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A synergistic effect of *fucus vesiculosus* extracts and alginate on inhibition of lipase

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Obesity is one of the most important issues in global health. Orlistat is the only approved pharmaceutical treatment for obesity. However, side effects may appear in individuals who use Orlistat such as fecal incontinence, oily spotting, and increased defecation frequency. Other lipase inhibitors derived from natural products such as seaweed are being investigated. However, their side effects on lower bowel function are likely to be similar to Orlistat. In order to reduce GI side effects, we are investigating synergistic effects of fibrous alginate and seaweed extracts. Three types of alginate were added to 3 different *f. vesiculosus* extracts, and the ability of the mixtures to inhibit lipase activity was tested. A modification of the method of was used to determine the inhibitory effects of the mixtures of *f. vesiculosus* extracts and alginates on lipase activity. This study showed that all *fucus vesiculosus* extracts tested can inhibit lipase activity. All the extracts had a similar inhibitory effect on lipase activity. Alginate manugel DMB was the best inhibitor on lipase activity assay followed by alginate PH157 and LFR5/60, respectively. The results showed that the synergistic effect between *f. vesiculosus* extracts and alginates (PH157 and LFR5/60) improved the lipase inhibition. However, the mixtures of *f. vesiculosus* extracts and alginate manugel DMB did not show any improvement in lipase inhibition. Further studies need to be carried out in order to characterize the mechanism of *f. vesiculosus* extracts and alginate mixtures on lipase activity.

Biography

Moaz Zulali is an MSc Nutritional Science Graduate of Northumbria University in Newcastle upon Tyne. He is a BSc Biology Graduate of College of Education (Scientific Section) of King Abdulaziz University. He is interested in Physiology and Nutrition Science. Currently, he is studying PhD of Physiology in Institute for Cell and Molecular Biosciences at Newcastle University.

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Carotid intima-media thickness in patients with type 2 diabetes and the metabolic syndrome related factors

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Objective: To evaluate the relationship between carotid intima-media thickness (IMT) and metabolic syndrome (MS) with its components in type 2 diabetes mellitus (T2DM) patients.

Methods: A random cluster sampling was conducted in 1884 employees of T2DM. All the subjects were divided into 2 groups according to the IMT levels, control group: IMT<0.90 mm (n=1083) and IMT increased group: IMT≥0.90 mm (n=801). The risk factors of metabolic syndrome (MS) in T2DM subjects with IMT were investigated.

Results: Compared with the control group, age, BMI, duration of diabetes mellitus, waist circumference (WC), hip circumference (Hip), SBP (systolic blood pressure), LDL and lnCRP (log C-reactive protein, lnCRP) were significantly higher in the IMT increased group (p<0.05). Multifactor logistic regression analysis demonstrated that age≥40 years, Duration≥10 years, BMI≥24 kg/m², WC≥95 cm, Hip≥101 cm, LDL≥3.31 mmol/L, lnCRP≥2.34 mg/L and hypertension (HTN) were independent risk factors of the IMT thickening in T2DM patients. Clustering analysis revealed that several metabolic syndrome (MS) components have a significant correlation with different levels of IMT and there is a dose-response relationship between them ($\chi^2=6.0\sim30.66$, P<0.001).

Conclusion: MS related components are IMT thickening independent risk factors in T2DM patients. HDL is a protective factor which can postpone the thickening of IMT. All of these indicating that it could be an effective method to prevent the carotid artery atherosclerosis and delay diabetic macrovasculopathy by controlling obesity, blood pressure, blood lipid and carotid ultrasound detection examination.

Biography

Wei Li is a Chief Physician, and Doctor Tutor of Shanghai Jiaotong University School of Medicine. She is a Member of the Endocrine and Metabolic branch of Shanghai Medical Association. In 1985, he graduated from Xi'an Jiao Tong University School of Medicine. She published 70 papers in core journals, including 15 SCI journals. She is an Editorial Board Member of *Chinese Journal of Clinicians* and *Chinese Medical Science journal*.

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Biometry investigation of the ocular anterior segment in type 2 diabetes

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Objective: To analyze the biometry parameters of the ocular anterior segment in type 2 diabetic mellitus (DM).

Methods: This is an observational cross-sectional study. 144 cases 285 eyes of DM patients' group age from 40 to 80 were collected during Mar. to Nov. 2015 and non-contact optical biometry measurement (Lenstar LS900) was conducted with central corneal thickness (CCT), white to white (WTW), anterior chamber depth (ACD), lens thickness (LT) and axial length (AL), and lens position (LP), as well as chamber crowd ratio (CCR) were calculated. Data were compared with the counterpart of non-DM cataract patients group and Wilcoxon Rank Sun Tests were employed to analyze the biometric differences between the 2 groups.

Results: Compared with the Non-DM cataract group, the average CCT of DM group was 533.64 ± 33.29 nm vs. 527.08 ± 31.61 nm ($\chi^2=6.4864$, $P=0.0109$). WTW 11.54 ± 0.51 mm vs. 11.42 ± 0.63 mm ($\chi^2=5.7074$, $P=0.0169$). ACD 2.50 ± 0.32 mm vs. 2.61 ± 0.43 mm ($\chi^2=12.7723$, $P=0.0004$). LT was 4.52 ± 0.32 mm vs. 4.31 ± 0.45 mm ($\chi^2=44.8900$, $P<0.0001$). LP was 4.77 ± 0.25 mm vs. 4.77 ± 0.33 mm ($\chi^2=0.0731$, $P=0.7869$). CCR1 was 84 ± 0.35 vs. 1.72 ± 0.47 ($\chi^2=29.6598$, $P<0.0001$). ACD+LT was 7.02 ± 0.28 nm vs. 6.92 ± 0.37 nm ($\chi^2=21.6796$, $P<0.0001$). LT/AL was 0.30 ± 0.01 vs. 0.28 ± 0.02 ($\chi^2=60.5197$, $P<0.0001$). (ACD+LT)/AL 0.30 ± 0.01 vs. 0.28 ± 0.02 ($\chi^2=68.3243$, $P<0.0001$).

Conclusions: Hyperglycemia may lead to the corneal stromal and sub-basal neuropathy in type 2 DM patients. Alterations of the ocular biometry parameters in such group may also lead to be more "crowded" of their anterior segments which herald that they may be more susceptible to angle-closing.

Biography

Yan Liang obtained Doctor of Medicine (MD) degree from Johannes-Gutenberg University Mainz, Germany and is currently the Director of the Department of Ophthalmology, Shanghai Jiao Tong University, Sixth People's Hospital, East campus, Shanghai, China.

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Decreased deceleration capacity of rate and heart rate deceleration runs in patients suffering from type 2 diabetes mellitus with essential hypertension

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This study aims to investigate the changes of deceleration capacity of rate (DC) and heart rate deceleration runs (DRs) in patients suffering from type 2 diabetes mellitus (T2DM) with essential hypertension and to explore the correlation between them and insulin resistance (IR). Fifty cases of T2DM and 95 cases of T2DM with essential hypertension as the experimental group, 50 cases of normal physical examination as a control group were recruited. The related biochemical and metabolic index of 3 group patients were measured; all patients were monitored with 24h Holter. DC, DRs and heart rate variability and other relevant indexes were determined, the index changes of 3 groups were compared. Results showed that (1) T2DM and T2DM + HT group of DC, SDNN, rMSSD, DR₂, DR₄, DR₈ were decreased significantly than that of control group ($P < 0.05$ and 0.001); (2) compared with T2DM group, DC of T2DM + HT group also decreased significantly ($P < 0.05$); (3) in T2DM and T2DM + HT group, DC and DR₂, DR₄, DR₈, SDNN, RMSSD was significantly positive correlation ($P < 0.0001$ respectively), and significantly negative correlated to the FBG, HbA_{1c}, IR (P were 0.0196 , 0.0013 , < 0.0001 respectively); (4) in T2DM and T2DM + HT group, IR and DC, DR₂, DR₄, DR₈, SDNN was significantly negative correlation (P were < 0.0001 , 0.0014 , 0.0019 , 0.0216 , 0.0006 , respectively), was significantly positive correlated with AC, HbA1c (P were 0.0004 and 0.0003 , respectively). In summary, in T2DM with essential hypertension patients, the autonomic function was damaged with IR, the DC and DRs detection can be used to assess cardiac autonomic function.

Biography

Xing De Wang graduated from Shanghai Second Medical University and Post-doctoral studies from Shanghai Jiao Tong University Affiliated Sixth People's Hospital - East Campus. He has published more than 20 papers in reputed journals and his major research interests were the non-invasive diagnosis of heart disease and complications of other diseases, such as COPD and diabetes.

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Correlation between body composition and walking capacity in severe obesity

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Background: Obesity is associated with mobility reduction due to mechanical factors and excessive body fat. The 6-minute walk test (6MWT) has been used to assess functional capacity in severe obesity.

Objective: To determine the association of BMI, total and segmental body composition with distance walked (6MWD) during the 6-minute walk test (6MWT) according to gender and obesity grade.

Setting: University of São Paulo Medical School, Brazil.

Public Practice/Methods: Functional capacity was assessed by 6MWD and body composition (%) by bioelectrical impedance analysis in 90 patients.

Results: The mean 6MWD was 514.9±50.3 m for both genders. The male group (M: 545.2±46.9 m) showed a 6MWD higher ($p=0.002$) than the female group (F: 505.6±47.9 m). The morbid obese group (MO: 524.7±44.0 m) also showed a 6MWD higher ($p=0.014$) than the super obese group (SO: 494.2±57.0 m). There was a positive relationship between 6MWD and fat free mass (FFM), FFM of upper limbs (FFM_UL), trunk (FFM_TR) and lower limbs (FFM_LL). Female group presented a positive relationship between 6MWD and FFM, FFM_UL and FFM_LL and male group presented a positive relationship between 6MWD and FFM_TR. In morbid obese group, there was a positive relationship between 6MWD with FFM, FFM_UL, FFM_TR and FFM_LL. The super obese group presented a positive relationship between 6MWD with FFM, FFM_TR and FFM_LL.

Conclusions: Total and segmental FFM is associated with a better walking capacity than BMI.

Biography

Gabriela Correia de Faria Santarém completed her Master's degree from the University of São Paulo Medical School and is a PhD student at the same university. She has published many articles related to obesity in renowned journals.

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Factors associated with remission of type 2 diabetes after bariatric surgery

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Introduction: Sleeve gastrectomy (LSG) is effective for glycemic control among obese type 2 diabetes (NIDDM) patients. C-peptide represents a predictor of NIDDM remission post LSG. Measuring basal C-peptide might identify appropriate LSG candidates.

Objectives: We examined the effectiveness of basal C-peptide and related factors as predictors for NIDDM resolution.

Methods: We retrospectively reviewed 50 NIDDM patients (BMI \geq 35) who underwent LSG between 2012 and 2015. Data were collected about patient's weight, age, NIDDM duration, C-peptide (basal), HbA1c (basal and 1-year post LSG), and TBWL (1-year post LSG). Complete resolution of NIDDM was correlated with age, basal C-peptide, duration of NIDDM, pre and post LSG HbA1c and TBWL. Preoperatively, mean age=45.7 years, mean BMI=46 kg/m², C-peptide range=1.0-10.9 ng/dl, HbA1c range=4.7%-14.7%. Mean NIDDM duration=8.1 years, mean NIDDM resolution rate at 1 year = 5.2%.

Results: Basal C-peptide was not significantly correlated with HbA1c 1 year post LSG; and remission NIDDM was not affected by high or low basal C-peptide levels (3.5 ng/mL was taken as median value of study population). NIDDM resolution at 1 year was not significantly correlated with patient's age; was negatively correlated with both the NIDDM duration ($p=0.009$) and with basal HbA1c ($p=0.001$); and positively correlated with TBWL ($p=0.016$).

Conclusion: Preoperative C-peptide is not a predictor of NIDDM resolution at 1 year post LSG regardless of patient's age. Shorter NIDDM duration, better pre-operative diabetes control and higher TBWL corresponded to a higher rate of complete diabetes resolution.

Biography

Isra Elgenaied Mustafa has completed her MBBS, MD from Khartoum University, Faculty of Medicine in 2007. She did her Internal Medicine Residency Program from Hamad Medical Corporation (HMC) Qatar. She got Arab Board Medical Specialization (ABMS) Certificate of Internal Medicine and is currently a Bariatric Medicine (Obesity Medicine) Clinical Fellow at HMC.

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Role of macrophage in the regulation of hepatocyte fat metabolism

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Macrophage secretory products contribute to the pathogenesis of chronic liver diseases by sensing danger signals from damaged cells under pathogenic inflammatory conditions like fatty liver or infection. Liver resident Kupffer cells activate inflammasome and caspase-1 to proteolyse cytokines IL-1 β and IL-18. The endogenous interleukin-1 receptor antagonist (IL-1Ra), secreted by activated monocytes and macrophages binds to IL-1 receptors & prevents IL-1 from sending a signal to that cell. Our study is designed to understand the molecular basis of inflammatory condition developed during fatty liver diseases which regulates hepatocyte fat metabolism. Cultured human THP-1 cells were differentiated into macrophages and stimulated by LPS to treat with BSA-Palmitate. The cytokines in THP-1 conditioned media (CM) were profiled by ELISA or HPLC. HepG2 cells were treated with the CM & BSA-Palmitate. Fatty acid oxidation (FAO) was measured in HepG2. Fat deposition was qualitatively determined by Oil Red O and Triglyceride (TG) accumulation assay. Total RNA from HepG2 cells were isolated to profile gene expressions by RTqPCR. Some expressed proteins were determined by qPCR and immune-blotting. Recombinant IL-1 decreased FAO which was dose-dependently reversed by IL-1Ra in HepG2 cells. IL-1Ra enriched CM from LPS stimulated THP-1 macrophage increased rate of FAO and prevented IL-1 dependent decrease in FAO. The intracellular triglyceride levels were accordingly modulated. Thus, IL-1Ra has an important role in controlling the fat accumulation and its metabolism in HepG2 cells. Recombinant IL-1Ra can play a potential role in blocking inflammasome induced IL-1 β dependent liver inflammation and combat the inflammatory condition developed during fatty liver diseases.

Biography

Susmita Chandra has completed her PhD during 2011 from Jadavpur University, Kolkata, India. She is working as a Post-doctoral Fellow at Cell Biology and Physiology Division of Indian Institute of Chemical Biology. She has 10 published papers in reputed journals and has presented her research contribution in a number of national and international conferences. Her previous and current research contribution encompasses mainly different areas of drug development studies.

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Tertiary care overweight and obesity management in Bangladesh: An exploration of the level of awareness and common barriers of physicians

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The aim of the present study was to assess the knowledge, attitudes and identify the barriers of the physicians regarding overweight and obesity management. A simple cross sectional study was conducted among 155 physicians through a standard questionnaire from 3 selected government hospitals and 1 private hospital of Dhaka city, Bangladesh. Mean age of the 155 physicians was 31.88±5.92. Majority of them, 80 (51.60%) were unable to answer the correct prevalence of overweight but 75 (48.40%) could mark the right answer. A substantial proportion, 71 (46.70%) of the physicians mentioned that they do not have much to do with controlling weight problem in Bangladesh. Majority of the physicians, 148 (95.5%) use BMI to measure weight problems, whereas only 13 (8.4%) practice waist circumference as a diagnostic tool. As weight management strategies, most of them 122 (85.3%) took advice to modify the life style, while 93 (68.4%) occasionally were referred to dietician. About 74 (47.7%) of the physicians reported lack of motivation, 73 (47.1%) mentioned short consultation time and 60 (38.7%) said that lack of national policy or management guideline are few barriers to treat weight problems. Again, perceived barriers like lack of parental support, lack of a national policy were statistically significant ($p<0.05$) with their occupational designation. This present study being the first one in country suggests for future large scale research to define physician's role, need of further training and identify the new strategies to include in the health system for dealing with this growing epidemic.

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The application status of bariatric surgery in China

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Obesity is becoming a global epidemic of the disease, which seriously threatens human health and the quality of life. Bariatric surgery is by restricting food intake and reducing nutrient absorption to treat the metabolic syndrome. Currently there are 4 accepted surgical methods: Roux-en-Y gastric bypass (LRYGB), laparoscopic sleeve gastrectomy (LSG), laparoscopic adjustable gastric banding (LAGB) and biliopancreatic diversion with duodenal switch (BPD-DS). The most widely used procedures are LSG and LRYGB. In recent years, the quantity of bariatric surgery is growing rapidly in China and to nearly 4000 cases in 2014. In 2012, Chinese College of Surgeons for Obesity and Diabetes Surgeons Committee was established, which greatly promoted the development of the obesity surgery in China. At present, the standardization of the surgery, the multidisciplinary collaboration and the follow-up mechanism construction also need to be further strengthened. With the continuous improvement of material life, people to the requirement of health and quality of life is increasing day by day, the surgical treatment of obesity will obtain the good social efficiency. The benefit of weight-loss surgery is not only the weight loss; more is to control and mitigate the complications of obesity related diseases. And improvement in the diabetic condition has attracted the most attention. Larger, randomized and long-term follow-up studies need to be conducted to compare the efficacy of different bariatric surgery procedures and to research the related mechanisms in the future.

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Association between adulthood obesity and health-related quality of life

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The World Health Organization has considered obesity to be the 'non-infectious epidemic of the 21st century' and one of the principal chronic health problems worldwide. Obesity is a chronic multifactorial and complex disease that develops through the interaction of genotype and environment. The therapeutic approach should take into account cultural alimentary beliefs to improve a lifestyle intervention. Health-related quality of life scales are being used increasingly to assess the health in population and analyze the effectiveness of health interventions. The 'subjective well-being' has two components: Emotional and cognitive approach. This research is a cross sectional descriptive study with 276 users of the Primary Health Centre 'OfraDelicias-Miramar', in Santa Cruz de Tenerife (Spain), in the first quarter of 2016. The sample consists of 52% normal weight (Body Mass Index-BMI <25) and 48% non-normal weight: 27% overweight (BMI 25-30) and 21% obese (BMI>30). 60% were female and 40% were male aged between 19 and 75 years old (42.3±12.73). Instruments used were: Satisfaction with life scale (SWLS) and health-related quality-of-life (EQ-5). EQ-5 is a simple and widely used multi-attribute utility model that assesses 5 dimensions: Mobility, self-care, usual activities, pain/discomfort and anxiety/depression. SWLS is a five-item scale designed to measure a person's global judgment (cognitive) of satisfaction with their life. Additionally, the satisfaction with life scale has been found to be positively associated at statistically significant levels with other measures of subjective wellbeing and negatively associated with measures of psychopathology. It is a valid and reliable measure of satisfaction with life (alphaCronbach=0.97) and test-retest stability (0,82). Results show that there are some relationships between BMI and health utility scores. As regards EQ-5, obese sample has lower quality of life than both normal and overweight group. There are significant differences ($p<0,05$) in 3 items: Mobility, usual activities and discomfort between the 3 groups. In all items, obese sample score higher than normal and overweight sample. Therefore, obese sample have more problems to walk, more problems to do ordinary activities and more pain/discomfort than normal weight. In relation to the SWLS, there are significant differences between normal weight sample and both obese and overweight sample, in first item: 'In most ways my life is close to my ideal'. The normal weight sample scores higher in this item than the other samples. In conclusion, subjective well-being has become a major topic in studies on chronic diseases, as obesity. In this research, obesity and overweight samples are related to better subjective well-being than normal weight sample. Longitudinal research that examine the pattern of obesity and the development of well-being is needed, which would be important with regard to future treatment, prevention and not underestimating the cost-utility of interventions for obesity treatment.

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Obesity: The epidemic, disease and global policy implications

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Obesity is a worldwide epidemic with recent literature suggesting that the impact on the global domestic product (GDP) is \$2.0 trillion USD. As morbidity, mortality and costs continue to rise; efforts must be made to understand the impact of the disease. In many developed countries, the prevalence of obesity is more than 30%. Some countries have sought to develop policy initiatives to tackle the disease, but often policy makers have a rudimentary understanding of the disease. Obesity is a disease in which a myriad of factors play a role in its incidence including behavior (diet quality, physical activity, sleep and stress), genetics and hormonal regulation. It is important to understand the complexity of obesity to work to develop strategies to prevent and treat persons who struggle with it. This presentation will define obesity, illustrate prevalence, and discuss current research which helps us to understand the complex physiology of the disease. We will evaluate the strengths and weaknesses of policies that have been developed throughout the world to target obesity. Additionally, we will also explore barriers to access to obesity care.

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Systemic hypertension and type 2 diabetes mellitus and lapse of diagnosis for end-stage kidney disease in 18 patients from a Hospital of Puerto Vallarta, Jalisco, México

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Background: End-stage kidney disease is directly related to hypertension, diabetes and dyslipidemia, which today is a disease that has reached epidemic proportions in our country.

Methods: We conducted an analytical, observational, cross-sectional and retrospective study based on individuals, involving 18 patients assigned to the ISSSTE Hospital located in Puerto Vallarta, Jalisco, México, diagnosed with end-stage kidney disease, in which we seek to establish an approximate time frame for the diagnosis of end-stage kidney disease in patients with a previous diagnosis of systemic hypertension, diabetes mellitus type 2 and both associated. Statistical analysis was performed using the Excel Analysis ToolPak for Microsoft Office Excel 2013.

Results: Data were collected from 18 patients diagnosed with end stage kidney disease, of which only 15 patients (83.33%) were analyzed, otherwise 3 patients (16.66%) were excluded, 2 of them by presenting a diagnosis of ESKD simultaneously to type 2 diabetes or systemic hypertension, and the remaining patient did not present any comorbidity when establishing the diagnosis of ESKD. Of the selected patients, it was found that the category which took a shorter time to have as diagnosed ESKD were patients with hypertension as unique comorbidity, with an average of 5.6 years, while the category of type 2 diabetes mellitus and associated hypertension, had an average of 9 years; and finally patients with type 2 diabetes mellitus only, showed an average of 20 years of evolution before they make a diagnosis of ESRD.

Conclusions/Discussion: The results show a direct causal link between type 2 diabetes mellitus and hypertension, with the onset of chronic kidney failure, this time depending on the evolution of the disease. Being patients with hypertension as the only comorbidity those with the shortest period to develop terminal chronic renal impairment compared to patients with diabetes mellitus as one comorbidity, who show a slow and progressive deterioration, perhaps associated with various factors, a major by inhibiting the renin-angiotensin system, which slows the progression of kidney disease.

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Novel intervention strategies for reducing sedentary behavior in the workplace

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Until recently, sedentary behavior was considered synonymous with a lack of moderate/vigorous physical activity (MVPA). More recent evidence suggests prolonged sedentary time has deleterious health effects that are independent of participation in MVPA. Furthermore, because they are distinct behaviours, strategies for increasing MVPA may not be effective for reducing sedentary behavior. Recent reviews have confirmed that efficacious interventions for MVPA do not reduce overall sedentary time. This suggests that novel intervention approaches that specifically target sedentary behavior are warranted. However, there is a notable gap in research identifying effective behavioral strategies for reducing sedentary behavior. The workplace is an ideal setting for implementing interventions to reduce sitting time, as a majority of adults spend up to half of their waking hours at work, and over 80% of adults now have sedentary occupations. Furthermore, the structure of workplaces facilitates multi-level approaches to behavior change, whereby environmental changes can be added to individual behavior change strategies to bolster intervention effects. Our team has conducted a series of experiments testing seated active workstations for reducing sedentary time amongst office workers. We will present the findings of these studies and discuss future directions for this important line of research.

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Hypoxia and extra-cellular matrix gene expression in adipose tissue associates with reduced insulin sensitivity in black South African women

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Objective: Black South African (SA) women are more insulin resistant and have increased gluteal subcutaneous adipose tissue (SAT) hypertrophy than white SA women. We tested the hypothesis that adipose tissue hypoxia and extracellular matrix (ECM) gene expression in gluteal and abdominal SAT is higher in black than white women, and associates with reduced insulin sensitivity (SI) in black women.

Methods: SI (frequently sampled intravenous glucose tolerance test), gluteal and abdominal SAT mRNA levels of hypoxia- and ECM-related genes were measured in normal-weight and obese premenopausal black (n=30) and white (n=26) SA women at baseline, and in black women, at 5-year follow-up (n=10).

Results: Compared to obese white women, obese black women had higher expression of hypoxia inducible factor 1 (HIF-1 α), collagen type V α 1 (Col5a1) and collagen VI α 1 Col6a1 and reduced vascular endothelial growth factor- α (VEGF α) expression in gluteal (p<0.05) but not abdominal SAT depots. Independent of body fatness, gluteal expression of HIF-1 α (r=-0.55; p=0.01), Col5a1 (r=-0.41; p=0.05) and Col6a1 (r=-0.47; p=0.03) correlated with reduced SI in black women only. Over a 5-year follow-up, changes in gluteal HIF-1 α (r=0.58; p=0.01), Col5a1 (r=0.82; p=0.02), and Col6a1 (r=0.88; p<0.00) expression correlated positively with the change in fasting insulin concentrations in black women.

Conclusion: Compared to their white counterparts, black women expressed higher levels of genes associated with hypoxia and collagen deposition, and that the associations between these genes and SI differed by ethnicity. We thus propose that insulin resistance in black women may be related to higher ECM and hypoxia gene expression.

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Gastric leptin: An important factor that regulates food intake and body weight loss; studies towards clinical applications

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Cell biology studies on gastric leptin secretion have demonstrated that the hormone known to regulate appetite and food intake, is synthesized, packaged in granules and discharged through regulated secretion into the gastric lumen by the Chief cells of the gastric mucosa. Leptin present in the gastric juice is tightly associated to the soluble isoform of its receptor. The leptin-leptin receptor complex allows the leptin molecule to survive the harsh conditions of the gastric juice. Leptin vehiculated from the gastric cavity to the duodenal lumen interacts with membrane-bound leptin receptors located on the apical membrane of the duodenal epithelial cells. Leptin is then internalized and released at the basal pole of the intestinal cells towards the submucosa. It penetrates the blood stream and reaches its hypothalamic target cells where regulation of food intake takes place. Since leptin is normally present in the gastric juice, we evaluated the efficiency of an oral administration of exogenous leptin for the control of food intake. Experiments were performed on normal and obese rodents as well as on large mammals, pigs and dogs. Exogenous leptin given orally in the form of a pill is able to reduce food intake and to trigger weight loss in all animals. Compared to leptin secreted by the adipose tissue, gastric leptin appears as an important and favorable target for clinical application.

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The state policy about overweight and obesity in Turkey

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Overweight and obesity can be defined as body weight that is above normal for height as a result of an excessive accumulation of fat. It is usually a manifestation of over nourishment. Overweight is defined as a body mass index (BMI) of more than 25 but less than 30 and obesity as a BMI of 30 or more by the World Health Organization (WHO). It is well known that inappropriate diets can give rise to obesity and diet-related non-communicable diseases such as atherosclerosis, type 2 diabetes, respiratory diseases and certain cancers. All of these conditions are more or less determined by what we eat, and the debates about what to eat to avoid disease are almost countless. Therefore, Nutrition Survey (2010) was intensively done by The National Health in Turkey. According to the dates of the survey, overweight ratio between men and women adults were found to be 39% and 30% respectively. On the other hand, obesity ratio was supplied 20% for man and 41% for women. The overweight and obesity ratio between the 1-20 years of old group were given 18% both for boys and girls. It seems that overweight and obesity are increasing day by day in Turkey as other several countries. Since at the beginning of millennium, the Ministry of Health has achieved the development goal obesity target plan to reduce or prevent weight gain all over the country. The aim of this plan is that nutrition is national priority and a healthy diet should be considered human right. Nutritional and food security should also have the same priority. Enhanced nutrition education, public health information campaigns and healthy food supply policies are included into this plan. The main goal of nutrition education is to inform people as to what constitutes a healthy, balanced diet, as well as how to improve their diet and lifestyle. Interventions aimed at children in schools, contents of their food box and the school canteens in which foods are selling. Once a day, milk services are supplied for the primary school children. Public health information campaigns are the most common type of nutrition intervention employed in communities. Particular educational target should be mothers of young children, promoting prenatal balanced diets and postnatal feeding practices especially breast feeding, as well as family nutrition needs. As the parent most responsible for household nutrition and child care, women, particularly young women, are an important target for nutrition education. Consumer policies and appropriate nutrition labeling, which enable consumers to make informed decisions, should be further developed as well. Follow up the strategy policy, every 10 years national nutrition surveys should be repeated.

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Resistin mediates tomato and broccoli extracts effects on glucose homeostasis in high fat diet induced obesity in rats

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Resistin is an adipocyte hormone that regulates glucose metabolism. Elevated levels of resistin may cause insulin resistance. We hypothesized that tomato and broccoli extracts treatment regulates glucose homeostasis via modulation of resistin levels in high fat diet induced obesity rats (HFD). 63 male albino rats were divided into 8 groups as follows: control, HFD, stop fat diet (SD), tomato 200 mg/kg (T200), tomato 400mg/kg (T400), broccoli 200 mg/kg (B200), broccoli 400 mg/kg (B400) and chromax (CX). Treatment continued for 1 month. Serum levels of resistin, leptin, adiponectin and insulin were measured using ELISA and glucose by spectrophotometry. Serum level of resistin was significantly reduced in T 200, T 400, B 200, B 400 and CX groups to: 4.13±0.22 ng/ml, 1.51±0.04 ng/ml, 4.13±0.22 ng/ml, 2.32±0.15 ng/ml and 1.37±0.03 ng/ml, respectively compared to HFD group and SD group (P value<0.0001). Non-significant difference was found between T 400, B 400 and CX groups. Serum level of leptin was significantly reduced in T 400 (22.7±0.84 Pg/ml) group compared to B 400 (41±2.45 Pg/ml) and CX groups (45.7±2.91 Pg/ml), P value<0.001. Serum level of adiponectin was significantly increased in T 400 group (131±3.84 Pg/ml) compared to CX group (112±4.77 Pg/ml), P value was<0.01. Our results demonstrate that tomato and broccoli extract treatment regulates glucose homeostasis via reduction of serum resistin and may be a useful non-pharmacological therapy for obesity.

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7th Obesity & Endocrinology Specialists Congress

October 10-12, 2016 Manchester, UK

Spatio-temporal gait during flat ground walking and obstacle crossing one year after bariatric surgery

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Obesity negatively impacts motor function leading to an increase in fall risk. Massive weight loss improves some aspects of gait on flat ground. However, we have little information about whether gait changes during flat ground walking and during more complex motor tasks beyond flat ground walking (e.g., crossing obstacles). The purpose of this study was to examine how massive weight loss after Roux-en-Y bariatric surgery influences gait during flat ground walking and obstacle crossing one year post bariatric surgery. Nineteen adult females walked under 5 conditions: Initial baseline walking on flat ground, crossing 3 obstacle heights and final baseline walking on flat ground for a total of 25 trials. Spatio-temporal gait parameters were collected simultaneously using a gait carpet and with body-worn sensors. Gait improved post-surgery with the strongest effect observed for double limb support time during both flat ground walking ($p < .001$) and obstacle crossing ($p < .001$). The reduction in body mass index was correlated with improved gait during both walking conditions ($ps < .01$). As expected, an increase in obstacle height altered gait ($ps < .01$). Improved gait post-surgery was more pronounced during the highest obstacle condition ($ps < .01$). Massive weight loss results in improved spatio-temporal gait patterns during flat ground walking. Practice during obstacle crossing may facilitate improved gait. Examining how massive weight loss affects spatio-temporal gait may help create ways to minimize falls for adults with obesity and to encourage a more active lifestyle.

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How did an albino patient lose 148 lbs of weight? A case report

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Introduction: Obesity is a highly prevalent and yet the most neglected disease. The number of overweight and obese people reached 2.3 billion and 700 million worldwide respectively, by the year 2015. Obesity is not a social disgrace but an actual disease with a major genetic component to its etiology. Obesity treatment is a lifelong task. Weight reduction medications should be used as an adjunct to diet restriction, exercise and behavioral modifications, when these measures alone have not resulted in adequate weight loss. We hereby present a case of a morbidly obese male patient with oculocutaneous albinism who has lost 148 lbs of weight. Furthermore, the report highlights the genetic link between oculocutaneous albinism and obesity.

Case Presentation: 28-year-old male with oculocutaneous albinism presented with 361.8 lbs of weight (BMI: 62.1) and complaint of difficulty in losing weight. Physical examination revealed hypertension, low intelligence, gynecomastia and infantile testicles. Lab investigations showed unregulated hyperlipidemia and hypotestosteronemia. The patient was prescribed Xenical (Orlistat) 120 mg. Over the period of 5 years, he lost 83.8 lbs. After this time, Xenical's effectiveness was significantly reduced. Consequently, the patient was started on Victoza (Liraglutide) on which he lost 64 lbs in 3 years. Thus, a sum of 147.8 lbs of weight was lost without any side effects of the drugs.

Discussion: Obesity needs to be treated within the healthcare system as any other complex disease. We observed Xenical and Victoza to be safe and effective in reducing obesity. Substantial literature has emerged to show that in both Oculocutaneous albinism and Prader-Willi syndrome (the most common genetic cause of obesity) the P gene is mutated on chromosome 15. This highlights the genetic susceptibility of our albino patient for developing morbid obesity.

Conclusion: Obesity develops from the interplay of both genetic and environmental factors. This case clearly illustrates that Xenical and Victoza can be safe and efficient for weight loss in a morbidly obese patient. Furthermore, scientific research in the genetic aspects of obesity can help develop new strategies towards its prevention and treatment.

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