

conferenceseries.com 884th Conference

10th International Conference and Exhibition on

Obesity & Weight Management

December 08-10, 2016 Dallas, USA

Keynote Forum (Day 1)



Obesity 2016

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Andrea M P Romani

Case Western Reserve University, USA

Metabolic syndrome and its worldwide epidemics: How hepatic inflammation and hepatic dysmetabolism consort to determine obesity, NAFLD and insulin resistance

The last 30 years have registered a progressive and dramatic increase in the incidence of obesity in both developed and developing countries. Metabolic syndrome represents one of the most commonly diagnosed conditions associated with obesity, and it has been identified as predisposing to major cardiovascular complications as well as various forms of cancer including liver, colon and breast cancer among others. Currently, 35.5 to 45% of the adult population, also adolescents and children, are affected by obesity and clinical parameters typical of metabolic syndrome with some marked differences in terms of age of onset and race, ethnicity and gender predisposition. According to the latest releases from the WHO, it is estimated that approximately one billion people worldwide are obese and near 500 million are diabetic, or at risk of developing diabetes. The underlying causes of increased obesity incidence are not completely understood, it is presently difficult to establish short- and long-term health guidelines and therapeutic approaches that can help containing the progression and possibly reversing the uptrend of obesity, metabolic syndrome, and their complications. The term 'metabolic syndrome' encompasses several clinical and hematic metabolic factors that altogether raise significantly the risk for heart disease, stroke, diabetes and the particular forms of cancer mentioned above. Liver steatosis, with or without inflammation (steatohepatitis) and progression to NAFLD is considered pathognomonic of metabolic syndrome, and represents the most common clinical manifestation of the disease. While the etiology of metabolic syndrome is most likely multi-facet, the condition is characterized by a major lipid dysmetabolism within liver and adipose tissue as well as systemically, connotations that it shares with T2DM. Inflammation is a key component of both pathologies, in that enhanced levels of inflammatory cytokines have been observed in the circulation and within specific organs, in which they may impair insulin responsiveness and systemic glucose homeostasis. Altogether, metabolic syndrome, NAFLD, obesity and insulin resistance pose major financial and health burdens on the affected individuals, and the medical and productive systems of the various countries. The predisposition to the various associated complications and the financial costs relative to their treatments argue for the necessity to better understand the causes responsible for the onset of metabolic syndrome and its complications and to identify more effective therapeutic and dietary approaches.

Biography

Andrea M P Romani completed his Medical Degree from University of Siena, Italy and his PhD from University of Turin, Italy. After completing his Post-doctoral studies under Dr. Scarpa, he joined the Faculty in Department of Physiology and Biophysics at Case Western Reserve University, where he is currently an Associate Professor. He has published over 90 peer reviewed articles in high profile journals together with numerous invited reviews and book chapters on "The role of mammalian magnesium homeostasis in health and disease". He is currently serving as an Editorial Board Member and Reviewer for numerous international journals.

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Donald E Wesson

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Successful weight management in an underserved population through the Group Lifestyle Balance (GLB) program

Background: Weight management strategies have been comparatively less successful in individuals from low socio-economic status (SES) communities which are medically under-served. We explored the weight management effectiveness of Group Life Balance, (GLB) a strategy adapted from University of Pittsburgh School of Public Health and applied at the Diabetes Health Wellness Institute, a population health initiative of Baylor Scott and White Health which operates in a low SES community of Dallas, Texas.

Methods: The GLB program emphasizes incorporating small, sustainable changes into the lives of participants to build self-efficacy and encourage them to leverage aspects of their current lifestyle toward healthy behaviors. The program does not specify a given “diet” but instead emphasizes a daily fat gram budget which participants manage within their current eating patterns. The program also emphasizes incorporation into their current lifestyle incremental that increases in physical activity of their choice to a weekly goal of 150 minutes. Tools such as food and activity log assist participants to achieve these goals over 3-month duration.

Results: The GLB program participants experienced an average 5.1% weight loss with an attrition rate of only 8%. Program participation was also associated with improved healthy behaviors of the family of participants.

Conclusions: In this low SES population, the GLB program with its emphasis on incremental changes in current lifestyles of participants toward healthy behaviors appears to be an effective weight management strategy for them and appears to improve healthy behaviors of their families as a collateral benefit.

Biography

Donald E Wesson, MD, FACP is currently Professor of Medicine and the Vice Dean of Texas A&M University College of Medicine in Temple, Texas. Prior to this position, he was the SC Arnett Professor of Medicine and Chairman of the Department of Internal Medicine and Physiology at Texas Tech University Health Sciences Center and had been Associate Professor of Medicine at the Baylor College of Medicine where he was Assistant Chief of the Nephrology Section at the Houston VA Hospital. He received his undergraduate degree from the Massachusetts Institute of Technology. He earned his Medical degree from Washington University School of Medicine and completed his Residency and Internship at Baylor College of Medicine. He is the recipient of multiple Teaching Awards at Baylor and Texas Tech.

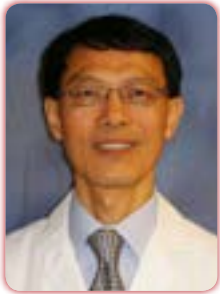
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Yi-Hao Yu

Greenwich Hospital, USA

Towards individualized therapy for obesity: A heterogeneous disorder

Obesity is a heterogeneous disorder of various causes. To make treatment most effective, therapy must be tailored to individuals who manifest obesity with different underlying etiologies. Monogenic forms of obesity are rare, but some of them where correction of the underlying defect is attainable provide opportunities for showcasing individualized treatment principles and favorable outcomes. The common forms of obesity are polygenic in nature. While the exact genetic defects in the affected individuals are not known, most of them manifest as predominantly metabolic obesity or hedonic obesity, which should be treated differentially with tailored interventions whenever possible. More importantly at this time, we advocate that existing therapies and treatment modalities under development be evaluated for their optimal therapeutic efficacy separately in patients with metabolic obesity and those with hedonic obesity.

Biography

Yi-Hao Yu is an Endocrinologist of Northeast Medical Group, Yale-New Haven Health System, Connecticut, USA. He is the Medical Director of Center for Behavioral & Nutrition Health and Inpatient Diabetes Program at Greenwich Hospital. Previously, he was faculty of several universities and served as Director of Nutrition Services at Columbia Presbyterian Hospital, Director of Nutrition Fellowship Program at Columbia University and Medical Director of Discovery Medicine & Clinical Pharmacology at Bristol-Myers Squibb Company. He completed his MD and PhD at NYU School of Medicine. He has published more than 20 original research papers in the top-notch medical and scientific journals and many reviews/book chapters in the field of "Diabetes, obesity and associated metabolic disorders".

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Gerry Leisman

The National Institute for Brain and Rehabilitation Sciences, Israel

What the neuro and rehabilitation sciences can offer the management of obesity and weight management?

Objectives: To apply the knowledge of neuroscience in managing obesity and movement in education and office environments.

Methods: We review data that motor processes contribute to cognitive function. We present findings of how movement contributes to synaptogenesis and neuroplasticity and increased BDNF in rats and brain state changes in children and adults.

Results: Motor and cognitive processes have dynamical bidirectional relationships. Rodent research has revealed that exercise influences the striatum by increasing dopamine signaling and angiogenesis. In children, higher aerobic fitness levels are associated with greater hippocampal volumes, superior performance on tasks of attentional and interference control, and elevated event-related brain potential indices of executive function.

Conclusions: We endeavor to integrate the Neurosciences, Cognitive Psychology and Biomechanics in providing a fundamental understanding of the relation between intention, decision-making, and movement in the context of functional connectivity, awareness, attention, and action. The lack of movement represented in office work and youngsters fettered to video games reduces the ability to formulate effective connectivities. Because children and adults are becoming increasingly overweight, unhealthy and unfit, understanding the neurocognitive benefits of an active lifestyle during childhood has important public health and educational implications. Methods will be discussed to effect weight and health management in educational and workplace environments.

Biography

Gerry Leisman is Director and Professor of the National Institute for Brain and Rehabilitation Sciences in Nazareth, Israel and as Professor of Restorative Neurology at Universidad de Ciencias Médicas Facultad Manuel Fajardo, Havana, Cuba. He has examined self-organizing systems in the nervous system applied to cognitive functions in memory, kinesiology, optimization, consciousness, and autism. He has applied optimization strategies to movement, gait, and cognition. In the 1970's, he was one of the first to identify functional disconnectivities in the brain. His work in Rehabilitation Sciences, has applied the tools of Industrial Engineering to those with developmental disabilities and to health promotion in adults using the tools of neuro and cognitive sciences.

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Edita Stokić

Clinical Centre of Vojvodina, Serbia

Nontypical points of obesity

During past few years the prevalence of obesity has increased dramatically. Obesity traditionally has been defined as a disease characterized by body fat accumulation to an extent that causes health disturbances, such as insulin resistance, type 2 diabetes mellitus, hypertension, dyslipidemia, cardiovascular disease, stroke, sleep apnea, gallbladder disease and some types of cancer. On the other side, obesity isn't homogeneous disease- cardiometabolic disturbances, which are associated with obesity, do not, however, affect all obese people. Several studies suggest that "Metabolically healthy but obese" - MHO people show specific phenotype and body composition differences compared with obese patients "at risk". MHO individuals exhibit lower total and intra-abdominal fat mass, lower ectopic fat accumulation and favorable metabolic, hormonal, immune and inflammatory profile. It is not clear what induces potential transition from metabolically healthy to unhealthy profile, and whether genetic, environmental, lifestyle and psychosocial factors have role. Metabolically obese but normal weight – MONW individuals present a subgroup of individuals with normal BMI, and with insulin resistance, higher risk of developing type 2 diabetes, cardiovascular disease, atherosclerosis and mortality. The early identification of individuals with the MONW phenotype would be beneficial and may have important therapeutic implications. Clinical guidelines should be target more to MHO population, especially to standardization of definition criteria. Future studies should elucidate mechanisms of preserved favorable metabolic profile, and specific dynamics of metabolic and neuroendocrine processes in MHO individuals, which may be helpful in tailoring potential interventions.

Biography

Edita Stokić, MD, PhD, is an Endocrinologist, Professor of Internal Medicine-Endocrinology, employed in the Clinic of Endocrinology, Diabetes and Metabolic Disorders of the Clinical Centre of Vojvodina in Novi Sad, Medical Faculty, Serbia. In 2005, she was appointed as Chief of Department. She is currently the Vice President of Serbian Association for the Study of Obesity and Chairman of the Continuing Education Board (Society of Physicians of Vojvodina of the Medical Society of Serbia). She was President of the Internal Medicine Section and President of Endocrinology Section within same Society. She is an author or co-author of 412 scientific articles, and has publications on obesity, dyslipidemias and diabetes. She has also published monographs namely Obesity is a Treatable Disease, and Obesity and Adipose Tissue Distribution – Metabolic Consequences.

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Vaclav Bunc

Charles University, Czech Republic

Movement activities like a tool of obesity and weight management

The current epidemic of obesity is a problem not only to public health, but each individual. It is up to about 5% of cases the problem of education and not medicine. For an effective intervention it is necessary in the first place timely to identify its initial stages and simultaneously identify the variables that can affect by the external interventions. The basic tool for successful intervention is to change the lifestyle of intervened individuals – from sedentary to active. The first step is early diagnostics and then selecting individual approach that respects the health, previous experience physical, physical fitness, time and economic conditions and the relationship with its surroundings to influence obesity of the subject. The movement intervention with the weekly energy content ranged from 1500 kcal to 2700 kcal (depending on subject's body mass) in the time duration of 5 months is able to cause a decline in the mean %BF of about 24.0%, and increase in the mean VO₂peak about 14.0% (both independently on body mass, age and gender). We can conclude that an exercise program with a similar energy content, form and intensity causes the similar changes in BC and in motor and functional performance in subjects, differing in body mass, age and gender.

Biography

Vaclav Bunc has obtained his PhD from TU Prague in 1979. He is a Vice-dean of Faculty of Physical Education and Sport at Charles University Prague. His main research topics are obesity management, application of mathematical methods and models in PE and sport, evaluation of physical fitness, exercise physiology, functional and physical testing in laboratory and field, body composition, BIA methods and moving regimes for prevention. He has published more than 350 papers in Czech and internationally reputed journals and is serving as an Editorial Board Member of repute.

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Maria Derylo

Loyola University, USA

Obesity

Obesity is a global epidemic with far reaching medical and social consequences. This presentation will provide participants with the opportunity to explore every facet of obesity care in one place—operational, scientific, clinical and business. The goal of this presentation is to engage health care providers in learning about the medical wellness, weight loss and expose them to cutting-edge clinical and research approaches for the recognition, treatment and prevention of obesity. The information is focused on improving patient's total wellness by utilizing clinical research and evidence-based strategies to address the myriad of comorbid conditions related to obesity to help practitioners to treat the whole person, not just obesity. Resources and tools that are needed to develop comprehensive weight management program will be presented. The following topics will be addressed: Basic Science and Obesity, Obesity Algorithm, Obesity defined as a disease, Obesity as a multifactorial disease, Obesity Management Goals, Obesity Classification, Adiposopathy, Stress and Obesity, Patient Evaluation: history, physical exam, laboratory and diagnostic testing, Treatment, concurrent medications, The impact of the Affordable Care Act on obesity treatment, Health risks associated with obesity, Weight-management technologies, Endocrine disorders and obesity, Pharmacologic options for obesity, Addiction related strategies that can be used to improve weight loss outcomes, Comprehensive, evidence-based, personalized care for patients to reverse diabetes, cardiovascular issues, and many other high risk, high cost medical conditions.

Biography

Maria Derylo, DNP, MSN, APN-BC, received her BSN degree from Ryerson University, Toronto, Ontario, Canada, Master's at D'Youville College in Buffalo, NY, Post-master's Adult Nurse Practitioner Certificate from University of Nebraska Medical Center, Omaha, and her Doctor of Nursing Practice from Case Western Reserve University in Cleveland, Ohio. She worked as Nursing Faculty at University of Nebraska Medical Center, and in Northern Illinois University, DeKalb, IL. Currently, she serves as full time faculty at the Loyola University. She practices as Adult Nurse Practitioner at the family practice comprehensive health services, primary care centers in Chicago, Illinois. She served as a speaker and poster presenter at the numerous national and international conferences. Her research interests are obesity, diabetes, cardiovascular diseases, carcinoid and health care system.

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Emmanuel Mukwevho

North West University, South Africa

Calmodulin dependent protein kinase (CaMK)II activation by exercise regulates NRF-1 and its target lipid oxidizing target gene, *Cpt-1* in rat skeletal muscle

Regular exercise increases oxidation of fatty acids in skeletal muscle. Exercise activates Calmodulin-dependent protein kinase (CaMK)II, resulting in increased mitochondrial oxidative capacity. As such, exercise can curb accumulation of excess lipids in adipose and intramuscular tissues that may result in obesity/type 2 diabetes. Lipid metabolism mainly occurs in mitochondria regulated by NRF-1 and is controlled by a set of mitochondrial enzymes. For example, Carnitine palmitoyltransferase (CPT)-1 is a rate-limiting enzyme in mitochondrial lipid oxidation that regulates the transport of long chain fatty acids across the mitochondrial membrane, resulting in ATP synthesis. On the other hand, acetyl-CoA carboxylase (ACC)-1 is a mitochondrial enzyme that promotes lipid synthesis by providing malonyl CoA substrate for the biosynthesis of fatty acids. NRF-1 is the major transcriptional factor of the mitochondria, the site for ATP generation from carbohydrates and lipids. As such, mitochondrial dysfunction is crucial in metabolism of the cell. In order to investigate the amount of NRF-1 bound *Cpt-1*, ChIP assay performed. Exercise showed that the amount of NRF-1 bound *Cpt-1* was ~1.3 fold increase compared with the control group. The exercise + KN93 group did not show any significant change compared with the exercise group. This result indicates that exercise-induced CaMKII activation increase the amount of NRF-1 bound *Cpt-1*. With respect to gene transcription, exercise group showed ~7.8 fold increase compared with the control group. *Cpt-1* gene expression of the exercise + KN93 group showed significant decrease compared with the exercise group. *Cpt-1* gene expression of the exercise + KN93 was similar to the control group. This result shows that CaMKII activation increase *Cpt-1* gene expression in rat skeletal muscle. With respect to mitochondrial integrity, mitochondria size of the exercise group increased by ~3.0 fold compared with the control group, whereas the exercise + KN93 group showed significant decrease compared with the exercise group. Using TEM we show that exercise-induced CaMKII activation increases mitochondria size in rat skeletal muscle and its integrity.

Biography

Emmanuel Mukwevho has completed his PhD in 2010 from University of Cape Town, South Africa in Anatomy and Cell Biology. He is an Associate Professor of Biochemistry at North West University, South Africa. He has published both nationally and internationally in reputed journals and his specialty is in Obesity and Diabetes where he led the Diabetes & Obesity Therapeutics Research group at North West University.

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