

Keynote Address



Values of Eating – How does our brain judge them?

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Eating is an innate behavior built in the brain of any animal as a biological mechanism for growing and maintaining the body and its activity. However, in humans, eating also has social and cultural values attached to it. We eat to facilitate communication and enjoy the harmony of sensations that foods generate. These biological, social and cultural values of eating are certainly judged in the brain. We may ask the following questions. By what mechanisms of the brain do we sense the values? What happens if one value is in conflict with another? What makes one to overeat or refuse to eat? How does a brand name of a food product gain a high-prestige value, and once a reputation is gained why does the popularity of the brand name perpetuate itself? I would like to offer some answers to these questions on the basis of modern brain science.

食べることの価値－脳はどのように判断するか

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食べるとは、身体の成長、維持、活動を支える生物学的な仕組みとしてすべての動物の脳に組み込まれた生まれつきの行動です。

しかし、人間ではこれに社会的および文化的価値が付加されます。

例えば、他の人と一緒に食べることでコミュニケーションが促され、洗練された料理が創り出す感覚の調和は人生に喜びを与えます。

このような食べることの生物学的、社会的、文化的価値を判断するのは脳です。

では、どのような脳の仕組みによって判断されるのでしょうか。また、次のような時に脳はどう働くのでしょうか。

2つの価値観が対立した場合はどうなのか。過食や拒食はどうして起こるのか。

食品のブランド名がどのようにして高い知名度を獲得するのか。また、一度評判を得るとそのブランド名の人気を保たれるのはなぜか。

最新の脳科学に基づいて、これらの疑問にお答えしたいと思います。

Educational Lecture



Unlocking the Eskimos' Nutritional Treasure: Marine Omega-3 Fatty Acids from Discovery to the Present

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Unlocking the health benefits of marine omega-3 polyunsaturated fatty acids was brought about in the 1970s as a result of our investigation of the Greenland Eskimos (Inuits) and their esoteric dietary habits. The contrast between the Inuits' relatively fatty diet and their low frequency of coronary heart disease, combined with new findings of Arachidonic acid (AA) metabolites (eicosanoids) regulating the thrombotic process, generated the idea that omega-3 fatty acid eicosanoids from Eicosapentaenoic acid (EPA) -- in contrast to AA metabolites -- might have antithrombotic properties. This proved to be true, demonstrated by a prolonged cutaneous bleeding time and a high EPA content in blood platelets in Eskimos. Our publications on this issue in the 1970s gave birth to enormous scientific and public interest in marine omega-3 fatty acids, resulting in their inclusion in dietary advice. The lecture will provide a survey of the historical background of omega-3 research, highlighting marine omega-3 fatty acids' role in current dietary advice, with reference to many new aspects of disease modification relating to the intake of marine omega-3 fatty acids.

エスキモーの栄養の宝庫を開ける：
海産生物由来の ω -3系脂肪酸の発見から現在まで

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1970年代、我々が行ったグリーンランド・エスキモー（イヌイット）と謎に包まれていた彼らの食習慣に関する調査の結果、海産生物由来の ω -3多価不飽和脂肪酸が健康に有益であることが明らかになった。血栓形成過程を調整するアラキドン酸（AA）代謝物（エイコサノイド）に関する新たな知見に加え、イヌイットは比較的脂肪分の多い食事をとっているにもかかわらず、冠動脈心疾患の発症頻度が低いという対照的な事実から、エイコサペンタエン酸（EPA）に由来する ω -3系脂肪酸エイコサノイドは - AA代謝物とは対照的に - 抗血栓作用を有するのではないかという考えが生まれた。エスキモーは皮膚出血時間が長く血小板のEPA含有量が多いことから、この考えが正しいことが証明された。この問題に関して我々が1970年代に発表した論文によって、科学界および一般市民の間で海産生物由来の ω -3系脂肪酸に対する関心が高まり、この考え方が食事療法のアドバイスに取り入れられるようになった。今回の講演では、海産生物由来の ω -3脂肪酸の摂取に関連する疾患修飾の新たな多くの側面を参照しながら、海産生物由来の ω -3脂肪酸が現在の食事療法のアドバイスで果たしている役割を中心に、 ω -3研究の歴史的背景を概観する。

Strategies and Actions in Prevention of the Double Burden of Malnutrition for Achieving Nutrition Security

Kraisid Tontisirin

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The double burden of malnutrition (DBM), a coexistence of under-nutrition and a rapid rise in overweight, obesity and diet-related chronic diseases has been the most challenging developmental issue in this millennium. It becomes a key societal problem worldwide, particularly, in the countries in transition with urbanization, changes in life style and dietary habits, and inadequate physical activity. Globally, 20 m. of infants were borne each year with LBW, one third of children are stunted and nearly the same are under weight, over 850 m. people are suffering from hunger, about 1.6 billion adults were overweight and 400 m. were obese, and 20 m. of preschool children were obese. Sixty percents of all death were due to diet related diseases and 80 % of those death occurred in low and middle income countries. The strategies and actions in prevention of the DBM include food based and regulatory approaches, nutrition and health cares during life course, nutrition education, increased physical activity, and community based integrated programme. The ultimate goal is for achieving “nutrition security”, nutrition well being for all with sustainability by ensuing food security, adequate intake and utilization of food to meet macro and micronutrients needs by everyone during life cycle.

栄養不良の二重の負担を防止して栄養安全保証 (nutrition security) を達成するための戦略と措置

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栄養不良の二重の負担 (DBM: double burden of malnutrition)、すなわち、一方では低栄養、もう一方では過体重・肥満・食事関連慢性疾患が急速に増加しているという栄養不良の共存状態は、発育上の問題として、この千年紀に直面した最難題である。これは世界的に重要な社会問題となっており、特に、都市化への移行期にあつてライフスタイルや食習慣の変化が進み、身体活動が不十分となっている国々では、深刻な社会問題となっている。世界的にみると、毎年 2,000 万人の乳児が LBW (出生時低体重) で生まれており、小児の 3 分の 1 が発育障害であり、ほぼ同数が低体重である。8 億 5,000 万人以上が飢えに苦しんでいる一方、約 16 億人の成人が過体重、約 4 億人が肥満、また 2,000 万人の就学前児童が肥満となっていた。全死亡の 60% が食事関連の疾患に起因するものであり、そのうちの 80% が低・中所得の国で発生していた。DBM を防止する戦略および措置としては、食品ベースの規制的アプローチ、生涯を通じた栄養ケアとヘルスケア、栄養教育、身体活動の増加、地域社会ベースの総合的プログラムが挙げられる。最終目標は、「栄養安全保証」を達成することである。「栄養安全保証」とは、食糧安全保証－主要栄養素および微量栄養素の必要性を満たすことのできる食物をすべての人が生涯を通じて適切に摂取し利用すること－を確保することにより、持続可能性を伴った栄養学的な健康がすべての人々に保証されることである。

Public Guidance on Food Intake: Recommendations, Determinants and Lay Conceptions

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Nutrition-related guidelines abound. They come from different sources, and they touch on food, physical activity and other aspects of living. Concerning food, there are many recommendations on what to eat, what combinations and sequence, how, how much, how often, when, where, with whom, and the food's point of origin. Sometimes they are simple and consistent, and at other times complex and conflicting. The guidelines are influenced by an increasing number of considerations: scientific, technological, social, economic, psychological, cultural, political, environmental, ethical and human rights. It is important that our present preoccupation with the issuance of this or that message to guide the public on “proper” eating in relation to obesity and its co-morbidities and consequences does not (1) weaken our resolve to address the problem of hunger and food insecurity of millions of people all over the world, including in lands of plenty, and (2) diminish our recognition of and respect for lay people's lived ways of making sense of their own world of food and eating.

集団に対する食事指導のあり方： メッセージ・影響力・受けいれ方

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栄養に関するガイドラインは数多く存在する。その情報源は様々であり、それぞれが食品、身体活動、その他の生活面について言及している。食品に関しては、何を食べ、どのような組み合わせで、どのような順序で、どのようにして、どれだけの量を、どれだけの頻度で、いつ、どこで、誰と食べるかについて、また食品の原産地について、数多くの提言がある。これらの提言は簡潔で一貫していることもあれば、複雑で矛盾している場合もある。科学的、技術的、社会的、経済的、心理学的、文化的、政治的、環境的、倫理的な問題や人権問題など、考慮すべき事柄は増加しており、それに伴いガイドラインも影響を受けることになる。肥満やそれに関連する疾患、それらの影響や関連において「適切な」食事について一般の人々を指導するためにいろいろなメッセージを発することが現在、我々の第一にすべき仕事である。それらのメッセージは、(1) 豊かな国々を含む世界中で何百万人もの人々が苦しんでいる飢餓や食糧不足の問題に取り組む我々の決意を損なうものではなく、(2) 専門家でない一般の人々の食物や食習慣の理解の仕方を我々が認識し尊重することを弱めるものでもないということが重要である。

Food: Where Science and Culture Meet

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Prepared for Health Care Restaurant Magazine

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As many dietitians who are readers of Health Care Restaurant Magazine know well, food and its consumption are where science and culture meet in the real world and an integral part of their profession. Dietetics is a field that brings science and culture together to improve health and the quality of human life. Appropriate dietetic education is required to accomplish this objective. The education and training of dietitians requires five essential kinds of proficiency if they are to teach others.

First is proficiency in science. Dietetics is an applied discipline. It has strong roots in the biological sciences, including food and nutritional science as well as more basic sciences. These sciences must be mastered to provide a sound evidence base that is the foundation of rational dietetic practice. Behavioral and social sciences are also relevant because they help dietitians to understand, engage, and better educate their patients and consumers. There is also the need to include practical aspects of feeding large groups of people, particularly those with special health care needs. Japan has strength in preparing dietitians with food service and catering expertise, and it is important to keep an emphasis on this in the future. However, clinical expertise is also important. The recent legislation passed in Japan to strengthen clinical dietetic education is a further step forward, and one that other country in Asia should watch with great interest. The challenges to educators in achieving science proficiency in their programs are to balance preparation in all of these disciplines, and to mix theoretical preparation with practice. Both are vital to achieve their goals.

Second, dietitians must be proficient in civic and public affairs that involve nutrition. The goal here is to help ensure nutritional well being for their fellow citizens by developing a concern for and familiarity with civic and community affairs at the local provincial and national level. Dietitians must be committed to improving human health by providing advice on issues touching on dietetics, food and nutrition issues. Often this means speaking out about the need for distributive justice so that sufficient resources for a nutritious and healthy life reach all citizens.

Cultural proficiency on the role of the culture's food and nutrition traditions is also essential, particularly in countries with a rich culinary heritage such as Japan. Dietitians have an obligation to be familiar with the foodways and food history of their country. They must also ensure that their advice is culturally acceptable and that eating remains a source of pleasure rather than simply a means of sustenance. Eating is first and foremost a pleasurable sensory experience. Preserving cultural traditions in food will require not only dietitians but also the cooperation and efforts of many others in the food industry, including many readers of the Health Care Restaurant magazine.

Communications proficiency is another key skill. This consists of the ability to translate and communicate the science into acceptable and affordable eating patterns for patients as well as the general public. Dietetics communications need to avoid preaching or lecturing. The challenge is to start a new dialogue with patients and consumers about what they need to do about food and how to do it.

Also managerial proficiency is essential, as many readers of Health Care Restaurant know very well from their own careers in the industry.

All of the information and skills that make superb dietitians must be inculcated during the process of education and training. It is to the great credit of the dietitians of Japan that they are constantly striving to update and improve their skills.

In conclusion, science and culture meet in the practice of dietetics. Dietitians from all over the world are eagerly awaiting the International Congress on Dietetics in Yokohama in 2008. They look forward to hearing more about the accomplishments of dietetic professionals in Japan, and to learning more about how the science and art of dietetics are practiced in Japan. And they are profoundly grateful for the hospitality their Japanese colleagues have extended.

食物：科学と文化が出会う場所

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『Health Care Restaurant Magazine』の読者である栄養士の多くの方がよくご存じのように、食物と消費は、科学と文化が出会う場所であり、栄養士という専門職に不可欠な要素です。食事療法学は、健康を増進して人間の生活の質を向上させるために科学と文化を統合した学問です。この目的を達成するために、栄養士が教育に携わる際、教育と訓練において、適切な食事療法学の教育が必要となります。

まず、科学の習熟です。食事療法学は応用科学の分野であり、より基礎的な科学に加え、食品・栄養科学を含む生物科学に深く根ざしています。合理的な食事療法学の実践の基盤である確かな科学的根拠を提供するためには、このような科学を習得しなければなりません。また、行動科学と社会科学は、栄養士が患者と消費者を理解し、関心をもたせ、よりよい教育を与えるうえで有用であることから、互いに両者を関連付けることも重要です。さらに、大きな集団、とりわけ特別な医療が必要な集団に対して食事提供という実際の側面も取り入れる必要があります。栄養士に食事サービスやケータリングの専門知識を身に付けさせる点では日本はすぐれており、将来にわたってもこの点を重視し続けることが大切です。一方で、臨床的な専門知識も重要です。日本では最近、臨床現場で食事療法の教育を強化する法令が可決されていますが、これは前進であり、その他のアジアの国々で大きな関心をもって注目されているはずですが、それぞれのプログラムで科学を習熟する教育者の課題として、これらすべての専門分野でのバランスをはかることと、実践に加え理論的な側面も取り入れることがあげられます。このことは、それぞれの目的を達成するために不可欠です。

次に、栄養士は、市民や国民の栄養にかかわる問題を習熟していなければなりません。ここでの目標は、地方の州や全国レベルで市民および地域社会の問題についての関心を高め、周知させることによって、同市民の栄養面での健康確保を手助けすることです。栄養士は、食事療法、食物、栄養のそれぞれの問題にかかわる事柄についてのアドバイスを提供することにより、人々の健康増進に深く取り組まなければなりません。このことはしばしば、栄養価の高い健康的な生活のための十分な資源がすべての市民に行き渡るように、分配の公正の必要性について声を上げることの意味しています。

また、日本のように豊かな料理の伝統がある国々では特に、それぞれの文化の食物・栄養面での伝統の役割について文化的に深い知識を得ることもきわめて重要です。栄養士は自国の食習慣や食の歴史をよく知る義務があります。栄養士はまた、文化的に受け入れられるようなアドバイスをし、食べることが単なる生命維持手段ではなく喜びの源であり続けるようにしなければなりません。食べることはまず何よりも楽しい感覚的な経験なのです。食物の文化的伝統を守ることは、栄養士だけでなく『Health Care Restaurant Magazine』の多くの読者を含む食品業界のその他関係者の多くの協力と努力が必要となるでしょう。

さらに別のスキルとして、情報伝達の習熟も重要です。これは、科学に基づいて、一般市民だけでなく患者にとっても受け入れられる手ごろな価格の食事パターンへの伝達力です。食事療法の情報伝達は、説教・講義形式を避けることが必要です。ここでの課題は、食物について何を、どのようにする必要があるかについて、患者や消費者と新たな対話を始めることです。

また、『Health Care Restaurant Magazine』の多くの読者が業界でのキャリアであることからよくご存じのように、経営面での習熟も必要不可欠です。

すぐれた栄養士をつくる情報とスキルはすべて、教育と訓練のプロセスのなかで教え込まれることが必要です。日本の栄養士が自らのスキルを向上させ改善するためにたゆまない努力を続けることは、大いに称賛に値します。

最後に、食事療法の実践は科学と文化が出会う場所です。世界中の栄養士が、横浜で開催される2008年国際栄養士会議の開催を心待ちにしています。彼らは日本の食事療法専門家の成果について、また日本で科学と食事療法がどのように実践されているかについて知りたいと願っています。世界中の栄養士は、日本の栄養士の方々の歓迎に心から感謝しています。

The role of the Consultant Dietitian in Clinical Nutrition

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Non-medical health professional consultant posts were originally established in the UK for nurses to provide a new career opportunity, retain clinical expertise and professional leadership providing better outcomes for patients and improving services. Until 2000, there was limited opportunity for specialist dietitians to progress further in a clinical role without taking on management responsibilities. Consultant dietitian posts provide improved patient outcomes and offer new career opportunities for expert specialist dietitians recognising extended roles and retaining clinical and professional leadership in the health service. Ten posts have been established since 2003 and specialities include diabetes, obesity, oncology, gastroenterology, nutritional support, intestinal failure, public health, mental health and paediatrics. Post-holders are experts in their clinical speciality and bring clinical leadership and strategic direction in their area of expertise. They develop evidence-based protocols and standards of care, leading audit and research and act as an expert dietetic resource within their specialist area locally and nationally. New working practices are established and provide clinical and professional leadership for dietitians in a specialist area. They ensure a whole systems approach to the delivery of nutrition and dietetics across organisational interfaces, for example between healthcare systems and educational establishments.

臨床栄養におけるコンサルタント栄養士の役割

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医師以外の医療専門家としてのコンサルタントのポストは、もともと英国で設立されたものであり、これは看護師に新たな就業チャンスを与えて、臨床的専門知識を取得して専門家としてのリーダーシップを発揮し、それによって患者の予後を改善し、サービスを向上させることを目的としたものである。

2000年までは、栄養士の専門家としての臨床的役割は管理責任のないものであり、栄養士がさらに進歩する機会は限られていた。コンサルタント栄養士のポストによって、治療の予後が改善されるとともに、専門家としての栄養士に新たな就業の機会がもたらされ、同時に、栄養士は役割の拡大を認識し、保健サービスの分野で臨床的、専門的リーダーシップをとるようになってきている。2003年までに10のポストが設けられ、それらの専門分野には糖尿病、肥満、腫瘍、消化器、栄養補給、腸疾患、公衆衛生、メンタルヘルス、小児分野などがある。このポストに就いた者は各臨床専門分野の専門家であり、それぞれの専門領域で臨床的なリーダーシップをとり、戦略的方向性の指示を行っている。また、科学的根拠に基づいたプロトコルおよびケア基準を開発し、検査および調査を指導し、地域および全国レベルで、各専門領域内で専門的食事療法学のリソースとしての役割を果たしている。

新たな業務慣行が確立され、専門領域で栄養士が臨床的、専門的リーダーシップを発揮できるようになっている。この業務慣行によって、例えば保健医療制度と教育機関という組織のインターフェイスの枠を超えて栄養と食事療法の実践の全体的なアプローチを可能とする。

Challenge to the Metabolic Syndrome; Adiponectin and Fat ROS

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The metabolic syndrome (MetS), a cluster of insulin resistance, elevated blood pressure, and atherogenic dyslipidemia, is a common basis of atherosclerosis. Accumulation of intra-abdominal visceral fat stands upstream of the metabolic syndrome. Adipose tissue expresses a variety of genes for bioactive secretory proteins conceptualized as 'adipocytokines'. We discovered an adipose-specific protein named 'adiponectin' from human fat cDNAs. Adiponectin circulates in the plasma and its serum level is decreased in visceral fat accumulation. Hypoadiponectinemia underlies the pathogenesis of multiple diseases related to visceral fat accumulation, including atherosclerosis, hypertension, cardiac failure, insulin resistance, diabetes, dyslipidemia, hepatic steatosis, chronic kidney disease, and cancers.

Recently, we revealed fat-derived reactive oxygen species (fat ROS) acting as an upstream factor in the development of hypoadiponectinemia and MetS.

Interventions, like life style, diet, exercise, and drugs, which control visceral fat accumulation, hypoadiponectinemia and fat ROS, should be the way to tackle the MetS. In this regard, activities of Expert Dieticians in Osaka University Hospital would be introduced.

メタボリックシンドロームへの挑戦；アディポネクチンと Fat ROS

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メタボリックシンドローム (MetS) は、インスリン抵抗性、血圧上昇、およびアテローム生成性異脂肪血症などの病態からなる症候群で、アテローム性動脈硬化症の共通基盤である。

メタボリックシンドロームの上流には、腹腔内の内臓脂肪の蓄積が原因として存在している。脂肪組織には、「アディポサイトカイン」として概念化される生理活性分泌たんぱく質の多様な遺伝子が発現している。我々は、ヒトの脂肪 cDNA に由来する「アディポネクチン」と呼ばれる脂肪特異的たんぱく質を発見した。アディポネクチンは血漿中を循環しており、内臓脂肪が蓄積するとその血清中濃度は低下する。低アディポネクチン血症は、アテローム性動脈硬化症、高血圧、心不全、インスリン抵抗性、糖尿病、異脂肪血症、脂肪肝、慢性腎臓病、がんなど、内臓脂肪の蓄積に関連した多数の疾患を発病する土台となる。

我々は最近、低アディポネクチン血症およびメタボリックシンドロームの発症において上流因子として作用する脂肪由来の活性酸素種 (fat ROS) を明らかにした。

生活習慣・食事・運動・薬物のような介入、内臓脂肪の蓄積や低アディポネクチン血症、および fat ROS をコントロールする介入は、メタボリックシンドロームに立ち向かっていく手段となると思われる。この点に関連して、大阪大学医学部附属病院の専門栄養士 (Expert Dieticians) の活動を紹介する。

Bridging: Facilitating Internationally Educated Dietitians to Gain Practice Recognition

Marlene Wyatt

Director Professional Affairs, Dietitians of Canada

Professionals often immigrate to a new country with the expectation of practicing in the area(s) in which they were educated/trained. In Canada, dietetics is a regulated profession. This means that Internationally Educated Dietitians (IEDs) face the burden of proving the equivalency of their credentials/competencies. For most IEDs this process has historically been time-consuming, expensive and one that has not resulted in significant numbers gaining practice registration.

The Internationally Educated Dietitians Pre-registration Program (IDPP) was launched at Ryerson University-Ontario, Canada in 2005. This bridging program is not a retraining program, but focuses on challenges created by a new practice environment and on assisting IEDs to successfully make the transition to practice. The program includes a curriculum which focuses on the Canadian context of healthcare/dietetics practice, and a dietitian supervised practicum. To date, the program has graduated 43 IEDs who have sought registration. Graduates have been very successful in gaining registration; passing the qualifying examination; and obtaining dietitian employment.

This session will:

- Provide an overview of the program components;
- Share learning's gained; and
- Present evaluation data related to program outcomes.

This session will be of interest to anyone interested in facilitating entry of IEDs into practice.

外国で教育を受けた栄養士が実務資格を得ることを支援する橋渡しプログラム

マーリーン・ワイヤット

カナダ栄養士会

専門家の中には、教育・訓練を受けた地域で活動したいと考えて、新しい国に移住する人が多い。カナダでは、栄養士という専門職には規制があり、諸外国で教育を受けた栄養士（Internationally Educated Dietitian :IED）は、自分が取得した資格/技量の同等性を証明しなければならない負担に直面している。大多数の IED にとって、このプロセスは歴史的にみて時間と費用のかかるものであり、結果として栄養士資格を取得した者の数はそれほど多くない。

2005年にカナダのオンタリオ州にあるライアソン大学で、諸外国で教育を受けた栄養士の予備登録プログラム（Internationally Educated Dietitians Pre-registration Program : IDPP）が開始された。この橋渡しプログラムは再教育プログラムではなく、新たな実践環境がもたらす課題と、IED が問題なく実践活動に移行できるための支援に重点を置いている。このプログラムには、カナダにおける医療/食事療法の実践の事情に焦点を当てたカリキュラムと、栄養士の指導による実習コースが含まれている。現在まで、登録を希望した 43 名の IED がこのプログラムを修了している。プログラム修了者は非常にスムーズに登録を完了し、資格認定試験に合格し、栄養士としての職を得ている。

本セッションでは、以下を予定している。

- ・プログラム構成内容の概要
- ・これまでに得た知識の共有
- ・プログラムの成果に関する現在の評価データの提示

本セッションは、IED が実務の場に入ることを推進しようとする方にとって興味深いものとなるであろう。

Telehealth – a Practice Frontier in Increase Access to Dietitians

Lisa Forster-Coull

*Population Health and Wellness
Ministry of Health Services*

Telehealth offers tremendous opportunities to increase access to dietitians and improve the nutritional health of the population. British Columbia's Dial-A-Dietitian service is at the forefront of telehealth nutrition services in Canada. Dial-A-Dietitian has been providing expert nutrition advice to the public and assisting them to access appropriate health care service for over 30 years in British Columbia. This telephone and web-based service also supports health professionals and the media by providing timely access to current scientifically-supported nutrition information.

Dial-A-Dietitian has recently expanded its services to support patients dealing with specialized, complex nutrition issues in oncology, allergy and pediatrics. With strategic technology enhancements, innovative partnerships with community-based providers, and a compelling shared vision among dietitians, telehealth is an exciting new frontier for dietetic practice.

テレヘルス－遠隔医療による先端的栄養指導のあり方

リサ・フォスター・コール

遠隔医療によって、栄養士への相談件数の増加ならびに住民の栄養上の健康増進のための機会をより多くもてるようになった。ブリティッシュコロンビア州の Dial-A-Dietitian サービスは、カナダの遠隔栄養サービスの最先端に位置づけられており、同州で 30 年以上にもわたって一般市民に専門的な栄養上のアドバイスを提供し、さらには市民が適切な医療サービスを受けられるように支援してきた。また、電話とウェブ・ベースのこのサービスは、科学に支えられた最新の栄養情報にタイムリーにアクセスできることを通して、保健分野の専門家やメディアへの支援も行っている。Dial-A-Dietitian は最近、そのサービスを拡大して腫瘍学、アレルギー、小児科分野の専門的で複雑な栄養上の問題に対処しなければならない患者をサポートしている。戦略技術の強化、地域社会をベースとしたサービス提供者との間での画期的なパートナーシップの構築、栄養士の間での説得力のあるビジョンの共有によって、遠隔医療は食事療法の実践における新たな注目すべき領域となっている。

Dietetics and Functional Foods

Linda Tapsell FDAA

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Director, Australian Centre of Excellence in Functional Foods
Editor, Nutrition & Dietetics, Dietitians Association of Australia*

Dietetics concerns the delivery of dietary advice based on a sound knowledge of food composition and the links between food and health. The benefits of functional foods are communicated to consumers based on scientific evidence of their impact on health. Dietitians therefore need to keep abreast of developments in functional foods but they can also be actively engaged in various aspects of their development and use in the diet. With their unique knowledge and skill base, dietitians can participate in this enterprise by a number of means. This includes reviewing the evidence base for claims on functional foods, participating in clinical research that requires dietary intervention, and assisting in the development of nutrition communications grounded in sound science. The increasing knowledge of the effects of food on genetic expression and the prevention of disease is producing great opportunities for professional development as well as challenges for the future.

Key words functional foods, dietetics, nutrition marketing, nutrigenomics

食事療法と機能性食品

リンダ・タプセル

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オーストラリア国立機能性食品センター、所長
オーストラリア栄養士協会、栄養&食事療法学、編集者

食事療法学は、食品成分ならびに食べ物と健康に関する信頼できる知見に基づき、食事のアドバイスをする学問である。機能性食品には、その健康効果を科学的根拠に基づいて消費者に伝えられるという利点がある。したがって栄養士は、機能性食品の最新情報を常に把握しておくことが必要であり、同時に、機能性食品の開発およびその食事への適用など、さまざまな側面に積極的に関わることができる。栄養士は、独自のユニークな知識とスキルを基に、様々な方法で機能性食品に関する取り組みに参加できる。その取り組みとしては、機能性食品として認定される証拠の審査、食事介入を必要とする臨床試験への参加、科学的根拠に基づく栄養コミュニケーションの開発支援などがあげられる。遺伝子発現や疾患予防に及ぼす食べ物の影響に関する知見が増えてきていることは、将来に向けての努力目標、ならびに専門能力を磨くための大きな機会を生み出すことになる。

キーワード：機能性食品、食事療法学、栄養マーケティング、ニュートリゲノミックス

Diet and Longevity: Lessons from Centenarians

Sang Chul Park

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The trend of population aging is global but more rapid and serious in Asian zone than any other parts of the world. For which, the betterment of the socio-ecological status as well as the improvement of the medical care for prevention and treatment of diseases contributed a great deal. Now is the time to review the primary questions related to the role of diet on longevity. The general nutritional status of the Korean centenarians was within normal range. But when we checked their dietary pattern and nutritional status, several unique features can be derived. Nutritional characteristics of Korean centenarians showed the unique level of serum vitamin B12. Basically the blood level of vitamin B12 in Korean centenarians is within normal despite their lifelong vegetable-oriented food pattern. We could successfully discover several sources of vitamin B12 in the traditional Korean fermented foods such as soy bean pastes (Doenjang, *Miso*; Chunggook Jang, *Natto*) and hot pepper paste (Gochu Jang). In addition the low consumption of fruits but high consumption of vegetables by centenarians led us to confirm the high anti-mutagenic activity and high anti-oxidant activity in vegetables, but high anti-oxidant activity without anti-mutagenic activity in fruits. In addition to the nutritional characteristics of the centenarians, their dietary behavior was worth to assess. That is, the meal time of centenarians is very regular and the amount of food in every meal is very constant. Their life long habit of dietary behavior of regularity in meal time and constancy of meal amount is general in most of the centenarians all over the country.

From these data, we can develop a new dietary program for the longevity, especially beneficial to the developing countries, since our centenarians have survived the economically poor and socio-politically turmoil period, similar to the situations in the those areas. We come to recognize that for the longevity it can not be limited to calorie restriction but expanded to the more positive food style. In that aspect, the following summary might be derived for the new dietary program, tentatively for the health and longevity of the general population. 1. The regularity of meal time and the constancy of the meal amount should be maintained. 2. The dietary diversity should be maintained. 3. The dietary balance should be maintained. 4. Exercise and other outdoor activity should be encouraged. 5. Fermented foods can compensate the nutritional shortage, especially the bean fermented foods are recommended. 6. Vegetables either fresh or blanched are strongly recommended.

食事と長寿：100歳以上の人々から学ぶ教訓

サン・チュル・パク

ソウル国立大学、高齢化研究所所長・教授

人口高齢化は世界的傾向であるが、世界の他のどの地域と比べてもアジア一帯ではこの傾向が急激かつ深刻である。これに大きく寄与したのは、社会生態学的状況の改善と、疾患の予防・治療における医療の向上である。いまこそ、長寿を実現する食事の役割についての基本的な疑問を再検討する時が来たといえる。韓国の100歳以上の人の一般的な栄養状態は、正常範囲内であった。しかし食事パターンと栄養状態を調べてみると、他の年代では見られないいくつかの特徴が浮き彫りになる。韓国の100歳以上の人の栄養学的特徴として、血清ビタミンB12濃度が独特の値を示すことが明らかになった。生涯を通じて野菜中心の食事パターンであるにもかかわらず、基本的に、100歳以上の人の血中ビタミンB12濃度は正常範囲内である。我々は、大豆ペースト（テンジャン、味噌；チョングッジャン、納豆）や唐辛子ペースト（コチュジャン）といった韓国の伝統的発酵食品にビタミンB12が含まれていることを見いだした。さらに、100歳以上の人では果物の消費量は少ないが野菜の消費量が多いことから、野菜は抗変異原性作用が高く抗酸化作用も高いが、果物は抗酸化作用が高いものの抗変異原性作用はないことを確認した。栄養学的特徴のほかに、100歳以上の人の食行動も評価する価値があった。すなわち、100歳以上の人の食事時間はきわめて規則正しく、1回の食事で食べる量も非常に一定しているのである。食事時間が規則正しく食事の量が一定しているという生涯変わらぬ食習慣は、全国的に100歳以上の人のほとんどに共通している。

これらのデータをもとに、長寿のための新しい食事プログラムを開発することができる。韓国の100歳以上の人は経済的に貧しく社会政治的に混乱した時代を生き抜いてきたことから、類似した状況にある開発途上国にとって、このプログラムは特に有益なものとなるであろう。我々は、長寿のためにはプログラムをカロリー制限に限定せず、より積極的な食形態へと拡大しなければならない、という認識に至った。この観点から、暫定的に一般の人々を対象とした健康と長寿のための新しい食事プログラムについて、次のようにまとめることができる。1. 規則正しい食事時間と一定量の食事を維持するべきである。2. 多様な食品の摂取を維持するべきである。3. 食事のバランスを維持するべきである。4. 運動やその他のアウトドア活動を奨励するべきである。5. 発酵食品によって栄養不足を補うことができ、特に豆の発酵食品が推奨される。6. 生でも茹でたものでも、野菜を食べることが強く推奨される。

The Use of DRIs for Food Planning

Suzanne P. Murphy, PhD, RD

Cancer Research Center of Hawaii, University of Hawaii

Planning applications using the Dietary Reference Intakes (DRIs) are often separated into those that apply to individuals and those that apply to groups of people. The goals of planning nutrient intakes for individuals usually are to ensure a low probability of inadequacy and a low risk of excessive intake. Thus, individuals should aim for nutrient intakes that meet the RDA or AI while not exceeding the UL. The goals of planning nutrient intakes for groups are similar: to ensure a low prevalence of inadequate intakes and a low prevalence of intakes that might be excessive. However, the applications are more complex because the distribution of intakes within the group should be considered. To achieve the goals, a feeding program should ensure that a small percent of the group falls below the EAR, and also that few people have intakes above the UL. An iterative approach is usually necessary: plan a program to achieve the target usual intake distribution, implement and then assess the program, and, finally, make alterations, if necessary. Examples of planning applications for groups include planning meals for a group residence, planning menus for a food assistance program, and planning the level of fortification for staple food products.

食事摂取基準の食事計画への活用

スザンヌ P. マーフィ

ハワイ大学ハワイ癌研究センター

食事摂取基準 (Dietary Reference Intakes :DRIs) を用いた適用例は、個人への適用と集団への適用に分けて計画されることが多い。個人を対象とした栄養摂取計画は通常、栄養不足の可能性を抑えて過剰摂取リスクを軽減することを目標としている。したがって、個人に対する目標は、推奨栄養所要量 (RDA) または適正摂取量 (AI) を満たし、許容上限摂取量 (UL) を上回らないような栄養摂取量を計画すべきである。集団を対象とした栄養摂取計画の目標も同様である。すなわち、摂取量不足の人たちの割合と過剰に摂取する人たちの割合をそれぞれ確実に減らすことを目標としている。しかし、集団内での摂取量の分布を考慮する必要があるため、集団への適用は個人の場合よりも複雑になる。目標を達成するためには、集団内での推定平均必要量 (EAR) を下回る割合がごく少数で、UL を上回る割合はほとんど含まないような食事提供プログラムを計画すべきである。通常反復的なアプローチが必要とされる。つまり、目標とする通常の摂取量分布を達成するプログラムを計画し、そのプログラムを実施して評価を行い、最後に、必要であれば変更を加える。集団への応用計画の例としては、集団での食事計画、食事介助における献立作成、主食への栄養強化量の決定などがある。

Foodservice Leadership – Easy as Pie?

Ghita Parry

*The Danish Diet and Nutrition Association
Denmark*

The aim of foodservice leadership in hospitals and nursing homes is a successful food and meal service. Successful for the people the food is made for.

Success is depending on whether the food is eaten, as food is not nourishment until it has been eaten.

Dietitians know how important the food is for the treatment and for the quality of life for the residents in nursing homes.

The success has to be created within complex systems including many occupational groups with awareness about their own roles.

To create success focus has to be replaced. Economy, nutritional composition and hygiene are necessary conditions but they alone do not make a success for the users.

How to change?

- The foodservice leader must be responsible for food and meals from processing the raw material till the food has been eaten and becomes nourishment. Power to make decisions should follow the responsibility.

- Creation of a straight relation between the foodservice employees and the users.

- To ensure a success the foodservice leader needs to set up clear goals and criteria.

The foodservice leader must be “the leading star” for all concerning food and meal service. Multidisciplinary collaboration needs to grow and be strengthened.

食事サービスにおけるリーダーシップの難しさ

ギタ・パリー

デンマーク栄養士会

病院および福祉施設における食事サービスのリーダーシップの目標は、食物と食事のサービスを成功させることである。つまり、準備する食事が人々に良い影響を与えることである。

食物は摂取されてはじめて栄養となるため、食事サービスの成功は食べ物を食べてもらえるかどうかにかかっている。

栄養士は、病院および福祉施設の入所者の治療とクオリティ・オブ・ライフ（QOL）のために食物がいかに重要であるかを理解している。

食事サービスの成功は、自らの役割を認識している多くの職業集団を含む複雑なシステムによって達成されなければならない。

目標を達成するためには、焦点を変える必要がある。経済、栄養成分、衛生状態は必要条件であるが、それだけでは利用者にとって十分ではない。

ではどうやって変革するのか

- 食事サービスのリーダーは、食材の加工から食物が摂取されて栄養になるまで、食物と食事に責任を持たなければならない。その責任のもとで決断を下す権限を与えられる必要がある。

- 食事サービスに携わる従業員と利用者との間に直接的な関係を築く必要がある。

- 成功を確実にするために、食事サービスのリーダーは、明確な目標と基準を設定する必要がある。

食事サービスのリーダーは、食物と食事サービスに関してすべての「主役」でなければならない。多くの専門分野からの協力を拡大し強化することが必要となっている。

Symposium



Health Japan 21

Hideo Shinozaki, MD, PhD, MSc

President, National Institute of Public Health

1. National Health Promotion Programmes

1) The 1st Programme (1978-1988)

- ① Alma Ata Declaration (WHO/UNICEF)
- ② Nutrition, Exercise, Rest
- ③ Intervention programme to reduce dietary salt intake

2) The 2nd Programme (1988-1998) “Active 80 Health Plan”

- ① Nutrition, particularly physical exercise, Rest
- ② Public Health Promotion Centers

3) The 3rd Programme (2000-2010) “Health Japan 21”

- | | |
|---------------------------------|---------------------------|
| ① Nutrition, Diet | ⑥ Dental health |
| ② Physical activities, exercise | ⑦ Diabetes |
| ③ Relaxation and Mental health | ⑧ Cardiovascular diseases |
| ④ Tobacco | ⑨ Cancer |
| ⑤ Alcohol | |

2. Nutrition, Diet

Indicators	Baseline	2010 Target	Midterm(2005)
Under weight female aged 20-29	23.3 %	< 15%	21.4 %
Obese male aged 20-69	24.3 %	< 15%	29.0 %
Overweight in school children	10.7 %	< 7 %	10.2 %
Salt intake	13.5 g	< 10 g	11.2 g
Vegetable intake	292 g	> 350 g	267 g

Japan's New Initiative for the Prevention of Lifestyle Related Non-communicable Diseases: Background and Overview of the Program

Eiichi Seki

*Director, Disease Prevention and Control, Lifestyle Related Non-communicable Diseases,
Health Service Bureau, Ministry of Health, Labor and Welfare, Japan*

Diseases such as cardiovascular disease and stroke that have a serious effect on patient health and are related to lifestyle and metabolic risk factors (in other words, lifestyle related non-communicable diseases) have become a significant national problem in Japan, as is reflected in the remarkable increase in the incidence of diabetes in recent years as Japanese population continues to age and becomes prone to lifestyle and other risks. Preventing these diseases has become a key health issue. To address this challenge, Japan launched a new preventive program composed of individuals' health assessment followed by a behavior-change assistance intervention, all based on the “metabolic syndrome approach” (focusing on adiposity, namely the accumulation of visceral fat, accompanied by one or more of three metabolic risk factors - high blood pressure, lipid abnormalities, and high blood glucose). The program has been introduced as an important part of a policy package which came into effect in April 2008 with the ultimate goal of ensuring sustainability of Japan's public medical insurance system. The target of this preventive program is all individuals from 40 to 74 years of age residing in Japan and covered by Japan's public medical insurance.

More precisely, the program uses a set of health examinations and tests (“Specified Health Checkup”, or “*Tokutei Kenkou-Shinsa*”) to identify individuals whose lifestyle habits and metabolic risk profiles are in need of improvement according to a certain criterion, and then provides a behavior-change assistance package (“Specified Health Guidance”, or “*Tokutei Hoken-Shidou*”) provided by physician, public-health nurse, and/or registered dietitian. The selection of individuals eligible for receiving Specified Health Guidance is principally based on the value of waist circumference at the navel height (male \geq 85cm, female \geq 90cm) as a requisite, along with meeting one or more additional conditions regarding: 1) blood pressure; 2) serum lipid profile (triglyceride and/or HDL-cholesterol); 3) fasting blood glucose; and 4) habit of smoking. The Specified Health Guidance is a set of interventions to assist participants in improving their daily life habits from the standpoints of nutrition, exercise, and smoking. It typically starts with the development of an individually-tailored lifestyle-change planning sheet, provides measures to support individual's effort to change certain aspects of daily life, and culminates in an evaluation of improvements six months after the inception.

In Japan virtually all citizens enjoy coverage under one of public medical insurance schemes, be it workplace-based or local community-based. Providers of such medical insurance schemes (medical insurers) have been put to the position of implementers of the new preventive program, and they will continuously accumulate a large number of individual data on risk profiles in a standard electronic format. Medical insurers are expected to fully utilize such data and actively undertake various activities, including individually-tailored health education according to the results of Specified Health Checkups, further encouragement towards individuals who have not yet undergone Checkups to undergo them, and appropriate medical follow-up for individuals whose checkup results indicate a need for immediate treatment.

The above-mentioned specified program prioritizes at-risk individuals, and is considered to fall under the category of “high-risk approach”. Such approach will only become effective when it is accompanied by efforts such as creating an environment conducive to healthy living and offering awareness and education programs geared to encouraging healthy living (“population approach”). These efforts are typically undertaken by local government at the city, town, and village level. These programs and undertakings, altogether, are expected not only to reduce the number of individuals suffering from or at risk for serious lifestyle related non-communicable diseases such as diabetes, cardiovascular disease, and stroke, but also to slow future growth of medical expenses by effectively preventing these diseases.

Specific Health Counseling

Kazuko Sako

Standing Director, The Japan Dietetic Association

1. Human Resources Development at the Japan Dietetic Association

The Japan Dietetic Association has 58,000 members, of whom 40,000 are registered dietitians. The association has developed a plan for training 10,000 registered dietitians in an effort to provide Specific Health Counseling, and 10,100 dietitians completed this program in fiscal 2007. Training focuses on the situations that are likely to arise during the practice of Specific Health Counseling. A survey of trainees who have completed the course indicates that 40% are already responsible for specified health guidance programs, and 20% would like to provide such guidance in the future. In 2008, the association is continuing to provide retraining for registered dietitians and to hold nationwide training sessions for dietitians responsible for ongoing assistance in Specific Health Counseling.

2. Specific Health Counseling

Specific Health Counseling involves progressing through the following stages in order to allow the target individual to reassess his or her lifestyle, establish goals for improving lifestyle habits, and provide assistance in achieving those goals: (1) making preparations, (2) building a relationship of trust, (3) assessing lifestyle habits, (4) encouraging awareness, (5) understanding healthy behavior, (6) establishing behavior goals, (7) performing monitoring and self-assessment, and (8) evaluating (awareness, knowledge, transformations in behavior, health checkup data, etc.). The initiative seeks to reduce the number of individuals at risk for lifestyle-related diseases such as diabetes by enabling them to manage their own health.

3. Establishing Nutritional Care Stations

The association began establishing and operating nutritional care stations in each of Japan's prefectures. The new facilities are staffed on a permanent basis by registered dietitians responsible for providing Specific Health Counseling. Furthermore, the association is gathering and analyzing information about effective as well as problematic guidance programs in an effort to create an effective and efficient health guidance program. We have also developed and set in motion a human resources management system designed to facilitate operations at the nutritional care stations, and we look forward to accumulating a record of success so that the stations become a familiar part of citizens' lives.

Population Approaches by Food Balance Guide (2005) and Exercise Guide (2006) to Combat the Epidemic of Metabolic Syndrome in Japanese

Nobuo Yoshiike

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Increased burden from overweight and relevant disorders is one of the important issues to be overcome in the next decade in Japan. In addition to the new system of the Health Check Up Specifically Programmed against Metabolic Syndrome Followed by Specific Health Counseling with an emphasis on controlling high risk groups for metabolic syndrome, population approaches also should be promoted for primordial and primary prevention. The Food Balance Guide Spinning Top (2005) was grounded in the ideas of social marketing, which emphasizes environmental improvement for healthier eating even in a fraction of the population being less conscious to health and diet. In the recent a couple of years so called "Shokuiku" (Nutrition education) programs have been widely and actively implemented both at the national level and in the local communities as multisector approaches, with a wide scope from health and nutrition to school education, food supply, agriculture, food safety and ecology. With a good combination of the Food Balance Guide and the Exercise Guide that appeared next year, achievement of the goal in Health Japan 21 (2000-2012) will be expected in near future.

Dietary Education Promotion

Tatsushi Nishizawa

*Director of the Office for Shokuiku Promotion
Cabinet Office*

In recent years, Japanese people's diet has been facing various problems: unbalanced or undisciplined eating habits, increases in obesity and lifestyle-related diseases, dependence on imported food, a disappearing of the traditional food culture, as well as food safety. Under these circumstances, the Basic Law on Dietary Education (Shokuiku Kihon Hou) was enacted in June 2005. This law aims to characterize dietary education as the basis of life and as the foundation for the three pillars of education: intellectual education, moral education and physical education. The law also intends to enable Japanese people to acquire knowledge about “food” and the ability to select “food” through various experiences in order to practice a healthy dietary life. Under the law, the Dietary Education Promotion Conference (Shokuiku Suishin Kaigi), which is chaired by the Prime Minister and is composed of the Minister of Education, Culture, Sports, Science and Technology, the Minister of Health Labour and Welfare, the Minister of Agriculture, Forestry and Fisheries, and other related ministers, as well as intellectuals from the private sector, was established. In March 2006, the Basic Program for the Promotion of Dietary Education (Shokuiku Suishin Keikaku) was adopted.

Based on this program, national and local governments, as well as individuals involved in dietary education, are expected to formulate policies that promote dietary education by collaborating with one another. In the program, nine targets were set: for example the percentage of Japanese people who are interested in dietary education should be 90%; the percentage of children and male in their twenties and thirties who go without breakfast should be decreased to 0% and 15% respectively; the percentage of Japanese people who have a good diet as defined by the “Balanced Diet Guide” and other guidelines should be 60%; the number of volunteers involved in the advance of dietary education should be increased by 20%, in addition to other goals. The program also aims to promote dietary education as a national people's movement, in which people tackle these issues from their own initiative.

Today, we would like to concisely introduce the systems for the Basic Law on Dietary Education and the Basic Program for the Promotion of Dietary Education.

Approach to Food Education and Development of Specific Policies

Masashi Kajiyama

Promoting Food Education at Schools (Ministry of Education, Culture, Sports, Science and Technology)

In recent years, there has been growing apprehension in Japan regarding a number of food-related developments in children's diets and health, including a tendency to skip breakfast, imbalanced nutrient intake, and an increasing trend toward obesity. These developments make it critical to ensure students gain accurate knowledge about food and develop desirable food habits so that they can enjoy healthy lives in the future.

1. Enhancing on diet

The Diet and Nutrition Teacher program was created in 2004 to promote food education at schools, and we began placing nutrition teachers in each prefecture the following year. Diet and nutrition teachers play a central role in promoting food education at schools by taking advantage of their qualifications as educators and their expert knowledge concerning nutrition to develop an integrated program combining the management of school lunches, for example through menu plan and sanitary management, with food guidance that utilizes the school lunch program. Currently, about 1,900 diet and nutrition teachers have been placed nationwide, and work is underway to significantly expand placement efforts.

Guidance on diet is related to a broad range of subjects, and it is important that it be provided through each school's educational activities in their entirety. Accordingly, schools are being called upon to develop comprehensive programs for guidance on diet and to provide a systematic, ongoing program of guidance in which diet and nutrition teachers play a central role while working closely with other staff under the leadership of the principal.

Following their revision this March for the first time in about ten years, the courses of study have assigned “promoting food education at schools” a clear role for the first time, ensuring that food education at schools will be pursued with a new level of dedication.

2. Enhancing school lunches

In addition to maintaining and enhancing students' health and improving their physique by providing a rich selection of well balanced meals, school lunches have the potential to serve as “living learning materials” for use in providing effective food guidance on diet. In this sense, we believe that school lunches have great educational significance.

There has been an effort in recent years to diversify school lunches, for example by using local products as ingredients and incorporating local specialties and traditional dishes into meal menus. In addition to deepening students' understanding of such regional characteristics as natural surroundings, culture, and industries, the use of local products in school lunches is an extremely effective way to cultivate a sense of gratitude for the efforts of the individuals involved in producing those items as well as for food itself.

The School Lunch Law underwent an extensive revision this June to articulate the significance of school lunches and the role of diet and nutrition teachers in the provision of food education at schools.

SY1-7

SHOKUIKU (food and nutrition education) Promotion for Health Improvement

Hiyoyuki Tanaka

Ministry of Health, Labor and Welfare

Recently the environment surrounding Japanese dietary habits has been changed, and the promotion of SHOKUIKU (food and nutrition education) was faced with challenge of fostering the people's mental and physical health and nurturing the rich humanity throughout their lifetime. Therefore the basic principles of SHOKUIKU (food and nutrition education) was established and the responsibilities and roles of the national government and the local public entities are identified. The Basic Law on SHOKUIKU (food and nutrition education) (2005, Law No. 63), which stipulates basic directions for policy formulation was enforced in July 2005. In March 2006, the Basic SHOKUIKU (food and nutrition education) Promotion Program was drafted at the SHOKUIKU (food and nutrition education) Promotion Conference. Prefectural and municipal governments should formulate the program for the promotion of SHOKUIKU (food and nutrition education) being in consistency with the health promotion plans.

Meanwhile, to provide an easy-to understand food guide including what sorts and how much amount to eat when practically selecting food in order to improve lifelong eating and physical activity habits as a part of public approaches to lifestyle-related diseases The Ministry of Health, Labour and Welfare jointly collaborated with the Ministry of Agriculture, Forestry and Fisheries drew up the "Japanese Food Guide Spinning Top (Japanese Food Guide ST)" in June 2005 so that it becomes socially cognitive. The local governments should implement the policy programs in cooperation with the department of agricultural administration and the department of education as well as in collaboration with the catering industry including supermarkets, convenience stores, restaurants for strong promotion activities.

In addition, to prevent and control metabolic syndrome at the early age, the Ministry now adopts comprehensive approaches to SHOKUIKU (food and nutrition education) promotion by using the Japanese Food Guide Spinning Top and the Physical Exercise Guide 2006.

SY1-8

The Ministry of Agriculture, Forestry and Fisheries' Food Education Concept and Policy Development

Kyoko Asakawa

*Director, Consumer Information, Food Safety and Consumer Affairs Bureau,
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The Ministry of Agriculture, Forestry and Fisheries supports the agriculture, forestry and fisheries industries as well as the food products industry. The Ministry is also working to revitalize rural areas where the majority of food production and agriculture, forestry and fisheries activities take place. The ultimate aim of these policies is to raise Japan's food self-sufficiency ratio. The Ministry is conducting food-related education in order to address three issues in contemporary dietary life: 1) The increase in "externalization of meals," with people eating in restaurants or purchasing prepared foods rather than cooking for themselves; 2) the growing number of consumers who do not know how food is produced and transported due to the many intermediaries between producers and consumers in the food distribution process, and the accompanying decrease in awareness of the importance of food; and, in particular, 3) the fact that in 2006 Japan's food self-sufficiency ratio fell to 39%. Specific policies of the Ministry for these issues are as follows:

- (1) Practicing a balanced dietary lifestyle
 - Formulating Dietary Guidelines and a Dietary Balance Guide in collaboration with related ministries and agencies, to encourage people to improve their dietary lifestyle.
 - Providing the necessary information on food safety and nutrition so that people can choose their foods.
- (2) Practicing a Japanese dietary lifestyle
 - Encouraging the Japanese dietary lifestyle (meals centered on rice with various side dishes) and incorporating traditional local dishes into people's diets.
 - Publicizing the Japanese dietary lifestyle through the media and publicity materials at supermarkets, convenience stores, and other places where consumers buy food.
- (3) Understanding of agriculture, forestry and fisheries industries and the food products industry
 - Providing opportunities for consumers to visit and experience agriculture, forestry and fisheries sites, to raise their awareness that food is a blessing of nature, and that many activities in such industries are what make food possible.
 - Promoting "local production for local consumption," including using locally produced foods in school lunches and selling foods produced in a region directly to consumers at regional stores, and strengthening the "visible human relationship" between producers and consumers.

SY2-1

Medicated Foods Education of School Foodservice Dietician in Korea

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This research was conducted to investigate how to apply the theories of oriental medicine and medicated foods appropriately, which direction should be taken, and how it should be developed for school foodservice.

First, to develop medicated foods, it is necessary to grasp the theoretical system, considering yin-yang and five phase theory, four qi-five flavor, the five viscera and the six bowels, organs and body, by raising the level of understanding comprehensively about the relationship between the theory of four qi-five flavor and food materials, and then to explain developed medicated foods and apply those theories to invent new ones for school food service.

Secondly, to develop medicated foods for health enhancement of elementary and middle school students, it is required to consider their physiological and pathological characteristics according to the theory of oriental medicine.

Thirdly to develop medicated foods according to the perspective of four qi-five flavor theory, Yin-Yang five phase theory, it is possible to invent medicated foods which is good for promoting intelligence, tranquilizing, improving vision, constipation and irregular menses.

Lastly, the scientific effect of the medicated foods which is developed by the scientific researches, clinical experiments quality, characteristics medicated foods prepared with different amounts and its preferences.

SY2-2

The Advantages of the Chinese Herbal Diet for the Health Promotion

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Abstract:The thesis states that application of Chinese Herbal Diet is based on constitution identification and syndromes identification, and is adaptable on various seasonal conditions, local conditions and physique of individuals. For the health promotion, Chinese Herbal Diet plays roles of taking preventive measures, preventing the progression of diseases and strengthening the body immune ability. The thesis also introduces the teaching and practicing of Chinese Herbal Diet in Shanghai University of Chinese Medicine

Keywords: Chinese Herbal diet; health promotion

SY2-3

The Development of Dietary Education Program for Children Using Fermented Foods Based on Chinese Medicated Diet in Japan

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The health strategy in the 21st century shifted from being for groups to being for individuals, and individual constitutions and supplying compatible foods are considered fundamental for establishing individual health. Since individual constitutions and environments are considered in Chinese medicated diet science based on Chinese medicine, it is important to incorporate this science for educating national registered dietitians. We want to advance this study while learning the wisdom of a Chinese medicated diet and to introduce the science-based medicated diet easily in Japanese dietary culture, but not as one unique to China. We therefore classified the medicated diet materials by four natures, five tastes, and channel tropism in accordance with the basic theory of Chinese medicine.

This study was designed to develop the food education program aiming at making children exercise zest for living and increasing their own health management ability and to examine the efficacy of the results. In order to prepare the program, the concept of Chinese medicated diets based on Chinese medicine was introduced with reference to the precede-proceed model, a behavior modification model developed by Green, L.W. et al. in the U.S.A.6-10 Thus, we consider that a preferable dietary habit for children can be formed by introducing Japanese traditional dietary culture, particularly a cuisine culture using traditional fermented foods.

SY2-4

Tailor-made Approach for Nutritional Education Based on Yakuzen Theory

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Until now, individuals have been received dietitian guidance according to dietary reference intakes. These guidance attached importance to quantity rather than quality. It is necessary to look for new ways of nutritional education from a standpoint of quality. We have introduced Yakuzen theory to new nutritional education using traditional Chinese medicine (TCM). TCM has been originally developed by tailor-made approach. The principle of TCM is to diagnose patient's constitutional predisposition. and to prescribe herbal medicine that is better suited for his/her constitution. Yakuzen theory is to instruct persons to take some foods that are better suited for person's constitution based on TCM. We have a great issue to be resolved to introduce Yakuzen theory. How we can select foods that are suited for person's constitution? Unfortunately, there is not sufficient evidence that shows the relationship between food and constitution in sharp contrast to herbal medicine. Therefore, we applied analysis of human gut microflora using molecular-biological techniques to select proper foods for person's constitution. The foods that breed good gut microflora are proper foods for persons. We would like to show the possibility of tailor-made approach for nutritional education based on Yakuzen theory.

School Lunches for Improving Children's Health

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The purpose of the school lunch program is to promote the healthy development of the minds and bodies of schoolchildren. It is conducted based on "The School Lunch Law" which was enacted in 1954.

As of May 2006, approximately 9.9 million schoolchildren have participated in this program. This program is, in itself, an educational activity. Schoolchildren are responsible for arranging and cleaning the tables. And through having meals together they learn proper mealtime greetings and manners. Moreover, the menu promotes a greater understanding of balanced nutrition, food culture and so on.

In recent years, as eating disorders and obesity are becoming more prevalent amongst adults and schoolchildren alike, there is rising concern of the onset of lifestyle-related diseases. As such, the Basic Law of shokuiku was enacted in 2005. Then, in order to enrich instruction about food to schoolchildren, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) established the Diet and Nutrition Teacher System in April 2007. As of March 2008, nearly 1,000 of diet and nutrition teachers are practicing throughout Japan.

In these schools, results indicate an improvement in the awareness of and interest in food amongst teachers and guardians. Moreover, reports have indicated that the percentage of children skipping breakfast has decreased, and an increase in quality of life is being achieved.

The Japanese school lunch program system is essential for fostering healthy minds and bodies for the next generation.

Korea's New School Lunch Policy Focusing on Nutrition Education

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Since the UNICEF started school lunches in Korean elementary schools in 1953, Korea's school lunch program has been consistently improved, exemplified by the School Lunch Act of 1981 and the status promotion of dietitians to nutrition teachers in 2006. School lunch coverage in Korea is currently 100%, 99.3%, and 95.1%, in elementary, middle, and high schools, respectively. The program's positive outcomes include: elimination of hunger for underprivileged children, healthier physical development through a wider variety of foods, less burden of preparing lunch boxes, and improved mealtime manners. With western influence, obesity, diabetes, and coronary heart diseases have become increasingly prevalent in Korea. In response, the government enforced nutrition management from the early years, so that children can form a lifelong dietary habit that is well-balanced, with less salt, fats, sugars, food additives, and trans fatty acids. Nutrition labeling for school lunches was also encouraged. The most significant improvement, however, is the nutrition education and counseling now provided by nutrition teachers, using standardized programs. In parallel, developing educational materials and websites, operating counseling rooms, and continued training for teachers are also conducted. The expected outcomes are reduced obesity rates and increased consumption of healthy foods, thus a healthier future generation.

SY3-3

Topic: School Nutrition for Children's Health Improvement

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Abstract: With adult and childhood obesity rates on the rise in the US and globally, nutritious meals provided to children in schools can help teach healthy eating habits while serving to prevent obesity related diseases. The National School Lunch Program in the United States has evolved over sixty two years from a program designed to address under nutrition to the current program that seeks to control over nutrition and promote a healthy childhood weight for the 30 million U.S. students who eat school meals daily.

Operational research indicates U.S. schools are providing more fruits and vegetables, whole grains and low fat dairy, often in forms that resemble popular food American foods although reformulated to be lower in fat and calories. However, challenges remain. “Hands on” nutrition education including taste testing new foods and culinary instruction are critical to influencing students' eating patterns but is underfunded. Foods consumed by children in the U.S. outside of school meals continue to promote overweight raising questions about how effective school based meal programs can be as the only method for addressing overweight. Adequate funding to prepare and provide healthy meals also remains a challenge.

SY3-4

School Nutrition for Children's Health Improvement

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In Sweden, school lunch is served to all attending children since 1946, according to national law. The law includes meal service in pre-schools and kindergartens since 1998. Sweden follows the guidelines issued by the European Union in 2006 concerning responsibilities and quality aspects of the meal service. The municipalities have the responsibility to see to that the meal service is carried out.

The general nutritional goal for the meal service is “good nutritional habits and safe food”. Nutritional recommendations are issued by the Swedish Food Administration. Guidelines aim at: (i) improving health and preventing nutrition related diseases by lowering the consumption of saturated fat, sugar and salt, and increasing the consumption of vegetables, fruit and fish (ii) enhancing physical activity (iii) increasing awareness towards ecologically sound choices, (iv) showing respect for individuals' choice of diet due to religious beliefs and ethical standpoints, and (v) taking consideration to individuals on special diets due to medical conditions, such as allergies. Schools, pre-schools and kindergartens are encouraged to integrate the meal service into the pedagogical work and the health care service, in order to improve the attitudes focusing favorable health behavior.

Micronutrient Deficiency and Food Fortification

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World wide, the three most common forms of micronutrient deficiency are iron, vitamin A and iodine deficiency. Of the three, iron deficiency is the most prevalent. It is estimated that just over 2 billion people are anemic, just under 2 billion have inadequate iodine nutrition and 254 million preschool-aged children are vitamin A deficient. The majority of these micronutrient deficiency are in developing countries.

However, another micronutrient deficiencies such as zinc, folate and selenium deficiencies, etc. are also notable in some regions.

The control of vitamin and mineral deficiencies is an essential part of the overall effort to fight micronutrient deficiency.

For this control, the food-based strategies such as dietary diversification is important. The food fortification is one of the strategy. In many situations, this strategy can lead to relatively rapid improvements in the micronutrient status of a population, and at a very reasonable cost. However, this strategy needs some requirement such as the fortified food needs to be consumed in adequate amounts by a large proportion of the target individuals in a population.

The requirements of success for the food fortification will be discussed.

Application of Iron Fortified Soy Sauce in the Control of Iron Deficiency in China – A GAIN Project

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Aim: To use iron fortified soy sauce in the control of iron deficiency anemia in China

Methods: NaFeEDTA fortified soy sauce at 23-27 mg Fe/100 ml produced by designated manufacturers was marketed in China since 2004. Social marketing and health education through mass media were conducted to raise the awareness and knowledge of consumers. Blood hemoglobin level was monitored in children and adult women for two years.

Results: More than 100 kinds of NaFeEDTA fortified soy sauce products are produced and marketed by 22 manufacturers in 7 provinces where the project was launched. Intensive mass education covered 300 million people and 50 million targeted populations are using fortified soy sauce. Significant reduction of anemia prevalence was observed and all the products are well accepted by consumers.

Conclusion: The application of NaFeEDTA fortified soy sauce in the control of iron deficiency anemia in China is feasible and effective. However, as a voluntary nutrition intervention, the key to the success of the project is intensive and continuous health education.

SY4-3

Control of Iron Deficiency Anemia through the Fortified Fish Sauce in Vietnam

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Iron deficiency anemia is affecting a large population in Vietnam despite the anemia situation among women and children has been reduced during the last decade but still remain an important public health problem. Control of iron deficiency anemia is thus a priority agenda set by National Nutrition Strategy 2001-2010 ratified by Vietnamese government.

Since year 2000 up to now, a multiple intervention for prevention and control of nutritional anemia in Vietnam have been implemented including iron food fortification. Fish sauce is chosen as vehicle because this condiment is used extensively (8-10g/capita/day) by most population groups regardless of ecological and socio-economic condition. Appropriate technology has been developed and tested. The efficacy and effectiveness studies have proved that iron fortified fish sauce is well accepted by the consumers, significantly improve iron status and reduce the prevalence of iron deficiency anemia among targeted population.

From 2006 National Institute of Nutrition started to implement iron fish sauce fortification program. The fortificant to be used is FeNaEDTA which proved the high bioavailability and acceptability. Up to now, 7 biggest fish sauce plants have been participated in iron fortification program. The program is supported by GAIN (Global Alliance for Improved Nutrition) and Vietnamese government. At the moment, the products covered about more than 20 provinces out of total 64 provinces of Vietnam. Fortification program needs highly government commitment and both industry and consumer awareness and knowledge on fortified food should be improved.

The Iron fortified fish sauce product has been distributed by the market channel to the consumers with social marketing communication campaigns. The quality of the fortified food at the plants is assured by the food producers and food inspectors from food control authorities. Recently, there has been a number of legal documentation served for food control including issues of defining responsibility of related sectors, administrative procedures, regulation, standards for ensuring food hygiene and quality control. The further regulation/law will be further developed toward the specific legislation of fish sauce fortification.

The next steps are expanding the program to other fish sauce plants and carrying out impact evaluation of this program. Hopefully, iron fish sauce fortification program will success and contribute to achievement of micronutrient malnutrition control and prevention in Vietnam in the years to come.

SY4-4

Lessons Learned from the Philippine Food Fortification Program

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AED – A2Z Project

Aim: To present the lessons learned in the implementation of the Food Fortification Laws given its unique nature of trying to implement mandatory fortification of 5 staples (salt with iodine, wheat flour with vitamin A and iron, refined sugar with vitamin A, cooking oil with vitamin A and milled rice with iron) at the same time together with the promotion of voluntary fortification of processed foods.

Methods: An analysis of the implementation of the Philippine Food Fortification Program as basis for determining the lessons learned will be based on the results of the National Nutrition Survey 2003 in-depth analysis of the impact of food fortification related to the dietary intake and current program status more than 3 years after the start of mandatory fortification.

Results: Results of the in – depth analysis of the dietary intake in 2003 showed that voluntary fortification benefits mainly those in the high income group while refined sugar may not be an appropriate vehicle for mandatory fortification. Based on current program status, difficulties in mandating sugar and rice fortification were identified while at the same time flour and oil fortification have shown progress.

Conclusion: While legislation for mandatory fortification is an enabling mechanism for program implementation, there should be proper groundwork in determining capability of the industry to implement mandatory fortification prior to any law as well as the conduct of technical assessment with proper monitoring to determine the viability of promoting voluntary fortification.

Can We Use International Growth References for Our Children?

Uraiporn Chittchang

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Aim: To evaluate the use of international growth references for Thai children.

Methods: Nutritional status assessed by the new (WHO 2005), old (NCHS) international reference and Thai growth reference (1997) were compared. A data set of 2,693 Thai 12 - 60 months old children from the national cross-sectional survey in 2001 (Dr.Ladda Mo-suwan et al study) was used.

Results: Percentage of underweighted by WHO 2005 and Thai reference were the same levels, but lower than NCHS reference (6.1, 6.5 and 9.8 respectively). More stunting was detected with WHO 2005 standard (15.9 %), while NCHS and Thai reference gave lower prevalence (11.4 % and 10.6 %). Somewhat the same levels of wasting were found from these three references (3.4 % to 4.3 %). Higher levels of obesity by the WHO 2005 compared with NCHS reference was detected (9.0 % VS 7.4 %), while a bit higher was found by Thai reference (10.4 %). Thai's BMI-for-age there was the similar pattern with WHO 2005 curves.

Conclusion: We can use the WHO 2005 data for underfive Asians, but it is necessary to have Asians data for Adolescent, especially height and BMI for age indicators. It is not difficult to have own data in Thailand.

Growth Pattern of Bangladeshi Children

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Objective: To evaluate the growth pattern of Bangladeshi children using the World Health Organization (WHO) Child Growth Standards and the National Center for Health Statistics (NCHS)/WHO growth reference.

Methods: Nationally representative data on Bangladeshi children (<5 years) collected in 2000- 2005 (n = 62924) by the Nutritional Surveillance Project (NSP) of Helen Keller International and Institute of Public Health Nutrition were analyzed.

Results: In 2000, the prevalence of underweight among Bangladeshi children was 48.2% (WHO) and 54.7% (NCHS) which declined to 38.1% (WHO) and 45.7% (NCHS) in 2005. The prevalence of stunting in 2000 was 57.2% (WHO) and 49.3% (NCHS), which decreased to 48.3%, and 39.2% in 2005 respectively. Although the estimates of the different references varied, both showed a similar and steady decline over the year. The trend (data not shown) indicated decrease of under-nutrition is about 2 percentage-point/year. Proportion of over-nutrition also exists in Bangladesh though very small and is declining over the period (0.7 to 0.4).

Conclusion: WHO offers a higher stunting and lower under-weight estimate compared to NCHS. Over the period, the prevalence of under-nutrition and over-nutrition decline in a similar magnitude from 2000 to 2005.

SY5-3

Growth Pattern of Tibetan Children Living at High Altitudes

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Aim: To evaluate growth pattern of Tibetan children below 36 months old by means of anthropometry and NCHS/WHO growth reference and explore effect of high altitude on Tibetan child growth.

Methods: The cross-sectional surveys on child health and nutrition were conducted in Tibet with stratified multistage cluster random sampling technique in 1999 and 2005, respectively. Height and weight of Tibetan children <36 months old were measured.

Results: In 1999, rural children had prevalence of stunting of 41.4% and underweight of 24.7%. In 2005, the prevalence rates of children were 28.1% for stunting, 15.3% for underweight and 3.4% for wasting in rural areas. Positive association of stunting with altitude was observed for each age group, even after controlling for selected potential affecting factors. Children above 3500m had two to six times risk of getting stunting compared with those at 3000m when socioeconomic and other factors were controlled.

Conclusion: Based on NCHS/WHO growth reference, high prevalence rates of stunting and underweight were observed. However, altitude might result in a delay in height of younger Tibetan children, independent of socioeconomic and other factors operating through nutrition and disease. This reference might overestimate the prevalence of malnutrition of Tibetan children living at high altitudes.

SY5-4

Growth Monitoring --Community Mobilization

Sharada Pandey

Dept of Health Service, Ministry of Health Nepal(MOHP)

Good Nutrition is essential for survival, growth and development. Nearly 50 % children in Nepal are malnourished. While health facility growth monitoring has not worked, programmes that empower communities to assess, analyse and take actions to improve in the situation of children holistically have resulted in significant reduction in malnutrition.

In DACAW (Decentralized Action for Women & Children) programme, implemented in 15 districts, community mobilisers, every month weighs children in settlement and discuss growth.

As parents realise that their children are malnourished, the community mobiliser facilitates discussion to identify the causes of malnutrition. Various PRA tools are used for the analysis the causes such as daily child care, feeding pattern, hygiene and sanitary practices, men vs women's workload, seasonality linked with malnutrition, etc.

The analysis is followed by discussion on what actions could be taken to improve the situation. Some of the key actions identified and carried out are increasing the feeding frequency and quality of feeding, improving cleanliness and hygiene, increasing male participation in child care, improving maternal care and care for sick child etc.

Every month the weighing and discussion takes place and as a result of this community process, the malnutrition rates has drastically declined from around 50% to 16% in DACAW areas. WHO growth standards has been utilized.

Comparison of WHO and Japanese Growth References for Small Children

Shigeru Yamamoto, Ayami Sano, Kanae Ishikawa and Mayo Shono

Ochanomizu University and Sizuoka Prefectural University, Japan

Aim: To evaluate the use of WHO growth reference for the evaluation of nutritional status of Japanese children.

Methods: Subjects were selected by the following methods. From 3,000 areas used for the Japanese national census in 2000, 900 areas were randomly selected, and then 10,021 children aged 2-5 years were randomly selected. From the regular mandatory infant health examination 4,094 children under 2 years were also randomly selected from 136 hospitals.

Results: Table 1 shows the height of WHO 5 percentile (cutoff points for stunting) and that of Japanese 3, 10 and 25 percentiles. By the WHO reference, more than 10% of Japanese small children were evaluated to be stunted. However, stunting by malnutrition is not reported in Japan.

Conclusion: The WHO growth reference can not be used for the evaluation of nutritional status of Japanese and maybe xanthis (Mongoloid) small children.

Table 1. Comparison of heights between WHO and Japanese references (cm)

Age (months)	WHO reference 5 percentile (cutoff of stunting)	Japanese reference			
		3 percentile	10 percentile	25 percentile	
12	boy	71.8	69.5	71.0	72.6
	girl	69.8	68.5	69.8	71.2
24	boy	82.8	80.1	81.9	83.8
	girl	81.1	79.4	81.0	82.6
39	boy	91.7	88.3	90.3	92.3
	girl	90.6	87.6	89.5	91.5
45	boy	94.9	91.5	93.6	95.8
	girl	94.0	90.9	92.9	95.1
57	boy	100.9	97.4	99.8	102.2
	girl	100.2	96.9	99.3	101.7

School Lunch Programs around the World

Jihyun Yoon, PhD, RD

Associate Professor, Department of Food and Nutrition, Seoul National University

School lunch programs have contributed to improving the nutrition, health and education of school-aged children in the world for the last decades. In the Republic of Korea, as the percentage of schools providing lunches reached over 90% in the early 2000's, dietitians and researchers in the field of school food service started to search for good systems or practices of school lunch programs around the world. This presentation will share some of the findings with a unique school lunch system of the Republic of Korea.

The presentation will introduce the followings in the context of school lunch programs: Shokuiku (food education) in Japan, the School Food Trust in the United Kingdom, the National Food Service Management Institute in the United States, and the School Nutrition Teacher System in the Republic of Korea. In addition, the results of comparative analysis will be presented about the nutritional standards of school lunches among several countries.

School dietitians or dietitians working for other child nutrition programs are expected to benefit most from this presentation. The audience could find benchmarking resources applicable to the school lunch programs in their own countries.

SY6-2

Assessing Dietary Intakes In High Secure Prisons

Mary Hannan-Jones, Sandra Capra

The University of Newcastle, Australia

Aim: In high security prisons, gathering relevant information about intake is important for developing appropriate food and nutrition policy. Collecting this dietary information poses many challenges for dietitians including: restricted access; low literacy; and the unreliable nature of the group. This study aimed to develop an effective methodology to accurately assess dietary intakes of offenders in this setting.

Methods: In a 1000 bed high secure prison, detailed menu verification was undertaken on all foods prepared from the two cook fresh kitchens, staffed by offenders under supervision. A detailed interview tool was developed, with images of verified standard portions of all food items on the 28 day menu and snack foods available for purchase.

Results: Fifty minute dietary interviews using the tool were conducted on 120 male offenders. All offenders were able to use the images to describe their dietary intake in detail. The tool assisted in quantification of food and provided specific information about the use of individual menu and purchased items in other, non-menu meals.

Conclusion: The tool although laborious to develop yielded high quality information in terms of detail and menu item use when compared to data collected from the same population group using traditional diet history.

SY6-3

Bringing it All Together: First Ever British Columbia Food Service Audit

Mary Fok

Alternate Service Delivery, Provincial Health Services Authority

The purpose of this initiative is to create and develop a publicly accountable, consistent set of province-wide standards in 3 areas of food service in the Province of British Columbia, Canada. This initiative audits safe food handling practices based on the internationally recognized HACCP system, surveys patient and resident satisfaction on the quality of food and food service; and at the same time assesses the nutritional adequacy of health facility menus in all acute care and publicly managed long term care facilities. A total of 149 health care facilities from all six Health Authorities in British Columbia participated in this project. The initiative has also involved experienced food service operators, expert clinical dietitians and public health inspectors from across the Province. Key results from this project have helped Health Authority executives and senior food service managers developed a province-wide consistent set of standards, and a common set of tools and processes needed to measure food and food service quality and performance over time. This Canadian first-ever initiative is supported by all Health Authorities and welcomed by all British Columbians in the context of public accountability and transparency.

Role of Food Service to Elderly Persons

Toshiko Teshima, RD

*Department of Health and Nutritional Sciences Hamamatsu University/
Nutritional Education Program National Institute of Health and Nutrition*

The food service to elderly persons assumes an important role to make them happy through eating by mouth. The loss of the appetite, anorexia and dysphasia easily cause malnutrition and dehydration in elderly persons. In order to keep quality of life, “the enjoyable meal to be eaten by mouth” should be served as food service.

In Japan, there are main three types of care facilities for elderly persons depending on the services, such as welfare facilities for elderly requiring long-term care, health care facilities for elderly requiring long-term care and sanatorium type medical care facilities for long-term care.

We have developed the enjoyable meal that the elderly persons could eat by mouth without aspiration and suffocation as named as “Kaigo-shoku (care diet)” through the researches with collaboration with the care facility in Kanagawa prefecture. We also established the concept as “Shoku-kaigo (dietary care)” to enjoy eating and to improve holistic health with collaboration with care facilities in Fukushima, Kanagawa and Tokyo prefecture.

We have recently carried out a questionnaire survey of 2700 care facilities in 6 areas in Japan.

I introduce the food service and the role of registered dietitian in care facilities in Japan.

SY8-1~6

Expanding Roles and Scopes of Practice with Primary Health System Reform

Paula M Brauer, PhD, RD

*University of Guelph
Dietitians of Canada*

Primary health care reform has been on the agenda of many countries, and this reform has taken many forms and directions. Nutrition is a major lifestyle factor in health promotion, and important in the prevention and management of many common chronic conditions such as diabetes, heart disease and obesity. In addition, in many countries malnutrition co-exists with the common chronic diseases. Comprehensive nutrition services are logically placed in the primary health care setting where initial identification, accessible intervention and long-term relationships can be established between patients and health professionals. Such comprehensive services require the skills of several providers, including the specialist services of dietitians. Panellists from Australia, Canada and the Netherlands will describe key features of their health systems, recent structural reforms by governments, and how these changes have created opportunities to expand dietitian roles and services. The methods used by the various discussants in advocacy to governments and in changing their systems may be useful to others seeking to establish or improve nutrition services within their own health care systems.

SY9-1

Importance of Standardization for the Comparison of an International Study: An Example of the INTERMAP Study

Hirotsugu Ueshima

Department of Health Science, Shiga University of Medical Science

It is very important that all procedures are standardized while conducting national and international cooperative studies. INTERMAP (International Study of Macro- and Micro-Nutrients and Blood Pressure) study included men and women aged 40-59 years from 4 population samples in Japan, 3 from People's Republic of China (PRC), 2 from United Kingdom (UK) and 8 from United States (USA). For this study, we extensively carried out standardization procedure and quality control not only for the nutrition survey part and 24-hour urine collection but also for the questionnaire and physical examination procedures.

There is no existing gold standard for obtaining habitual diet and nutrients intake information. Dietary intake was recorded 4 times using questionnaire with a 24-hour recall ensuring high quality control and standardization. The interviews were tape recorded and later on the data was cross-checked by nutritionists. For questionnaire, all the contents of questionnaires were back translated to reconfirm that the translation was correct. Regarding blood pressure measurement, we used the same brand of stethoscope and a special device (Random Zero) in all the centers. We also strictly enforced identical blood pressure measurement such as 5 minutes rest without moving. For tow times of 24 hour urine collection, all the specimens were sent to a central laboratory and measured Na, K, and others with high quality control.

Through this high quality standardization, we could obtain imperative research findings that are presented at this symposium.

SY9-2

INTERMAP: Aiming for Excellence in Dietary Assessment

Claire E Robertson^{1,2}

¹*School of Biosciences, University of Westminster*

²*Department of Epidemiology & Public Health, Imperial College*

Aim: Assessing how dietary factors impact disease outcomes is reliant on the precision of all involved measurements, making preparation and evaluation of collected data crucial to all research projects involving dietary assessment. The methods designed and utilized by INTERMAP to achieve excellence are described alongside an assessment of their effectiveness.

Methods: Intensive training and quality control procedures were designed and used in the INTERMAP study to ensure accuracy and consistency in data collection and processing across 4 countries. Dietetic fieldworkers were centrally trained to collect and/or code dietary recalls. Nutrient coding frameworks were designed locally, with intensive efforts made to add accurate composition data for 76 nutrients using methods entirely comparable across countries. In addition, a 3-phase quality control check including weekly evaluations of taped interviews and recoding of recalls was completed by (i) site, (ii) country and (iii) chief nutritionists to ensure standardization within and between centres, and internationally.

Results/Conclusion: Systematic use of these methods helped prevent, identify and correct errors routinely reported in studies including dietary assessment. By foreseeing difficulties which may arise, these methods helped fieldworkers avoid and tackle potential problems, thus creating a greater ability to draw correct inferences concerning relationships of dietary intakes to health outcomes.

SY9-3

Validating the USDA Automated Multiple Pass Method

Alanna Moshfegh, Donna Rhodes, Theophile Murayi, John Clemens

*Food Surveys Research Group, Beltsville Human Nutrition Research Center,
Agricultural Research Service, U.S. Department of Agriculture, USA*

Aim: Nationwide food consumption data, collected by the U.S. Department of Agriculture, are used in nutrition policies and programs. To determine the accuracy of the 5-step Automated Multiple Pass Method (AMPM) for collecting 24-hour dietary recalls in national surveys, a validation study was conducted.

Methods: The study collected reported energy intakes measured by the AMPM and energy expenditures measured by doubly-labeled water (DLW) of 524 subjects, 30-69 years. Each subject was dosed with DLW on the first day of their 14-day study period. Three dietary recalls were collected during this same period.

Results: Reported energy intake compared to energy expenditure was underreported by 11%. For normal weight (BMI<25), energy intake was underreported by less than 3%, and by 17% for overweight (BMI≥25). Using a linear mixed model, 95% confidence intervals were determined for the ratio of individual's reported energy intake to energy expenditure. Seventy-eight percent of males and 74% of females were classified as acceptable reporters.

Conclusion: The utility of the AMPM in assessing energy intake at the population level was supported. The high level of accuracy for normal weight individuals has not been previously observed. Intake reported at each of the 5 steps of the AMPM will be presented.

SY9-4

Standardization and Quality Control of Dietary Intake Survey of National Health and Nutrition Survey in Japan

Katsushi Yoshita, Yusuke Arai, Miho Nozue

*Project for the National Health and Nutrition Survey, Nutritional Epidemiology Program,
National Institute of Health and Nutrition, Japan*

The dietary intake survey of National Health and Nutrition Survey is carried out in local public health centers which were selected for survey districts. The survey team is consisted of dietitians, physicians and public health nurses. Manual of survey and databases of food, check lists were prepared by Ministry of Health, Labour and Welfare every year to maintain standardization and quality control of survey.

National Institute of Health and Nutrition provides information and training seminar to the dietitians of survey staff and also makes training materials. And, data cleaning and calculation were done using Standard methods to eliminate error.

Keynote

Educational

Symposium

Sponsored
Symposium

Workshop

Morning

Luncheon

Evening

Oral

Poster

SY9-5

Proportion of Korean Population with Calcium and Riboflavin Intake Lower than Requirement Based on the Estimation of Usual Intake

Yoonna Lee, Haeng-Shin Lee, Hae-Jeung Lee, Young-Ai Jang, Cho-il Kim

Korea Health Industry Development Insittute, Seoul, Korea

Aim: To assess the nutrient intake status of the population, it's necessary to estimate usual intake. Based on the repeated 24-hour recalls taken from representative samples, estimation of usual intake for calcium and riboflavin, the nutrients of concern for Koreans, was attempted.

Methods: Dietary intake data collected in 2005 National Health and Nutrition Survey and 2005 Seasonal Nutrition Survey in Korea were used to extract data for individuals with repeated 24 hour recalls. Then USDA-NCI statistical method based on SAS for usual dietary intake estimation was applied to depict the distribution of adult population in terms of nutrient intake and to get the proportion of population with intake lower than EAR (Estimated Average Requirement).

Results: Depending on the sex and age group, the proportion of population with intake lower than EAR varied from 57.8% to 94.9% for calcium and from 48.7% to 98.0% for riboflavin. Although the values were higher in women than men for calcium, the opposite was true for riboflavin.

Conclusion: Because the intake distribution was skewed left for both nutrients, values after statistical estimation were higher than those from 1-day 24 hour recall data. Such difference emphasizes the importance of multiple recalls for dietary intake assessment.

SY10-1

Schools Educate by What They Do: ... Creating Less Obesogenic Environments in Manitoba Schools

Paul Fieldhouse

*Nutrition Research & Policy Analyst, Manitoba Health & Healthy Living &
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Manitoba has higher rates of overweight and obesity than the Canadian average. There are also nutrition concerns related to food security and poor eating behaviors amongst school-aged children. Schools, as public institutions, have an important role to play in modeling and supporting health, and good health has a positive impact on educational outcomes.

In Manitoba in 2005, a government policy directive to improve access to nutritious food in schools along with increased levels of physical activity resulted in a multifaceted intervention that includes curriculum, environmental and policy changes to support healthier eating and active living. The key elements of this intervention will be described, including a student leadership award program designed to engage students in taking action on healthy eating.

Nutritional Education to Prevent Lifestyle-Related Diseases

Yumiko Fujisawa

Wayo Women's University

Obesity is known to play a significant role in the onset of lifestyle-related diseases, so countermeasures should be started at an early age. We conducted ongoing preventative health checks for lifestyle-related diseases targeting students in the fourth grade of elementary school and the first grade of junior high school of Sosa City in the suburbs of Tokyo. Based on the results, we implemented individual and group nutritional education. In order to conduct effective nutritional education for schoolchildren, the contents should be tailored to children of each age group. This program was designed to encourage children to recognize problems in their own health condition and dietary habits and to stimulate them to make behavioral changes toward improvement and prevention. This presentation will describe the nutritional education program, our development of educational materials, and the effectiveness of this education.

Evaluation of a School Feeding Programme in Addressing Malnutrition in a Primary School

Carin Napier¹, Wilna Oldewage-Theron², Jeanette Kearney²

¹*Durban University of Technology, South Africa.*

²*Vaal University of Technology, South Africa.*

Aim: The main aim of this study was to determine the level of malnutrition in a primary school in an informal settlement and to plan and implement a school-feeding intervention programme.

Methods: Before and after the intervention blood was drawn from 160 children. Quantitative Food Frequency Questionnaires and 24-hour recall questionnaires were completed in interviews with the parents. Anthropometric measurements were taken. A maize meal, whole-wheat deep fried cake (vetkoek) was developed that provided 25% of the daily needs of the children for zinc and iron, making use of ingredients from the top 20 list. The vetkoek was administered for seven months, daily except for school holidays and weekends, to 60 randomly selected children forming the experimental group, with 60 other children receiving a fruit as the control group and 40 children receiving the South African Primary School Nutrition Programme (PSNP).

Results: The post-intervention results indicated that the children in all three groups significantly improved in weight and height and their zinc and iron intake also increased. Although few statistically significant changes occurred biochemically, clinical changes occurred in all three groups.

Conclusion: This study proved that any food provision can have a beneficial impact on the growth of a malnourished child.

SY10-4

The Body Weight Concerns and Satisfaction in Relation to Behaviors among Female Adolescents in Taiwan

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¹ *Dept. of Nutrition, Chungshan Medical University, Taiwan*

² *Dept. of Food, Health and Nutrition Science, Chinese Culture University, Taiwan*

Anorexia nervosa and bulimia nervosa are major clinical problems not only in the Western countries but also in the Eastern world. They are some of the most prevalent diseases in female adolescents in United States, however, there are still few data reported in Taiwan. Both unrealistic weight goals and misperception of body image are known to be major risk factors responsible for the increasing incidence of eating disorders. From the studies in Taiwan which done in these related issues, we conclude that (1) the risk factors leading to eating disorders are common existed among female Taiwanese college students; (2) over-concern about thinness were found in 10-to 14-year-old schoolgirls in Taiwan, a longitudinal follow-up study should be conducted with these schoolgirls to determine if eating disorders become prevalent in the later teen years; intervention strategies aimed at setting realistic weight goals and standards should be implemented to minimize or possibly prevent the occurrence of eating disorders; (3) the problem of eating disorders in Taiwan should be attracting the attention of the health professionals such as physicians, psychologists, dietitians and educators to develop plans and strategies for possibly prevent the prevalence of eating disorders.

SY14-1

Creating Healthy Nutrition Environments

Shiriki Kumanyika, PhD, RD, MPH

University of Pennsylvania School of Medicine

Community nutrition environments are defined by government and industry policies; neighborhood access to food stores and restaurants; advertising; food availability in homes, schools, workplaces; sociodemographic and psychosocial factors¹. The obesity epidemic has markedly increased awareness of how these environmental variables influence the healthfulness of eating patterns. In the United States, the nutrition environments in African American, Hispanic American, Pacific Islander, Native American, low income, and rural communities are of particular concern because these communities experience higher than average obesity prevalence. Examples of interventions to change community nutrition environments in the United States include: an after-school program for African American girls and their caregivers (usually their mothers); a school-based intervention that includes classrooms, cafeterias, vending machines, and neighborhood stores; a public-private partnership to place supermarkets in neighborhoods with poor food access; and community action projects to counteract ethnically-targeted marketing of less healthful foods. The greatest challenges relate to a combination of political, economic, cultural, and social vested interests and processes—global, national, and local—that must be satisfied or adapted as part of any effective and sustainable efforts to improve eating patterns in communities at large.

¹ Glanz K, Sallis JF, Saelens BE, Frank LD. *Healthy nutrition environments. Concepts and measures. American Journal of Health Promotion. 2005; 19(5) 330-333.*

SY14-2

National Initiatives to Promote Healthy Eating in Singapore

Grace Soon Ing

Nutrition Standards, Adult Health Division, Health Promotion Board

The Health Promotion Board (HPB) in Singapore takes a multi-pronged approach to promoting healthy eating at a national level. The first prong is to educate the public on the importance of healthy eating and equipping them with the knowledge and practical skills of selecting and preparing healthier food. In addition, as approximately half of Singaporeans eat out at hawker centres (open-air food centres) almost every day, the HPB has put in place programmes to ensure the availability of healthier choices outside the home; at hawker centres, restaurants, workplaces and schools. Lastly, the third prong is to increase the supply of healthier packaged ingredients and food products which are used for cooking at home, through the Healthier Choice Labelling Programme.

These programmes are regularly evaluated for their effectiveness on consumer behaviour and food practices. The last National Nutrition Survey was conducted in 2004, where positive changes were observed in food behaviour and practices, such as a significant increase in the proportion of Singaporeans meeting recommended intakes for fruit, vegetables and whole-grains. However, there were other aspects of the diet that could be improved, such as the fact that fat contributed to a greater proportion of dietary energy in 2004 compared to 1998, although the average fat intake stayed within the recommended range.

This presentation will cover details of the various efforts in creating a healthy nutrition environment in Singapore, and link these efforts with current dietary practices of Singaporeans through results from the National Nutrition Survey.

SY14-3

Community-based Approach on Creating Healthy Nutrition Environment in Niigata City, Japan

Nobuko Murayama

Professor, Community Nutrition, Niigata University of Health and Welfare, Niigata, Japan

The most appropriate center of gravity for health promotion is the community, because the decision making for social change affecting lifestyle of the people can best be made as close to homes and workplaces of those affected as possible (Green LW, Kreuter MW, 1999).

In this presentation, I would like to sort out the community-based approach on creating healthy nutrition environment using an example of Niigata city. The social marketing and diffusion of innovation theory are useful to planning/sort out the community-based approaches. There are the various channels. The healthy food distribution is promoted through the channels of food system such as 1) cafeteria in the work places/schools/organizations, 2) supermarket, convenience store and restaurant, 3) food producers, etc. The health related information distribution is promoted through the channels of information system such as 1) volunteer/NPO, inter-person communication, 2) work places/schools/organizations, 3) community leaders/city office, 4) mass media, etc.

The evaluations of these approaches are conducting in programs and city levels. For example, one research project, “Nutritionally Balanced Boxed Lunch project”, has been conducting by collaboration among local government, university and private sector. And “City health and nutrition survey” was started in 2007 to evaluate the policy and action of the city.

The challenges are community involvement, organization of various programs and establishment of effective evaluation and feedback system.

Keynote

Educational

Symposium

Sponsored
Symposium

Workshop

Morning

Luncheon

Evening

Oral

Poster

SY14-4

Population Strategy to Improve Nutrition and to Prevent Cardiovascular Diseases in Worksite

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Dept. of Health Science, Shiga Univ. of Medical Science, Otsu, Japan

High salt intake, increase in fat intake and obesity, and decrease in fruit and vegetable intake are major nutritional problems in Japanese, especially in young and middle-aged adult men. These problems are major causes of hypertension, dyslipidemia, diabetes, and, therefore, heart disease and stroke in Japan. Population-wide health education and environmental change are necessary in order to move the whole distribution of each nutrient intake to a favorable direction. The usage of canteens and cafeterias in worksite could be a good approach for young and middle-aged adults who spend long time in their worksite. In 2003, a law for health promotion in Japan also provided to use canteens in worksite and school for nutritional education. We conducted the High-Risk and Population Strategy for Occupational Health Promotion (HIPOP-OHP) Study, and, in this study, we developed the methods of population strategy to improve nutrition and to prevent cardiovascular diseases in worksite. The methods include providing health-related information in canteens, assessment of salt concentration of miso soup, providing tools to lower salt intake, educating healthy choice of dishes, etc. Examples and their effects will be demonstrated in this lecture.

SY15-1~4

EUROACTION

Alison Mead

Cardiovascular Medicine, NHLI, Imperial College, London

EUROACTION is the largest ever European-wide preventive cardiology project. EUROACTION spanned eight countries and 24 hospital and general practice centres, in a cluster randomized controlled trial. The project addressed the cardiovascular health of over 10,000 coronary and high risk patients and their partners, according to the European cardiovascular prevention guidelines. The inclusion of partners and family members underpinned EUROACTION's emphasis on family support and a shared commitment to heart-healthy living.

Final results from EUROACTION show that a nurse-managed multi-disciplinary team approach, coupled with the support and involvement of a patient's partner and family, can yield significant lifestyle improvements and risk factor reductions in coronary patients and patients at risk of developing cardiovascular disease (www.escardio.org/euroaction). Significant improvements were observed in patients and their partners in key lifestyle and other risk factors: diet (fruit and vegetable, saturated fat and oily fish intake), physical activity, central obesity, blood pressure, cholesterol and glucose. The administration of cardio-protective medication – ACE inhibitors and statins – was also improved but it was largely lifestyle change which achieved better blood pressure, lipid and glucose control.

SY16-1

Communicating Nutrition Information on Product Labels - Regulations in Southeast Asia

E-Siong Tee, PhD

President, Nutrition Society of Malaysia

Communicating nutrition information through food labels on packaged foods has been recognised as a useful means of providing the consumer with information about a food so that an informed choice of food can be made. Two main types of nutrition information may be communicated to consumers, namely declaration of nutrient content of foods (often known as nutrition labelling) and nutrition and health claims. There has been increased interest and efforts of regulatory agencies around the world to improve regulations on nutrition labelling and nutrition and health claims.

This presentation provides an overview of current regulatory approaches in nutrition labelling and health claims in several Southeast Asian countries. There are significant differences in these regulations. Nutrition labelling is voluntary on most food packages in countries in the region while Malaysia has gazetted mandatory labelling of 4 core nutrients on a wide variety of foods. Authorities are paying greater attention to the format for nutrition labelling (either voluntary or mandatory), to be more in line with the Codex guidelines. Many countries in the region permit nutrition claims on food packages whereas some authorities allow some forms of health claims. There is also increasing interest to ensure that consumers understand and make effective use of such nutrition information. In recent years, there is increased interest in the use of various front-of-pack indicators, logos and symbols as alternative ways of communication nutrition information to consumers. The presentation also touches on efforts of the International Life Sciences Institute Southeast Asia Region to harmonise regulatory developments in the region.

SY16-2

Communicating Health Benefits of Food Products to Consumers Through Food Labels: Case Study DHA

Leila G Saldanha, PhD, RD,

NutriIQ LLC, USA.

Key words: food labels; nutrient content claims; health claims; LCPUFA; DHA.

The food label is an important information tool for consumers. Manufacturers use it to communicate the benefits of their products and consumers to make food choices for themselves and their families. Quantitative research from the United States shows that consumers refer to food labels when deciding which foods to purchase or eat; >80% looked at ingredients or nutrition information at least sometimes.

A range of nutrition and health claims appears on food and dietary supplement packages. The types of claims permitted and the level of government control surrounding the use of these claims varies across countries. Driven by the need to reduce the cost-burden of chronic disease and promote wise food choices, there has been a move in countries to permit wider use of nutrition and health claims.

This talk will empower dietitians with information they need to distinguish the different types of claims on packages and the level of substantiation necessary to make these claims in the United States. Docosahexaenoic acid (DHA) found in high concentrations in the brain and retina and an omega-3 LCPUFA of increasing global consumer interest, will serve as the example to aid in the understanding of these claims. (196 words; work limit 200).

Keynote

Educational

Symposium

Sponsored
Symposium

Workshop

Morning

Luncheon

Evening

Oral

Poster

Nutrition Front-of-Pack Labeling Schemes

Celeste A. Clark, Ph.D.

*Senior Vice President
Global Nutrition and Corporate Affairs
Kellogg Company*

The goal of providing nutrition information on product packaging is to encourage informed food purchases leading to a more healthful diet. This presentation will review front-of-pack labeling systems referred to as “fact-based” and “better-for-you icons” currently used around the world. A special emphasis on a fact-based system referred to as Guideline Daily Amounts (GDA's) will be explored as it is currently in use, on a voluntary basis, in more than thirty five countries. GDA's communicate through a graphic symbol containing the quantitative amounts of the nutrients per serving of food, and the percentage contribution of that quantity per serving to a reference dietary intake of that nutrient for one day. All GDA labeling systems currently in use present calorie information on the front or facing panel of a food package. Many GDA labeling systems also present information on key nutrients of concern (sodium, fat, sugar) and nutrients to be encouraged (i.e., fiber, vitamins A, C, E). GDA labeling systems are compatible with, and complement most, existing labeling systems globally used. Research regarding GDA's reflects high awareness, and demonstrates that GDA's score significantly better on clarity and helpfulness of nutrition information versus all other “better-for-you” icons tested with consumers.

Utilization of the Food for Special Medical Purposes for the Diet Therapy in the Medical Institutions in Japan

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⁶*Koshien University, Japan*

BACKGROUND: “The food for special medical purposes (FSMP)”, which are in the category of foods for special dietary uses approved by the Health Promotion Law (2002) are classified as low sodium, low calorie, low protein and thickener. However, enteral feeding formula like dense liquid which is utilized most frequently in the medical foods isn't under any regulation system. This study was investigated how the dietitians in medical institutions utilized the medical foods for diet therapy.

METHOD: This study was conducted by the Japan Dietetic Association in 2007. We mailed the questionnaires to 1,999 hospitals randomly selected from 8,850 hospitals across the country. There were 1,389 respondents statistically analyzed.

RESULTS: Only 3.9% of the products listed under medical foods were FSMP, the rest had no legal health permission. 95% of dietitians utilized some medical foods for the diet therapy. 15 dense liquid out of the 30 products listed under frequency of usage topped the survey, 7 were thickened foods (for the swallowing difficulties), 3 (low-sodium soy sauce and low-protein rice) were FSMP. The 60.7% dietitians responded that they can choose either because they rely more on the nutritional label indicated by the food manufactures rather than the legal health restrictions.

CONCLUSION: This study has shown that the current system of the food for the special dietary uses is not suitable for the present needs in the clinical site. Enteral feeding formula like dense liquid should be listed under FSMP.

Epidemiology, Prevention and Control of Colorectal Cancer

Shinkan Tokudome

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Introduction: Colorectal cancer is one of the major malignancies, and the incidence and mortality rates are increasing in Japan and worldwide. Primary and secondary prevention and control are crucial.

Aim: To elucidate risk and beneficial effects of dietary factors and physical activity, and to devise effective strategies for prevention and control of colorectal cancer.

Methods: Along with our epidemiologic studies, including observational studies and a randomized controlled trial, the relevant worldwide literature including reports from WRCF/AICR in 1997 and 2007 was reviewed and discussed.

Results: According to the reports from WRCF/AICR in 1997 and 2007, physical activity is a convincing beneficial factor, and probable beneficial factors are foods containing dietary fiber, garlic, milk and calcium. Convincing risk factors include red/processed meat, alcoholic beverages (men), body/abdominal fatness and adult attained height, and a probable risk factor is alcoholic beverages in women. Fish remained a limited-suggestive beneficial factor and foods containing animal fats are listed as a limited-suggestive risk factor. NSAIDs have long been considered to prevent colorectal adenomas/cancer. Fecal occult blood test and periodic colonoscopy examination seem beneficial for secondary prevention of colorectal cancer.

Conclusions: The abovementioned strategies may be useful for prevention and control of colorectal cancer.

The Role of a Plant-Based Diet in Reducing Cancer Risk

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Expert reviews of epidemiologic studies on nutrition and cancer show that a diet which emphasizes plant foods is probably associated with a lower risk of cancers of the mouth, larynx, esophagus, lung, stomach, pancreas and colorectum. Vegetables and fruits contain a wide variety of bioactive compounds, such as carotenoids, vitamin C, selenium, isothiocyanates, glucosinolates, indoles and phenols that have demonstrated anti-carcinogenic effects in animal models. Many different mechanisms may account for their beneficial properties, such as antioxidation, anti-inflammation, induction of detoxification enzymes and inhibition of nitrosamine formation. Legumes are a source of phytoestrogens, particularly the isoflavones found in soy products, but are also a source of many other potentially anticarcinogenic compounds, such as saponins, protease inhibitors, and gamma-tocopherol. All these foods, plus whole grains, are major sources of dietary fiber, which may also protect against cancer. A plant-based diet may also lower cancer risk indirectly, since such a diet necessarily is lower in animal products. Animal products, especially red meat and dairy foods, are usually high in fat and are energy-dense relative to most plant foods. High intake of these foods contributes to overweight and obesity, another risk factor for several cancers. Because animal products contain important nutrients, such as vitamin B12 and zinc, a primary issue for reducing cancer risk is achieving a proper balance between plant and animal foods in the diet.

SY17-3

Obesity and Cancer by Philip James

Philip T. James

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Chairman, The International Obesity TaskForce / Global Prevention Alliance*

The second WCRF/AICR report on Food, Nutrition, Physical activity and Cancer summarises an enormous amount of detailed work. A systematic review involved 17 cancer sites and a wide range of dietary factors as well as physical activity with standard statistical approaches to the collation of thousands of studies. A new and striking finding was that excess body weight, designated as body fatness, was convincingly related to cancers of the oesophagus (adenocarcinoma), pancreas, colorectum, breast (postmenopausal), endometrium and kidney. Body fatness probably relates to gallbladder cancer and abdominal obesity to cancers of the endometrium, pancreas, breast(postmenopausal) and colorectum - the last being most convincing. The relationships are consistent and progressive from low levels of body fatness but with a moderate gradient of risk. Nevertheless, given the astonishing prevalences of excess body weights of both adults and children globally obesity is now an important risk factor for multiple cancers. Managing this risk is a major challenge because overweight/ obesity, once established, is difficult to reverse. Recent surgical trials with major weight losses reduced cancer rates by 60-80%. Prevention strategies involving major dietary and activity changes are now needed by governments and business as well as individuals.

SY17-4

Prevention of Stomach and Liver Cancers in Relation to Dietary Intake

Tomio Hirohata

Professor Emeritus of Kyushu University

Stomach and liver cancers are uncommon in most of industrialized countries, but are still prevalent in Japan as well as in other Asian countries. This presentation will explain how these cancers are preventable by proper intake of diet and by avoiding contamination of food by a fungus (aflatoxin). The speaker was involved in expert reviews on "Food, nutrition, physical exercise and the prevention of cancer," which were based on all scientific relevant papers published worldwide (WCRF/AICR report). Avoidance of aflatoxin contamination on foods is critical for the prevention of liver cancer. Recent epidemiologic studies clearly indicate that aflatoxin metabolites in blood or serum of liver cancer cases are far more prevalent than among healthy controls. An important risk factor for stomach cancer is consumption of salt and high salt containing foods. Our report recommends restricting salt consumption less than 6 g a day. Intake of non-starch vegetables and fruits is probably protective for stomach cancer. Plant-based foods and restriction of salt consumption is important for the prevention of stomach cancer, and such a diet is also effective for the prevention of other chronic diseases.

The Metabolic Syndrome

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The metabolic syndrome is defined as a collection of signs and symptoms that can alert health care workers to the future risk of diabetes and cardiovascular disease (CVD). The idea that centrally located fat might be hazardous goes back to the beginning of the 20th century, but it was Professor Vague in France who gave it a real push. With the development of computed tomography, it became possible to quantify the amount of visceral fat. Central fat and particularly visceral fat were shown to be strong predictors of the risk for diabetes and CVD. The syndrome we call the “metabolic syndrome” has had many names and several definitions. The full members of the syndrome include increased central adiposity, impaired fasting glucose, high triglycerides, high blood pressure and low HDL-cholesterol. Several other measures are also often present, including a pro-inflammatory state, a pro-coagulant state, endothelial dysfunction, hyperuricemia, and small dense LDL particles. Insulin resistance appears to be an important factor underlying all of these clinical and laboratory findings. From a diagnostic point of view, the use of the Adult Treatment Panel III criteria has made the diagnosis clinically applicable. The most important issue is how to deal with it. On the one hand you can treat the individual symptoms. On the other you can reduce insulin resistance and produce weight loss which will improve all of the aspects of the metabolic syndrome. These approaches will be contrasted.

Obesity and the Metabolic Syndrome

Peter Kopelman

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The rapidly increasing global prevalence of overweight and obesity confirms that it has become an epidemic and a major threat to public health. One in 5 children in Europe are now overweight with an additional 400,000 children adding to this total every year. This rise in obesity in young people is paralleled by an equally alarming prevalence in adults – predictions for the UK suggest that >50 of the adult population will be obese by 2050.

In some European countries obesity and type 2 diabetes occur in 1 in 4 adults. The close association between increasing body weight, intra-abdominal fat, impaired glucose tolerance and deleterious alterations in lipid profile are well recognised. However, the patho-physiological consequence of increased body fatness, although predictable from an understanding of the relationship between insulin resistance, systemic hyperinsulinaemia and eventual pancreatic islet cell decompensation, is often overlooked by clinicians. This oversight contributes to an unhelpful debate about the criteria for defining the metabolic syndrome.

Why is it that such persuasive evidence for public health intervention has not resulted in policies to ensure healthier lifestyles? The answer is ambivalence – ambivalence of Governments not to inhibit choice, ambivalence of policy makers not to upset the economy, ambivalence of health professionals about the management of obesity and its complications, and ambivalence of young and old about the causes of the epidemic. Public health must learn lessons from the recent past – successful policies for intervention and prevention require strong leadership, high priority, cross government strategies that engage social and medical disciplines. Such policies need to be fully resourced and monitored with clear goals and objectives, and sustainable over years. Successful strategies must question the scope of choice and the role of regulation to challenge the present pervasive ambivalence.

Obesity and the Metabolic Syndrome

Gary Wittert

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Obesity is defined as an excess of body fat. The risks depend on the total amount of fat, its distribution, lean body mass, and changes in fat mass over the life course. For clinical and epidemiological purposes total fat mass has been defined by body mass index (BMI), waist circumference (WC), or waist hip ratio (WHR). The health risks of excess fat increase are continuous with increasing BMI, WC, or WHR but the threshold at which the risks increase are modified by race, gender, and age. Although each measure of obesity may be predominantly associated with a particular disease risk, the risks are also cumulative and modified by lifestyle and dietary factors.

Increasing “ectopically located” fat (viscerally, in the liver and in muscle) increases insulin resistance and a cluster of risk factors termed the metabolic syndrome (MetS) leading to an increased risk of type 2 diabetes mellitus (T2DM) and cardiovascular disease.

A 7% reduction in weight will prevent T2DM; greater amounts of weight loss (~15%) may be required to reverse obstructive sleep apnoea. Together with a strategy for behavioral change, a reduction in calorie intake, optimization of nutrient content, and regularization of meal patterns is required. The particular dietary pattern is not important as long as it is adhered to. Meal replacements are effective. Regular physical activity (aerobic and resistance), is essential for weight loss maintenance, and are the primary treatment for the elderly, where caloric restriction should be avoided in the absence of severe obesity related immobility.

Adjunctive pharmacotherapy may be useful in selected patients, and in the morbidly obese bariatric surgery is the intervention with substantial and durable benefit, improved well being, and increased longevity.

Obesity and Metabolic Syndrome

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Obesity is originally defined as excessive body fat accumulation now assessed by BMI. Two other types of obesity are defined in relation to obesity-associated diseases (lifestyle-related diseases): upper body obesity or abdominal obesity and visceral obesity. It is recognized that obesity as a disease should be treated and 5-10% reduction of body weight is enough to normalize obesity-associated abnormalities, while simple obesity is not necessarily to be treated from a view point of medical problems.

After concept of metabolic syndrome appeared, the situation has changed and it is considered that it should be treated although it is not a disease. Metabolic syndrome is a cluster of high blood glucose, high blood pressure, hypertriglyceridemia and hypoHDL-cholesterolemia based on abdominal obesity or visceral obesity, and is proposed to be a high risk syndrome for coronary heart disease and diabetes mellitus. Utilizing the concept of metabolic syndrome, national task force for preventing lifestyle-related diseases especially diabetes mellitus have been initiated this year in Japan. Three kg of body weight reduction with 3cm of waist circumference reduction is targeting for this task force.

A New Horizon of Clinical Nutrition for Dietitians – Through Disease- and Age-Specific Formulae

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Gastro-Intestinal (GI)-tract has been highly differentiated with immunology of bi-directional vectors, where a *positive* immunology to recognize foreign bodies as non-self to eliminate and, as another aspect, a *negative* one not to do so (tolerance immunology: TI), coexists. Enteral nutrition (EN) has used mucosal structures where “mucosal-immunology” works as TI. Among a long human history, EN had been sole nutritional route until TPN has appeared.

Here is a giant nutrition mountain to in front of us challenge, where various fruits of disease-specific EN formulae, especially for DM, pressure ulcer, IBD and immune-modulation, are born. At present time, we as nutritional profession have to think that more formulae of not only disease-specific but age-specific must be developed to maximize clinical outcome and to minimize side-effects.

We, hereon, would review history on EN fruits and submit perspectives, involving disease- and age-specific formulae, such as heart disease-specific formula in childhood, and a new horizon of supplements in clinical setting.

You must be aware of a word to achieve your dream as dietitian, profession of nutrition, when face to obstacles in your way:

“brick walls are not there to keep us out. The brick walls are there to give us a chance to show how badly we want something.”

- Randy Pausch's Last Lecture: Really Achieving Your Childhood Dreams, given at Carnegie Mellon University, Sep, 18, 2007 -

Strategies for Inpatient Malnutrition Management

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Malnutrition remains very prevalent in both developed and developing countries particularly in hospitals. The consequences of disease related malnutrition are broad-ranging and ultimately impact on quality of life, increase length of stay in hospital and cost; associated with higher rates of morbidity and mortality. The management of malnutrition requires integrate approaches. Applying appropriate screening and assessment tools to identify malnutrition is a first step to address the problem, since failure to acknowledge the risks of malnutrition can seriously impact on morbidity and mortality rates. Multiple interventions, including dietary advice, oral nutritional supplements, dietary modification, enteral tube feeding and parenteral nutrition support, according to patient groups, disease categories and health-care settings, to help ameliorate the impact of treatment on weight loss and nutritional status and improve clinical outcomes. This presentation discusses current strategies of nutrition management for inpatient malnutrition and pre-operative nutrition support.

SY20-2

What are the Considerations to Succeed Nutrition Support in Critically ill Patients?

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Critically ill patients have intense metabolic response, characterized by hypermetabolism and catabolism. These metabolic changes induce higher prevalence of malnutrition. Malnutrition, especially in critically ill patients, results in impaired immunologic function, prolonged ventilator dependence and increased infectious morbidity and mortality rates. Nowadays optimal nutrition support is part of the standard of care for the critically ill patients.

There are some considerations to succeed nutrition support in critically ill patients. There is a debate about the optimal timing of nutrition support in ICU. Early enteral nutrition is recommended but may be associated with high gastric residuals and so on. It is generally agreed that enteral route is preferred to parenteral nutrition in the incidence of infectious complications and may be less costly. Improving energy and protein balance is associated with clinical benefits. Tight glycemic control with insulin is now considered central for improved clinical outcomes.

Multidisciplinary nutrition support team and ICU protocols are the key solutions to solve the obstacles in implementing nutrition support for the critically ill patients.

SY20-3

Perioperative Nutrition

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Malnutrition is a common problem among perioperative patients. Perioperative nutrition is an important component of perioperative care to decrease surgical morbidity and mortality, reduce the catabolic state and restore anabolism, support the depleted patient throughout the catabolic phase of recovery, decrease the hospital length of stay, speed the healing/recovery process, and to ensure the prompt return of gastrointestinal function to resume standard oral intake as soon as possible. Nutrient depletion occurs in the perioperative patient due to decreased intake, increased metabolic expenditure, and altered nutrient use. The beneficial effects of nutritional interventions are modest in well-nourished patients. In uncomplicated cases, these patients tolerate up to 10 days of starvation with no medical consequences. Moderately or severely malnourished patients may require nutritional support earlier. Severely malnourished patients are more likely to experience sepsis, pneumonia, wound infections, and other complications; they benefit from preoperative nutritional support. Perioperative nutritional support should be limited to those in whom the benefits outweigh the risks. When indicated, preoperative nutritional support can be provided only to those in whom the operation can be safely delayed, and nutrition should be continued into the postoperative period. Postoperative nutritional support comprises the majority of perioperative nutrition support and can be complicated by the site of operation, the available routes of access, and the physiologic status of the patient. As a rule, if the gut works, it should be used.

The American Society for Parenteral and Enteral Nutrition has developed evidence-based practice guidelines regarding perioperative nutrition support.

1. Preoperative specialized nutrition support (SNS) should be administered for 7 to 14 days to moderately or severely malnourished patients undergoing major gastrointestinal surgery if the operation can be safely postponed.
2. PN should not be routinely given in the immediate postoperative period to patients undergoing major gastrointestinal procedures.
3. Postoperative SNS should be administered to patients who are expected to be unable to meet their nutrient needs orally for 7 to 10 days.

Traditional Greek Diet: An Expression of History, Culture and Lifestyle

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Hygiene and Epidemiology, University of Athens Medical School

Greece has been for millennia a cross road of people and civilizations and the benevolent climate in the region and the human spirit have molded disparate components into a balanced food culture. The Greek food culture, more than most others, is an integral part of the past and the present. Many of its modern aspects can be traced in the ancient past.

The traditional Greek diet is frequently being considered as a healthy diet. It has been found that a diet that adheres to its principles is associated with a significant reduction in total mortality. The longevity associated with this diet could be partly attributed to traditional foods, which this diet incorporates. Traditional foods, apart from being vehicles of our culture, may also possess health qualities, since tradition rarely honors foods which are healthy as well as palatable. Traditional foods reflect cultural inheritance and have left their imprints on the dominant dietary patterns, despite the fact that contemporary lifestyles do not encourage their preservation in our daily lives and customs.

Although the Greek diet and lifestyle were shaped by climatic conditions, poverty and hardship, rather than by intellectual insight or wisdom, it seems as if a superior force has led this population to a prudent diet by exploiting, to the utmost, the gifts that nature favored them with.

Food Culture, Its Transition and Health in Thailand

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During the past three decades Thailand has transformed from a subsistence agrarian society into an industrial society. Economic development entails economic and social changes which are reflected in patterns of food, eating, and nutrition. Major structural changes include *globalization* which expands food activities beyond smaller, local shops and public market vendors into worldwide agroindustrial food complexes with modernized food marketing, *urbanization* from rural to urban residence, and *modernization* involving technology development from labor to generated power causing changes in the production, processing, distribution and consumption of food. These changes are paralleled by changes in food culture; people move from being primarily producers of goods and services to mainly consumers and change from eating indigenous foods that they produce to consumption of mass foods purchased in general markets, shift from consuming homemade foods to ready-to-eat foods, as well as change in food preferences and choices moving from traditional to adopted foods. Industrialization has brought many Thais greater dietary diversity as well as more preprocessed foods and more dietary sugar, fat and animal products. These dietary changes, as well as a shift in physical inactivity, are reflected in an epidemiological transition with increasing obesity, Type II diabetes, hypertension, stroke, coronary heart disease and cancer in Thai population. Obesity even among children and adolescents is increasing. Several nation-wide implementation programs and policy options have been undertaken in Thailand. Effective programs and policies will include not only health promotion and education, but also community empowerment and action to overcome the environmental, social and economic constraints to improvement in dietary quality and reduction of sedentarianism.

SY21-3

Food Culture and Nutrition Transition in Israel - Intervention Programs to Improve Dietary Habits in Israel- Working with Multicultural Populations

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Background: Over the last 60 years food habits for the general population have changed dramatically, from periods of near famine in the first 10 years of the country's existence (rationing), through adapting cultural local Arab foods – such as humus and falafel, to a culture of Western energy dense foods in abundance. These changes, in addition to a more sedentary lifestyle – evolving from a rise in income and prosperity, have contributed to a sharp rise in population weight, and weight related disease. The effects on health due to changes in nutritional habits compared with – traditional diets original culture are particularly apparent among new immigrant populations from Ethiopia and Yemen. Preschool aged children suffer from extensive dental caries and among the youth cases of obesity are on the rise. The incidence of diabetes and heart disease has also significantly increased in adults. Exposure to the Western/Israeli diet has led to indiscriminate food choices (sweets, calorie dense “junk food”) and the traditional healthy foods are rapidly being abandoned. There has been limited Nutrition Education to provide the immigrants with the tools to plan and prepare low-cost meals that are both healthy and tasty and to encourage physical activity.

Intervention projects: During the last few year awareness has increased and several intervention programs have been initiated. A few examples:

- (a) Healthy Heart Through Change – a multidisciplinary workshop approach:
The target audience of this intervention is cardiologists, family doctors, dietitians and nurses. The program is sponsored by industry (Unilever Israel) and educates caregivers on prevention of Western disease so that a healthy lifestyle is emphasized when meeting with patients. The program's effectiveness is under evaluation.
- (b) Nutrition Education for Ethiopian immigrants - the Hebrew University of Jerusalem; This project includes practical aspects of food preparation for implementation in the homes and community. The program has proven to be an overwhelming success, both to the participating nutrition students that receive practical training in community nutrition and public health and to the Ethiopian immigrants in adapting to new dietary habits and healthier food choices.
- (c) Healthy Cooking for specific groups – several programs in different settings including Hadassah Hospital in Jerusalem. The program is carried out by a physician that also has training as a chef. Evaluation is in progress.
- (d) Community involvement: Ashalim, “tafur-Aliy”, Jerusalem and Haifa municipality; All intervention programs aimed at teaching and implement better nutrition habits, Evaluation is in progress.

Significance: Conclusions from research models will help to establish health care policy for preventive medicine in Israel – with nutrition as a fundamental factor. The projects may help improving population health while incorporating traditional foods and lifestyle factors. It will also empower participants and allow them to act as agents for change within their families and communities.

SY21-4

Food Culture and its Transition in Japan

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Traditional Japanese food has been symbolized by a meal pattern composed of a main dish(represented by boiled rice) and one or more side dishes including a cup of soup. It has been pointed out by nutritionists that such form of Japanese foods appeared to provide by itself a “framework” for their healthy nature.

The postwar rapid economy growth resulted in at least two major changes of the dietary habit of Japanese: an increased variety in food items taken as their daily side dishes and increased intake of protein and fat of animal origin. The latter was corresponded to be so-called “westernized food pattern” characteristics. These trends, however, seems to be shifting toward another stage of transition recently, in which these postwar changes in national food consumption have come to a standstill at the point with an seemingly ideal nutrient composition from viewpoint of healthy diet.

While there are continuing apparently desirable food patterns, an unexpected changes in dietary habit has recently taken place among Japanese, including an increasing use of precooked food, frequent eating outside, skipping breakfast, night-eating and so on. These emerging problems have been regarded as a result from a general loss of the awareness of foods in many aspects as well as from a negligence and a convenience-oriented behavior toward foods. A national movement of promoting food education is currently undertaken in Japan accordingly.

Nordic Food Culture and its Transition

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Geographically the Nordic countries are spread over a very large area and thus there is no common Nordic food culture as such. The national food cultures are depending on the availability of produce which differs from Greenlandic Inuit culture in the northwest, Iceland and the Faroe Island in the North Atlantic, Denmark and Sweden in the south, Norway, the Sami parts of Norway, Sweden and Finland, and Finland in the eastern part.

During the last 50 years the food cultures in all the countries have been influenced by the burger-pizza-noodle culture as well as more exotic cultures like Thai, Indian and Chinese.

In the past ten years a parallel trend has come up with focus on refining the national food cultures of the everyday meals.

A group of chefs are developing a Nordic food culture as higher gastronomy only using produce grown in the Nordic countries. This project will also apply to the everyday food because it helps create a national food identity.

The dilemmas in food cultures and their transitions in a globalised world are preserving national food identities while accepting the influence from the rest of the World focusing on sustainability and health.

Barbie or Kurt? Body Image Concerns in the United States

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The rate of obesity has increased dramatically in the United States over the past thirty years. At the same time, the rate of body dissatisfaction has also increased among our population in the United States. There are many factors which might be causing these medical and social concerns. Body image is one such factor. Body image distortion is a growing problem among all ethnic groups and both sexes in the United States. It has been commonly thought that white females were the main group with this distorted view of themselves, but recent research reveals that it is a wider spread phenomenon among our population. Studies show that “ideal” body image is perceived differently by different ethnic groups. Current programs are addressing a major concern for our youth to develop strong self worth and positive self images. The role of the media in print, television, movies, the internet, game characters, and even song lyrics is strong and worth our attention and understanding. Nutrition professionals have a role in promoting realistic, healthy body images and improved sense of personal self worth in our clients and hopefully affecting the American society's projected “ideal” body image or “desired” size.

SY23-2

Increased Prevalence of Thinness and Body Image in Young and Adolescent Women in Japan

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In Japan, the thinness of young women has been a serious issue over the past several years, and the prevalence of thinness (BMI<18.5) among women in their twenties is now over 20%. In order to compare these findings with those of other countries, data from the National Nutrition Surveys in Japan, Korea and the US were analyzed. The mean BMI of women in both Japan and Korea was observed to decrease from their late teens into their thirties. This decrease was not observed in US women or in men from any country.

In order to clarify these results, we surveyed body image, media influence, diet behavior and self-esteem of 183 girls from 12 to 15 years old, as well as their mothers (mean age, 44 yrs). Approximately 30% of the girls overestimated their body figures. In addition, 51% of the girls who recognize their body figures as “normal” or even “thin” wished to be thinner. Multiple regression analysis revealed that this wish to be thin was associated with their ideal body figure and their mother's consciousness toward thinness. These results suggest that the body image of girls and that of their mothers influences the thinness of girls in Japan.

SY23-3

Study on Factors of Body Image in Vietnamese and Japanese Adolescents

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Over-concern about thinness is common, especially among young girls. We tried to find a clue to solve the problem by comparing the body image between Japanese and Vietnamese junior high school students. Schools and classes were randomly selected to involve 374 (boy 196, girl 178) and 714 (boy 352, girl 362), respectively, in Japan and Vietnam. Questions about their body image concerning their desire, liking of the opposite sex, own liking and health were answered by marking the silhouettes. Most of the Japanese girls overestimated their body weight and dissatisfied with their body shape. Vietnamese girls also had similar tendencies in their desire about their body image as the Japanese but they were less serious. The girls in both countries preferred thinner body image than the healthy body image and thought that boys liked thinner body image. Japanese boys were mostly satisfied with their body shape, however, about half (46%) of the Vietnamese boys wanted bigger and muscular body image. In conclusion, the biggest problem of body image was the over-concern about thinness of the Japanese girls which was based on their own misconception. Education about good health and also information of the boy's favorite body image are recommended.

SY23-4

Body Image Perceptions and Attitudes among Iranian Schoolchildren in Relation to Body Composition and Sociodemographic Characteristics

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This study sought to examine attitudes and perceptions toward weight and its associated factors. A cross-sectional study including 14- to 15-year-old schoolchildren of public schools located at Maku and Urmia districts, west Azerbaijan province, was carried out from December 2007 to February, 2008. A total of 209 participants (female: 143 and male: 66) selected by cluster sampling, were asked to answer a body image questionnaire aimed at measuring body form dissatisfaction and questions about family and social status. Also, height, weight and body fat percentage were measured. The relationship between body form perception and associated variables was measured by logistic regression. Among girls, 39.16% wished to have a thinner body, while 42.87% desired to have a larger body; as for the boys, the same desires accounted for 53.3% and 9.09 %, respectively. The data was significantly correlated with body mass index of either boy or girl subjects. Also, more boys were satisfied by their body shapes (36.36%) than girls (27.97%). The findings imply a distinct gender differences in body perception in relation to body composition and sociodemographic characteristics.

SY23-5

Comparison of Body Image and Eating Styles between Japanese and American College Women

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Results of our study show that significant numbers of normal and underweight Japanese college female students desire weight loss and a smaller body size. Among this group, being overweight or desiring weight loss was associated with higher levels of disordered eating attitudes and behaviors, while being underweight was associated with stronger internalization of socio-cultural pressures to be thin. The desire to lose weight was also associated with higher dietary restraint scores and stronger motivations for environmental, emotional, physical, and social eating. Similar results are expected among American college women. These findings indicate a need to educate this population about healthy weight ranges and healthy weight management. Public health messages should take into account the cultural influences that play a role in the drive for thinness. Although the results of this study support the hypothesis that socio-cultural aspects affect eating styles, dieting and body image, further research should be conducted to gather more conclusive evidence.

Keynote

Educational

Symposium

Sponsored
Symposium

Workshop

Morning

Luncheon

Evening

Oral

Poster

Dietetic Therapy of Diabetes Mellitus in Japan

Keiko Honda

Kagawa Nutrition University, Saitama, Japan

In Japan, 95% of diabetic patients are grouped to type 2. Dietetic therapy for these patients is to control the total energy and the energy ratio and supplement with reasonable quantity of vitamin, mineral and dietary fiber.

The way to eat is at least 3 meals a day with sufficient chewing, at regular meal time.

Such eating behavior should be got into the habit, to improve the insulin sensibility and the insulin secretion.

The final goal is to prevent the onset and development of the complications.

- 1) The adequate energy intake is to be set up by carefully evaluating the laboratory data and the physical state.
- 2) The balance of energy ratio of carbohydrate, protein and fat is to be 50~60%, 15~20% and 20~25%, respectively.

The protein energy ratio, 15~20%, is equivalent to 1.2~1.5/g /kg per standard body weight.

The fat energy ratio of saturated and polyunsaturated fatty acid is to be within 10%, respectively.

- 3) Dietary fiber (soluble dietary fiber), which controls the blood glucose and the cholesterol level, is targeted to 20~25g, and basically take

10g/1,000kcal × energy intake. Daily total amount of salt is to be within 10g, in male and 8g in female.

The Process of Dietary Care to Patients with Type 1 and Type 2 Diabetes

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¹*The French Speaking Dietetic Association, France*

²*The French Paramedical Association of Diabetes and Metabolic Disease, France*

Aim: This communication gives a progress report on the dietary care strategy on Diabetes.

Methods: Clinical surveys conducted in type 1 diabetes (T1D) such as Diabetes Control and Complications Trial, in type 2 diabetes (T2D) such as United Kingdom Prospective Diabetes Study, and French High Health Authority recommendation, led to refine the nutritional care of diabetics.

Results: For T1D, the diet - difficult in the past because of unadapted insulinotherapy - is now easier due to the good results of pharmacologic and diagnosis researches. The insulin analogs have made it easier for the patient to adapt his treatment to his carbohydrates intake.

For T2D, weight control and prevention of cardiovascular diseases are essential. There is an international consensus to deliver nutritional message to diabetics: limiting overweight, participating in prevention of macro-vascular complications and confining important glycemic fluctuations. Nutritional education must be focused on fats choice, easing the mono-unsaturated acids intake, as well as on carbohydrates choice, stressing on complex carbohydrates rich in fibres and low glycemic index food intakes.

Conclusion: For T1D and T2D, these results conduct the dietician to join in a process of personalized nutritional care from a data collection (type of diabetes, treatment, weight history....) focused on therapeutic nutritional education.

SY24-3

American Dietetic Association Evidence-Based Nutrition Practice Guidelines for Type 1 and Type 2 Diabetes

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Aim: To identify American Dietetic Association (ADA) Evidence-Based Nutrition Practice guidelines for type 1 and type 2 diabetes.

Methods: The ADA uses a systematic process for identifying, analyzing and synthesizing scientific evidence: 1) an expert workgroup selects critical practice questions; 2) research studies that meet predetermined criteria are analyzed and graded; 3) conclusion statements are written; 4) nutrition therapy recommendations and clinical algorithms are developed.

Results: Sixteen studies were analyzed on the effectiveness of medical nutrition therapy (MNT), 63 on carbohydrate, 11 on protein, 22 on weight management, 14 on physical activity, 25 on glucose monitoring, and 22 on nutrition interventions for cardiovascular disease in diabetes. Recommendations for each question were written. A number of nutrition therapy interventions (reduced energy intake, carbohydrate counting, exchange lists, simplified meal plans, insulin-to-carbohydrate ratios and behavioral strategies) and a series of nutrition-related encounters led by dietitians showed significant reductions and maintenance of A1C levels. In 11 weight loss studies ≥ 1 -yr duration, 6 studies in weight loss diet arms reported no improvement in A1C while 5 studies reported improvement with fairly similar weight losses.

Conclusion: Dietitians should determine the most effective nutrition interventions for each individual and coordinate care with an interdisciplinary team.

SY24-4

Diabetes Outcome Study in Korea

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The prevalence of diabetes is steadily increasing in Korea. The increase in number of people with diabetes would ultimately result in premature death, poor quality of life, and increasing economic cost. Medical nutrition therapy (MNT) is considered a keystone of medical treatment of chronic diseases. But studies with long-term observation which confirm the impact of MNT on medical and economical outcomes are rare. The study was performed on the patient with type 2 diabetes mellitus to evaluate the effect of clinical and cost-effective outcomes of MNT. Subjects from two general hospitals were randomly assigned to two different groups; One receiving basic nutritional education (BE)(n=35), and the other receiving intensive nutritional education (IE)(n=32) for a 6-month clinical trial. Considering the net cost-effect of blood glucose control and HbA1c, IE which provides MNT by dietitian had a cost efficiency advantage than that of BE. According to this study, MNT provided by dietitian had a significant improvements in medical and clinical outcomes compared to that of BE intervention. Therefore, MNT protocol should be performed by systemic intensive nutrition care by dietitian in clinical setting to achieve good therapeutic results of DM with lower cost.

Keynote

Educational

Symposium

Sponsored
Symposium

Workshop

Morning

Luncheon

Evening

Oral

Poster

SY25-1

Entrepreneurial Nutritionists in Japan

Reiko Hashimoto

Y.K. Reiko Hashimoto Diet Consultations

Objective: Highly-specialized, capable Registered Dietitians are needed in order to emphasize the need for diseases prevention and health promotion at the time when elderly population and life-style-related diseases are on the increase. It is important to find how Dietitians are creatively, independently attempting to succeed in this highly-competitive field.

Method: Questionnaire will be used to find the data on Registered Dietitians who presently work in the health/medical field, including consultant and private practitioners.

Results: Results of the questionnaire will be reported on: Reasons for choosing the dietetic career; motivation behind starting the business; management of the business; policies and procedures of the business; status of the business; future challenges.

Conclusions: It is highly likely that more demand will be placed on Registered Dietitians for disease prevention and health promotion in the future. In order to meet the needs of the society in providing excellent services while maintaining financial viability, the study attempts to report on the characteristics, knowledge and qualification necessary to be successful as a Registered Dietitian.

SY25-2

Monitoring Nutrition Related Information in Mass Media By the Korean Dietetic Association(KDA)

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Aim: To review the monitoring activities for nutrition related information by the KDA from 1994 and analyze the trend of nutrition information in mass media in Korea,

Methods: Using reports from KDA monitoring program and articles in the KDA journal, the trend of nutrition related information are analyzed quantitatively and qualitatively.

Results: The monitoring results for newspaper, magazine, television and internet websites were analyzed quantitatively and qualitatively. The quantity of nutrition related information showed increasing trend especially in the television and internet. With increasing quantity of information, it seems that there were many problems in the quality of information. Overall, the problem in the quality of nutrition related information showed differences depend on the characteristics of programs and mass media.

Conclusion: Although the amount of information related to nutrition are increasing in all kind of mass media, the quality of information are not controlled. There are need to monitor and control nutrition related information and control by professionals such as dietitians. Since KDA carry out monitoring since 1994 , government established the system for monitoring in the Food and Drug Administration.

Importance of Dietary Therapy-Compatible Meals in Hotels: In order that Patients May Feel The Pleasures of Meals and The Joy of Life

Yukie Oki

Hotel Du Ciel Bleu, Japan

Aim: It is extremely important to offer dietary therapy (DT)-compatible meals to promote the quality-of-life for certain patients in hotels. DT very often reduces the patient's ability to enjoy meals, especially when eating out. If DT-compatible meals could be offered in a tranquil and relaxing setting such as a mountainside hotel, the favorable psychological rewards for patients might be enormous.

Methods: Based on the pathology-nutrition theory, eligible DT patients were categorized and DT standards were established and prepared in line with hospital DT regimens. All meal-related management and calculation faithfully followed those of a medical institution.

Results: The hotel was able to offer DT-compatible meals almost throughout (95%) of the year. The DT-compatible meals for pathological conditions such as diabetes, nephropathy, hyperlipemia, hepatopathy and pancreopathy were routinely offered together with standard French meals. All meals were of full-course servings.

Conclusion: This DT-compatible meal was particularly meaningful for nephropaths not undergoing dialysis. Under the pressure of a strict dietary regimen, many hope for a safe transition through dialysis while many just give up on their one and only precious life.

This speaker has established a novel mission for this hotel, and strongly hope that this concept will be disseminated throughout the world to promote quality-of-life in patients.

Entrepreneurship in the United States

Kathy King, RD, LD

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The first known dietitian who worked as an entrepreneur in private practice was Eloise Treasher in 1949. Then Norma MacRae started her practice beginning in 1953, and I started my practice in 1972 in Denver, CO. Today, we have thousands of dietitians in all sorts of private business ventures: private practice, nursing home consultant, kitchen designers, media spokespersons, beauty/skin care expert, software developers, web designers, corporate wellness program designers, chefs in restaurants and spas, and supermarket personal shoppers and chefs. Some dietitians own their own office buildings and some have hired staffs of two to 60 people.

In the Spring of 2008, I conducted the most comprehensive survey ever made of self-employed dietitians in the U.S. and world-wide. In my presentation, we will look at the results of that survey. We want to know what factors dietitians felt were the most important contributors their success in business that their dietetic organization contributed, as well as their dietetic peers, their families, and their own innate personal qualities.

In the U.S., women start their own businesses at twice the rate of men, and according to the U.S. Small Business Administration, they remain in business longer—and we will look at the reasons. Men in dietetics have taken their expertise and created lucrative books, sports consulting practices, food service renovation businesses, and become chefs.

We have the most expensive health care costs in the world and yet, we are near the bottom in quality and accessibility of the developed countries in the world. These situations present opportunities and threats to self-employed dietitians. Everyone is concerned about how to survive when economic times are hard—we will discuss tactics used by U.S. dietitians.

Clinical Nutrition for Chronic Kidney Disease

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CKD is an important risk factor for end stage renal disease, ESRD and also cardiovascular disease, CVD. There are two major axes for CKD. The first axis is chronic renal diseases in a strict sense of the words. The second axis is a pathological status related to lifestyle disease. There are known risk factors for this axis of CKD; aging, smoking, hypertension, obesity, dyslipidemia, diabetes mellitus and metabolic syndrome etc. Most of these risk factors are common risk factors for CVD. These risk factors for CKD aggravate the renal disease of the first axis.

The lifestyle modification is, thus, essential for the management of CKD in order to prevent both ESRD and CVD. For this purpose the nutritional management is important together with keeping an appropriate physical exercise and body weight, quitting smoking and strict control of blood pressure, lipid metabolism and diabetes. Firstly, an appropriate calorie intake according to the CKD status is fundamental for the management of CKD. Secondly, the salt intake should be restricted to 6 g/day, which makes blood pressure control easy and possibly reduce excretion of urinary protein. Thirdly, the low protein diet, 0.8 to 0.6 g/kg/day, might suppresses the progression of CKD and reduce the amount of urinary protein.

Nutrition Care in Kidney Disease: A United States Perspective

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Nutrition is an essential component in the clinical care of renal patients. Since many forms of renal disease are characterized by a slow, steady decline in renal function, a continuum of nutrition care is needed as many patients move from acute, to chronic, to end stage renal disease (ESRD). In the United States (US), ESRD will result in transplantation or dialysis, either hemodialysis or continuous ambulatory peritoneal dialysis.

The goals of medical nutritional therapy in kidney disease are:

1. Prevent deficiencies and maintain good nutrition status
2. Control edema and electrolyte imbalance
3. Prevent or retard the development of renal osteodystrophy
4. Enable patients to eat palatable, attractive diets that fit lifestyle as much as possible

Nutrients that are modified and controlled in kidney patients include protein, sodium, potassium, phosphorus, fluids, and energy. Food exchange lists have been developed for the US National Renal Diet. Foods with similar nutrient profiles are placed into ten groups: milk, nondairy substitutes, meat, starch, fruit, vegetable, fat, high calorie, beverages, and salt. Modified food products, such as low protein breads, rice, and pastas are sometimes used. Renal enteral feeding products are also available and may be usefully dietary adjuncts for some kidney patients.

Low Protein Diet for Chronic Kidney Disease

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Low protein diet (LPD) is playing an important role in the treatment of chronic kidney disease (CKD), especially in stage 4 and 5. The diet could not only relieve the symptoms of uremia, but also prevent further damage by reducing the load on the remaining nephrons.

In this diet, keeping the quality of protein ingestion is extremely important for the prevention of malnutrition. To simultaneously obtain both reduction of the amount and maintenance of the quality of protein intake, foods that contain low amino acid score protein like rice, noodles and breads should be avoided. However, since sufficient energy intake is essential in the LPD therapy, these foods are necessary. In order to solve this dilemma in LPD, we have been trying to use specially manufactured protein-reduced rice, noodles and breads. By the use of these specially manufactured foods, allowance for meat, fish, egg or milk was able to be increased and amino acid score of the diet became maintaining at 100 (perfect). Social supports and high self-efficacy are associated with improvement of the compliance with a LPD therapy, leading to good therapeutic effects.

SY26-4

Individualized Dietary Counseling using DIETQUEST CD-ROM Is Beneficial to Improve Diet Quality & Knowledge in Malnourished Patients on Hemodialysis

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Aim: The purpose of this study was to evaluate the effectiveness of using an interactive software (Diet Quest) developed for nutrition education of renal patients in Malaysia.

Methods: The study was carried out in a single NKF dialysis center in Kuala Lumpur. Only patients with serum albumin below 35 g/dl, BMI lower than 18kg/m² and SGA score B were eligible to participate. A total of 30 patients were equally and randomly divided into experimental and control group. Patients in the experimental group received individualized counseling using the interactive software DietQuest for 30 to 45 minutes fortnightly for 3 months by the same dietitian. The control group continued on routine care provided by the dialysis center. Main outcome measures were before-and-after knowledge test results and baseline and final anthropometry, laboratory values and 3 days diet recall to assess diet quality.

Results: At baseline, there were no significant differences in anthropometry, dietary intake, knowledge scores and laboratory values between the two groups. After 3 months of individualized counseling, gains in knowledge were significantly higher in the intervention group ($p < 0.05$) particularly knowledge on foods high in potassium, phosphorus and sodium. The intervention group significantly ($p < 0.05$) increased their energy intake, lowered their fluid intake and had greater food variety compared to the control group. Serum phosphorus level were significantly lower ($p < 0.05$) in the intervention group after counseling due to improved compliance to phosphate binders.

Conclusion: Patients who received individualized counseling using an interactive software showed positive changes, which may be beneficial in reducing malnutrition and hyperphosphatemia.

