Beneficial role of antioxidants on clinical outcomes and erythrocyte antioxidant parameters in rheumatoid arthritis patients

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Objectives: This study aims to investigate the effect of antioxidants supplement on clinical outcomes and antioxidant parameters in rheumatoid arthritis (RA).

Subjects and methods: The pre-post study was conducted on 40 female patients with RA in 12 weeks that taken daily one selenplus capsule contained 50 micrograms selenium, 8 milligrams zinc, 400 micrograms vitamin A, 125 milligrams vitamin C and 40 milligrams vitamin E. About 5 mL venous blood sample was taken from all participants and disease activity score (DAS) was determined by DAS-28 formula and high-sensitive C-reactive protein (hs-CRP). Glutathione peroxidase (GPX) and superoxide dismutase (SOD) were measured by spectrophotometric kit and catalase (CAT) was measured by Abei method. Total antioxidant capacity (TAC) was determined by spectrophotometric kit. Distribution of the variables were assessed using histogram with normal curve as well as Kolmogrov-Smirnov test and data were analyzed with paired t test for differences between pre-post data using SPSS software version 13.5.

Results: Out of 40 patients, 39 completed the study. DAS-28 score and hs-CRP have changed (p=0.003 and p=0.019 respectively) while the number of swollen and painful joints did not reduce significantly. TAC, GPX, SOD and CAT increased significantly (p<0.001, p=0.011, p=0.009 and p=0.008 respectively).

Conclusion: Our findings showed that antioxidants may improve disease activity significantly but it did not affect the number of painful and swollen joints and increased erythrocyte antioxidant levels. Antioxidants may be useful for controlling of clinical outcomes and oxidative stress in RA.

Key words: Rheumatoid arthritis, antioxidants, oxidative stress, dietary supplements, nutrition therapy
Background: Canola oil (CO) has an amalgamation of high mono-unsaturated fatty acids (MUFA) and alpha linolenic acid with a low n-6 to n-3 fatty acid ratio -- characteristics which have been found to confer cardiovascular protection by reducing triglyceride, low density lipoprotein cholesterol (LDLc) but increasing high density lipoprotein cholesterol (HDLc) levels. CO diets have also been shown to favourably moderate thrombotic tendency, insulin resistance, endothelial dysfunction, ventricular arrhythmia and inflammation.

Subjects and methods: A study was carried out in India to study the effect of substituting CO for the regular cooking oil on serum lipids of dyslipidemic patients. Middle aged (35-60 years) dyslipidemic patients (N=50), were randomly enrolled according to NCEP (2002) criteria for dyslipidemia (LDLc ≥130 mg/dl) and upon obtaining an informed written consent. CO was substituted in place of regular cooking/frying oil for 45 days followed by its discontinuation. Data were gathered at baseline (pre); on 46th day (post I); and on 91st day (post II).

Results: High MUFA and linolenic fatty acid intake brought a significant decrease in total cholesterol (TC) by 16.07 percent (p=0.000); LDLc by 15.3 percent (p=0.004) and TC/ HDLc ratio by 12.56 percent (p=0.04). Resumption of the usual oil showed an insignificant increase in the TC, LDLc, HDLc, TC to HDLc ratio, blood pressure and BMI.

Conclusion: It can be concluded that canola Oil exerts significant hypolipidemic effect on atherogenic lipids. Its use at household and institutional level should be considered.

Keywords: Canola oil, MUFA, linolenic acid, linoleic to linolenic acid ratio, CVD, dyslipidemia, LDLc, HDLc.
O005   Oral

Traditional uses and scientific evidence for a selected native medicinal plant from Jordan: a critical evaluation of Varthemia iphionoides.

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Background: Traditional uses and scientific evidence for a selected native medicinal plant from Jordan: a critical evaluation of Varthemia iphionoides.

Subjects and methods: The present study design investigated the effects of crude aqueous extracts (AE) of Varthemia iphionoides Boiss (Compositae), traditionally utilized in diabetes treatment in Jordan, on the pancreatic β-cell MIN6 proliferation and insulin secretion and extrapancreatic glucose diffusion. Additionally, In vitro enzymatic starch digestion with acarbose or (1-100 mg/mL) V. iphionoides aqueous extracts was assayed using α-amylase and α-amylglucosidase. Oral starch tolerance tests (OSTT) and oral glucose tolerance tests (OGTT) were determined for V. iphionoides extracts at concentrations 125, 250 and 500 mg/Kg body weight. Blood glucose levels in rats treated with plant extracts or drugs (acarbose or metformin and glipizide) were measured at -30, 0, 45, 90, and 135 min.

Results: V. iphionoides concentrations (0.5 and 1 mg/mL) induced MIN6 monolayers expansion by respective 1.39 and 1.31 folds (P<0.001), comparable to GLP-1 (500 nM) pancreatic proliferative capacity. Unlike L-alanine (10 mM) insulinotropic efficacy and without exerting cytotoxicity, glucose stimulated insulin secretion was not potentiated by V. iphionoides AE at used doses. Comparable to guar gum (50 mg/mL) diffusional hindrance in a simple dialysis model, V. iphionoides AEs (10, 25 and 50 mg/mL) inhibited overnight glucose movement in vitro dose dependently (by 10.8 4.6% - 29.4 6.7% AUC reductions, P<0.05-0.001).
vitro acarbose effectiveness, V. iphionoides (0.1-10 mg/mL) exerted significant dose dependent dual inhibition of \(\alpha\)-amylase and \(\alpha\)-glucosidase, with IC50 of 0.1 mg/mL. Comparable in vivo acute postprandial antihyperglycemic efficacies were obtained for acarbose in starch-fed rats. V. iphionoides, however, lacked any inhibitory efficacy. Besides, none of V. iphionoides extracts qualified for improving the glucose tolerance in fasted rats on glucose loading, unlike metformin or glipizide antidiabetic therapeutic efficacies.

**Conclusion:** These in vitro and in vivo evaluations have revealed that V. iphionoides augmented \(\beta\)-cell expansion and inhibited carbohydrate and digestion absorption. These actions depend on their intact absorption in vivo. Future directives may assess the use of V. iphionoides as a new potential source of active leads with anti-diabetes pharmacotherapy benefits.

**Key words:** Varthemia iphionoides Lam, MIN6, glucose diffusion, acarbose, glipizide, metformin, L-alanine, GLP-1, guar gum, Jordan
Potential Link between Bioactive Compounds of Saffron and Possible Anti-Obesity Effect

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Background: Obesity and overweight are global problems since they can lead to complications associated with risk of many diseases such as coronary heart disease, cancers, type 2 diabetes, hypertension and dyslipidemia. Although different types of obesity treatment drugs such as orlistat and sibutramine are available in the market, however cost and potential dangerous side-effects justified intensive investigation on possibilities of herbal products for managing obesity. Natural extracts and isolated compounds from plants have been reported to increase body weight loss and prevent diet-induced obesity. In this regard, antioxidants; carotenoids and polyphenols are the most significant. They are able to reduce levels of glucose, triglycerides and LDL cholesterol in blood, increase energy expenditure and fat oxidation, as well as lower body weight and adiposity. They are also capable of inhibiting enzymes related to fat metabolism such as pancreatic lipase. Saffron is a source of plant polyphenols and carotenoids, use as important spice and food colorant in different parts of the world. Recently, reports about the pharmacological activity of this plant increase its importance in the world. The purpose of this paper is to review the potential role of saffron and its constituents in the regulation of metabolic functions, which can beneficially alter obesity pathophysiology.

Subjects and methods: The method used for this study included searching Web of Science and Medline for saffron and its constituents health benefits between years 1993 to 2013.

Results: More than 100 papers have been published on medicinal properties of saffron. The medicinal properties include anti-cancer, anti-inflammatory,
anti-diabetic, hypotensive, hypolipidemic, hypoglycemic, antidepressant and mood improving effects that attributed to a number of its compounds such as crocetin, crocins and other substances (safranal) having strong antioxidant properties. Potential link of saffron’s bioactive that able to combat against obesity-mediated inflammation, oxidative stress and metabolic disorders is through its high antioxidant activity via different biological properties. Although the link between saffron’s bioactive compound and body weight is not definitive yet, based on scientific evidence the potential mechanisms can be classified into four major categories: (1) decreasing calorie intake by blocking dietary fat digestion via inhibiting pancreatic lipase, (2) acting as an antioxidant and suppressing inflammatory cytokines and adipocyte differentiation, (3) suppressing food intake by increasing satiety, or the feeling of fullness due to raising the level of neurotransmitters or hormonal functions, and (4) enhancing glucose and lipid metabolism via regulating glucose uptake in skeletal muscle cells.

**Conclusion:** Antioxidant-rich saffron compounds may modulate obesity and the associated metabolic disorders. They can be useful in prevention, control, and/or management of overweight and obesity condition. Due to lack of research in this field both pre-clinical and clinical studies are warranted to demonstrate saffron’s anti-obesity potential

**Key words:** Bioactive Compounds, Anti-Obesity, Antioxidant
Sardine protein improves insulin resistance and hypertriglyceridemia and modulates very low density lipoprotein composition in high fructose-fed rats

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Background: The metabolic syndrome (MS) is a common risk factor for cardiovascular disease and type 2 diabetes. The present study aims at exploring the effects of sardine protein on insulin resistance, plasma lipid profile and inflammatory status, as well as VLDL and LDL-HDL1 composition in rats with fructose-induced metabolic syndrome.

Subjects & methods: Twenty four Male Wistar rats weighing 200 +10 g were assigned into 4 groups and were fed casein (Cas) or sardine protein (SP) with or without fructose (F) for 2 months. Intraperitoneal glucose tolerance test were performed at 54 day of experiment. At the end of feeding, plasma glucose, insulin, tumor necrosis factor-α, leptin and lipids levels as well as VLDL and LDL-HDL1 composition were determined.

Results: The fructose-fed rats developed hyperglycemia, hyperinsulinemia, insulin resistance, altered glucose tolerance and high HbA1C, leptin and TNF-α and low GLP-1 compared to control rats. Moreover, fructose diets increased hepatic and circulating free fatty acids (FFA), triglycerides (TG), total cholesterol (TC), phospholipids (PL), apo B-100 and decreased apo A-I. We also observed a significant increase in VLDL and LDL-HDL1 mass, apolipoproteins, TG, PL, TC, UC and CE in F groups than in C groups. VLDL-apo A-I, B100, C and E were much higher after chronic consumption of fructose. Feeding SP-F diet improved insulin resistance and glucose tolerance and lowered plasma glucose, insulin, HbA1C, plasma FFA and TG and VLDL-TG and -TC and increased GLP-1 as compared to Cas-F diet. In
addition, rats treated with SP-F diet exhibited low plasma TNF-α and leptin as compared to Cas-F diet.

**Conclusion:** these results support the beneficial effect of sardine protein on insulin resistance, inflammatory status and hypertriglyceridemia through the modulation of VLDL amount and composition, suggesting the possible use of sardine protein as a protective strategy against insulin resistance and related situations.

**Keywords:** metabolic syndrome, fructose, rats, inflammation, lipids, lipoproteins
Nutrition-related diseases determined through anthropometric measurements among adolescent boys in Jazan

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Background: When children become adolescents, changes in food habits and food choices change. This is attributed to his growth and development. According to Singh (2005), she stated that teenagers have the reputation for having the worst eating habits in the world. The main purpose of this study is to undertake anthropometric measurements among adolescent boys in Jazan, Kingdom of Saudi Arabia in order to identify their nutrition-related diseases and to address the same.

Subjects & methods: The descriptive cross-sectional method was used. There were 137 adolescent boys willing to be measured participated in the study. Anthropometric measurements were carried out using a tape measure and a weighing scale. Values of Body Mass Index; Chest to Hips Ratio, Waist to Hips Ratio and Waist to Chest Ratio were obtained by using the calculators published in the internet for these purposes.

Results: Underweight were 20.4%; Normal weight were 53.3%; Overweight were 13.9% and Obese were 13.9%. For Waist to Hips Ratio, 74.45% belong to <0.9 while 25.55% belong to 0.9>; For Chest to Waist Ration, 86.13% belong to <1.1 while 13.87% belong to 1.1>; For Chest to Hips ratio, 4.38% belong to <0.8 while 95.62% belong to 0.8>.

Conclusion: Samples with normal weight were slightly more than those who were found overweight and obese. Hence, it is still considered that there is a high risk of nutrition-related disease among them. About one fifth are at risk with cardiovascular disease because of poor circulation due to poor exercise habits. There is a need to integrate proper nutrition and health in the general education curriculum to educate them and eventually change their lifestyle.

Keywords: Body Mass Index; Waist, Chest Hips Ratio; Anthropometric Measurements; Nutrition-Related Diseases
O011 Oral

Survey of effect sheep’s milk on grow and health of infants with sensitivity to protein of cow’s milk

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Background: Sensitivity to protein of cow’s milk is increasing among infants in developing countries such as Iran. Some problems of sensitivity to protein of cow’s milk include skin signs and gastrointestinal problems. Therefore, the article focuses on replacement other milk products instead of cow’s milks in diet of nursing mothers with infants suffering to sensitivity to protein of cow’s milk.

Subjects & methods: Participants of study were 10 nursing mothers and their infants who were referred to a nutrition and dietetics center in Tehran/Iran. The collection data were focused interview and consultant dietitian with nursing mothers. In continues, the researchers conferred with the neonatal specialists about the finding of focused interview with nursing mothers.

Results: The findings of study show that 7 infants of participants have sensitivity to protein of cow’s milk. However, dried milk with protein hydrolyzed is often recommended for the infants by the neonatal specialist; but the milk has bitter taste and the infants don’t like and eat it; therefore their growth will be impaired.

Conclusion: According to the results of study, the researchers suggest two solutions. The first solution is the replacement bufflehead’s milk instead of cow’s milk in diet of nursing mothers. The experimental observations show that the number of infants with sensitivity to protein of cow’s milk can tolerate protein of bufflehead’s milk. The second solution is the replacement sheep’s milk instead of cow’s milk in diet of nursing mothers that fortunately, the majority of infants can tolerate the protein of milk.

Keywords: sheep’ milk, protein, cow’s milk
O016 Oral

The effect of ginger consumption on glycemic status and some inflammatory markers in patients with type 2 diabetes mellitus

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Background: this study aims to assess the effect of ginger consumption on glycemic status and some inflammatory markers in patients with type 2 diabetes mellitus.

Subjects & methods: This is a double-blind, placebo controlled clinical trial. Seventy type 2 diabetic patients were enrolled. They allocated randomly in to ginger group (n=35) and control group (n=35). They consumed 1600 mg powdered ginger versus 1600 mg wheat flour placebo (1 capsule 800 mg before lunch and 1 capsule 800 mg before dinner) daily for 12 weeks. Serum sugar, C-reactive protein, prostaglandin E2 and tumor necrosis factor α were measured before and after intervention. Results: Sixty three patients were analyzed: Ginger group (n=33) and control group (n=30). Ginger reduced fasting plasma glucose, hemoglobin A1C, insulin, HOMA index, C-reactive protein and prostaglandin E2 significantly (p<0.05), compared with placebo group. However there were no significant differences in and tumor necrosis factor α between two groups (p>0.05).
Conclusion: Ginger improved insulin sensitivity and reduced C-reactive protein and prostaglandin E2 in type 2 diabetic patients. Therefore ginger can be considered as an effective treatment for prevention of diabetes complications.

Keywords: ginger, type 2 diabetes, glycemic status, insulin sensitivity, inflammation
O019 Oral

Inflammatory status and dietary selenium intake in non-Hodgkin lymphoma

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**Background:** Malignant non-Hodgkin (NHL) is the seventh most common cancer in the world; they are malignancies that develop from lymphoid cells. Chronic inflammation in patients with NHL poses a serious problem of prognosis. Selenium is a modulator of inflammation confirmed; dietary selenium intakes may have a close relationship with poor prognostic inflammatory revealed by serum C-reactive protein (CRP).

**Subjects & methods:** Twenty-three (23) NHL patients (eight women and five men with a mean age 48.26 ± 0.92 years) admitted to the hematology clinic of the University Hospital of Tlemcen Algeria were recruited to determine their CRP and assess their levels of dietary selenium by alimentaire.les survey data were processed by a professional nutrition software.

**Results:** serum levels of CRP in patients with NHL (>6 mg/L) showed a chronic inflammatory state parallel dietary intake of selenium are very minimal in these patients compared with recommended dietary these results can be explained by the food habits of the patient which does not include foods rich in selenium.

**Conclusion:** In addition to the tumor microenvironment inducible inflammation in patients with NHL, insufficient selenium intake food aggravates their prognostic inflammatory. Supplementation selenium is recommended for these patients.

**Keywords:** Non-Hodgkin Lymphoma, selenium, inflammation, C-reactive protein
O023  Oral

Debated points surrounding the diet quality concept

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**Background:** The term "diet quality" has recently gained considerable attention in nutritional research. Despite widespread use, it is often poorly defined and remains difficult to measure. Confusion surrounds the term as there is no consensus on how to define quality of the diet or to pin down a framework for producing a standard indicator. The composite and cut-off selection of most diet quality indexes depend on investigator's choices in line with research objectives. In addition to the frequently used dietary compliance-based approach, innovative approaches have emerged to construct diet quality indexes based on antioxidant and anti-inflammatory profiles of diet. Different viewpoints and overlapping interests may yield different interpretations. Most of the unresolved issues are related directly or indirectly to the multi-dimensional and open-textured nature of the concept.

**Subjects & methods:** This review aims to elucidate several debated key points in order to understand the reasons behind this confusion and address the complexity of how to define and quantify this concept.

**Results:** A standardized and well-defined outline of diet quality is important for both general public and different factors interested by the subject, particularly scientists and practitioners working in the fields of nutrition, public health, toxicology, sociology, and the food industry.

**Keywords:** diet, quality, concept
Description of Centralized Fat Status of Adolescent Girls in Saudi Arabia using Waist Circumference in Comparison to the UK Reference Data

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Background: Waist circumference (WC) is a generally accepted measure of central obesity, which is an important risk factor for a number of diseases such as cardiovascular disease (CVD). The majority of Saudi researchers commonly use the body mass index to classify overweight and obesity in adolescents1. However, some researchers considered BMI as just a proxy measurement of body fatness. Centralised excess body fat, which might carry an increased risk for obesity, is associated with metabolic complications in children and adolescents 2. Visceral fat measurements using tools such as WC can be used in the assessment of centralised deposition of excess body fat.

Subjects & methods: The objective of the study was to measure waist circumference of 1519 female adolescents aged 13 to 18 in Jeddah and to identify the centralized fat status of adolescent girls in Saudi Arabia. Measurements for WC were taken. Z-scores and percentile construction and smoothing for all WC measurements were performed for the all taken WC measurements using the LMS methodology3, followed by transformation of all individual measurements into standard deviation scores and the reference used for comparisons was the UKSDS4. Means and standard deviations were calculated and used to describe WC of Jeddah girls.

Results: Fat status of participants was categorized and described using frequency and percentages. The percentage of girls with waist-circumference scores ≥90th percentile was the highest (9.7%) among 13-years old girls compared to other age groups (Table 1). Girls who aged 17 years had the highest proportion (36.7%; 98 out of 370) of WC scores ≤10th
percentile. In comparison to the UK female population (12-17 years old), Jeddah adolescents had a higher WC among all compared ages. This could be due to genetics and environmental differences between UK population and Middle East5. The mean WC for Saudi girls in all ages (13 to 17 years) was above the 75th percentile (Table 2). Based on the cut-off point of 75th percentile as high WC6, 20% of Jeddah girls had a WC greater than or equal to the 75th percentile.

**Conclusion:** There is a dearth of information regarding the use of WC in evaluating body fatness of young girls in Saudi Arabia and this study has generated imperative data on values for the percentile WC of adolescent girls in Saudi Arabia, which could help to establish national criteria for determining central obesity based on this simple anthropometric measurement.

**Keywords:** Fat Status, Adolescent Girls, Waist Circumference
Effect of Coeliac disease on the human gastrointestinal tract

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**Background:** Coeliac disease is an important clinical disorder affecting the human gastrointestinal tract leading to multiple signs and symptoms in different body organs. This disease was the subject of a cross sectional descriptive-analytic study conducted in the Gaza Strip during 2010.

**Subjects & methods:** Objectives were oriented to identify and verify several variables and attributes affecting the prognosis of coeliac disease in the patients. Ninety five children out of 113 patients were arranged into two groups according to age from 2 to 11 years and from 12 to 18 years old.

**Results:** showed the poor interest of health professionals regarding coeliac disease in the Gaza Strip. The mean age of study population was 5.47 years for males and 8.93 years for females. The lifestyle of coeliac patients was directly proportional with better nutritional indicators. Poor recognition of the emblem illustrating gluten in foods implicates effective health awareness or promotion. The more knowledgeable patients or mothers (P=0.036) were the more compliant. The compliance to giving gluten free foods outside home was statistically significant (P= 0.037). Similarly, cautious approach when buying foods or detergents (P=0.011). According to BMI 74.4%, 23.4% and 3.2% of all patients were normal, underweight and overweight respectively. Albumin blood level was normal in 32.6% and low in 67.4%. Meanwhile, blood calcium level was normal in 76.8%, low in 21.1% and high in 2.1% of all patients.
Conclusion: The study showed that recreation and social activities for coeliac patients are substantially missing in the Gaza Strip. Moreover, the study proved that AEI is a reliable centre for care of coeliac disease patients and conducting relevant studies.

Recommendation: There is a need for thorough and continuous community and institutional mobilization regarding coeliac disease in the Gaza Strip and in Palestine.

Keywords: Body Mass Index: BMI; Coeliac Diseases: CD; Enteropathy; Endomyseal antibodies: EMA; Gluten; Tissue Transglutaminase: TtG

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Background: Celiac Disease (CD) is an immune-mediated disease affecting the small intestine secondary to exposure to gluten in genetically-susceptible individuals. Several disorders are associated with CD such as Down Syndrome (DS). The prevalence of CD in DS ranges between 4-17% in several studies which indicates that CD is common in DS. CD is prevalent in Arab populations; unfortunately, these are no previous studies in Down Syndrome children in Saudi Arabia.

Subjects & methods: the study aims to find out the prevalence of CD in Saudi patients with DS. This is a retrospective study of 91 DS patients who were seen in the pediatric Clinic at KFSH&RC. Data collection and analysis included the patient's demographics, symptoms, karyotyping, serological markers and histopathological data.

Results: 45 out of 91 patients (49.45%) positive AGA IgG levels. AGA IgA was positive in 27 patients (29.67%). Anti-reticulin was positive in 6 patients (6.59%). Anti-tissue glutaminase was positive in 13 patients (14.28%). Anti-endomysial antibodies were positive in 6 patients (6.59%). Biopsy was done in 23 patients who had positive serological markers, wherein 9 patients (8 females, 1 male) were confirmed to have CD (9.8%).

Conclusion: Our study showed a high prevalence of confirmed CD (9.8%) in Saudi patients with DS based on positive EMS and biopsy, which is in line with previously reported study results. This indicates the need to screen DS Saudi Arabian children for CD even if they are asymptomatic.

Keywords: Celiac disease, Down Syndrome children
Nuts consumption and frequency in physicians and nurses

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Background: Epidemiological studies have consistently demonstrated that frequent nuts consumption is associated with reduced risk of developing coronary heart diseases, type 2 diabetes, or death by overall mortality causes. Nuts are fatty foods and presumably for this, until recently, were ignored or treated with a great deal of caution on most dietary recommendation.

Subjects & methods: The aim of this study is about nuts consumption in physicians and nurses that work in educational hospital in Kerman. The cross sectional study was done in 2011-2012. Three hundred nurses and 200 hundred physicians were included. Study has done by a questionnaire that involved demographic information and questions about eating and frequency behaviors. All statistical analysis was performed by SPSS and P-value less than 0.05 was considered as statistically significant.

Results: Population of this study was 300 nurses and 200 physicians. Four hundred forty one of them completed questionnaire. Mean of age was 34.45±8.3. Mean of BMI was 23.94±4.17. Less than 10% of population consumed nuts habitually and 18.8% of them never ate it. Major of population ate them weekly.

Conclusion: Despite of nuts importance, their consumption is low among this population. Educational programs needed for developing of their knowledge and their usefulness of consumption.

Key words: consumption behavior, frequency behavior, nut, nurses, physician.
The Assessment of eating behaviors of obese, over weight and Normal weight Adolescents in Southern Iran

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Background: Obesity is one of the most common nutritional problems in adolescent. Knowing eating behavior of adolescents improve our understanding about this pandemic and helps design an appropriate preventive and care plan.

Subjects & methods: In a cross-sectional study, 372 students selected randomly from 8 guidance schools of Shiraz, Iran, during August-December 2009. Body weight was measured to the nearest 0.1 kg, height was measured in bare feet to the nearest 0.5 cm. Adolescents with a Body Mass Index ) BMI( over the 85th but less than 95th percentile are considered overweight and those with a BMI greater than the 95th percentile are considered obese. Eating behaviors was assessed using Dutch eating behavior questionnaire (DEBQ). The analysis was performed using the SPSS statistical software version 13. A p-value of less than 0.05 was considered as statistically significant.

Result: The mean age of adolescent was 13.43 0.973 years. Of population studied, 23.9%, 22.35% and 53.8% were found to be obese, overweight and normal weight There was significant differences between restrained and external eating score in obese and overweight groups (p= 0.0001). Restrainted eating score in obese and overweight adolescent was higher than those of normal weight group. There was no significant difference between emotional eating behavior in adolescent (p>0.05). There was a positive significant correlation between dietary restriction and BMI (r = 0.36) in adolescent (p= 0.000).

Conclusion: Understanding the individual differences in eating behaviors is the first step in modifying programs for obesity. Emotional eating behavior is also recommended to be considered in designing preventive programs.

Keywords: Eating behaviors, Obese, Overweight, Normal weight, Adolescents
Addressing Structural and Individual Challenges Food Security in Development of No More Hunger

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**Background:** Addressing Structural and Individual Challenges Food Security in Development of No More Hunger (No More Hunger), an innovative promotora-driven nutrition education and skill-building curriculum for Mexican-origin older adults in Texas border colonias.

**Subjects & methods:** Mexican-origin older adults who live along the Texas-Mexico border experience high rates of poverty, food insecurity and hunger, and health disparities. Among this hard-to-reach population, promotoras de salud (community health workers) serve as a cultural bridge, provide outreach, and are recognized as respected health advocates and peer health educators. The purpose of this study was to design, develop, and pilot test curricula and instructional materials that provide promotoras with knowledge and skill-building training to target older adults through tailored and culturally appropriate information and skill building on food acquisition and preparation using community food resources.

**Methods:** In 2012, 95 Mexican-origin older adults participated in 14 Spanish-language focus groups (FG) to determine information and skill needs. Limited-resource participants described their experiences and beliefs in discussing how they get food to eat at home; when they do not have enough money for food; when they do not have enough food to eat; major concerns; decision-making when confronting competing demands for resources; planning for meal preparation; source of nutrition information; and community resources.

**Result:** Based on the FG, No More Hunger (No More Hunger) was developed and consists of seven modules of instruction that engage and empower promotoras to deliver evidence-based information and skills in the homes of older adults, using Adult Learning Theory, interactive instructional modules, and case-based discussions to guide resource-dependent education. Pre- and post-tests comparisons were assessed for each module.
Conclusion: Older adults are key in identifying issues regarding food acquisition and food preparation knowledge and skills needed to increase food security and nutritional health. Their voices stress the need for contextually-situated efforts to enhance nutrition knowledge and skills and to effectively apply the science of human nutrition to meet the needs of this vulnerable population.

Keywords: Challenges, Food Security, Development, No More Hunger
Background: Validity of the Canadian national nutrition reports and the basis for formulation of nutrition policies at national and provincial levels are largely influenced by quality of CCHS national nutrition data. The objectives of this study were to assess the accuracy of energy reporting in CCHS 2.2 dataset and to evaluate the characteristics associated with misreporting of energy intakes.

Subjects & methods: Validity of energy reporting data for adults ≥19 yr who had complete records for sociodemographic and food intake variables was analyzed. IOM equations were used to calculate estimated energy requirements (EER). Disparity values were calculated by subtracting EER from reported energy intakes. McCrory’s intervals were used to identify cut-off points of EI: EER ratio for CCHS 2.2 dataset. Bootstrap technique was applied to estimate p-values, confidence intervals, standard errors and coefficients of variations.

Results: Under-reporting and over-reporting of energy intakes were observed among 33.87% and 9.72% of participants, respectively. Participants who were overweight and obese, diabetic, female, smoker, physically active and older were more likely to misreport their caloric intakes. Disparity values were approximately 300 Kcal/day, which indicates a significant misreporting.

Conclusions: Across the different adult DRI age groups, energy reporting accuracy data were not physiologically plausible among over 40% of participants. Due to strong association of energy reporting accuracy with sociodemographic factors we hypothesize that the distribution of intakes for several nutrients could be potentially influenced by misreporting. These
preliminary results emphasize the importance of considering methodological limitations in generating public policies related to diet-disease relationships. Funding support: M.J. is supported by “Vanier Canada Graduate Scholarship” and the “CIHR/CCO Fellowship in Population Interventions for Chronic Disease Prevention”

**Keywords:** Community, Health, Survey, Nutrition
Background: Many randomized controlled trials have studied the efficacy of SMBG in lowering HbA1c, and results have been conflicting. Numerous trials have been carried out to determine the true impact of SMBG on glycaemic control. Some, including randomized, controlled trials, have demonstrated the efficacy of SMBG. Self-monitoring of blood glucose (SMBG) is advocated as a valuable aid in the management of diabetes. SMBG has a number of theoretical advantages/disadvantages which might impact on treatment, outcome and wellbeing.

Subjects & methods: Investigating and quantifying the effect of self-monitoring in a condition where self-management plays a central role poses major methodological difficulties because of the need to minimize confounding factors. Despite the absence of definitive evidence, some situations where monitoring is generally accepted to be beneficial include patients on insulin, during pregnancy, in patients with hypoglycaemia unawareness and while driving.

Results: The impact of monitoring on patient wellbeing must also be considered, with some studies suggesting adverse psychological effects. Given the large increase in the prevalence of type-2 diabetes, it will be important to define the role of SMBG so that resources can be used appropriately. The justification is that SMBG is an important component of modern therapy for diabetes mellitus. The Self-monitoring of blood glucose (SMBG) is an important adjunct for optimizing glycaemic control, owing to its ability to differentiate between fasting and postprandial hyperglycaemia.
and to provide feedback on the effects of food choices, medications, and exercise.

**Conclusions:** Control of postprandial hyperglycemia is essential for achieving recommended HbA1c goals. Control of fasting hyperglycemia is necessary but usually insufficient for achieving HbA1c goals <7%. Self-monitoring of blood glucose (SMBG) data is a useful tool for identifying and managing postprandial hyperglycemia (PPHG). PPHG and postprandial glucose excursions occur frequently in patients with diabetes even when hemoglobin A1C is controlled below 7.0%, and convey increased risk of cardiovascular morbidity and mortality. Glucose variability and oxidative stress is often a concern in diabetes complication control.

**Keywords:** Self Monitoring, Blood Glucose, Medical Nutrition, Post Prandial, Hyperglycaemia
The Effect of Elevated Serum α-tocopherol Levels on Liver Transaminases in Children with NASH Treated with Oral Vitamin E

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**Background:** Objectives of this study were to examine the effect of increased serum α-tocopherol levels on liver transaminases in children with nonalcoholic steatohepatitis (NASH) treated with oral vitamin E supplementation.

**Subjects & methods:** We retrospectively reviewed medical records of all patients < 18 years of age who were seen at our liver centers for elevated liver enzymes with biopsy proven NASH and without any other known cause of liver disease. They were started on vitamin E oral therapy. Body mass index (BMI), liver transaminases, and α-tocopherol levels were obtained prior to vitamin E treatment and at the subsequent follow-up visits.

**Results:** These patients had increases in α-tocopherol levels from baseline during the first 6 to 9 months of treatment, with subsequent levels being similar to those at baseline. For all time intervals during follow up, which varied between 3 to >24 months, there were improvements in ALT and AST levels compared to those at baseline. There was an inverse relationship between the changes in VitE and ALT levels during the first 12 months of treatment that was statistically significant for the 9-12 month interval (Spearman Correlation Coefficient -0.85, p = 0.02). The same trend was observed between the changes in VitE and AST levels, but no statistical significance was achieved.
**Conclusions:** Children with NASH who were treated with vitamin E oral supplementation demonstrated improvement in liver transaminases in the first 12 months of treatment. Increases in α-tocopherol levels were associated with favorable changes in the transaminase levels, though was only statistically significant for ALT.

**Keywords:** Serum α-tocopherol Levels, Liver Transaminases, in children NASH, Vitamin E
Diet and nutrition style changing has affected the oral health

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Background: Oral health is a necessity to total health. Nutrition and also diet are the most important factors to prevent oral diseases. So, the aim of the present study was to determine the effect of nutrition and diet changing on oral health, comparison with the other risk factors.

Subjects & methods: This longitudinal study was performed among one hundred 12 year old children who were selected by systematic random sampling in 1996 and again in 2011 in same age group in Zanjan/Iran. DMFT (Caries Index) was determined by WHO standard examination method. Oral health information, access to dentist, oral hygiene statue by PI (Plaque Index), FT(Filled Teeth Index) and DT(Decayed Teeth Index), diet and nutrition statue based on family habits were investigated by a questionnaire. The data were analyzed by chi-square and t test.

Results: DMFT was 1.4 (SD= 1.02) in 1996 and 2.3 (SD=1.96) in 2011 (P<0.0001). Oral health information, FT/ DMFT, PI (oral hygiene), access to dentist among study group were significantly improved (P<0.05). Diet style was changed from the point of food texture, type and form. There was significantly relationship between nutrition and diet changing with DMFT (P<0.0001). Family nutrition style also was changed from low carbohydrate, high fiber toward high carbohydrate, low fiber intake.

Conclusion: Despite improvement on the oral hygiene and dental care access, DMFT increased. From the point of changing the diet and nutrition degree toward low qualification, oral health could be more affected by diet and nutrition style changing. So, a hypothesis was risen

Keywords: Oral health, Oral hygiene, DMFT, Diet, Nutrition
Obesity, unhealthy food habits and nutritional knowledge of primary school children in Shiraz Iran, 2013

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Background: Obesity is one of the main risk factors of chronic diseases in adults and childhood obesity is related to adulthood obesity. Some studies indicate that there is an association between unhealthy food habits and obesity. So we did this study to evaluate the association between obesity, unhealthy food habits and nutritional knowledge of primary school children in Shiraz.

Subjects & methods: This study was carried out on 209 grade 4 children, selected by cluster sampling in primary schools of Shiraz. Weight, height and waist circumference, were measured. Nutritional knowledge, socioeconomic and food frequency questionnaires were completed. Data was analyzed using SPSS version 16.

Results: Mean SD of BMI and WC were 18.50 ± 4.99 (kg/m2) and 63.17 ± 8.12 (cm) respectively. Prevalence of obesity was 10%, overweight 19.6% and central obesity 9.6%. Intake of dairy (1.67 ± 1.12 serving/day) and fruits + vegetables (3.09 ± 1.93 serving/week) were significantly less than the recommended amounts (P<0.001). Frequency of fast food and sweets were 2.37 ± 2.30 (serving/week) and 18.54 ± 12.42 (serving/week) respectively. Results showed that BMI (r=0.16, P=0.02) and WC (r=0.28, P<0.001) were negatively correlated to children nutritional knowledge. There was no correlation between BMI or WC and frequency of fast foods, sweets, dairies, fruits and vegetables consumption.

Conclusion: Results of our study indicated that high prevalence of obesity among the Shiraz children was not the result of unhealthy food habits and may be affected more by total energy intake or inactivity. Also it seems that parents concerns about the health status of their obese children led to better nutritional knowledge of them.

Keywords: Obesity, food habits, nutrition, primary school,
Diabetes, Hunger, and Health among Mexican Immigrants along the Texas-Mexico Border in U.S.

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Background: Diabetes is a growing problem in the United States, especially among racial and ethnic minority populations. The population of Mexican-origin immigrants who reside in colonias along the Texas-Mexico border is dramatically increasing; however, little is known about the effect of diabetes status on physical characteristics, health, and food security.

Subjects & methods: In 2012, six promotoras de salud (community health workers) trained in research methods completed 2,594 Spanish-language, door-to-door surveys of Mexican-origin women living in colonias in functionally rural areas of Hidalgo County (Texas). The self-reported data included demographic characteristics, physical characteristics and health, nutrition assistance, and food security.

Results: Almost 16% (n = 412) reported having diabetes. Women with diabetes (WD) were older, less educated, not married, and without children in the household. Compared with women without diabetes (WOD), WD were more likely to have heart problems (25.9% v. 4.3%), lung/breathing problems (17.2% v.3.6%), obesity (61.1% v. 46%), fair/poor overall health (79.4% v. 43.5%), entire last month physical health or mental health not good (20.3% v. 6.3%;19.8% v. 8.6%, respectively), and fair/poor overall quality of diet (61.6% v. 46.3%). WD were more likely to report anxiety about running out of food (57% v. 49.6%) and experiencing moderate and severe hunger in the last month (32% v. 25%; 7.5% v. 4.1%). WD were more likely to have experienced food insecurity and hunger during childhood.

Conclusion: Findings suggest that women of Mexican-origin concurrently experience high rates of diabetes, poor health, obesity, and hunger. The clustering of these interrelated proximate factors and outcomes pose significant and complex problems for diabetes self-management and prevention of functional decline and disability. Future efforts require focusing on economically-disadvantaged individuals, families, and communities.

Keywords: Diabetes, Hunger, Health
Parental styles and perceived adolescents' autonomy towards diabetes treatment

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Background: Parental styles can be classified on the basis of two dimensions, warmth and control. We explore the different parental styles of adolescents with diabetes, and the relation between these styles and the adolescents’ autonomy toward diabetes treatment, as perceived by parents. We also investigated whether these parental styles change between a mother and a father or between genders.

Subjects & methods: Twenty nine parents of adolescents with diabetes signed up at the diabetes clinic of Sainte-Justine University Health Center. Individual telephone semi-structured interviews were carried out with twenty nine parents, sixteen mothers and thirteen fathers having an adolescent with diabetes. Qualitative analysis of recordings was performed using the software Semato where we looked for indicators of parental styles and responses related to adolescents’ autonomy with regard to glycemic control as perceived by their parents.

Results: The majority of parental styles exposed warmth over control. Data analysis revealed the exercise of both warmth and control in managing diabetes treatment, with mothers being more controlling than fathers. Overall, the warmth factor was associated with increased adolescents’ autonomy toward glycemic control.

Conclusions: Data analysis demonstrated that authoritative parental style, characterized equally by warmth and control, may be recommended in families with chronically-ill adolescents. Other parental factors are important to be considered and suggest further work.

Key words: parental style, diabetes, adolescents, treatment, glycemia, autonomy
Standard” nutritionist follow up v/s “eating behavior programming. A longitudinal randomized controlled pilot study.

Jad Wehbe, ST joseph university, lebanon

Background: There are more than one billion overweight people in the world. According to the WHO, nutrition is one of the most important components of health. Nowadays, Patient’s tailored diets are in the spot light while the correct eating patterns and habits remain in the shade. A correct eating pattern is the framework of any life lasting effective diet. However, the concept of “eating behavior” is not the main focus during the nutritionists’ academic studies nor later on in their practice. Good eating behavior is the foundation for the maintenance of a weight loss diet’s outcome. To this effect, the mastering of a fast and practical tool is a must. To this day, most nutritionists do not acknowledge nor have the know how of the technique that orients the patient towards staying in control of their long term eating behavior.

Subjects & methods: This study is about “eating behavior programming” (EBP), a technique that nutritionist can use and teach their clients. It is based on many neurological findings and principles. EBP is a newly found technique that uses a combination of preexisting food independent and unrelated self improvement methods as tools for correcting eating behaviors. EBP is an integrative approach; it includes traditional and alternative concepts. In order to prove the effectiveness of the EBP we designed a longitudinal randomized controlled study on 105 pre-obese candidates (BMI=25.00 - 29.99) with no specific health issues. The study was performed by different nutritionists and was spread out over a period of seven months. We had a control group of 52 people and an EBP experimental group of 53 people. Both groups filled the “Three-Factor Eating Questionnaire—Revised 18-Item” (TFEQ-R18) at the beginning of the study and did the same at the end. The control group was followed up by a nutritionist on a one hour weekly session for a period of three months and
left unattended for the remaining four months period. The experimental group was followed up by a nutritionist and an EBP on a half hour weekly each, in addition to a daily 5 minutes home workout program of specific concentration exercise 3 times a day. For the remaining four months, the control group was left unattended but kept the home workout regimen.

Results: Both groups showed significant improvement in their BMI (p<0.05), the experimental group had an improved result (p<0.01). The outcome of the TFEQ-R18 questionnaire was as follows: The control group showed some improvement in the cognitive restraint scale (p<0.05), but poor difference concerning the uncontrolled eating scale (p>0.2) and the emotional eating scale (p>0.3). The EBP group showed great improvement in the 3 aspects of the TFEQ-R18, the cognitive restraint scale (p<0.01), the uncontrolled eating scale (p<0.001) and the emotional eating scale (p<0.001).

Conclusions: The classical follow up of a nutritionist, pushes the person to be more aware and have better control of the quantities and qualities of the meals, but it has no significant effect on the emotional eating, neither on the ability to overcome hunger and food temptation. On the other hand, the EBP focuses on the control of food temptation and on the emotional eating. It also promotes and facilitates the person’s cognizance and of the consequence and effect of food quality and quantity intake.

Key words: Standard, nutritionist, follow up, eating, behavior
The risk of developing malnutrition in children with end stage renal disease treated with hemodialysis

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Background: The risk of developing malnutrition in children with end stage renal disease (ESRD) treated with hemodialysis (HD) is increased during dialysis. Aim of the study; to evaluate and reevaluate the nutritional knowledge following interventional educational sessions for six months to children with ESRD on regular HD.

Subjects and methods: A pre-designed questionnaire was done for 40 children with ESRD treated with HD at the beginning of the study, followed by 6 months of educational sessions and reevaluation of the nutritional knowledge by post sessions questionnaire. We also measure the anthropometric measures before and after those six months to evaluate impact of those sessions on these measurements.

Results: Comparisons between number of correct answers in most questions of the questionnaire concerning nutrition elements post education session showed statistically significant and high significant increase than the pre sessions questionnaire in correct answers about most elements. While there was non-significant increase in correct answers about both zinc and copper. We found a highly statistically significant increase in patients scores and in adequate knowledge at the final questionnaire. Our results showed statistically significant decrease in BMI and weight, and statistically non-significant increase in height after educational sessions for six months. And we found that there were statistically non-significant decrease in serum phosphorus, ferritin, Iron and creatinine, while non-significant increase in hemoglobin, serum calcium, Blood urea nitrogen, and Serum albumin.

Conclusion: We concluded that nutritional education are effective significantly as regard the level of knowledge but as regard attitude and practice (presented by the impact on anthropometric measures and the biochemical markers) the effect is limited.

Key words: Malnutrition, renal disease, hemodialysis
What Do Overweight Saudi Women Want in a Weight loss App?

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Background: The prevalence of obesity in most of the Gulf countries equals or exceeds the obesity rates of the United States of America (USA). There is evidence that mobile phone technology is being used to promote health and specifically, weight loss. Saudi Arabia (SA) is one of six countries that have been reported to have the highest smart phone users in the world. This technology provides an opportunity to reach and influence Saudis daily lives. A review of Arabic weight loss Apps identified that those available, have low levels of compliance with weight management guidelines. This study aims to explore the proposed features for a weight loss application (App) by seeking the experiences and opinions of overweight and obese Saudi women themselves.

Subjects & Methods: Four focus group discussions (FGD) were conducted with a purposive sample of 39 volunteer overweight and obese Saudi women (body mass index (BMI) ≥ 25), older than 18 years, who own a Smartphone) to seek participants opinion of using smart phone Apps to support weight loss, and their experience and feelings about features of such Apps. All transcribed, translated discussions were thematically analyzed, categorized for each of the main topics of discussion and specific quotations were identified.

Results: Few participants were aware of the availability of health-related Apps. Study findings showed that Saudi women would prefer the weight loss App to be in Arabic and culturally sensitive. Social networking emerged as an important feature to provide motivational support. A number of barriers to weight loss including motivation, support (social and professional), boring diets, customs and lifestyle were identified. Ease of use and tracking tools were highly regarded.
**Conclusion:** Arabic, user-friendliness and social support are valued features that were suggested by Saudi overweight and obese women. These findings will inform the development of an Arabic Weight loss App as the basis of a weight loss intervention.

**Key words:** Mobile technology, weight loss management, Focus group discussions (FGD)
**Comparison pomegranate juice with sour cherry juice on serum lipids and blood pressure in type 2 diabetic patients**

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**Background:** Type 2 diabetes is one of the most prevalent endocrine diseases in the world that results from a combination of insulin resistance and β-cell failure. Regarding importance of nutritional factors in management of diabetes, this study was designed to explore the effects of pomegranate juice and sour cherry juice on serum lipids and blood pressure in type 2 diabetic patients at Yazd Diabetes Research Center in 2013.

**Subjects & Methods:** Fifty type 2 diabetic patients (25 women and 19 men) with a mean age of 57.6±7 years and body mass index (BMI) of 26.9±3.6kg/m2 who were taking oral antidiabetic agents (Sulfonylurea or/and Metformin) or an anti-diabetic dietary regimen alone were recruited in this Parallel Randomized clinical Trial. After obtaining informed consent, the subjects received cherry or pomegranate concentrate in 40 g / day cans. 24-hour dietary recalls were obtained at the first, and end of the study. The step 1 heart diet was administrated for subjects. Height and weight were taken by Seca scale Blood pressure measured using a standard mercury sphygmomanometer (Alpk2, japan). Blood samples were collected after an overnight fasting. Total cholesterol, high-density lipoprotein [HDL] cholesterol, triacylglycerol [TG]) and Plasma glucose were measured at baseline and after 8 weeks by enzymatic methods (PARS AZMON-Iran). The changes of absorption/time ratio and oxidation parameter such as delay time in start of oxidation(Lag-time), the highest speed of oxidation in during test (V-max) and the highest aggregation of components derive of oxidation in during the test(OD-max) were calculated by Excel software. MallonDi Aldehyde was measured by thiobarbituricacid (TBARS) method. Statistical analysis was performed using Statistical
Results:
It was found in the present study that systolic blood pressure after pomegranate (131.5±21.3, 122.6±17.9) and cherry juice (133.3±16.6, 122.9±26.1) reduced significantly (0.01, 0.02 respectively). Changes in systolic blood pressure between pomegranate and cherry juice hadn't significant differences. After consuming pomegranate juice dbp, TC, LDL and FBS diminished. After using cherry juice weight, dbp and HbA1C decreased (Ns). After cherry juiced, Vmax, MDA increased but Lag time decreased (Ns). After consumption of pomegranate concentrate, none of these factors hadn't change.

Conclusion: Our findings indicated that after consuming pomegranate juice TC, LDL, FBS diminished and after using cherry juice weight, dbp and HbA1C decreased.

Keywords: Type 2 diabetes, Pomegranate juice, Sour cherry juice
Diabetes modifies the association between vegetable intake and pancreatic cancer risk

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**Background:** Little is known about the etiology of pancreatic cancer, and preventive and screening efforts have not been successful. There have been some reports that diets rich in fruit and vegetables may reduce the risk of pancreatic cancer, but results have been inconsistent. Diabetes has been implicated as a possible risk factor for pancreatic cancer and vegetable intake may be associated with risk of diabetes.

**Subjects & Methods:** To assess the association of vegetable consumption and pancreatic cancer and the effect modification of diabetes, we conducted a hospital-based case-control study from January 2000 to May 2008. Cases and controls were frequency-matched on race.

**Results:** Age (±5 years), and sex. Vegetable consumption data were collected using a validated food frequency questionnaire. Associations between each vegetable group and pancreatic cancer were assessed using unconditional multivariate logistic regression. The effect of diabetes on the association of vegetable consumption and pancreatic cancer was assessed with a multiplicative interaction term using the likelihood ratio test. A total of 713 cases and 734 controls were included in the final analyses. Significant inverse associations with pancreatic cancer were found in total vegetables (P=0.02), cruciferous vegetables (P=0.04), celery (P=0.009), and beets (P=0.04). In the stratified analyses, vegetable consumption was not associated with a reduced risk of pancreatic cancer in non-diabetics, but an inverse association was found in those with diabetes.

**Conclusion:** This effect modification was significant in dark green vegetables (Pinteraction=0.02) and corn/limas/peas (Pinteraction=0.01). Diets high in vegetable intake reduce the risk of pancreatic cancer, and the presence of diabetes modifies this association.

**Keywords:** Diabetes, vegetable, pancreatic, cancer
Appropriate nutritional modification, complementary treatment for infertile male: Systematic review of a decade

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Background: There is growing evidence that reinforce appropriate dietary modifications, nutritional supplementation and eating behavior amendment can improve the natural conception rate of infertile couples and increases the success rate of assisted reproductive techniques (ART). Objectives: The purpose of this study was to conduct a systematic review of high quality studies to investigate the latest findings relating nutrition, male infertility and ART success rate

Subjects & Methods: A comprehensive review of English published human studies of the last decade was carried out by searching PubMed, Google Scholar, Evidence Based Medicine of Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews and EMBASE. Article selection was in accordance with guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. The American Dietetic Association Research Design and Implementation Checklist were also used to assess the quality of potential articles.

Results: A total of 648 articles were identified, from which 14 studies (2 cross sectional, 8 RCTs, 3 case controls and 1 open label prospective study) met the quality assessment criteria. Following results were obtained from this review: 1) Semen quality and treatment outcome is positively associated with a diet rich in fruits, vegetables, fish, whole grains, omega-3 fatty acids (1.8 g/day DHA) and number of meals per day 2) Lipophilic foods (such as meat and milk) and xenoestrogens which are highly accumulated in fat-rich foods (e.g. meat processed foods) as well as soy isoflavones and sweets decline semen quality 3) Supplementation with L-carnitine (2-3 g/day for
minimum 24 wks) improves sperm motility and total count

4) Administration of CoQ10 (200 mg/day at least 26 weeks) significantly improves sperm quality and pregnancy outcome

5) Among antioxidants only vitamin E (400 mg/day) significantly improves sperm count, progressive motility and pregnancy rate

6) Under nutrition, weight loss and inadequate calorie intake even in infertile male are the dominant factors regulating frequency of gonadotropin pulses and reproductive activity and negatively associate with ART success

7) Viability of transferred embryo, implantation and early post implantation development may be conditioned to paternal dietary pattern.

**Conclusion:** Couples seeking assisted reproduction treatments must be advised about the drastic effect of daily nutrient exposure and diet quality on their treatment success. However, further studies need to address the mechanism of action of these dietary interventions. The optimum dosage and duration of certain supplementations still requires to be further clarified.

**Keywords:** nutritional, modification, complementary treatment, infertile male
Diabetes Self Management Education and Training towards the prevention of Complications.

Maria Reynolds, Centre for Diabetes and Research, Ajman, United Arab Emirates

Background: Several studies and outcomes measures have demonstrated continuous quality improvement and the importance of successful diabetes self management education and training in the promotion of quality of life towards the prevention and delay of diabetes related. Diabetes is a complex disease that requires daily self-management making healthy food choices, staying physically active, monitoring your blood sugar and taking medications through the diabetes care team approach. Through the resources of a diabetes educator and diabetes healthcare professional, large amounts of complex information is communicated to people with diabetes in order to assist with the versatile high quality self care behaviors needed to cope with complication prevention and control of diabetes on a daily basis.
Mechanisms of inhibitory effects of chemical chaperons of polyol family, saffron aqueous extract and crocin on protein glycation in both in vitro and in vivo and therapeutic effects of this compounds on type II diabetic rats

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Background: In the present research, we studied the effects of the saffron aqueous extract, crocin and chemical chaperones such as polyols on biochemical parameters of serum and urine in streptozotocin-induced type 2 diabetic rats.

Subjects & Methods: Neonatal male Wister rats, 2-5 days old were housed and then they were randomly divided into healthy and diabetic groups with or without treatment. Diabetic groups received i.p. injection of streptozotocin (90 mg/kg body weight). Diabetic groups were treated with saffron aqueous extract (100 and 150 mg/Kg body weight), crocin (50 and 100 mg/Kg body weight) interiperitoneally injection and polyols glycerol and inositol % 0.5 w/v in drinking water. The study continued up to the end of month 5.

Results: The results indicate a decrease in the mortality rate and a significant increase (P<0.001) in the body weight of diabetic rats treated compared to the diabetic group. Administration of chemical chaperones in diabetic rats were effective in decreasing the levels of glucose, HbA1c, TG, total cholesterol, LDL, oxidative stress, creatinuria and albuminuria and increasing HDL level, HDL functionality and hsp 70 in serum.

Key words: Diabetes mellitus, rat, streptozotocin, crocin, saffron aqueous extract, polyols
Measuring Resting Metabolic Rate for effective Weight Loss

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Background: Among the population of the Middle East aged 20 and older, the prevalence of overweight and obesity is reported to be 68%. [Regional Strategy on Nutrition 2010-2019 WHO EMRO]. Weight gain is a consequence of eating more calories than the body uses. A range of predictive equations for Resting Metabolic Rate (RMR) had an error for an individual ranging from 233 Kcal to 426 Kcal. Concluded that when available measuring RMR is the best option in individual patient care.

Subjects & Methods: To demonstrate the effectiveness of weight loss based on measuring RMR rather than estimating we selected a male subject who initially weighing 84.7Kg An RMR was estimated to be 1861 KCal using the WHO equation – (REE =11.6xKg + 879). Using a standard Physical Activity Level (PAL) multiplier of 1.3, A Total Energy Expenditure (TEE) was calculated to be 2419Kcal. A typical diet intervention might suggest aiming for a daily deficit of 500Kcal, so this would require a daily consumption of 1919Kcal.

Results: However when the subject was measured using the GEM Indirect Calorimeter, the actual RMR was 1968Kcal. Using the same PAL of 1.3 this represents a TEE of 2558Kcal. RMR is the minimum number of calories that a body needs to maintain healthy functionality, so the estimated equations would not even provide this basic level of nutrition. Rather, an energy deficit diet of 375 Kcal was adopted and this resulted in a weight loss of 2.2 Kg over 45 days. This suggests that it is essential to measure RMR as part of a successful weight loss intervention. In line with the WHO recommendations that stated ‘RMR predictive equations are to be revisited, reviewed and revised and there is an urgent need for more TEE and measured BMR studies’. We propose further research measuring RMR particularly targeting the local population.

Keywords: Resting, Metabolic Rate, Weight
Clinical presentation of inflammatory bowel disease in Saudi children

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Background: Inflammatory bowel disease (IBD) include Crohn's disease (CD), ulcerative colitis (UC), and indeterminate colitis (IC). IBD is a disorder characterized by chronic inflammation of the gastrointestinal tract with frequent relapses and remission course. There is limited information about this disease in Saudi children despite a rising worldwide incidence of IBD.

Subjects & Methods: Objective of the study is to study clinical and demographic characteristics of Saudi children diagnosed with IBD at the time of presentation, lag in Diagnosis, disease localization, growth, Pediatric IBD patients, and comparing these data with the international data. Study design; This is a retrospective study where the charts of all children less than 14 years of age who diagnosed as IBD and followed up in King Faisal Specialist Hospital and Research Center from January 2001 to December 2012 were reviewed.

Results: There were 66 children diagnosed with IBD, 36 (54.5%) had Crohn's disease (CD), 27 (41%) had ulcerative colitis (UC), and 3 (4.5%) had indeterminate colitis (IC). A male predominance is demonstrated in both CD (61%) and UC (56.6%). The mean age at diagnosis was 9.3, 7.3 and 7.5 years in CD, UC and IC respectively. A positive family history was found in 19.7% of all patients. The commonest presenting symptoms were diarrhea (89.4%), rectal bleeding (75.8%) and abdominal pain (62%). The most common site affected in CD was ileocolonic region (41.6%) while pancolitis was predominate in UC (74.1%).

Conclusions: CD is the most prevalent form of IBD in Saudi children; Male predominance and high rate of growth failure were documented in children with CD. Clinical presentation, family history and disease localization are comparable to international data Clinical presentation of inflammatory bowel disease in Saudi children

Keywords: inflammatory bowel disease,
Predictors of malnutrition in Egyptian children with congenital heart disease

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Background and aim: To assess predictors of malnutrition among children with congenital heart disease (CHD).

Subjects and Methods: Between May 2008 and May 2012, a cross-sectional survey was conducted among 189 children, at the national insurance hospital cardiology clinic. Study population were male and female children younger than 18 years, diagnosed with Congenital heart disease. Weight/Age (W/A), Height/Age (H/A) and Weight/Height (W/H) were used to measure nutritional status; Z scores greater than -2 was the case definition of malnutrition. Predictors investigated were age, gender, perinatal history, dietary factors and nutritional supplementation, socioeconomic status, and family composition and educational status. Four CHD groups were studied: acyanotic with and without pulmonary hypertension (APH, AWPH) and, cyanotic with and without pulmonary hypertension (CPH, CWPH).

Results: APH was the most frequent CHD (62.7%), followed by CWPH (19.6%), AWPH (10.5%), and CPH (7.2%). Malnutrition was identified in 40.9% children with the W/A index, in 24.6% with the H/A index; and in 31.1% with the W/H index. Infants and the CPH group had the worst nutritional status. Risk factors associated with malnutrition were: having a cyanotic CHD (OR 2.43; 95%CI, 0.99-4.78), lack of nutritional supplementation (OR 2.18; 95%CI, 1.05-5.14), and a greater number of family members (OR, 1.33; 95%CI, 0.99-2.05). Older children were more likely to be well-nourished (OR 0.82; 95%CI, 0.88-0.96) with a tendency towards less severe congenital heart disease.

Conclusion: Malnutrition is frequent among children with CHD; it is more common in younger children and in those with cyanotic CHD. Health educational programs directed to the families of these children are needed to combat frequency of malnutrition.

Keywords: malnutrition - children - congenital heart disease
O068 Oral

Some teratogenic effects of aflatoxin B1 in balady rabbits (Oryctolagus cuniculus)

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Background: This study was conducted to determine the teratogenic effects of aflatoxin B1 (AFB1) in balady rabbits.

Subjects & Methods: The female animals were divided into two groups control and treated, each group contained three dams. A dose of 0.05mg/kg/day AFB1 was administered by gastric intubation to pregnant rabbits on the 6th–18th day of pregnancy. The fetuses were obtained through the uterine incision at 29th day of gestation. The lengths and weights of the fetuses as well as absolute organs weights were measured.

Results: There was statistically significant differences between the two groups (p<0.001). The observed gross anomalies included wrinkled skin, enlarged eye socket and microphthalmic eyes. The heart of treated group showed reduction in size with wide ventricular lumen and shallow interventricular groove. The characteristic fetal histopathological findings were vacuolation and distortion of hepatic cord pattern. The renal tubular epithelium was vacuolated and their lumen were occluded with casts. The eye lids revealed less number of hair follicles. Regarding, the skeletal anomalies there were incomplete ossification in some of the skull bones, the laminae of the vertebral arches throughout the vertebral column remain cartilaginous. The sternum was incompletely ossified. The 2nd phalanx, carpus, extremities of metacarpi had no cartilaginous drafts. The central and distal tarsal rows as well as extremities of metatarsi remained cartilaginous.

Conclusion: There is some teratogenic effects of aflatoxin B1 in balady rabbits (Oryctolagus cuniculus) which are to be considered and furtherly evaluated.

Keywords: Aflatoxin B1 (AFB1), Rabbits, teratogenicity, Ossification, histopathology.
Comparing the effect of ultra-filtered feta cheese and yoghurt as probiotic carriers on lipid profile: a double blinded randomized controlled trial

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Background: There have been studies investigating the effect of Probiotic yoghurt probiotic yoghurt on blood lipids. However the results are conflicting. Also, there have been few studies about Probiotic cheese.

Subjects & Methods: The goal of this trial was to compare the consumption effect of probiotic yoghurt and probiotic cheese on blood lipids. Design; 180 subjects aged 18 – 65, with <6 mmol/l total cholesterol were participated in a 8 week trial. Subjects were assigned into three 60-person groups. Group one consumed 30 g of probiotic cheese (daily), group two consumed 100 g (daily) of probiotic yoghurt along with a control group. Probiotics strains in products were L. acidophilus LA5 and B. lactis BB12.

Results: a significant reduction in cholesterol was observed after an eight week period in both groups; group one (-0.42 mmol/L; 95% CI, -0.47, -0.37; P<0.0001), group two (-0.15 mmol/L; 95% CI, -0.25, -0.05; P=0.007). HDL, LDL, Triglyceride and BMI also showed significant improvements during the study period. Cholesterol comparison with control also revealed a significant reduction in both groups; group one (-0.51 mmol/L; 95% CI, -0.63, -0.39; P<0.0001), group two (-0.27 mmol/L; 95% CI, -0.39, -0.15; P<0.0001).

Conclusion: Probiotic cheese showed greater improvement effects on blood lipids and it can be used as a new Probiotic carrier. This trial was registered in the Australian New Zealand Clinical Trials Registry (ANZCTR) at http://www.anzctr.org.au as ACTRN12612000623897

Key words: ultra-filtered feta cheese, probiotic carriers, lipid profile
Why do we need probiotic cheese on our diet: a look into health and market aspects

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Background: The market of functional foods is expanding with a rapid speed, giving probiotic products a market share of 75%. Also, the familiarity of consumers with the concept of “probiotics” faced a sharp increase during the last 5 years. As a consequence, research into these products and finding more suitable carriers for these microorganisms increased as well.

Subjects & Methods: While fermented milks and yoghurt are considered as the best known examples of such products, cheese seems to be a more novel carrier for probiotics with better shelf life and health benefits. One of the most versatile food products around the world, cheese is also suitable for all ages and has better opportunities for marketing strategies. As a carrier, probiotics incorporated in cheese should be able to proliferate in human intestine and survive in gastrointestinal tract. Worthy to mention, these probiotics would be exposed to hydrochloric acid and bile in human body. Cheese has the potential to create a more favorable environment for probiotics due to its higher pH. Also, buffer creating properties, dense matrix and higher fat content will result in a higher survival rate of probiotics throughout the gastric transit. Moreover, recent studies indicate the positive effect of probiotic cheese consumption on different clinical endpoints such as lipid profile and blood pressure.

Results: Breadth of health benefits aside, most countries faced a growth in cheese consumption regardless of socio-economic levels. Based on IDF (International Dairy Federation) reports, an increase of more than 3% was observed in European countries, North America and Middle East in cheese
consumption. These trends illustrate that choosing cheese as a probiotic carrier may be a great opportunity to increase the overall public health in a long-term run and opening up a new market for industries.

**Conclusion:** To sum up, having probiotic cheese in our diet presents considerable advantages both in health and marketing aspects, allowing nutritionists and industries to work together for increasing public health in a win-win situation. Needless to say, more randomized trials are required to strengthen the fact that probiotic cheese consumption will imply positive health effects.

**Key words:** probiotic cheese, health, market aspects
O073 Poster

Comparison of dietary patterns between patients with Major Depressive Disorder and healthy subjects

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**Background:** There has been a limited finding on food preference and dietary pattern among patients suffering from Major Depressive Disorder (MDD).

**Subjects & Methods:** This study was carried out to compare the food pattern of major depressed patients with healthy subjects. This study was a cross-sectional research carried out on 63 patients during autumn 2006 in Milad clinic, Ahvaz city. Patients were 15-50 years old with major depression (36 female) and their dietary patterns were compared with that of 65 healthy age and sex matched individuals as control group. Questionnaires consisted of 13 questions of Beck test, Food Frequency Questionnaire (FFQ) and information about demographic characteristics. Body Mass Index (BMI) was also calculated.

**Results:** Female patients had higher mean of BMI than their counterpart controls (22.8±4.3 vs. 21.1±2.5; P<0.05). Consumption of milk and dairy products, fresh vegetables, nuts and olive were 1.5,1.8, 2 and 4 times more in controls than patients, respectively (P<0.05). Weekly intake of legumes (P<0.01) and vegetable oils (P<0.01) were more prevalent in the control group than patients with major depression. It was also observed that patients used to eat a lower amount of sea foods than controls (57.4% vs. 81.5%; P<0.01). Moreover, patients used to limit their meals to less than 3 times a day, compared to the controls (P<0.001). However, patients used to eat more sugar (P<0.05).
Conclusion: It was seen that patients consume lower amounts of sea foods than controls. On the other hand, patients consume higher amounts of sugar than healthy matched people. In general, depressed patients, and in particular, female patients have poor nutritional pattern. Therefore, correction of food pattern is important in such patients.

Key words: dietary patterns, Depressive Disorder
Grape, its products and health: a review on human studies

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Background: In recent years, functional foods and their health promoting effects have drawn considerable attention of many researches, consumers and food production corporations. Grapes and grape-based products are among the most widely consumed functional foods all around the world due to their medicinal and nutritive values. On the other hand, with the increasing trend of chronic diseases, an alternative approach toward these complications such as diet modification plays a vital role in the public health. Furthermore, grapes are rich in phenolic compounds, especially flavonoids such as dimeric, trimeric and polymeric procyanidins, cathechin and epicatechin (monomeric flavanols), gallic acid and ellagic acid (phenolic acids). These polyphenols have been shown to have anti-carcinogenic, anti-inflammatory and antioxidant properties which lead to reduction in the incidence of many complications such as hyperlipidemia, atherosclerosis, hypertension, neurodegenerative diseases and cancers.

The goal of this review is to investigate the recent knowledge regarding beneficial efficacy of grape and grape based products (grape seed extract, grape skin, wine, grape juice, and grape pomace). Altogether, different study types from different countries concluded that grape and its products are a potential human health improver and a regular consumption may have an impact in the health of population. However, further research is required on the dosage and mode of application in order to amplify the benefits.
A new step toward functional foods: from theory to practice

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Background: A great number of studies in the past decade demonstrated a promising correlation between diet and maintaining or promoting health. Hence, there has been a great augment for finding and developing new food products that can contribute to the enhancement of health and well-being in the target population. These natural or processed foods which provide documented health benefits are known as the functional foods. While nutritionist are investigating the functional properties of different food substances, food scientists and technologists are focusing on the extraction and characterization of new natural ingredients that can contribute to consumer’s well-being as part of new functional foods. However, this field is saturated with studies which were carried out to investigate the functional properties of a “single” food substance. A strategy to approach the development of new products is to focus on the interaction between potential functionality of substances present in more than one food group. Furthermore, the importance and the novelty of functional foods are inherent in the possibility to renew the development process of such foods and to form a stronger link between nutrition and food Science/technology. Functional foods are considered as one of the most investigated and widely promoted areas in the food and nutrition sciences nowadays, therefore tackling the challenges of this field is one of the priorities for all the scientists involved. The purpose of this study is to discuss a strategy for development of possible new functional foods which is considered as one of the major challenges in this field.
Diet and Nutrition Style Changing Has Affected the Oral Health

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Background: Oral health is a necessity to general health. Nutrition and also diet are the most important factors to prevent oral diseases. So, the aim of the present study was to determine the effect of nutrition and diet changing on oral health, comparison with the other risk factors.

Subjects and Methods: This longitudinal study was performed among one hundred 12 year old children who were selected by systematic random sampling in 1996 and again in 2011 in same age group in Zanjan/Iran. DMFT (Caries Index) was determined by WHO standard examination method. Oral health information, access to dentist, oral hygiene statue by PI (Plaque Index), FT (Filled Teeth Index) and DT(Decayed Teeth Index), diet and nutrition statue based on family habits by a questionnaire were investigated. The data were analyzed by chi-square and t test.

Results: DMFT was 1.4 (SD= 1.02) in 1996 and 2.3 (SD= 1.96) in 2011 (P<0.0001). Oral health information, FT/ DMFT, PI (oral hygiene), access to dentist among study group were significantly improved (P<0.05). Diet style was changed from the point of food texture, type and form. There was significantly relationship between nutrition and diet changing with DMFT (P<0.0001). Family nutrition style also was changed from low carbohydrate, high fiber toward high carbohydrate, low fiber intake.

Conclusion: Despite improvement on the oral hygiene and dental care access, DMFT increased. From the point of changing the diet and nutrition degree toward low qualification, oral health could be more affected by diet and nutrition style changing. So, a hypothesis was raised, "Diet and nutrition are more important than the other risk factors in oral health statue". We suggest looking for more evidence to change this hypothesis to a powerful theory. We must have program planning for solving this important problem.

Keywords: Oral health, Oral hygiene, DMFT, Diet, Nutrition
Comparison pomegranate juice with sour cherry juice on serum lipids and blood pressure in type 2 diabetic patients

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Background: Type 2 diabetes is one of the most prevalent endocrine diseases in the world that results from a combination of insulin resistance and \beta-cell failure. Regarding importance of nutritional factors in management of diabetes, this study was designed to explore the effects of pomegranate juice and sour cherry juice on serum lipids and blood pressure in type 2 diabetic patients at Yazd Diabetes Research Center in 2013.

Subjects and Methods: Fifty type 2 diabetic patients (25 women and 19 men) with a mean age of 57.6 ± 7 years and body mass index (BMI) of 26.9 ± 3.6 kg/m² who were taking oral antidiabetic agents (Sulfonylurea or/and Metformin) or an anti-diabetic dietary regimen alone were recruited in this Parallel Randomized clinical Trial. After obtaining informed consent, the subjects received cherry or pomegranate concentrate in 40 g / day cans. 24-hour dietary recalls were obtained at the first, and end of the study. The step 1 heart diet was administrated for subjects. Height and weight were taken by Seca scale. Blood pressure measured using a standard mercury sphygmomanometer (Alpk2, Japan). Blood samples were collected after an overnight fasting. Total cholesterol, high-density lipoprotein [HDL] cholesterol, triacylglycerol [TG]) and Plasma glucose were measured at baseline and after 8 weeks by enzymatic methods (PARS AZMON-Iran). The changes of absorption/time ratio and oxidation parameter such as delay time in start of oxidation (Lag-time), the highest speed of oxidation during test (V-max) and the highest aggregation of components derive of oxidation in during the test (OD-max) were calculated by Excel software. MallonDi Aldehyde was measured by thiobarbituric acid...
(TBARS) method. Statistical analysis was performed using Statistical Package for Social Sciences (SPSS version 15.0, Chicago IL).

**Results:** It was found in the present study that systolic blood pressure after pomegranate(131.5 ± 21.3, 122.6 ± 17.9) and cherry juice(133.3 ± 16.6, 122.9 ± 26.1) reduced significantly (0.01, 0.02 respectively). Changes in systolic blood pressure between pomegranate and cherry juice hadn't significant differences. After consuming pomegranate juice dbp, TC, LDL and FBS diminished. After using cherry juice weight, dbp and HbA1C decreased (Ns). After cherry juiced, Vmax, MDA increased but Lag time decreased (Ns). After consumption of pomegranate concentrate, none of these factors hadn't change.

Conclusion: Our findings indicated that after consuming pomegranate juice TC, LDL, FBS diminished and after using cherry juice weight, dbp and HbA1C decreased.

**Keywords:** Type 2 diabetes, Pomegranate juice, Sour cherry juice
Correlation Fast Food And Soft Drink Consumption, Physical Activity And Genetic History with overweight in adolescent

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**Background:** Overweight in Indonesia is not a concern, especially in adolescents. Some data constraints magnitude occurred since the prevalence of overweight adolescents age limits or standards of different nutritional status in the analysis of national health survey. Overweight is the initial condition of obesity that occurs due to the risk factors and the continuing impact of chronic non-infectious diseases disorders occur earlier. Food consumption pattern in adolescents is influenced by lifestyle, including western lifestyles that consume fast food and soft drink.

**Subjects and Methods:** This study aims to analyze the relationship between heredity, consumption patterns, soft drink consumption habits, physical activity and the incidence of overweight in adolescents. This research is an cross sectional study with a random sampling of 85 adolescents aged 12-15 years are of junior high school students in the district Lumajang. Do collected 24-hour food recall for 2 days and drink for consumption, anthropometric measurements (weight, height) to determine IMT / U, interview age, physical activity and family history of genetic obesity.

Results: showed the amount of soft drink consumption on overweight more than good nutrition. There is a relationship between heredity (p = 0.00), the habit of eating fast food (p = 0.00), snack consumption habits at home (p = 0.00), snack consumption habits at school (p = 0.00), soft drink consumption habits (p = 0.00), exercise habits (p = 0.00), level of physical activity (p = 0.00) and nutritional status. In contrast there is no relationship between the frequency of meals a day (p = 0.396), the level of protein intake
(p = 0.737), the level of fat consumption (p = 0.538), the level of carbohydrate consumption (p = 0.981) and nutritional status. In accordance with the results of the research to reactivate monitoring of the nutritional status of students through existing school health program, conduct counseling on healthy lifestyle on a regular basis, the promotion of balanced nutrition, and foster physical activity in school and outside of school.

*Keywords*: overweight, heredity, soft drinks, physical activity
Comparison of Nutritional Status in Two Systemic Diseases Involving the Respiratory System
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Background: Systemic scleroderma (SSc) and chronic obstructive pulmonary disease (COPD) are chronic diseases in which nutritional status has an important prognostic role. Pathophysiological changes in both these diseases differ. However, both SSc and COPD are accompanied by chronic inflammation, which may lead to lesions in internal organs.

Subjects and Methods: This study aimed to assess and compare nutritional status, type of diet, and life quality of patients with COPD and systemic scleroderma. The following information, including the research ethics of this study, has been carefully examined and approved by the Ethics Committee. The following subjects were examined: COPD group: 30 patients, 21 men (70%) and 9 women (30%), aged between 54 and 81 years (median age: 66 yrs), with stable COPD. SSc group: 32 patients, 28 women (87.5 %) and 4 men (12.5%), aged between 17 to 82 years (median age: 54.4 yrs), diagnosed with SSc. Amongst COPD patients, 96% smoked cigarettes, whereas 41% of SSc patients smoked in the past. Anthropometrical measurements were performed, and body composition was assessed using electrical bioimpedance (BIA), in all patients. The following parameters were measured: fat mass (FM), fat-free mass (FFM), total body water (TBW), and basal metabolic rate (BMR). In addition, body mass index (BMI) and fat-free mass index (FFMI) were also calculated. Patients were categorised into the following groups based on their BMI: underweight (<20 kg/m2), normal weight (20 to 24.9 kg/m2), overweight (25.0 to 29.9 kg/m2), and obese (30 kg/m2). Spirometry (to measure FEV1) was also performed in all patients. Finally, life quality was assessed using St. George’s Respiratory Questionnaire (SGRQ) for COPD patients and SScQLI for SSc patients.
Results: Amongst COPD patients, 13% (n=4) had normal body weight, 60% (n=18) were obese, 27% (n=8) were overweight, while none were undernourished. Likewise, in the SSc group, 59% (n=19) had normal body weight, 31% (n=10) were overweight, 1 was obese, and 2 were underweight. Body composition measurement with BIA was contraindicated in 4 patients with SSc. COPD patients had a mean BMI of 31.3, while that of SSc patients was 25.3. This difference was statistically significant (p=0.000094). None of the COPD patients had an FFM deficit; FFMI of female patients was 15 kg/m2, and male patients was 16 kg/m2. In contrast, 2 (7.1%) female patients with SSc had an FFM deficit. The difference between the FFMI values of COPD patients (mean FFMI = 19.6) and SSc patients (mean FFMI = 14.5) was statistically significant (p=0.000003). Increased FM was found in 76.6% of COPD patients, while 16.6% had normal, and 6.7% had values below normal. In the SSc group, 43% patients had excess FM, 25% had normal values, and 22% had FM deficit. Decreased TBW was found in 60% of COPD patients and 32% SSc patients; whereas, normal TBW values were measured in 23% of COPD, and 53.6% of SSc patients. For TBW, above normal values were found in 17% of COPD patients and, 14.3% of SSc patients. Mean score of life quality was 57.3 (ranging from 26.0 to 88.5) in COPD patients, and 35.8 (ranging from 0 to 100) in SSc patients. Physical fitness domain scores were lower in COPD patients (65.5) as measured with SGRQ, while in SSc patients, the lowest scores were due to anxiety related to the prognosis and the course of the disease. COPD patients had a lower life quality than SSc patients, and this difference was statistically significant. Mean values of FEV1 were 45.5 (SD 12.2) in COPD, and 86.8 (SD 21.2) in SSc patients. This difference was statistically significant at p=0.00000. COPD patients also showed positive correlations between FEV1 [litres] and the following parameters: grip strength (r=0.64, p<0.05), FFM in % (r=0.48, p<0.005) and PPM (r=0.51, p<0.05); whereas they showed negative correlations between FEV1 and the following parameters: FM (in % r= -0.56, p<0.05), life quality (total score r= -0.44, p<0.05), and PCO2 (r= -0.77, p<0.05). A positive correlation was observed between FEV1 and BMR (r=0.65, p<0.05), similar to the group of SSc
patients. Finally, strong positive correlation was noted between BMI and FFMI in both patient groups.

**Conclusions:** Nutritional disorders are more frequent in chronic obstructive pulmonary disease (COPD) patients in comparison to those with systemic scleroderma (SSc). Obesity affected 60% of COPD patients, with 76.6% having fat mass over normal values. In contrast, in the SSc group, 57% of patients had normal body weight, with only 43% having fat mass above normal. Finally, life quality of COPD patients is significantly worse than that of SSc patients

**Keywords:** Nutritional, Systemic Diseases, Respiratory System
Self-Treatment with anti-Obesity medications in Overweight and Obese Women in Tehran

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Background: Following the failure of long-term weight loss diet and media advertisements about anti-obesity medications, taking anti-obesity drugs is increasing.

Subjects and Methods: The aims of present study were to determine the prevalence of self-medication, correlations between self-medication and general characteristic and ways to obtain information about anti-obesity drugs in overweight and obese women. A cross-sectional study was carried on 200 overweight and obese women (Body Mass Index=28.36 3.73 kg/m²) aged 20-50 years from April to December 2012. A questionnaire which contained socio-demographic, life styles, self diet management and self medication items was filled out and anthropometric indices were measured. SPSS software version 16 was applied for Statistical analysis. Pv<0.05 was considered significant.

Results: About 54% of participants had self-diet management during the last six months. 12.87% of women reported self-medication without weight loss diet. Self-medication in younger was significantly more than older women (Pv=0.01). No significant correlation was observed between income, education and BMI with self medication (Pv<0.05). However a significant correlation was observed between age and self medication(r=0.23, Pv=0.01). More subjects, particulary younger women mentioned self-medication for faster losing weight and fitness (64.35%). Herbal supplements were the most commonly used medications in subjects (32.35%). About 60% of women reported that friends and relatives were the main sources of receiving information about anti-obesity drugs.
Conclusion: Self-treatment among women in Tehran-Iran is of concern, due to tendency of younger women to self-medication for getting body image satisfaction.

Keywords: Self Medication, Treatment, Obesity, Weight loss, Women
**How accurate is Mifflin equation for predicting resting energy expenditure in overweight and normal weight young females in Tabriz-Iran?**

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**Background:** Tendency to obtain desirable weight is increasing. Predicting resting energy expenditure, a main component of total energy requirement is important for diet planning. So, the aim of present study was to determine the accuracy of Mifflin equation for predicting resting energy expenditure in normal and overweight young females in Tabriz-Iran.

**Subjects and Methods:** In this cross-sectional study, 200 healthy volunteer females (100 normal and 100 overweight) aged 18-30 years with Body Mass Index (BMI) 18.5-30 kg/m2 were recruited. Weight and height of subjects were measured. Resting metabolic rate (RMR) was measured by indirect calorimetry (FitMateTM) and calculated by Mifflin equation. Paired sample t-test was used to compare predicted with measured RMRs. The accuracy of equation and the mean percentage differences between predicted and measured values were calculated.

**Results:** In normal weight females, the mean age, BMI, measured and calculated RMR were 23.04 2.62 yrs, 21.34 1.22 kg/m2 1468.04 117.5 and 1527.33 75.50 kcal/day, respectively. The difference between measured and predicted RMR was not significant (P=0.49). Mifflin formula over and underestimated in 20.4 and 4% of subjects, respectively. In overweight females, mean age, BMI, measured and calculated RMR were 22.50 2.94 yrs, 27.06 2.45 kg/m2, and 1271.32 33.68 and 1347.75 62.58 kcal/day, respectively. The difference between measured and predicted RMR was not significant (P=0.21) and over and underestimation was observed in 7.69% and 7% of participants, respectively. In normal and overweight females, accuracy of H-B formula was 75.5 and 84.6%, respectively.
**Conclusions:** It seems, Mifflin formula can be used in normal and overweight Iranian females to predict RMR in clinical practice.

**Keywords:** Mifflin, Overweight, Normal weight, Accuracy, Prediction
Improvement in Growth and Developmental Milestones with Nutritional Intervention in Methylmalonic Acidemia: A Case Report Bahare Imani 1, Marzie Zilaee2 Abdolreza Norouzy 1, Mohammad Safarian2 - Department of Pediatrics, The Mashhad Dr. Sheikh Hospital, PICU, section, Mashhad University of Medical Sciences, Mashhad, Iran2-Biochemistry, and Nutrition Centre, Faculty of Medicine, Mashhad University of Medical, Sciences, Mashhad, Iran

Background: methyl malonic acidemia (MMA) is a metabolic disorder and especial nutritional support has an important role in improvement of growth and development in these patients.

Subjects and Methods: Case presentation: A 3-month old female infant with known MMA was admitted to emergency department of Dr Sheikh Children Hospital Mashhad-Iran with primary diagnosis of pneumonia and sepsis. MMA was diagnosed after several episodes of tachypnea, lethargia, poor feeding and irritability. Signs of developmental delay were apparent in the patient including hypotonisity, lack of neck holding, and inability to rolling supine to prone and prone to supine in 3th month of life). In 3th month of life her weight was 4600 grams. Nutritional considerations for the patient include feeding by the special formula (MMA/PA -Nutritia company), supplementation with vitamin B12, vitamin B1 and carnitin, protein restriction (0.5-1 mg/kg/dl) and avoidance from long term fasting. The energy intake of baby was 500-600 kilocalories from 250 cc dextrose water, 10 modules MMA/PA formula for providing 7.5-8 grams protein, 10 modules Aptamile formula for providing 5-6 grams protein and 7-8cc MCT-oil. She was also fed by porridge with at smallest amount of protein including rice flour, starch and oil at the tolerance. We followed the status of patient after discharge from hospital for 4months (at the 7th month of life).

Results: Marked muscular hypotonia, developmental retardation, and neutropenia have decreased with controlling acidosis by protein restriction
and treatment. In 7th month of life the weight of baby was 6.8kg, that is between 10 and 25th percentile. We found a clear improvement in development of hearing and understanding, improvement in speech and motor development including p, b, and m, vocalizes excitement and displeasure, makes gurgling sounds when left alone and when playing with the caregivers holding her head up.

**Conclusion:** early diagnosis of MMA and nutritional intervention has a significant role in improving growth and developmental milestones of these patients.

**Keywords:** Diet, Methylmalonic acidemia, Nutrition.
The effect of nutritional education on serum levels of inflammatory markers in obese subjects

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Background: Obesity is a low grade inflammatory condition. In obese subjects, the plasma levels of inflammatory cytokines increase, and the anti-inflammatory ones decrease. One of the remarkable causes of obesity and chronic diseases is unhealthy nutrition and poor quality of diet. Nutritional education is considered as an important approach to improve diet quality and change the nutritional habits. It seems that there is an association between diet quality and inflammatory markers, independent of weight loss.

Subjects and Methods: We assessed the effect of improving diet quality through nutritional education on plasma levels of inflammatory cytokines including hs-CRP and TNF-α, without making any effort to change the current weight or restrict the energy intake. This study has been designed as a randomized clinical trial on sixty obese subjects divided into educated and non-educated groups. The anthropometric indexes were measured at the beginning and at the end of the study. The blood samples were collected before the education and after two months, at the end of education period. Nutritional education classes were held to expand nutritional knowledge of subjects by using the information of my plate released by USDA. In addition, a designed nutritional booklet was provided for each individual.
Results: Diet quality was improved after nutritional education. After adjustment for weight, age, sex and energy intake, the plasma levels of both hs-CRP and TNF-α declined significantly (all p values <0.05).

Conclusion: The nutritional education could play a major role in enhancing the diet quality and driving people to a healthier diet. Despite no significant change in body weight and BMI, improving diet quality could decrease the inflammatory markers independently.

Keywords: nutritional education, serum levels, inflammatory markers, obese
The effect of nutritional education on improving healthy eating index (HEI) score in obese subjects

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Background: Unhealthy nutrition and poor quality of diet is known as one of the major causes of obesity and chronic diseases .HEI provided by USDA, is a useful tool to evaluate the quality of diet and compliance with dietary guidelines. Higher HEI score shows higher adherence to dietary recommendations. It seems that obese subjects have lower HEI score and lower tendency to use healthy diet.

Subjects and Methods: the study aimed to improve the diet quality by enhancing the HEI score through nutritional education without making any effort to lose weight or limit the energy intake. This randomized clinical trial study was conducted on sixty obese subjects with no history of chronic and inflammatory diseases, divided into educated and non-educated groups. At the beginning of the study, the HEI scores of all subjects were calculated based on their seven days food record. The anthropometric indexes were measured by a trained nutritionist. Nutritional education classes were held for educated group. In order to inform subjects more effectively, a designed booklet was provided according to the information of my plate released by USDA. After two months, at the end of education period, the HEI scores were calculated again.
**Results:** After adjustment for weight, energy intake, age and sex, the HEI score of educated group was enhanced significantly. Before education, the mean score of educated group was in needed improvement level (60.58 ± 6.31) that improved to good condition (83.34 ± 5.12) (all P value <0.05).

**Conclusion:** The nutritional education could affect the quality of diet and improve HEI score. It could be a useful approach to guide people to choose a healthier diet and change the nutritional habits of society.

**Keywords:** nutritional education, healthy eating index
The effect of education of dietary healthy eating index (HEI) on serum levels of inflammatory markers in obese subjects.

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**Background:** Obesity is a serious health problem which affects modern human societies. It is a low grade inflammatory condition. Healthy diet plays a major role in preventing chronic diseases. HEI is a valuable tool to evaluate diet quality. It seems that there is an association between HEI score and the concentration of inflammatory markers, independent of BMI.

**Subjects and Methods:** We assessed the effect of improving HEI score through nutritional education on the serum levels of inflammatory markers without making any effort to lose the current weight. This study was a randomized clinical trial on sixty obese subjects, divided into educated and non-educated groups, who had HEI score below 80 with no history of chronic diseases. The HEI scores were calculated and the blood samples were collected to assess the plasma levels of inflammatory cytokines including hs-CRP, TNF-α, and adiponectin. Then, the nutritional education was conducted. We designed an informative booklet by using the data of my plate released by USDA and planned diet according to current weight and HEI indexes individually. The anthropometric indexes were measured before and at the end of education period. The period of education was two months. At the end of the study, the HEI scores were calculated again and the serum levels of inflammatory markers were analyzed.
**Results:** After adjustment for energy intake, weight, age and sex, the HEI score of educated group was improved significantly. The mean of HEI score of educated group was in needed improvement level (60.58 ± 6.31) before education that was improved to good condition (83.34 ± 5.12). After adjustment for energy intake, weight, age and sex, the plasma levels of hs-CRP, TNF-α decreased and the concentration of adiponectin increased significantly (all p values <0.05).

**Conclusion:** In spite of no significant change in body weight and BMI, the improvement of HEI score could affect the inflammatory markers. It seems that the quality of diet could be an independent factor in preventing diseases and maintaining the people in a healthy condition.

**Keywords:** nutritional education, serum levels, inflammatory markers, obese
Dietary Patterns and Prevalence of Metabolic Syndrome in Saudi Patients with Diabetes and Ischemic Heart Disease

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Subjects and Methods: The aim of this cross-sectional study is to determine the prevalence of metabolic syndrome among Saudi patients with diabetes mellitus type 2 (DMT2) and cardiac disease, as well as their dietary habits with metabolic syndrome risk factors. A total of 448 subjects with either obesity, DMT2 or Ischemic Heart Disease (IHD) were recruited. A generalized questionnaire and multiple 24h dietary recall for three consecutive days were administered for this study. Fasting blood samples were collected. Biochemical indices of glucose, and lipids, anthropometric and blood pressure were measured.

Results: The over-all prevalence of MS using the modified National Cholesterol Education Program and Adult Treatment Panel III (NCEP-ATP III) and International Diabetes Federation (IDF) were found to be 80.1% and 75.4% respectively. MS was significantly (p ≤0.05) higher among males based on NCEP-ATP III and low HDL-C was the most common risk factor of MS. Abdominal obesity was significantly (p ≤0.05) higher in females. There is a high consumption of cholesterol and saturated fatty acids and low consumption of polyunsaturated fatty acids among these patients. Significant relationships (p ≤0.05) were found between consumption of red meat, fast food and animal fats and presence of MS predictors. Significant associations (p ≤0.05) were found between consumption of grain and grain products and legumes and higher triacylglycerol (TAG) levels. The prevalence of MS among these patients was extremely high and is influenced by diet. Creating aggressive public health awareness on the right food choices especially among populations at highest risk should be implemented.

Keywords: Dietary Patterns, Metabolic Syndrome, Diabetes, Ischemic Heart Disease
**Gut Microflora and Weight: Application of Probiotics in Human Weight Management**

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**Background:** Increasing trends of overweight and obesity, as main feature of epidemiologic transition, is seen all around the world, especially in Middle-eastern countries. Moreover, it has led to introduction of several alternative hypotheses and management approaches, besides diet and physical activity. Probiotics, as beneficial micro-organisms for human health, has also received special attention by researchers. They have already shown their potential positive effects in a number of immune-mediated diseases.

**Subject and Methods:** This article aims at reviewing the available evidence regarding implications of probiotics in preventing overweight and obesity. We retrieved full articles in English published in peer-reviewed journals between 1990 and 2013 using Medline and Scopus search engines. Earlier studies in animals had shown that modifications of gut microbiota could result in animal weight gain or loss without any change in food intake. Changes in animal weight could also in turn affect the composition of microbial population in host.

**Results:** the connection between weight and gut microbiota was mediated through a number of mechanisms in and beyond gastrointestinal tract. Energy harvesting, inflammatory responses and changes in intra-body fuel utilization were proposed as potential mechanisms in animals. As expectable, findings in animal studies can not be easily extrapolated to human subjects. There are also a wide variation between function of different probiotics species and strains. Results from human clinical trials are still controversial, and there is need to more well-controlled trials. In the meantime, there are some promising evidence which support the positive role of probiotics in obesity and overweight management.

**Keywords:** Weight, Obesity, Overweight, Gut microbiota, Probiotics
Vitamin D Status among Patients Visiting a Tertiary Care Center in Riyadh, Saudi Arabia: A retrospective review of 3475 cases

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Background: Vitamin D deficiency has been implicated in several chronic, non-communicable diseases independent of its conventional role in bone and calcium homeostasis.

Subject and Methods: In this retrospective study we determined the prevalence of vitamin D deficiency and its association to several cardiometabolic indices among patients visiting King Abdulaziz Medical City (KAMC), a tertiary hospital in Riyadh, Saudi Arabia. A total of 3475 charts of out-patient subjects who visited KAMC last September 2009 until December 2010 were reviewed and included. Variables of interest included measurements of vitamin D status, glycemic and renal profile, as well as trace elements (calcium and phosphorous).

Results: The over-all prevalence of vitamin D deficiency in the cohort studied was 78.1% in females and 72.4% in males. 25(OH) vitamin D was significantly associated with increasing age and weight (p-values < 0.0001 and 0.005, respectively). It was also positively associated with albumin, calcium and phosphorous (p-values < 0.0001, < 0.0001 and 0.0007, respectively) and negatively associated with alkaline phosphatase as well as circulating levels of PTH (p-values 0.0002 and 0.0007, respectively).

Conclusion: vitamin D deficiency is overwhelmingly common among patients seen at KAMC regardless of the medical condition, and it is significantly associated with increasing age, weight and markers of calcium homeostasis. Findings of the present study further stress the spotlight on vitamin D deficiency epidemic in the country and region in general.

Keywords: Vitamin D, Tertiary Care
**Nutritional support in critically ill children**

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**Background:** The nutritional support measures is the basic management of children admitted in PICU. Traditionally nutritional support in children admitted to the PICU, do not start, while metabolic and cardiovascular status has not been established. While many hospitals have changed their protocols and guidelines and nutritional support will be starting as soon as possible. The reasons of receiving inadequate nutrient materials are affected by the lack of suitable methods to assess nutritional status, fluid restriction and wrong estimated calorie needed due to numerous factors influencing the estimate on the amount of energy needed for these children as the movement, the consumption of multiple drugs, sedative and mechanical ventilation. (1), (2) Regarding to the importance of nutrition and providing calorie and the consequences caused by the increase or decrease calories, in this study we determined calorie and nutritional support to provide calorie and the condition of malnutrition which indicates lack of received or received is calorie.

**Subject and Methods:** This study is a cross-sectional review of the 52 children admitted to the PICU Dr. Sheikh hospital during one week has tested. Information about age, sex, type of disease, the patient's weight on admission and calorie intake in one week stay in PICU and weight changes within a week of the patient's medical records are gathered, and to determine the nutritional status of patients with WHO charts are Used. The data were analyzed by 14 SPSS software.

**Results:** The study included 52 children admitted to the PICU Dr. Sheikh hospital is doing the sex included 31 patients (59/6%) males and 21 (40/4%) are female. Distribution by age of patients included 26 patients (50%)
Neonate, 18 patients (34/6%) Infant, 2 patient (3/8%) The Second Year, 3 (5/8%) preschoolers (2-5 years), 3 patients (5/8%) children (6-11 years old). Nutritional support for these patients were included in the parentral 27 (51/9%) with breast feeding and parentral(TPN) 24 (46/2%) and parentral with liquid 1 (1/9%) patients in the study have received 1/93% of the total calorie needed and it was clear that 60/8% patient have low calorie needs by amount of 50%. There was no significant difference between initial weight and weight changes in bed, but there was significant difference between ideal weight and actual weight and initial intake of calorie needed was seen. P-value <001/0

**Conclusion:** it can be seen that most of children before hospitalization are malnourished or at risk for malnutrition. On the other hand the results showed that in most of these children have calorie intake less than 50% they need so that they are more prone to malnutrition. **Recommendation:** It is recommended that the assess of nutritional status should be monitored carefully in PICU patients. The study also recommends that in order to better assess of nutritional status is not only to measure weight, but also other anthropometric measurements such as arm circumference, head circumference should be used. Anthropometric measurements of weight, especially as measured regularly and on Z Score Table or register to alterations and nutritional status of the CDC easily be followed. A longer period of time to assess changes in body weight, calorie intake and nutritional status should be assessed.

**Keywords:** Nutrition, support, PICU