M. Katan (The Netherlands) in "Dietary lipids and plasma lipoproteins" addressed the determinants of low density lipoproteins, high density lipoproteins, and triglyceride levels with specific reference to the nature of the dietary fat component; E. Berry (Israel) in "Does oleic acid possess antioxidant properties?" presented data that monounsaturated fatty acids diets may have antioxidant activity; L. Beilin (Australia) in "Diet and hypertension" reviewed the interaction between dietary factors including lipids, salt, potassium, and alcohol consumption on hypertension and highlighted differences due to gender and hypertensive state. Other speakers included H. Nakamura (Japan) "The effects of mycoprotein on plasma lipid and lipoproteins", and Ghafoorunissa (India) "Effects of palm-olein on blood lipids and platelet aggregation in healthy Indian subjects."

In the symposium on the Prevention of Cancer by Nutritional Means, T. Hirohata (Japan) spoke on "Prevention of gastric cancer based on epidemiological studies in Japan;" T. Campbell (USA) discussed the relationship between nutrition and cancer in the light of an ecological, co-operative, large scale study in China; K. Krishnaswamy (India) presented "Chemoprevention of precancerous lesions in the oral cavity in India;" R. MacLennan (Australia) presented "Effect of fat, fiber and beta carotene on adenomatous polyps;" A. Conney (USA) presented "Inhibitory effects of green and black tea on tumorigenesis;" and J. Joossens (Belgium) spoke on "Stomach cancer, salt and nitrate in 24 countries."

In the Prevention of Obesity-Linked Disease Symposia, the following topics were covered: G. Riccardi (Italy), "Metabolic abnormalities associated with obesity;" P. Bjorntorp (Sweden), "Body fat distribution, insulin resistance and metabolic disease;" K. O'Dea (Australia), "Diet and exercise in the treatment and prevention of noninsulin-dependent diabetes mellitus;" B. Howard (USA), "Obesity and hyperlipoproteinemia;" and R. Singh (India), "Randomised, controlled trial of low energy diet in decreasing central obesity and associated disturbances."

The Dietary Treatment of Major Chronic Diseases Symposium featured the following topics: A. Truswell (Australia), "Nutritional possibilities for management of hypertension;" V. Tanphaichitr (Thailand), "Nutritional treatment in diabetes mellitus;" G. Schlierf (Germany), "Treatment of coronary artery disease by diet and exercise;" K. Carroll (Canada), "Dietary treatment of cancer;" and J. Deferne (UK), "Supplementation with blackcurrant seed oil: resting blood pressure and cardiovascular reactivity to psychological stress with borderline hypertensive males - a double blind, controlled trial."

The Nutrition and Physical Performance Symposium covered the following: C. Williams (UK), "Food, nutrition and exercise capacity;" K. Pavlou (Greece), "Protein requirements in elite athletes;" J. Parizkova (Czechoslovakia), "Nutrition and physical performance during growth and development;" M. Davis (USA), "Fatigue and central nervous system during prolonged exercise: nutritional considerations;" and A. Sjodin (Sweden), "Energy balance in cross country skiers evaluated by means of doubly labeled water and dietary record."

In the Nutrition and Cognitive Performance Symposium,

the following were discussed: E. Pollitt (USA), "Nutritional deficiencies, brain function and cognition: a commentary;" R. Uauy (Chile), "New approaches to evaluate the effect of nutrition on brain and retinal development;" S. McGregor (Jamaica), "Recent advances in research on mental development and protein energy malnutrition;" P. Idjradinata (Indonesia), "Iron deficiency anaemia is a cause of developmental delays;" J. Keene (UK), "Overeating in dementia, an observational study;" and P. Baghurst (Australia), "Iron status and cognitive development in children from a smelter community chronically exposed to lead dust."

The Nutrition and Immune Functions symposium covered the following: R. Chandra (Canada), "Nutrition, immune function and infectious illness;" F. Schelp (Germany), "Epidemiological factors in malnutrition and infection;" S. Erickson (USA), "Dietary fat modification of macrophage function;" M. Sakamoto (Japan), "Complement systems in various nutritional states;" and J. Berger (France), "Iron deficiency in Togo: effect of iron supplementation on cell mediated immunity and sensitivity to infections."

The Nutrition in Pregnancy and Lactation Symposium covered the following: R. Whitehead (UK), "Energetic adaptations in pregnancy and lactation;" C. Piekrzik (Germany), "Folate economy during pregnancy;" A. Prentice (UK), "Calcium economy during lactation;" P. Hartmann (Australia), "Short term control of human milk synthesis;" and R. Puri (India), "Nutrient supplements during pregnancy improve the nutritional status of neonates."

The symposium on Nutrition of the Infant covered the following: N. Kretchmer (USA), "Nutrition and growth of the infant;" R. Uauy (Chile), "Human milk: the optimal food for growth and development;" A. Omololu (Nigeria), "Weaning, the bane of infant nutrition in Africa;" M. Gracey (Australia), "Chronic diarrhea, nutrition and growth;" D. Kyle (USA), "New triglycerides which are highly enriched in 22:6 or 20:4 but do not contain 20:5;" and M. Beaudry (Canada), "Relationship between infant feeding and health: a retrospective cohort study of infants during the first six months of life."

The Nutrition and AIDS Symposium covered the following: R. Watson (USA), "Ethanol and vitamin E: Immunomodulatory nutrients affecting disease and tumor resistance in a murine model of AIDS;" L. Cone (USA), "Pathogenesis, diagnosis and treatment of diarrhea and malnutrition caused by HIV-associated infections;" J. Lustig (Australia), "The development of guidelines in nutrition and HIV in Australia;" H. High (Australia), "Nutritional impact on quality of life in people with HIV disease;" and C. Oliver (Australia), "Longitudinal assessment of nutritional biochemistry in early HIV infection."

The Nutrition and Inflammatory Disease Symposium included: A. Waage (Norway), "The role of cytokines in health and disease;" R. Grimble (UK), "Nutrient cytokine interactions;" B. Bistrian (USA), "The modulation of inflammation by dietary fats;" and L. Cleland (Australia), "Effects of dietary C18 fatty acids and cellular incorporation of EPA."

The Nutrients as Metabolic Regulators Symposium included: L. De Luca (USA), "Retinoids and their receptors in differentiation and neoplasia;" J. Mercer (Australia), "Gene regulation by copper;" C. Drevon (Norway), "Vitamin E and alcohol metabolism;" U. Testa (Italy), "Iron metabolism

and function;" and H. Mano (Japan), "Gene expression of retinoid receptors."

The Genetic Variation and Nutrition Symposium included: A. Simopoulos (USA), "Genetic individuality and nutrition;" A. Velazquez (Mexico), "Gene-nutrient interactions in single gene defects and polygenic diseases;" L. Rudel (USA), "Genetic differences in lipoprotein response to dietary fat and cholesterol"; K. Berg (Norway), "Genetic variability of risk factors for coronary heart disease;" U. Wahrburg (Germany), "Influence of dietary cholesterol and apolipoprotein E polymorphism on serum lipid lowering effects of monounsaturated fatty acids;" and R. Kanamoto (Japan), "Effects of dietary nutrition on the expression of *c-myc* and *IGF-1* genes in growing rat liver."

The Nutritional Modulation of Genetic Expression Symposium included: M. Clandinin (Canada), "Nutritional modulation of genetic expression;" S. Clarke (USA), "Polyunsaturated fatty acid regulation of gene transcription;" B. Lonnerdahl (USA), "Maternal factor affecting the expression of genes for specific proteins;" E. Sebokova (Slovak Republic), "Triglyceride and glucose transport in the rat: effects of dietary sucrose and fish oil;" E. Christiansen (Norway), "Dietary regulation of delta-9 desaturase in rat liver;" and J. Von Pilsun (USA), "Evidence for an interrelationship between dietary creatinine and exogenous growth hormone in regulation of L-arginine: glycine amidinotransferase gene expression."

The Symposium on Energy Metabolism included: E. Jequier (Switzerland), "The role of nutrient balance in body weight regulation;" J. Garrow (UK), "Relationship between body configuration and energy metabolism in man;" J. Fricker (France), "Influence of weight loss on energy expenditure in obese subjects;" P. Warwick (Australia), "Energy expenditure in humans under conditions of everyday life;" P. Davies (UK), "Total energy expenditure in children aged 1.5 to 4.5 years;" and G. Pastore (Italy), "A dual channel radar to explain the variance of energy expenditure in a calorimetric chamber."

The Symposium on Calcium and Osteoporosis covered the following areas: J. Eisman (Australia), "Calcium intake, physical activity and peak bone mass;" J. Anderson (USA), "Calcium requirements for optimising skeletal mass of adolescent and young adult females;" E. Seeman (Australia), "Dietary calcium requirements during growth;" P. Charles (Denmark), "Obligatory calcium loss: implication for dietary allowance of calcium in osteoporosis;" and B. Nordin (Australia), "The effect of sodium intake and other factors on calcium requirement in women."

The Dietary Fiber Symposium covered the following areas: D. Kritchevsky (USA), "Fiber and cancer;" A. Walker

(South Africa), "Fiber epidemiology: the African experience;" B. Schneeman (USA), "Alimentary lipemia: individual variation and differences due to dietary fiber;" D. Topping (Australia), "Human foods and large bowel fatty acids in a suitable animal model;" M. Ataut Rahman (Pakistan), "The effect of dietary fiber on the enterohepatic recycling of estrogen in women;" and L. Thompson (Canada), "Soluble and insoluble fiber intake: effect on fermentative ability of human colonic flora."

The Symposium on Antioxidants and Free Radicals covered: I. Dreosti (Australia), "Antioxidant protection: riddles and relevance;" C. Chow (USA), "Vitamins and related antioxidants in free radical defense;" C. Keen (USA) "Trace element/vitamin interactions in free radical defence;" N. Das (Singapore), "Novel antioxidants and antioxidant interactions;" V. Singh (USA), "Roles of carotenoids beyond provitamin A activity: prevention of chronic diseases;" and T. Miyazawa (Japan), "Phospholipids, tocopherol and carotenoids as potent antioxidants in human plasma, erythrocytes and skin lipid."

The Biology of Fatty Acids Symposium included: J. Beare-Rogers (Canada), "Biological properties of isomeric fatty acids;" C. Galli (Italy), "Biological roles of n-6 fatty acids;" A. Leaf (USA), "Some effects of fish oils on cardiovascular function and disease;" R. Nicolosi (USA), "Comparative effects of saturated, polyunsaturated and monounsaturated fatty acids on lipoproteins and atherosclerosis;" and M. Ashwell (UK), "Unsaturated fatty acids: nutritive and physiological significance. The report of the British Nutrition Foundation's Task Force."

Of the 44 workshop sessions at the Congress, the following covered areas of direct interest to nutritional biochemists: "Vitamin B12 and folic acid; Water soluble vitamins; Functional consequences of vitamin deficiencies; Iron deficiency; Early detection of iron imbalance (+ or -); Dietary fiber; Oligosaccharides; Physiological implications of the consumption of resistant starch; Edible oils; *Trans* fatty acids; Antinutrients; Food factors and causation of Type 1 diabetes; Nutrition and childhood diarrhea; and Nutrition in pregnancy and lactation."

It is anticipated that the Proceedings of the Fifteenth International Congress of Nutrition will be available from early to mid 1994. The publisher of the Proceedings will be Smith Gordon, London. The next International Congress of Nutrition will be held in Montreal, Canada, from July, 27 to August, 1 1997. The 1997 Congress Executive will be presided over by Professor R. Chandra. For further information contact XVI International Congress of Nutrition, National Research Council, Ottawa, Ontario, Canada KIA OR6, (Fax: 613 957 9828).