
Scientific Tracks & Abstracts

September 15, 2017

Vitamins 2017



International Conference on

VITAMINS, NUTRIGENOMICS & MALNUTRITION

September 15-16, 2017 | Hilton Dallas Park Central Area
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Vitamin A requirements are likely overestimated but many US adults do not have optimal status

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Vitamin A is a fat soluble vitamin essential for growth, reproduction, and immune function. The US has mandated skimmed and low fat milk to be fortified with retinyl palmitate since 1978 and other products are voluntarily fortified. We evaluated the vitamin A requirements of young women in the US using the $^{13}\text{C}_2$ -retinol isotope dilution ($^{13}\text{C}_2$ -RID) test at baseline and follow-up after daily supplements. No prior research has evaluated the estimated average requirement (EAR) in this age and gender group as defined in the dietary reference intakes of the US. Women consumed food containing 175 μg retinol activity equivalents (RAE) daily for 12 wk. For the middle 6 wk, women ($n = 41$) were randomized to take a daily supplement of 0, 175 μg , or 525 μg retinol as retinyl palmitate. Dietary vitamin A intake decreased from baseline in the groups given supplements with 0 and 175 μg retinol ($P=0.005$ and 0.018 , respectively) but not in the group given the 525 μg supplement ($P=0.25$). Mean baseline liver reserves $132 \pm 92 \mu\text{g}$ ($0.46 \pm 0.32 \mu\text{mol}$) retinol/g liver were $>0.1 \mu\text{mol/g}$, the cut-off for deficiency ($P<0.05$). Liver reserves and total body vitamin A did not change in any group during the intervention ($P>0.05$). An estimate for daily RAE intake to maintain the total body vitamin A pool and liver concentrations was approximately 300 μg RAE/d. The EAR (500 μg RAE) for vitamin A for well-nourished women aged 19 – 30 y provides robust liver stores and may be higher than necessary. Furthermore, in a recent study with US adult cadavers ($n = 27$; 49-101 y), six subjects (22%) had vitamin A deficiency

and nine subjects (33%) had hypervitaminosis A ($>1 \mu\text{mol/g}$ liver); histology corroborated hypervitaminosis A. In conclusion, the vitamin A requirements of US adults need reevaluation and the causes of hypervitaminosis A should be determined.

Speaker Biography

SA Tanumhardjo manages a progressive research team in Nutritional Sciences. She serves as the Director of the Undergraduate Certificate in Global Health and is on the Executive Board for the Global Health Institute. She teaches at the undergraduate and graduate level including international field experiences. She has more than three decades of experience with vitamin A and carotenoids. Her multidisciplinary research approach is enhanced by her educational background in chemistry, biochemistry, and nutrition. She has authored >160 research publications and chapters. Her research group works with animal models and outcomes often applied to humans. She has been an invited speaker at >250 meetings. Her research efforts were recognized as an endowed chair at University of Wisconsin-Madison (Friday Chair for Vegetable Processing Research; 2009). Other awards include membership on WHO's Expert Advisory Panel on Nutrition (2012), G Malcolm Trout Visiting Scholar Award for lectureship at Michigan State University (2011), Ruth Pike Lectureship Award at Pennsylvania State University (2007), Alex Malaspina ILSI Future Leader Award (2004), and Dannon Institute Creative Leadership training (2001).

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Impact of interactions between self-reported mental stress and habitual exercise on the dietary intake of Japanese men and women: A large-scale cross-sectional study

Kaori Endoh, Kiyonori Kuriki and Toshinao Goda
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It has been demonstrated that two major diseases, heart disease and cancer, are strongly associated with lifestyle behaviors, such as habitual exercise, alcohol drinking, smoking, and diet. Currently, mental stress (MS) is considered as one of the heaviest global burdens of diseases. MS is also proposed to be negatively related to lifestyle behaviors, such as habitual exercise and higher intake of fruits and vegetables rich in vitamins and minerals; however, little is known about the interactions of MS with lifestyle behaviors. Here, we investigated the interaction between self-reported MS (SRMS) and lifestyle factors to diet in a large-scale cross-sectional study, focusing on habitual exercise among middle-aged Japanese men and women who underwent annual health checkups. The subjects included 5,587 men and 2,718 women. They were divided according to their lifestyle factors, such as habitual exercise, alcohol drinking, and smoking status. Energy-adjusted food and nutrient consumption was assessed with a validated food frequency questionnaire. To estimate food and nutrient consumption, general linear models were performed for each SRMS level for each lifestyle factor. First, in women, natto (fermented soybean), "carrots and squash," other root vegetables (onions, burdock, lotus root), mushrooms, seaweeds, other 3 foods, vegetable protein, soluble, insoluble and total dietary fiber, daidzein, genistein, carotene, retinol equivalents, vitamin B₂, pantothenic acid, potassium, calcium, magnesium, phosphorus and iron significantly interacted with SRMS levels and habitual exercise ($p < 0.05$). In men, "raw and green leafy vegetables" and "fruit and vegetable juice" significantly interacted with SRMS levels and habitual exercise ($p < 0.05$). Second, the SRMS and drinking status interacted with 11 foods, protein, animal protein, fat, animal fat, carbohydrate, monounsaturated fatty acid, polyunsaturated

fatty acid (PUFA), n-3 PUFA, n-6 PUFA, cholesterol, vitamin D, B₂, B₆ and B₁₂, niacin, pantothenic acid, magnesium, phosphorus, and zinc in men ($p < 0.05$), but not in women. Third, in both men and women, smokers consumed less vegetables and fruits rich in antioxidants that are believed to prevent diseases, such as heart disease. Our findings indicated that the association between SRMS and dietary intake of vegetables and fruits are modified by habitual exercise, alcohol drinking, and smoking. Similar to the two major diseases, we must appropriately interpret such interactions for MS prevention. However, the causal relationship between MS and lifestyle factors was unidentified because of the study design. Further prospective studies are warranted to demonstrate the causality of interactions.

Speaker Biography

Kaori Endoh received her BS, MS, and PhD degrees from Kyoritsu Women's University in Japan. After conferral of her Doctorate, she worked for the National Institute of Health and Nutrition in Tokyo and the University of Niigata Prefecture in Japan. Since 2011, she has been working as a research Assistant Professor for the Laboratory of Public Health in the Department of Nutrition and Life Sciences at the School of Food and Nutritional Sciences of the University of Shizuoka, Japan. Her current research area is the study of interactions among mental health and diet in large-scale populations. After analyzing a cross-sectional study population that included approximately 10,000 middle-aged Japanese men and women, she published three first-authored papers on the interactions between mental health and lifestyle factors such as habitual exercise, alcohol drinking, and smoking to diet.

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Advyndra®: A safe and effective synergistic blend of amino acids and B vitamins improving quality of life based on clinical rating scales measuring depression and anxiety symptoms

Germaine Hawkins

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Objective: Evidence-based studies support the safety and benefits of B vitamins and amino acids enhancing the availability of these neurotransmitters. However, few studies have been done focusing on synergistic blends and their benefits. Prescription medications (stimulants, antidepressants and anxiolytics), are often used for first line targeting any deficiency in optimal brain performance. Though effective, these classes of medication are not without side effects including poor libido, weight gain, cognitive dulling and emotional numbing. We hypothesized that a synergistic blend of B vitamins and amino acids could improve cognitive performance and quality of life outcomes.

Methods: The study was an open label 8-week study of 27 healthy volunteers ages 18 to 65 with active symptoms of depression or anxiety measured by PHQ-9 and BAI rating scales; these including subjective reports of cognitive impairment.

Results: The results of the study indicated a statistically significant difference between initial PHQ-9 and 8 weeks PHQ-9 as well as initial BAI and 8 weeks BAI scores.

Conclusions: The statistically significant results underlies the importance of

treating clinicians addressing nutritional deficiencies and potential benefits of supplements when implementing treatment plans that for decades have primarily relied heavily and solely on prescription medications.

Speaker Biography

Germaine Hawkins is a General adult Psychiatrist and Medical Director of Hawkins Psychiatry, PLLC (www.hawkinspsychiatry.com) in Arlington, Texas and Executive Vice President, Director of Mental Health Division of Ultimaxx Health (www.ultimaxxhealth.org). He, as an Osteopathic –Trained Physician adopts a holistic and integrative approach to treating mental illness which fueled his formulating Advyndra® (advyn-druh) www.myadvyndra.com, a metabolic mood enhancement supplement. He obtained his Bachelor of Science in Biomedical Science from Texas A&M University –College Station, received his Doctorate of Osteopathic Medicine from University of North Texas Health Science Center – Ft. Worth and completed his Psychiatric Residency at John Peter Smith Hospital in Ft. Worth, Texas. He is also a Commissioned Officer in the US Army Reserves Medical Corps. He has experience as a combat stress Psychiatrist treating soldiers from Iraq and Kosovo in support of OIF/OEF suffering from PTSD (Post Traumatic Stress Disorder) and TBI (Traumatic Brain Injury).

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Comparative pharmacokinetic evaluation of a new formulation of vitamin C gel caps

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Objective: The objective of the pharmacokinetic study was to demonstrate efficacy and the bioavailability of new formulation of Vitamin C in gel caps, comparing that to the controlled release formulation in vitamin C depleted healthy volunteers.

Methodology: Adult subjects with vitamin C levels <75 micromol/L at screening were enrolled according to the inclusion and exclusion criteria. Volunteers randomly assigned to one of the following groups: Vitamin C i.v. injection 500 mg, p.o. controlled release 500 mg capsules, p.o. NovoC Plus 2x300 mg softgel capsules dietary food supplement. The comparative efficacy and bioavailability was assessed by the serum levels and the urinary ascorbate levels.

Results: Intravenous administration resulted in a sharp peak with a quick turnover within 3 hours. Oral administration of controlled release capsules or the new formulation of NovoC Plus softgel capsules resulted in statistically similar extended (elongated) kinetics within 12 hour-investigational period similar to that of the (timed) controlled release product claimed. Considering the availability, the normalized AUC were not different, however higher dose response were detected in serum (i.e. capacity of the given dose to increase of ASC levels in blood) compared to levels that was achieved by the controlled release capsules.

Conclusion & Significance: The treatment with the new formulation NovoC Plus resulted in similar AUC response, high bioavailability and extended duration of vitamin C supplementation in serum compared to the (timed)

controlled release capsules. The effect presumably due to the modified/alternative absorption kinetics resulted in the liposomal/lipoid components of the formulation. The oral administration of the similar or lower doses of this new formulation may give better or more time-efficient availability of ASC in blood to support the tissues in conditions of increased amount required or such as stress, muscular depletion in (extreme) sports or other medical conditions.

Speaker Biography

Istvan Takacs has his academic background based on Neuroendocrine and Cell Biology Research (Semmelweis University, Neuroendocrine research group at Academy of Sciences Hungary; Rudolph Magnus Institute of Pharmacology, Utrecht: The Netherlands; Dept. of Molecular and Cell Biology: Penn State University, USA). He served as a university Lecturer (Medical School) and invited Lecturer for graduate and postgraduate education and recently appointed as Associate Professor, Head of Department of Pharmaceutical Surveillance and Economy at Debrecen University, teaching pharmacovigilance, pharmaceutical business-management, and drug development. His clinical research experience is based on clinical operation management and clinical quality site management including senior level consultancy for pharmaceutical industry (research /project management, drug development, medical affairs) and clinical operational head. His research project covered the range of development phases (I/II to III-IV) including specific areas such as bioequivalence and post-marketing safety trials as well.

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Optimal cutaneous vitamin D synthesis: Balance between beneficial and harmful health effects of solar UV-B

Janusz W Krzyscin

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Statement of the Problem: Early humans, before migration out of East Africa (~100,000 years ago), lived in surroundings abundant in solar radiation, and to this day, traditionally living Hadza people in Tanzania have vitamin D levels of ~115 nmol/L. Migration to other continents induced loss of skin pigmentation to keep the same vitamin D₃ production as it was previously in East Africa. Thus, the level of 115 nmol/L could serve as the measure of optimal vitamin D status that was formed during millennia of human evolution. It represents a target for contemporary humans usually having a vitamin D deficit.

Methodology & Theoretical Orientation: Krzyscin *et al.* (2016) modeled vitamin D doses received by the Hadza adults during typical life activities and found that the daily vitamin D₃ synthesis due to solar exposures was equivalent to ~2000 IU of vitamin D₃ taken orally. To assess safety of sunbathing to get such high doses by people with different skin phototypes, we propose to calculate a health risk factor (HRF), i.e. a number of the optimal vitamin D doses attained during maximal allowed duration of sunbathing yielding exposure of 1 Minimal Erythemal Dose.

Findings: It appears that HRF is independent on skin phototypes. The

optimal vitamin D dose is obtained safely, i.e. without erythema, for HRF>1. Such conditions usually happen around sunny noon in spring/summer for people exposing ~30% of the whole body.

Conclusion & Significance: Analyses of HRF time series for several mid-latitude sites show that young adults (~20 yr.) could obtain optimal vitamin D₃ doses equivalent to 2000 IU vitamin D₃ taken orally for only 2-3 months per year. Such vitamin D₃ supplementation seems to be necessary over the whole year for persons >59 yr. but it may be reduced to ~1000 IU in spring/summer for outdoor active persons.

Speaker Biography

Janusz W Krzyscin has been involved in modelling surface UV radiation for almost 30 years. He has developed a model for serum 25(OH) vitamin D changes due to solar exposure and elaborated theory for antipsoriatic heliotherapy to be carried out in any country. He proposed a method of improving vitamin D₃ status by using UV transparent garment made of fine linen that is especially important for persons exposing limited skin area due to cultural/religious reasons. He is a leader of team producing free smartphone apps for planning and monitoring healthy sunbathing.

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Antioxidant ability of phenolic compounds in drug delivery against glaucoma

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Functionalization of therapeutic drug carriers with phenolic compounds can potentially provide additional benefits in drug delivery for disease treatment. Given that this modification determines final therapeutic efficacy of drug carriers, we investigate the role of the grafting amount of antioxidants onto *in situ* gelling copolymers for intracameral delivery of pilocarpine in antiglaucoma treatment. As expected, increasing grafting of the phenolic compounds increased total antioxidant activities and free radical scavenging abilities of synthesized carrier biomaterials. The hydrophilic nature of antioxidant molecules strongly affected physicochemical properties of carrier materials, thereby dictating *in vitro* release behaviors and mechanisms of pilocarpine. *In vitro* oxidative stress challenges revealed that biocompatible carriers with high antioxidant content alleviated lens epithelial cell damage and reduced reactive oxygen species. Intraocular pressure and pupil diameter in glaucomatous rabbits showed correlations with antioxidant-mediated release of pilocarpine. Additionally, enhanced pharmacological treatment effects prevented corneal endothelial cell loss

during disease progression. Increasing content of the phenolic compounds increased total antioxidant level and decreased nitrite level in the aqueous humor, suggesting a much improved antioxidant status in glaucomatous eyes. This work significantly highlights the dependence of physicochemical properties, drug release behaviors, and bioactivities on intrinsic antioxidant capacities of therapeutic carrier biomaterials for glaucoma treatment.

Speaker Biography

Shih-Feng Chou is an Assistant Professor in the Department of Mechanical Engineering at The University of Texas at Tyler. He completed his PhD from Auburn University in 2011 followed by working as a Research Associate at Dartmouth College from 2012 to 2013 and a senior fellow at University of Washington from 2014 to 2016. He has 21 publications that have been cited over 140 times, and his publication H-index is 6 and has been serving as a reviewer of reputed journals.

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Notes:

Randomized clinical trial comparing the efficacy of daily, weekly and monthly administration of vitamin D₃

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The main objective of the present study was to demonstrate efficacy and safety of three different vitamin D₃ treatment protocols with the same cumulative dose in vitamin D-deficient subjects. Adult subjects with vitamin D deficiency (25OHD<20 ng/ml), were included according to the inclusion and exclusion criteria. A daily single dose of 1000 IU (group DD1K) to a once weekly dose 7000 IU (group WD7K), or monthly dose of 30,000 IU (group MD30K) of vitamin D₃ were administered for 12-weeks. The comparative efficacy and safety profiles of these selected maintenance doses of vitamin D₃ has been evaluated in a prospective, randomized clinical trial. Additional to safety parameters, the measurements of 25OHD and PTH were completed in every 4 weeks. The treatment efficacy was compared between groups by inclusion levels (i.e. <10 ng/ml and 10-20 ng/ml initial plasm 25OHD values at screening). The dose-response were similar in these three groups, 13.0±1.5; 12.6±1.1 and 12.9±0.9 ng/ml. Thus the treatment of vitamin D-deficient subjects with different treatment regimens of 1000 IU/daily dose were judged to be equally effective in restoration of 25OHD values to above 20 ng/ml. The increase of 25OHD in the group with "low" (<10 ng/ml) initial values was significantly higher (14.05-20.9 ng/ml) by the end of the treatment period in treatment group than that in the group with "moderately-insufficient" (10-20 ng/ml) baseline values (11.54-14.9 ng/ml). The calculated efficacy relative to the baseline resulted in Effnd=1.72-2.66 of subjects with the "low" and Effnd=0.75-0.92 in moderately deficient

subjects. Outcomes of the present RCT investigation demonstrated similar efficacy and safety profile of daily, weekly and monthly dosing equivalent of 1000 IU/day vitamin D₃. The present study utilized vitamin D₃ tablets commercially available for the public with selected dosing schedules to achieve the best adherence to treatment goals.

Speaker Biography

Bela E Toth MD, PhD, MBA, has her academic background based on neuroendocrine and cell biology research (Semmelweis University, Neuroendocrine research group at Academy of Sciences Hungary; Rudolph Magnus Institute of Pharmacology, Utrecht: The Netherlands; Dept. of Molecular and Cell Biology: Penn State University, USA). She was academically appointments as a university Lecturer (Medical School) and Invited lecturer for graduate and postgraduate education and recently as an Associate Professor, Head of Department of Pharmaceutical Surveillance and Economy at Debrecen University, teaching pharmacovigilance, pharmaceutical business-management, and drug development. Her clinical research experience is based on clinical operation management and clinical quality site management including senior level consultancy for pharmaceutical industry (research /project management, drug development, medical affairs) and clinical operational head. The research projects covered the range of development phases (I/II to III-IV) including specific areas such as bioequivalence and post-marketing safety trials as well.

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Prevalence of vitamin D deficiency in children from 136 countries, living in the United Arab Emirates

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The prevalence of vitamin D deficiency viz. having serum 25(OH)D concentrations less than 75 nmol/mL is a common phenomenon worldwide. This study has been undertaken keeping in mind that the previous studies done and published were more general in nature. The aim of this study has been to be more accurate with respect to clearly defining the variables for example children are now clearly categorized by a combination of multiple variables together (age, gender, nationality). In the previous studies, the analysis was done separately for each variable. The data presented in this paper is specifically of the juvenile population living in the United Arab Emirates i.e., residents aged less than 18 years. Data showed highest prevalence of severe vitamin D deficiency (< 25 nmol/L) in two groups of UAE female teenagers viz. age groups of 13–15 years and 16-18 years old. Considering nationality and the age in correspondence analysis, the optimum level of vitamin D (75-200 nmol/L) is found in babies between the ages of 1-3 years irrespective of their nationality. In the juvenile population, the study shows an inverse correlation between age variable and serum 25(OH)D levels variable (with an increase in age, the level of vitamin D decreases). Irrespective of the nationality, the highest incidence of insufficient level of vitamin D (50-74 nmol/L) was found in children aged between 4 and 6 years. On the other hand, optimum levels of vitamin D (75-200 nmol/L) were found in males irrespective of their nationality. For predicting the level of 25(OH)D ($p < 0.01$) in children; variable 'age' is the most important factor followed by the variable 'gender' for children up to

the age of 12 years and variable 'nationality' for children between the age of 12-18 years. These startling data warrant further studies leading to drafting a national policy to overcome this epidemic of vitamin D deficiency among juveniles in the United Arab Emirates. We speculate that similar data exists in other GULF countries.

Speaker Biography

Afrozul Haq is working as a Director of Research & Development at Gulf Diagnostic Center Hospital (GDCH), Abu Dhabi, UAE. He is the pioneer of Vitamin D research and testing in the UAE and serving as the Founding President and Chairman of the International Conference on Vitamin D Deficiency, Nutrition and Human Health continuously conducted for the last 6 years at Abu Dhabi, UAE. He is a graduate of Aligarh Muslim University, India and started his professional career from All India Institute of Medical Sciences (AIIMS), New Delhi in 1984. He has more than 35 years of experience as a Basic & Clinical Research Scientist working in a number of research labs, and hospitals around the world including Pasteur Institute, Paris, France; McGill University, Montreal, Canada; King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia, Mafraq Hospital, Sheikh Khalifa Medical City, VPS Healthcare, Abu Dhabi, UAE. He is serving as Guest Editor for the *Journal of Steroid Biochemistry and Molecular Biology* for the last 2 years and Editor-in-Chief, Editorial Board Member and Advisor for several international journals in the field of Medical Research and Health Sciences.

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A comparison of fat-soluble antioxidants in wild and farm-reared egg yolk of chukar partridges (*Alectoris Chukar*)

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The Chukar partridge (*Alectoris chukar*) is a popular game bird that is closely related to the red-legged partridge *Alectoris rufa*. Its native distribution extends from the Balkans to eastern Asia. In Turkey, approximately 152,000 *Alectoris chukar* were released by the Ministry of Forestry and Water Affairs per annum between 2001-2011. Reared breeding of partridges for hunting purposes and in certain cases for supplementing wild populations are recognized as an important management tool. However, it is believed that the “quality” of reared gamebirds is more important than quantity. This study assessed differences in the composition of antioxidants (carotenoid, retinol, retinol-ester, vitamin E and coenzyme q₁₀) in egg yolks of *Alectoris chukar*. Wild partridge (*Alectoris chukar*) eggs were collected in 2013-2016, three eggs from eight different clutches (N = 24 eggs) during the breeding season (March-April) from the protected Karpaz Region of North Cyprus. Ten wild eggs were analyzed for antioxidants and 14 eggs were marked and incubated. Farm egg yolk samples were taken from Gönyeli Shooting and Hunting Partridge Farm. The farm capacity is 448 females and 168 male breeders. They were randomly distributed in 56 semi-open houses (4x3 m²) having 8 females and 3 males at each site. All breeders were 35 weeks old and they were fed a corn and soybean based diet. The eggs of each farm partridge were taken from ten different houses for antioxidant analyses and the rest of eggs were marked and incubated. All eggs were hatched in an artificial incubator under standard condition. Eggs were placed in an electric incubator with a dry bulb set at 37.2°C and automatic turning at 1 h intervals. Two days before hatching, eggs were transferred to a non-turning part of the incubator. On the day of hatch, 10 chicks from wild

and 10 randomly chosen chicks of farm origin were sacrificed by cervical dislocation. Chick tissues were dissected then transferred to a freezer (-56°C) until antioxidant analyses in the laboratory. This study was approved by the YYU Animal Ethics Committee (2016/09 decision number). Fat soluble antioxidant concentrations in egg yolks were determined by HPLC. Egg yolk fat soluble antioxidant concentrations of wild and farm-reared chukar was presented. These results showed that total carotenoid, total vitamin E, retinol and alpha-tocopherol in egg yolk were significantly higher in the wild partridges egg yolk (p<0.05). However, gamma-tocopherol, delta tocopherol and coenzyme Q10 were not significantly different in the eggs of either type of partridge (p>0.05). Individual carotenoid percentage of wild egg yolk was 4.54% unknown carotenoids, 87.43% (zeaxanthin + lutein), 0.64% β-cryptoxanthin and 7.39% β-carotene of total carotenoids, respectively. The percentage carotenoid profile for farmed partridge egg yolk was as follows: individual carotenoid percentage of total carotenoids in farmed egg yolk was close to that in farm feed with 96.80% (zeaxanthin + lutein) and 3.20% for unknown carotenes. Only β-carotene was not identified in egg yolk from farmed birds. These findings imply that the concentrations of fat soluble antioxidants in the eggs of reared Chukar partridges need to be revised and maternal access to antioxidants in the diet need to be increased.

Speaker Biography

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Diabetes awareness

Agnes George

AgnesGeorge, United Kingdom

I will aim to educate the audience through the provision of information on diabetes. This disease is far too prevalent in our society, and unfortunately there is no cure! What is currently practiced is an attempt to control one's blood sugar with medications which themselves have adverse effects on the body. It is for this reason that I believe that the only effective way to treat diabetes is by its prevention. I will therefore focus on attempts at preventing this disease. Among the various attempts at prevention are (A) healthy lifestyle (b) weight management and (C) physical activity. I hope to make a Global difference in individual lives through speaking. Having observed the devastation caused by the disease, affected individuals suffer from head to toe. The brain is affected with increased incidence of Alzheimer and Dementia among individuals who suffer with the disease, there is an increased incidence of visual disturbances which may lead to blindness. The circulatory disturbances leading to foot ulcers, the diabetic foot and worst amputations. Renal damage, with persons needing dialysis to merely stay alive. There is an increased incidence of heart disease, myocardial infarction and strokes among diabetes. And men there is an increased incidence of impotence among diabetes which has its effects on family life and the man's self-esteem. Every 17 seconds someone in the World is diagnosed with diabetes. Researchers argues more than 371 million people across

the Globe have Diabetes. This figure is predicted to rise over 550 million by 2030. Ladies and gentleman there is an urgent need to address this disease. After this devastating information, the good news is the condition is preventable. So the next time you are tempted to overindulge in the foods we love, remember you may be eating yourself into a disease state for which there is no cure.

Speaker Biography

Agnes George is in helping with the Education of individuals on the prevention of Type 2 Diabetes. Agnes's passion is improving the health of individuals and wellbeing, by enabling them to live a healthy lifestyle. Agnes is the founder and CEO of Mind & Body Healthy Lifestyle Company; an Author, International Speaker, Transformation Coach on Diabetes Awareness; Agnes lectures on the subject at Teaching Hospitals, Schools, University, Institutions and Conferences. Agnes Coaching Clients Group are Corporate, busy professionals age > 40 years, gets successful Coaching results, with very good feedback from her clients. Agnes Speaks Internationally on Diabetes Awareness to help educate one to many and add value to people's lives, has specially dedicated her life to the prevention of Type 2 Diabetes which is something that is closest to her heart, by speaking Internationally.



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Mineral deficiency and undernutrition are keys clinical hallmark to elaborate appropriate interventional strategies in rural area: A Cameroonian study on women of childbearing age

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Background: Malnutrition in terms of over nutrition and undernutrition, especially deficiencies in key neglected minerals is still a serious public health issue in Cameroon. The aim of this study was to assess the prevalence of various forms of malnutrition among women of childbearing age so as to propose interventional strategies.

Method: This was a cross sectional study during which women aged 14-49 years were randomly selected from the political capital city of the country (Yaounde), the littoral, the western, north-west and north regions of the country. Anthropometric, socio-demographic parameters and data on dietary habits were collected. Blood samples were also collected for the analysis of plasma level calcium, magnesium and iron.

Results: The sample consisted of 608 women of childbearing age with average age of 34.68 ± 0.39 years. The evaluation of the prevalence of the various forms of malnutrition revealed that, underweight was 2.1%, overweight 29.9%, obesity 37.3%, iron, magnesium and calcium deficiencies were 11.5%, 22.4% and 48.3% respectively. All the forms of malnutrition increased with age with the 31-40 and 41-49 years age groups recording the highest rates. The northwest and the western regions presented the highest

prevalence of all the forms of malnutrition. Higher prevalence of Mg (25.8%) and Ca (22.3%) deficiencies were associated to women with no educational level. Overweight (26.2%) and obesity (27.4%) were highest among those with a primary level and Fe deficiency (27.6%) among those with a first cycle level of education. With respect to the profession and marital status, housewives and married women presented the highest numbers of Ca deficiency. The low intakes of most food groups (pulses and beans; milk and dairy products; vegetables; fruits) were associated to higher rates of all the forms of malnutrition especially Ca deficiency. Plasma Ca concentration was strongly correlated to the frequent intake of traditional diets in a week ($r=0.129$, $p=0.008$).

Conclusion: All the forms of malnutrition were present in the study population but Ca deficiency was the most prevalent form. Therefore strategies aiming at reducing the rates of Ca and Mg deficiencies such as bio-fortification, reduction of anti-nutrients in potential food sources, dietary diversification, nutritional education are warranted; especially among women of childbearing in Cameroon so as to prevent their future probable exposure to non-communicable diseases such as osteoporosis caused by such deficiencies.

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Prevalence and correlates of complementary and alternative medicine use among type 2 diabetic patients in teaching hospital in Ethiopia: A cross-sectional study

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Statement of the Problem: Patients with Type 2 Diabetes Mellitus (T2DM) are increasingly using herbal remedies due to difficulty in adhering to the therapeutic regimens. However, research on herbal medicine use by patients with diabetes mellitus is scarce in Ethiopia. The aim of the present study was to investigate the prevalence and correlates of herbal medicine use among type 2 diabetes patients attending the diabetes illness follow-up care clinic of University of Gondar Referral and Teaching Hospital (UOGRTH), Ethiopia.

Methodology & Theoretical Orientation: A hospital-based cross sectional study was conducted on 387 T2DM patients attending the diabetes illness follow-up care clinic of UOGRTH from October 1 to November 30, 2016. An interviewer-administered questionnaire about the socio-demographic, disease characteristics as well as herbal medicine use was filled by the respondents. Descriptive statistics, univariate and multivariate logistic regression tools were performed to determine prevalence and correlates of herbal medicine use. Findings: From 387 respondents, 62% were reported to be herbal medicine users. The most common herbal preparations used were Garlic (*Allium sativum* L.) (41.7%), Giesilla (*Caylusea abyssinica* (fresen.) (39.6%), Tinjute (*Otostegia integrifolia* Benth) (27.2%), and Kosso (*Hagenia Abyssinica*) (26.9%). Majority of herbal medicine users (87.1%) had not consulted their doctors about their herbal medicine use. Higher educational status, a family history of DM, duration of T2DM and presence

of DM complications were found to be strong predictors of herbal medicine use.

Conclusion & Significance: The present study revealed a high rate of herbal medicine use along with a very low rate of disclosure to the health care providers. Patients mainly depend on families and friends as a source of information about herbal medicines. From the stand point of high prevalence and low disclosure rate, health care providers should often consult patients regarding herbal medicine use.

Speaker Biography

Agnes George is in helping with the Education of individuals on the prevention of Type 2 Diabetes. Agnes's passion is improving the health of individuals and wellbeing, by enabling them to live a healthy lifestyle. Agnes is the founder and CEO of Mind & Body Healthy Lifestyle Company; an Author, International Speaker, Transformation Coach on Diabetes Awareness; Agnes lectures on the subject at Teaching Hospitals, Schools, University, Institutions and Conferences. Agnes Coaching Clients Group are Corporate, busy professionals age > 40 years, gets successful Coaching results, with very good feedback from her clients. Agnes Speaks Internationally on Diabetes Awareness to help educate one to many and add value to people's lives, has specially dedicated her life to the prevention of Type 2 Diabetes which is something that is closest to her heart, by speaking Internationally.

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 Notes:

International Conference on
VITAMINS, NUTRIGENOMICS & MALNUTRITION
September 15-16, 2017 | Dallas, USA

Bacterial profile and drug susceptibility pattern of diabetic foot ulcer patients attending Saint Paul hospital, Addis Ababa, Ethiopia

Mesrach tsehay

Jimma University , Ethiopia

Statement of the problem: Diabetes foot ulcer is one of the most common complication of diabetes . 15% of all amputation has been shown associated with diabetes, while 58. % of all admitted patients with diabetes foot ulcer end up with amputation. . The poly microbial nature of diabetic foot ulcer and the emergence of drug resistant strains make it difficult for management.

Objective: To investigate the most commonly isolated bacterial pathogens and their drug susceptibility pattern from diabetic foot ulcer patients

Methods: A hospital based cross-sectional study will be conducted at Saint Paul hospital ,Addis Ababa , Ethiopia from June 2017-November 2017.180 patients visiting the hospital with diabetes foot ulcer at diabetes clinic and admitted to the ward with foot ulcer. We use convenient sampling method . Data collected by investigator taking history, physical examination and sample taken from wound site. Culture and sensitivity will be done at Ethiopian public health institute.

Result: In previous studies the most common bacterial over growth is staphylococcus aureus. Since our research under progress the result not yet finished

Conclusion: Diabetes foot ulcer is common problem patients coming St. Paul hospital . Diabetic education, screening of foot ulcer and early & appropriate treatment will help for good outcome.

Recommendation: Routine screening foot ulcer at diabetes clinics.

Speaker Biography

Dr Meshach Tehay senior general medical practitioner with 7 years of experience in clinical medicine. Worked at Felege hiwet referral hospital , Black lion referral hospital and land mark general hospital. Currently doing her masters of public health at Jimmauniversity, ABH campus

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Self-care practice and its associated factors among diabetic patients in Addisababa public hospitals, cross sectional study

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Statement of the problem: Diabetes is one of the most prevalent non-communicable diseases globally, presenting a significant public health burden on the basis of its increasing incidence, morbidity, mortality, and economic costs. The prevalence of the disease is gradually increasing in the developing countries; Ethiopia is also facing a growing morbidity and mortality of diabetes. Self-care of diabetes is essential for control of the disease and improvement of quality of patients' life. Thus, this study has assessed self-care practice and its associated factors among diabetes mellitus patients in Addis Ababa public hospitals.

Methodology & Theoretical Orientation: In this cross-sectional study, 660 diabetic patients were selected through systematic random sampling method; data was collected from November to December 2011. Patients were interviewed using a structured questionnaire. Based on the patients answer to the practice questions patients were categorized as those with good and poor levels of practice. Binary and multivariate logistic regressions were used to exam the association between self-care practice and different factors.

Findings: The result of the study showed that only 60.3 % (95% CI: 56%, 64%) of participants had good self-care practice. There was significant association between mode of treatment AOR= 1.94(95% CI: 1.31, 2.87), social support system AOR=1.59(95% CI: 1.10, 2.31), being member of diabetic association

AOR= 2.39(95% CI: 1.19, 4.81), diabetes education from health professionals AOR= 2.79(95% CI: 1.95, 3.99) diabetes knowledge AOR= 3.13(1.54, 6.39) and good self-care practice.

Conclusion and Recommendations: Despite the important role of self-care practice in management of diabetes and preventing its serious complications, a substantial number of the patients had poor self-care practice especially lack of regular exercise and self-monitoring of blood glucose, which have critical roles in controlling diabetes.

Speaker Biography

Melat Mamo has both medical laboratory scientist and public health experience in evaluation and passion in improving the health and wellbeing. Her experience in both hospital and teaching has brought great experience towards the health problem facing her society at large. She has built great urban and remote rural area experience while working as a program officer and researcher in international organization (NGOs). During research thesis of her master program undergo a cross sectional study on diabetes that has not been given emphasis at the study period. In addition, due to special interest on chronic non communicable diseases specially Diabetes participate in local and international symposiums and conferences so as member of Ethiopian Diabetes Association.

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Effect of jali extract (*coixlacrimajobi l*) on the mice with diabetes mellitus' blood glucose *in vivo*

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Background: Type 2 diabetes mellitus (DM) is a chronic disease marked by the elevation of blood glucose. There are many factors that can cause type 2 DM, such as genetics, poor dietary habits, life style, and many more. Choices of the correct food ingredients can help control blood glucose in patients with type 2 DM. Jali (*Coixlacrimajobi L*) is a tropical grain that belongs to the Poaceae family or flowering plants (grass). In a study of twelve antidiabetic plants, Jali has been demonstrated to have the antidiabetic effects that can reduce blood glucose in patients with type 2 DM.8

Purpose: To determine the effect of Jali extract on the mice's blood glucose with diabetes mellitus.

Methods: An experimental study has been conducted in five groups of ten male mice and each has been administered with 10 mg of jali extract and 50 mg/kg in aquadest daily for 30 days. The groups are (1) negative control

(without aloxan and aquadest), (2) positive control (with injections of aloxan and aquadest), (3) glibenclamide (GC)-50 standard (with injections of aloxan and GC 50 mg/kg), (4) polysaccharide extract (BSF)-10 (induction of aloxan and BSF 10 mg/kg), and (5) BSF-50 (induction of aloxan and BSF 50 mg/kg). From each animal, serum blood glucose was recorded and analyzed before the experiment started as the baseline, on the 15th, and 30th days, these mice are then sacrificed by euthanasia on the 30th day. The results demonstrated that jali has the effect of reducing mice's serum blood glucose in 30 days and it shows the efficacy of jali polysaccharide fraction as an antidiabetic agent.

Results: The use of jali polysaccharide extract 50mg/kg body weight significantly reduce blood glucose.

Conclusion: The use of jali extract as a natural antidiabetic agent.

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