

T5 - CLINICAL PRACTICE AND MULTI DISCIPLINARY MANAGEMENT

T5:PS1 - Biological Lessons from Bariatric/Metabolic Surgery

658 accepted poster

ADOLESCENTS' VITAMIN STATUS 2 YEARS AFTER LAPAROSCOPIC GASTRIC BYPASS SURGERY

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Abstract Text: Introduction The prevalence of severe obesity among adolescents is increasing. Gastric bypass surgery is a possible treatment. Vitamin supplementation is of importance after surgery and the aim of this study was to determine the vitamin status and the compliance of vitamin intake among adolescents. **Methods** In a non-randomised prospective intervention study (AMOS), 81 adolescents with morbid obesity (1318 years, BMI 45.56.1) underwent laparoscopic gastric bypass surgery. S-Fe, S-Ferritin and S- B12 were analysed, at baseline, 1 and 2 years after operation. All adolescents were prescribed daily multivitamin and mineral supplements. The girls were prescribed iron tablets in addition. At follow-up visits the adolescents were asked about compliance of the prescribed vitamins and minerals. **Results** The serum levels of iron and vitamin B12 increased at a group level over the two years. But there was an increase in the proportion of subjects with a subnormal level postoperatively: B12 1.3% / 17% and ferritin 15.4% / 38%. The serum levels of ferritin decreased significantly over the two years (female 65%, male 35%): base line 65.8 (55.4) to 45.0 (55.0), mean (SD), P<0.001, with no difference between genders. In 70% of the patients we identified poor compliance of the prescribed vitamin and mineral supplements. **Conclusions** Yet the stores of iron and vitamin B12 had increased at a group level we found an increased frequency of subnormal levels, and decreased ferritin levels, two years after gastric bypass surgery. A very poor compliance in vitamin and mineral supplementation in adolescents mandates certain attention.

Conflict of Interest:

Funding:

659 accepted poster

COMPARISON OF NUTRITIONAL STATUS IN OBESE SUBJECTS 6 MONTHS AFTER ROUX-EN-Y GASTRIC BYPASS (GBP) OR SLEEVE GASTRECTOMY (SG)

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Abstract Text: Background: Some patients choose SG to avoid nutritional deficiencies induced by GBP. However, few studies have compared nutritional status after these 2 procedures. Our aim was to compare nutritional status in obese patients 6 months after GBP or SG. **Methods:** 30 patients who underwent GBP were matched for age, gender, weight, weight loss, skin color and season with 30 subjects who underwent SG (47 years, M/F: 8/22). Multivitamin supplements were systematically prescribed after surgery. Dietary intakes (including proteins, carbohydrates, lipids, calcium, iron and total caloric intake) and nutritional parameters (including serum prealbumin, albumin, hemoglobin, calcium, iron, cholesterol, triglycerides, parathyroid hormone and vitamins A, B, C, D, E) were assessed before and 6 months after surgery. **Results:** The mean decrease of BMI was similar in the 2 groups (from about 50 to 40 kg/m). Before surgery, nutritional parameters and dietary intakes were similar in the 2 groups. After surgery, there was no difference between the 2 groups except for prealbumin (p=0.028), total cholesterol (p=0.0017) and vitamin E (p=0.03) that were lower after GBP than after SG. **Conclusions:** Nutritional status 6 months after GBP or SG is almost similar. These data support the low impact of duodenal bypass on nutritional status in subjects taking multivitamin supplements after GBP. Further studies with longer follow up are needed.

Conflict of Interest: non disclosed

Funding: no funding

660 accepted poster

EFFECT OF VITAMIN K1 SUPPLEMENTATION ON VITAMIN K1 STATUS AND MATERNAL COAGULATION FACTORS IN PREGNANT WOMEN AFTER BARIATRIC SURGERY

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Abstract Text: Introduction: Recently several neonatal cases with severe intracranial bleeding have been reported, all possibly related to maternal vitamin K1 deficiency during pregnancy following bariatric surgery. The aim of this study is to investigate the effect of intensive follow-up and vitamin K1 supplementation on vitamin K1 blood serum levels in pregnant woman after bariatric surgery. Methods: A multicenter prospective cohort study including 49 pregnant women with a history of bariatric surgery was conducted. Nutritional deficiencies were prospectively screened. In case of an observed vitamin K1 deficiency a prescription for vitamin K1 supplement was given. Data on serum blood levels of vitamin K1, activity of coagulation factors and supplement intake were collected during all trimesters. Results: During the first trimester 87.8% of women had a vitamin K1 deficiency (<0.8 nmol/l), during the second trimester 59.1% and during the third trimester 50.0%. The mean serum level of vitamin K1 during the first trimester (0.42 ± 0.26 nmol/l) was significantly lower than during the third trimester (4.70 ± 10.31 nmol/l). Activity of prothrombin time and factor VII was significantly higher during the second or third trimester than during the first trimester. Activity of Factor X and Factor VIII was significantly higher during the second trimester than during the first trimester. Conclusion: Intensive follow-up and nutritional screening for vitamin K1 deficiencies and vitamin K1 supplementation in pregnancies after bariatric surgery is effective for improving vitamin K1 serum levels and activity of vit-K dependent coagulation factors throughout pregnancy.

Conflict of Interest: None.**Funding:** 1. IG is funded by a postdoctoral research grand of the K.U.Leuven (2010-2011). RD is recipient of a postdoctoral research grant from the FWO Flanders (2010-2015).

662 accepted poster

IGF-1 : PREDICTIVE FACTOR OF WEIGHT LOSS AFTER GASTRIC BANDING

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Abstract Text: Introduction. Laparoscopic adjustable gastric banding is a safe technique of bariatric surgery that not always results in lasting weight loss. The aim of the study was to evaluate predictive biological and anthropometrical parameters of the efficiency of this surgical technique in terms of weight loss in patients with morbid obesity. **Patients and methods.** In 375 patients with morbid obesity operated for adjustable gastric the following parameters were evaluated: anthropometric parameters, lipid, glucose metabolism and hepatic parameters including IGF1, before surgery and during a post surgical follow-up period of 2 years. **Results.** Our study showed that overall, 2 years after the surgical intervention the mean percentage of weight loss reported to the weight excess (%EWL) was about 42%. %EWL or body mass index (BMI) loss after 2 years were more important in the patients with low oIGF-1 values (< 125 μ g/l, $p < 0.05$). Associated diabetes mellitus or age > 40 years were equally predictive factors of the gastric banding inefficacy on weight loss. **Discussion.** Low IGF-1 levels in a subpopulation of patients with morbid obesity were associated with reduced efficacy of gastric banding in terms of weight loss. Subjacent GH deficit of these patients should be taken into account before any therapeutic approach. However, further prospective studies are necessary in order to improve clinical and biological phenotyping of patients eligible for bariatric surgery.

Conflict of Interest: None**Funding:** None

663 accepted poster

INDICATORS OF CALCIUM AND VITAMIN D METABOLISM IN MORBIDLY OBESE PATIENTS AND IN PATIENTS AFTER BILIOpancreatic DIVERSION

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Abstract Text: Indicators of calcium and vitamin D metabolism in morbidly obese patients (MO) and post-bariatric patients were studied. Vitamin D status was different in patients with a BMI > 40 (n = 22), in patients after biliopancreatic diversion (BPD) (n = 23) and in the control group of healthy normal weight volunteers (n = 22) ($p < 0.001$). Parathyroid hormone (PTH) level was elevated in 4 (18%) patients with MO, in 12 patients (52%) patients after BPD, and was normal in all patients of the control group. Comparison of secondary hyperparathyroidism (SHPT) frequency in the first and the second group has confirmed its higher prevalence among post-bariatric patients ($p = 0.029$). We found higher frequency of vitamin D deficiency in morbidly obese patients compared to the control group ($p = 0.007$). Survey of patients after BPD showed a high incidence of SHPT in the long-term period after surgery.

Conflict of Interest:**Funding:**

664 accepted poster

INFLUENCE OF OBESITY AND WEIGHT LOSS INDUCED BY ROUX-EN-Y GASTRIC BYPASS SURGERY ON ZINC AND COPPER LEVELS

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Abstract Text: Introduction: Micronutrient deficiencies are common complications of bariatric surgery. The aim of this study was to evaluate and correlate the changes that occur in serum copper and zinc in obese patients before and after Roux-en-Y gastric bypass surgery. Material and Methods: We studied 18 patients undergoing Roux-en-Y gastric bypass. There were four males and 14 females with a mean age of 44 ± 13 years (19-59 years). The patients' fasting serum copper, iron and zinc levels were measured before the operation and at 30, 90 and 180 days post-operatively. Results: Prior to the operation, 50% of the patients had elevated serum copper levels and 22% had reduced serum zinc levels. In the first 30 days after surgery, there was an elevation of serum zinc and copper. After 90 and 180 days, the serum levels of zinc and copper returned to levels similar to the pre-surgical levels. A positive correlation was found between serum zinc and copper (rest = 0.261, $p = 0.039$). Conclusion: Supplementation of these elements in obese patients should not be routine but should be based on clinical follow-up and the confirmation of serum levels, taking into account the postoperative changes in mineral absorption.

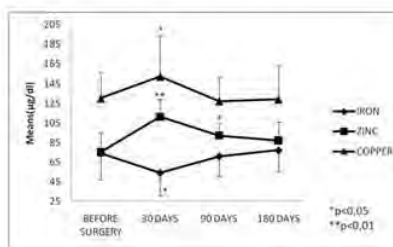
Conflict of Interest: THERE ISN'T ANY CONFLICT OF INTEREST.**Funding:****Figure 1:** Means of iron, zinc and copper (μ g/dl) before and after surgery

Table 1: Comparison of postoperative mean BMI and serum zinc and copper, and zinc/copper ratio with patient preoperative baseline at 30, 90 and 180 days after surgery.

	Baseline	30 days	90 days	180 days
BMI (kg/m ²)	47 ± 9	42 ± 9**	39 ± 8**	37 ± 7**
Zinc (µg/dl)	75 ± 20	111 ± 18**	92 ± 12*	87 ± 19
Copper (µg/dl)	130 ± 26	152 ± 42*	127 ± 24	129 ± 34
Ratio Zn/Cu	0,6 ± 0,2	0,6 ± 0,3**	0,7 ± 0,2*	0,7 ± 0,1*

*p<0.05 e **p<0.01 em relação ao basal

Normal values: zinc: 65-132,5 µg/dl; copper: 80-125 µg/dl

665 accepted poster

LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING (LAGB) FOR ADOLESCENTS IN FRANCE: RESOLUTION OF COMORBIDITIESM. Dabbas-Tyan¹, N. KKhen-Dunlop², C. Telion², Y. Revillon², Y. Aigrain², O. Goulet¹¹ HÔPITAL NECKER / APHP, Pediatric gastroenterology and nutrition, paris, France² HÔPITAL NECKER / APHP, Pediatric surgery, paris, France

Abstract Text: Rapidly increasing prevalence in France of obese adolescents is associated with substantial medical and psychosocial morbidity. The success rate of interventions is modest in severely obese adolescents. LAGB represents an attractive treatment with minimal morbidity. We studied the place of LAGB in the management of severely obese adolescents. **Methods:** Selection and follow up of our patients were performed according to European recommendations. All adolescents were included in prospective longitudinal data collection. **Results:** Since 2008, 17 patients have undergone LAGB after a one year lifestyle intervention at least, in Necker's multidisciplinary program. The group had 21 months of follow up (range 7-39) and an average of 14 visits in the first year. The mean age was 16.52 ± 0.94 years. Mean body mass index was 46.53 ± 5.96 kg/m. Baseline comorbidities data demonstrated a high incidence of insulin resistance (IR) and 75% of metabolic syndrome. Mean weight loss was 24.3 ± 17 and 32.1 ± 17.8 kg at 12 and 24 months, respectively, corresponding to progressive increases in excess weight loss of 40.4 ± 24.9 and 54.6 ± 31.2 %. Incidence of dyslipidemia decreased from 75% to 38% and 28% and the IR from 100% to 38% and 0 at 1 and 2 years respectively. 2 revisions for band slippage and cholecystectomy on one patient were performed. **Conclusion:** These early data support the safety of LAGB and the improvement of adolescents' comorbidities. For optimal effectiveness and safety of procedure, the bariatric surgery approach requires long term supportive follow-up by trained health professionals.

Conflict of Interest:**Funding:**

666 accepted poster

LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING (LAGB) ON ADOLESCENTS: ANDROID FAT LOSS WITHOUT BONE LOSSM. Dabbas-Tyan¹, N. KKhen-Dunlop², C. Telion², Y. Revillon², Y. Aigrain², O. Goulet¹¹ HÔPITAL NECKER / APHP, Pediatric gastroenterology and nutrition, paris, France² HÔPITAL NECKER / APHP, Pediatric surgery, paris, France

Abstract Text: We studied the place of LAGB in the management of obese adolescents and assessed the nutritional status and the distribution of weight loss. **Methods:** Since 2008 weight loss surgery is considered for adolescents (≥14 years) with severe obesity (BMI ≥ 40) after a one year lifestyle intervention at least. Co-morbid conditions, anthropometric measures and body composition (Dual energy X ray absorptiometry) were assessed. **Results:** 17 patients (60% female) have undergone LAGB. 13 and 7 patients completed 12 and 24 months follow up respectively. Mean age was 16.52 ± 0.94 years. Mean BMI was 46.53 ± 5.96 kg/m. All patients had a central obesity (46% of fat mass were android) and insulin resistance (HOMA = 6.1 ± 3.6). 82 % of adolescents were Vitamin D deficient. More than 60% of patients had their BMI decreased below 35 at the final check. An improvement in metabolic status was demonstrated. At one year follow up total mass (- 20 kg), total fat (- 15 kg) and trunk fat mass (- 7 kg) were decreased significantly (p<0.001). Bone density and bone mineral content were increased (p=0.01). No LAGB-related nutritional complications were detected. There was no difference in serum B12, Iron, Folate or Parathyroid

hormone levels between baseline and 1 year after surgery. There was small increase in Vitamin D (13.4 ± 10.3 versus 23 ± 5.8, p=0.05). **Conclusion:** Maintaining or improving bone health during weight loss is important for overall health, and may have great implications for decreasing the risk of diseases later in life.

Conflict of Interest:**Funding:**

667 accepted poster

LIPID PROFILE, HBA1C AND C REACTIVE PROTEIN BEFORE AND 90 DAYS AFTER BARIATRIC SURGERYS. Polovina¹, M. Sumarac-Dumanovic¹, D. Bajec², D. Radenkovic², D. Stamenkovic-Pejkovic¹, D. Micic³, D. Micic¹¹ INSTITUTE FOR ENDOCRINOLOGY, DIABETES AND DISEASES OF METABOLISM, Center for obesity, Belgrade, Serbia² CLINIC FOR DIGESTIVE SURGERY, CLINICAL CENTER OF SERBIA, Bariatric and Metabolic Surgery, Belgrade, Serbia³ EMERGENCY CENTER, CLINICAL CENTER OF SERBIA, Belgrade, Serbia

Abstract Text: Introduction: obesity is associated with changes in serum lipids and systemic inflammation, possible impaired glucose toleration, atherosclerosis and cardiovascular diseases. **Methods:** we have analyzed BMI, lipid profile, HbA1c and C reactive protein in 20 obese subjects, before and three months after bariatric surgery. 4 males and 16 females, 35.2 (±17.6) years of age, were on 1000kcal, balanced diet three weeks before bariatric procedure and on restrictive dietary regimen after operation. Mean BMI was 43.1 ± 7.1 kg/m², total cholesterol 5.23mmol/l, HDL-c 1.15mmol/l, LDL-c 3.04mmol/l, tg 2.11mmol/l, CRP 13.3mg/l. All of them were operated by laparoscopic restrictive-malabsorptive bariatric technique (Roux en Y gastric by pass) **Results:** 90 days after bariatric surgery BMI was 37.24kg/m², decreased 18% (p<0.05) from beginning, HbA1c 5.32%, decreased 12% (p<0.05), s-cholesterol 3.26mmol/l, decreased 37.3% (p<0.01), LDL cholesterol 2.13mmol/l, decreased 29.1% (p<0.05), triglycerids 1.14mmol/l, were lower 42% (p<0.01). There was no significant changes in HDL cholesterol level (p>0.05). C reactive protein was 2.37mmol/l, and that was significant decrease of 82% (p<0.001). **Conclusion:** weight reduction with medical nutritive therapy and bariatric restrictive-malabsorptive procedures, improves lipid parameters, glycated hemoglobin and lowering systemic inflammation and risk for atherosclerosis and risk for cardiovascular diseases.

Conflict of Interest:**Funding:**

668 accepted poster

NUTRITIONAL DEFICIENCIES IN PREGNANCY ARE FREQUENT AFTER BARIATRIC SURGERY: A PROSPECTIVE COHORT STUDYI. Guelinckx¹, G. Vansant¹, S. Pauwels¹, S. Bel², C. Vanholsbeke³, T. Vanderheyden⁴, R. Devlieger²¹ KULEUVEN, Public Health - Nutrition, Leuven, Belgium² UNIVERSITY HOSPITAL, Obstetrics Gynecology³ ZIEKENHUIS OOST-LIMBURG, Obstetrics Gynecology⁴ GZA SINT-AUGUSTINUS, Obstetrics Gynecology

Abstract Text: Introduction: Bariatric surgery improves the patient's quality of life, but may induce nutritional deficiencies. The study aim was to analyze the nutritional status of pregnant women with bariatric surgery. **Method:** 18 women with restrictive (BMI 27.0 ± 4.8 kg/m) and 31 with malabsorption (BMI 31.0 ± 5.7 kg/m) types of bariatric surgery (age 29.9 ± 4.7; 39% nulliparae) were included into a prospective cohort. All were prescribed prenatal vitamin/mineral supplements and patient tailored supplementation if required. A fasting blood collection was performed during 1st and 2nd trimester, and 1 non-fasting on day of birth. **Results:** Between both groups the mean concentrations were comparable, except for albumin and vitamin A which were significantly lower in the restrictive group. During pregnancy the proportion of deficiencies significantly change as summarized in this table: Deficiencies (%) Reference 1st trimester 2nd trimester 3rd trimester P-value Vit A 300 650 µg/l 19 40 58 0.005 25-OH-Vit D 7.0 60.0 µg/l 14 7 6 0.030 Vit B1 70 185 nmol/l 2 5 17 0.002 Albumin 35 52 g/l 7 21 74 0.001 No vitamin E deficiencies were observed. Mild iron deficiency and pernicious anemia was diagnosed in respectively 22% and 9 % of the women during the 1st trimester and 40% and 37% during 3rd trimester. **Conclusion:** Independently of the surgery type, pregnant women with bariatric surgery are at risk for anemia and a vitamin A, 25-OH-D and B1 deficiency. A routine detection of nutritional deficiencies and patient tailored supplementation therefore seems recommended to

prevent related complications.

Conflict of Interest: none

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669 accepted poster

PHYSICAL EXERCISE IS ASSOCIATED WITH INCREASED INSULIN SENSITIVITY AND NORMOGLYCEMIA IN MORBIDLY OBESE PATIENTS AFTER BARIATRIC SURGERY

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Abstract Text:

Conflict of Interest: None.

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670 accepted poster

SERUM VITAMIN D SIGNIFICANTLY INCREASES WITH WEIGHT LOSS IN OBESE PATIENTS 6 MONTHS AFTER ROUX-EN-Y GASTRIC BYPASS (GBP)

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Abstract Text: *Background:* Malabsorptive surgical procedures led to deficiencies in fat soluble vitamins. However, results concerning serum vitamin D (25OHD) after GBP are controversial. Our aim was to determine the influence of GBP on 25OHD and calcium metabolism. *Methods:* Parameters of calcium metabolism were evaluated in 202 obese subjects before and 6 months after GBP. 30 of these subjects were matched for age, gender, weight, weight loss, skin color and season with 30 subjects who underwent sleeve gastrectomy (SG). A multivitamin preparation that provides 200 to 500 UI vitamin D3 per day was prescribed after surgery. *Results:* 93% of the subjects were taking multivitamins after GBP. Mean BMI decreased from 45.8 to 35.5 kg/m (p<0.0001). Despite a decrease of calcium intake (p<0.0001) and urinary calcium/creatinine ratio (p=0.015), serum calcium increased after GBP (p<0.0001). Serum 25OHD significantly increased after GBP from 13.4±9.1 to 22.8±11.3 ng/ml (p<0.0001), whereas parathyroid hormone (PTH) did not change. 25OHD and PTH did not differ between the 2 groups of 30 subjects 6 months after GBP or SG. Serum 25OHD was negatively correlated with BMI 6 months after GBP (r=-0.3385, p<0.0001). *Conclusions:* 6 months after GBP, 25OHD significantly increased in subjects supplemented with multivitamins containing low dose of vitamin D. These data suggest that weight loss 6 months after surgery has a greater influence on vitamin D status than malabsorption induced by GBP

Conflict of Interest: non disclosed

Funding: no funding

671 accepted poster

SHOULD UNDERGOING GASTRIC BANDING OR GASTRIC BYPASS SURGERY BE A PATIENT'S CHOICE?

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Abstract Text: Introduction: NICE guidelines in UK recommend bariatric surgery for people with BMI ≥ 40 kg/m² or BMI ≥ 35 kg/m² with co-morbidities with the aim of reducing their BMI to <35 kg/m². The most common types of bariatric surgery are gastric banding (GB) and gastric bypass (GBP). However, NICE guidelines do not specify the appropriate type of surgery for an individual patient and some Primary Care Trusts in England recommends that patient's choice should be taken into

consideration. **Methods:** We have audited the outcome at one year in 37 patients who underwent GB and 37 patients who underwent GBP to assess how many achieved BMI <35 kg/m² and the mean% of excess body weight (EBW) lost in each group at one-year. **Results:** The mean initial BMI in GB was 48.0±9.4 kg/m² and 40.0±9.5 kg/m² post-GB. Eleven patients (29.7%) achieved target BMI <35 kg/m². The mean initial BMI in GBP was 50.7±7.6 kg/m² and 34.6±5.5 kg/m² post-GBP. Twenty patients (54.1%) achieved target BMI <35 kg/m². The mean % loss of EBW after surgery was 37.5±17.5% in GB and 65±15.5% in GBP (p<0.0001). **Conclusion:** Our audit shows that the outcome is far better in GBP than GB, in achieving the target BMI and the percentage EBW loss. We have identified that some factors, such as weight loss before surgery and initial BMI, may be important in determining the best outcome. We conclude that while patient's choice is important, other factors should be taken into consideration when deciding on the best bariatric procedure for an individual patient.

Conflict of Interest:

Funding:

672 accepted poster

STATE OF CARBOHYDRATE METABOLISM IN OBESE PATIENTS WITH DM 2 AFTER BILIOPANCREATIC DIVERSION

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Abstract Text: State of carbohydrate metabolism in obese patients with DM 2 after Biliopancreatic diversion Introduction: the aim is to assess the dynamics of the glucose metabolism in patients with obesity and DM 2 after BPD. **Methods:** examined 70 patients, age 45,0±8,4 years, obesity (BMI 48,2±7,3 kg/m²) and DM 2 before and during 5 years after BPD (p<0,05). **Results:** BMI for the year decreased from 48,2±7,3 to 29,5±4,7 kg/m² and remained stable at the end of the observation period (29,1±4,0). Weight loss was accompanied by improvements in carbohydrate metabolism: 3 months marked normalization of fasting plasma glucose (baseline 8.0 (7,1;10,9) mmol/l, after 3 months 5,6 (5,0;6,0)) and HbA1c (baseline 7,5 (6,6; 8,5)%, after 3 months 5,7 (5,3;5,9), which persisted for over 5 years of follow up (4,5 (4,0;4,5) and 4,8 (4,2;5,0) respectively). Baseline in 45,4% of patients revealed fasting hyperinsulinemia (22,0 (16,4;38,6) U/l) and all patients - increasing HOMA-IR (9,3 (6,2;17,3)). After 3 months and 5 years of observation fasting hyperinsulinemia was not detected in any patient, also decreased significantly with increasing number of patients HOMA-IR: 3 months of these patients was 25%, after 6 months 15,4%, a year and a further increase in patients with HOMA-IR was not. **Conclusion:** in patients with obesity and DM 2 decreased after BPD weight is stored in the observation periods of up to 5 years, accompanied by a significant improvement in the status of carbohydrate metabolism within 3 months after surgery, which remains in observation periods of up to 5 years.

Conflict of Interest: none disclosed

Funding: no funding

673 accepted poster

THE RELATION BETWEEN ADIPONECTIN VARIATION, WEIGHT LOSS AND METABOLIC SYNDROME REMISSION IN OBESE PATIENTS - EARLY EFFECTS OF LAPAROSCOPIC SLEEVE GASTRECTOMY

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Abstract Text: Adiponectin is an adipocyte-derived hormone with an important role in regulation of glucose and lipid metabolism. Its variation might mediate an ameliorated metabolic profile in response to weight loss after bariatric surgery. The aim of our study was to evaluate early effects (6 months) of laparoscopic sleeve gastrectomy (LSG) regarding weight loss, insulin resistance and metabolic syndrome and to correlate it with changes in adiponectin level. **Patients and methods:** 124 (37 M, 87 F) patients with morbid obesity were evaluated before and 6 months after LSG. Anthropometrics and blood pressure were measured and blood tests were taken in all patients, including fasting glucose and insulin (to calculate HOMA-IR), lipid profile and adiponectin (ELISA). Patients were considered to have metabolic syndrome according to the NCEP-ATPIII definition. Excess BMI loss (EBL) was calculated by

dividing the post-op BMI change by the pre-op BMI minus 25 Results. Patients mean age was 42.32±10.58 years and mean preoperative BMI was 46.93±8.56 kg/m². Metabolic syndrome (MetS) prevalence was 74.2%. 6 month after LSG mean EBL was 65.24 ± 25.16%. Mean HOMA values decreased from 5.71±6.68 to 1.31±1.22, p<0.001, while mean adiponectin levels significantly increased (in men from 13.76±7.58 to 16.47±9.55 ng/ml, in women from 15.72±6.84 to 22.03±10.75 ng/ml, p<0.01 for both). Adiponectin variation correlated with EBL (r=.338, p<0.01) and, in non-diabetic patients, with HOMA-IR variation (r=.258, p<0.05). MetS prevalence after 6 months decreased to 17%. Patients with MetS remission after bariatric surgery had a higher improvement in adiponectin level than those with persistent MetS (51.48±82.46% versus 17.21±53.22%, p<0.05)Conclusions. Adiponectin changes may be the link between weight loss and a more favorable metabolic profile after sleeve gastrectomy.

Conflict of Interest:

Funding:

T5:PS2 - Long Term Results of Medical and Surgical Therapies

674 accepted poster

GASTRIC BYPASS INDUCES A GREATER IMPROVEMENT IN POSTPRANDIAL GLYCEMIC AND LIPID PROFILE THAN SLEEVE GASTRECTOMY

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Abstract Text: Introduction: The effect of bariatric surgery on metabolism seems to be multifactorial. The aim of the present study was to compare the effect of Roux-en-Y gastric bypass (GB) and sleeve gastrectomy (SG) on postprandial glucose and lipid homeostasis.**Methods:** Twenty two patients were recruited. Twelve underwent GB (age: 38.3 ± 8.9 years, Body Mass Index (BMI): 49.2 ± 6.1 kg/m) and ten SG (age: 44.6 ± 7.1 years, BMI: 51.7 ± 7.6 kg/m). Patients were examined preoperatively and 3, 6, and 12 months after the surgery. A test meal was consumed, consisting of 200 ml ice cream (450 kcal). Blood samples were collected before meal initiation and every 30 minutes until 180 minutes postprandially. Differences in glucose and triglycerides were examined in terms of area under the curve divided by time (AUC) using the trapezoid rule.**Results:** Both groups experienced significant (p<0.001) and similar weight loss.Blood glucose was lower in GB compared to SG at 6 and 12 months postoperatively (AUC6monthsGB: 86.4± 10.4 vs SG: 100.0± 10.2 mg/dl, p=0.009, AUC12monthsGB: 84.9± 6.9 vs SG: 96.9± 13.9 mg/dl, p=0.018).Blood triglycerides were lower in GB compared to SG at all postoperative visits (AUC3monthsGB: 109.0± 26.6 vs SG: 139.5± 34.0 mg/dl, p=0.046, AUC6monthsGB: 87.1± 25.6 vs SG: 133.1± 35.2 mg/dl, p=0.003, AUC12monthsGB: 86.9±23.3 vs SG: 121.0± 47.0 mg/dl, p=0.041).**Conclusion:** Gastric bypass improves postprandial glucose and lipid levels to a greater extent than sleeve gastrectomy even a year after surgery, implying that other mechanisms beyond weight loss are involved.

Conflict of Interest: None

Funding: None

675 accepted poster

1, 2 AND 3-YEAR WEIGHT MAINTENANCE OUTCOMES IN 5965 PATIENTS AFTER A MEAN WEIGHT LOSS OF 25.7KG USING A VLCD AND BEHAVIOUR-CHANGE PROGRAMME

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Abstract Text: IntroductionMaintaining weight loss is challenging. LighterLife is a commercial weight-management programme for BMI≥30 patients. Significant weight loss is achieved with the Total VLCD, alongside behavioural modification through transactional analysis/cognitive behavioural therapy techniques (TCBT[®]). Subsequently, LighterLife's weight-maintenance programme supports an ongoing healthier lifestyle.**Aim**To determine maintenance of weight loss 1, 2, 3yrs after mean 25.7kg baseline weight reduction. **Method**5965 patients lost weight with the LighterLife Total VLCD then utilised the weight-maintenance programme for 1yr. Data are presented for patients continuing to attend meetings and have their weight recorded for up to 3yrs post-VLCD.**Results** Start Exit 1yr 2yr 3yr Mean weight(kg) 99.1 73.4 80.6 83.3 84.4 Mean BMI 36.3 26.9 29.5 30.6 31.0 n-patients available at each time point 5965 2044 592 % keeping off 5% of start weight 92% 86% 79% % keeping off 10% of start weight 82% 69% 63% % keeping off 20% of start weight 42% 28% 24% Approximately 1/3rd of lost weight was regained by 1yr, but further weight gain after 2 and 3yrs in those remaining on the programme was modest, and approximately of patients maintained the loss of 20% of their starting weight. **Conclusion**Historic data as discussed by Wing *et al*, 2005, demonstrates that, regardless of weight-loss method, weight gain is common, particularly with increasing time. Maintaining a healthier weight over a 3yr period is likely to be due to an individual's ability to make lifestyle changes. TCBT[®] and a weight-maintenance programme are likely to help this process.

Conflict of Interest:

Funding:

676 accepted poster

1-YEAR OUTCOME FOR WEIGHT MAINTENANCE IN 1118 PATIENTS AFTER A MEAN WEIGHT LOSS OF 9.7KG USING AN LCD AND BEHAVIOUR-CHANGE PROGRAMME

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Abstract Text: Introduction Maintaining weight loss is challenging. LighterLife Lite is a commercial weight-management programme for patients with BMI 25-29.9. Weight loss is achieved with a low-calorie diet (LCD, 800-1200 kcal), comprising fortified-food replacement formula and a calorie/carbohydrate-restricted conventional meal. Subsequently, LighterLife's weight-maintenance programme sustains a healthier lifestyle via behavioural modification through transactional analysis/cognitive behavioural therapy techniques (TCBT[®]), group meetings, weigh-ins, healthy eating/physical activity plans and lapse-management strategies. **Aim** To determine the degree of maintained weight loss after 1yr, following initial mean 9.7kg weight loss. **Method** 1118 patients lost weight on the LighterLife Lite LCD for 8wks and were utilising the weight-maintenance programme 1yr later by attending meetings and having their weight recorded with their weight-management counsellor. **Results** **Start 8wks 1yr p-value Mean weight(kg)** 75.1 65.4 68.8 $p<0.01$ **Mean BMI** 27.6 24.1 25.3 $p<0.01$ **Mean weight loss** **9.7kg 6.3kg 1yr % keeping off 5% of start weight** 69% **% keeping off 10% of start weight** 43% Initial mean weight loss was 12.9%. At 1yr, while mean weight regain was 3.4kg, 69% of patients maintained a weight loss of 5% of starting weight, and 43% a weight loss of 10%. **Conclusion** Historic data as discussed by Wing *et al*, 2005, demonstrates weight gain is common, regardless of weight-loss method and particularly with increasing time. Maintaining a healthier weight over 1yr is likely to be due to an individual's ability to make lifestyle changes. Regular attendance, TCBT[®] and a weight-maintenance programme which facilitates/supports such change may contribute to this process.

Conflict of Interest:**Funding:**

677 accepted poster

4 YEARS TESTOSTERONE REPLACEMENT THERAPY WITH TESTOSTERONE UNDECANOATE LONG ACTING INTRAMUSCULAR INJECTIONS IS ASSOCIATED WITH REDUCTION IN OBESITY

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Abstract Text: Introduction: Obesity and the metabolic syndrome are frequently associated with late onset hypogonadism (LOH). We sought to study the effects of testosterone replacement therapy on weight, body mass index (BMI) and waist circumference (WC) in patients with LOH. **Materials and Methods:** As of November 2004, 130 patients with LOH (diagnosis criteria: total testosterone ≤ 3.5 ng/dl and documented erectile dysfunction (ED) by SHIM ≤ 21) were included in a prospective cohort study to investigate the effect of long-acting Testosterone Undecanoate (TU) 1000 mg intramuscular injection. Treatment was initiated at day 1 (T1) then the second dose was administered 6 weeks after (T2). TU was injected at 3-monthly intervals thereafter. Body weight and waist circumference were measured at baseline and at every treatment visit. Serial BMI, WC and percentage of weight change from baseline were calculated. **Results:** The median follow up time was 4.7 years. The mean weight decrease from baseline to the last visit was 14.3 kg ± 8.7 [-5; 44], the mean percentage weight loss was 13.0% ± 6.8 [-5.3; 34.4], the mean BMI decrease was 4.5 ± 2.7 [-1.6; 13.4], and the mean waist circumference (WC) reduction was 11 cm ± 6 [-13; 24]. There is a strong linear relationship between time and weight loss, BMI decrease and decrease of waist circumference TU treatment. **Conclusion:** Long-term treatment with testosterone replacement therapy results in significant reduction of all parameters of obesity.

Conflict of Interest: Farid Saad is an employee of Bayer Pharma. Aksam Yassin has received speaker fees from Bayer Pharma, GSK and Ferring. Yousef El Douaihy has nothing to disclose.**Funding:** The present study did not receive any funding. Bayer Pharma paid for data entry and structuring the database.

678 accepted poster

A MULTIDISCIPLINARY CLINIC FOR SEVERE OBESITY: OUTCOMES BEYOND WEIGHT LOSS

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Abstract Text: Introduction: Objective: To evaluate patient progress against a range of outcome measures within a specialist weight management program. **Methods:** Retrospective cohort study reporting on 1 year weight loss outcomes, functional outcomes and quality of life measured by Measure Yourself Medical Outcomes Profoma (MYMOP). Setting: Multidisciplinary community weight management service for patients with a BMI of ≥ 40 kg/m or ≥ 35 kg/m with co-morbidities. **Subjects:** Patients within the service for 12 months (n = 173). Mean BMI 47.1kg/m, Mean age 48.8 years, 70.4% female. **Results:** At 1 year (± 2 months) mean weight loss was 2.51kg ($p<0.001$); 28.9% achieved $\geq 5\%$ weight loss. Functional and quality of life outcomes were measured in subsets of patients (n=19-42) following the integrated 12 week physiotherapy program. Improvements were seen in the 2 minute step test, the time taken to walk 6m & the number sit-stands in one minute (table). Quality of life, measured by MYMOP, showed clinically significant improvements in all domains of self-reported physical, emotional & social symptoms related to weight (summary scores shown in table). **Conclusions:** Traditionally weight management research has focused principally on weight loss data. Results of the current study show that, from attending a multidisciplinary weight management service, patients experience a range of benefits in addition to losing weight.

Outcome	Before	After	p-value
Step test (n)	42.0 \pm 2.5	51.2 \pm 2.2	<0.001
6 metre walk (s)	8.2 \pm 0.6	5.9 \pm 0.4	<0.001
Sit-stand (n)	13.1 \pm 1.5	19.3 \pm 1.5	<0.001
MYMOP	14.8 \pm 1.1	9.9 \pm 0.8	<0.001

Conflict of Interest: None disclosed**Funding:** Aintree LOSS is a multidisciplinary clinic for severe obesity funded by the NHS (Liverpool Primary Care Trust).

679 accepted poster

ACUTE AND SHORT TERM (6 MONTHS) EFFECTS OF AN INTENSIVE 10 TO 14 WEEKS INPATIENT PROGRAM WITH LIFESTYLE MODIFICATION ON BODY COMPOSITION IN SEVERELY OBESE PATIENTS.

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Abstract Text: Introduction: Primary objective of the treatment for severe obesity (SO) is reduction in fat mass (FM), especially abdominal fat, leading to decrease in risk factors for diabetes type 2 and cardiovascular diseases. In addition the objective is to maintain fat free mass (FFM) in order to prevent the anticipated lowering of resting energy expenditure following weight-loss. We aimed to investigate whether intensive lifestyle intervention (ILI) leads to acute and short term (6 months) changes in Body Weight (BW), FM, FFM and waist circumferences (WC). **Methods:** Data were collected from patients at the Hjelp24 NIMI Ringerike Obesity Clinic, an inpatient program focused on physical activity, nutrition and coping strategies. 92 patients (60 % female), aged 19-65 years (BMI: 42.4 \pm 4.7 kg/m²) were included. We assessed body composition (BC) at admission, discharge and 6 months follow-up using Inbody 720, a direct segmental multifrequency bioelectrical impedance. In addition 39 waiting-list patients were included in a control-group and, these data will be available in Mars 2012. **Results:** The Table shows a significant reduction in all components of BC and WC both from admission to discharge and from discharge to 6 months follow-up (P< 0.001). **Conclusion:** ILI for SO patients leads to both acute reduction in BW, FM and WC, and a further reduction at 6 months follow-up. FFM was also slightly reduced. Results regarding longterm follow-up will be provided.

	T ₀	Change T ₀ -T ₁	Change T ₁ -T ₂
BW (kg)	127.6 ±19.8	-17.3* (-18.8 to -15.7)	-5.4* (-6.8 to -4.1)
FFM (kg)	67.8 ±13.6	-1.8* (-2.4 to -1.2)	-1.0* (-1.5 to -0.5)
FM (kg)	59.8 ±11.0	-15.4* (-16.8 to -14.0)	-4.4* (-5.6 to -3.3)
WC (cm)	122.7 ±13.3	-13.8* (-15.0 to -12.6)	-3.9* (-5.1 to -2.8)

T₀=admission, T₁=discharge, T₂=6 months follow up
 Values are shown as mean ± SD or (95 % CI), n=92
 *Wilcoxon Signed Rank Tests (P<0.001)

Conflict of Interest: None Disclosed.

Funding: No Funding.

680 accepted poster

ADJUSTABLE GASTRIC BANDING IMPROVES OBESITY AND WEIGHT-LOSS QUALITY OF LIFE (OWLQOL) MEASURES OVER 3 YEARS: INTERIM RESULTS OF THE APEX STUDY

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Abstract Text: Introduction: Laparoscopic Adjustable Gastric Banding has been established as a safe, effective treatment to reduce weight in obese patients. This summarizes the 3-year prospective outcomes of the Obesity and Weight-Loss Quality of Life (OWLQOL) instrument after surgical placement of the LAP-BAND AP® (LBAP) device. **Methods:** The APEX trial is an ongoing 5-year open-label study to assess the progressive weight reduction, change in comorbidities and OWLQOL results after implantation of the LBAP (NCT00501085). The well-validated OWLQOL was prospectively provided pre-implantation and at 6 month intervals post-operatively. This represents an interim analysis of the 159 evaluable subjects (159/359) who have exited or completed the 30-month post-operative visit. **Results:** Significant improvements in all questions of the OWLQOL were observed within 6 months after implantation and continued to improve over 3 years. Mean change in score from baseline was -2.2 (range -0.9 (Q16 fear of weight regain) to -3 (Q7 ability to do what I want)). Total score improved from 70.4 at baseline to 33.3 at 3 years, (mean total improvement of 53% from baseline (range 24% (Q16) to 65% (Q7)). These improvements correlated with the mean 52% excess weight loss (%EWL) and with remission /improvement of many comorbidities of obesity: type 2 diabetes (96%), hypertension (91%), hyperlipidemia (77%), GERD (91%), sleep apnea (86%), arthritis (75%) and depression (93%). **Conclusion:** Weight loss facilitated by LBAP placement offers meaningful improvement in all 17 OWLQOL measures, and correlates with significant %EWL and comorbidity changes. Durability of these improvements will be followed and reported over 5 years.

Conflict of Interest: Drs Cornell and Okerson are employees of Allergan. Drs. Ponce and Billy are investigators in the APEX study.

Funding: Allergan provides funding for the APEX study, and is the manufacturer of the gastric band utilized in this trial

681 accepted poster

CHANGES IN HEALTH RELATED QUALITY OF LIFE AFTER GASTRIC BYPASS OR INTENSIVE LIFESTYLE INTERVENTION: A CONTROLLED CLINICAL STUDY

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Abstract Text: Objectives To study changes in health related quality of life (HRQL) between and within two groups of morbidly obese patients 1 year after Roux-en-Y Gastric Bypass (RYGB) or an intensive lifestyle intervention program (LIP). **Methods** A total of 139 morbidly obese patients chose treatment with RYGB (n=76) or LIP (n=63). The participants completed three HRQL-questionnaires before treatment and 1 year thereafter. ANCOVA were used to analyse differences between treatment groups for five dimensions of HRQL (physical, mental, emotional, symptoms and symptom pressure) controlling for baseline HRQL, age, age of onset of obesity, BMI, and physical activity. Clinical relevance is reported as Effect Size (ES) measured as the HRQL baseline standard deviation divided by the mean difference between the scores at baseline and 1 year. **Results** Between groups, the adjusted mean difference (95% CI) was 8.6 (4.6-12.6) points for the *physical dimension*, 5.4 (1.5-9.3) points for the *mental dimension* and 25.2 (15.0-35.4) points for the *emotional dimension* (all in favour of RYGB). Also, the measured *symptom pressure* was 7.7 (1.3-14.3) points and 2.3 (-3.4-4.3) fewer *symptoms* (in favour of RYGB). Within the RYGB group the change scores reached clinical relevance for all dimensions except the mental dimension (ES=.53). Within the LIP group a clinically relevant change was reached only in the emotional dimension (ES=1.39) and in the reduction of symptom pressure (ES=1.43). **Conclusion** Both RYGB and LIP were associated with improvements in HRQL after 1 year. Improvements following RYGB were greater, possibly indicating the benefits of greater weight loss.

Conflict of Interest:

Funding:

682 accepted poster

COST-EFFECTIVENESS OF PRIMARY CARE REFERRAL TO A COMMERCIAL PROVIDER FOR WEIGHT LOSS TREATMENT, RELATIVE TO STANDARD CARE – AN INTERNATIONAL RANDOMISED CONTROLLED TRIAL

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Abstract Text: Introduction: Due to the high prevalence of overweight and obesity, there is a pressing need to identify cost effective approaches for weight loss in primary care and community settings. We evaluated the cost effectiveness of two weight loss programmes of 1 year duration, either standard care (SC) as defined by national guidelines, or a commercial provider (Weight Watchers) (CP). **Methods:** This analysis was based on a randomised controlled trial of 772 overweight and obese adults (87% female; age 47.4±12.9 years; BMI 31.4±2.6 kg/m²) recruited by health professionals in primary care in Australia, England (UK) and Germany. Both a health sector and societal perspective were adopted to calculate the cost per kilogram of weight loss and the incremental cost effectiveness ratio (ICER) per quality adjusted life year (QALY). **Results:** The cost per kilogram of weight loss was USD122, 90 and 180 for the CP in Australia, UK and Germany respectively. For SC, the cost was USD138, 151 and 133 respectively. From a health sector perspective, the ICER per additional QALY gained for the CP compared to SC was USD18,266, 12,100 and 40,933 for Australia, UK and Germany respectively. Societal ICERs were USD31,663, 24,996 and 51,571 respectively. **Conclusion:** Comparing to national standards, the CP was a cost effective approach from a health funder and societal perspective indicating that it is more cost effective for GPs to refer overweight and obese patients to CPs and therefore may be better value for money than spending public funds on GP visits to manage this global problem.

Conflict of Interest: None

Funding: This study was investigator initiated but was funded by Weight Watchers International through a grant to the Medical Research Council (UK).

684 accepted poster

DIFFERENCES IN ENERGY EXPENDITURE, FAT MASS AND APPETITE SUPPRESSION AFTER GASTRIC BYPASS AND SLEEVE GASTRECTOMY FOR MORBID OBESITY

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Abstract Text: Introduction: Bariatric surgery is the most effective treatment for morbid obesity. The present study examined possible differences between gastric bypass and sleeve gastrectomy in energy expenditure, fat mass and appetite suppression. **Methods:** Thirty four patients were recruited. Fifteen underwent Roux-en-Y gastric bypass (GB) (mean age: 39.1 ± 8.2 years, mean Body Mass Index (BMI): 48.3 ± 5.8 kg/m) and nineteen underwent sleeve gastrectomy (SG) (mean age: 39.4 ± 8.1 years, mean BMI: 50.2 ± 7.0 kg/m). Patients were evaluated preoperatively and 3, 6, and 12 months after surgery. They consumed a standard test meal of 450 kcal and completed a visual analog scale questionnaire for the subjective rating of hunger and satiety every 30 minutes until 180 minutes postprandially. Differences in hunger and satiety were assessed as area under the curve (AUC) divided by time. Differences in energy expenditure (indirect calorimetry), and fat mass (bioimpedance analysis) were also examined. **Results:** Both groups displayed similar and significant (p<0.0001) weight loss. Energy expenditure and fat mass were significantly (p<0.05) and similarly decreased in both procedures. Hunger rating was significantly decreased three (p=0.004) and six months (p=0.027) after GB and six (p=0.047) and twelve (p=0.025) months after SG. Satiety was significantly increased three (p=0.039) months after GB and six (p=0.029) months after SG. There was no significant difference between the two groups in hunger and satiety ratings. **Conclusion:** Gastric bypass and sleeve gastrectomy lead to significant and comparable weight loss, decrease in energy expenditure, fat mass, and hunger, as well as an increase in satiety.

Conflict of Interest: None**Funding:** None

685 accepted poster

EFFECT OF KETOSIS ON HORMONAL ADAPTATIONS TO WEIGHT LOSS

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Abstract Text: Introduction: Diet-induced weight loss is accompanied by compensatory changes which increase appetite and encourage weight regain. Ketogenic diets may suppress appetite. We examined the effect of ketosis on a number of circulating factors involved in appetite regulation, following diet-induced weight loss. **Methods:** 39 non-diabetic overweight or obese subjects underwent an 8-week ketogenic very-low-energy diet (VLED), followed by 2 weeks of reintroduction of foods, including carbohydrates. Following weight loss, circulating concentrations of glucose, insulin, non-esterified fatty acids (NEFA), leptin, gastrointestinal hormones, and subjective ratings of appetite were compared in the presence and absence of ketosis. **Results:** Subjects lost 13% of initial body weight during the VLED. Fasting β -hydroxybutyrate increased from 0.07 ± 0.00 to 0.48 ± 0.07 mmol/L during the ketogenic VLED (p<0.001), and fell to 0.19 ± 0.03 mmol/L after 2 weeks of carbohydrate reintroduction (p<0.001 compared with week 8). Weight-loss induced increase in ghrelin was suppressed, and post-prandial area under the curve (AUC) values for glucose, NEFA, cholecystokinin and glucose-dependent insulinotropic polypeptide were higher when subjects were ketotic. AUC amylin, and fasting leptin, peptide YY, pancreatic polypeptide, and subjective ratings of appetite were lower when weight-reduced subjects were ketotic, compared with after carbohydrate reintroduction. **Conclusion:** Ketosis affects the circulating concentrations of several hormones and nutrients which influence appetite, and mitigates the increase in hunger which accompanies diet-induced weight loss.

Conflict of Interest: J.P. was chairman of the Optifast VLCD medical advisory board at the time the study was conducted. The other authors have no conflicts of interest.**Funding:** Research relating to this abstract was funded by a NHMRC project grant (508920), Endocrine Society of Australia scholarship (P.S.),

Royal Australasian College of Physicians Shields Research Entry scholarship (P.S.), and Sir Edward Dunlop Medical Research Foundation (J.P.).

686 accepted poster

EFFECTS OF ADJUSTABLE GASTRIC BANDING AFTER 2 YEARS – AN INTERIM REPORT FROM THE APEX STUDY

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Abstract Text: Introduction: Laparoscopic Adjustable Gastric Banding safely and effectively reduces weight in obese patients. This report summarizes the 2.5 year data from APEX, a study utilizing the newest LAP-BAND (AP®) device. **Methods:** The APEX study, an ongoing 5-year prospective multi-center open-label study, will assess weight reduction, improvements in comorbidities as well as changes in Obesity and Weight-Loss Quality of Life assessment after surgical implantation of the LAP-BAND AP® system (NCT00501085). These data represent an interim analysis of the subjects who have exited or completed at least the 30 month visit; 517 subjects were enrolled with 359 currently evaluable. **Results:** 81% were female, mean age of 43 years, 86% Caucasian, 10% African-American and 3% Hispanic. Hypertension and/or type 2 diabetes was present in 53% and 21% of patients respectively. 23.4% of all subjects experienced at least one adverse event (AE), with 11.4% experiencing at least one serious adverse event (SAE). 21% of the AEs and 51% of the SAEs were deemed by investigators to be unrelated to the device. 16 subjects had device explantation. Mean baseline BMI (in kg/m²) and mean excess weight was 44.3±6.3 and 121±43 pounds respectively. At 2.5 years the mean BMI was 34.6±7.2 and the mean % excess weight loss was 52±30% (n=211). The mean change from baseline in 2.5 year BMI was -9.7, representing a loss of 21.3% of body weight. **Conclusion:** These interim data demonstrate that the LAP-BAND AP® system represents a safe and effective method to provide progressive weight loss for up to 2.5 years.

Conflict of Interest: Drs Cornell and Okerson are employees of Allergan. Drs. Bhoyrul and Liu are investigators in this study (APEX), which is funded by Allergan.**Funding:** This study is funded by Allergan, the manufacturer of the gastric band used in this trial.

688 accepted poster

GLP-1 (ACTIVE 7-36) RESPONSE AFTER TEST MEAL IN OBESE PATIENTS BEFORE AND 5 AND 90 DAYS AFTER BARIATRIC GASTRIC BYPASS SURGERY

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Abstract Text: Various hypothesis exist about the mechanism of glycemic control after bariatric surgery involving intestinal bypass. The aim of our study was to determine GLP-1 response after test meal (Fresubin drink a 200 ml; 200 kcal, 15 % protein, 30% fat and 55 % carbohydrate) before (day 0) and 5 and 90 days after gastric by pass surgery. Glycaemia (mmol/l; glucose oxidase) and GLP-1 (Active 7-36) (pMl; ELISA; ALPCO diagnostics) were determined in 8 obese patients (age: 31.1±14.0; BMI: 42.7±7.2 kg/m²) in three separate days in 0, 15, 30, 45, 60, 90 and 120 min. There were no significant difference between area under the glucose curve (X ± SD) (652.65±57.12 vs 574.80±72.96 vs 572.62±68.36 mmol/l x min⁻¹; p >0.05) in respective day intervals, while there was significant increase in area under the GLP-1 curve (pmol/l x min⁻¹) in days 5 (861.94±251.22) and 90 (664.12±124.36) in comparison with day 0 (163.00±73.61) (p < 0.05). There were no significant differences between basal glucose and GLP-1 levels (0.56±0.25; 0.95±0.17; 0.35±0.14; p > 0.05) while there was significant increase in peak GLP-1 levels in day 5 (21.28±3.23) and day 90

(26.52 ± 4.36) in comparison with day 0 (1.97 ± 0.30) ($p < 0.05$). In conclusion, GLP-1 response after test meal is significantly increased after gastric bypass surgery early (after 5 days) and lately (after 90 days). The observed improvement in GLP-1 response after test meal after gastric bypass surgery may be responsible for the metabolic effects of bariatric surgery.

Conflict of Interest:

Funding:

689 accepted poster

GROWTH HORMONE TREATMENT IN CHILDREN WITH PRADER WILLI SYNDROME IMPROVES BODY COMPOSITION IN ADULTHOOD

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Abstract Text: Background: Growth hormone (GH) treatment in children with PWS improves body composition but data are lacking concerning adults after discontinuation. **Aims:** to compare body composition (Dual-energy X ray Absorptiometry) and metabolic status in adults according to GH treatment in childhood. **Methods:** 60 adults with PWS (34 deletion, 18 disomy, 8 abnormal methylation without deletion) were evaluated: 22 treated with GH in childhood (T) without treatment at the time of the study, and 38 na to GH (C) (mean age 23.4 vs 25.7y, men 59 vs 32%). **Results** (mean \pm SEM): Height adjusted for gender was 154.7 cm in the T group vs 153.5 cm in the C group. After adjustment for age, gender and sex hormone therapy, BMI was significantly lower in the T group (32.1 ± 2.6 vs 42.6 ± 2.8 kg/m², $p = 0.007$). 50 % of the T patients had a BMI < 30 kg/m compared to 18 % in the C group ($p = 0.05$). Percentage of fat mass and fat mass index were significantly lower in the T group (44.5 ± 1.7 vs $50.3 \pm 1.9\%$, $p = 0.02$, and 15.2 ± 1.7 vs 22.1 ± 1.9 kg/m, $p = 0.008$, respectively). Diabetes tended to be less present in the T group (9.1 vs 26.3%, $p = 0.13$ after adjustment for age) and significantly lower levels of HBA1c and fasting insulinemia (5.4 vs 6.1%, $p = 0.01$ and 7.1 vs 17.7 μ U/ml, $p = 0.05$, respectively). **Conclusions:** GH treatment in childhood is associated with decreased BMI and fat mass in adults with PWS even after discontinuation. This treatment can contribute to improve health condition of these patients in adulthood.

Conflict of Interest: non disclosed

Funding: no funding

690 accepted poster

IMPACT OF ADHERENCE TO MEDICAL CARE ON LONG-TERM NUTRITIONAL DEFICIENCIES AFTER GASTRIC BYPASS

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Abstract Text: Introduction: Long-term prospective data on the frequency of nutritional complications after GBP are missing. The deficits can be corrected by supplementation with multivitamins, but depend on patient's compliance. Our aim was to compare the long-term nutritional status in obese patients after GBP depending on adherence to medical care. **Methods:** We selected from our prospective database the subjects who underwent gastric bypass surgery three years ago or more. We isolated a group of 66 "compliant" subjects (CS) who attended yearly medical visits and a group of 29 "incompliant" subjects (IS) who have been called because they had not attended visits for 2 years or more. Multivitamins were systematically prescribed after GBP and additional supplements (including vitamin B12, vitamin B1, 25OH-vitamin D, calcium, iron) were introduced if deficiencies were recorded during follow-up. **Results:** Mean BMI (33 ± 7 vs 32 ± 7 kg/m) and weight loss (41 ± 16 vs 44 ± 14 kg) at the last visit did not differ between IS and CS. The time since surgery was longer for IS than for CS (58 ± 14 vs. 49 ± 15 months, $p = 0.011$). Less IS than CS were taking multivitamins (72 vs. 90%) or specific vitamins (17 vs 50%) at the last visit. IS had more nutritional deficiencies than CS (6.1 ± 2.2 vs 4.4 ± 2.4 , $p = 0.0028$) with significant difference for iron-, vitamin B1-, 25OH-vitamin D deficiencies and hyperhomocysteinemia. **Conclusion:** Long-term adherence to vitamin supplementation and medical care is required to avoid nutritional deficiencies after GBP.

Conflict of Interest: 1. Conflict of interest: none disclosed

Funding: 2. Funding: no funding

691 accepted poster

IMPROVEMENT IN DIET (RESP. FAT CONSUMPTION) AFTER TREATMENT WITH ORLISTAT IN OBESE SUBJECTS

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Abstract Text: Introduction: The pharmacological approach in the treatment of obesity plays an important role. We have previously demonstrated that Orlistat intake has beneficially influenced the diet. **Aim:** To study to effect of Orlistat treatment on fat consumption in obese subjects. **Design:** We analyzed 122 obese patients (42 men and 80 women) with mean age 42.8. At the beginning of the study the mean body mass index was 39.9; fat mas-40.2%, and waist circumference-109 cm. The first four months of the study patients received 120 mg Orlistat two times/ daily. Then, the study continued only with diet for a period of three months. Fat consumption was examined at the beginning, after the 4th and 7th month of the study using 3-day food diaries. **Results:** Before treatment fat consumption was 110 g/ daily, at the end of 4th month-62.2 g/ daily, and at the end of the 7th month-51.6 g/ daily. The mean BMI decreased significantly to 33.8, fat mass to 32%, and waist circumference to 100 cm. The relation lean body mass/ fat mass improved with 30.5%; pulse rate and blood pressure after loading as well as Cooper's test and PWC have been favorably influenced. **Conclusion:** These results show that the regular Orlistat intake beneficially improved not only the anthropometric parameters but also the diet (resp. fat consumption) in obese patients.

Conflict of Interest:

Funding:

692 accepted poster

IMPROVEMENTS IN QUALITY OF LIFE AFTER LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING AND LAPAROSCOPIC GASTRIC BYPASS

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Abstract Text: Introduction: Laparoscopic Adjustable Gastric Band (LAGB) and Laparoscopic Roux-en-Y Gastric Bypass (lap RYGB) are currently two of the most effective treatments to help patients lose weight and secondary diseases. But they also lead to help an improvement in psychosocial functioning and quality of life. The main focus of this study was to determine hunger (pangs), eating pattern and quality of life (QOL) improvements due to secondary weight loss. **Methods:** After a minimum follow-up of 6 months 113 patients who had had bariatric surgery (LAGB or lap RYGB) between January 2004 and June 2009 were invited to join the study as part of their regular appointments at the Clinical Department of Surgery in Innsbruck. QOL was measured using the six categories contained in the Moorehead-Ardelt II Quality of Life Questionnaire (MA-QoL-Q II). **Results:** 73 (74.5%) women and 25 (25.5%) men filled in questionnaires, the mean age was 43.5 years. No significant differences could be found for hunger (pangs) and eating pattern. Significantly high correlations were shown in two identical items (physical activity; social contacts) from MA-QoL-Q II with the excess weight loss (EWL) respectively postoperative weight loss. **Conclusion:** The more weight patients lose due to bariatric surgery the more active and sociable they become and their QOL in general improves. Those results are of particular importance because especially obese patients have to deal with social discrimination, prejudice and social isolation.

Conflict of Interest: None Disclosed

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693 accepted poster

KINETICS OF CHANGE IN QUALITY OF LIFE AFTER BARIATRIC SURGERY AND RELATIONSHIPS WITH BODY COMPOSITION CHANGES

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Abstract Text: *Introduction:* Quality of life (QoL) is improved with weight loss induced by bariatric surgery but the kinetics of change in QoL after surgery have not been fully assessed as well as associations with body composition (BC) modifications. *Methods:* 71 obese patients (80.3% women, mean age 42.1 ± 11.2 y, mean baseline body mass index (BMI) 47.6 ± 6.2 kg/m², mean fat mass 47 ± 4.9 %) undergoing Roux-en-Y gastric bypass filled QoL questionnaires (SF-36) and had BC measured by dual-energy X-ray absorptiometry before, 3, 6 and 12 months after surgery. Changes in QoL were assessed using repeated measures ANOVA, and associations between changes in QoL and changes in BC with mixed-effect models. *Results:* Physical QoL summary scale (PCS) significantly increased over time (from 38.9 ± 9.3 to 52.6 ± 7.9 , $P < 0.001$) as other physical SF-36 scales (all $P < 0.001$) while mental QoL summary scale did not vary significantly (from 45.7 ± 9.5 to 48.6 ± 11.5 , $P = 0.072$). Major changes in QoL occurred at 3 months after intervention to reach values comparable to the general population. PCS improvements were significantly associated with changes in BMI, lean and fat mass ($P < 0.0001$, $P < 0.0001$, $P = 0.004$ respectively). However, BC variables did not predict changes in QoL better than BMI. *Conclusions:* Serial measurements in QoL and body composition show that improvement in physical QoL after bariatric surgery is observed as early as 3 months after intervention, and is associated with weight loss. However, fat mass loss does not seem to account for change in QoL better than weight loss alone.

Conflict of Interest: None disclosed**Funding:** None

694 accepted poster

LONG-TERM EFFECTS OF AEROBIC PLUS RESISTANCE TRAINING ON THE ADIPOKINES AND NEUROPEPTIDES IN NAFLD OBESE ADOLESCENTS

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Abstract Text: *Introduction:* The aim was to compare the effects of aerobic training with aerobic plus resistance training in NAFLD obese adolescents. *Methods:* Long-term of interdisciplinary weight loss therapy (one year of clinical, nutritional, psychological and exercise-related intervention). 58 post-pubertal obese adolescents were randomized to aerobic (AT) or aerobic plus resistance training (AT+RT) according to NAFLD diagnosis. Adipokine and neuropeptide concentrations were measured by ELISA, visceral fat by ultrasound and body composition by pletismography. *Results:* The NAFLD group that followed the AT+RT protocol presented lower values of insulin, HOMA-IR and ALT after intervention compared to AT. It was verified a higher magnitude of change in the subcutaneous fat, glycemia, Total cholesterol, LDL-c, ALT and adiponectin in response to AT+RT. All patients submitted to the AT+RT exhibited a significant higher adiponectin, leptin, adiponectin and lower MCH concentrations after therapy compared to AT group. In the simple linear regression analysis, changes in glycemia, insulin and HOMA-IR were independent predictors of significant increased in adiponectin concentration. Indeed, Δ AST and Δ GGT were independent predictors of Δ ALT, meanwhile Δ fat mass and Δ AgRP were independent predictors of Δ MCH. Although the limited number of patients, we showed the positive effects of AT+RT protocol in a long-term interdisciplinary therapy to improve inflammatory biomarkers and to reduce orexigenic neuropeptides concentrations in NAFLD obese adolescents for the first time. **Conclusion:** The long-term interdisciplinary therapy with

AT+RT protocol was more effective to improve significantly non-invasive biomarkers of NAFLD which are associated to highest risk of disease progression in the pediatric population.

Conflict of Interest: None disclosed**Funding:** AFIP, FAPESP 2008/53069-0 and 2006/00684-3, FAPESP (CEPID/Sleep #9814303-3 S.T) CNPq, CAPES, CENESP, FADA, and UNIFESP-EPM, supported the CEPE-GEO Interdisciplinary Obesity Intervention Program.

695 accepted poster

PATIENTS' PERCEPTIONS, PSYCHOLOGICAL AND HEALTH CHANGES WITH OBESITY TREATMENT: SUCCESS AND FAILURE

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Abstract Text: Obesity treatment has been a challenge to professionals and researchers, highlighting the need to clarify factors related to success. In the present study qualitative and quantitative data were used to understand the personal expectations and perceptions, health and psychological changes, during the obesity treatment process. In-depth interviews and self-report measures were used to obtain qualitative and quantitative data, respectively. Thirty bariatric patients were evaluated before surgery, at 6- and 12-month follow-up. After one year, 66.6 % did not lose the expected weight. Data showed that, before surgery, failure cases see obesity as an identity and unmodifiable trait, whereas successful patients conceptualize obesity as a disease. Those groups did not differ on the other qualitative or quantitative dimensions. At 6- and 12-month follow-ups, failure cases had higher BMI, psychopathology, health problems and complaints and lower % excess weight loss than success cases. Twelve months after the surgery groups are distinguishable, with successes highlighting a positive perception of surgery, whereas failures valued unexpected dimensions, and still looking for a miracle surgery. Before surgery, success and failure cases have distinct discourses related to the understanding of their obesity and treatment. While failures comprehend obesity as a personal trait where they have a passive role, successes highlight the personal impact of obesity and understand treatment as a process whereas their active role is fundamental. These differences should be considered as an indicator to be used in order to promote greater effectiveness of surgery.

Conflict of Interest: None Disclosed**Funding:** Research relating to this abstract was funded by Foundation for Science and Technology (SFRH/BD/37069/2007).

696 accepted poster

SERVICE EVALUATION OF THE ROTHERHAM INSTITUTE FOR OBESITY

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Abstract Text: *Introduction:* The Rotherham Institute for Obesity (RIO) is the most comprehensive NHS-funded specialist intervention for weight management, based in the primary care setting, in the UK. It forms part of the award-winning NHS Rotherham Healthy Weights Framework, and provides a multi-disciplinary team approach, primarily for the morbidly obese and the obese patients with co-morbidities, in both adult and child care pathways. *Methods:* A service evaluation was performed on the RIO adult data, for the 12 month period of 2010, in order to assess anticipated annual throughput and success, and to estimate cost-effectiveness. *Results:* 1624 adults were referred to RIO, and 801 completed the full 6m RIO programme. 766 (96%) of adults lost weight and 566 (71%) met or did better than their weight loss targets. Based on 2010 costs, this equated to a cost of 454 per success. Average percentage weight loss at 6m in all completers was 5%, with a range of 3-27.8%. Average percentage excess weight loss at 6m in all completers was 12%, with a range of 5.3-92.7%. Referrals for bariatric surgery were reduced by over 50% (67 anticipated to 33 actual). The cumulative weight loss for all adults attending during 2010 was 5.6 tons. There was a 97% patient satisfaction with the service. *Conclusion:* RIO is well used by the healthcare community and is popular with the patients. It is successful in its aim to maintain or reduce weight, and initial evaluation suggests that it is a cost-effective intervention.

Conflict of Interest:**Funding:** The Rotherham Institute for Obesity is funded by NHS Rotherham

697 accepted poster

SURGICAL OBESITY TREATMENT STUDY: A 10 YEAR PROSPECTIVE COHORT STUDY OF BARIATRIC SURGERY OUTCOMES

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Abstract Text: Introduction There is a lack of long-term evidence on the outcomes of bariatric surgery. This includes details on long-term complication and reoperation rates, and the effects on diabetes and cardiovascular disease in this era of intensive primary prevention. **Methods** We will collect data prospectively from all patients undergoing bariatric surgery in both the public and private sector in Scotland over a 5 year period (>2000 patients). A web-based clinical information system for use by all bariatric surgeons in Scotland will link bariatric surgical patient data to NHS Scotland diabetes, diagnostic, hospital admissions, cancer, and mortality registries. We will also contact the patients periodically to complete questionnaires. **Results/Outcomes** of this study will include mortality, early and late complications, reoperation rates, body mass, cardiovascular disease, cancers, fractures, nutritional biochemistry, anxiety, depression, quality of life, diabetes incidence, diabetes control, medications and complications including retinopathy, nephropathy and neuropathy. **Conclusions** This novel registry, which utilises the excellent health IT infrastructure in Scotland, will provide some of the most detailed and robust data on long-term outcomes from bariatric surgery. The design will allow data collection beyond 10 years at minimal cost and is therefore an excellent model for a bariatric registry.

Conflict of Interest: None**Funding:** This study is funded by the National Institute of Health Research Health Technology Appraisal Programme.

698 accepted poster

THE IMPORTANCE OF THE PATIENTS GENDER IN RELATION TO TREATMENT OF OVERWEIGHT IN GENERAL PRACTICE

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Abstract Text: Introduction: To investigate attitudes and treatment practices among Danish general practitioners (GPs) in relation to treatment of overweight, among female and male patients. **Methods:** A total of 1145 Danish GPs participated in a questionnaire survey which, in addition included an overweight case report. The case was the same except for the gender of the case patient. The GPs were asked their opinion about recommending medicine and lifestyle changes as treatment for the case. Responses were coded as very important/important and less important/not important. Logistic regression analysis was performed adjusting for age and gender of the GPs. **Results:** The GPs stated that advice about diet counseling (96.95%) and exercise (97.03%) were equally important for the overweight male and female case. However weight loss was to be found of more importance for the overweight female than male case (OR 1.62 (95% CI 1.26-2.09)). Older GPs more frequently recommended weight loss than younger GPs (OR 1.02 (95% CI 1.01-1.04)), but no differences were found between male and female GPs. Finally, the GPs more often recommend lipid lowering medication in relation to the overweight female than male case (OR 1.43 (95% CI 1.12-1.83)), suggesting that Danish GPs may treat overweight male and female patients differently. **Conclusion:** The GPs in the present study found weight loss to be more important for overweight female than overweight male patients. In addition they may also treat complications to overweight more rigorously among female than male patients, as they recommended lipid lowering medicine more often to female overweight patients.

Conflict of Interest: None**Funding:** The Danish College of General Practitioners (DSAM)

699 accepted poster

THE ROLE OF GUT HORMONES IN PREDICTING PERCENT BODY FAT REDUCTION BY PROGRAMMED INTERVENTION IN OBESE TAIWANESE

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Abstract Text: Introduction: Gut hormones are important in regulating food intake, body weight (BW) and percent body fat (BF %). Whether the baseline gut hormones can be related to the successful BF% reduction is of interest. **Methods:** A total of 107 (46M/61F, 33.21±9.24 yr, 33.79±6.13 kg/m²) obese subjects who had completed 6-month diet/medication programmed intervention were enrolled for analysis. BW, BMI and BF% was obtained by a body-composition analyzer (TBF-410, Tanita). Total plasma gut hormones including GLP1, GIP, amylin, pancreatic polypeptide (PP), PYY and ghrelin levels were measured (LINCoplex Kit, Millipore) at 0- and 6-month visit, accordingly. A ≥ 10% loss of BF% was defined as successful BF% reduction. **Results:** At 6-month, the BW, BMI and BF% were reduced (P<0.001) along with the increment of GIP (P<0.05), amylin, PP and PYY (P<0.001), but the decrement of ghrelin (P=0.099). Sixty nine (64.5%) subjects reached the successful BF% reduction. Multiple logistic regression model revealed that baseline PP level was positively (OR=10.043, 95%CI:1.068-94.403), but ghrelin levels was negatively (OR=0.033, 95%CI:0.002-0.449) associated with successful BF% reduction. **Conclusions:** The 6-month programmed weight intervention can significantly reduce BW, BMI and BF% with favorable changes of gut hormone level for long term control. Higher baseline PP and lower ghrelin levels are independent predictors for successful BF% reduction in obese Taiwanese.

Conflict of Interest: None Disclosed.**Funding:** Research relating to this abstract was funded by National Cheng Kung University Hospital and the fund had no role in this study.

701 accepted poster

TWO-YEAR OUTCOMES OF AN EXTENDED ADOLESCENT WEIGHT-LOSS MAINTENANCE INTERVENTION INVOLVING NOVEL ADDITIONAL THERAPEUTIC CONTACT: THE LOOZIT® RANDOMISED CONTROLLED TRIAL

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Abstract Text: Introduction: Community-based randomised controlled trials (RCTs) evaluating prolonged adolescent weight-loss maintenance interventions involving youth-friendly technological support are scarce. We report the final outcomes at 24 months of: i) community and group-based management of moderate obesity in Australian 13-16 year olds (pre-post study); and ii) novel adjunctive additional therapeutic contact (ATC) (RCT). ATC involved telephone coaching and short-message-service and/or email communication once/fortnight.

Methods: Adolescents were randomised to receive the Loozit® group program a two-phase behavioural lifestyle intervention with (n=73), or without (n=78), ATC in Phase 2. Seven weekly group sessions were held separately for adolescents/parents (Phase 1), followed by quarterly adolescent group sessions to 24 months (Phase 2).

Blinded assessors determined 24 month changes in anthropometry and metabolic health, including primary outcomes body mass index (BMI) z-score and waist:height ratio (WHtR). Secondary outcomes were adolescent-reported psychosocial and lifestyle changes, and adolescent and parent anonymous program satisfaction reports. Data analysis employed intention-to-treat principles. **Results:** By 24 months, 17 adolescents had withdrawn formally and ATC largely had no impact on outcomes. In both arms combined, mean [95% CI] BMI z-score (-0.13 [-0.20, -0.06]) and WHtR (-0.02 [-0.03, -0.01]) reduced, with significant improvements in total cholesterol, triglycerides and most psychosocial outcomes. The majority of adolescents (87%) and parents (97%) would recommend the Loozit[®] program to others. **Conclusion:** The Loozit[®] group program is feasible to deliver medium-long term as a community-based adolescent weight management intervention. Further work is needed to optimize technological support for adolescent weight-loss maintenance. Australian New Zealand Clinical Trials Registry Number ACTRN012606000175572.

Conflict of Interest: None disclosed.

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702 accepted poster

YEAR-ON-YEAR COMPARISON OF MALE AND FEMALE PATIENTS FOLLOWING 12 WEEKS OF A VLCD AND BEHAVIOUR-CHANGE PROGRAMME

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Abstract Text: Introduction Since 1996, LighterLife has offered a nutritionally complete very-low-calorie diet (VLCD) and weight-management programme to patients with BMI \geq 30, and since 1997 has published weight-loss data at ECO demonstrating efficacy. Weight loss is achieved with the LighterLife Total VLCD (providing a minimum 50g protein, 50g carbohydrate, mean 550kcal), alongside behavioural modification specifically developed for weight management using transactional analysis and cognitive behavioural therapy techniques (TCBT[®]). Post-weight loss, an ongoing weight-maintenance programme helps patients implement and sustain healthy lifestyle changes, thus reducing comorbidity risk. **Aim** To demonstrate the year-on-year reproducibility of weight loss achieved using the LighterLife Total VLCD and weight-management programme in male and female patients over a 12-week period. **Method** Mean start weight and BMI were recorded at baseline and after 12 weeks on LighterLife's client data system. Mean weight loss and BMI reduction were determined in a random sample (n \geq 3000) of male and female patients completing 12 weeks of the LighterLife Total VLCD in 2008-2011. **Results** Year Mean start weight Mean start BMI Mean weight after 12 weeks Mean BMI after 12 weeks Mean weight loss Mean BMI reduction 2008 102.4kg 37.6 82.7kg 30.4 19.6kg 7.2 2009 103.5kg 37.8 83.9kg 30.7 19.6kg 7.1 2010 103.9kg 38.0 84.5kg 30.9 19.4kg 7.1 2011 105.3kg 38.2 85.8kg 31.2 19.5kg 7.0 **Conclusion** Reproducible weight-loss results are demonstrably achievable with the LighterLife Total VLCD and weight-management programme, irrespective of participants. The behavioural-modification work provided alongside the LighterLife Total VLCD may be a factor in the reproducibility of results.

Conflict of Interest:

Funding:

T5:PS3 - Motivational, Behavioural and Cognitive Approaches in Treatment

703 accepted poster

A 6-MONTH WEIGHT-REDUCTION PROGRAM (DIET MODULATION AND BEHAVIORAL LIFE STYLE INTERVENTIONS) HAS A POSITIVE EFFECT ON C-REACTIVE PROTEIN, BODY COMPOSITION AND REST ENERGY EXPENDITURE IN UNCOMPLICATED OVERWEIGHT WOMEN

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Abstract Text: INTRODUCTION: Obesity is primarily considered to be a disorder of energy balance, and it has recently been suggested that some forms of obesity are associated with chronic low-grade inflammation. C-reactive protein is one of the markers of persistent, low-grade inflammation and independent predictor of several chronic diseases and all-cause mortality. Last findings shown the influence of diet-modulation on biomarker of inflammation, body composition and the rest energy expenditure in obese persons. We assessed correlations between these factors before and after our weight-reduction program and revealed the significance of its influence C-reactive protein, metabolism and weight-loss. The intention of this study was to assess correlations between biomarkers of chronic inflammation, metabolism, body composition (percentage of fat) and determine the effects of 6-month weight-reduction program on these factors. **METHODS:** Fifty six (> or = 42 y), overweight [body mass index (in kg/m²) > or = 28], women were assigned to behavioral weight loss treatment: healthy lifestyle control and diet-induced weight loss. The weight-loss intervention consisted of a weekly session with a registered dietitian to provide education, support for lowering energy intake and improve physical activity and monthly behavioral group therapy. **RESULTS:** The diet-induced weight-loss intervention resulted in significantly greater reductions in concentration of C-reactive protein (P = 0.01), decrease free-fat percentage compared with did no weight-loss treatment. Despite a significantly (P < 0.001) greater loss of fat mass (-8.7 +/- 4.1 kg) compared with fat-free mass (-2.8 +/- 2.2 kg), energy expenditure at rest decreased by 9% following the intervention. Changes in C-reactive protein and free-fat percentage correlated with changes in body weight. **CONCLUSIONS:** These findings provide evidence that a dietary intervention designed to elicit weight loss and healthy life style reduces the concentration of inflammatory marker C-reactive protein and improve metabolism.

Conflict of Interest:

Funding:

704 accepted poster

A NEW STRATEGY FOR THE RESIDENT FACULTY DEVELOPMENT OF PATIENT EDUCATION OF BODY WEIGHT REDUCTION

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Abstract Text: Objectives The Department of Medical Education at National Taiwan University Hospital (NTUH) developed the "Residents as Teachers for Patient Education of Body Weight Reduction" training program in 2011. Instead of the traditional didactic method, we employed new teaching strategies including audio-visual technique, role-play, feedback and small group discussion in the training program. This study was designed to exam the benefit of new strategies offered in the patient education of weight control. **Methods** 168 resident doctors from 1st year to 5th year were recruited from internal medicine, surgery, gynecology, pediatrics, and emergency medicine departments to participate in the training program. During the four-hour training program, five video clips were shown followed by small group discussion, role-play, video replay and feedback. The participants filled out a questionnaire rating the importance and confidence of patient education skill. **Results** The workshop was effective as the pre- and post-test results demonstrated increased confidence in patient education skills. The participating residents found the new strategy more engaging. Participants' professional knowledge (F = 35.36, p < .001, η^2 = .044) and patient health education skills (F = 17.33, p < .001, η^2 = .024) were significantly higher than those before the workshop. As for the overall self-assessment of patient education

competence, the scores after the workshop are significantly higher than those before the workshop ($F = 13.59$, $p < .001$, $\eta^2 = .026$). Long-term impact of the training program on the patient education outcomes of patient weight control will be assessed by patient follow-up a year later. Conclusions: Interactive methods of the "Residents as Teachers" training program on patient education skill can be effective in settings where teaching is traditionally didactic. This faculty development model is worth of trying to implant into the body weight control program.

Conflict of Interest: No Conflict of Interest

Funding: The study was conducted and funded by the National Taiwan University Hospital.

705 accepted poster

AN EXAMINATION OF ATTACHMENT STYLE AND SELF COMPASSION AS POTENTIAL PREDICTORS OF WEIGHT LOSS IN OBESE ADULTS

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Abstract Text: Introduction: An invalidating home environment in childhood can contribute to the development of an insecure attachment style. Recent research has demonstrated that insecure attachment is significantly correlated with disinhibited eating and higher BMI in women (Wilkinson et al., 2011). In contrast, secure attachment relationships can help to develop self compassion, which is significantly related to adaptive psychological functioning (Neff et al., 2006). Insecure attachment is significantly correlated with disinhibited eating and higher BMI in women (Wilkinson et al., 2011). The present study examined the potential moderating influence of attachment style (AS) and self compassion (SC) on obese adults' weight loss during participation in a weight loss program. **Method:** Forty obese adults (mean BMI = 38.4) attending a 26-session behavioural weight loss program completed the Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991) and Self Compassion Scale (SCS) (Neff, 2003) at pre-treatment. Anthropometric measures were taken at pre- and post-treatment assessments. **Results:** Multiple regression was used to assess the ability of AS and SC to predict total weight loss. While the proposed model did not reach significance, SC was a stronger predictor of weight loss than AS. **Conclusion:** SC has emerged as a potentially promising construct that may predict weight loss in larger samples. While AS did not significantly predict weight loss in this study, novel behavioural weight loss treatments could incorporate SC skills in a larger sample and examine whether this improves treatment outcomes.

Conflict of Interest: None.

Funding: Research relating to this abstract was funded by a National Health and Medical Research Council of Australia (NHMRC) grant

706 accepted poster

ARE TYPE OF PERSONALITY AND SELF-EFFICACY ASSOCIATED WITH NUTRITIONAL STATUS?

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Abstract Text: Introduction: It has been suggested that psychological characteristic may predispose to behavior favorable development of overweight and obesity. The aim of the study is to assess the relationships between type of personality and sense of self-efficacy and nutritional status. **Methods:** 744 subjects (452 women and 292 men) were enrolled. Weight and height were measured and BMI was calculated. Personality type was assessed using the Polish version of the Framingham Type A Behavior Patterns Questionnaire. Self-efficacy was determined on the basis Polish version of Generalized Self-Efficacy Scale - GSES (both adapted by Juczynski). **Results:** The type A of personality had 30%, indirect type 40% and type B 30% study subjects. Low, average and high self-efficacy was presented by 28.3%, 44.8% and 26.9% study subjects, respectively. Underweight was diagnosed in

8.0%, normal weight in 38.6%, overweight in 29.6% and obesity in 23.8% study subjects. The BMI differed significantly across the three types of personality. In post-hoc comparison type B personality was associated with significantly higher BMI values than the indirect type group ($p < 0.05$) and type A ($p < 0.01$) regardless of self-efficacy. **Conclusions:** Type B personality seems to predispose for overweight and obesity development.

Conflict of Interest: None Disclosed

Funding: Research relating to this abstract was funded by Polish Ministry of Science and Higher Education number 4673/B/P01/2011/40

707 accepted poster

ASSESSING THE EFFECTIVENESS OF PSYCHOTHERAPEUTIC APPROACHES TO WEIGHT LOSS IN RUSSIA

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Abstract Text: Introduction: Obesity remains one of the most urgent and widespread health concerns in Russia and currently affects approximately 23% of the population. Our weight loss programme has been in place for 10 years and has been taken to over 80 cities and towns across the country. **Methods:** The programme consists of complex group psychotherapy using CBT, low-calorie diets, elements of trance and transpersonal techniques. Research was conducted with an experimental group of 237, who actively participated in the programme from October to December 2010 in Tomsk, Siberia. **Results:** Initial body mass was 93.73 ± 21.14 kg. After 1 month, the average participant weighed 89.14 ± 20.57 kg with a mean weight loss of $5.84 \pm 2.08\%$ from initial body mass. After 3 months, average weight decreased to 85.26 ± 19.15 kg with a mean weight loss of $9.73 \pm 3.90\%$. Following a 6 month period, participants weighed 83.31 ± 17.90 kg on average with a mean weight loss of $11.4 \pm 5.86\%$ (Table 1). Table 1

N=237	Weight in kg	Weight loss dynamic in % from initial body mass	Number of participants who lost given percentages from their initial body mass			
			<5%	5-10%	10-15%	>15%
1 month	89.14±20.57	5.84±2.08	56.62%	40.56%	2.82%	0
3 months	85.26±19.15	9.73±3.90	13.95%	35.98%	43.41%	6.98%
6 months	83.31±17.90	11.40±5.86	14.40%	26.40%	33.80%	25.60%

Conclusion: The use of this short-term psychotherapeutic programme provides good weight loss results. At the present time, further studies are being done to assess the effectiveness of the given approach over a longer period (minimum 1 year).

Conflict of Interest: None Disclosed

Funding: No Funding

708 accepted poster

CAN IMPULSIVITY HAVE AN IMPACT ON THERAPIES OF OBESE PATIENTS WITH BINGE OR NIBBLING BEHAVIOUR? A STUDY DESIGN ON 65 PATIENTS.

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Abstract Text: Introduction: Obese patients with Binge or Nibbling behaviour show growing impulse disorder related to Eating Behaviour. This psychopathological trait may cause failures in the compliance to nutritional treatments. The aim of our study is to emphasize that the recognition of the quality of impulsivity and consequent reduction in quality of life can be evaluated as a predictor of the most adequate therapeutic project in obesity treatment. **Materials and Methods:** 65 obese patients (mean BMI:47.54; mean age:35.15; F:50; M:15) have been visited for the first time to follow a nutritional program (2009-2011), and were assessed by a clinical interview. Patients with Binge or Nibbling behaviour were evaluated by a semi-structured interview and by a nutritional psycho-diagnosis: Binge Eating Scale (BES), Barratt Impulsiveness Scale -11 (BIS-11), to rate impulsivity, SF-36 for quality of life (QOL). To be involved in the trial, patients should not have a psychiatric disorder included in Axis I (DSM-IV-TR). **Results:** The data showed that high rates of impulsivity, $BES > 18$; $BIS-11 FM > 20$ and $FnP > 20$, related to the scores ISF and ISM of QOL < 50 , are negative predictors for adherence to nutritional treatment in patients with Binge

or Nibbling type EB. **Conclusions:** To obtain a stable process of weight loss the treatment of these obese patients should be approached through an integrated program: individual and group psychotherapy associated with nutritional intervention. **References:** Compr Psychiatry. 2011 May-Jun;52(3):312-8. Epub 2010 Aug 13. Exploring pretreatment weight trajectories in obese patients with binge eating disorder. Barnes RD, Blomquist KK, Grilo CM.

Conflict of Interest: The authors declare that they have no competing interests nor conflict of interest.

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709 accepted poster

CHILDHOOD OBESITY AND METABOLIC SYNDROME: EFFECTIVENESS OF A GROUP INTERVENTION PROGRAM ADDRESSED TO CHILDREN AND THEIR PARENTS

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Abstract Text: Introduction: Childhood obesity prevalence in Europe has increased dramatically in the last years. In Spain, about 15% of children are obese and 30% suffer from overweight. Therefore, the risk of paediatric metabolic syndrome is increasing. The aim of this study was to determine the effect of a group treatment program on Body Mass Index (BMI) and metabolic syndrome components. **Methods:** Forty obese/overweight children (25 girls, 15 boys) 8-13 year-old were recruited and distributed in 4 groups (n=10). They and their parents followed an intervention program of 11 weekly sessions of 90 min, named 'nin movimiento', designed to modify nutritional and psychological aspects as well as lifestyle habits. Body weight, height, waist and hip circumferences, body fat mass and blood pressure, as well as fasting serum glucose, triacylglycerols and HDL-cholesterol, were determined before and after the program. Data were analyzed using statistical paired tests (t-test or Wilcoxon test) with a confidence interval of 95%. **Results:** After the intervention program, with only one dropout, 87% of children (n=34) reduced their BMI. Waist circumference, waist/hip ratio and % fat mass were significantly lowered. The number of children with high blood pressure (>90th percentile, n=12), those with high triacylglycerol levels (>110 mg/dL, n=5) and those with low HDL-cholesterol (<40 mg/dL, n=4) decreased (75%, 60% and 75%, respectively). None of children had high basal glycaemia (>100 mg/dL) either before or after the program intervention. **Conclusion:** A group program is very effective for reducing BMI and the risk of metabolic syndrome in children.

Conflict of Interest: The authors declare no conflict of interest.

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710 accepted poster

CLIENTS WITH BINGE EATING DISORDER: PERSONAL FEATURES AND EFFECTIVE STRATEGY OF THE HELP.

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Abstract Text: Introduction: Experience with the clients suffering binge eating disorder, shows that the most effective results are reached by a combination of the medical and psychological approach. The given group of clients demands as the special medical approach (in particular, about currents of sight dieticians and endocrinology), and essential attention to their psychological features (prevailing psychological protection, type and structure of the person, the underestimated self-appraisal, etc.). **Methods:** The carried investigations of the big group of clients with binge eating disorder has revealed dominating types of the person, prevailing protective mechanisms and characteristic levels of a self-appraisal. Simultaneously surveyed have been classified on medical parameters, presence of accompanying diseases, adiposity degree, to quantity of unsuccessful attempts to lower weight in the past. **Results:** The analysis of psychological characteristics of clients with binge eating disorder has shown presence of the general characterologic features (more than 70 % use rationalization as dominating psychological protection, 52 % have underestimated, and 18 % - the lowest self-appraisal, over 40 % use protection on type idealization depreciation). At the same time,

inspection of medical parameters has shown an essential difference in a state of health, degrees of adiposity and presence of accompanying diseases. **Conclusion:** The conducted researches have shown that optimum strategy of the help to clients with binge eating disorder is the combination of the individual medical approach to the group psychological therapy considering dominating psychological features of clients.

Conflict of Interest: None Disclosed

Funding: No Funding

711 accepted poster

FOOD ADDICTION IN SEVERELY OBESE AND NON-OBESE CHILDREN - AN EXPLORATIVE STUDY OF THE YALE FOOD ADDICTION SCALE-KIDS IN DUTCH ADOLESCENTS

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Abstract Text: Introduction: We investigated whether or not the scores on the Yale Food Addiction Scale for children (YFAS-Kids) differed between obese and non-obese adolescents and compared these scores with the scores of two other questionnaires on food related behaviour. **Methods:** The YFAS-Kids is a questionnaire that assesses food addiction based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) criteria for substance dependence. A Dutch translation was presented to severely obese adolescents participating in an inpatient treatment program (A), obese adolescents treated in an outpatient setting (B) and a group of non-obese friends (C). Group A also completed the Dutch Eating Behaviour Questionnaire (DEBQ) and the Child Eating Disorder Examination-Questionnaire (ChEDE-Q). **Results:** Group A and B both consisted of 20 adolescents; group C of 12 adolescents. In total, 13 adolescents (25%) were classified as being food addicted according to the YFAS-Kids criteria. The percentage food addicted children did not differ significantly between groups A (30%), B (15%) and C (33%). Within group A the adolescents classified as being food addicted scored significantly higher on the subscales emotional and external eating of the DEBQ and on the ChEDE-Q subscales concern about eating, shape and weight compared to the others. **Conclusion:** There were no significant differences in meeting the criteria for food addiction between groups of adolescents differing in the degree of obesity, but the groups were relatively small. Severely obese adolescents who were classified as food addicted showed other signs of disturbances in eating behaviour that need to be further explored.

Conflict of Interest: None disclosed.

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712 accepted poster

HEALTH-RELATED QUALITY OF LIFE AND STAGES OF CHANGE FOR EXERCISE IN OVERWEIGHT/OBESE INDIVIDUALS

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Abstract Text: Background: Stages of change (SOC) for exercise have been shown to be associated to health-related quality of life (HRQoL) among overweight/obese adults. However, studies examining this relationship did not use HRQoL questionnaires dedicated to this population. The current study assessed the effect of SOC on HRQoL using the Quality of Life Obesity Dietetics (QOLOD) questionnaire. This specific questionnaire includes 5 dimensions: physical impact (PI), psycho-social impact (PSI), sex life (SL), comfort with food (CF) and diet experience (DE). We supposed that the more people are in advanced SOC, better are their quality of life. **Methods:** A total of 214 obese individuals (148 females / 66 males, 47.4 ± 13.99 years old, 37.2 ± 8.4 kg/m²) were included in a cross-sectional study and completed questionnaires of SOC and the QOLOD. **Results:** The results showed that 2.8% of the participants were in the precontemplation stage, 11.7% in contemplation, 47.6% in preparation, 12% in action and 25.7% in maintenance. An ANOVA determined a significant effect of SOC for exercise on PI ($P < 0.001$), PSI ($P < 0.01$), marginally significant on SL ($P = 0.07$) but not on CF ($P = 0.13$) and DE ($P = 0.13$). **Conclusion:**

Even though the overweight/obese individuals in the current study did not exercise regularly, they showed motivation to do so, which was associated to a better HRQoL. However, it is important to be aware of the limitations of physical activity and not to expect drastic improvement in dimensions related to attitude toward food.

Conflict of Interest: none

Funding:

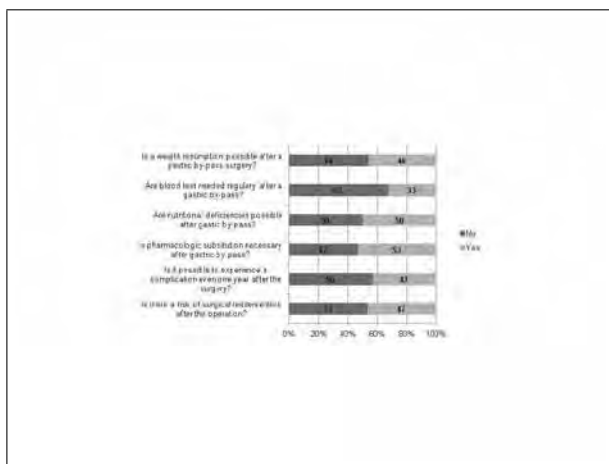
713 accepted poster

IMPACT OF A COMPREHENSIVE PRE-OPERATIVE INFORMATION COURSE FOR GASTRIC BY-PASS SURGERY: A PROSPECTIVE STUDY

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Abstract Text: Introduction: Roux-en-Y gastric bypass (RYGBP) is the most reliable method to obtain significant weight loss, which in turn results in improved comorbidities and survival. RYGBP induces also major changes in eating behaviors, psychological feelings and makes nutritional deficiencies and potential requirement for life-long dietary supplementation. The aim of this study was to assess the patients' knowledge and to analyze the impact of a preoperative teaching on their understanding. **Methods:** We realized a prospective study including all patients attending preoperative teaching in our out-patient obesity clinic between January and July 2010. A specific questionnaire was proposed before and after the course to test patients' knowledge about surgery implications. **Results:** The questionnaires of 87 patients having taken the lessons were obtained. 4 were excluded because they had not followed the 3 information sessions. Of 83 included patients 71 (86%) were women and 12 (14%) men. The figure 1 resumes the most significant patients' answers before the teaching. The courses were able to increase the percentage of positive answers between 87% and 96%. **Conclusion:** Our study shows the paucity of patients' knowledge about surgical implications and also the unrealistic expectations of some patients, especially about the weight loss, the risk of weight resumption and need of a long-term medical follow-up. These results confirm the great importance of a scrupulous and global preoperative evaluation particularly considering their psychological assessment.



Conflict of Interest:

Funding:

714 accepted poster

IMPACT OF COGNITIVE AND BEHAVIORAL THERAPY ON NON BARIATRIC VS BARIATRIC SURGERY OBESE PATIENTS

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Abstract Text: Introduction: Obesity is a complex and multifactorial disease characterized by the association of excess weight, eating disorders and psychological dysfunctions. The aims of this study were: 1) to assess the eating behaviors and psychological profile of two groups of obese women having had respectively surgical and conventional

treatment 2) to evaluate the impact of cognitive-behavioral therapy (CBT) in both groups of patients. **Methods:** Eating behaviours were assessed with the Bulimic Investigatory Test of Edinburgh (BITE) and the Eating Disorder Inventory-2 (EDI-2). Psychological profile was assessed by the Beck Depression Inventory II, the Spielberger State-Trait Anxiety Inventory form Y, the Rathus Assertiveness Schedule. The evaluation was completed before and 6 months after CBT. **Results:** The mean BITE score in surgical and conventional group was 18.3+ 5.2 and 19.9+ 4.2 respectively and after CBT was 8.7+ 6.4 and 7.7+ 7.3 (p < 0.05). The Beck score decreased significantly (p<0.05) in the two groups of patients: 16.0+ 9.6 and 16.0+ 9.7 respectively versus 7.6+ 8.5 and 6.4+ 8.5. At baseline, the surgical group showed higher scores in anxiety, ineffectiveness and social insecurity and at post-test, showed a more significant decrease in anxiety, interoceptive awareness and impulse regulation. **Conclusions:** Our study shows that both groups improve their psychological state and eating behaviors during CBT and this effect persists after 6 months.

Conflict of Interest:

Funding:

715 accepted poster

JVALUE2: JAPANESE STUDY OF VISCERAL ADIPOSITY AND LIFESTYLE INFORMATION: UTILIZATION AND EVALUATION 2.

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Abstract Text: Introduction: A reduction of visceral fat reportedly leads to the improvement of metabolic risk factors. A new medical device to measure visceral fat has been under development; it is handy and easy to use. The aim of this study was to compare the effects of a web-based weight-loss program alone or together with measurement and awareness of visceral fat on weight loss, the waist circumference (WC), dietary and physical activity behaviors. **Methods:** The study included 216 overweight and obese males (BMI > 23 kg/m² based on WPRO criteria; mean age of 45 years) in 8 healthcare offices of 3 enterprises. Exclusion criteria included having a pacemaker and participation advised against by a doctor. Subjects were randomly allocated into the following 3 groups: Control group, Web-based weight-loss program (Web), and Web+VFA group with the addition of visceral fat measured by bioelectrical impedance and awareness of visceral adiposity. The primary endpoint was reduction of the WC, which is simple indicator of visceral adiposity. **Results:** The completion rate was 81%. The mean 3-month weight losses were 0.7, 1.9, and 2.8 kg, respectively. The decreases in WC were -0.1, 1.7, and 3.3 cm, respectively. Dietary and physical activity behaviors in the Web+VFA group improved compare with the Web and control groups. **Conclusion:** Our findings suggest that measurement and awareness of visceral fat are effective in weight reduction in overweight and obese males in the workplace.

Conflict of Interest: None disclosed.

Funding: Research relating to this abstract was funded by Kao Corporation.

716 accepted poster

LEPTIN MODULATES BRAIN ACTIVITY ASSOCIATED WITH FEEDING BEHAVIOR IN PATIENTS WITH LIPODYSTROPHY

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Abstract Text: Intro: Markedly decreased plasma leptin concentrations in patients with lipodystrophy commonly lead to overeating. Leptin-replacement therapy improves feeding behavior in these patients. The aim of the present study is to clarify neuronal networks influenced by leptin signals for appetite regulation in the patients with lipodystrophy. **Methods:** We measured neuronal responses to visual food stimuli by use of functional magnetic resonance imaging (fMRI) and investigated subjective feeling on appetite under both fasting and postprandial conditions in 10 patients with or without leptin-replacement therapy and age- and sex-matched 10 healthy subjects. **Results:** In fMRI analysis, significant difference of food-related neural activity between controls and patients was detected in many regions under postprandial condition,

while only in a few areas under fasting condition. Leptin increased neural activity in a region involved in satiety and suppressed in regions involved in hunger in patients under postprandial condition with few changes under fasting condition. In subjective feeling, there was no apparent difference of hunger feeling under fasting condition, while postprandial satiety feeling in patients was significantly reduced compared to controls, which was effectively increased by leptin. **Conclusion:** These findings may suggest that improvement of feeding behavior by leptin is associated with modulation of neuronal processing in the brain regions involved in energy homeostasis and appetite regulation.

Conflict of Interest: 1. **Conflict of interest:** None disclosed

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717 accepted poster

LONG-TERM EFFECTS OF A GROUP-BASED WEIGHT-LOSS SUPPORT PROGRAMME: A 2-YEAR FOLLOW-UP STUDY OF A RANDOMISED CONTROLLED TRIAL

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Abstract Text: Introduction: We implemented a 30-month randomised controlled trial (UMIN00001259) comprising a 6-month weight-loss intervention and 2-year follow-up to examine the long-term effects of a group-based support programme. **Methods:** The study included 125 overweight adults (92 women and 33 men) with a mean (SD) age of 51.2 (6.8) years and body mass index of 29.1 (3.4) kg/m². They were randomly assigned to either moderate or intensive intervention groups. Both the groups were given a single motivational lecture and educational materials (textbooks, notebooks, and a pedometer), whereas only the intensive intervention group underwent a group-based support programme. The primary outcome measure was the amount of weight loss and the secondary outcome measures were components of metabolic syndrome. **Results:** The mean (SD) weight loss during the intervention period in the moderate and intensive intervention groups was 4.7 (4.0) kg and 7.7 (4.1) kg, respectively, which was determined by intention-to-treat analysis. There was a significant weight difference of 3.0 kg (95%CI, 1.3 to 4.8 kg) between the 2 groups. This difference disappeared at 1-year (1.5 kg, -0.0 to 3.0 kg) and 2-year (0.0 kg, -1.7 to 1.8 kg) follow-up. The mean (SD) weight loss at 2-year follow-up in the moderate and intensive intervention groups was 3.3 (5.5) kg and 3.3 (4.2) kg, respectively. No significant differences were observed between the 2 groups with respect to the secondary outcome measures. **Conclusion:** A group-based support programme is an effective method for promoting weight loss on a short-term basis. To achieve long-term effects, additional approaches are needed.

Conflict of Interest: None Disclosed.

Funding: Research relating to this abstract was funded by the Japan Agriculture Ibaraki Public Welfare Federation; by Grants-in-Aid for Scientific Research from the Japan Society for the Promotion of Science (#22700689, 20102011); and by the Meiji Yasuda Life Foundation of Health and Welfare, 2008.

718 accepted poster

MAINTENANCE OF LIFESTYLE CHANGES: 3-YEAR RESULTS OF THE GRONINGEN OVERWEIGHT AND LIFESTYLE STUDY

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Abstract Text: Introduction: This study aims to evaluate the three-year effects of lifestyle counseling by a nurse practitioner (NP) on physical activity (PA) and dietary intake compared with usual care by a general practitioner (GP) and to investigate the maintenance of lifestyle changes between one and three year follow up. **Methods:** At baseline, subjects were randomly allocated to the NP group (n=225) or to the GP group (n=232). The NP group received a low-intensive lifestyle intervention for three years by the NP and the GP group received one consultation by the GP and thereafter usual care. After three years data about PA and diet were available for 338 subjects. Body height, weight, waist circumference, and blood pressure were measured and PA and dietary intake were assessed with a questionnaire. **Results:** After three years, for both groups leisure time activity increased, but total PA decreased due

to a decrease in light intensity PA. Furthermore, favorable improvements towards a healthy diet were made. These three-year changes in PA and diet did not differ significantly between groups. Changes in PA and dietary habits after one year were practically maintained after 3 years, because only small relapses were found in leisure time activities and dietary intake. **Conclusions:** After three years, subjects were more physically active and had a healthier diet compared to baseline. Lifestyle counseling by NP resulted in similar lifestyle changes after 3 years compared to GP consultation.

Conflict of Interest:

Funding:

719 accepted poster

MOTIVATIONAL CORRELATES OF EXERCISE BEHAVIOR AMONG LONG-TERM WEIGHT LOSS MAINTAINERS

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Abstract Text: Introduction: This study sought to examine how general and exercise-related motivation is associated with features of physical activity (PA) behavior (frequency, intensity, duration, energy expenditure), and explore the role of gender and BMI, in a group of long-term weight loss maintainers. **Methods:** 165 participants (65% women) of the Portuguese Weight Control Registry (age; 39.9±10.5y; BMI: 26.6±4.2kg/m²) were evaluated at registry entry with the 7-day PA Recall and with general and exercise-related motivation measures. **Results:** Participants spent 309.6 ± 197.9 min/wk in moderate and vigorous PA, with a frequency of 4.4±2.1 times/wk, an exercise intensity of 7.7±5.0 METs/session, and a total PA energy expenditure of 2849±2958 MET-min/wk. Men reported higher intensity and total energy expenditure (ps <0.01). Positive correlations were observed between autonomous exercise-related motivation and also relatedness need satisfaction, and measures of PA frequency and duration (ps <0.01). Perceived competence, importance, identified and intrinsic motivation were also associated with both PA intensity and total energy expenditure (ps <0.05). BMI negatively predicted intensity (p=0.006) and general and exercise measures of motivation (p<0.05). Adjustment for BMI did not change the pattern of associations between motivation and PA (p<0.05). Analyses by gender showed that while for women several exercise-related motivational indicators were associated with PA, the same did not apply for men (except for identified regulation and tension). **Conclusions:** Autonomous motivation predicted several PA characteristics in long-term weight loss maintainers. This trend appeared independent of actual BMI but not gender. Exercise-related interest/enjoyment, perceived competence, importance, intrinsic motivation and general relatedness need satisfaction were associated with PA only for women.

Conflict of Interest: None Disclosed

Funding: Portuguese Science and Technology Foundation

720 accepted poster

MULTIDISCIPLINARY PROGRAM TO REDUCE ANXIETY, DEPRESSION AND BODY MASS INDEX IN OBESE CHILDREN

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Abstract Text: Introduction: Obesity is the major epidemiological transition in the 21st century, constituting a public health problem (Olaiz, et al 2006). In Mexico there are few studies on multidisciplinary approaches and the identified ones focuses on physical appearance and nutrition without emphasizing the psychological dimension. **Method:** Intervention study with quasi-experimental design in two summer camps (2007 and 2008), with a psychological evaluation pre and post intervention compared to a control group was employed. The intervention in the 2007 group was designed for six months while a year in the experience of the 2008 group. The Children's Depression Scale (Lang and Tisher, 1983) and the Revised Children's Manifest Anxiety Scale (Reynolds and Richmond, 1997) were applied, besides the evaluation of body mass index (BMI). **Results:** The 2007 group did not have significant changes in levels of anxiety, depression and BMI (p>.05); these results took us to consider making changes in the structure and duration of the intervention. There was a significant difference (p <.01) in BMI, depression and anxiety in the 2008 group, under the adjustments made according to the results in the previous experience. In the control group there was a significant difference in the incensement of BMI (p = .02). **Conclusion:** When treating childhood obesity, multidisciplinary intervention that includes spaces for working with anxiety and depression may be an impact factor in treatments to reduce and control weight.

In prevention of childhood obesity, family and school environment will strengthen psycho affective attachment to healthy eating habits.

Conflict of Interest:

Funding:

721 accepted poster

OBESITY CHILDREN ARE STIGMATIZED MORE THAN ADULTS AND BELIEFS ABOUT THE CAUSES OF OBESITY MODERATE STIGMATIZATION OF CHILDREN

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Abstract Text: Introduction: Obesity is stigmatized among adults and children. No research, however, has compared: 1) the severity of stigma between adults and children, or 2) if beliefs about the causes of obesity moderate stigmatization. The purpose of the present study was to test these two aims. Methods: 159 undergraduate students viewed photographs of Caucasian females from one of four conditions: normal weight child, obese child, normal weight adult, and obese adult. Attractiveness was controlled by blurring faces. Participants rated each photograph on 14 adjectives (popular, stupid). Participants completed a measure that quantified their beliefs in three perceived causes of obesity: Internal (e.g., lazy), Social (e.g., environment), and Physical (e.g., genetics) (Klaczynski et al., 2004). Results: A 2 X 2 ANOVA with the adjective scale as the dependent variable revealed significant main effects for weight and age and a significant interaction between weight and age. Photographs of obese children were rated more negatively (stigmatized) than photographs of obese adults. The perceived causes of obesity was a moderator only for participants who viewed child photographs. Obesity stigma was associated with perceiving the cause of obesity as Internal. Conclusion: Obese children were more stigmatized than obese adults, and believing obesity is caused by Internal factors (e.g., laziness) was associated with stigmatization only of obese children.

Conflict of Interest: None disclosed.

Funding: No funding.

722 accepted poster

OBESITY AND OVERWEIGHT IN CHILDREN AND ADOLESCENTS AS A PREDICTOR FACTOR OF LOW SCHOOL MOTIVATION.

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Abstract Text: TITLE: OBESITY AND OVERWEIGHT IN CHILDREN AND ADOLESCENTS AS A PREDICTOR FACTOR OF LOW SCHOOL MOTIVATION.

Authors: Marosuilra Cordero¹; Emilio Gonzz Jimz¹, Antonio Shez L²; Carlos A. Padilla L³; Javier S. Perona⁴, Judit lvarez Ferre⁵; Francisco Rivas Garc5; Ocete Hita, Esther⁶; Rafael Guisado Barrilao.¹ Departamento de Enfermer Facultad de Ciencias de la Salud. Universidad de Granada. ² Doctorando Departamento de Enfermer Facultad de Ciencias de la Salud. Universidad de Granada; ³ Grupo de InvestigaciS 367. Grupo PAI. Junta de Andaluc ⁴ Instituto de la Grasa. (IG-CSIC); ⁵ Ayuntamiento de Guadix (Granada); ⁶ Departamento de Pediatr Universidad de Granada; **KEYWORDS:** Overweight, obesity, adolescence, school motivation. **OBJECTIVES:** To assess motivational aspects in overweight and obese children and adolescents. **METHOD/DESIGN:** The type of study is cross-sectional, with 25 children and adolescent (12-16 year old) participants, of whom 10 had normal weight and 15 were overweight or obese. The "Test of motivations in adolescents (SMAT)" (School Motivation Analysis Test) by A.B. Sweney, R.B. Catell and S.E. Krug was used in the study. This test consists of 3 stages that are performed in 50-60 minutes and measures five parameters related to motivation: TAO (total autism-optimism), TGI (total general information), TIN (total integration), TPI (total personal interest) and TCO (total conflict). In this study we evaluated two groups of overweight and obese children and adolescents, and one group with normal weight. **RESULTS AND CONCLUSIONS:** In each of the variables of SMAT, children with overweight and obesity (4.5) had worse outcomes than children and adolescents with normal weight (4.9), reflecting that they have less motivation and interest, more frustration, more likelihood to distort reality and less goals. In this study we can conclude that children and adolescents with overweight and obesity are generally more demotivated than children and adolescents with normal weight. **REFERENCES:** 1. Aguilar M J, Gonzz E, Perona JS, Padilla C A, lvarez J, Mur N y Rivas F. Metodologel estudio Guadix sobre los efectos de un desayuno de tipo mediterrero sobre los partros lipcos y postprandiales en preadolescentes con sobrepeso y obesidad. Nutr Hosp. 2010;25(6):1025-1033 Guerra C E, Cabrera A C, Santana I, Gonzz

A E, Almaguer P y Urta T. Manejo prico del sobrepeso y la obesidad en la infancia. Medisur 2009; 7(1)2. Shrewsbury V, O'Connor J, Steinbeck S K, Stevenson K, Lee A, Hill A, Kohn M, Shah S, Torvaldsen S y Baur L. A randomised controlled trial of a community-based healthy lifestyle program for overweight and obese adolescents: the Loozit@study protocol. *BMC Public Health* 2009, 9:119.3. Kriemler S, Zahner L, Schindler K, Meyer U, Hartmann T, Hebestreit H, Brunner-La Rocca H P, Van Mechelen W y Puder J J. Effect of school based physical activity programme (KISS) on fitness and adiposity in primary schoolchildren: cluster randomised controlled trial. *BMJ* 2010;340:c785.4. Niederer I, Kriemler S, Zahner L, Brgl F, Ebenegger V, Hartmann T, Meyer U, Schindler C, Nydegger A, Marques-Vidal P and Puder J J. Influence of a lifestyle intervention in preschool children on physiological and psychological parameters (Ballabeina): study design of a cluster randomized controlled trial. *BMC Public Health* 2009, 9:94. **INTRODUCTION:** One out of four children is overweight in the Western world. The World Health Organization considers obesity as a global epidemic that affects physical and psychological aspects.

Conflict of Interest:

Funding:

723 accepted poster

PERSONALITY TRAITS AND EATING BEHAVIOURS IN MORBIDLY OBES PATIENTS SEEKING BARIATRIC SURGERY (THE PSYMO-STUDY)

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Abstract Text: Introduction We examined whether personality traits are associated with dysfunctional eating behaviours in morbidly obese patients. Methods Morbidly obese patients (n=46, 12 men, mean (SD) age 44 (11) y, BMI 44 (5) kg/m²) seeking bariatric surgery participated in an RCT (clinicaltrials.gov NCT01403558). Cross sectional correlation and regression analyses were conducted using the Three-Factor Eating Questionnaire (TFEQ-R21) measuring Emotional Eating (EE), Uncontrolled Eating (UE) and Cognitive Restraint (CR) as dependents, and the NEO Personality Inventory (NEO PI-R) measuring Neuroticism (N), Extraversion (E), Openness, Agreeableness (A) and Conscientiousness (C) as independents. Significant associations were indicated as *p < .05 and **p < .01. Results N correlated strongly with UE (r = .60**), CR (r = -.57**) and EE (r = .56**). Significant correlations also emerged between O and EE (r = -.29*), and between A and UE (r = -.30*) and EE (r = -.41*). C correlated significantly with UE (r = -.44*), CR (r = .46*) and EE (r = -.33*). N was the only significant personality predictor of UE ($\beta = .56$), CR ($\beta = -.50$) and EE ($\beta = .58$) in all the multiple linear regression models (all p < .01). Conclusion Our findings suggest that personality traits may be pivotal in the pathological eating behaviours associated with morbid obesity. Although no causal inferences can be made, it might be wise to take personality traits into account when treating morbidly obese patients.

Conflict of Interest: None disclosed

Funding: Hege Gade has received unrestricted educational grants from South-Eastern Norway Regional Health Authority

724 accepted poster

RISKY BUSINESS: WEIGHT RELATED KNOWLEDGE AND RISK PERCEPTION IS DIFFERENT FOR HEALTHY AND OVERWEIGHT PREGNANT WOMEN

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Abstract Text: Introduction: Weight status in pregnancy and gestational weight gain (GWG) affect the health of mothers and their offspring. Knowledge and perceived risk associated with health conditions are a necessary precursor for behaviour change. This analysis aimed to compare knowledge and perception of risk related to pre-pregnancy weight status and GWG between healthy (Hwt)(BMI<25kg/m²) and overweight (Owt) (BMI>25kg/m²) women. Methods: Pregnant women

(n=584) aged 29+5 (mean+SD) years were recruited at 16+2 weeks gestation. GWG intentions and knowledge; perceived risk for defined health conditions, risk associated with weight status and GWG; and demographics were assessed by questionnaire. Height measured at baseline and self report pre-pregnancy weight was used to calculate BMI. Results: Mean knowledge score was lower for Owt women (1.8+1.3 vs 2.1+1.4, p=0.013) and only 6% of all participants achieved the maximum score of 5. The majority perceived a low personal risk for developing a medical condition (91% Hwt, 74% Owt, p<0.0001) or have a large for gestational age baby (83% Hwt, 72%Owt, p=0.003). One quarter (25%) Hwt and 54% Owt women thought it likely they would gain more weight than recommended (p<0.0001). Amongst Owt women 14% and 33% reported their pre-pregnancy weight status would cause health problems for their baby and themselves respectively. The majority were aware excess GWG would cause health problems for themselves (65%Hwt, 77% Owt, p=0.003) and their baby (55% Hwt, 57% Owt, p=0.586). Conclusions: Improving knowledge and perceived risk regarding weight status and GWG may improve engagement with weight management interventions and positively influence health outcomes in pregnancy.

Conflict of Interest: None disclosed

Funding: Study funding provided by the Royal Brisbane and Women's Hospital Foundation, PhD Scholarship funding provided by the National Health and Medical Research Council and the Royal Brisbane and Women's Hospital Research Advisory Committee

725 accepted poster

SELF-EFFICACY AND THE 6 MINUTES WALKING TEST IN OBESITY

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Abstract Text: Background: Self-efficacy is defined as people's judgment of their capabilities to organize and execute courses of action required to attain designated type of performance. The six-minute walk test (6MWT) is an inexpensive, quick and safe tool that has been shown to be highly reproducible in obese subjects and thus can be used as a fitness indicator in this population. In this study, we aimed to evaluate whether the 6MWT could be a useful tool to increase self-efficacy of obese subjects. Method: 28 participants (20F/8M, 47.45 ± 15.57 years old, 37.87 ± 4.75 kg/m) performed two 6MWT separated by a rest period of 45 minutes and completed 3 questionnaires on self-efficacy (SE): 1 on increasing distance to the 6MWT (SEDist), another on increasing number of daily steps (SEInc) and the last one on self-efficacy barriers (SEBarr) to physical activity. Each questionnaire was completed 3 times: before the 1st 6MWT, during the rest period and after the 2nd 6MWT. Results: Cronbach's alpha ranged from 0.79 to 0.90 reflecting a good to excellent internal consistency. SEDist increased through the 3 measures [F(2, 52)=14.93, p=0.0001, $\eta^2_p = 0.36$] as well as SEinc [F(2, 52)=5.47, p=0.00697, $\eta^2_p = 0.17$] and SEBarr [F(2, 46)=5.23, p=0.00898, $\eta^2_p = 0.18$]. Conclusion: The 6MWT could be a useful tool to increase SE of obese subjects, at least in the short term. The increase of SEBarr showed that the 6MWT allowed an increase of expectations to others situations related to daily life as assumed by the self-efficacy theory.

Conflict of Interest: no conflict of interest to disclose

Funding:

726 accepted poster

STRESS, COPING AND EATING BEHAVIOURS IN MALTESE ADOLESCENTS: DEVELOPING A MODEL FOR AN EFFECTIVE ONLINE INTERVENTION

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Abstract Text: Introduction: Stress-induced eating and inadequate coping skills have been linked to overeating and obesity (Fryer et al. 1997; Nguyen-Rodriguez et al. 2008). The 2001-2002 Health Behaviour in School-Aged Children Study (Janssen et al. 2005) places Malta second only to the USA in prevalence of overweight (17.5%) and obese (7.9%) youth. A model amongst Maltese adolescents linking stress, coping responses and eating behaviours has been established to produce an effective Internet-based, person-centred intervention for the reduction of stress and overeating. **Methods:** Cross-sectional data were gathered from seventy-nine 14 to 17-year-old Maltese adolescents, from 7 schools, using an online questionnaire which included 6 self-report measures:

perceived stress, coping responses, eating behaviours, self-efficacy, physical exercise and social support. **Results:** The prevalence rates of overweight and obesity in this sample were 20% (95%CI: ±8.82) and 7% (95%CI: ±5.63) respectively. Higher emotional eating related to higher perceived stress and lower exercise self-efficacy. Higher perceived stress was also associated with lower perceived social support, lower general self-efficacy, and a greater use of escape-avoidance and self-controlling coping responses. No relationships with weight status were found. **Conclusion:** Associations suggest it should be possible to develop an intervention to decrease emotional eating by considering the following: decreasing perceived stress, increasing self-efficacy, increasing perceived social support, and decreasing escape-avoidance and self-controlling coping responses.

Conflict of Interest: None disclosed

Funding: Daniela Cassola is partially funded by a Plymouth University PhD studentship

727 accepted poster

SUBSTANCE DEPENDENCE (PROBLEM FOOD) APPROACH TO CHILDHOOD OBESITY, IMPLEMENTED AS A SMARTPHONE APP: A PILOT STUDY

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Abstract Text: Introduction: Current interventions for obese youth are only marginally successful, with generally poor long term results. Emerging evidence points to dependence on highly pleasurable foods (addiction) as a significant cause of childhood obesity [1,2]. Incorporating substance dependence methods may improve intervention success rates. **Methods:** An iPhone app intervention was developed using substance dependence treatment methods and included: 1) listing and photographing the user's problem foods, with sequential withdrawal from each food, 2) self esteem, motivation, and coping skills augmentation, and 3) buddy and online community support. A two month pilot study was carried out with 12 obese youth, ages 8-21. Mentors provided 24/7 wireless support. **Results:** The app was felt to be understandable by all participants, except those under age 10. The personal nature of information typed into the app was substantial. 83% lost at least 3 kg. The buddy feature was heavily utilized, although mentors were under-utilized. Participants carried the app wherever they went, thus it was available "in the moment" for cravings or impending binges. As today's youth typically use cell phones, participants were not self-conscious about using the app. Mentors, likewise, were able to effect support on the go, as any smart phone could be used. Call center mentors were an option. **Conclusion:** The efficacy of the app's approach may be superior to current interventions for childhood obesity. The app could be used indefinitely to avoid relapse. An RCT will follow. **References:** 1. Pretlow, R., Eating Disorders. 2011;19(4):295-307.2. Gearhardt, et al., Arch Gen Psychiatry. 2011;68(8):808-816.

Conflict of Interest:

Funding:

728 accepted poster

THE INSATISFACTION TOWARD BODY IMAGE IS ASSOCIATED WITH COGNITIVE RESTRAINT IN A POPULATION OF WOMEN

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Abstract Text: Background : cognitive restraint (CR) is often associated with periods of disinhibition leading to an overconsumption of calories what is predictive of weight gain and frustration. Several behavioral strategies are identified to decrease cognitive restraint including workshop on feelings and body image. In this study, we aimed to analyse correlations of cognitive restraint with attitude toward food and body image. **Methods :** A sample of 50 women (aged of 45 ± 17 years old) completed the Dutch Eating Behavior Questionnaire to obtain CR, the body image scale and answered to 3 questions based on determinants of a meal cessation with a visual analogue scale. These questions were 1) Do you enjoy eating? (Q1); 2) When you eat, do you leave food on your plate? (Q2); 3) When you eat, are you more likely to start or finish in what you prefer? Q3. **Results:** As expected, there is a high correlation between perceived body image and BMI (r=0.88, p<0.001) It appeared that CR is correlated with dissatisfaction score (IS; perceived body image minus desired body image) (r=0.69; p<0.0001) and with Q3 (r=0.51, p<0.001). IS was correlated with Q3. BMI was only correlated with Q1

($r=0.43$, $p=0.02$). None of our outcomes were correlated with pleasure to eat. Conclusion: This study gives some elements toward the role of body dissatisfaction in development of cognitive restraint. Correlations with the fact to finish with what they preferred showed that they might be advisable to start with what they prefer to limit the caloric intake.

Conflict of Interest: none

Funding: none

729 accepted poster

WEIGHT LOSS INTERVENTIONS IN PRIMARY CARE: A QUALITATIVE STUDY OF PARTICIPANTS' ACCOUNTS OF COMMERCIAL REFERRAL AND STANDARD CARE.

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Abstract Text: Introduction: In an international RCT, primary care referral to a commercial provider (CP) produced significantly greater weight loss than standard care (SC) over 12 months. This study examines participants' accounts of their experience of the two interventions to elucidate the reasons behind the greater weight loss in CP and examine how participants' 'Explanatory Model' of being overweight related to the two interventions. **Methods:** Semi-structured telephone interviews with a purposeful sample of UK participants from the RCT. Thematic Framework Analysis. **Results:** Participants' accounts of CP and SC suggest that CP is more structured, with more support and more frequent contact, which may help explain the greater weight loss. Participants across the cohort did not view weight loss, as distinguished from severe health issues, as a legitimate priority for GPs. Thus, CP accorded more to participants' explanatory model of being overweight and strategies to address it. However, most were positive about interventions being delivered in a primary care setting and some participants preferred individual level support with a primary care provider. **Conclusions:** CP appears to provide individuals who do not require specific clinical care with the motivation and support they require to lose weight and presents weight loss outside a strictly medical context, mirroring how participants regard being overweight. 1. Jebb SA, Ahern AL, Olson AD, Aston LM, Holzapfel C, Stoll J, et al. Primary care referral to a commercial provider for weight loss treatment versus standard care: a randomised controlled trial. *The Lancet* 2011.

Conflict of Interest: ALA and SAJ have received research funding to their institution and related hospitality from Weight Watchers International.

Funding: Research relating to this abstract was funded by the Medical Research Council. The trial from which participants were drawn was funded by Weight Watchers International, through a grant to the Medical Research Council.

T5:PS4 - New Dietary Strategies

730 accepted poster

12-MONTH WEIGHT-LOSS OUTCOMES FOR THE COUNTER-WEIGHT LOW ENERGY LIQUID DIET (LELD) AND WEIGHT-LOSS MAINTENANCE PROGRAMME, DELIVERED IN PRIMARY CARE. M. Lean¹, N. Brosnahan², A. Bell-Higgs², D. Morrison¹, H. Ross², P. McLoone¹

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² COUNTERWEIGHT LTD, Edinburgh, United Kingdom

Abstract Text: Introduction: This programme aimed to generate weight-losses ≥ 15 kg at 12 months, as recommended for severe obesity, within routine primary care. **Methods:** Patients with BMI ≥ 40 kg/m² commenced a micronutrient replete 810kcal/day LELD for 12 weeks/20kg weight-loss (whichever sooner), followed by 6 weeks structured food reintroduction then weight-loss maintenance \pm orlistat. The LELD Programme was delivered by nurses or dietitians over 12 months. **Results:** 91 patients (74% women). Baseline characteristics (mean): weight 131kg, BMI 48kg/m², age 46 years. 54/91 (60%) completed the LELD phase, mean duration 13.3 weeks (SD 3.5), mean weight-loss 17.3kg (SD 5.7). 37/54 (68%) completed the food reintroduction phase: mean duration 7.6 weeks (SD 2.3) and further mean weight-loss 1.9kg (SD 3.1). 44/91 (48%) were prescribed orlistat at some stage following the LELD phase. 68/91 (75%) had 12-month weight recorded: mean loss of 12.4kg (SD 11.4). For 36 protocol-compliant, 16.1kg (SD 10.6) mean weight-loss observed at 12 months. For 32 non protocol-compliant, 8.3kg (SD 10.9) mean weight-loss observed at 12 months. A total of 30/91 (33%) of all patients starting the programme and 30/68 (44%) of patients with a 12 month follow up weight maintained weight-loss ≥ 15 kg at 12 months. **Conclusion:** A care-package for severe obesity, including LELD, food reintroduction and weight-loss maintenance within routine primary care achieves 12-month maintained weight-loss ≥ 15 kg for 33% of all patients.

Conflict of Interest: Nil

Funding: Cambridge Weight Plan (Cambridge Manufacturing Ltd) supplied LELDs funded ML for conference attendance, and has provided departmental funding for related research.

731 accepted poster

A VERY LOW CARBOHYDRATE KETOGENIC DIET COMPARED WITH A LOW GLYCEMIC INDEX REDUCED CALORIE DIET IN OBESE TYPE 2 DIABETIC PATIENTS

A. Koutsovasilis¹, D. Vlachos², E. Diakoumopoulou³, A. Ganotopoulou⁴, C. Stathi⁵, D. Doulgerakis³, A. Melidonis⁴, N. Tentolouris⁶, N. Katsilambros⁶

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Abstract Text: Introduction: A very low carbohydrate ketogenic diet (VLCKD) is attractive due to its potent antihyperglycemic effect while low-glycemic reduced calorie diets (LGRCD) are more common. This study aims at evaluating and comparing the effect of these diets on weight-related components, glycemic control and lipidemic profile in obese type 2 diabetes patients. **Methods:** Seventy two obese type 2 diabetic patients were randomized to either a VLCKD (850kcal/day progressively increasing to 1500kcal/day) or a LGRCD (500 kcal/day deficit from weight maintenance diet). Metabolic and anthropometric parameters were determined before and at 2, 9 and 22 weeks after diet administration. **Results:** At 22 weeks the reduction of mean HbA1c was greater for the VLCKD group ($p = 0.03$). Reduction in fasting glucose was also greater in VLCKD ($p=0.021$). Reduction of body weight was significant only in the VLCKD group ($p=0.001$). Waist circumference was significantly reduced in the VLCKD group ($p<0.001$) but not in the LGRCD group ($p=0.186$). Only the VLCKD group showed significant reduction in body fat mass ($p<0.001$), TC ($p=0.001$), TGs ($p=0.014$) and diastolic blood pressure (0.041) as well as a significant increase in HDL (0.036). Reduction in insulin units in the VLCKD group ($p=0.022$) was also significant. **Conclusion:** The VLCKD diet leads to a significantly greater weight loss, better glycemic control and lipidemic profile and greater reduction of BP compared to a LGRCD.

Conflict of Interest: None Disclosed

Funding: No Funding

732 accepted poster

AN ASSESSMENT OF DIETARY QUALITY IN A SAMPLE OF IRISH ADULTS WITH METABOLIC SYNDROME

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Abstract Text: Introduction: It has been hypothesised that diet plays a role in the progression of metabolic syndrome (MetS). Overall dietary quality has not been widely examined in the context of MetS. **Methods:** In this cross-sectional analysis of 89 adults, 46 cases had MetS¹ (Mean±SD age 57±9y; BMI 31.6±4.6kg/m²) and 43 controls did not have MetS (52±14y, 27.6±4.0kg/m²). Data from 3-day estimated food records were used to calculate 3 dietary quality scores: Diet Quality Index (DQI) (range: 0 (excellent) to 16 (poor)), Healthy Diet Indicator (HDI) (range: 0 (poor) to 8 (excellent)) and Obesity-Specific Nutrition Risk Score (ONRS) (tertile 1=higher quality, tertile 3=lower quality). **Results:** In patients with MetS, DQI and HDI scores were 7.8±2.4 and 1.9±1.3, respectively. The proportion of individuals in each tertile of the ONRS did not differ between groups (p>0.05). Dietary quality, as assessed by all indices, was similar in individuals with and without MetS (p>0.05). In patients with MetS, total cholesterol was inversely correlated with HDI (p<0.05). **Conclusion:** These results indicate that Irish adults need to improve their dietary quality, irrespective of MetS status. The inverse association observed between HDI and total cholesterol suggests that adherence to the WHO dietary guidelines for the prevention of chronic disease, upon which the HDI is based, may improve the lipid profile of patients with MetS. 1. Alberti et al. *Circulation* 2009;120:1640-1645

Conflict of Interest: None disclosed.**Funding:** Research relating to this abstract was funded by Science Foundation Ireland.

733 accepted poster

ANTIOXIDANT CAPACITY OF THE VEGETARIAN DIETS AS THE INDICATOR OF LOW ENERGY AND HIGH NUTRITIVE DIETS

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Abstract Text: Introduction: Vegetarian diets are perceived as lower energy density diets, higher in selected vitamins and minerals, especially responsible for antioxidant defense in human body. The aim of the present study was to evaluate the intake profile of the main dietary antioxidants in diets practiced by lactoovovegetarians compared to CON and to develop the index characterizing the low energy density simultaneously high in nutrients diet. **Material & Methods:** The vegetarian group (VEG) consisted of 45 women practices lactoovovegetarians, and the control group (CON) consisted of 46 women on the traditional diet. The both group were similar in socioeconomic status and age. The information about the antioxidant potential of diets was provided by the food frequency questionnaire (FFQ). **Results:** There were statistical differences in energy intake of daily food ration in both group (VEG vs CON). It was also founded the statistical difference (VEG>CON, p<0.05) in intake of β -carotene vitamin E, folic acid, vitamin C, total phenolic, flavonoids and ORAC in the diet. We noted the correlation (p<0,05) between vitamin E supply and ORAC. **Conclusions:** The vegetarian regime of studied group was characterized by higher index of antioxidant capacity taking into account phenolic and flavonoids, and vitamins and minerals presented in diet.

Conflict of Interest: None disclosed**Funding:** Research relating to this abstract was funded by the Polish Ministry of Science and Higher Education as a research project N N312 245436

734 accepted poster

APPETITE AFTER WEIGHT LOSS BY TWO DIFFERENT ENERGY RESTRICTED DIETS

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Abstract Text: Introduction: Failure to maintain weight loss is likely due to a series of co-ordinated physiological adaptations designed to

encourage weight regain. This project aimed to determine the impact of the rate of weight loss on appetite, leptin, insulin, ghrelin and glucose levels. **Methods:** Initial baseline testing was performed then all 200 participants were randomised at a 1:1 ratio to: **A.** Rapid Weight Loss Diet (RD)-average daily intake ~3,500-4,000KJ. **B.** Gradual Weight Loss Diet (GD)- average daily intake~8,000-9,000KJ. Following the weight loss intervention participants who lost 15% of their body weight underwent measurements as per baseline visit. **Results:** Of the 200 participants (51 male and 153 female) average age 50±1 years, and initial BMI 35.3 ± 0.3 m/kg². Following the intervention, 78.4% of the RD achieved the goal of 15% weight loss compared to 52.4% in the GD (p<0.001). No differences in the change in fasting glucose (p=0.10), leptin (p=0.15), ghrelin (p=0.24) and insulin (p=0.31) were seen between the RD and GD. Fasting desire to eat (DTE) (p=0.018), hunger (p=0.003) and prospective food consumption (PFC) (p=0.02) increased following the GD. In contrast, fasting DTE and hunger did not change (p=0.85, p=0.34; respectively), and PFC decreased (p=0.075) following the RD. **Conclusion:** This study suggests that slow weight loss results in greater feelings of hunger, DTE and PFC than rapid loss. Rate of weight loss does not influence appetite regulating hormones/nutrients. **References:** 1. Sumithran P et al. Long-Term Persistence of Hormonal Adaptations to Weight Loss. *N Engl J Med* 2011; 365:1597-1604.

Conflict of Interest: None disclosed.**Funding:** Research relating to this abstract was funded by NHMRC (grant number 628748).

735 accepted poster

BENEFICIAL INFLUENCE OF GREEN TEA EXTRACT SUPPLEMENTATION ON BLOOD PRESSURE, INSULIN RESISTANCE, SELECTED INFLAMMATORY MARKERS AND TOTAL ANTIOXIDANT STATUS IN PATIENTS WITH OBESITY RELATED HYPERTENSION.

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Abstract Text: Introduction: Obesity-related hypertension represents a common clinical condition characterised by complex pathophysiological and therapeutic features. Novel therapeutic strategies in obesity-related hypertension with favourable protective effect on endothelium are a matter of interest. Green tea (GT) consumption is shown to be associated with enhanced cardiovascular and metabolic health. The aim of the study is to examine the effect of a green tea extract (GTE) supplementation on blood pressure, insulin resistance, total antioxidant status and selected inflammatory markers in obese patients with hypertension. **Methods:** A randomized, double-blind, placebo-controlled study. 54 obese patients with arterial hypertension were randomly assigned to either receive 379 mg of a GTE or placebo daily for 3 months. At baseline and after 3-months of treatment anthropometric parameters, blood pressure measurements, biochemistry parameters, tumor necrosis factor alpha (TNF α), C-reactive protein (CRP), total antioxidant status (TAS) and insulin were assessed. Insulin resistance was evaluated according to the homeostasis model assessment/insulin resistance (HOMA-IR) protocol. **Results:** We found that 3-month GTE supplementation resulted in significant decrease of systolic and diastolic blood pressure, total and LDL cholesterol, triglycerides, glucose, insulin, HOMA-IR, TNF α and CRP. Significant increase of HDL concentration and TAS level were noticed. **Conclusion:** The present findings demonstrate beneficial influence of green tea supplementation on blood pressure, inflammation and oxidative stress in patients with obesity-related hypertension. Moreover, green tea exerts positive effects on insulin resistance and lipids profile. The potential therapeutic role of green tea administration in patients with obesity-related hypertension needs further investigation.

Conflict of Interest:**Funding:**

736 accepted poster

BIG EVENING MEALS ARE NOT THE CULPRIT OF METABOLIC SYNDROME

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Abstract Text: Introduction: Diverse investigations are performed in an effort to understand and slow down the epidemic of metabolic

syndrome. Dietary habits are acknowledged to be in close relationship with metabolic derangements among many risk factors. In this study, we aimed specifically to investigate whether large evening meals are associated with metabolic syndrome parameters. **Methods:** We performed a cross-sectional analysis on data from 6,308 participants from the Fourth Korean National Health and Nutrition Examination Survey. The National Cholesterol Education Program criteria were used in the definition of metabolic syndrome. Subjects were evaluated for metabolic syndrome and its components across different amount of evening intake. Subjects were evaluated again after stratification according to gender, age group, total calorie, body mass index and medical treatment of hypertension and diabetes. **Results:** No significant relationship was found between the amount of evening intake and metabolic syndrome. Among metabolic syndrome components, we found a statistically nonsignificant increase in the risk of central obesity with increasing evening calorie intake. Subjects being treated for hypertension showed a 2.03 fold increase in the risk of metabolic syndrome in the group with largest evening intake compared to the group with smallest evening intake ($p < 0.05$). No particular relationship was observed in subjects being treated for hyperglycemia. **Conclusion:** Our research shows that the risk of metabolic syndrome or its components does not differ between evening intake calories. Further studies on dietary habits or dietary content, rather than the calorie per se, are needed for better prevention of metabolic derangements.

Conflict of Interest: None Disclosed

Funding: No Funding

738 accepted poster

CHANGES IN DIETARY QUALITY AFTER GASTRIC BYPASS SURGERY OR INTENSIVE LIFESTYLE INTERVENTION. A NON-RANDOMIZED CLINICAL TRIAL.

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Abstract Text: Introduction: Laparoscopic gastric bypass surgery (LGBP) is associated with lower energy intake and greater weight-loss than lifestyle intervention (LI). The effect of LGBP on dietary quality compared to LI is, however, unknown. We aimed to compare the 1-year changes in intake of healthy- and unhealthy foods, fibre and saturated fat, in patients undergoing either LGBP or LI. **Methods:** One-year non-randomized controlled clinical trial (MOBIL-study). Morbidly obese subjects ($n=126$) were treated with either LGBP ($n=72$) or LI at a rehabilitation centre ($n=54$). Dietary intake was assessed using a validated food-frequency questionnaire. **Results:** At baseline the patients had a mean (SD) age of 44 (11) years, weight 130 (21) kg and BMI 45 (6) kg/m², and there were no significant differences between groups in energy-distribution, fibre- and food-group intake. After one year, the LI-patients had a significantly higher median intake of fruit/vegetables, 522 vs 390 g/d, $p=0.002$ and fibre, 27 vs 21 g/d, $p<0.001$, while the energy-percentages from total- and saturated fat were significantly lower, 31 vs 35 and 11 vs 13, $p<0.001$ for both, compared to the LGBP-group. The changes in intake of whole grain foods and red- or processed meat were comparable between groups. **Conclusion:** LI results in better dietary quality compared to LGBP; the intake of total- and saturated fat, fibre and fruit/vegetables changed significantly in a health-promoting direction.

Conflict of Interest: None Disclosed.

Funding: Line Kristin Johnson has received unrestricted educational grants from the National Resource Centre for Women's Health, Rikshospitalet, Oslo University Hospital, Norway.

739 accepted poster

COMPARISON OF THE SLIMMING WORLD EATING PLAN AND DIOGENES INTERVENTION DIETS USING A HEALTHY DIET INDEX

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Abstract Text: Introduction. This study examined diet composition and weight-loss maintenance in women consuming low-fat, lower energy density diets during 6 months after weight-loss. **Methods.** Weighed food records and body weights were compared in 117 overweight/obese members of a commercial weight management programme (CWMP) with 277 participants in the Diogenes study investigating high/low protein (HP/LP), and high/low glycaemic index (HGI/LGI) diets and healthy eating advice in weight-control¹. All diets were *ad libitum*. Diet quality was estimated by Healthy Diet Indicator (HDI) scores². **Results.** Compared to the other Diogenes diets, the CWMP diet was lower or similar for percentage energy from fat, and higher or similar for percentage energy from protein and carbohydrate. Energy density was lower, and fruit and vegetable intake was higher (both $P<0.002$). HDI score was similar to the two LP diets and higher than the other diets ($P<0.001$). Red and total meat consumption was higher than the two LP diets and similar to the other diets. Mean weight changes, as % initial weight, were significantly different across groups ($P=0.005$) -0.53, -0.17, +2.47, -1.73, +0.12 and +1.18 (CWMP, HPHGI, LPHGI, HPLGI, LPLGI and healthy eating advice respectively). **Conclusion.** People following the CWMP reported diets that were generally as, or more, healthy than the Diogenes intervention diets. Higher protein diets could be refined by substituting some red meat with other protein sources. ¹Larsen et al. *N Engl J Med.* 2010;363(22):2102-13. ²Huijbregts et al. *Br Med J.* 1997;315:13-7.

Conflict of Interest: J Stubbs works for Slimming World.

Funding: EC Framework 6 Diogenes project (contract #: Food-CT-2005-513946).

740 accepted poster

DECREASE IN PLASMA PROTEIN MARKERS OF OXIDATIVE STRESS AND INFLAMMATION IN OVERWEIGHT/OBESE TYPE 2 DIABETICS AFTER SUPPLEMENTATION WITH BILBERRY EXTRACT

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Abstract Text: Introduction: Dietary strategies for alleviating health complications associated with type 2 diabetes are being pursued as alternatives to pharmaceutical interventions. Berries such as bilberry are enriched in anthocyanins with reported anti-oxidant and anti-inflammatory properties. This study investigated whether three weeks supplementation with a concentrated bilberry extract would alter markers of inflammation and oxidation in the plasma proteome of overweight/obese type 2 diabetics compared to pre-supplementation samples. **Methods and Results:** Male, type 2 diabetics ($n=11$, BMI>25) controlling their diabetes by diet only were given a total daily dose

of 1.4 g standardized bilberry extract (36% (w/w) anthocyanins) for three weeks. 2 Dimensional Electrophoresis (2DE) gels of plasma proteins revealed significant changes ($p \leq 0.05$) post-supplementation in the normalised volume of 14 spots; 9 decreased, identified by liquid chromatography-electrospray tandem mass spectrometry (LC/MS/MS) as predominantly inflammatory markers haptoglobin (Hp), complement C3 (C3) and alpha-1-acid glycoprotein (AGP); 5 increased, including negative acute-phase proteins (APPs) (transferrin (Tf) and anti-thrombin III (AT)) and the HDL constituent apolipoprotein-A-II. Immunoblotting confirmed reductions ($p \leq 0.05$) in AGP, 4.51%; C3, 14.32%; Hp, 10.20%; while Tf increased, 6.89%. Markers of oxidation; protein-pyrroles, nitrotyrosine (3-NT) and oxidised LDL, decreased ($p \leq 0.05$) 39.51%, 9.06% and 12.26% respectively. Conclusion: These findings support the hypothesis that supplementation with a bilberry extract with a high standardized anthocyanin content (36% (w/w) anthocyanins) for three weeks is effective in lowering markers of inflammation and oxidative stress in overweight/obese type 2 diabetics.

Conflict of Interest: Conflict of interest: None disclosed

Funding: Funding: Research relating to this abstract was funded by a grant from the Scottish government

741 accepted poster

DIET CLOSE TO THE TRADITIONAL NUTRITIONAL HABITS IN BULGARIA IN THE MANAGEMENT OF OBESITY

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Abstract Text: Introduction: In the last years the beneficial effect of fiber and yoghurt has been extensively studied in the dietary treatment of obesity, dislipidemias and metabolic syndrome. Aim: To study the effect of traditional dietary regimen on the anthropometric and biochemical parameters in obese patients. Design: The study consisted of 74 subjects (28 men and 46 women), with mean age 39.3. The following anthropometric parameters were examined by Tanita 420: body mass index, fat mass, visceral fat. Patients received dietary advices based on the traditional Bulgarian diet for a period of two months. The diet consisted of 100 g of wholegrain bread (29.5% fibers, 6.8% proteins, 1.7% fat, 46-50% carbohydrates), a variety of seasonal fruits and vegetables and juices as well as 370 g yoghurt (2% fat, 3.2% proteins, 4.2 carbohydrates) for dinner. Results: After the two month dietary regimen an improvement in the studied parameters were demonstrated. Conclusion: We conclude that diet rich in fiber and yoghurt should be advised when treated obese patient.

Conflict of Interest:

Funding:

742 accepted poster

DIETARY PHYLLOQUINONE INTAKE AND RISK OF TYPE 2 DIABETES IN ELDERLY SUBJECTS AT HIGH RISK OF CARDIOVASCULAR DISEASE

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Abstract Text: Introduction Limited evidence from human and animal studies suggest that vitamin K has a potential beneficial role in glucose metabolism and insulin resistance. For this reason, the aim of our study was to cross-sectional and longitudinal analyse the association between dietary vitamin K intake and type 2 diabetes mellitus (T2DM) in elderly subjects at high cardiovascular risk. Research design and methods Cross-sectional associations were tested in 1,925 men and women entering the PREDIMED trial. Longitudinal analysis was conducted on 1,069 individuals free of diabetes at baseline (median follow-up of 5.5 years). Biochemical and anthropometric variables were obtained yearly. Dietary intake was collected during each annual visit using a food frequency questionnaire (FFQ), and Vitamin K intake was estimated using the USDA database. Occurrence of T2DM during follow-up was assessed using American Diabetes Association criteria. Results Dietary vitamin K at baseline was significantly lower in those subjects who developed T2DM during the study. After adjusting for potential confounders, the risk of incident diabetes was 15% lower for each additional 100 µg/day of vitamin K intake. Moreover, those subjects who

increased their dietary intake of vitamin K during the follow-up had a 40% reduced risk of incident diabetes compared to those who decreased or did not change the amount of vitamin K intake. Conclusion Dietary vitamin K intake was associated with a reduced risk of type 2 diabetes mellitus in elderly subjects at high cardiovascular risk. Further studies are needed to confirm this association.

Conflict of Interest: No potential conflicts of interest relevant to this article were reported for any of the authors.

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743 accepted poster

DIETARY POLYPHENOLS AND FAT OXIDATION IN HUMANS

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Abstract Text: Introduction Dietary polyphenols may enhance lipid oxidation, which may improve body weight control and insulin sensitivity. The present study investigated effects of polyphenols on fat oxidation and energy expenditure (EE). Methods 16 healthy overweight volunteers (9 females, 7 males; age 33.9 years; BMI 28.8 kg/m) participated in a randomized double-blind crossover study. Combinations of Epigallocatechin-gallate (EGCG, 200 mg/day) + Resveratrol (150 mg/day RSV), and EGCG+RSV + 80g/day Soy Isoflavones (SI) or placebo capsules (PLA) were supplemented twice daily, for a period of 3 days. On day 3 energy metabolism was measured during fasting and after a high-fat-mixed meal (2.6 MJ, 61.2 E% fat) using indirect calorimetry. Results EGCG+RSV increased fasting EE compared to placebo (5.44±0.77 vs 5.18±0.82 kJ/min, $p < 0.05$). This was accompanied by a more pronounced rise in fat oxidation with EGCG + RSV compared with PLA (Fat oxidation as % EE, $p = 0.084$) in males. The thermogenic response was blunted in males with EGCG + RSV compared with PLA (iAUC, $p < 0.05$), whilst no differences were observed in females. Within the whole group, postprandial RQ was increased with EGCG+RSV as compared to PLA (RQ (AUC&iAUC) $p < 0.05$). EGCG+RSV+SI had no synergistic effect on EE and substrate metabolism. Conclusion EGCG + RSV increased fasting EE, whilst the effect on fasting fat oxidation appears to be more pronounced in males compared with females. EGCG and RSV increased postprandial RQ, indicating an improved metabolic flexibility. If these effects are sustained after long-term treatment, this may have positive consequences for body weight control and insulin sensitivity.

Conflict of Interest: No conflict of interest declared.

Funding: This study was funded by the ALPRO Foundation.

744 accepted poster

EFFECT OF WEIGHT REDUCTION IN THE SHORT TERM BY VERY LOW CALORIE DIET ON OXIDATIVE STRESS MARKERS AND CYTOKINES IN PATIENTS WITH OBESITY.

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Abstract Text: Introduction: Increase of oxidative stress markers and cytokines is seen in diabetes and obese patients, but these changes by weight reduction on Very Low Calorie Diet (VLCD) are not clarified enough. Methods: We enforced VLCD treatments more than at least 1week for 18 obesity patients, then measured urinary 8-OHdG, 8-isoprostaglandin (8-iso-PGF_{2α}), biopyrrin, and serum IL-6, IL-18, TNF-α, VCAM-1, L-selectin, MCP-1, ICAM-1, adiponectin before VLCD and in 1-2weeks, and in 3weeks or more. Results: Body weight decreased from 98.2kg to 93.9kg in 1-2weeks ($p < 0.01$), and to 84.3kg in 3weeks or more ($p < 0.05$). Urinary 8-OHdG increased from 11.8ng/ml to 18.0ng/ml in 1-2weeks ($p < 0.05$), and to 21.2ng/ml in 3weeks or more ($p < 0.05$). Serum VCAM-1 increased from 662.1ng/ml to 791.3ng/ml in 1-2weeks ($p < 0.01$), and to 814.3ng/ml in 3weeks or more ($p < 0.01$), too. IL-18 increased from 229.1pg/ml to 290.6pg/ml in 1-2weeks ($p < 0.05$), but appearing did not show a change in 3weeks or more. L-selectin increased from 857.4ng/ml to 913.3ng/ml only in 1-2weeks ($p < 0.05$), but not in 3weeks or more, too. Adiponectin increased from 6.56µg/ml to 8.00µg/ml only in 3weeks or more ($p < 0.01$),

but not in 1-2weeks. The others did not show a meaningful change. Conclusion: Although urinary 8-OHDG and serum VCAM-1 increased after VLCD, IL-18 and L-selectin increased only in 1-2weeks but not in 3weeks or more. In addition, adiponectin increased in 3weeks or more, but not in 1-2weeks. These findings suggested that weight reduction in the short term by VLCD in patients with obesity might give vessels damage from oxidative stress markers and cytokines.

Conflict of Interest:

Funding:

745 accepted poster

EFFECTIVENESS OF THE COUNTERWEIGHT PROGRAMME DELIVERED IN COMMUNITY PHARMACIES IN FIFE, SCOTLAND.

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Abstract Text: Introduction Limited evidence exists of effectiveness for weight-loss programmes delivered through community pharmacies. We aimed to evaluate the Counterweight Programme delivered in this setting compared with published data from family practice delivery: specifically 3,6 & 12month outcomes (-3.3kg, -4.2kg and -3.0kg respectively), 45% retention at 12months and 13.9% of all patients entering the programme >5% weight-loss at 12months. **Method** From September 2009 to June 2011 community pharmacies were recruited to deliver the Counterweight Programme. Specialist dietitians provided training, support and resources to pharmacy support staff. Patients recruited had BMI $\geq 30\text{kg/m}^2$ or $\geq 28\text{kg/m}^2$ with obesity-related co-morbidities, were not routinely engaging with health services and came from areas of high social deprivation. A financial incentive scheme was included. **Results** 16 pharmacies recruited 370 patients (74.9% women, mean age 55.2years, mean BMI 36.1kg/m²). Mean weight change at 3, 6 and 12months of -2.3kg, -3.5kg and -3.7kg, respectively. Of 237 patients eligible for a 12month visit, 27% (n=64) attended. 11.0% (n=26) of all patients entered, or 40.6% of those who attended achieved the target loss of $\geq 5\%$ baseline weight. **Conclusion** Based on all patients entered, fewer achieve clinically beneficial weight-loss at 12m compared to published Counterweight outcomes. This may have been influenced by higher loss to follow up in this population. For those maintaining engagement, mean weight-loss is better at 12m compared to published outcomes. Strategies to maintain programme engagement should be explored

Conflict of Interest: Nil

Funding: The Counterweight Programme was funded by the Scottish Government as part of the Keep Well Programme.

747 accepted poster

EVIDENCE-BASED NUTRITIONAL RECOMMENDATIONS FOR THE PREVENTION AND TREATMENT OF OVERWEIGHT AND OBESITY IN ADULTS. THE FESNAD-SEEDO CONSENSUS.

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Abstract Text: Introduction: Conscious of the current overwhelming, and sometimes confusing, information about the role and characteristics of diets for overweight and obesity, FEESNAD and SEEDO underwent this review study in order to provide the health professional with a tool which could facilitate the choice of strategies to prevent and manage overweight and obesity in adults. **Methods:** We have reviewed the scientific references published from January 1st 1996 and January 31st 2011 (15 years) according the following criteria:

1. Human studies with a minimum of 10 individuals per group.
2. Dropout rate lower than 20% for studies of up to 1 year duration or 40% for those above 1 year duration.
3. Studies focused on adult populations (excluding pregnant or breast-feeding women).
4. We have not considered studies on nutritional issues of bariatric surgery, neither those related to pharmacological or physical activity aspects of obesity prevention and management. Studies on malnourished or type 2 diabetic patients, as well as those performed in poorly or undeveloped countries, were also excluded.

5. Different evidence-levels and derived recommendation degrees have been established following the EASO criteria¹.

Results: Following the above, a total amount of 543 published studies dealing with obesity prevention and treatment were reviewed. The different levels of evidence are presented grouped by sections. **Conclusion:** According to the diverse evidence-levels observed, subsequent degree-classified recommendations are produced.¹ Tsigos C et al. *Obes facts*, 2008; 1:106-16

Conflict of Interest:

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748 accepted poster

IMPACT OF DIET AND WEIGHT LOSS ON IRON STATUS IN OVERWEIGHT AND OBESE YOUNG WOMEN

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Abstract Text: Introduction: Risk of iron deficiency in young women may be exacerbated by obesity related inflammation and restricted energy intake.¹ Diets higher in protein and haeme iron may be superior for maintaining iron status in those undergoing weight management.¹ This study aimed to monitor iron status of young overweight women during a 12 month randomised clinical weight loss trial. **Method:** Participants were healthy women (18-25y; BMI $\geq 27.5\text{kgm}^{-2}$) who completed (attrition:49%) a trial comparing two non-vegetarian, 5600kJ diets, higher in protein and haeme iron (HP:n=21) or carbohydrate (HC:n=15). Baseline and 12 month haemoglobin, ferritin and soluble transferrin receptor-ferritin index (sTfR-F: marker of iron depletion and anaemia of inflammation) were assessed against categories of percent weight loss (<5%; $\geq 10\%$) and diet type. **Data: mean \pm SD. Results:** Weight loss for the two dietary groups: HP:-9.8 \pm 13.0; HC:-4.6 \pm 7.1%; P=0.16. Iron markers were similar between groups at baseline. In those who lost $\geq 10\%$ weight, ferritin was higher in both diets ((HP:<5%:45.5 \pm 29.6 $\mu\text{g/L}$; $\geq 10\%$:70.2 \pm 31.3 $\mu\text{g/L}$; P=0.044); (HC:<5%:33.0 \pm 20.8 $\mu\text{g/L}$; $\geq 10\%$:49.3 \pm 7.1 $\mu\text{g/L}$; P=0.037)), with almost significantly lower sTfR-F (<5%:1.06 \pm 0.41; $\geq 10\%$:0.73 \pm 0.30; P=0.051) in HP and trend to higher haemoglobin (<5%:127 \pm 11g/L; $\geq 10\%$:129 \pm 6g/L; P=0.061) in HC. Between diets, haemoglobin (HP:132 \pm 12g/L; HC:125 \pm 11g/L; P=0.031) and ferritin (HP:52.7 \pm 30.1 $\mu\text{g/L}$; HC:38.0 \pm 20.8 $\mu\text{g/L}$; P=0.026) were significantly higher in HP at 12 months irrespective of weight loss. All iron values remained within the normal range. **Conclusion:** Although iron values remained within the normal range, greater weight loss was associated with higher ferritin, and HP was superior at maintaining haemoglobin and ferritin concentrations than HC at 12 months. 1. O'Connor et al. *Asia Pac J Clin Nutr*. 2011;20:206-211

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749 accepted poster

INULIN-TYPE FRUCTANS WITH PREBIOTIC PROPERTIES LESSEN ENDOTOXEMIA AND MODULATE HOST METABOLISM BY CHANGING GUT MICROBIOTA COMPOSITION IN OBESE WOMEN

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Abstract Text: Introduction: Inulin-type fructans (ITF) are non digestible/fermentable carbohydrates that modulate the gut microbiota composition, improve glucose and lipid homeostasis and decrease inflammation and adiposity in obese rodents. Few studies report that ITF prebiotics decrease body weight in obese humans and modulate the production of gut peptides involved in satiety. The aim of this study is to evaluate the influence of ITF prebiotics on gut microbiota composition

in obese women and to highlight the contribution of gut microbes in the modulation of metabolism in host. **Methods:** Randomized, double-blind study in 32 obese women treated with ITF prebiotics (Synergy 1®) or placebo (maltodextrin) during three months (16g/day). Blood, feces and urine sampling as well as OGTT, HOMA and fat mass measurement were performed before and after treatment. The urine metabolic profile was analyzed by NMR spectroscopy. The gut microbial composition in faeces was analyzed by qPCR and phylogenetic microarray HiTchip (in progress). **Results:** ITF prebiotics decrease fat mass ($p=0.09$) without changing body weight and prevent the deterioration of glucose tolerance. Changes in gut microbiota composition (i.e. increase in bifidobacteria and lactobacilli) are correlated to decreased plasma lipopolysaccharides levels. The urine metabolic profile highlights the influence of ITF prebiotics on choline metabolism as well as correlations between urinary metabolites and bacterial species. **Conclusion:** Changes in gut microbiota composition in obese women treated with ITF prebiotics are associated with a lower endotoxemia and changes in choline metabolism that could be considered as a metabolic signature of prebiotic effect in the context of obesity.

Conflict of Interest:

Funding:

750 accepted poster

LUNCH WITH ELEVATED ENERGY DENSITY IS ASSOCIATED WITH METABOLIC SYNDROME IN PATIENTS WITH TYPE 2 DIABETES

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Abstract Text: Introduction: Metabolic Syndrome (MetS) is highly prevalent in diabetic patients and diet plays an important role in MetS. Therefore, this study aimed to investigate possible associations of dietary energy density (ED) with MetS in diabetic patients. **Methods:** In this cross-sectional study ED of total diet and individual meals [energy from food (kcal)/food amount(g)] of 125 patients with type 2 diabetes (78 with and 47 without MetS; 62.0±9.4 years old; diabetes duration of 12.5±8.4 years; HbA1c 7.2±1.3%) were assessed by 3-day weighed diet records. MetS was defined according 2009-Joint Interim Statement criteria. **Results:** Patients with MetS had lower total energy (25±7 vs. 31±7 kcal/kg; $P<0.001$), lower dietary fiber (16.7±6.8 vs. 21.6±7.3 g; $P<0.001$), and higher intake foods (1145±261 vs. 1041±289 g; $P=0.041$) than patients without MetS. The ED was higher at lunch in patients with than without MetS (1.5±0.3 vs. 1.4±0.2 kcal/g; $P=0.017$) with no difference in the ED of total diet, breakfast, dinner, and snacks. At the lunch time, patients with MetS had lower intake (g/kg) of beans [0.7(0.41.1) vs. 1.1(0.61.6)], vegetables [1.2(0.61.7) vs. 1.4(1.02.0)], and total meat [1.3(1.01.6) vs. 1.4(1.21.8)] than patients without MetS ($p<0.05$ for all). In multivariate analysis, ED at lunch (kcal/g) was associated with MetS (OR=4.94; IC95% 1.24-31.89; $P=0.030$), adjusted to significant variables. **Conclusion:** High ED at lunch was associated with MetS in type 2 diabetic patients. Increasing the intake of low ED foods (e.g. beans, vegetables, and white meat) at lunch might be included as an additional dietary strategy for diabetic patients with MetS.

Conflict of Interest: None Disclosed

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751 accepted poster

MEASURED RESTING ENERGY EXPENDITURE IN COMPARISON WITH PREDICTED ONE IN PATIENTS WITH SEVERE MENTAL ILLNESS

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Abstract Text: Introduction: A large number of studies have demonstrated the association between intake of antipsychotic drugs and weight gain. Thus, the weight management is a significant clinical challenge for patients with severe mental illness taking antipsychotics. Weight management is based on the measurement of energy expenditure. The present study investigated the difference between measured Resting Energy Expenditure (REE) and estimating it using the most commonly used equation of Harris and Benedict. **Methods:** 1010 psychiatric patients (mean age 39.68±11.66 years) participated in the study (809 women and 201 men). Anthropometric measurements (body weight, height,

waist, and hip and abdomen circumference) were collected and body fat was estimated using bioelectrical impedance. REE was measured with indirect calorimetry and compared with the predicted value using the equation of Harris and Benedict. The statistical analysis was carried out with SPSS. **Results:** According to the results, mean BMI of the participants was 34±7.14kg/m², mean % body fat was 38.57±8.07% and mean waist 106.8 ± 17.34cm. The REE with indirect calorimetry was 1553.23±432.45 kcal/day compared to 1720±335.52 kcal/day ($p<0.001$) estimated with the equation of Harris-Benedict. In particular, women had an REE of 1443,98±340,540 kcal/day with indirect calorimetry compared with 1601,016±205,7555 kcal/day ($p<0.001$) based on the equation, whereas for men REE was 1992,93±483,065 kcal/day and 2198,814±331,3392 accordingly ($p<0.001$). **Conclusion:** The commonly used Harris-Benedict equation overestimates REE in severe mentally ill patients. When measuring energy requirements as part of a weight-management program in patients with severe mental illness, it is important to measure REE with indirect calorimetry.

Conflict of Interest:

Funding:

752 accepted poster

NON-PHARMACOLOGICAL TREATMENT OF OBESITY

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Abstract Text: Introduction: Obesity is a risk factor of serious chronic diseases, mainly metabolic diseases. In the Czech population there is prevalence of obesity during the past 10 years, decreasing. Instead of a number of preventive programs that were implemented in the form of primary prevention programs. **Methods:** The aim of work was the investigation of the change of selected anthropometrical and biochemical parameters (BMI, waist circumference, % of body fat, serum concentrations of total cholesterol, HDL and LDL, TAG) during 3 month controlled, non pharmacology regime of weight reduction (restrict of dietary energy to 2000 kJ and addition of 8g fibre three times per day) and physical activity (5 per week 45 min) at 40 obese women. Evaluation of overweight, obesity, muscle balance, fat and water distribution in body was done using BIA (InBody 720). Patients completed 24-hour recall and of food frequency questionnaire and daily dietary intakes were analyzed using nutrient analysis software NUTRIDAN. **Results:** The results proved that there is a positive effect of a targeted reduction diet on obese persons. Following the three-month therapy, weight loss (6 kg), decrease of body fat (5%), lower waist circumference (5cm), improved lipid profile and decreased of systolic as well as diastolic blood pressure were demonstrated. **Conclusion:** Reducing diet enriched by dietary fiber lead to weight loss and also positively influence feelings of hunger, which is in many cases the limiting factor.

Conflict of Interest: No conflict of interest

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753 accepted poster

PUFA-OMEGA 3 SUPPLEMENTS DECREASE OXIDATIVE STRESS AND ATHEROSCLEROSIS PROGRESSION IN METABOLIC SYNDROME PATIENTS

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Abstract Text: Introduction: A number of clinical trials reported an important role of PUFA omega-3 on reducing the risk of cardiovascular events, by decreasing the circulating levels of triglycerides (TGs) and TG-rich lipoproteins and by inhibition of platelet aggregation. The objective of this study was to assess the impact of 1 year administration of ω-3 PUFA supplements on oxidative stress and atherosclerosis progression. **Methods:** A total of 210 patients with metabolic syndrome, aged 65±6.7 years, without clinical evidence of atherosclerosis were allocated to 2 groups, matched by sex and age: group A (110 patients) diet according to ESC/EASD recommendations; group B (100 patients) the same diet + capsules of fish oil (1g eicosapentanoic acid, 1g docosahexanoic acid, 0,1g α-tocopherol acetate). Body fat mass (BFM) and body fat percent (%BF) were measured by bioimpedance analysis.

Oxidative stress was assessed using FormOx systems monitor on a blood drop. For progression of atherosclerosis, intima-media thickness (IMT) at carotid artery (ACC) was measured. Patients were evaluated at baseline, after 6 months and 1 year. **Results:** After 1 year, all the parameters were significantly improved in group B compared with group A: Total cholesterol (mg/dl) - 189 ± 18.3 vs 223 ± 18.6 ($P < 0.002$); HDL-cholesterol (mg/dl) - 58 ± 12 vs 44 ± 11 ($P < 0.05$); Triglycerides (mg/dl) - 126 ± 44 vs 146 ± 56 ($P = 0.002$); Fasting Plasma Glucose (mg/dl) - 107 ± 12 vs 121 ± 14 ($P < 0.0001$); IMT left ACC - 0.609 ± 0.07 vs 0.618 ± 0.07 ($P = 0.016$); IMT right ACC - 0.592 ± 0.049 vs 0.604 ± 0.073 ($P < 0.05$); FormOx (Fort Units) - 255 ± 45 vs 269 ± 78 ($P < 0.0001$). **Conclusions:** One year administrations of omega-3 PUFA enriched diets reduces cardiovascular risk of type 2 diabetes patients, resulting in a significant decrease of oxidative stress and atherosclerosis progression.

Conflict of Interest: No Conflict of Interest

Funding: A part of this study was supported by National Research Program CEEX.

754 accepted poster

THE COUNTERWEIGHT 12MONTH LOW ENERGY LIQUID DIET (LELD) AND WEIGHT-MAINTENANCE PROGRAMME: A COMPARISON OF OUTCOMES BY NURSE AND DIETITIAN DELIVERY IN PRIMARY CARE

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Abstract Text: Introduction: To compare 12month LELD Programme outcomes delivered by nurses and dietitians. **Methods:** 4 nurses and 9 dietitians attended 1 day LELD training. The programme provides a three-phase intervention for patients BMI ≥ 40 kg/m²: 1) 810kcal/day liquid diet 2) food re-introduction 3) weight-loss maintenance, aiming for ≥ 15 kg weight-loss. **Results:** 91 patients (p) were recruited. 38(24%men; mean124kg) and 53(15%men; mean136kg) patients were seen by nurses (pN) and dietitians(pD) respectively. At LELD phase completion and commencement of food reintroduction pN(n=17) and pD(n=37) achieved weight-loss of 14.4%(SD1.1) and 12.3%(SD0.7) respectively. At 12months protocol-compliant pN(n=13) and pD(n=23) achieved 12.4%(SD2.0) and 12.3%(SD1.7) weight-loss respectively. A 12month follow up weight was obtained for 68/91 (75%) patients. 12month weights were available for 27/38 (71%) pN and 41/53(77%) pD. Weight-loss at 12 months for pN was 8.6%(SD1.3) and by pD was 9.4%(SD1.4). At 12months the percentage of pN or pD who maintained ≥ 15 kg weight-loss were 26% and 38% ($p = 0.23$) respectively. A total of 30/91(33%) of all patients starting the programme and 30/6 (44%) of patients with a 12month follow up weight maintained weight-loss ≥ 15 kg at 12months. More dietitian patients completed the LELD phase (70% v 45%; $p = 0.02$) and food reintroduction (43% v 37%; $p = 0.53$). **Conclusion:** Dietitians and nurses delivering the LELD Programme obtained similar percentage weight loss outcomes. Possible reasons for the difference in patient retention need to be explored.

Conflict of Interest: NIL

Funding: Cambridge Weight Plan (Cambridge Manufacturing Ltd) provided funding for: Professor M Leans departmental research fund plus conference attendance; The LELD Product and training day.

755 accepted poster

THE N-3 PUFA SUPPLEMENTATION OBESITY, AND POSTPRANDIAL GIP CONCENTRATION (THE BIOCLAIMS STUDY)

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Abstract Text: Background: The influence of n-3 PUFA on development of T2D remains unresolved. In patients with glucose abnormalities the glucose-dependent insulinotropic peptide (GIP) secretion is normal or even higher. **The aim of the study:** Was to evaluate the effects of n-3 PUFAs supplementation on glucose and lipid metabolism and BMI in obese and non-obese volunteers with/without caloric restriction after oral glucose or fat challenges. **Methods:** 50 patients aged 25-65 years, has been randomly assigned to 3 subgroups of diets: control (BMI ≥ 25 ≤ 29 kg/m²) and obese (BMI ≥ 30 ≤ 40 kg/m²) with isocaloric and low-calorie diet. Patients from each subgroup were divided on placebo or on 3x600 mg capsules (1800mg/day) n-3PUFA, with DHA:EPA ratio 5:1 (EPAX 1050TG) supplementation. Before and after 3 months of diet

and PUFA / placebo supplementation participants undergone the oral glucose tolerance test (OGTT) and oral lipid tolerance test (OLTT). The blood insulin, FFA, TG and GIP concentrations were measured. **Results:** After 3 months of intervention patients with EPAX supplementation on low-calorie diet achieved significant reduction of BMI as well as TG levels. The increased postprandial GIP AUC ($p = 0.05$) during OLTT but not OGTT was observed. **Conclusion:** Considered GIP action, we can assume that n-3 PUFA supplementation may have impact on glucose homeostasis especially after postprandial lipid load. The clinical relevance of this relation and its possible mechanisms require further investigation

Conflict of Interest: No conflict of interest

Funding: Supported: EU FP7 BIOCLAIMS, Grant agreement no. 244995 and grant K/ZDS/002442

756 accepted poster

THE NEW NORDIC DIET INCREASES WEIGHT LOSS AND IMPROVES BLOOD PRESSURE – A 6 MONTH RANDOMIZED CONTROLLED TRIAL

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Abstract Text: Introduction The Mediterranean Diet has been associated with lower risk of cardiovascular disease. We hypothesize that the New Nordic Diet (NND) may be just as healthy and easily adopted by Nordic populations. **Methods** A 26 week controlled dietary intervention study was performed. 181 centrally obese participants of both genders (20-66 years of age, body-mass index 22.6-47.3 kg/m², waist circumference 80-138 cm) were randomly assigned to receive either NND (high in fruits, vegetables, whole grains and fish and low in added sugar) or an Average Danish Diet (ADD). All foods were provided ad libitum and free of charge using a shop model. The study is registered at ClinicalTrials.gov: NCT01195610. **Results** 147 participants completed the intervention (NND 81%; ADD 82%). High dietary compliance was achieved for both groups, resulting in large group differences. Physical fitness level remained stable. Mean body weight change for the completers was -4.7kg (SE 0.5) for the NND group versus -1.5 kg (0.5) for the ADD group (adjusted difference -3.2 kg (0.7), $p < 0.0001$). An intention to treat analysis revealed similar results. Mean change in body fat mass for the completers was -2.1 kg (1.1) and 0.56 kg (1.2) (adjusted difference -2.6 kg (0.6), $p < 0.0001$) for the NND and ADD groups, respectively. Furthermore, systolic and diastolic blood pressure were reduced in NND compared with ADD (adjusted difference -5.1 mmHG (1.5), $p < 0.001$ and -3.2 mmHG (1.2), $p < 0.009$). **Conclusion** The New Nordic Diet is well accepted and improves body composition and blood pressure in a Danish population with central obesity.

Conflict of Interest:

Funding: The Nordea Foundation, Denmark

T5:PS5 - New Technical Approaches and Pharmacology

757 accepted poster

ASPIRATION THERAPY: A NOVEL ENDOSCOPIC APPROACH FOR TREATING OBESITY

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Abstract Text: Background: Successful long-term weight loss is difficult to achieve without surgical intervention. **Methods:** The safety and efficacy of aspirating gastric contents after meal consumption, by using an endoscopically-placed novel gastrostomy tube (A-Tube™) and siphon assembly (Aspire Bariatrics, King of Prussia, PA) was evaluated in 18 obese subjects, who were randomized (2:1 ratio) to 52 wks of Aspiration Therapy (AT) plus diet and behavioral education (BMI=42.0±4.7 kg/m²) or diet and behavioral education alone (Control, BMI=43.4±5.3 kg/m²). At 52 weeks, subjects in the AT group were permitted to continue AT for another 52 weeks (104 week total). **Results:** Ten of 11 AT and 4/7 Control subjects completed the initial 52-week study, and lost 18.3±7.6% (49.0±24.4 percent excess weight loss [%EWL]) and 5.9±10.0% (14.9±24.6 %EWL) body weight, respectively (p<0.04). Seven subjects in the AT group continued therapy, and maintained a 20.1±9.3% weight loss (54.6±31.7% EWL) at 104 weeks. A battery of eating behavior assessments did not detect any adverse effects of AT on mood, eating behavior, attitudes towards eating, thoughts about food, or perceived hunger/satiety/satiation, and there was no evidence of increased food intake and no episodes of binge eating in the AT group. No serious adverse events occurred; however mild to moderate complications included intermittent abdominal discomfort, peristomal skin irritation, leakage, infection, and bleeding, bloating and gas, constipation/diarrhea, nausea +/- vomiting and anemia; all resolved with or without treatment. **Conclusion:** The results from this pilot study demonstrate the potential of AT as a safe and effective long-term weight loss therapy for obesity.

Conflict of Interest: S. Klein is a stockholder in Aspire Bariatrics, and serves on the Scientific Advisory Board of Ethicon Endosurgery. S. Edmundowicz receives research support from Aspire Bariatrics

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758 accepted poster

BASAL INSULIN THERAPY AT PATIENTS WITH DIABETES MELLITUS TYPE 2 OBESE

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Abstract Text: Introduction: Insulin therapy determine weight gain of diabetic patients. It is very important that this unintended response to be minimized. There are variations of gravity of the patient based on the type of insulin chosen. Material and methods: We included in the study a total of 120 patients with diabetes mellitus type 2 obese treated with basal insulin combined with metformin. The first group consisted of 60 patients who were treated with insulin detemir and the second consists of 60 patients was treated with another type of basal insulin. Patients were monitored: body weight, height, waist circumference, hip circumference, waist/hip ratio, and metabolic control (fasting and postprandial glucose, glycosylated hemoglobin- HbA1c). We evaluated these parameters before and after 6 Months of treatment with basal Insulin. **Results:** The study group of patients who treated with detemir showed an average increase weight of 1.8 kg and the other basal insulin treated with growth of 2.6 kg. In terms of metabolic control results were similar, both groups showed improvement at 6 months of metabolic control (HbA1c decreased by 1.5% vs 1.4 %). **Conclusions:** The therapeutic results in diabetes are evaluated not only on the metabolic control but also by controlling weight. Insulin can influence the choice of weight change in patients with insulin treatment. Insulin detemir achieved the lowest weight gain (1.8 kg in 6 months) and 30% of patients in the first group showed no weight gain.

Conflict of Interest: None disclosed

Funding: No funding

759 accepted poster

BIA - TOOL FOR EVALUATING THE SUCCESS OF REDUCE THE BODY WEIGHT

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Abstract Text: Background: A normal balance of body fat is associated with good health and life longevity. The issue of excess fat in relation to lean body mass, a condition known as altered body composition, can greatly increase risk of cardiovascular disease and more. **Methods:** There were 57 healthy subjects (Female, age 39.0 ± 8.0, BMI 29.1 ± 3.1) recruited from the general population. The first group (n=28) was assigned targeted a reducing diet. The second group (n=29) went through the controlled aerobic exercise in addition to the same diet. The basic anthropometrical parameters and measurement of body composition were used to evaluate the success of the programs. **Results:** At 1st group was higher weight loss than the 2nd, but this weight loss included decrease of the fat tissue and the loss of the muscle mass (decrease of weight was significant; the decrease of the fat tissue was not). The loss of the fat tissue as well as the increase of the muscle mass at group 2 was significant. **Conclusions:** The commonly used anthropometrical parameters such as BMI and WC are sufficient for a basic assessment of weight change and alert to the risk of increased fat in the abdominal area. However, the evaluation of reduction programs should concentrate on the changes in body composition that cannot be captured by the BMI and WC. Therefore, it is necessary to apply more sophisticated methods, such as the BIA.

Conflict of Interest: no conflict of interest

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760 accepted poster

BIOENTERICS INTRAGASTRIC BALLOON AND WEIGHT REDUCTION: A KUWAITI EXPERIENCE

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Abstract Text: Background: Obesity has reached the epidemic proportion worldwide with serious implications on morbidity, mortality, and quality of life of affected individuals. Currently, Kuwait has been ranked as the 8th fattest population worldwide with almost 80% of its people classified as overweight and 47.5% considered obese. Although the popularity of BioEnterics Intra gastric Balloon (BIB) application as a temporary method to lose weight is increasing worldwide, there is no current study that focuses on Kuwait's population regarding this matter. **Objective:** To evaluate the safety, efficiency and effectiveness of the BioEnterics Intra gastric Balloon as a method for treating obesity in Kuwait. **Methods:** A prospective study was conducted on 73 overweight/obese patients who had undergone the BIB procedure at Amiri Hospital performed from 2010-2011, of which 54 completed follow-up in the surgical out-patient department; 11 were males, 43 were females. **Results:** Mean age and BMI of the patients were: 34 years (range 16-67 years) and 38.5 kg/m² (26-73kg/m²). The average weight loss after 6 months was 13.4 kg with a range between 0-35 kg. The mean BMI after BIB removal was 33 kg/m² (range 24.7-65 kg/m²). From the 73 patients, two developed acute pancreatitis, one of which required immediate removal. **Conclusion:** The BIB has been effective to temporarily treat obesity. It was not associated with mortality and showed minimal risk of major complications.

Conflict of Interest:

Funding:

761 accepted poster

BREAKFAST CEREAL, AS PART OF A WEB BASED WEIGHT LOSS PROGRAMME, RESULTS IN GREATER BODY MASS AND FAT LOSS THAN A STANDARD WEB BASED PROGRAMME

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⁴ THE KELLOGG COMPANY

Abstract Text: This study tested the hypothesis that promoting breakfast cereal consumption as part of a web based programme results in long term body mass and body fat loss. **Methods:** Single centre, single blind (with respect to assessors), randomised parallel study. Test group (n=90 women) were asked to follow a fully interactive website (B): MySpecialK.co.uk with breakfast cereals provided as prescribed by the website. Control group (n=90 women) were asked to follow website (A) giving standard dietetic advice on weight loss. Both groups were given kitchen and bathroom scales. Participants visited the study site at day 0, day 28, day 84 and day 172 for measurements of height, weight, skinfolds, body fat (BodPod), waist and hip circumference and completed a self-perception questionnaire. Subjects were in good general health, aged 19-50 years, with a body mass index ranging from 25-40 kg/m². **Results:** Of those who completed the 6m trial, 62 were in group A and 64 were in group B. At 6 m (day 172), the percentage change in body mass was greater for website B (p=0.023) across all time points. The percentage change in BMI was also greater for website B (p=0.037). The percentage change in fat mass was greater for website B compared to website A (p=0.055) across all time points. **Conclusion:** The advice and motivation offered by an interactive website including consumption of breakfast cereals results in significantly greater body mass and greater fat loss after 6 m compared to the use of a standard website.

Conflict of Interest: Payment received from The Kellogg Company

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762 accepted poster

CARDIOVASCULAR SAFETY OF PHENTERMINE ALONE AND IN COMBINATION WITH TOPIRAMATE

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Abstract Text: Introduction: One goal of obesity treatment is to reduce cardiovascular risk. This presentation describes the cardiovascular profile of an investigational agent for obesity, controlled-release phentermine/topiramate (PHEN/TPM CR). **Methods:** Randomised, double-blind, placebo-controlled trials were conducted to assess the safety and efficacy of 2 doses each of PHEN monotherapy (7.5 and 15 mg), TPM CR monotherapy (46 and 92 mg), and PHEN/TPM CR (7.5/46 and 15/92 mg). Cardiovascular measures included systolic blood pressure (SBP), heart rate (HR), echocardiography, and review of all cardiovascular adverse events during the program. **Results:** In a 6-month trial, SBP decreased 3.0-3.3 mmHg (PHEN 7.5 and 15 mg), 7.2-7.8 mmHg (TPM CR 46 and 92 mg), and 5.2-8.0 mmHg (PHEN/TPM CR 7.5/46 and 15/92 mg) as compared with 1.3 mmHg for placebo ($P < 0.05$ for all comparisons). In 1-year trials, PHEN/TPM CR 15/92 was associated with significant SBP decreases (5.2 mmHg) but a small increase in HR compared with placebo (1.6 bpm; $P < 0.0001$). In a Phase 2 trial, echocardiography assessments were made pre-randomization and after 6 months of treatment. No evidence for mitral or aortic valvulopathy was found. During the entire development program, FDA-defined major cardiovascular events occurred in 8/2581 subjects treated with PHEN/TPM CR and 10/1742 subjects treated with placebo (hazard ratio 0.49 [95% CI 0.19-1.25]). **Conclusion:** PHEN/TPM CR treatment significantly reduced SBP and carried a numerically lower risk of major cardiovascular events compared with placebo. PHEN, TPM CR, or PHEN/TPM CR use was not associated with valvulopathy.

Conflict of Interest: Jens Jordan, MD - None; Arne Astrup, MD - Consultant for Vivus, Inc., Arena, Orexigen, and Novo Nordisk/Wesley Day, PhD - Employee of Vivus, Inc., the manufacturer of the study drug

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CHANGES OF BODY COMPOSITION MEASURED WITH BIA IN DEPENDENCE ON CONDITIONS

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Abstract Text: Introduction: Obesity is a big problem across the globe. Body composition is crucial knowledge in determination of obesity. Nowadays obesity and problems connected with obesity plays big role in a field of medical treatment and thus attention to measurements of body composition should be paid. **Methods:** We tried to measure body composition with a bioimpedance approach. This method is well known and often used for its benefits such as fast and good results or patient friendliness. We observed changes of bioimpedance and body composition in dependence on changes of measurement conditions. Multi-frequency eight electrode device was used. Different conditions were applied on patients. Every measurement was repeated for better results and error elimination. **Results:** Changes in bioimpedance and body composition were observed. In some cases changes were very significant. In dependence on patient difference of body composition was from percent of units to tens of percents. Also correlations between body fat % and bioimpedance were calculated. Best correlation had frequency of 250 KHz. This correlation was in some patients nearly 99 percent. **Conclusion:** Importance of conditions on measurements was proved. Therefore special attention should be paid in case of different conditions. We consider cleaning all body places that come in contact with measuring electrodes. Without this step outcome values can be biased and body composition can differ between measurements. Also best correlation of 250 KHz was observed thus question of single frequency measurements should be consider.

Conflict of Interest:

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764 accepted poster

CLINICAL APPLICATION OF THE CLÍNICA UNIVERSIDAD DE NAVARRA-BODY ADIPOSITO ESTIMATOR (CUN-BAE), A NEW EQUATION FOR ESTIMATING BODY FAT

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Abstract Text: Introduction: BMI exhibits notable inaccuracies not precisely reflecting body fat and changes in body composition that take place with age or the sexual dimorphism characteristic of body adiposity. Our aim was to evaluate the predictive capacity of a new equation termed CUN-BAE based on BMI, sex and age for estimating body fat percentage (BF%). **Methods:** The CUN-BAE was compared with different anthropometric indices regarding its correlation with actual BF% determined by air-displacement plethysmography (ADP) in a large cohort of Caucasian subjects representing a wide spectrum of ages and adiposity (n=6,510; 67% females, aged 18-80 years). Moreover, a validation study (n=1,149) and a further analysis of the clinical usefulness of this prediction equation as regards its association with cardiometabolic risk factors (n=634) were performed. **Results:** The average BF% in the cohort of 6,510 subjects measured by ADP was 39.9±10.1%, while the mean BF% estimated by the CUN-BAE was 39.3±8.9% (SEE=4.7%). Moreover, BF% calculated with the CUN-BAE showed the highest correlation with actual BF% (r=0.89, $P < 0.000001$) as compared to other anthropometric measures or BF% estimators. Similar concordance was observed in the validation sample. Furthermore, BF% estimated by the CUN-BAE exhibited better correlations with cardiometabolic risk factors than BMI as well as waist circumference in the subset of 634 individuals. **Conclusions:** The CUN-BAE represents an easy-to-apply predictive equation that may be used as a first screening tool in clinical practice without access to direct body composition assessment. Moreover, our equation provides a useful tool for identifying patients at increased cardiometabolic risk.

Conflict of Interest: The authors declare that they have no conflict of interest.

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765 accepted poster

CLINICAL PRACTICE AND INTER DISCIPLINARY MANAGEMENT TO CONTROL OBESITY AND CO-MORBIDITIES IN BRAZIL: NEW TECHNICAL APPROACHES: OBESITY RESEARCH GROUP (GEO)

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Abstract Text: Introduction: The interdisciplinary management of obesity was developed by Obesity Research Group (GEO) in 2004 at Federal University of Sao Paulo Paulista Medicine School, registered on Clinical Trial (NCT01358773), with the main purpose to associate educational and research programs motivating community and family to self management, adherence to treatment and long-term lifestyle changes, including obese from 15 to 19 years old. **Methods:** Insert Figure **Results:** The interdisciplinary management was effective to control obesity, reducing the prevalence of metabolic syndrome from 32% to 8%, nonalcoholic fatty liver diseases from 60% to 29%, asthma from 45% to 0%, insulin resistance from 66% to 17%, hypertension from 41% to 0%, dyslipidemia from 17% to 0%, eating disorders, including symptoms of bulimia nervosa from 100% to 67% and binge eating disorder from 40% to 17%, as well reducing scores of mood disorders, including depression, anxiety and body image in this population. This interdisciplinary approach received international and national honor and had high impact in family, community and on the media. Moreover, this new technical approach was replicated by our coworkers in different states in Brazil, supporting both obese adolescents and adults. **Conclusion:** This innovative technical approach seems important in control of obesity and its co-morbidities being applicable for different age groups in view to reduce public and private cost with health and morbi/mortality.



Conflict of Interest: None disclosed

Funding: The Obesity Research Group was supported by: FAPESP, AFIP, CEPE, CNPq, CAPES, FADA, UNIFESP

766 accepted poster

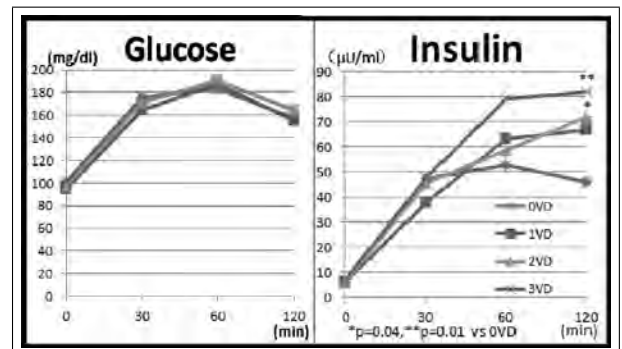
CORRELATION BETWEEN DISEASED VESSEL NUMBER AND HYPERINSULINEMIA IN CORONARY HEART DISEASE PATIENTS.

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Introduction: Postprandial hyperglycemia with hyperinsulinemia is often shown in obese subject, accumulating evidence suggests that insulin directly promotes atherosclerosis, although, it is not precisely studied whether hyperinsulinemia affects on severity of atherosclerosis. **Methods:** Consecutive 322 patients who underwent coronary-angiography (CAG) and oral glucose tolerance test (OGTT) from April 2006 to June 2011 were enrolled. According to the diseased vessel numbers, patients were divided into 4 groups: 0 vessel disease (VD)(n=20), 1VD(n=108), 2VD(n=81) and 3VD(n=30), and compared with plasma insulin level. **Result:** There were no differences in OGTT data (0VDvs1VDvs2VDvs3VD:pre;100.9±11.4SDvs94.9±12.7vs96.7±12.5vs93.3±11.7mg/dl[ns],30min;175.1±30.8vs164.4±29.3vs171.2±49.5vs165.6±22.4mg/dl[ns],60min;183.6±45.1vs187.2±44.4vs190.2±52.9vs196.4±38.4mg/dl[ns],120min;157.0±51.3vs154.8±51.2vs164.3±57.8vs160.5±50.1mg/dl[ns]), respectively. However, insulin secretion was greater in 2VD and 3VD at 120min(pre;6.2±3.4SDvs6.1±4.6vs5.9±2.6vs6.9±3.2μU/ml[ns], 30min;47.6±30.4SDvs37.9±23.6vs45.6±36.5vs47.8±28.8μU/ml[ns], 60min; 52.6±28.8SDvs63.4±45.0vs58.9±45.9vs79.1±59.5μU/ml,120min;46.2±20.5SDvs67.0±59.3vs72.0±55.08 (p=0.042; compared with 0VD) vs81.2±57.2 (p=0.011;compared with 0VD) μU/ml. And total amount of insulin secretion was greater in 3VD than 0VD(0VDvs3VD:152.5±57.5vs215.5±105.2μU/ml;p=0.02).

Conclusion: Patients with delayed but exaggerated insulin secretion showed severe coronary arteriosclerosis. Obese subjects who often have these abnormalities should be concerned with coronary heart disease.



Conflict of Interest:

Funding:

767 accepted poster

DEVELOPMENT OF AN ELECTRONIC TOOL TO ESTIMATE HEALTH RISKS AND PROVIDE PERSONALISED WEIGHT MANAGEMENT ADVICE FOR OVERWEIGHT AND OBESE CHILDREN IN THE UNITED KINGDOM

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Abstract Text: Introduction: Managing overweight and obese children in primary care can be challenging. Our goal was to develop a brief, evidence-informed electronic tool to assist primary care health

professionals with the assessment and referral of overweight and obese children. The tool was designed to 1) use a child's demographic data and family history to estimate current risks for cardiometabolic and mental health disorders, and 2) use self-reported lifestyle information to provide personalised weight management advice. **Methods:** Data analyses and literature searches informed the content of the tool. First, risk prediction models were developed through analyses of two large cohorts of UK children: the Avon Longitudinal Study of Parents and Children (ALSPAC) and the Research with East London Adolescence Community Health Survey (RELACHS). Second, lifestyle behaviours associated with childhood overweight and obesity were identified by performing literature reviews designed to update the evidence cited by the 2007 U.S. recommendations on treatment of childhood obesity. **Results:** The tool uses risk prediction models to provide a 'traffic-light' estimate of risk (high, medium, low) for type II diabetes, dyslipidemia, high blood pressure, low self esteem and mental health problems. Additionally, the tool provides children with individually tailored weight management advice on six modifiable lifestyle behaviours: breakfast consumption, eating meals away from home, drinking sugar-sweetened beverages, television and computer screen time, sleep duration and physical activity. **Conclusions:** We have developed a brief, easy to use electronic tool that will help front line health professionals appropriately and efficiently manage the care of overweight and obese children.

Conflict of Interest: The authors declare that no conflict of interest exists.

Funding: Research relating to this abstract was funded by the National Institute for Health Research.

768 accepted poster

EFFECT OF DIET-INDUCED WEIGHT LOSS AND SUBSEQUENT ADDITION OF LIRAGLUTIDE 3.0 MG ON IMPAIRED FASTING GLUCOSE IN OVERWEIGHT/OBESE ADULTS IN THE SCALE™ MAINTENANCE 56-WEEK PHASE 3 RANDOMISED TRIAL

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Abstract Text: Introduction: Impaired fasting glucose (IFG) is a risk factor for developing type 2 diabetes and cardiovascular disease. We quantified changes in IFG prevalence (*post-hoc* analysis) from a double-blind trial investigating the effect of liraglutide 3.0 mg versus placebo on maintenance of diet-induced weight-loss (primary endpoint). **Methods:** Overweight/obese adults (≥ 18 years, BMI ≥ 30 kg/m² or ≥ 27 kg/m² with comorbidities) who lost $\geq 5\%$ weight after 412 week run-in with low-calorie diet (1200/1400 kcal/day) and exercise were randomised to once-daily s.c. liraglutide 3.0mg (n=212) or placebo (n=210), plus 500 kcal/day deficit diet and exercise. IFG definition: fasting plasma glucose ≥ 5.66 mmol/L (ADA 2003). **Results:** The full-analysis-set comprised 413/422 randomised individuals (age 46.2 ± 11.5 years, BMI 37.9 ± 6.2 kg/m² [mean \pm SD]). During run-in, participants lost 6.3 ± 1.6 kg weight and IFG prevalence decreased from 54% (224/413) to 40% (164/413) of individuals. At week 56, the placebo group maintained their run-in weight loss, whereas the liraglutide group lost an extra 5.9 kg (95%CI 7.3;-4.4; $p < 0.0001$). Additionally, the proportion with IFG decreased significantly more for the liraglutide group than the placebo group (odds-ratio 6.0 [95%CI 3.111.6]; $p < 0.0001$) (Table). At week 68, after 12 weeks off treatment, the liraglutide group regained about 2kg lost weight (difference 4.2 kg [95%CI -6.0;-2.4]; $p < 0.0001$). The odds of having IFG did not differ between groups (odds-ratio liraglutide:placebo 1.3 [95%CI 0.782.3]; $p = 0.30$). **Conclusion:** Liraglutide decreases IFG prevalence in overweight/obese people who have already lost weight by diet and exercise. The mechanisms responsible are likely due to additional liraglutide-induced weight-loss and weight-loss independent effects of liraglutide.

	Liraglutide 3.0mg	Placebo
Week 0		
IFG (n,%)	78/207 (38%)	86/206 (42%)
Weight (kg) (mean \pm SD)	100.7 \pm 20.8	98.9 \pm 21.2
Week 56*		
IFG (%)	6.3%	28.7%
Weight (kg)#	-5.7	0.16
Week 68*		
IFG (%)	25.4%	31.0%
Weight (kg)#	-3.8	0.41

*last-observation-carried-forward, model-estimate
#Change from week 0

Conflict of Interest: SK is a stockholder in Aspire Bariatrics, serves on medical advisory boards for Ethicon Endosurgery and Takeda Pharmaceuticals, speakers' bureau for Merck and has received research funding from Enteromedics, Novo Nordisk, and Pfizer. LJA discloses the following relationships: Arena - research support; Amylin - advisor, research support; Cardiometabolic Support Network - shareholder; GI Dynamics - advisor; GlaxoSmithKline - advisor; Merck advisor; Metabolic Therapeutics consultant; Neurosearch advisor; Orexigen - advisor, research support; Pfizer - advisor, research support; Metabolous Pharmaceuticals - patents, shareholder; Transtech - advisor, research support; Vivus - advisor, research support. PH has done consulting for Novo Nordisk, Merck, Pfizer and GlaxoSmithKline. KN has done commercially-sponsored research for Novo Nordisk. CBJ and MLL are employed by and own stock in Novo Nordisk. VW has held paid lectures and done commercially-sponsored research for Novo Nordisk, Lilly, Sanofi, Merck, AstraZeneca and Bristol-Myers Squibb, and is an advisory board member for all.

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769 accepted poster

EFFECT OF MODERATE WEIGHT LOSS ON HEPATIC, PANCREATIC AND VISCERAL LIPIDS IN OBESE SUBJECTS.

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Abstract Text: Introduction Several studies showed that even moderate weight loss improves metabolic complications of obesity. The aim of the study was to compare the effects of weight loss on abdominal fat, liver and pancreas lipid content and to test the effects of these changes on metabolic improvement observed after weight loss. **Methods** in 24 obese subjects (13 males and 11 females) with age ranging from 26 to 69 years and body mass index 30.2 to 50.5 kg/m². Weight, BMI, waist circumference, body composition as assessed by DXA, metabolic variables, leptin, adiponectin, visceral and subcutaneous abdominal fat, liver and pancreas lipid content as assessed by magnetic resonance were evaluated before and after weight loss achieved by hypocaloric diet. **Results** After a mean body weight decrease of 8.9%, BMI, waist circumference, fat mass, all metabolic variables, HOMA, hs-CRP, ALT, GGT, leptin but adiponectin and HDL-Ch significantly decreased (all $p < 0.01$). Visceral and subcutaneous abdominal fat, liver and pancreas lipid content significantly decreased (all $p < 0.01$). Percent changes in liver lipid content were greater ($84.1 \pm 3\%$) than those in lipid pancreas content ($42.3 \pm 29\%$) and visceral abdominal fat ($31.9 \pm 15.6\%$). After weight loss, percentage of subjects with liver steatosis decreased from 75% to 12.5%. Insulin resistance improvement was predicted by changes in liver lipid content independently of changes in visceral fat, pancreas lipid content, systemic inflammation, leptin and gender. **Conclusion:** moderate weight loss determines significant decline in visceral abdominal fat, lipid content in liver and pancreas. Liver lipid content is the strongest predictor of insulin resistance improvement after weight loss.

Conflict of Interest: Nothing to declare.

Funding: The research was supported by Italian Minister of Health project "Pathophysiology, clinical and therapeutical aspects of morbid obesity: a comprehensive approach in the management of the disease and its comorbidities".

770 accepted poster

EFFECT OF TREATMENT WITH DIFFERENT STATINS ON BODY FAT ACCUMULATION IN OBESE ZUCKER RATS

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Abstract Text: Introduction: Statins are a drug family widely used in hyperlipidemia treatment because they are very potent hypocholesterolemic agents. Nevertheless, their effects on the metabolism of other lipid species such as triacylglycerols are not known. The aim of this study was to analyze the effect of the statins commonly used for clinical prescription on body fat accumulation in genetically obese Zucker rats, an animal model which shows hypercholesterolemia and some of metabolic alterations frequently observed in hypercholesterolemic patients. **Methods:** Seventy obese Zucker rats (fa/fa) were divided into seven groups. Rats from six statin groups were orally treated with Atorvastatin, Fluvastatin, Lovastatin, Pravastatin, Rosuvastatin or Simvastatin, respectively, at a dose of 0.6 mg/kg body weight/d. Control rats received water. At the end of the experimental period (6 weeks), white adipose tissue (WAT) from epididymal, perirenal and subcutaneous locations were dissected and weighed. Total and HDL-cholesterol were measured in order to verify the effectiveness of the statins. Adipose Index was calculated as $\sum \text{WAT}/\text{body weight}$. **Results:** All statins similarly decreased the total cholesterol/HDL-cholesterol ratio. With regard to fat accumulation, there were no differences in intra-abdominal fat (epididymal+perirenal depots) between statin groups and control group. However, subcutaneous adipose tissue from Atorvastatin, Fluvastatin, Lovastatin and Rosuvastatin treated rats was significantly increased when compared with control rats as well as their Adipose Index. **Conclusion:** These results show that statins have similar effects on serum cholesterol levels but they have different effects on body fat accumulation. These results should be taken into account for statin choice in prescription.

Conflict of Interest: The authors declare no conflict of interest.**Funding:** Research funded by Diputaciral de Gipuzkoa DFG11 (142/11).

771 accepted poster

EXERGAMING – A NEW WAY OF INCREASING PHYSICAL ACTIVITY LEVEL IN OBESE ADOLESCENTS?

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Abstract Text: Introduction: Childhood obesity is one of today's primary childhood health problems. However treatment of obesity has shown poor results so far, especially among adolescents. Intervention to increase physical activity is one way to decrease weight gain and improve health-related factors associated with obesity. Exergames is a relative new term for video games that demands physical activity. Studies have shown that the use of exergames can increase the energy expenditure in a similar way as hard walking. The objective of this feasibility study is to determine if prescribing the Kinect exergame to adolescents with obesity increases their physical activity level. The effects on bodyBMI, cardiorespiratory fitness and quality of life will be evaluated. **Methods:** Participants from the National Childhood Obesity Centre, Karolinska University Hospital, Stockholm will exercise in their homes using the exergame Kinect (Microsoft) for one hour every day for a 10 week-period. Cardiorespiratory fitness, weight, height, waist and quality of life (PedsQL) will be measured before and after the test period. **Results:** The results of this pilot study will be presented and analyzed in order to optimize the planning of a bigger intervention-study. The first patient was included in June 2011. The number of participants is intended to be 10 and the final results will be made available in May 2012. **Conclusion:** Motivating obese adolescents to a healthier lifestyle is a big challenge for today's health-care. To use technology in a way that is common for adolescents could be one way.

Conflict of Interest: Non Disclosed**Funding:** Microsoft has kindly lend us equipment for this project.

772 accepted poster

KETOGENIC ENTERAL NUTRITION (KEN) IN THE TREATMENT OF OBESITY: SHORT-TERM AND LONG-TERM RESULTS OF 19.000 PATIENTS

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Abstract Text: Introduction: In the normal routine of a Home Artificial Nutrition Unit we included Obese Patients who received short cycles of Enteral Nutrition with only Protein obtaining Weight Loss and marked Ketosis that prevented hunger (Blackburn G.L.). **Methods:** In a 5-year period 19.036 patients (age 44.3±13, M/F=2/5, BW=101, 4±22.9, BMI 36.5±7.1) underwent an average of 2.5 cycles of 10-day Enteral Nutrition through a fine Nasogastric Tube receiving daily 50-65 gr of proteins, vitamins and electrolytes using a small Portable Pump. Body Composition was checked with a Impedance Analyser before and after each cycle: initial FM was 40.9±12.8 kg. **Results:** patients lost an average of 10.2±7.0 kg of body weight (for a total of 194 tons), 5.8±5.5 kg of FM and 2.2± 3.3 kg of BCM. No significant adverse effects were recorded except a mild gastric hypersecretion and constipation. Long-term results were checked in 15.444 KEN patients (KEN Group) and after 362±296 days we found a mean weight gain of 1.5±7.1 kg. We found that in KEN Group out of 15.444 patients 8 were dead (0.052%) for cardiovascular disease or cancer. Checking 3.179 patients who made a reservation for KEN and afterwards did not come (Control Group: BMI 33.7±6.9) we found that 18 patients (0.56%) were dead, most of them for cardiovascular disease. **Conclusion:** 10-day KEN cycles can induce a rapid 10% weight loss, 57% of which is FM. After 1 year they keep 85% of weight loss. Follow-up Mortality of Control Group was 10 times higher than Mortality of KEN Group.

Conflict of Interest:**Funding:**

773 accepted poster

LONG-TERM SAFETY AND EFFICACY OF ANORECTIC THERAPY IN OBESITY MANAGEMENT AS PART OF A COMPREHENSIVE OBESITY MANAGEMENT PROGRAM

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Abstract Text: Purpose: To evaluate the weight loss results, lipid improvements, and side effects of 10,895 patients from 3 obesity management clinics. **Methods:** Patient electronic medical records were reviewed. Patients were evaluated and started in the program using guidelines of the American Society of Bariatric Physicians (ASBP). Patients were started on sympathomimetics unless contraindicated or declined by the patient. Patients diagnosed as metabolic syndrome using WHO criteria were also started on glucophage. All patients were instructed to consume a controlled calorie, adequate protein, controlled carbohydrate diet. Weight loss data of 10 years of patients is reported as LOCF (last observation carried forward) and completers of the program. Side effects data is from 1.5 years of consecutive patients (Jan 2009 June 2010, n=1,998). **Results:** Weight loss in LOCF (n = 9,481): (% baseline body weight) at 6 months (-10.2%), 5 years (-4.63%). Completers weight loss: (n=1414): 6 months (-10.5%), 5 years (-11.5%). 5 year completers: 25.2% maintained 15% BBW, 9.2% maintained 20% BBW. Lipid improvements at 5 years rivaled or surpassed the improvements of average Lap Band surgery patients. In the adverse event study, of 1779 treated with sympathomimetics 1.2% had cardiovascular side effects, 0.8% were for elevated BP (>160 systolic, >90 diastolic). Clinically significant palpitations were reported in 0.4% (none required intervention other than change of medications).

Conclusions: Sympathomimetics, as part of a long term treatment program following the guidelines of the ASBP are safe, effective and can approximate the results of lap band surgery.**Conflict of Interest:** No conflict of interest**Funding:** No funding

774 accepted poster

MRI-MEASURED LIVER FAT CONTENT INCREASED PROGRESSIVELY WITH THE NUMBER OF METABOLIC SYNDROME COMPONENTS IN FRENCH ADULTS.

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Abstract Text: Objective Prevalence of non-alcoholic fatty liver disease (NAFLD) among cardio metabolic condition is incomplete because liver biopsy cannot be routinely performed. New non-invasive magnetic resonance imaging (MRI) allows accurate and safe measurement of hepatic fat fraction (HFF). The aim of this study was to examine the relation of liver fat content to the number of metabolic traits in a French adult population. Methods 156 adults recruited from the French prospective cohort Numevox were included in this cross sectional study. Liver fat content as well as visceral and abdominal adipose tissue were assessed by MRI using multifocal sequences. Metabolic traits were recorded using the Caucasian International Diabetes Foundation definition of metabolic syndrome (MS), with subjects ranging from 0 to 5 metabolic components. Receiver operator characteristic curve analysis and the maximum Youden index were used to obtain an optimal HFF cutoff value best predicting the presence of at least two MS components. Results 66% of the participant were identified of having three or more MS components. HFF ranged from 0.3 to 52 % (mean 13.4 %, 95% CI 7.3-23.8%). After adjusting for age and gender, degree of steatosis was found to be positively correlated with BMI ($r=0.44$), systolic blood pressure ($r=0.19$), triglyceridemia ($r=0.22$), fasting blood glucose concentration ($r=0.31$) and insulin resistance evaluated by the HOMA-IR index ($r=0.42$). MRI-measured visceral adipose tissue was strongly related to HFF ($r=0.39$). Each component of the metabolic syndrome increased the risk of fatty liver in a dose-dependent manner (level of HFF at 3.5% in subjects without any component and 19.5% in those with all five components). The optimal MRI-based HFF best predicting at least two MS components was determined to be 5.2% by the maximal Youden index point. Conclusion This study demonstrates the potential usefulness of measuring liver fat content (HFF) by MRI with an optimal cutoff value of 5.2% for defining an increased metabolic risk.

Conflict of Interest: None**Funding:**

776 accepted poster

OVERWEIGHT AND OBESE CHILDREN WITH DIAGNOSED ATTENTION DEFICIT HYPERACTIVITY DISORDER HAVE A FAVOURABLE WEIGHT LOSS WITH METHYLPHENIDATE – ONE YEAR DATA

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Abstract Text: Introduction: Attention deficit hyperactivity disorder (ADHD) is often treated with psychostimulants. Weight loss and a subsequent impaired growth are known side effects of psychostimulant treatment. On the other hand, this effect on BMI may have a positive impact on weight loss in obese children with a co-morbid, recently diagnosed, ADHD. **Methods:** Records from all children age <18 years meeting DSM-IV criteria for ADHD and treated with methylphenidate in two outpatient clinics of Gothenburg, Sweden, were retrospectively investigated and their growth was evaluated. Children with a BMI at start of treatment >1.5 SDS were selected for further investigation. **Results:** Twenty-four children (14 females/10 males, age range 5.9-16.8 years) out of 100 children with ADHD were found to meet the criteria of BMI>1.5 SDS. The children were daily treated with methylphenidate (dose range 10-54 mg). After 6 months mean BMI decreased 0.7 SDS, range 0.0-2.9 ($p<0.001$ with paired sample test) and after 12 months mean BMI decreased 1.0 SDS ($p<0.001$). During the same treatment year height SDS was unchanged for all but the youngest child, who decelerated in longitudinal growth. No gender differences were found. **Conclusion:** Overweight and obese children with diagnosed ADHD exhibit a substantial weight loss during the first year of methylphenidate treatment. Whether there may be an age- and gender difference on response needs to be further investigated in a larger cohort.

Conflict of Interest: J Dahlgren- Honoraria for lectures received from Novartis**Funding:** No funding

777 accepted poster

PASylation AND NONSENSE SUPPRESSION: EXPLORING TWO DIFFERENT TREATMENT STRATEGIES FOR LEPTIN AND LEPTIN RECEPTOR DEFICIENCY

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Abstract Text: Loss-of-function mutations in the leptin and leptin receptor (LEPR) gene result in obesity. Rescue of leptin signaling appears promising to ameliorate obesity in rare cases of leptin and LEPR deficiency. Here we explore two strategies to treat leptin deficiency in general and LEPR deficiency triggered by nonsense mutations: (1) recombinant leptin causes weight loss in leptin deficient subjects. Due to the short half-life of leptin, daily injections are needed. To improve leptin replacement therapy we engineered leptin derivatives with prolonged half-life using the PASylation technique. Leptin was fused with a polymer comprising 200, 400 or 600 proline, alanine and serine (PAS) residues forming a random coil with an increased hydrodynamic volume. In cell culture, PASylated Leptin variants were almost as potent in activating intracellular signaling as native leptin. In mice the anorexigenic effect of PAS200-Leptin was more pronounced and maintained over a longer period compared to native leptin. (2) Nonsense mutations result in the synthesis of defective proteins. Aminoglycosides lower translation fidelity and can mediate the incorporation of random amino acids at the premature stop codon. This read-through partially rescues protein activity. Here we evaluate nonsense suppression for the human and rodent LEPR stop mutations W31X, Y333X and Y763X in cell culture. Characterization of signaling revealed a loss-of-function phenotype of all three variants which was successfully restored after aminoglycoside administration. Our data provide perspectives to rescue leptin and LEPR deficiency by either PASylation of leptin or aminoglycoside-induced read-through of LEPR stop mutations.

Conflict of Interest: We declare no conflict of interest.**Funding:** This work was supported by the National Genome Research Network NGFNplus to Martin Klingenspor (01GS0822).

778 accepted poster

QUALITY OF LIFE IMPROVEMENTS ARE RELATED TO THE MAGNITUDE OF WEIGHT LOSS WITH CONTROLLED-RELEASE PHENTERMINE/TOPIRAMATE (PHEN/TPM CR) IN OBESE PATIENTS

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Abstract Text: Introduction: Weight loss (WL) with PHEN/TPM CR and its impact on health-related quality of life (HRQOL) were determined in two 56-week Phase 3 clinical trials (EQUIP and CONQUER). Methods: EQUIP evaluated PHEN 3.75 mg/TPM CR 23 mg (3.75/23) and PHEN 15 mg/TPM CR 92 mg (15/92) versus placebo in 1267 patients with body mass index (BMI) ≥ 35 kg/m². CONQUER evaluated PHEN 7.5 mg/TPM CR 46 mg (7.5/46) and 15/92 versus placebo in 2487 patients with a BMI ≥ 27 kg/m² and ≤ 45 kg/m² with ≥ 2 weight-related comorbidities. Primary endpoint was percent WL at 56 weeks. Secondary endpoints included both Impact of Weight on QOL (IWQOL-Lite; EQUIP and CONQUER) and Medical Outcomes Study Short Form (SF-36; CONQUER). Results: At week 56, EQUIP least-squares mean percent WL was 5.1% (3.75/23), 10.9% (15/92) versus 1.6% (placebo) ($P<0.0001$ vs placebo; ITT-LOCF). CONQUER WL at 56 weeks was 7.8% (7.5/46), 9.8% (15/92) versus 1.2% (placebo) ($P<0.0001$ vs placebo; ITT-LOCF). All IWQOL-Lite domains showed significant improvement with 15/92 treatment (EQUIP and CONQUER; $P<0.02$ vs placebo). Significant improvements in the SF-36 physical component summary (PCS) were seen in both 7.5/46 and 15/92 ($P<0.0001$ vs placebo) while the SF-36 mental component summary remained unaffected. Categorizing patients by degree of WL revealed proportional improvements in IWQOL-Lite total ($P<0.0001$ vs baseline) and SF-36 PCS scores ($P<0.0001$ vs baseline). Conclusions: WL with PHEN/TPM CR led to improvements in multiple aspects of weight-related and general HRQOL. The greater the WL, the larger the improvements in IWQOL-Lite total and SF-36 PCS scores.

Conflict of Interest: Ronette Kolotkin, PhD - Consultant for Vivus, Inc.; Received royalties from Duke University for the use of the

IWQOL-LiteKishore Gadde, MD - Received research support from Vivus, Inc. Craig Peterson, MS - Employee for Vivus, manufacturer of the study drug

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779 accepted poster

SLEEP AND IMMUNITY: IMPORTANCE OF INTERDISCIPLINARY THERAPY IN OBESE

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Abstract Text: Introduction: The Obesity is considered a global epidemic. It is deleterious for vital functions as the immune system and the sleep. Sedentary lifestyle with inappropriate food habits are considered the main factors for those modifications by promote adipose tissue accumulation, causing disbalance in cytokine concentrations and consequently immunosuppression and sleep complains. Recent studies show that the interdisciplinary therapy promotes benefits when compared to only physical exercise. The aim of this study was to compare the quality of the sleep and salivary immunological parameters from obese adults engaged to long term interdisciplinary therapy with sedentary obese adults. **Methods:** Sixteen volunteers were randomized in two groups including eight (n=8) volunteers after the interdisciplinary therapy and eight (n=8) volunteers without therapy. Both groups have similar anthropometric variables. The mean values of the BMI were 32,90 Kg/m² ($\pm 1,55$) and 32,15 Kg/m² ($\pm 2,33$) of the group after therapy and without it, respectively. The interdisciplinary therapy occurred for one year, with an intervention consisting physical exercise, nutritional, physiotherapy and psychological components weekly. **Results:** When compared the groups, it was observed an increase in α -amilase (p <0.05), tendency of decrease in the total proteins and drowsiness (p = 0.06), decrease sleep latency (40%) and increase the quality of sleep (30%) in the Interdisciplinary therapy group. **Conclusion:** In this way, the long term interdisciplinary therapy improved the mucosa immunity and sleep quality. Those changes may modulate by relations neuroimmunoendocrine.

Conflict of Interest: No disclosure

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780 accepted poster

THE INFLUENCE OF ORAL ANTIDIABETIC THERAPY ON WEIGHT CHANGE IN OBESE PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Abstract Text: Introduction: The purpose of this study is to investigate how antidiabetic oral therapies influence the weight at the patients obese with diabetes type 2. In choosing antidiabetic therapy must consider the effect they have on the body weight. **Methods:** We included in this study 80 patients obese with type 2 diabetes and we made two groups: - group 1: included 40 patients who were treated with DPP4 inhibitors (Sitagliptin) combined with Metformin - group 2 included 40 patients who were treated with sulfonylurea combined with Metformin. We following the metabolic control (fasting plasma glucose, 2 hours after meal glucose and glycosylated hemoglobin HbA1c) and the weight status before and after 6 Months treatment. **Results:** After 6 Months of treatment: - the first group showed an improvement in metabolic control (HbA1c decreased from 8,9% to 7,1 %; fasting plasma glucose decreased from 165+/-21 mg/dl to 122+/-18 mg/dl and 2 hours post-load plasma glucose decreased from 234+/-14 mg/dl to 171+/- 16 mg/dl) and decreased the BMI from 33,8 kg/m² to 32,2 kg/m² - the second group showed an improvement in metabolic control (HbA1c decreased from 8,5% to 7,4 %; fasting plasma glucose decreased from 181+/-11 mg/dl to 142+/-15 mg/dl and 2 hours after meal glucose decreased from 211+/-18 mg/dl to 162+/- 14 mg/dl) and increased the BMI from 32,9 kg/m² to 34,1 kg/m². **Conclusion:** both types of treatment have made an improvement in glycemic control but the treatment with DPP 4 inhibitors has made decreased in body weight.

Conflict of Interest: None disclosed

Funding: No funding

781 accepted poster

THE USE OF PHARMACOTHERAPY IN OBESITY TREATMENT IN THE UNITED STATES

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Abstract Text: Introduction: Bariatric physicians who specialize in the medical intervention of obesity in the United States have undergone scrutiny by the medical community as a result of the phen-fen fiasco (1992-1997), which has created many misconceptions about obesity pharmacotherapy. The usage of prescription medications for obesity treatment has not been well-documented due to this scrutiny; therefore, we examined the usage of obesity pharmacotherapy among members of the American Society of Bariatric Physicians (ASBP) who specialize in the medical treatment of obesity. **Methods:** An anonymous online survey was distributed to ASBP members in regards to their use of pharmacotherapy in obesity treatment. **Results:** Respondents (n=266) reported seeing an average of 1,176 patients annually, of which 1/3 reported practicing 100% bariatric medicine and another third less than 50% bariatric medicine. 96% of respondents reported using pharmacotherapy. Of those who employed pharmacotherapy, the most widely prescribed drugs were Phentermine (96%), Diethylpropion (57%), Phendimetrazine (55%), Sibutramine (47%), Topiramate (46%) and Orlistat (43%). Phentermine and Topiramate were prescribed for an unlimited duration by 52% of respondents. Drug combinations were used by 83% of respondents, and 71% used drugs not approved for treating obesity, with 83% deviating from NIH treatment guidelines. 52% used anti-obesity drugs for adolescents. **Conclusion:** This survey revealed how useful ASBP members find various drugs for the treatment of obesity. Pharmacotherapy in combination with lifestyle intervention should be considered as part of a comprehensive obesity management program.

Conflict of Interest: No conflict of interest

Funding: No funding

782 accepted poster

WEEKLY CHANGES OF INTRA-ABDOMINAL FAT ACCUMULATION DETECTED WITH DUAL BIOELECTRIC IMPEDANCE ANALYSIS DURING DIET THERAPY

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Abstract Text: Dual bioelectrical impedance analysis (Dual BIA) instrument allows measurement of intra-abdominal fat accumulation. To detect the weekly change of intra-abdominal fat accumulation during the diet therapy quantitatively, we measured the intra-abdominal fat area with the Dual BIA (Dual BIA-IAFA) in obese patients. Out of 67 patients with obesity, diabetes mellitus or metabolic syndrome, 19 Japanese inpatients (10 males and 9 females, age 49.0 \pm 14.4 years, BMI 33.2 \pm 7.3 kg/m²) had lost more than 5 % of baseline body weight (BW) during 3 weeks of diet therapy. Their intra-abdominal fat accumulation was assessed initially with both Dual BIA and CT, and in the following weeks with the Dual BIA instrument. In 67 patients, Dual BIA-IAFA correlated well with CT-IAFA (r=0.821). The changes in Dual BIA-IAFA, BW and waist circumference (WC) from baseline showed a significant decrease after 1 week of the diet therapy (p<0.05). In the patients who lost more than 5% of initial weight during diet therapy, average values of Dual BIA-IAFA, BW, and WC decreased in 3 weeks by 18.9 %, 5.3 %, and 3.8 %, respectively. Dual BIA instruments could detect the weekly change of intra-abdominal fat accumulation during the diet therapy in obese patients and demonstrated a substantially larger change of the intra-abdominal fat accumulation compared with changes of BW and WC.

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783 accepted poster

WHOLE-BODY VIBRATION IN OBESE WOMEN IMPROVES BODY COMPOSITION AND AEROBIC FITNESS AND DECREASES CARDIO-METABOLIC RISK FACTORS

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Abstract Text: Introduction. Substantial decrease in body fat and increase in aerobic fitness is difficult to observe in obese subjects due to poor compliance to exercise. Whole-body vibration (WBV) training has positive effects on both body composition and VO₂max but the application of this technique to obese patients remains mitigated. **Methods.** 29 obese subjects were randomly allocated to 2 groups: WBV (n=16) and non-exercising control group (C, n= 13). On the vibration platform, dynamic exercises were performed under supervision 3 times per week (session duration ~30 min.) for 12 weeks. Total and regional body composition was assessed by whole body and segmental BIA at baseline and after training. **Results.** In the WBV group, body weight and total body fat decreased by 2.9±0.2 kg & 2.2±0.1 kg respectively ($p < 0.05$). Waist circumference decreased by 8.0 cm ±1.6 ($p < 0.001$) in WBV and VO₂max increased by 14.5% in WBV (17.9±2.1 to 20.5±2.7 mlO₂kg⁻¹min⁻¹, $p > 0.01$). Blood pressure dropped by 13.4±8.7/9.4±6.0 mmHg (sys/dias). In the C group, no significant changes were observed for all above variables. **Conclusion.** WBV training constitutes a promising type of physical activity for obese women accompanied with a substantial reduction in cardiovascular and metabolic risk factors, and improvement in cardiorespiratory fitness. Additional studies over a longer duration are required to confirm the excellent effects and compliance observed with WBV training.

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T5:PS6 - Physical Activity Across Lifespan

784 accepted poster

A QUALITATIVE ANALYSIS OF THE USE OF EXERCISE THERAPY AT THE ROTHERHAM INSTITUTE FOR OBESITY

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Abstract Text: Introduction: The Rotherham Institute for Obesity (RIO) provides a multi-disciplinary team approach to weight management in the primary care setting. Exercise therapy is provided in on-site gym facilities, and includes a minimum of 6 sessions with one of 2 exercise therapists, whose aim is to educate and motivate patients. **Methods:** A questionnaire based qualitative analysis was performed to assess whether patients were finding exercise therapy to be a useful part of the MDT approach. Comprehensive subjective feedback was collected, relating to the structure and organisation of the service, and rating their benefit from the intervention. **Results:** In the 8m period from 1/4/11 to 1/12/11, 838 patients were referred to the on-site RIO gym. 528 patients (63%) completed questionnaires. 27% were men, 73% were women, and the age range was 20-75 years old. 92.5% of patients had to wait less than 5 minutes, from their allotted appointment time, to be seen. 79.5% of patients seen found the exercise therapy had been of use. 19% stated that it had changed their lives. 69% of patients found the exercise therapy had helped them to implement lifestyle changes. 100% of patients found it was delivered in a useful way. 79.4% of patients found the overall service "excellent", with 100% reporting "good" or better. **Conclusion:** The use of exercise therapy, as part of the RIO MDT approach, appears to be extremely popular with patients and is subjectively found to be a useful part of their weight management and behaviour change programme.

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785 accepted poster

BMI INFLUENCE IN THE POSTURAL BALANCE IN OBESE ADULTS INTEGRATED IN AN INTERDISCIPLINARY LIFESTYLE THERAPY

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Abstract Text: Introduction: Nowadays obesity is a worldwide epidemic. Overweight suggests an alteration on the locomotor system mechanics which changes the gravity centre and leads to changes on body balance. All of this could also lead to increase of energetic waste and life quality and risk of falling. **Aims:** The aim of this study was to verify the correlation between the BMI and balance in obese adults integrated in an interdisciplinary lifestyle therapy. **Material and Methods:** For this study were enrolled BMI>30 obese adults integrated in an interdisciplinary lifestyle therapy. Analyses were performed in both genders, 6 male and 24 female and age 43,33 ± 10,63. The corporal balance test was assessed with the *Balance Error Score System* (BESS) according to McLeod et al., (2009). To verify the co-relation between BMI and body balance was used Pearson coefficient with the SPSS program version 14.0. **Results:** The studied sample showed an average of BMI 35,18 ± 5,7 and Bess 69,77 ± 33,30. Co-relating Bess and BMI, was shown the value of $r = -0,1$ and value of $p = 0,59$. **Conclusion:** The results didn't show the correlation between the BMI and balance in obese adults integrated in an interdisciplinary lifestyle therapy.

Conflict of Interest: **Conflict of Interest:** None Disclosed**Funding:** **Funding:** No Funding

786 accepted poster

CORRELATIONS OF PHYSICAL EXERCISE AND ATHEROSCLEROSIS RISK FACTORS WITH THE PRESENCE OF CARDIOVASCULAR EVENTS IN THE ELDERLY. THE SERRES STUDY.

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Abstract Text: Introduction: In the most literatures, atherosclerosis risk factors are strongest predictors of cardiovascular events. Physical exercise, diet habits and drug therapy contributes to the prognosis of cardiovascular events. We sought to evaluate the correlations of physical exercise, diet and drug therapy in an elderly population study. **Methods:** The aim of that follow-up study was undertaken to define the prevalence of dietary habits, physical activity and drug therapy in a population of elderly 70-76 years of age without known familiar history of cardiovascular disease. The sample consisted of 60 patients (43 men, 17 women) with diagnosis of a transient ischemic attack stroke (TIA). Patients with family history of cardiovascular disease and smoking habit, automatically excluded from the population study. The depended variable was the physical activity (IPAQ short form physical activity questionnaire score). The independent variables were risk factors for atherosclerosis. The software SPSS 17 was used in the statistical analysis. **Results:** The statistical analysis showed that low physical exercise score and history of arterial hypertension, obesity and diabetes, associated with poor TIA prognosis. On the other hand, daily physical activity reduces the TIA stroke risk and associates with better prognosis, in a one year follow-up study. **Conclusion:** These findings suggested that physical exercise is a major factor for cardiovascular disease prevalence. Even though patients who undertaken a systematically low lipid drug therapy and reduce other risk factors (obesity) but they did not have regular physical activity were in higher risk for a transient ischemic attack stroke with non favorable prognosis.

Conflict of Interest: None Disclosed

Funding: No Funding

787 accepted poster

COST-EFFECTIVENESS REDUCING AND PREVENTING OBESITY OF A PHYSICAL ACTIVITY PROGRAM IN SCHOOL-AGE CHILDREN. THE CUENCA STUDY.

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Abstract Text: Introduction: childhood obesity is a public health problem. Spain is one of the most affected countries in which the pandemic evolves rapidly. It is important conduct economic evaluations of interventions to reduce obesity and provide to governments and policy makers tools to take better decisions. **Methods:** cost-effectiveness analysis of a physical activity program from a social perspective. The effectiveness was obtained from a cluster randomized trial in 20 schools divided into: the intervention group, who carried out the program, and control group that continued their usual activities. The effectiveness variable was the number of subjects who ceased to be obese or did not develops obesity in the intervention group versus the control group. Body fat percentage was use to classify children obesity. Program costs were estimated regardless of clinical trial cost. Control group costs were estimated with statistics sources on caregivers costs. **Results:** The incremental cost-effectiveness ratio of the program against the option to continue with usual activities was 46,99 €/per reduced case. The program cost per 1000 children was 197.605,83 €. And if it takes place in the Spanish population of 9 to 11 years (approximately 890.862 children) would cost 176.039.524,93 € and would avoid 34.467,45 obese children. **Conclusion:** The program, without mention of other benefits such as improvement in quality of life or lipid levels, shown that can reduce childhood obesity and prevent other diseases in adulthood with acceptable costs.

Conflict of Interest: None Disclosed

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788 accepted poster

DIFFERENT RESPONSE IN OVERWEIGHT VERSUS OBESE SUBJECTS AFTER A 12 MONTHS CONTROLLED FITNESS PROGRAM

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Abstract Text: Introduction: It was the aim of the present study to evaluate the efficacy of a standardized fitness program (tailored aerobic exercise in combination with resistance training) maintained over 12 months in overweight and obese subjects. **Methods:** Data were retrieved from participants in the Fitclass® program (n=8726). Subjects with BMI values between 25.0-29.9 (overweight) and above 30.0 (obese), who completed 4 evaluation moments over a one year period, were included. Bodyweight, - height and - fat percentage were measured at the start of the program and after every 12 weeks combined with performance indicators during a graded bicycle ergometer test (heart rate at deflexion point, wattage at deflexion point, maximal wattage). **Results:** Only 167 overweight and 57 obese women and 141 overweight and 37 obese men completed 4 successive 12 week training blocks and evaluations. Bodyweight decreased significantly after completion of the program for overweight women (from 73.1±5.5 to 70.1±7.7kg) and men (from 83.4±7.5 to 82.5±8.1kg) but remained stable for obese women (from 89.7±8.4 to 89.0±8.4kg) and men (from 105.7±15.9 to 105.5±16.2kg). Body fat percentage decreased in overweight women (from 34.4±3.7% to 31.8±4.2%) and men (from 20.9±3.0% to 19.1±4.1%) but remained stable in obese women (from 39.0±5.2% to 39.3±5.2%) whilst it decreased significantly in obese men (from 28.3±3.4% to 27.6±4.2%). Performance indicators improved significantly in all groups. **Conclusions:** In contrast to overweight women and overweight and obese men, obese women showed no change in body composition after a 12 months controlled fitness program.

Conflict of Interest: None

Funding: None

789 accepted poster

EFFECT OF DANCE EXERCISE ON COGNITIVE FUNCTION IN ELDERLY PATIENTS WITH METABOLIC SYNDROME: A PILOT STUDY

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Abstract Text: Introduction: Metabolic syndrome is associated with an increased risk of cognitive impairment. The purpose of this prospective pilot study was to examine the effects of dance exercise on cognitive function in elderly patients with metabolic syndrome. **Methods:** The participants included 38 elderly metabolic syndrome patients with normal cognitive function (26 exercise group and 12 control group). The exercise group performed dance exercise twice a week for 6 months. Cognitive function was assessed in all participants using the Korean version of the Consortium to Establish a Registry for Alzheimer's disease (CERAD-K). Repeated-measures ANCOVA was used to assess the effect of dance exercise on cognitive function and cardiometabolic risk factors. **Results:** Compared with the control group, the exercise group significantly improved in verbal fluency (p = 0.048), word list delayed recall (p = 0.038), word list recognition (p = 0.007), and total CERAD-K score (p = 0.037). However, no significance difference was found in body mass index, blood pressure, waist circumference, fasting plasma glucose, triglyceride, and HDL cholesterol between groups over the 6-month period. **Conclusions:** In the present study, six months of dance exercise improved cognitive function in older adults with metabolic syndrome. Thus, dance exercise may reduce the risk for cognitive disorders in elderly people with metabolic syndrome.

Conflict of Interest: None Disclosed

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790 accepted poster

EFFECTS OF TRAINING PROGRAM ON THE BALANCE PERFORMANCE IN BARIATRIC SURGERY PATIENTS

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Abstract Text: Effects of training program on the balance performance in bariatric surgery patients F.Marchand, J.Vanhelst EA 4488-Facultés sciences du sport-Lille 2-Ronchin, FranceCIC-9301-CHRU-INSERM, University hospital, Lille, France Introduction: To evaluate the effects of a physical training program on balance performance in bariatric surgery patients.**Methods:** Thirty obese patients participated to the program after bariatric surgery (38.04 ± 11.18 years, BMI = 44.14 ± 4.85 kg/m). Measurements included height, weight, BMI, musculoskeletal fitness (sit walk, push ups, schober test, elbow-toe, trunk flexibility). The intervention consisted of a unique program of adapted physical activity to their pathology. Activity sessions were offered two times per week, 1 hour each session, for 3 months. Means were calculated at baseline and following intervention and were compared by paired *t* tests.**Results:** Findings suggest significant improvements in musculoskeletal fitness in spite of the loss of weight (p<0.001).**Conclusions:** The physical training program improved the balance performance and strength which could contribute to minimizing the risks of falls.

Conflict of Interest: None Disclosed/Payment received**Funding:** No Funding/Research relating to this abstract was funded

791 accepted poster

ENERGY BALANCE AND NUTRITIONAL ADAPTATIONS TO EXERCISE AND PHYSICAL INACTIVITY IN OBESE YOUTHS

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Abstract Text: Introduction: Energy expenditure induced by exercise has been found to favor reduced obese adolescents' energy balance through decreased subsequent energy intake at both lunch and dinner time. The aim of this work was to question whether imposed physical inactivity could affect daily energy intake and energy balance in obese youths. **Methods:** 10 obese adolescents were asked to randomly complete three experimental sessions from 0730am to 0800pm: 1) sedentary (SED); 2) Exercise (75% VO₂max; EX); 3) Imposed physical inactivity (INACT). Appetite feelings were rated using Visual Analogue Scales; ad libitum energy intake assessed and Armband used to measure energy expenditure. **Results:** Daily energy intake was significantly higher during INACT compared with SED (p<0.05) and EX (p<0.0001) and during SED compared with EX (p<0.01). No differences were observed between sessions at lunch time while energy intake was significantly lower during EX compared with SED (p<0.05) and INACT (p<0.0001) as well as during SED compared with INACT (p<0.01). Energy balance was significantly different between conditions with INACT>SED>EX (ANOVA: p<0.0001). Hunger, satiety and Prospective food consumption were not different between conditions. **Conclusion:** In obese adolescents physical inactivity favors positive energy balance by mainly increasing daily energy consumption while an exercise session leads to lower energy intake and then negative energy balance. Those energy consumption differences are not accompanied by appetite feelings modifications.

Conflict of Interest:**Funding:**

792 accepted poster

IMPACT OF BRISK WALKING ON REGIONAL VARIATION IN ADIPOCYTE LIPOLYSIS OF PRE- AND POSTMENOPAUSAL WOMEN

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Abstract Text: Introduction: Aims of this study were to verify whether regional variation in subcutaneous fat cell lipolysis persists at early menopause, compared to late premenopausal status, and to evaluate the impact of walking on adipocyte lipolytic responses to epinephrine and insulin, α_2 - and β -adrenoceptor (AR) agonists (UK14304 and isoproterenol), once age and adiposity-differences were considered. **Methods:** Sixteen late pre- and 14 early postmenopausal (49±2 vs. 52±2 yr; p<.001) moderately obese women were subjected to a 16-week walking program (3 sessions/week of 45 min at 60% heart rate reserve). Subcutaneous abdominal and femoral fat cell lipolysis, body composition and cardiorespiratory fitness (CRF) were measured before and after walking. **Results:** At baseline, fat cell weight, body composition and CRF did not differ between groups. Epinephrine responsiveness was similar whatever the menopausal status and fat depot. Antilipolytic effects of UK14304 and insulin were lower in abdominal than in femoral adipocytes (.005<p<.05), in premenopausal women. Regional variation in UK14304-induced antilipolysis was comparable in postmenopausal women (.005<p<.05). Isoproterenol-stimulated lipolysis did not differ between groups and sites. Body weight and fat mass losses, and CRF increases were comparable after walking (.0001<p<.05). Antilipolytic responses to UK14304 and insulin were reduced in femoral adipocytes of both groups (.01<p<.05), while the α_2 -AR component decreased in abdominal cells of premenopausal women, only, after walking (p<.05). The β -AR component remained unchanged in both groups.**Conclusion:** A modest weight loss reduces the main antilipolytic components of femoral adipocytes, irrespective of menopausal status, and the α_2 -AR pathway of abdominal fat cells, in premenopausal women.

Conflict of Interest: None disclosed**Funding:** Research related to this abstract was funded by the Canadian Institutes of Health Research (CIHR) [MOP#77572]

793 accepted poster

INFLUENCE OF NURSING EDUCATION SUPPORT IN REDUCING INACTIVITY IN SCHOOL AGE CHILDREN.

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Abstract Text: Introduction. Physical inactivity in school age children in Mexico is frequent in Mexico.**Methodology.** Longitudinal study, pre-experimental, with a sample of 62 school children, from primary Diana Laura Riojas of Colosio of the City of Celaya, Guanajuato. For data collection was used instrument: "physical activity questionnaire INTA" which aims to assess habitual physical activity a child or adolescent during the week, was applied in a school population. The statistical package used was SPSS version 18. **Results.** The predominant age was 12 years with 27%, 53% of students are female, 36% are in 6th grade. 82% of school children was first measured with a sedentary lifestyle, whereas in the second postintervention measurement was 56%. Mean difference was performed for dependent groups, to test the hypothesis that was used the Student *t* test statistic. When assessing physical activity was found in the pretest of 4.31 ± 1.34 points and in the posttest of 5.24 ± 0.862 points. Checking the influence of support and education for the reduction of physical inactivity in school, obtaining a value of p <0.1 showing statistical significance in relation to physical activity of the students. **Conclusions.** Without a doubt, and based on accepted statistical results support hypothesis that nursing education has a positive impact for the reduction of physical inactivity in school children.

Conflict of Interest: None**Funding:** No funding

794 accepted poster

THE EFFECT OF EXERCISE ON VISCERAL ADIPOSE TISSUE IN OVERWEIGHT ADULTS: A META-ANALYSIS

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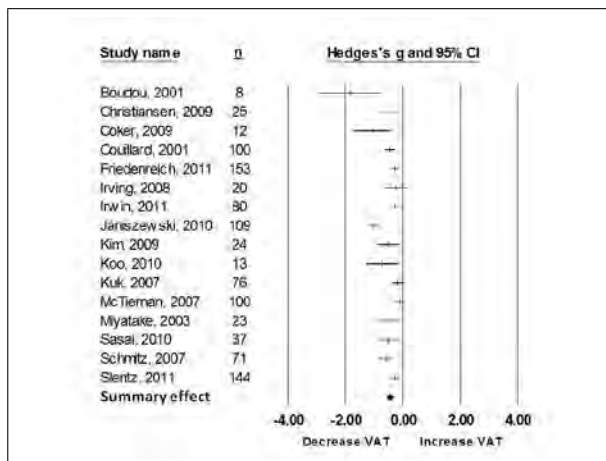
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Abstract Text: Introduction: Excessive visceral adipose tissue appears to trigger a cascade of metabolic disturbances that seems to coexist with ectopic fat storages in muscles, liver and heart. Therefore, the reduction of visceral adipose tissue plays a pivotal role in the treatment of the metabolic syndrome. The purpose of this meta-analysis is to provide an overview of the effect of different exercise regimes without diet on visceral adipose tissue in overweight adults. **Methods:** A systematic literature search was performed according to the PRISMA statement for reporting systematic reviews and meta-analyses. Databases searched were Pubmed, SPORTDiscus, Pedro and Cochrane using the keywords (Overweight OR Obesity) AND (Exercise OR "Physical activity" OR "Exercise therapy" OR "Resistance training" OR "Aerobic training") AND ("Visceral adipose tissue" OR "Intra-abdominal fat"). The initial search resulted in 85 articles. After screening on title, abstract and full-text 16 articles (totaling 995 subjects) fulfilled our planned criteria for inclusion. **Results:** Using random-effect weights, the standardized mean difference (Hedge's g) of the change in visceral adipose tissue was -0.461 with a 95% confidence interval of -0.606 to -0.317. The Z-value was -6.247 and the p-value (two tailed) was <0.001 (Figure).



Conclusion: Based on the data of the present meta-analysis of 16 studies it can be concluded that exercise (aerobic and/or resistance), even without a hypocaloric diet, has the potential to reduce visceral adipose tissue significantly. The next phase of the meta-analysis will focus on which specific exercise regime is most efficient in reducing visceral adipose tissue.

Conflict of Interest: None

Funding: No Funding

795 accepted poster

THE EFFECTS OF RESISTANCE TRAINING AND HIGH-FAT DIET ON BODY COMPOSITION AND FAT DEPOTS IN OBESE RATS

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Abstract Text: Introduction: Our study investigated effects of resistance training on body composition and fat depots in high-fat fed male adult Wistar rats divided into 4 groups: Sed-C, sedentary; Sed-HF, sedentary high-fat diet (30% of fat); RT-C, resistance training; RT-HF resistance training high-fat diet. **Methods:** Animals climbed a 1.1-m vertical ladder with weights attached to their tails, 3 times a week sessions, 49 climbs and 812 dynamic movements per climb, during 10 weeks. **Results and conclusion:** RT promoted induced a decrease in body mass, fat percentage and fat depots in diet-induced obese rats. (Table 1).

	Sed-C	Sed-HF	RT	RT-HF
Body mass (g)	453.0 ± 14.06 ^a	566.4 ± 22.10 ^b	431.5 ± 16.63 ^b	500.5 ± 16.36 ^{b,c}
Fat percentage (%)	40.41 ± 1.61 ^a	55.71 ± 1.43 ^b	30.70 ± 1.62 ^{b,c}	48.13 ± 1.82 ^{b,c}
Epididymal fat depot	2.21 ± 0.13	3.07 ± 0.11 ^b	1.78 ± 0.08 ^b	2.87 ± 0.22 ^{b,c}
Retropertoneal fat depot	1.68 ± 0.11	2.91 ± 0.24 ^b	1.28 ± 0.14 ^b	1.96 ± 0.13 ^{b,c}
Mesenteric fat depot	2.93 ± 0.23	4.81 ± 0.30 ^b	1.80 ± 0.16 ^{b,c}	3.87 ± 0.26 ^{b,c}
Maximal Workload (g)			914.3 ± 28.97	842.1 ± 27.86

All values are presented as means ± SEM (p<0.05): ^a versus Sed-C; ^b versus Sed-HF; ^c versus RT. Fat depots: g/100g of body mass.

Conflict of Interest: None declared by all authors.

Funding: FAPERJ

796 accepted poster

THE INFLUENCE OF BODY MASS INDEX (BMI) AT PLANTAR PRESSURE IN OBESE ADULTS

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Abstract Text: Introduction: The feet complex is formed by several structures which receives the body weight and adapts to the ground. The increase of body weight could change the height of medial longitudinal arch, needed for the propulsion of the feet in relation to the ground during the cycle of gait. **Aims:** To verify an influence of BMI at the plantar pressure in obese adults. **Material and Methods:** Thirty (30) volunteers with age between 18 and 30 years with BMI over 30kg/m and independent gait were enrolled for this study. The obese adults were submitted for plantar pressure according to the methods of the Valenti (Barros Filho, 2001). Statistical analysis ANOVA was used to verify the difference between BMI and plantar pressure. Afterwards, we used the Bonferroni post hoc to determine differences between the types of plantar pressure, with $p < 0.05$. **Results:** The people involved in this study was composed by 80% female, with the average of: age 43,3 years, body mass 95,3 kg, stature 1,64 m and BMI 35,1Kg/m. When comparing the BMI and plantar pressure of both sides, was observed only on the right side a significant statistical difference (p=0.03), only between the high arch and flat foot in the right side was demonstrated a statistical significance (p=0.03). **Conclusion:** According to our results the present study verified the influence between BMI and plantar pressure only for the right side.

Conflict of Interest: Conflict of Interest: None Disclosed

Funding: Funding: No Funding

797 accepted poster

THE ROLE OF PHYSICAL ACTIVITY IN OBESITY

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Abstract Text: Introduction: Obesity is the most common nutritional disorder and it is associated with a large number of co-morbidities. Among the individual factors contributing to obesity are inappropriate diets and physical activity. This paper aims to determine the impact of physical activity on obesity. Methods: I took a group of 200 study subjects, aged between 28-74 years, whom presented at the County Hospital of Oradea. We establish the correlation between physical activity and obesity were recorded the following parameters: age, physical activity, weight status. Results: over 55% of the subjects were obese and only 10.0% were of normal weight. Most patients had daily physical activity (60.0%), those without any exercise were only 14.0%. In our study group most patients had an unhealthy diet + physical activity (weekly or daily) (48.0%), and healthy diet + physical activity (38.0%). The more intense the physical exercise is the lower the prevalence of obesity (42.5% in those with daily exercise compared to 92.9% without physical exercise). The highest prevalence of obesity occurred in patients without physical activity (93.8%) and the lowest in patients with physical activity (26.3%). Conclusion: In terms of weight status we discovered that over 55% of the subjects were obese and only 10.0% were of normal weight. The more intense the physical activity is the lower the prevalence of obesity (42.5% in those with daily exercise compared to 92.9% without physical activity). The risk of obesity is almost two times higher in those without physical activity compared to those with physical activity (daily or weekly).

Conflict of Interest:**Funding:**

798 accepted poster

THE SIX-MINUTE WALK TEST IN OBESE YOUTH: REPRODUCIBILITY, VALIDITY, AND PREDICTION EQUATION

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Abstract Text: Introduction: To assess the reproducibility and validity of the 6 minute walk test (6MWT) in a cohort of obese youth and to develop an equation to predict peak oxygen uptake from results of 6 MWT and body composition. **Methods:** Physical measures included body mass, height, % fat mass and % fat free mass. Three walk tests were administered one week apart. Each visit corresponded to a specific test, either an incremental treadmill test, or the 6MWT. The 6MWT was performed on two occasions one week apart to assess repeatability. Treadmill and walk tests were randomly assigned to avoid order effect. **Results:** Of one hundred one overweight and obese youth recruited, four failed to achieve maximal effort on the exercise test and were not included in the study. Fifty-two girls and 45 boys, ages 7-17.8 participated in the study. Subjects walked 689.4 ± 98.6 m in the first walk test and 690.4 ± 98.2 m in the second walk test. The intraclass correlation coefficient was calculated as 0.99. The Bland and Altman method showed good agreement between the two tests. Stepwise multiple regression showed that distance walked in 6 MWT and BMI are necessary to predict the VO_{2max} . The prediction equation is $VO_{2max} = 26.9 + 0.014 \text{ MWT (m)} - 0.38 \text{ MI (kg/m)}$. **Conclusions:** In obese youth, the 6 MWT is a reproducible and valid test for assessing aerobic power. A prediction equation was developed to estimate VO_{2max} , using distance covered in 6MWT and BMI.

Conflict of Interest: None Disclosed/Payment received**Funding:** No Funding/Research relating to this abstract was funded.

799 accepted poster

TRAINING IN THE FASTED OR A FED STATE: EFFECTS ON GLUCOSE, SUBSTRATE OXIDATION AND SYMPATHOVAGAL RESPONSES TO A MEAL CONSUMED AFTER AN EXERCISE SESSION, AND ON TOTAL AND ABDOMINAL FAT MASSES

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Abstract Text: Introduction: Training in the fasted state has been reported to improve fat oxidation in muscle, glucose tolerance and body fat loss. Here we assessed whether such a training strategy may alter the glucose, substrate oxidation and sympathovagal balance responses to a meal consumed after an exercise session. **Methods:** Seventeen young healthy male subjects trained during a 6 week-period on a treadmill (3 days/week, 40 min at 70% of VO_{2peak}) in a fasted (FAST, n=9) or fed (FED, n=8) state. On the first and the last days of training, subjects exercised in the fed state and consumed a test-lunch 2 h later. Glucose and autonomic balance were assessed continuously by a subcutaneous glucose monitor and the analysis of heart rate variability (HRV) respectively, substrate oxidation by indirect calorimetry before and 90, 150 and 210 min after lunch, and fat mass by bioelectrical impedance (total by Tanita BC418-MA and abdominal by ViScan). **Results:** Postprandial glucose levels and substrate oxidation were not modified by training and were not different between FAST and FED. Overall autonomic activity was increased by training but, in FAST, heart rate and indices of sympathetic activity decreased. Last, abdominal fat decreased in FAST (from 13.5 ± 1.1 to $11.6 \pm 1.1\%$ respectively, mean \pm SEM) but not in FED. **Conclusion:** Training in a the fasted or the fed state did not alter glucose response to a meal consumed after an exercise session but training in the fasted state reduced the sympathetic response to the meal and specifically abdominal fat mass.

Conflict of Interest: None Disclosed**Funding:** Research relating to this abstract was funded

T5:PS7 - Treatment of Co-Morbidities in Obese Patients

800 accepted poster

LORCASERIN, A SELECTIVE SEROTONIN 2C AGONIST FOR WEIGHT MANAGEMENT, REDUCES FRAMINGHAM 10-YEAR RISKS OF HARD CORONARY HEART DISEASE (HCHD) AND GENERAL CARDIOVASCULAR DISEASE (CVD) IN MEN AT INCREASED RISK AT ONE YEAR

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Abstract Text: Introduction: As previously demonstrated from 3 randomized, placebo-controlled trials that evaluated ~7800 obese or overweight patients, 8% with type 2 diabetes (T2D), Lorcaserin 10 mg (Lorc) QD and BID was associated with significant weight loss and improvement in blood pressure (BP), glycemia, waist circumference, body composition, and lipids at 1 year. Measures of cardiometabolic risk were analyzed using Framingham calculators to evaluate the effect of Lorc on predicted 10-year cardiovascular risk. **Methods:** Data from 2914 modified-intent-to-treat patients (18% with T2D, 60% women) with baseline 10-year CVD risk $\geq 5\%$ were analyzed using Framingham sex-specific models. Predicted risks at baseline and 1 year were based on age, smoking status, anti-hypertensive medication use, T2D status, systolic BP, HDL-cholesterol and total-cholesterol (or BMI replacing lipids in a simplified model). Missing data were handled by last-observation-carried-forward. Least squares mean (LSM) change and difference from placebo were computed using the ANCOVA model with treatment as factor and adjusted for study and baseline risk. **Results:** Baseline age was 53 years in men and 56 in women, and BMI was similar in both sexes at 36 kg/m². Baseline risks and analysis of change at 1 year are summarized below. When patients with T2D were analyzed separately, baseline risk was higher than in non-diabetics, and Lorc-associated decreases in men were greater.

Mean risk (%)	Men			Women		
	Lorc-BID (n=614)	Lorc-QD (n=148)	Placebo (n=492)	Lorc-BID (n=775)	Lorc-QD (n=204)	Placebo (n=735)
Heart Coronary Heart Disease (HCHD)						
Baseline	8.718.8	8.828.4	8.656.8	2.481.9	2.287.9	2.481.8
Change at 1 year	-0.2 (-0.5, 0.04)	-0.3 (-0.6, 0.0)	0.1 (-0.2, 0.4)	-0.1 (-0.2, 0.01)	0.1 (-0.1, 0.3)	0.02 (-0.1, 0.1)
General Cardiovascular Disease (CVD)						
Baseline	16.290.3	17.3811.0	16.189.4	8.994.1	6.794.3	8.953.9
Change at 1 year	-0.8 (-1.2, -0.4)	-0.8 (-1.3, 0.2)	0.2 (-0.2, 0.6)	-0.4 (-0.6, -0.2)	-0.01 (-0.4, 0.4)	-0.1 (-0.5, 0.1)
Simplified-CVD (replacing lipids with BMI)						
Baseline	22.8812.2	23.8813.9	22.8812.7	11.726.2	11.588.9	11.865.8
Change at 1 year	-0.7 (-1.1, -0.3)	0.1 (-0.7, 0.8)	0.2 (-0.3, 0.8)	-0.9 (-1.7, -0.2)	-0.2 (-0.8, 0.2)	-0.2 (-0.8, 0.1)

*Mean±SD for baseline; (LSM (95% confidence interval) for change.

Conclusion: Compared with placebo at 1 year, Lorc-BID was associated with decreased predicted 10-year CV risk in men at increased risk. In women at increased risk, predicted risks trended lower with Lorc than with placebo.

Conflict of Interest: All authors are employees of Arena Pharmaceuticals, Inc.

Funding: The studies were funded by Arena Pharmaceuticals, Inc.

801 accepted poster

24-WEEK REFERRAL TO SLIMMING WORLD FROM PRIMARY CARE: WEIGHT OUTCOMES FOR 4,754 ADULTS.

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Abstract Text: Introduction: This project audited attendance and weight loss over 24 weeks in patients who participated in a primary care/commercial weight management organisation partnership scheme. **Methods:** 4,754 adult patients (575 men, 4,179 women) were referred to Slimming World for 24 weekly sessions. Individual age, height, gender and weekly weight records were collected. Data were analysed by regression using the GENSTAT 5 statistical program. **Results:** Mean (SD) BMI change was -3.3 kg/m² (2.2), weight change -8.9 kg (6.0), percent weight change -8.6% (5.3) and number of sessions attended 21.3 (3.2) of 24. For patients attending at least 20 of 24 sessions (n=3,626 or 76.3%), mean (SD) BMI change was -3.6 kg/m² (2.2), weight change -9.6 kg (6.1), percent weight change -9.3% (5.3). Weight loss was greater in men than women (p<0.001). 74.5% of all patients enrolled, and 79.3% of patients attending 20 or more sessions achieved at least 5% weight loss. 37.3% of the whole population lost $\geq 10\%$ of their weight. Percent weight lost during the first week of referral and attendance were the largest predictors of percent weight loss. Age, height, gender and starting BMI all explained a very small amount of

the variance (<0.3%) in percent weight loss. **Conclusion:** Referral to a commercial organisation for community-based lifestyle intervention is a practical option for longer-term National Health Service weight management strategies.

Conflict of Interest: All authors (except S Whybrow) work for Slimming World.

Funding: This work was funded by Slimming World.

802 accepted poster

A RISK SCORE TO PREDICT TYPE 2 DIABETES MELLITUS IN AN ELDERLY MEDITERRANEAN POPULATION AT HIGH CARDIOVASCULAR RISK

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Abstract Text: Aims: To develop and test a Diabetes Risk Score to predict incident diabetes in an elderly Mediterranean population at high cardiovascular risk. **Methods:** A Diabetes Risk Score was derived from a subset of 1381 nondiabetic individuals from three centres of the PREDIMED study (derivation sample). Multivariate Cox regression model coefficients were used to weigh each risk factor. PREDIMED-personal Score included Body-mass-index, smoking status, family history of type 2 diabetes, alcohol consumption and hypertension as categorical variables; PREDIMED-clinical score included also high blood glucose. We tested the predictive capability of these scores in the DE-PLAN-CAT cohort (validation sample). Discrimination of Finnish Diabetes Risk Score, (FINDRISC), German Diabetes Risk Score (GDRS) and our scores was assessed with the area under the curve (AUC). **Results:** The PREDIMED-clinical Score varied from 0 to 14 points. In the subset of the PREDIMED study, 155 individuals developed diabetes during 4.5 years of follow-up. PREDIMED-clinical Score at a cutoff of ≥ 6 had 72.2% sensitivity, and 72.5% specificity, whereas AUC was 0.78. The AUC of PREDIMED-clinical Score was 0.66 at the validation sample (sensitivity=85.4%; specificity=26.6%), and was significantly higher than the FINDRISC and the GDRS in both the derivation and validation samples. **Conclusions:** We identified classical risk factors for diabetes and developed a PREDIMED-clinical Score to determine those individuals at high risk of developing diabetes in a Mediterranean population at high cardiovascular risk. The predictive capability of the PREDIMED-clinical Score was significantly higher than the FINDRISC and GDRS, moreover using fewer items in the questionnaire.

Conflict of Interest: No potential conflicts of interest relevant to this article were reported for any of the authors.

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803 accepted poster

ACCURACY OF DIFFERENT MEASURES OF RENAL FUNCTION IN OBESITY:

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Abstract Text: Introduction: Obesity is a risk factor for hyperfiltration and renal dysfunction. The increased lean and fat mass in obesity influences creatinine and cystatin C production respectively. Hence the accuracy of creatinine based measurements and cystatin C have been questioned. There are few studies validating these measures in obesity against glomerular filtration rate (GFR) as determined by the

gold standard nuclear isotope scans. **Methods:** We studied 58 obese (BMI 35.9 ± 5.3 kg/m²) diabetics aged 60.5 ± 9.1 years. There were 40 males and 18 females. GFR was measured by renal DTPA scan and compared with cystatin C, serum creatinine, GFR by the Modification of Diet in Renal Disease (MDRD) formula and creatinine clearance as calculated using 24 hour urine collections (24hr CrCl) and using the Cockcroft-Gault formula unadjusted for lean weight. **Results:** The mean GFR using DTPA scan was 125 ± 49 ml/min. This compared to MDRD (94 ± 29 ml/min/1.73m²), 24hr CrCl of 164 ± 62 ml/min, Cockcroft-Gault creatinine clearance of 138 ± 60 ml/min. Mean Cystatin C was 0.87 ± 0.22 mg/dl. Compared to the GFR from DTPA scan, the correlation co-efficients were -0.69 (cystatin C), -0.54 (serum creatinine), 0.69 (24hr CrCl), 0.80 (Cockcroft-Gault), and 0.75 (MDRD). **Conclusion:** In obese hyperfiltering subjects, the Cockcroft-Gault formula overestimates but most accurately approximates GFR as determined by nuclear DTPA scan compared to other methods.

Conflict of Interest: The authors have no conflict of interest.

Funding: Funding for this study was provided by the CSIRO, an Australian research organisation.

804 accepted poster

ADDICTIVE FEATURES OF OBESITY. WHAT IDEAS DO HEALTH PROFESSIONALS AND RECOVERED OBESE PEOPLE HAVE ABOUT THIS ISSUE?

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Abstract Text: Introduction: Latest research in neurobiology on appetite regulation for the obese refers to the genesis of neurotransmission circuits caused by the stimulus some elaborated food generates on different brain areas similar to drug -dependency. Therefore, we wonder whether many specialists and recovered obese patients recognise this aspect which would imply a radical change on the therapeutic impact. **Objective:** To find out the degree of knowledge that recovered obese patients and health professionals have on this addictive aspect of obesity. **Materials and Method:** Many surveys were given to active patients on weight maintenance treatments considering the substance dependency criteria established by the World Health Organization. Some doctors and specialists from different institutions were also asked to complete a survey on the nature of therapeutic- diagnosis for obesity. **Results:** 96.2% of the recovered obese patients consider obesity as an addiction referring to the substance dependency criteria of the World Health Organization. 100% of the inquired doctors consider obesity as a chronic disease that needs life treatment. 75% think obesity is an addictive disease but only the 59.3% believe it is necessary to approach the treatment with the substance abuse therapeutics. **Conclusion:** We are undergoing a transition as regards the consideration of the disease nature and the necessary therapeutic tools to treat it.

Conflict of Interest:

Funding:

805 accepted poster

ADIPONECTIN COULD BE A COMPREHENSIVE MARKER OF METABOLIC SYNDROME IN OBESE CHILDREN

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Abstract Text: Introduction: The prevalence of obesity has increased dramatically as a result of our modern lifestyle and is one of the most important targets of public health programmes. We aimed to investigate the relationship between serum adiponectin level and the metabolic syndrome phenotype in children and to examine the independent association between serum adiponectin level and the individual components of the metabolic syndrome. Design: cross-sectional. Method: Participants: 56 obese children with body mass index $\geq 95^{\text{th}}$ percentile for age and sex and 50 normal weight children matched for age and sex with the obese children acted as controls. Main outcome measure: serum adiponectin level. Results: serum adiponectin level was significantly lower in obese children compared to normal weight controls (7.35 ± 3.1 μ g/dl vs. 10.64 ± 3.04 μ g/dl). Obese children with the metabolic syndrome have a significantly lower adiponectin level compared to obese children without the metabolic syndrome (5.92 ± 1.9 μ g/dl vs. 8.57 ± 2.1 μ g/dl). There was a significant negative correlation between adiponectin level and waist circumference, triglyceride level, systolic blood pressure, diastolic blood pressure, and fasting blood glucose. Adiponectin level correlated positively with the level of HDL-C. After controlling for the confounding effect of age, sex, and visceral fat, adiponectin level remained a significant predictor of the metabolic syndrome (OR: 0.76,

95% CI: 0.630.91). Conclusion: Adiponectin demonstrated a consistent relation to each metabolic syndrome component. Adiponectin may be a comprehensive marker of the metabolic syndrome condition.

Conflict of Interest: No conflict of interest.

Funding: Self funding

806 accepted poster

ANALYSIS OF NUTRITION OF POLISH CHILDREN AGED 13-36 MONTHS WITH EXCESSIVE BODY WEIGHT – NATION-WIDE STUDY

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Abstract Text: Overweight at developmental age is an eating disorder demanding medical and nutritional intervention, because of the risk of diet-related diseases. Aim: Analysis of nutrition of children aged 13-36 months with excessive body weight. Material and methods: From the representative nation-wide population of children aged 13-36 months (n=400) two groups were isolated children with excessive body weight (BMI z-score $\geq +1$; n=110) and control group with normal body weight (BMI z-score between -1 and +1; n=181). The diets of children were evaluated in relation to their nutritional status assessed using anthropometric indices (weight, height, BMI, z-score BMI with reference to WHO Child Growth Standards). Energy and nutrient intake of children were determined using dietary software Dieta 4.0. Results: The mean age in studied groups was 23 ± 6.7 months. The study did not show any significant differences in feeding patterns (number of meals, snacking) and energy and nutrients intake between both groups. The percentage of children with birth weight >4000 g was higher in group with overweight (14.3% vs 8.3% in controls). Almost 8% of control group and 10% of overweight children were still breastfed, but in the latter case night-time breastfeeding was more frequent. Excessive birth weight >4000 g, prolonged breastfeeding, particularly at night (Me=2 feedings in overweight group; Me=1 in controls) seems to be risk factors of overweight in studied children. Conclusions: 1. Feeding pattern of toddlers with excessive body weight was similar to their normal weight counterparts. 2. Overweight children require regular paediatric care and particular attention to feeding practices paid by parents.

Conflict of Interest:

Funding:

808 accepted poster

BODY IMAGE ENHANCEMENT MEDIATES 12- AND 36-MONTH POSITIVE CHANGES IN BODY WEIGHT AND PSYCHOLOGICAL WELL-BEING IN WOMEN UNDERGOING OBESITY TREATMENT

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Abstract Text: Introduction: Body image (BI) is often compromised in overweight women, and frequently associated with poorer psychological well-being and weight outcomes. This study tested whether BI improvement during treatment mediated changes in weight and psychological well-being at intervention's end and after a 2-yr follow-up. The effects of changes in different BI dimensions were also examined. Methods: At baseline, 221 overweight women (age: 37.6 ± 7.0 yr; BMI: 31.6 ± 4.1 kg/m²) were assigned to a control or 1-year group intervention designed to improve diet and increase physical activity. Controls received a health education curriculum. Participants were followed for 2 years post-intervention. Assessments were performed at baseline and at 12 and 36 months. Preacher and Hayes (2007) resampling procedures to test indirect/mediated effects were used. Results: Changes in evaluative BI were correlated with 12- ($r = .60$) and 36-month ($r = .34$) weight change, and significantly mediated treatment effects (effect ratios: .47 and .61, respectively; all $ps < .01$). This dimension had no effects on well-being. Reductions in investment BI were associated with better weight and psychological outcomes at both time points, and significantly mediated treatment effects (all $ps < .05$). The indirect effects of treatment on well-being through BI investment remained significant after adjusting for weight change. Conclusions: Improving BI during obesity treatment might contribute to more favourable weight outcomes and psychological well-being immediately post-intervention, but also in the longer-term. Its effects on well-being appear to be independent of weight change. These findings are particularly relevant in the context of relapse prevention, further supporting the need for addressing BI issues during obesity treatment.

Conflict of Interest: None Disclosed

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tuguese Science and Technology Foundation, the Calouste Gulbenkian Foundation, Oeiras City Council, IBESA, Nestlé Portugal.

809 accepted poster

CAN WE PREDICT SLEEP APNOEA OR HYPERTENSION BY ANTHROPOMETRY?

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Abstract Text: Introduction: Obesity is a rising problem worldwide and has several co-morbidities including obstructive sleep apnoea (OSA) and hypertension. OSA is prevalent in 40% of the obese population and is largely undiagnosed. **Method:** Data on 100 patients (50 female and 50 male) was collected from the Aneurin Bevan Hospital Weight Management Clinic. An inclusion criterion was a BMI over 35. Data included: age, gender, BMI, neck and waist circumference, Epworth Sleepiness Score, and BP. Data was subgrouped according to gender and analysed. Due to being intended for an audit no control group has been used. **Results:** Neck circumference was found to positively correlate with Epworth Score. 32 patients had a high Epworth Score however only 9 of these patients had been referred in regards to OSA, thus indicating how under diagnosed this condition is. Waist circumference positively correlated with systolic BP. However no link was proved between Epworth Score and systolic BP. **Conclusion:** Neck circumference and Epworth Score positively correlate therefore this link can help clinicians in the early detection, diagnosis and treatment of OSA. However OSA is under diagnosed in general due to a lack of public awareness, healthcare screening and healthcare referrals. The results show for the first time that waist circumference correlates with high blood pressure, although it is unlikely to be adopted on a large scale due to alternative easier methods of measuring blood pressure.

Conflict of Interest: None disclosed

Funding: No Funding

810 accepted poster

CARDIOVASCULAR RISK FACTORS FOLLOWING THREE DIFFERENT MAINTENANCE PROGRAMS IN OLDER OBESE INDIVIDUALS WITH KNEE PAIN AFTER A MAJOR WEIGHT LOSS: A RANDOMIZED CONTROLLED TRIAL

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Abstract Text: Introduction: Obese patients with knee osteoarthritis (OA) are encouraged to lose weight to obtain symptomatic relief. Our aim was to compare changes in cardiovascular disease (CVD) risk-factors after 1-year of either dietary, knee-exercise or control group maintenance. **Methods:** Obese individuals (>50 yr) having knee OA, were enrolled in a 16-week weight loss formula diet program. Randomization with concealed allocation (1:1:1): 1-year maintenance with [D]dietary support, [E]knee-exercise, or [C]control. Endpoints: change in waist circumference, vitamin D (a novel risk-factor of CVD), and the number of patients with metabolic syndrome (MS). Analysis: We applied a likelihood-based approach using general linear mixed models (ANCOVA and GLMM), dealing with the repeated (longitudinal) measures in the statistical model. **Results:** Participants: 192, on average 63 years (SD 6), weight 103.2kg (15.0), and BMI 37.3kg/m² (4.8) were randomized. Baseline: Waist circumference was 111.3cm (10.9), vitamin D was 48.2nmol/L (20.4), and the number of participants with MS in D, E and C was 44, 43 and 44. Mean changes in waist circumference at week 68, in D, E, and C were -8.3, -4.6 and -6.9cm ($P < .0001$); D lost significantly more than E: -3.7cm (95%CI -5.7;-1.7; $P < .0004$). Vitamin D increased in all groups; D experienced significantly larger increase than E: 9.5nmol/L (95%CI 3.6;15.3; $P = 0.0015$). The number of patients with MS were reduced in all

groups, D: 26(41%), E: 33(52%), and C: 33(52%), respectively ($P=0.33$; potentially in favor of D). **Conclusions:** Dietary support after a major weight loss improved cardiovascular risk factors significantly more than exercise-maintenance in sedentary older individuals.

Conflict of Interest: Pia Christensen, Henning Bliddal, Birgit Falk Riecke, Robin Christensen, Marius Henriksen and Arne Astrup received travel grants to attend scientific meetings from the Cambridge Manufacturing Company.

Funding: This study was supported by grants from The Oak Foundation, The Velux Foundation, The Cambridge Weight plan UK, The Danish Rheumatism Association, The Augustinus Foundation, The A.P. Mller Foundation for the Advancement of Medical Science, Hrslev Fonden, Bjarne Jensens Fond and Aase og Ejnar Danielsens fond.

811 accepted poster

CASE REPORT: INSULIN REDUCTION AND STOPPAGE AFTER INTRODUCTION OF GLP1 AGONIST TREATMENT IN A PATIENT WITH METABOLIC SYNDROME.

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Abstract Text: A 54 years old gentleman was referred to the hospital diabetes clinic with poor control (HbA1c 9%). He was diagnosed as having type 2 diabetes for 7 years with morbid obesity (BMI 41). He was already on twice daily mixed insulin started 3 years after diagnosis due to worsening of HbA1c at 11%. However, despite using 100 units of insulin daily with metformin, the best HbA1c achieved was 8.4%. His diabetes was complicated by dyslipidemia, microalbuminuria and uncontrolled hypertension despite multiple treatment dose escalation. He was started on exenatide with gradual tapering of his insulin. Within 6 months, he managed to have his HbA1c reduced to 6.3% with BMI of 38. Over the following 6 months, insulin dose was reduced further and stopped completely with further weight reduction to BMI of 35 maintaining HbA1c of 6% with no hypoglycaemic episodes, in addition to improvement of lipid profile and blood pressure control. Although not licensed as yet with insulin, the use of GLP1 agonists in selected cases can help insulin dose reduction and stoppage helping better control of diabetes, BMI and metabolic parameters in patients with type 2 diabetes and metabolic syndrome.

Conflict of Interest:

Funding:

812 accepted poster

CHANGES IN LIPIDEMIA DURING CHRONIC CARE TREATMENT OF CHILDHOOD OBESITY

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Abstract Text: **OBJECTIVE:** This intervention study assessed the associations between weight changes and lipidemia in obese children and adolescents. **METHODS:** Two hundred forty obese children and adolescents (median age: 11.3 years; range: 3.9-20.9) were enrolled in a best-practice multidisciplinary chronic care treatment program. The concentrations of total cholesterol, low-density lipoprotein (LDL), high-density lipoprotein (HDL), and triglycerides (TGs) and anthropometric data comprising height and weight were collected at baseline and after up to 39 months of continuous treatment. **RESULTS:** The body mass index standard deviation score (BMI SDS) decreased in 70% of patients (responders) during the treatment. At baseline, 65 (27.1%) of the patients exhibited dyslipidemia defined as increased concentrations of total cholesterol (>200 mg/dl), LDL (>130 mg/dl), or TGs (>150 mg/dl), or decreased HDL concentration (<35 mg/dl). Dyslipidemia improved with weight loss; the odds ratio (OR) was 0.37 per BMI SDS ($P = 0.014$) after adjusting for age, sex, and baseline BMI SDS. Baseline TG concentration correlated positively and HDL concentration correlated negatively with baseline BMI SDS. Weight loss was associated with a decrease in the concentrations of total cholesterol ($P = 0.0007$), LDL ($P < 0.0001$), and TGs ($P < 0.0001$), and with an increase in HDL concentration ($P < 0.0001$). These changes were greatest in the responders. **CONCLUSIONS:** High lipid concentrations were associated

with childhood obesity. The lipid profile improved during weight loss independently of the baseline BMI SDS and baseline lipid concentration. An improved lipid status reduces the future risk profile in these obese children and adolescents.

Conflict of Interest: No competing financial interests exist.

Funding: The Region Zealand Health Sciences Research Foundation supported this study.

813 accepted poster

CHARACTERISTICS OF NIGHT EATING BEHAVIOUR (NEB) IN A SEVERELY OBESE POPULATION

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Abstract Text: **Introduction:** Diagnostic criteria for Night Eating Syndrome (NES) continue to be updated. Identification of characteristics using qualitative approaches must account for the confounding features of severe obesity. **Methods:** Eighty one individuals (mean (SD) age 44.6 (11.6) years, BMI 50.0 (10.7) kg/m²; 43% male) from a hospital-based UK obesity clinic were interviewed for NES based on 2003 criteria. Full and partial NES were combined into one NEB group (n=31). NEB characteristics were identified through thematic analysis of interview data using grounded theory techniques. NEB individuals (n=28) were matched with non-NEB controls according to age, BMI, gender and work status. Beck Depression Inventory (BDI) and Night Eating Questionnaire (NEQ) scores, levels of childhood obesity and significant life events were compared. **Results:** NEB developed both in adulthood (57%) and childhood (43%). Parental management of childhood obesity influenced NEB development in 4 individuals. NEB was characterised by perceived lack of dietary control and low mood. The matched control group comparison confirmed these differences (BDI: 26.0 (10.5) vs 17.1 (11.0) $p<0.001$; NEQ control item: 2.3 (1.4) vs 1.4 (1.3) $p=0.03$ (paired t test)). Disturbed sleep featured in both groups (100% NEB vs 60% non-NEB ($p=0.003$); childhood obesity and significant life events were also common (61% vs 46% ($p=0.25$) and 64% vs 46% ($p=0.16$) respectively) (McNemar test). **Conclusions:** Disturbed sleep is common in severe obesity. Poor dietary control and negative affect may be key distinguishing features of NEB in this population. Night-eating must be considered as an adverse consequence of childhood obesity management.

Conflict of Interest:

Funding: Roche Products Ltd has contributed funding to the research discussed in this abstract

814 accepted poster

CHRONIC CARE CHILDHOOD OBESITY TREATMENT AND CONCOMITANT TREATMENT OF NON-ALCOHOLIC FATTY LIVER DISEASE

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Abstract Text: **Introduction:** Nonalcoholic fatty liver disease (NAFLD) is the most common cause of chronic liver disease in children, and lifestyle modifications are the recommended treatment. This study investigated the effect of an intervention program on the development of liver fat content, anthropometric measures, and blood variables in obese children and youths. **Methods:** 225 individuals (100 boys) aged 6-20 years with a median 3.01 (range 1.32-5.36) BMI SDS were investigated. At baseline and after 1 year of intervention liver fat content was measured by magnetic resonance spectroscopy. Anthropometric measures and fasting

blood samples (liver enzymes, lipids, glucose, and insulin) were also obtained. **Results:** 99 (44%) individuals (50 boys) had NAFLD and after treatment 37 (36%) individuals had NAFLD. Liver fat content ($P=0.029$), BMI SDS ($P<0.0001$), and waist/height ($P=0.0003$) were significantly reduced. The blood variables were improved. A reduction of 0.15 BMI SDS was associated with reduction in liver fat content (OR=0.69 (95% CI(0.50;0.94) $P=0.018$). **Conclusion:** This childhood obesity treatment program reduced degree of obesity and the amount of fat in the livers, and improved liver enzymes, insulin resistant and lipids.

Conflict of Interest: None Disclosed

Funding: Region Zealand Health Sciences Research Foundation and Director Jacob Madsen and Wife Olga Madsen Foundation.

815 accepted poster

COMPARING EFFECTS OF A PARTIAL MEAL REPLACEMENT DIET PLAN WITH CONVENTIONAL DIET ON WEIGHT LOSS, INSULIN RESISTANCE, LIPIDS, SEXUAL AND ENDOTHELIAL FUNCTION, AND URINARY TRACT SYMPTOMS IN OBESE MEN
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Abstract Text: Introduction: Weight loss improves insulin resistance, dyslipidaemia, sexual, urinary and endothelial function in the obese. We aimed to compare effects of weight loss using partial meal replacements, with a conventional diet plan, on cardiometabolic risk factors, sexual and endothelial function, and lower urinary tract symptoms (LUTS) in obese men. **Methods:** Obese Asian (body mass index ≥ 30 kg/m², waist circumference [WC] ≥ 90 cm) men (mean age 44.1 years, range 30-61) were randomized to conventional diet (CD) ($n=18$) or 1-2 meal replacements (MR) ($n=19$), to reduce daily intake by 500 kilocalories below basal requirements. Fasting glucose, insulin, triglycerides (TG), HDL, LDL, sex-hormone binding globulin (SHBG) and testosterone, International Index of Erectile Function 5-item (IIEF-5), International Prostate Symptom (IPSS) scores, and endothelial function (by Reactive Hyperaemia Index [RHI] using finger plethysmography on EndoPAT) were measured at baseline and 12 weeks. **Results:** Reductions in weight and waist circumference were significantly greater with MR (3.9 ± 2.1 kg, 4.1 ± 2.8 cm) compared to CD (2.9 ± 1.7 kg, 2.2 ± 2.1 cm). CD and MR produced similar reductions in insulin resistance as measured by homeostatic model assessment (16.2% vs. 21.9%), IPSS (20.1% vs. 19.8%), TG (0.27 vs. 0.32 mmol/L) and LDL (0.21 vs. 0.18 mmol/L), and increases in testosterone (1.59 vs. 1.49 nmol/L), IIEF-5 (18.0 vs. 16.8%), and RHI (26.4% vs. 26.7%). **Conclusions:** Compared to conventional diets, partial meal replacement plans produce greater weight loss and similar improvements in insulin resistance, lipids, testosterone, sexual and endothelial function and LUTS in obese men.

Conflict of Interest: None disclosed

Funding: Research relating to this abstract was funded by a grant from the SingHealth Foundation.

816 accepted poster

COMPARISON OF WEIGHT LOSS IN PATIENTS WITH TYPE 2 DIABETES USING A VERY-LOW-CALORIE DIET (VLCD) APPROACH

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Abstract Text: Introduction Type 2 diabetes is an obesity-driven chronic progressive condition, exacerbated by insulin/sulphonylurea treatment causing weight gain. Bariatric surgery and a recent VLCD study (Lim *et al.*, 2011) demonstrate reversibility of this pathology. Significant weight loss by standard dietary measures in type 2 diabetes is difficult (50% of expected) (Avenell *et al.*, 2004). LighterLife Total is a commercial weight-management programme for BMI ≥ 30 patients. Weight loss is achieved with a nutritionally-complete VLCD alongside behavioural modification (transactional analysis/cognitive behavioural therapy techniques [TCBT[®]]). A weight-maintenance programme helps patients sustain lifestyle changes post-VLCD. **Aim** Comparison of patients taking oral hypoglycaemic/insulin medication for type 2 diabetes vs BMI/age/gender-matched non-type 2 diabetics, following 12-week VLCD. **Method** An audit of our database identified 494 type-2 diabetics taking oral hypoglycaemic/insulin medication (169 male, 325 female) who completed 12 weeks of VLCD. They were matched for BMI/ age/gender

with non-type 2 diabetics from the database. Patients were weighed weekly and attended their physician for 4-weekly review; physicians were advised to continue metformin, stop sulphonylurea and halve insulin dosage upon commencement. **Results** Start weight(kg) Start BMI Exit weight(kg) Exit BMI Weight loss(kg) BMI reduction %BWL Diabetic 113.6 40.4 93.4 33.2 20.2 8.5 17.5% Non-diabetic 114.8 40.9 89.3 31.9 25.2 9.5 21.7% In type 2 diabetics, mean BMI reduction of 8.5, 20.3kg weight loss and 17.5% reduction in start weight were observed. **Conclusion** In a weight-loss-resistant cohort, patients following this programme achieved clinically meaningful weight loss by non-surgical means that may be beneficial for treatment of type 2 diabetes.

Conflict of Interest:

Funding:

817 accepted poster

DIABETES STATUS AND ABDOMINAL FAT, BUT NOT NECK FAT, INFLUENCE THE SEVERITY OF OBSTRUCTIVE SLEEP APNEA SYNDROME IN OVERWEIGHT WOMEN

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Abstract Text: Introduction: Obstructive sleep apnea syndrome (OSAS) is frequently associated with obesity and type 2 diabetes mellitus (T2D). The aim was to study the links between anthropometric and body composition (BC) characteristics with the apnea/hypopnea index (AHI) in a female population. **Methods:** Data related to one-night polygraphy, anthropometric indexes, Epworth sleepiness scale (ESS) and BC characteristics (measured by DEXA) were examined retrospectively in 112 overweight women. DEXA measurements included whole body (WFM), legs (LFM), abdominal (AFM) and neck (NFM) fat masses. **Results:** Age, BMI, waist (WC) and neck (TC) circumferences were 45.9 ± 13.7 yrs, 38.9 ± 5.6 kg/m, 114 ± 10.9 cm and 39.6 ± 2.8 cm, respectively. According to the AHI, mild (5-14.9 events/h), moderate (15-29.9 evts/h) and severe (>30 evts/h) OSAS frequencies were 12.4, 38.0 and 47.8%, respectively. Bivariate analysis showed that the AHI was correlated with age, T2D, WC, NC, ESS score, AFM, AFM/LFM ratio ($p<0.05$) but not with BMI, WFM or NFM ($p=NS$). Multivariate analysis showed that age, BMI, and T2D are independently correlated with AHI ($r=0.21$). A model including BC parameters showed that AHI is independently predicted by age and AFM ($r=0.14$). **Conclusion:** Waist and neck circumferences are important factors associated to OSAS. Regarding body composition, abdominal fat seems to be a major predictor. T2D mellitus could be a risk factor for OSAS independently of obesity.

Conflict of Interest: No conflict of interest

Funding: No funding

818 accepted poster

DEVELOPMENT ROLE OF SEROTONIN IN ANXIETY AND DEPRESSIVE DISORDERS IN YOUNG ADULTS WITH OBESITY

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Abstract Text: Introduction: Aim of this study was to determine the level of serotonin in young patients with obesity, according to the severity of insulin resistance (IR) **Methods:** We included 360 young adults with obesity (165 women and 155 men), mean age 25.7 ± 1.3 years. The control group of 150 people of whom 85 women and 65 men, mean age 23.9 ± 0.9 years. All surveyed the main group were arbitrarily divided into two subgroups: with an index of HOMA-R <2 (305) and patients with a confirmed assertion of IR (HOMA-R > 4 -55 people). To verify the diagnosis were used: anthropometric, general clinic, special biochemical methods, determination of the hormonal profile, serotonin. Questionnaires were used Kettella, Kondasha, anxiety and depression scale Spielberger-Hanin. **Results:** The study of the state anxiety level on a scale of reactive and personal anxiety Spielberger-Hanin recorded higher ($P < 0.001$) rates of reactive (RR), personality (PA) examined anxiety in the 1st and 2nd subgroups compared with control children the group. At the same time in patients with IR, compared with children in group 1 were recorded more often moderate to severe performance RR and PA. The correlation analysis conducted between hormonal and psychological characteristics showed that patients who are overweight with IR was observed inverse correlation between values of anxiety and serotonin levels ($r = 0.3092$, at $p = 0.0001$), a straight line with leptin, insulin ($r = -0.0435$, at $p = 0.0012$). **Conclusions:** The level of anxiety

and depression depends on the severity of IR and levels of serotonin in the blood. Hyperserotonemia can act as a predictor of the formation of anxiety and depressive disorders in obese patients and used for the timely correction of violations.

Conflict of Interest:

Funding:

820 accepted poster

EFFECT OF RESISTANCE TRAINING PROGRAM ON INFLAMMATORY MARKERS, METABOLIC AND HEMODYNAMIC PARAMETERS IN OBESE ADOLESCENTS

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Abstract Text: Introduction: Aerobic exercise prevents coronary heart disease, possibly by changes in inflammation, however effects of resistance training program (RT) have not been established yet. Our aim was to evaluate possible changes on inflammatory markers, hemodynamic and metabolic parameters in obese adolescents in response to a RT program. **Methods:** The intervention was 3 times per week of RT for three months involving 18 sedentary obese adolescents (13.9 ± 0.2 y). Blood pressure (BP) was measured by 24h-ambulatory BP method. Oral glucose tolerance test (OGTT), insulin, triglycerides (TG), C-reactive protein (CRP), fibrinogen and inflammatory cytokines were analyzed. All volunteers were evaluated before and after RT. **Results:** Three months of regular RT program reduced systolic (p=0.01), diastolic (p=0.01), mean BP (p=0.01), OGTT (p=0.01), TG (p=0.01), insulin (p=0.03), CRP (p=0.01), fibrinogen (p=0.01), endothelin-1 (p= 0.04), TNF-α (p=0.01), while adiponectin levels increased (p=0.01). No differences were observed in body mass, although there were significant changes in fat (p=0.01) and lean masses (p=0.01). **Conclusion:** Three months of RT by itself showed an anti-inflammatory effect and improved hemodynamic and metabolic parameters in obese adolescents.

Conflict of Interest: None disclosed

Funding: FAPERJ

821 accepted poster

EFFECT OF SURGICALLY-INDUCED WEIGHT LOSS IN BLACKS WITH HYPERTENSION

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Abstract Text: Objective: To determine BP control and effect of weight loss in Blacks compared to non-Blacks. **Methods:** Subjects with hypertension with evaluable data at 2 years from the on-going APEX study, which examines the effect of laparoscopic adjustable gastric banding (LAGB) (LAP-BAND®AP) in patients with a BMI>35 on weight loss and comorbidities. Hypertension was defined as a history of hypertension or a BP of >140/90 at screening. **Results:** 209/395 (52.9%) met this definition. Mean age was 42.6 yr; 81.4% were female. Control of known hypertension was similar at baseline in Black vs. non-Black: 11/21(52.4%) and 97/181(53.6%) respectively, although 44% of Blacks had undiagnosed hypertension compared to 31% non-Black. Two years after LAGB, Blacks with uncontrolled hypertension at baseline lost a mean of 20.2% (57lbs); mean SBP (mmHg) decreased from 150.7 to 133.6(-17.1), and mean DBP decreased from 93.1 to 84.7(-8.4). Blacks with controlled BP at baseline lost 18.9% of body weight; SBP decreased 3.4 (122.8 to 119.4) and DBP 4.1 (79.7 to 75.6). In non-Blacks uncontrolled at baseline SBP decreased 17.8(151.0 to 133.1) and DBP 7.1(89.9 to 82.7). Baseline wt(285lb) and % change in wt(-19.7%) was similar to the Black group. **Conclusions:** Hypertension is common in relatively young morbidly obese individuals and more likely to be unrecognized in Black patients. However, the BP effect of LAGB-induced weight loss was equally effective in Blacks and non-Blacks, suggesting that LAGB may be considered as part of the hypertension treatment paradigm in morbidly obese subjects, particularly those with higher overall cardiovascular risk.

Conflict of Interest: Drs. Okerson and Cornell are employees of Allergan, which funded this research and supplied the gastric band for

this study. Drs. Woodman and Cywes are investigators in this study. Dr. Dixon is a consultant to Allergan.

Funding: The APEX study is funded by Allergan.

822 accepted poster

EFFECT ON BODY COMPOSITION AND MUSCULAR PERFORMANCE OF WEIGHT LOSS IN PATIENTS WITH SEVERE OBESITY. COMPARISON BETWEEN OLD AND YOUNG

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Abstract Text: Introduction: The prevalence of obesity in the elderly is growing, with a increase in health care costs. However risk/benefits ratio of weight loss in morbid obese elderly is still debated. The aim of the study is to evaluate the effects of an important weight loss on body composition, muscle strength and physical performance in a group of elderly morbid obese women as compared to younger female patients. **Methods:** We evaluated a group of 12 voluntary females, divided into two groups: Elderly group (mean age 65), treated with intragastric balloon, and youth group (mean age 39), treated with adjustable gastric banding. All patients were evaluated immediately before the procedure and after a substantial weight loss. In all subjects we determined body composition by DEXA, muscle composition by peripheral quantitative computed tomography, muscle strength and physical performance. **Results:** No significant differences between the two groups were found before treatment. A 14% weight loss was obtained in both groups. In both groups, weight loss was associated with a loss of both fat mass and fat free mass. Peripheral quantitative CT showed no significant changes in muscle area or muscle density. Analyzing physical performance, we found a reduction in muscle strength, but a mild improvement in functional tests. **Conclusions:** Weight loss in morbid obese women was associated with a significant reduction in fat free mass, fat mass and muscle strength and with a mild improvement in the physical performance tests. These modifications were similar to those obtained in younger subjects.

Conflict of Interest:

Funding:

823 accepted poster

EFFECTS OF 3-MONTH RESISTANCE EXERCISE TRAINING ON MICROVASCULAR ENDOTHELIAL-DEPENDENT REACTIVITY IN OBESE ADOLESCENTS.

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Abstract Text: Introduction: Aerobic exercises are able to improve endothelial dysfunction however the benefits of resistance training (RT) on microvascular endothelial reactivity are still unclear. Our aim is to examine effects of RT on microvascular endothelial reactivity in obese adolescents. **Methods:** The intervention was 3 times per week of RT for 3 months involving 18 sedentary obese adolescents (13.9±0.2 y). All volunteers were evaluated before and after RT. Non-nutritive skin microflow was assessed by laser Doppler flowmetry and endothelial-dependent and -independent vasodilation was established respectively after acetylcholine and sodium nitroprusside iontophoresis. Venous occlusion plethysmography was used to measure forearm blood flow (FBF) and vascular conductance (VC) at resting and during post-occlusive reactive hyperemia (3 minutes ischemia) for endothelium-dependent reactivity. **Results:** After 3 months of regular RT we noticed significant improvements on non-nutritive skin endothelium-dependent microflow (p=0.01), on muscle endothelium-dependent vasodilation (p<0.05) and also on muscle endothelium-dependent VC (p<0.05). No differences were observed in total body mass, but fat (p=0.01) and lean masses (p=0.01) presented differences. **Conclusion:** RT program by itself was able to improve endothelial-dependent microvascular reactivity independent of weight loss in obese adolescents.

Conflict of Interest: None disclosed

Funding: FAPERJ

824 accepted poster

EFFECTS OF FAMILY-BASED BEHAVIORAL THERAPY IN GROUP OR IN INDIVIDUAL SETTING IN PRE-PUBERTAL OBESE CHILDREN: A RANDOMIZED CONTROLLED TRIAL

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Abstract Text: Introduction: to determine the effects of a family-based behavioural therapy in group or in individual setting in obese children. **Methods:** This was a 6-month RCT including 75 pre-pubertal obese children (age 9.7 yr, 95%CI 9.1-10.1) randomly assigned to an Intervention (I, n=50) or a Control group (C, n=25). The intervention consisted of a family-based behavioural therapy in group (GR, 1 session/week with a dietician and a psychologist) or in individual setting (IND, paediatrician or dietician 1x/month). We assessed changes in BMI z-score, waist circumference (WC), total body and abdominal fat by DXA, 24h blood pressure (BP), cardio-respiratory fitness (VO2max), fasting plasma insulin and lipids. **Results:** Compared to controls, we observed changes in GR or IND groups (*p<.05, **p<.01) for BMI z-score (treatment effect GR-C -0.15** vs IND-C -0.10**), WC (-1.33* vs -0.79* cm), total body fat (-0.94* vs -1.50**%), abdominal fat (-2.08** vs -3.43**%), 24-h systolic BP (-2.10 vs -11.3* mmHg) and diastolic BP (2.45 vs -3.15* mmHg, VO2max (83.7** vs 21.0** ml.min⁻¹), insulin (0.31 vs -2.50 mU⁻¹), total (0.41 vs -0.21* mmol⁻¹) and LDL-cholesterol (0.38 vs -0.18* mmol⁻¹). **Conclusion:** Family-based behavioural therapy in group or individual setting resulted in significantly reduced BMI, WC, body fat and cardio-respiratory fitness in pre-pubertal obese children. Changes in BP, fasting insulin and lipids were only significant during the individual therapy. As the participation in group programs is limited in Europe due to the small number of specialized centres and the lack of parents' availability, program in individual setting are a good alternative.

Conflict of Interest: None disclosed**Funding:** The Swiss National Science Foundation (#3200B0-120437) and the University Hospital of Geneva Research and Development Fund.

825 accepted poster

EFFECTS OF WEIGHT LOSS IN SLEEP PATTERNS AND THEIR CORRELATIONS WITH METABOLIC, INFLAMMATORY, NEUROENDOCRINE AND ANTHROPOMETRIC PROFILE OF OBESE ADOLESCENTS

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Abstract Text: Introduction: Concomitant increase in obesity and reduction of hours of sleep has been observed worldwide. Thus the aims of the present study were to investigate the influence of weight loss on sleep patterns and possible correlations with metabolic, inflammatory, neuroendocrine and anthropometric profile of obese adolescents. **Methods:** fifty-five obese adolescents underwent to an interdisciplinary therapy for one year. The following tests were performed before and after the therapy: polysomnographic, anthropometric measures, body composition, blood tests, measurements of cytokines and markers of energy balance. Statistical tests were applied according to the behavior of the variables. **Results:** The therapy was effective in improving metabolic, anthropometric, inflammatory and neuroendocrine profile. There was an increase in REM sleep, as well as an improvement in REM latency. Boys had significantly higher index of respiratory events than girls. We observed a positive correlation between the MCH with the NREM sleep stage 2, for the entire group. In boys group there was a positive correlation between adiponectin and total sleep time and between the MCH and NREM sleep stage 2, as well as a negative correlation between leptin and REM sleep. In girls was observed a positive correlation between NPY and NREM sleep stage 2 and a negative correlation between NPY and NREM stage 3. **Conclusions:** Inflammatory markers of obesity, as well as neuropeptides of energy balance may have an influence in sleep architecture. The weight loss improved the inflammatory process in obesity as well the sleep patterns of obese adolescents.

Conflict of Interest: There is no conflict of interest**Funding:**

826 accepted poster

EVIDENCE THAT OBESITY IS ONE OF THE IMPORTANT RISK FACTORS OF AORTIC VALVE CALCIFICATION

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Abstract Text: Introduction: Aortic valve calcification (AVC) is the common form of heart valve disease. Recently, several studies showed that metabolic syndrome was correlated with AVC. However, the relationship between AVC and coronary risk factors has not precisely studied yet. **Method:** Sixty-four patients with aortic stenosis (AS) aged 51-85 were enrolled. AS patients with bicuspid valve were excluded. AVC were assessed with echocardiography and divided into four groups as follows: 1 no calcification; 2 mildly calcified (small isolated spot); 3 moderately calcified (multiple larger spot); and 4 heavily calcified (extensive thickening and calcification of all cusp). We compared body mass index (BMI), percentage of body fat, presence of hypertension, diabetes mellitus, smoking habit, family history, and lipid profiles among four groups. **Result:** As BMI and triglyceride increased, severity of valvular calcification became greater. As for the percentage of body fat, group 4 was significantly (p<0.05) higher than group 1. There were no significant differences in hypertension, diabetes mellitus, smoking habit, family history and total-cholesterol level. **Conclusion:** This study revealed that AVC was associated with BMI and percentage of body fat, triglyceride level. Obesity and high triglyceride level were important risks of AVC. It is considered that management of obesity and dyslipidemia would prevent the progression of AVC.

Conflict of Interest:**Funding:**

827 accepted poster

GENERAL NUTRITION KNOWLEDGE OF OBESE PATIENTS SEEKING TREATMENT.

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Abstract Text: Introduction: Weight management programs typically include dietary education to improve nutrition knowledge. Few studies assess or agree on the nutrition knowledge of obese patients or how this compares with the general community. Conflicting evidence in the literature maybe associated with methodological and demographic differences. Awareness of the level of nutrition knowledge in obese patients would facilitate design of weight management education programs that address specific nutrition knowledge deficits. This study aimed to assess the level of nutrition knowledge in obese patients seeking treatment compared to a convenience community sample. **Methods:** A validated General Nutrition Knowledge Questionnaire (GNKQ) was used to assess nutritional knowledge in obese patients seeking treatment in a tertiary hospital (P) and a convenience sample from hospital, educational institutions and community groups (C). Demographic characteristics included age, gender, occupation, level of education, living arrangement and social economic status. BMI was measured in (P) and self reported in (C). **Results:** Preliminary data (n=417) showed the total GNKQ score was significantly lower for (P) (65.3±18.8) compared to healthy weight C (82.3 ± 10.87) even after controlling for the above mentioned demographic characteristics. Put P was not significantly different to obese C (79.5±11.8). **Conclusion:** General nutrition knowledge was lower in the obese seeking treatment compared with community participants. Although good nutrition knowledge does not guarantee healthy dietary intake, a sound level is pivotal for appropriate dietary change. The reason for lower nutrition knowledge in this obese sample is unclear but highlights that nutrition knowledge in obesity requires further investigation.

Conflict of Interest: Nil**Funding:** University of Sydney

828 accepted poster

GLUCOSE HOMEOSTASIS ABNORMALITIES IN OBESE PATIENTS: IMPLICATIONS OF DIFFERENT DIAGNOSTIC METHODS

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Abstract Text: Introduction: Obesity is a risk factor for intermediate hyperglycemia and diabetes. Different laboratory methods identify glucose homeostasis abnormalities, depending on the diagnostic criteria applied. **Aims:** To compare the prevalence of glucose homeostasis abnormalities in obese patients using diagnostic criteria of American Diabetes Association (ADA-2011) and International Diabetes Federation (IDF)/WHO-2006. To calculate the sensitivity and specificity of glycated hemoglobin (A1c) when compared with standard diagnostic criteria. **Methods:** We evaluated 96 obese patients without previous diagnosis of dysglycemia or hypoglycemic therapy, with a mean age=39±13.8 years, BMI=40.4±6.2Kg/m², waist circumference=117.6±14.8cm and fat mass percentage=52.8±9.9%. They were submitted to a fasting blood collection for glucose and A1c, followed by a 75g OGTT. **Results:** The mean fasting glucose=97.9±20.26mg/dL and mean A1c=5.8±0.76%; 66 patients completed OGTT with a mean 2nd hour glucose=135.2±44.4mg/dL. Considering IDF/WHO criteria, the prevalence of impaired fasting glucose (IFG) was 7.6%, although, using ADA criteria, the prevalence of IFG rose up to 31.8%. Diabetes mellitus (DM) was diagnosed by fasting hyperglycemia in 7.6%. After OGTT, 16 patients (24.2%) had impaired glucose tolerance (IGT) and 7 (12.1%) DM. Based on A1c levels, 20 patients (30.2%) had intermediate hyperglycemia and 8 (12.1%) DM. Globally, DM was found in 11 patients (16.7%). A1c was the criteria that established most of the diagnoses. Comparing this method to fasting glucose and OGTT, its sensibility is, respectively, 80% and 71.4%; its specificity is 93.4% and 94.9%. **Conclusions:** Glucose homeostasis abnormalities are highly prevalent in obese patients. In the population studied A1c was the method that identified intermediate hyperglycemia and DM in most of the patients, with good sensitivity and specificity.

Conflict of Interest: None disclosed.

Funding: No funding.

829 accepted poster

IMPROVEMENTS IN FUNCTIONAL STATUS IN HEART FAILURE PATIENTS BY DIET-INDUCED WEIGHT LOSS

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Abstract Text: Introduction: Observational studies have found that overweight seems to reduce mortality in patients with heart failure. However, the association is counterintuitive from a pathophysiological view, and may be due to measurement error and confounding. We aimed to investigate if weight reduction could improve symptoms of heart failure, and risk factors of cardiovascular disease. **Methods:** We enrolled 26 obese patients with heart failure and NYHA II or III. They were randomly assigned to a low calorie diet (LCD) or conventional dietary advice (C) for 12 weeks; the LCD group received 800 kcal/d during the first 8 weeks and 1200 kcal/d during the last 4 weeks. During the study we assessed body weight and -composition, plasma lipid profile, NT-proBNP, functional status and quality of life. **Results:** Of 26 patients, 18 completed the study (LCD: n=11, C: n=7). Mean weight loss after 12 weeks on LCD was 11.3%, which was 11.7 kg greater than C group (95% CI: 6.8, 16.6, P<0.0001, ANCOVA). The LCD group increased walking distance, while the C group decreased their walking distance, resulting in a between-group difference by 173 m (95% CI: 82.3, 261.7) after 12 weeks (P<0.0005, ANCOVA). The weight loss had no effect on NT-proBNP levels; mean between-group difference 40.2 pg/mL (95% CI: -167.4, 247.8, P=NS). Improvements in total cholesterol, LDL-cholesterol and triglycerides were found in the LCD group after 8 weeks intervention. **Conclusion:** In this pilot study we found significant improvements in body weight and functional status of patients with heart failure with no adverse effects.

Conflict of Interest: None Disclosed

Funding: Research relating to this abstract was funded by Nupo A/S

830 accepted poster

INFLUENCE OF BARIATRIC SURGERY ON TYPE 2 DIABETES THERAPY (PHARMACOECONOMIC EVALUATION)

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Abstract Text: The influence of bariatric procedures on diabetes therapy was evaluated in the first year. In 25 type 2 diabetic (mean age 53.9 years, mean diabetes duration 10 years, mean age 51 years, mean BMI 52.6 kg/m²) one of 3 bariatric procedures (gastric banding, sleeve gastrectomy, gastric bypass) was performed. The number of patients was low to compare the operation and the influence on therapy was evaluated in the whole sample. T-test and nonparametric Wilcoxon were used for evaluation. Mean BMI, blood glucose, HbA1c after operation:

	BMI	p	Blood glucose (mmol/l)	p	HbA1c (%IFCC)	p
Before operation	47.2		9.44		6.84	
6 months after	41.1	< 0.001	7.05	0.016	5.56	< 0.001
12 months after	40.1	< 0.001	6.76	0.002	5.60	< 0.001

Differences at 6 and 12 months are not significantly different.

Number of antidiabetic used and total expenses for therapy (25 Czech crowns ≈ approx 1 Euro)

	Mean number of antidiabetic	SD	Czech crowns/day	SD	p
Before operation	1.2	0.8	19.2	20.2	
6 months after	0.8	0.8	5.8	8.1	0.008
12 months after	1.0	0.7	7.5	13.0	0.006

Differences in costs at 6 and 12 months are not significantly different.

Conclusion: Bariatric procedures reduce significantly the cost of therapy already after 6 months and 12 months even in patients with longer duration of type 2 diabetes.

Conflict of Interest: Potential conflict of interest: Member of local advisory boards in Czech Republic: Lilly Diabetes, Novartis, and MSD

Funding: Funded by Czech Ministry of Health IGA 10510595-3, 2009-2011.

831 accepted poster

INSULIN RESISTANCE IN OBESE AND NORMAL WEIGHT WOMEN WITH POLYCYSTIC OVARY SYNDROME

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Abstract Text: Introduction: Insulin resistance plays role in pathogenesis of PCOS. The aim of study was to evaluate the insulin resistance in women with PCOS. **Methods:** Data were retrospectively recruited from our data-base. The study group involved 66 women (mean age 26+/-9 years) with PCOS. The study group was divided on the basis of BMI into two subgroups: A group - normal weight (n=29) mean BMI 20.8+/-2.3kg/m²; and B group overweight/obese (n=37) mean BMI 31.2+/-4.2kg/m². Fasting plasma glucose and insulin level were measured. HOMA index was calculated with formula. **Results:** Mean HOMA index in subgroup A was 2.0 +/- 1.5 and in subgroup B was 4.0+/-1.9. 20% women in the group A have HOMA index > 2.5 and in group B 73% women have HOMA index > 2.5. There was positive correlation between HOMA index and BMI in the group of overweight/obese women (r=0.3347 p<0.05), but there was no correlation between HOMA index and BMI in normal weight women. There was no correlation between HOMA index and waist circumference (r=0.2471 p=0.09) in the whole group, and both groups A and B separately. **Conclusions:** It seems that insulin resistance in PCOS women is only partially dependent on BMI. Probably any other mechanism plays role in the insulin resistance in PCOS women, especially normal weight ones.

Conflict of Interest: None.

Funding: None.

832 accepted poster

INTERVENTION IN LIFESTYLE AS MANAGEMENT OF OBESITY IN SCHOOL AGE CHILDREN IN CELAYA

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Abstract Text: Introduction. Obesity are raising between school age children from Mexico. **Material and methods.** It was approved by Bioethics Committee from School of Nursing and Obstetrics of Celaya, University of Guanajuato. **Subjects.** School age children from elementary public schools from Celaya, both genders, from 6 to 13 years old, who parents did accept to participate in the study. We selected 4 schools and invited to the parents to participate. We randomized schools as experimental and as control group. We measured weight, stature, body mass index, mean of intake of calories, at the beginning and the end of the follow-up (4 months). **Intervention** was 30 minutes of walk in the school from Monday to Friday, during 4 months and teaching in selecting and preparing meals to mother of the children in 8 sessions. **Statistical analysis.** We compare proportion of obesity between experimental and control group and p-value. We calculate Z-paired before and after intervention in each group. **Results.** Experimental group 157 and control group 144 subjects. After intervention, experimental group 64.94% overweight/obesity and 66.90 in control group (OR=1.09; 95% CI= 0.67 to 1.77, Z= -0.36, p=0.72. Comparing before and after intervention, we obtained: Z=-12.61, p<0.05 for weight in experimental group and Z=-5.56 p<0.05 for control group; for BMI, Z=-5.95 p<0.05 experimental group and Z=-3.25, p=0.001 control group; for intake daily of calories, Z= 11.33, p<0.05, experimental group and Z=-3.74, p=0.0003 control group. **Conclusion.** The intervention was effective comparing before and after of it (p-values <0.05).

Conflict of Interest: No one

Funding: Grant from PROMEP System of Ministry of Education

833 accepted poster

IS THE TEMPLE STREET W82GO HEALTHY LIFESTYLES PROGRAMME EFFECTIVE IN REDUCING BMI SDS?

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Abstract Text: Introduction: The W82GO Healthy Lifestyles programme is an evidence-based multidisciplinary treatment for children who are obese. W82GO aims to improve nutrition, physical activity and fitness levels, and facilitate behaviour modification. This study describes the changes in BMI SDS in those treated in W82GO. **Methods:** A retrospective audit of patients referred from Sept 2005-April 2011 was conducted to describe the changes over 12 months. A univariate analysis correcting for gender, baseline age and BMI SDS was used. **Results:** 219 children were referred and 164 accepted treatment (88 boys). Those who refused treatment were younger (6.68 years versus 11.08 years, $p=0.004$). Mean characteristics of participants were: age 11.07 years [95% CI 10.57, 11.57]; BMI 31.23 [30.34, 32.13]; BMI percentile 98.82 [98.65, 98.98] and BMI SDS 2.41 [2.34, 2.47]. 143 participants completed 6-months of treatment and 98 completed 12 months (drop-out of 13% and 40%). There were no baseline differences between those who participated and those who dropped out. BMI SDS decreased by 0.07 [0.05, 0.09] at 6 months [$F=6.93$, $p<0.001$] and by 0.16 [0.12, 0.21] at 12 months [$F=5.84$, $p=0.001$]. No gender differences were observed however BMI SDS of younger children (<6 years) decreased more than older children at 12 months (-0.43 versus -0.13 [6-12 years, $p<0.001$] and -0.14 [12-16 years, $p<0.001$]). **Conclusions:** W82GO significantly reduced the BMI SDS in youth who were obese.

Conflict of Interest: The authors report no conflict of interest.

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835 accepted poster

LIFESTYLE INTERVENTION IN WOMEN WITH EARLY-STAGE, NON-METASTATIC BREAST CANCER: RATIONALE AND DESIGN OF THE LIFESTYLE MODIFICATION PART OF THE SUCCESS-C STUDY

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Abstract Text: Introduction: There is growing evidence from cohort studies that lifestyle factors such as obesity, diet, and lack of physical activity may affect long-term prognosis/survival in women with breast cancer. Aim of this study is to investigate the effect of an intensive lifestyle intervention program on disease-free survival in women with early breast cancer. **Methods:** This is an open-label, multicenter, randomised controlled phase III study using a 2 x 2 factorial design. 3547 women with early-stage, HER2/neu-negative breast cancer will be recruited. The first randomization will compare disease-free survival in patients treated with either 3 cycles of Epirubicin-Fluorouracil-Cyclophosphamide (FEC) chemotherapy, followed by 3 cycles of Docetaxel (D) chemotherapy or 6 cycles of Docetaxel-Cyclophosphamide (DC) chemotherapy. The second randomization serves to compare disease-free survival in patients with a BMI of 24.0-40.0 kg/m receiving either a telephone-based individualized lifestyle intervention program aiming at moderate weight loss ($\geq 5\%$ in the BMI category 24.0-29.9, $\geq 10\%$ in the BMI category 30.0-40.0 kg/m) or general recommendations for a healthy lifestyle. The lifestyle intervention comprises a moderately energy-reduced, healthy diet and an increase in physical activity to at least 150 min/week, tailored to the individual requirements. Recruitment took place between 2009 and 2011 and is finished. A mean follow-up period of 5 years is planned. In addition to the primary endpoint disease-free survival, the incidence of type 2 diabetes, hypertension and coronary heart disease will be assessed. **Conclusion:** This study will provide valuable information on the efficacy and efficiency of a comprehensive lifestyle intervention programme to influence long-term prognosis in a large cohort of women with early-stage breast cancer.

Conflict of Interest: None

Funding: Else Kroener-Fresenius-Foundation

836 accepted poster

LONG-TERM DETERMINANTS OF VISCERAL FAT LOSS AND STABILIZATION IN HIGH-RISK ABDOMINALLY OBESE DYSLIPIDEMIC MEN WITH FEATURES OF THE METABOLIC SYNDROME

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Abstract Text: Introduction: SYNERGIE was a lifestyle intervention program for the clinical management of men with features of the metabolic syndrome (MetS) combining: 1) a one-year abdominal fat loss phase (healthy eating, exercise/physical activity (PA), 2) a two-year weight stabilization phase, both based on a personalized counselling by health professionals. **Methods:** We aimed to identify which intervention components (PA, caloric/macronutrient intake, diet quality score (DQ) assessed by 3-day dietary and daily PA journals/pedometer) were related to the loss and stabilization of visceral adiposity (VAT, assessed by computed tomography). From the 144 initially recruited subjects (age: 48 ± 9 y, waist circumference: 108 ± 8 cm, triglycerides: 2.52 ± 0.89 mmol/l), 117 viscerally obese men completed the first year, and 94 (65%) the third year of intervention. **Results:** After one year, the decrease in VAT (-26%, $p<0.0001$) was significantly and independently associated with the significant changes in PA (reported exercise, daily number of steps) and in DQ score, but not with changes in reported total caloric intake (-559 \pm 68 kcal/day) or diet macronutrient composition. After the 2 year-weight stabilization phase, the subjects who lost the most VAT after one year still presented a significantly lower VAT after 3 years compared to baseline, despite the highest VAT regain and independently of diet or PA parameters. The subjects who lost the least VAT after one year were not different at year 3 from baseline. **Conclusion:** These results emphasize the need to synergistically focus on both PA and DQ to optimally reduce VAT over the long term in viscerally obese men with the features of the MetS.

Conflict of Interest: None

Funding: This study was supported by the Canadian Institute of Health Research: CIHR grant 89985.

837 accepted poster

MEASURING PHYSICAL ACTIVITY IN > GRADE 2 OBESE PATIENTS

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Abstract Text: Introduction: Patients attending a tertiary hospital obesity clinic, have poor exercise tolerance. The average speed achieved by patients at 75% maximum HR, walking on a flat treadmill, is 4.5km/hr with a perceived exertion rating of 13. Most patients (98.8%) have fitness comparable to < 5th centile of Australian norms. Measuring physical activity (PA) is difficult due to its subjective nature and the lack of appropriate measuring tools. Several questionnaires (Q) have been used to measure PA in obese patients: a) Pre-fitness Appraisal Q b) Modified Baecke PA Q c) Bouchard PA Q. However, PA questionnaires are often difficult to interpret, time consuming to complete or ambiguous in their questioning. Few studies have looked at what might be the best measure of PA in patients with > grade 2 obesity from both the point of view of the patient and the accuracy of the results. This study aims to ascertain which Q patients find most acceptable and gives the most accurate result. **Methods:** Patients attending an outpatient obesity clinic will be invited to complete several different activity questionnaires. They will be asked about the ease of completion and which they believe gives the most accurate account of their physical activity. They will also be asked to wear an actiwatch monitor to measure PA patterns and complete the Submaximal Work Capacity treadmill test. **Conclusion:** The study will determine the most appropriate and acceptable PA questionnaire for > grade 2 obese patients.

Conflict of Interest: Nil
Funding: Nil

838 accepted poster

METABOLIC SYNDROME

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Abstract Text: Introduction: Obesity is an important cardiovascular risk factor. The aim of this study was to verify the impact of adiposity on microvascular function (MF) and on adipokine levels in adolescents. **Methods:** A cross-sectional study was conducted on 55 female non-diabetic non-hypertensive adolescents, aged 12-18 years (15.1±1.7 years) and body mass index (BMI) z-score 1.89±0.54. Parameters assessed included leptin, resistin, adiponectin and MF by dynamic videocapillaroscopy (DVC) and venous occlusive plethysmography (VOP). DVC was assessed in nailfold of the fourth finger at resting and after 1 min ischemia (post-occlusive reactive hyperemia PORH). It was measured diameters of capillary loops, functional capillary density, resting red blood cell velocity (RBCV), peak RBCVmax during PORH and time (TRBCVmax) taken to reach it. VOP was measured to assess muscle microvascular blood flow at resting and during PORH. **Results:** BMI z-score correlated directly with leptin [r=0.8, p<0.01] and resistin [r=0.3, p=0.04] levels and indirectly with adiponectin [r=-0.3, p<0.01]. RBCV [r=-0.4, p<0.01] and RBCVmax [r=-0.5, p<0.01] presented a negative correlation with BMI z-score while TRBCVmax [r=0.7, p<0.01] had a positive one was positively correlated to it. BMI z-score negatively was correlated indirectly associated to muscle endothelium-dependent vasodilation (r=-0.3, p<0.01) and nutritive skin microvascular blood flow (r=-0.3, p<0.01) and directly positively with to muscle vascular resistance [r=0.4, p=0.01]. **Conclusion:** These findings provide evidence of the influence of adiposity on systemic microvascular function and on adipokine levels. Therefore, even on adolescents, we can conclude that obesity per se seemed to be an important cardiovascular risk factor. even in adolescents.

Conflict of Interest: none disclosed
Funding: FAPERJ

839 accepted poster

MUSCLE ENDOTHELIAL-DEPENDENT VASODILATATION, NUTRITIVE SKIN MICROFLOW AND ADIPOKINES ARE ALL CORRELATED WITH ADIPOSITY IN ADOLESCENTS

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Abstract Text: Introduction: The aim of study was to verify the impact of adiposity on microvascular function (MF) and adipokine levels in adolescents. **Methods:** A cross-sectional study was conducted on

55 female non-diabetic non-hypertensive adolescents, aged 12-18 years (15.1±1.7years) and body mass index (BMI) z-score 1.89±0.54. Parameters assessed included leptin, resistin, adiponectin and MF by dynamic videocapillaroscopy (DVC) and venous occlusive plethysmography (VOP). DVC was assessed in nailfold of the fourth finger at resting and after 1 min ischemia (post-occlusive reactive hyperemia PORH). Resting red blood cell velocity (RBCV), peak RBCVmax during PORH and time (TRBCVmax) taken to reach it and VOP, to assess muscle microvascular blood flow at resting and during PORH, were measured. **Results:** BMI z-score correlated directly to leptin [r=0.8,p<0.01] and resistin [r=0.3,p=0.04] and indirectly to adiponectin [r=-0.3,p<0.01]. RBCV [r=-0.4,p<0.01] and RBCVmax [r -0.5,p<0.01] showed negative correlation to BMI z-score while TRBCVmax [r=0.7,p<0.01] had a positive one. BMI z-score was indirectly associated to muscle endothelium-dependent vasodilation (r=-0.3,p<0.01) and nutritive skin microvascular blood flow (r=-0.3,p<0.01) and directly to muscle vascular resistance [r=0.4,p=0.01]. **Conclusion:** Obesity *per se* seemed to be an important cardiovascular risk factor, even in adolescents.

Conflict of Interest: None disclosed
Funding: FAPERJ

840 accepted poster

NIGHT EATING SYNDROME (NES) IN A SEVERELY OBESE UK POPULATION: PREVALENCE AND RELATIONSHIP WITH SLEEP

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Abstract Text: Introduction: The prevalence of NES and its relationship with poor sleep quality and obesity-related co-morbidity in a severely obese UK clinic population is unknown. This work employed validated tools to identify prevalence and explore this relationship. **Methods:** Consecutive clinic attendees (n=103, mean BMI 47.0 (9.8) kg/m², age 44.4 (11.9) years, 72% female), completed the Pittsburgh Sleep Quality Index (PSQI) to identify sleep quality. The Night Eating Questionnaire (NEQ) and Epworth Sleepiness Score (ESS) were also completed to identify suspected NES and Obstructive Sleep Apnoea (OSA) respectively. Proportions of individuals above and below tool cut-points were compared using: NEQ lower cut -point of >25 and higher cut >30; PSQI cut > 5; ESS cut >10. Pearson correlation coefficients examined relationships between tool scores. **Results:** NES was suspected in 14.6% using the lower cut-point, and 3.9% using the higher cut-point. Poor sleep quality was noted in 74% and suspected OSA in 32%. The strongest correlation between PSQI and NEQ total scores (r=0.55, p<0.001) did not diminish after controlling for daytime sleepiness. PSQI and ESS scores, though significantly correlated (r=0.34, p=0.001), reduced when NES (r=0.23, p=0.02) was controlled for. The correlation between NEQ and ESS scores (r=0.27, p=0.006) was not significant having controlled for sleep quality. **Conclusions:** Poor sleep quality is frequently found in severe obesity whereas moderate NES is less common and severe NES rare. Although poor sleep quality is associated with NES, this relationship does not seem to be influenced by the presence of daytime sleepiness as a marker for OSA.

Conflict of Interest:

Funding: Roche Products Ltd has contributed funding to the research discussed in this abstract

841 accepted poster

NUTRITIVE AND NON-NUTRITIVE SYSTEMIC MICROVASCULAR DYSFUNCTION AND LOW-GRADE INFLAMMATION IN OBESE ADOLESCENTS

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Abstract Text: Introduction: Obesity is associated to cardiovascular disease and our aim was to assess microvascular function (MF) in obese adolescents. **Methods:** Adolescents (n=55; 15.1±1.7 years) were distributed according to z-BMI (WHO criteria). Controls [C; n=11] z-BMI between -2-1; obese group 1 [G1; n=28] z-BMI between 2-3 and obese group 2 [G2; n=16] z-BMI > 3. MF was assessed by dynamic

videocapillaroscopy at the nailfold of the fourth finger at resting and after 1 min ischemia (post-occlusive reactive hyperemia PORH); diameters of capillary loops, functional capillary density, resting red blood cell velocity (RBCV), peak RBCVmax during PORH and time (TRBCVmax) taken to reach it. Venous occlusion plethysmography was measured to assess muscular microvascular blood flow at resting and during PORH. **Results:** Comparing to C, G1 and G2 had higher levels of CRP [$p=0.003$], and leptin [$p<0.001$], while adiponectin was lower only in G3 [$p=0.04$]. RBCV and RBCVmax were lower in G1 and G2 [$p=0.003$; $p=0.001$; respectively] compared to C. Additionally, G1 and G2 had a prolonged TRBCVmax during PORH [$p<0.001$]. Endothelial-dependent vascular resistance was impaired only in G2 [$p=0.02$]. **Conclusion:** Systemic non- and nutritive microvascular dysfunction is already present in obese adolescents with low-grade inflammation.

Conflict of Interest: None disclosed

Funding: Research relating to this abstract was funded by Funda de Amparo squisa do Estado do Rio de Janeiro - FAPERJ

842 accepted poster

OBESE CHILDREN, ADULTS AND SENIOR CITIZENS IN THE EYES OF THE GENERAL PUBLIC: RESULTS OF A REPRESENTATIVE STUDY ON STIGMA AND CAUSATION OF OBESITY

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Abstract Text: Background: Stigmatization influences morbidity and mortality in obesity, making weight bias reduction efforts an important approach when trying to deal with rising prevalence rates of obesity. Aside from prevalence rates of stigmatizing attitudes, a thorough analysis of determinants is needed. Unlike most previous research, this study provides evidence from a representative sample. This study aims at investigating the prevalence of stigmatizing attitudes in the German general public and determining associated variables of these attitudes. **Methods:** A representative study of the German population was conducted via computer-assisted telephone interview. Vignettes were used to determine influences of age and gender of the depicted obese individuals. Stigmatizing attitudes were assessed with a short form of the Fat Phobia Scale (FPS). **Results:** The average FPS score of the overweight vignette was 3.65 (s.d. = 0.49, scale range from 1 = positive attribute to 5 = negative attribute) indicating slightly negative attribution overall. Higher education and higher BMI showed to be associated with lower FPS scores. The vignette of the obese child was rated far more negatively compared to that of an adult or senior citizen ($p < 0.001$). Casual attribution to internal as well as external factors was associated with higher FPS scores. **Conclusions:** It seems that anti stigma interventions will need to aim at obese children just as much as focusing on the obese adult. Obviously, implementation of an adequate etiological model will still be a base for anti-stigma intervention; however, this study reveals the need for further investigation of other stigma-determining factors.

Conflict of Interest: None Disclosed

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843 accepted poster

OBESEITY AND HEPATIC STEATOSIS

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Abstract Text: Introduction: Obesity is a chronic disorder associated with multiple complications, including nonalcoholic fatty liver disease (NAFLD). The prevalence of hepatic steatosis in the obese population is high and despite being a benign condition it may progress to more advanced stages of liver disease. The aim of this work is to assess the prevalence of hepatic steatosis in obese subjects (Body Mass Index ≥ 30 kg/m²) followed in the department of Endocrinology of our hospital, and its relationship with metabolic profile and liver enzymology. **Methods:** Retrospective review of the clinical, anthropometric, analytic and liver ultrasound results using statistical analysis program SPSS 18.0. **Results:** 307 patients were evaluated, 79.8% female, mean age 43.3 ± 13.4 year-old. BMI 41.3 ± 7.2 kg/m² (21.2% obesity class I, 24.4% class II, 54.4% class III), mean waist circumference 120.8 ± 14.6 cm, %body fat 53.8 ± 11.1 %, systolic blood pressure (BP)

134.4 ± 19.3 mmHg, diastolic BP 82.3 ± 12.7 mmHg. Comorbidities: 54.7% with hypertension, 43% dyslipidemia, 34.5% depression, 20.8% thyroid disease, 20.3% diabetes, 8.5% sleep apnea. ALT was elevated (≥ 45 U/L) in 19.6% of patients and AST (≥ 35 U/L) in 17.9%. 47.6% of the patients did liver ultrasound and of those 55.5% had steatosis. In patients with steatosis, 32.0% had elevated ALT (vs. 12.5%, $p = 0.022$) and 25.3% AST (vs. 11.6%, $p = 0.075$). No statistically significant difference was noted for BMI, waist circumference, hypertension, diabetes and dyslipidemia among patients with steatosis. **Conclusion:** The prevalence of hepatic steatosis in this obese population was high. The elevation of liver aminotransferases, especially ALT, suggests the possibility of NAFLD so further investigation must be considered.

Conflict of Interest: None

Funding: None

844 accepted poster

OBESEITY AND METABOLIC SYNDROME IN A POPULATION OF EASTERN ALGERIA

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Abstract Text: Considered a major risk factor for cardiovascular disease, metabolic syndrome (MS) is little, or not taken into account, under the supervision of obesity. In the adult population of this study, the SM generates high frequencies and different according to the definitions (NCEP ATP III: 43.63%, IDF: 49.51%). The objective of this study was to describe obesity and estimate its position in the onset of MS. A cross-sectional survey was conducted in 2011 on the adult population. Biochemical assays, measurements of blood pressure and anthropometric measurements were made possible to classify the subjects SM + and SM- as defined by the IDF and NCEP ATP III. A total of 320 subjects participated in the survey; they are divided into 23.87% men and 76.08% women. The mean BMI 28.42 kg/m² women vs 25.65 kg/m² men. Weight status is characterized by a high incidence of obesity and overweight women (40.83% and 66.53%). The overall prevalence of obesity in the sample is 35, 84%. The prevalence of obesity was significantly higher in women (40.83% vs. 22.08%) ($p = 0.0045$). The average number of metabolic complications is higher in obese than in normal weight. The impaired fasting glucose, hypertriglyceridemia, low HDL cholesterol are respectively more frequent in obese (32.4%, 53.2% and 77.1%) than in normal weight (10.6%, 12.9% and 75.3%). The metabolic syndrome was significantly more frequent ($P < 10^{-3}$) in the obese (according to IDF: SM 63.92% and according to NCEP ATP III: 60.7%) than in normal weight (according to IDF SM: 30, 57% and SM according to NCEP ATP III: 23.27%). SM is present in the IDF at 54.45% women vs. 44.57% men according to NCEP ATP III in 48.47% of women vs 38.8% men. The incidence of SM is very high in the population Constantine. As part of monitoring of obesity, particular emphasis should be placed on the control of central obesity as well as body. On the other hand, given the differences observed on the frequency of central obesity according to both definitions, studies must be considered in determining the threshold values appropriate to the Algerian population.

Conflict of Interest:

Funding:

845 accepted poster

OBESEITY AND RISK OF CORONARY ARTERY DISEASE IN WEST OF IRAN

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Abstract Text: Introduction: The purpose of study was to examine the differences between CAD (Coronary Artery Disease) and non-CAD patients in west of Iran regarding their BMI as an obesity index and to determine the Odds Ratio for obesity in the patients being studied. **Methods:** A total of 594 people were recruited to participate in the survey. The study used case-control methodology for collection and analysis of the data. CLR was applied to quantify the odds Ratio (OR) of CAD associated with obesity. **Results:** The mean \pm SD BMI for cases was 27.86 ± 5.15 kg/m² and for controls it was 27.04 ± 4.67 kg/m² showing significantly higher rates of BMI in cases ($p < 0.05$). According to NIH classification, Only 2 cases and 7 controls were underweight. About 33% of controls and 29% of the cases were normal weight. 136 (46%) of the controls and 113 (38%) of the cases were overweight. About 32% (95) of the cases and less than 19% (55) of the controls were identified as suffering from obesity. Categories of BMI associated to the risk of CAD significantly ($P < 0.05$). The highest risk was for obesity class II

and III (OR=8.35, 95% CI =2.74-25.40). **Conclusion:** This study shows patients with obesity class II and III have more than 8 times risk of Coronary Artery Disease in compare with not obese people

Conflict of Interest:

Funding:

846 accepted poster

OBEISY, INFLAMMATION AND SUBCLINICAL ATHEROSCLEROSIS: THE AMBIGUOUS ROLE OF LEPTIN IN OBESE ADOLESCENTS

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Abstract Text: Introduction: The increase of obesity prevalence in children and adolescents is associated with several metabolic and cardiovascular comorbidities that lead to health complications and early death in adulthood. The aim of this study was to verify whether a frame of hyperleptinemia can be involved in associations between inflammation and subclinical atherosclerosis in obese adolescents. Methods: 34 obese adolescents [17 without hyperleptinemia (control group-CG) and 17 with hyperleptinemia (hyperleptinemic group-HG)], paired by gender and body mass index (BMI) were submitted to an interdisciplinary intervention over the course of 1 year. The carotid intima-media thickness (cIMT) was determined ultrasonographically. Blood samples were collected to analyze glycemia, insulinemia and lipid profile. The adipokines were measured by ELISA (Enzyme-linked Immunosorbent Assay) and reference values of leptin adopted were: 1-20 and 1-24 ng/mL for boys and girls respectively. Results: Serum adiponectin increased significantly after therapy and leptin concentration was inversely correlated with plasminogen activator inhibitor-1 (PAI-1) concentration ($r = -0.56$; $p=0.02$) in the CG. In the HG there was a tendency of positive correlation of PAI-1 concentration and cIMT at baseline conditions ($r=0.45$; $p=0.07$). The reduction of PAI-1 concentration (PAI-1) was positively correlated with improvement in cIMT (cIMT) only in the HG ($r =0.61$; $p=0.01$). Conclusion: Our results suggest that physiological concentration of leptin can exert anti-inflammatory role, while a frame of hyperleptinemia seems to contribute for the installation of pro-inflammatory state, which is associated with subclinical markers of atherosclerosis.

Conflict of Interest: none disclosed

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847 accepted poster

OBEISY, INSULIN RESISTANCE AND THEIR CORRELATION WITH TESTOSTERONE LEVELS IN CAUCASIAN MALE PATIENTS.

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Abstract Text: Introduction: The relationship between obesity and testosterone levels is one of the longest running controversies in endocrinology. **Aim:** The objective of the study is to show correlation with obesity, insulin resistance and testosterone levels in male patients. We also study the influence of testosterone replacement therapy on obesity and insulin resistance in men. **Materials and Methods:** 98 male patients with the age range 30-65 years and BMI 27,0 45,0 kg/m² were included in the study. The following analyses were done: anthropometric study and biochemical measurements. **Results:** In all investigated

patients abnormal lipid profile and increased level of leptin was observed, 62 patients had decreased level of free testosterone and had inversely correlated with the degree of obesity and insulin resistance. The appropriate treatment was prescribed to all patients. In the first group with only obesity we used diet and physical activity, in the second group with obesity and insulin resistance we used diet, physical activity and metformin, in the third group with androgen deficiency, insulin resistance and obesity we used testosterone, metformin, diet and physical activity. After three months of treatment we repeated the diagnostic assessments. Free testosterone level increased in all groups but the best results was in III group. HOMAIR decreased in all group but I and III group had alike result. BMI decreased in all groups but the best result was in III group. Leptin level after treatment was approximately same in all groups.

Conclusion: As our small study had shown testosterone therapy reduces insulin resistance and obesity in male patients and also decrease total cholesterol level. These observations suggest that an inverse relationship exists between serum androgens, obesity and insulin sensitivity.

Conflict of Interest: The authors have no conflicts of interest to declare.

Funding: National Institute of Endocrinology, Tbilisi, Georgia.

848 accepted poster

ORAL GLUCOSE TOLERANCE TEST IN 20 ADOLESCENT WITH OBEISY PRE, ONE AND TWO YEARS POST GASTRIC BY-PASS SURGERY (AMOS; ADOLESCENT MORBIDITY OBEISY SURGERY STUDY)

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Abstract Text: Introduction: Impaired glucose tolerance (IGT) is common among persons with obesity. The aim of this study was to investigate the glycaemic status in a small group of adolescents operated with gastric bypass drawn from the AMOS study. Methods: Twenty adolescents (9boys/11girls) aged 13.618.8 years, underwent laparoscopic gastric bypass and were followed postoperatively with OGTT (oral glucose tolerance test). We measured glucose and insulin at baseline and glucose 2 hours after an intake of 75 g glucose, at three occasions; before, 1 and 2 years after surgery. Results: During two years BMI decreased from 46.3 to 31.5 and 30.4 kg/m² ($p<0.0001$). Mean (SD) fasting glucose (mmol/l) decreased from 5.6 (0.5) to 5.5 (0.4) and 5.3 (0.6) ($p=0.05$ at two years). Impaired fasting glucose (IFG) > 6.1 mmol/l) was seen in two patients at baseline, and in one each at one and two year check up. Two hours glucose levels decreased from 6.3 to 4.4 and 4.2 ($p<0.0001$), respectively. Impaired glucose tolerance (IGT) (two hour glucose $>8.8-12.2$) was not seen at any of the three occasions. Mean fasting insulin (mU/l) was 34.3 (21.5) at baseline and 8.1 (2.7) and 8.0 (2.5) ($p<0.0001$, respectively) at follow ups. At baseline, 70% had an elevated insulin level (> 20 mU / l), and at one and two years after surgery, all had levels within the normal range. Conclusion: Laparoscopic gastric bypass due to morbid obesity in adolescents improved glucaemic status both fasting and 2 hour glucose and particularly insulin levels normalized significantly over two years.

Conflict of Interest: none disclosed

Funding: No funding

849 accepted poster

PREDICTIVE FACTORS OF TYPE 2 DIABETES REMISSION AFTER BARIATRIC SURGERY

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Abstract Text: Background: Type 2 diabetes remission after bariatric procedures has been highlighted in many studies. Weight-independent mechanisms could be involved supporting differences in metabolic efficiency of the procedures. **Objectives:** First, to determine whether the bariatric procedure itself (AGB, GBP or LSG) may influence the percentage of type 2 diabetes remission after 1 year of follow-up. Second, to identify baseline positive predictors for type 2 diabetes remission and to build a pre-operative predictive score. **Methods:** Retrospective observational study. 46 obese diabetic patients underwent

AGB, GBP or LSG. We compared anthropometric and metabolic features during 1 year of follow-up. A ROC analysis was performed to predict T2DM remission. These results were used to build a pre-operative predictive score. **Results:** GBP and LSG were similarly efficient for body weight loss and more efficient than AGB. 62.8% of patients presented T2DM remission at 1 year, with no significant difference according to the surgical procedure. A 1-year BMI $< 35 \text{ kg.m}^{-2}$ was predictive of T2DM remission whatever the procedure. The pre-operative predictive factors of diabetes remission were: a baseline BMI $\leq 50 \text{ kg.m}^{-2}$, a duration of type 2 diabetes ≤ 4 years, an HbA1c $\leq 7.1\%$, a fasting glucose $< 1.14 \text{ g/l}$ and absence of insulin therapy. **Conclusions:** The type of bariatric surgery is not a predictive factor for type 2 diabetes remission. A short duration of diabetes as well as good pre-operative glycemic control increase the rate of T2DM remission after surgery.

Conflict of Interest: none disclosed

Funding: no funding

850 accepted poster

REFERRAL TO A COMMERCIAL ORGANISATION IS AS EFFECTIVE FOR PEOPLE WITH HIGH BMI AS FOR THOSE WHO ARE MODERATELY OVERWEIGHT.

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Abstract Text: Introduction. Recent audits illustrate the effectiveness of partnerships between commercial weight management organisations and primary care^{1,2}. This project audited weight-loss outcomes as a function of initial BMI in one of these partnership schemes involving 77 UK Health Trusts. **Methods.** 34,271 patients were referred to Slimming World for 12 weekly sessions. Individual age, height, gender and weekly weight records were collected. Data were analysed, by regression using the GENSTAT 5 statistical program. **Results.** Patients were categorised by BMI groups $<30 \text{ kg/m}^2$, $30\text{-}34.9 \text{ kg/m}^2$, $35\text{-}39.9 \text{ kg/m}^2$ and $\geq 40 \text{ kg/m}^2$. Mean weight losses after 12 weekly sessions were -2.9 , -3.6 , -4.1 , and -4.8 kg for each BMI category respectively. Regression analysis showed that after adjusting for age and gender, relative to the $<30 \text{ kg/m}^2$ group, absolute weight losses were 0.8 , 1.4 and 2.4 kg more for the $30\text{-}34.9 \text{ kg/m}^2$, $35\text{-}39.9 \text{ kg/m}^2$ and $\geq 40 \text{ kg/m}^2$ groups respectively (all $p < 0.001$). Percent weight change was similar in each BMI category: -3.7% , -4.0% , -4.0% and -3.9% , respectively ($p < 0.001$). **Conclusion.** This audit demonstrated that referral to a commercial organisation is as effective for people with high BMIs as for those who are moderately overweight. ¹ Stubbs et al. *Obes Facts*. 2011; 4:113-120. ² Ahern et al. *BMC Public Health*. 2011; 11: 434.

Conflict of Interest:

Funding: This work was funded by Slimming World.

851 accepted poster

RELATIVE MUSCLE MASS IS INVERSELY ASSOCIATED WITH INSULIN RESISTANCE IN OLDER ADULTS WITH TYPE 2 DIABETES

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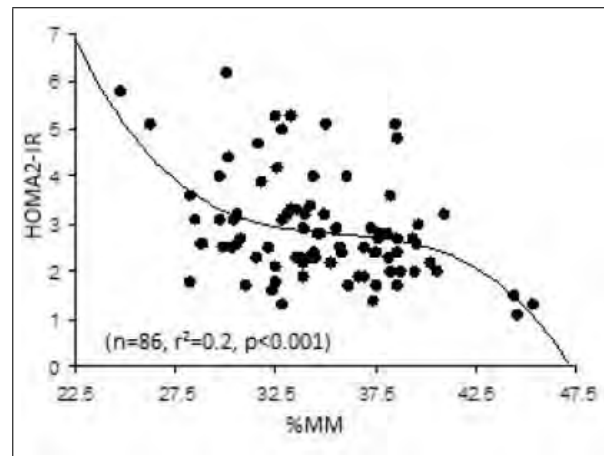
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Abstract Text: Introduction: The relationship between excess adiposity and IR is well known. However, the contribution of skeletal muscle is less well understood. Recently, conflicting data have emerged examining this relationship within various cohorts using differing indices of skeletal muscle mass. The purpose of this investigation was to examine the relationships between absolute and relative skeletal muscle mass and IR within

a cohort of older adults with type 2 diabetes. **Methods:** Baseline data in 87 older adults with type 2 diabetes participating in a clinical trial of resistance training were analyzed for this study. Skeletal muscle mass was measured using BIA. Relative skeletal muscle mass (%MM) and muscle mass index (MMI) were calculated by dividing by body weight (kg) and height² (m) respectively. IR was estimated from the Homeostatic Model of Assessment (HOMA2-IR). Visceral adipose tissue (VAT) was determined using computed tomography. **Results:** HOMA2-IR was inversely related to %MM ($r^2=0.2$, $p < 0.001$) and VAT ($r^2=0.1$, $p < 0.01$). No relationships were found between absolute muscle mass or MMI and HOMA2-IR. In a stepwise regression model, %MM, but not VAT, was the only independent predictor of HOMA2-IR. **Conclusions:** Higher relative muscle mass is associated with lower IR in older adults with type 2 diabetes. Anabolic interventions targeting skeletal muscle mass may be an underutilized strategy to improve IR and reduce CVD risk in this cohort.



Conflict of Interest: The authors declare no conflict of interest

Funding: The Graded Resistance Exercise And Type 2 Diabetes in Older adults (GREAT2DO) study was funded by project grant #512381 from the National Health and Medical Research Council (NHMRC), and grants from The Australian Diabetes Society and Diabetes Australia. Y. Mavros was supported by the Australian Postgraduate Award Scholarship. Y. Wang was supported by University of Sydney International Postgraduate Research Scholarship.

852 accepted poster

RESISTANT HYPERTENSION IN VISCERAL OBESITY

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Abstract Text: Introduction: The aim of the study was to assess the prevalence of resistant hypertension (RH) in patients with visceral obesity, its potential causes and effectiveness of the applied therapy. **Methods:** Survey was performed on 10,678 hypertensive subjects with visceral obesity. Visceral obesity was diagnosed according to IDF 2005 criteria. BP control was analyzed on the basis of ambulatory and home BP measurements. Patients were interviewed for drug adherence. **Results:** During the first visit 39.4% of patients met the criteria of RH. When home BP measurements were included and patients who were given drugs not in a regular manner were excluded, the percentage decreased to 13.2%. RH was more frequent in morbidly obese patients (24.3%). The analysis of home BP measurement revealed that in 10.9% of patients RH is supposed to be "white coat" hypertension. Many patients receiving three, four and five antihypertensive medications with poor BP control were not receiving diuretics. Patients with morbid obesity were receiving three-drug therapy more frequently than patients with visceral obesity and BMI $< 30 \text{ kg/m}^2$. **Conclusions:** An incomplete adherence to the prescribed regimens, "white-coat" effect, and underuse of diuretics in multidrug regimens are the reasons for overdiagnosis of resistant hypertension in patients with visceral obesity. The need for multi-drug pharmacotherapy increases with body weight.

Conflict of Interest: None Disclosed

Funding: Research project supported by a scientific grant of Adamed, organized by Europharma M. Rachtan Sp. z o. o.

853 accepted poster

SHORT- TERM EFFECTS OF A MULTIDISCIPLINARY INTERVENTION IN SARCOPENIC OBESE INPATIENTS.

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Abstract Text: Introduction. The aim of the study was to investigate the effectiveness of a multidisciplinary intervention in sarcopenic obese inpatients in a metabolic, nutritional and psychological rehabilitation unit setting. **Methods.** 80 inpatients (mean age: 59.6 ± 11 yrs, mean BMI: 45.4 ± kg/m² were recruited. Sarcopenia was diagnosed according to the EWOP definition. Body composition, muscle strength and functional ability were estimated. Depression (SCL-90), comorbidities and quality of life (TSD-OC test and SF-36 test) were assessed. Adverse clinical events were considered. Subjects underwent to a 1- month rehabilitation program based on diet, nutritional education, psychological intervention and physical activity (3 training sessions per week). **Results.** 45% of subjects were sarcopenic obese (SO). Osteoarticular disorders were diagnosed in the whole sample of SO subjects (100% vs 88.6%, p= 0.04). Quality of life of SO inpatients was significantly poorer than non-SO subjects (p= 0.000), and rates of depression and anxiety were higher (p= 0.002 and p= 0.000, respectively). After the rehabilitation program, functional disabilities and quality of life improved (p= 0.032 and p= 0.04, respectively), whereas no significant results were obtained in terms of anxiety (p= 0.61) and depression (p= 0.99). SO inpatients required a greater number of nursing interventions (p= 0.04), and adverse clinical events were more frequent than non- SO counterparts (p< 0.01). **Conclusion.** Effectiveness of a short- term metabolic, nutritional and psychological rehabilitation program was reduced in SO subjects. More intensive, long- term multidisciplinary interventions are needed to improve outcomes of a rehabilitation program in the subset of SO individuals.

Conflict of Interest: None disclosed**Funding:** No funding

854 accepted poster

STATIN WITHDRAWAL REDUCES MUSCLE-RELATED SIDE EFFECTS AND IMPROVES MUSCLE FUNCTION

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Abstract Text: Introduction: Compliance to statins can be compromised by drug-induced myopathy other than rhabdomyolysis. Affecting up to 15% of patients, the expression and intensity of these discomforts are heterogeneous and their impact on muscle function is poorly documented. Our objective was to assess muscle functional capacity while under statin treatment and after statin withdrawal in these patients. **Methods:** Functional capacity of knee flexor and extensor muscles was assessed in 6 men and 3 women (57 ± 9 years) with myopathy under statins, before and after a 2 to 3 month withdrawal period. Muscle strength was measured in a sitting position with a Biodex isokinetic dynamometer after 3 maximal contractions at 60/sec. Power, endurance and fatigability were measured after 15 repetitions at 180/sec. Muscle symptoms were documented, as were blood CK and AST levels. **Results:** After statin withdrawal, more than 75% of subjects experienced a significant reduction of their reported muscle symptoms, and nearly 70% showed functional improvements. Extensor and flexor muscle strength increased by 22±43% and 17±28% respectively, power by 28±64% and 29±41%, and endurance by 28±57% and 20±35%. No changes were observed on muscle fatigue or blood CK and AST values. **Conclusion:** Our results show that cessation of statin therapy increased muscle functional capacity in the majority of subjects who experienced a *priori* muscle discomfort. Since this condition could affect the pharmacological compliance and potentially reduce cardiovascular benefits of statins, it is imperative to better characterize this dysfunction and develop approaches to reduce its impact.

Conflict of Interest: None to declare**Funding:** This work was supported by a grant from the Canadian Institutes of Health Research

855 accepted poster

STUDY OF THE EFFECT OF COQ10 ON PARAOXONASE ACTIVITY, TOTAL ANTIOXIDANT CAPACITY, MALONDIALDEHYDE, HS-CRP, LIPID PROFILE AND GLYCEMIC CONTROL IN TYPE2 DIABETIC PATIENTS

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Abstract Text: Introduction: Type2 diabetes is one of the metabolic disease currently of high prevalence and occurrence in Iran which has now become a health issue and problem in this country, pathophysiology of which indicate involvement of oxidative stress upon which antioxidants might play important and effective role in both prevention and management. **Objectives:** To study the effect of CoQ10 upon some of the oxidative and antioxidative parameters in type2 diabetes. **Methods:** In a randomized double blind clinical trial approved by University Ethics Committee, 40 type2 diabetic patients (19 males and 21 females) aged 56±9.9 years, Weight: 70.5±10.6 Kg and BMI: 28.2±3.9 kg/m² referring to Tehran University of Medical Sciences' Institute of Endocrinology and Metabolism were allocated to the Placebo control group (n=20) and treatment group (receiving 150 mg/day CoQ10 in three intervals). 10ml venous blood samples were obtained from every subject at onset and end of the period of study. Paraoxonase (PON) activity, Total antioxidant capacity (TAC), serum Q10 concentration, Malondialdehyde (MDA), hs-CRP, lipid profile, HbA1c, fasting blood glucose (FBS) and insulin concentration and resistance (HOMA), systolic and diastolic blood pressures were measured, and intake questionnaires (24 hours recalls) were obtained. Data were processed using SPSS version 15 and Nutritionist 4 softwares. **Results:** After 12 weeks of treatment, CoQ10 increased significantly the PON activity, TAC, serum Q10 concentration and surprisingly LDL levels (P<0.0001). However significant reductions were observed in MDA, hs-CRP (P<0.0001), FBS and HbA1c (P<0.02) and Systolic and diastolic blood pressures (P<0.0001). There were no significant changes of other afore-mentioned measured parameters after CoQ10 treatment compared to placebo group. **Conclusions:** Based on our study CoQ10 treatment improved antioxidative and anti-inflammatory parameters and capacity of type2 diabetic patients and might be considered in an adjunct therapy after conducting further research.

Conflict of Interest: None**Funding:** Research relating to this abstract was funded by a grant awarded by vice chancellor office for research affairs of Tehran University of Medical Sciences.

856 accepted poster

SUCCESSFUL OUTPATIENT, MEDICAL TREATMENT OF CLASS 3 OBESITY

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Abstract Text: Introduction: Bariatric surgery is often recommended as treatment for class 3 obesity (CL3OB), but whether medical, conservative treatment in outpatient settings can achieve meaningful results is unclear. **Methods:** 54 CL3OB or CL2OB patients with a major complication of obesity (diabetes, sleep apnea, etc; age 48 ± 2 yr, weight 129.5 ± 3.3 kg, BMI 44.4 ± 0.9 kg/m² (35.1-68.3 kg/m²)) followed a 3-year lifestyle modification group program. Individualized exercise instructions, hypocaloric diets (1200-2200 kCal/day) and additional individual consultations with an internist, physician-assistant and dietician were given. **Results:** Mean weight loss after 18 months was 18.2 ± 2.5 kg (13 ± 1% of original body weight; both p<0.001). 16 patients (38%) lost 15% of their original body weight, 9 of whom 20%, 4 30% and 2 35%. Mean percent excess weight loss (ptEL) was 25 ± 3 % (p<0.001). 15 patients (28%) had 25% ptEL, 13 of whom >30%, 5 55%, 2 70% and 1 80%. After 30 months (n=10), weight loss was 20.2 ± 4.0 kg (16 ± 2% of initial body weight, 29% ± 5 ptEL). 5 subjects dropped out. **Conclusion:** Mid/long term weight loss is achievable in severely obese patients in outpatient settings. Criteria for success may differ; 26 subjects (48%) would no longer meet NICE criteria for surgery, 24% would meet the criterion of >30% ptEL, often used to define surgical success.

Conflict of Interest: none**Funding:** Grants from Sanofi-Aventis, Novo-Nordisk, Novartis and Lilly provided support for the obesity clinic

859 accepted poster

THE EFFECT OF ANTHROPOMETRIC CHARACTERISTICS ON RESTING METABOLIC RATE IN OBESE INDIVIDUALS

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Abstract Text: Objective: Anthropometric characteristics and health status are significant components in the estimation of Resting Metabolic Rate (RMR). In order to control and manage obesity effectively, appropriate assessment of RMR is of highest importance. The aim of the present study was to investigate the effect of anthropometric characteristics on RMR in obese subjects. **Methods:** The sample consisted of 146 obese adults (26 men and 120 women), of mean age 40.16 ± 10.81 years. Subjects with metabolic disorders or under medications that would affect heart rate or RMR were excluded from the study. The subjects were submitted to anthropometric measurements (body weight, body height, waist and hip circumference). Resting Metabolic Rate (RMR) was measured with indirect calorimetry after overnight sleeping and 12h fasting. Body composition was assessed with bioelectrical impedance (BIA) method. SPSS v.15 was used for statistical analysis. **Results:** BMI was $36.49 \pm 5.84 \text{ Kg/m}^2$. MRMR (measured resting metabolic rate) was $1746 \pm 416 \text{ Kcal}$ measured by indirect calorimetry. PRMR (predicted resting metabolic rate) was 1608 ± 295 estimated by Owen equations. There was a positive correlation between the MRMR and PRME ($r=0.767, p<0.001$). Body fat percentage was 42.97 ± 6.76 . MRMR was significantly correlated with BMI ($r=0.471, p<0.001$), waist circumference ($r=0.479, p<0.001$), hip circumference ($r=0.500, p<0.001$), body weight ($r=0.727, p<0.001$) and body height ($r=0.699, p<0.001$). There was no significant correlation between MRMR and Body fat. **Conclusions:** Anthropometric characteristics were positively correlated with MRMR. There was no correlation between body fat and MRMR, which could be attributed to the fact that fat tissue is metabolically inactive. RMR was underestimated by 8% when used Owen equations compared to indirect calorimetry. Further research is necessary.

Conflict of Interest:**Funding:**

860 accepted poster

THE EFFECT OF HYPOXIC-HYPEROXIC PRECONDITIONING ON CARDIOMETABOLIC RISK-FACTORS AND GUT HORMONES IN PATIENTS WITH THE METABOLIC SYNDROME

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Abstract Text: Introduction: Hypoxic preconditioning is known to be safe, efficacious method for pre-acclimatization, prevention and treatment of some chronic diseases. We develop a new mode of interval hypoxic-hyperoxic training (IHHT), in which repeated episodes of hypoxia (11% O₂ via face mask) interspersed with hyperoxic episodes (30% O₂). The study was designed to reveal changes in risk-factors and gastrointestinal hormones following IHHT in patients with the Metabolic Syndrome (MetS). **Methods:** 35 patients were randomized to IHHT group (n=24) or placebo group (n=11). For the IHHT group each of 15 sessions consisted of 4 to 7 hypoxic periods (46 min) with 2-min hyperoxic intervals. Before and after 4-week IHHT program patients have passed: psychological testing, body composition by bio-impedance, fasting plasma concentrations of lipids, lipoproteins, glucose, leptin, ghrelin, serotonin levels (ELISA), 6-minute walking test (6MWT). **Results:** The IHHT group showed essential weight loss vs. placebo (BMI decreased on 9.2% vs. 4.8%, $p<0.01$) due to the loss of fat mass, the resting BP and HR reduction ($p<0.01$), physical endurance increase in 6MWT (+7.8% vs. +3%, $p<0.001$). Total cholesterol level, triglycerides, fasting glucose decreased in both groups, LDL - in IHHT group only (-9.8% vs. -3.4%, $p<0.01$). Cardiometabolic changes in IHHT group were associated with the diminished binge eating symptoms and the decrease of leptin and ghrelin levels (initially doubled and imbalanced), increase of serotonin ($p=0.02$). **Conclusion:** IHHT program was effective to correct selected cardiometabolic risk factors, exercise tolerance in MetS patients, which might be explained partly by orexigenic/anorexigenic hormones balancing.

Conflict of Interest: None**Funding:** None

861 accepted poster

THE EFFECT OF INTENSIVE LIFESTYLE INTERVENTION AND BARIATRIC SURGERY ON MODERATE TO SEVERE OBSTRUCTIVE SLEEP APNEA IN MORBIDLY OBESE PATIENTS; A NON-RANDOMISED CLINICAL TRIAL

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Abstract Text: Introduction: Obstructive sleep apnea (OSA), defined as an apnea-hypopnea index (AHI) >5 events/hour, is highly prevalent in morbidly obese patients. CPAP is mandatory for patients with moderate or severe OSA (AHI ≥ 15 events/hour). The objective of this study was to evaluate how intensive lifestyle intervention (ILI) and Roux-en-Y gastric bypass surgery (RGB) affect the need for CPAP. **Methods:** 133 morbidly obese patients (93 females) were treated with either ILI (n=59) or RGB (n=74) (MOBIL-study). All patients underwent sleep registration with a portable somnograph (Embletta[®]) at baseline and 1-year follow-up. Fisher's exact test, McNemar's test and independent samples t-test were used. **Results:** The mean (SD) weight reduction was 8 (10) % in the ILI group and 30 (8) % in the RGB group ($p<0.001$). A total of 15 patients (25%) in the ILI group and 26 (35%) in the RGB group had moderate or severe OSA at baseline, $p=0.260$. Of these, 8 (53%) patients in the ILI group (3 out of 8 with severe, and 5 out of 7 with moderate OSA at baseline) and 19 (73%) patients in the RGB group (10 out of 16 with severe, and 9 out of 10 with moderate OSA at baseline) improved to either mild (n=8) or no OSA (n=19) at follow up, within-group change from baseline; $p=0.039$ and $p<0.001$, respectively. The treatment effect was comparable between groups, between-group difference $p=0.306$. **Conclusion:** Both ILI and RGB reduced the number of patients in need for CPAP by more than 50% in morbidly obese patients.

Conflict of Interest: None disclosed**Funding:** Jan Magnus Fredheim has received unrestricted educational grants from South-Eastern Norway Regional Health Authority

863 accepted poster

THE EFFECTS OF LOW INTENSITY LIFESTYLE MODIFICATION FOR YOUNG ADULTS WITH METABOLIC SYNDROME IN EAST TAIWAN

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Abstract Text: Introduction: The study examined the effectiveness of a low-intensity lifestyle modification (LILM) in a community setting of young adults with metabolic syndrome (MS) in east Taiwan. **Method:** This was a prospective, quasi-experimental design. The enrolled 464 young adults with MS were assigned to the intervention (INT) (n = 247) or the comparison (COM) (n = 217). The participants in the INT group attended a LILM program for 6 months which included four interactive group discussion sessions and weekly phone contact with volunteer counselors. GEE modeling was used to analyze the effects during the study (3 months), and post-completion (6 months) of the LILM program. **Results:** Compared with the COM group, the INT group showed significantly greater reductions in body weight ($-2.95 \pm 3.52 \text{ kg}$ vs. $-0.76 \pm 2.76 \text{ kg}$, $P.0001$), BMI ($1.03 \pm 1.25 \text{ kg/m}$ vs. $0.30 \pm 1.16 \text{ kg/m}$, $P.0001$), WC (3.82 ± 4.90 vs. $-0.27 \pm 4.38 \text{ cm}$, $P.0001$), and TG (-57.77 ± 149.00 vs. $-44.50 \pm 168.17 \text{ mg/dl}$, $P=0.01$). **Conclusion:** The 6-month LILM program was proven to be as effective as other LM programs reported in the literature. LILM program in a community setting would be an affordable, realistic course of action.

Conflict of Interest: There were no conflict of interests**Funding:** This study was funded by the Yilan county government, Taiwan.

864 accepted poster

THE ENDOCRINE DYSFUNCTION CAN BE OFTEN THE BACKGROUND OF INEFFICIENT WEIGHT REDUCTION

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Abstract Text: Introduction: During low-calorie diet (LCD) in simple obesity weight lossing stops abruptly. Among many reasons the possibility of subclinical endocrine dysfunction has often arisen. **Aim:** To observe of possible endocrine dysfunction background of LCD interruption. **Material and methods:** The investigation covers 97 overweight and simple obese patient 73 female (43.6 y; BMI 35,5 kg/m²), 25 male (39,9 y; BMI: 35,3 kg/m²) directly two weeks after stop of weight lossing. Hormone blood-tests examinations were held by routine laboratory method. **Results:** Hormone levels have not deviated from reference but testosterone median value (1.27) was an exception among women. The deviated hormone levels in percent of cases are shown in table.

	TSH	TPATE	LH	FSH	Progad	OD	Proges	Testos	DHAs	Insulin
mean	0.05	26.4	10.44	17.45	300.01	269.66	5.54	1.87	3.06	6.82
female	*2.28	*53.2	*19.9	*30.84	*211	*272.8	*10.45	*2.72	*1.8	*6.6
Δ % female	+17.8	+6.22	+26.2	+18.7	+8.5	+8.2	+27	+3.2	-10.3	+38.8
male	2.95	-	4.0	4.75	219.2	140	1.06	10.57	6.55	15.87
male	*2.0	-	*1.81	*2.04	*120	*88.89	*0.41	*3.2	*3.6	*17.88
Δ % male	+12	-	0	0	+10	0	0	+47.8	0	+20

TPATE: thyro-peroxidase antibody; +increased, - decreased; *SD

Conclusion: Mathematical statistical analysis is not possible because of low number of cases, but calls attention that in case of unsuccessful diet endocrine dysfunction should be taken into consideration which requires endocrine examination.

Conflict of Interest: None

Funding: No

865 accepted poster

THE IMPACT OF INTEGRAL TREATMENT FOR OBESITY ON THE SEXUAL ASPECT

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Abstract Text: IntroductionThe adverse effects of obesity on health are mostly well registered. However, the consequences for sexual health are not very well known. In the first integral evaluation at the Maximo Ravenna Therapeutic Centre (MRTC) we notice that the 63% of the incoming patients refer to a decrease of sexual desire. Thus, it is necessary to re-evaluate this aspect at the end of the decreasing period. **Objective** To recognise the impact of the integral treatment for obesity on the sexual desire of patients. **Materials and Method** According to some clinical records chosen at random, we could observe how 135 patients perceived their sexual desire. This was possible through the Beck's Test at the beginning of the treatment. Then, those patients who could get the ideal weight were asked for an individual psychological semi-directed interview to re-consider this aspect. **Results** From all the patients at the beginning of the treatment (135), 41 % were re-evaluated and within this percentage 82% reflected, to a greater or lesser extent, an improvement on sexual desire. **Conclusion** We understand that interdisciplinary work on the non-appropriate link with food allows redefining several link behaviours. These serve to find positive changes on the sexual area with a marked increase of sexual desire compared to the first evaluation.

Conflict of Interest:

Funding:

866 accepted poster

THE IMPACT OF INTENSIVE LIFESTYLE INTERVENTION AND A LOW CALORIE DIET ON ARTERIAL STIFFNESS IN MORBIDLY OBESE PATIENTS - A NONRANDOMIZED CLINICAL TRIAL

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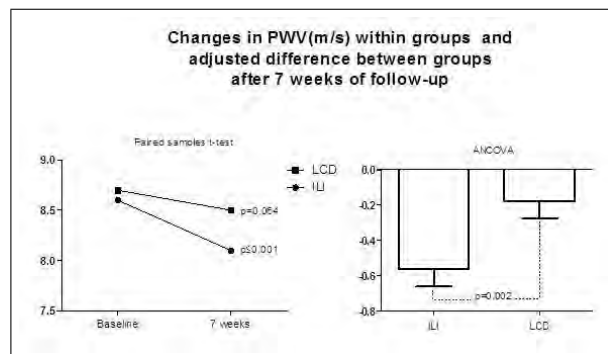
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Abstract Text: Background: Arterial stiffness is an independent predictor of cardiovascular morbidity and mortality. We aimed to investigate the 7-week effect of a low calorie diet (LCD, ~900 kcal/day) and an intensive lifestyle intervention (ILI) program on arterial stiffness measured by pulse wave velocity (PWV) in morbidly obese individuals. **Methods:** Nonrandomized clinical trial. The ILI included behavioral treatment and moderate to high intensity aerobic physical exercise 3 days a week, and a daily calorie restriction of 1000 kcal. PWV was measured by high-fidelity applanation tonometry. T-tests statistics, Fisher's exact test and analysis of covariance (ANCOVA) were used as statistical methods. **Results:** A total of 179 individuals completed the study, 88 (56 women) in the ILI-group and 91 (57 women) in the LCD-group. Both interventions resulted in a significant weight loss ($p < 0.001$) of mean (SD) 6.6 (3.5) kg in the ILI-group and 9.4 (4.3) kg in the LCD-group. At follow up, only the ILI-group showed a significant reduction in PWV (figure 1). After adjustment for relevant confounders, the ILI-group had a significantly greater reduction in PWV than the LCD-group, mean (95%CI); -0.4 (-0.7, -0.1) m/s, $p = 0.002$. **Conclusion:** Despite a larger weight loss in the LCD-group only the ILI-group showed a significant reduction in PWV. Moreover, we observed a significantly greater reduction in arterial stiffness in the ILI-group compared to the LCD-group.



Conflict of Interest: Conflict of interest: None disclosed

Funding: Funding: No funding

868 accepted poster

THE RESMENA DIET: A NEW EFFECTIVE DIETARY STRATEGY FOR REDUCING METABOLIC SYNDROME

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Abstract Text: Introduction: Obesity and metabolic syndrome (MetS) complications are important risk factors affecting morbidity and mortality rates. Several investigations are focused on searching different dietary approaches to improve metabolic syndrome traits. The aim of our study was to compare the effects of two hypocaloric diets (-30% Energy) on body composition and biochemical features in patients with metabolic syndrome: Control diet based on the American Heart Association (AHA) criteria and the Resmena diet based on a different macronutrient distribution (30% proteins, 30% lipids, 40% carbohydrates) and characterized by a high adherence to the Mediterranean diet, increased meal frequency (7 times/day), low glycemic load (mainly in the afternoon and at night) as well as high total antioxidant capacity and omega-3 fatty acids content. **Methods:** Ninety-six (48M/48F) adults presenting MetS criteria (40±9 years) were randomly allocated in the AHA or Resmena diet during 8 weeks under nutritional supervision. Blood samples, anthropometric and body composition (DEXA) measurements as well as blood pressure were taken at baseline and after the nutritional intervention. **Results:** Both AHA and Resmena strategies showed a significant reduction in body weight, waist circumference, fat mass, as well as systolic and diastolic blood pressures, without significant differences between both

dietary groups. Concerning biochemical data, both diets significantly reduced total cholesterol, triglycerides, glucose, insulin and HOMA index. HDL-cholesterol showed a higher decrease in the AHA group. **Conclusion:** RESMENA diet is as effective as AHA diet to improve body composition and biochemical values. Resmena diet may be a good dietary strategy for MetS reduction.

Conflict of Interest: None of the authors declare a conflict of interest.

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869 accepted poster

THE RESMENA DIET: A NEW LONG-TERM STRATEGY TO REDUCE METABOLIC SYNDROME COMORBIDITIES

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Abstract Text: Introduction: There are different dietary strategies to reduce metabolic syndrome symptoms, but studies researching the long-term effects are scarce. In this context, this study compared the long-term effects of two low-calorie diets (-30% Energy): a Control diet based on the American Heart Association criteria; and the RESMENA diet based on a different macronutrient distribution (30%proteins, 30% lipids, 40% carbohydrates) and characterized by a high adherence to the Mediterranean diet, increased meal frequency (7times/day), low glycemic load (mainly in the afternoon and at night) as well as high total antioxidant capacity and omega-3 fatty acids content. The specific aim of this study was to analyze changes in volunteers during an autonomous free-living period after a two-month personally advised nutritional intervention.**Methods:** Seventy-eight volunteers presenting metabolic syndrome were randomly assigned to the Control and RESMENA diets. After the nutritional intervention a four-month autonomous free-living period began, during which participant must apply the advice received. Anthropometrical measurements and biochemical analyses were performed before and after the free-living period.**Results:** Only the RESMENA group individuals significantly continued losing body weight, body mass index and waist circumference, while in both groups a significant reduction of fat mass was found. Total cholesterol and glucose concentrations significantly increased in the control group, but no changes occurred in the RESMENA group. Additionally, an improvement in transaminases levels (AST and ALT) was observed in the RESMENA group.**Conclusion:** The adherence to the RESMENA diet could be a good option as a long-term dietary treatment for combating metabolic syndrome comorbidities.

Conflict of Interest: Non disclosed.

Funding: This work was supported by the Health Department of the Government of Navarra (48/2009) and by Linea Especial of Nutrition, Obesity and Health (University of Navarra LE/97). Government of Navarra also provide a research grant to Patricia L-Legarrea (Pre-doctoral n 233/2009). Roce la Iglesia predoctoral grant is provided by Carlos III Health Institute (n F110/00587).

870 accepted poster

THE ROLE OF PRO/ANTI-INFLAMMATORY ADIPOKINES ON BONE METABOLISM IN NAFLD OBESE ADOLESCENTS: EFFECTS OF LONG TERM INTERDISCIPLINARY THERAPY

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Abstract Text: Introduction: The epidemic of obesity has increased significantly over recent decades. This increase represents a public

health problem, since overweight is directly linked to metabolic complications. The aim of this study was to investigate the role of pro- and anti-inflammatory adipokines in the bone metabolism of Non-Alcoholic Fatty Liver Disease (NAFLD) obese adolescents as well as the effects of long-term interdisciplinary therapy on metabolic related risk factors. **Methods:** Forty post-pubertal obese adolescents were randomly assigned into two groups: 1) NAFLD group and 2) Non-NAFLD group and submitted to a weight loss therapy. Body composition was analyzed by plethysmography, bone mineral density and content by dual-energy X-ray absorptiometry, blood samples were collected to measure lipid profile, hepatic enzymes, leptin and adiponectin concentrations. **Results:** It was observed, in both groups, a decrease in total body mass, BMI, body fat, visceral and subcutaneous fat, insulin concentration, HOMA-IR, total cholesterol and an increased in lean mass. In addition, increased levels of adiponectin and reduction in leptin concentrations were observed in NAFLD group. The simple regression analysis demonstrated that HOMA-IR was an independent predictor changes in bone mineral content (BMC) in total obese adolescents and in the Non-NAFLD group. **Conclusions:** One year of interdisciplinary weight loss therapy for obese adolescents with or without NAFLD, could regulate bone mineral metabolism as result of an increased bone mineral content and improved inflammatory state in these analyzed population.

Conflict of Interest: none disclosed

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871 accepted poster

THE "GRAND DÉFI ENTREPRISE": ASSESSING AND MANAGING CARDIOMETABOLIC HEALTH IN THE WORKPLACE

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Abstract Text: Introduction: Our sedentary lifestyle and poor nutritional habits leading to the current epidemic of abdominal obesity, metabolic syndrome and type 2 diabetes have changed the mosaic of modifiable risk factors for cardiovascular disease. While most abdominally obese individuals fail in their attempts to adopt over the long term healthy behaviors, few comprehensive cardiometabolic health programs are offered in the workplace.**Methods:** More than 600 employees from four different companies were involved in a pilot project of the "Grand D Entreprise" (Great Corporate Challenge), which involved a 3 month friendly in-house competition among teams of five employees each within one company to improve their lifestyle habits. For that purpose, the participating companies offered a free and comprehensive cardiometabolic and cardiorespiratory health assessment provided by a mobile risk assessment unit before and after the contest.**Results:** After the 3 month contest, body weight, fat mass and waist circumference were significantly reduced (-2.1±3.2 kg, -2.1±3.0 kg and -4.4±3.9 cm, respectively, p<0.0001). Resting systolic and diastolic blood pressure were also decreased (-5.9±10.5 kg and -3.8±6.9, p<0.0001). Prevalence of hypertriglyceridemic waist, a marker of high risk visceral obesity, went from 33% to 22%. Heart rate at a standardized submaximal treadmill workload (3 .5mph at 2% slope) was significantly reduced, suggesting improved cardiorespiratory fitness, such reduction being accompanied by reduced exercise blood pressure. Other markers of cardiometabolic health were improved.**Conclusion:** Results from the pilot study component of the "Grand D Entreprise" suggest that it is possible to implement an effective cardiometabolic health and fitness assessment/management in the workplace.

Conflict of Interest: None

Funding: Pfizer Canada inc.

873 accepted poster

TREATING YOUNG OBESE CHILDREN: A PILOT STUDY

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Abstract Text: Introduction: Because of the increasing prevalence and severe consequences of childhood obesity an effective intervention in young obese children is needed. Therefore, we developed AanTafel!, a novel evidence- and practice based multidisciplinary intervention program for young children (aged 3-8 year). AanTafel! is focused at the parents, and has a total duration of one year. Part of this intervention is the digital workbook on the internet. **Methods:** A study was performed

to assess the feasibility of AanTafel!. 15 children (6 boys, 9 girls) with overweight started treatment. At the beginning, end of intensive part of treatment (4months) and end of treatment (1yr) weight and height were measured. **Results:** At start the median BMI was 25,03 (range 18,01-28,59) with a median BMI z-score of 4,31 (range 1,78-5,80). After 4 months the median BMI z-score change was -0,15 (range +0,08 to -0,76). There were no drop-outs. In the less intensive part, 3 out of 15 children dropped out. In 7 out of 12 children there was a further decrease of BMI z-score at 1yr (range -0,22 to -1,5). In 4 children there was a stabilisation of BMI z-score and in 1 child BMI z-score increased (+0,16). Overall the 1 year treatment effect was a median change in BMI z-score of -0,58 (range -0,07 to -1,76). **Conclusion:** The intervention program AanTafel! for young obese children appeared to be feasible. To determine the effectiveness of this intervention program research is still going on.

Conflict of Interest: None disclosed

Funding: No funding

875 accepted poster

VITAMIN D DEFICIENCY, PHYSICAL ACTIVITY AND OBSTRUCTIVE SLEEP APNEA

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Abstract Text: Introduction: Obstructive sleep apnea (OSA) and vitamin D deficiency (VDD) are common conditions associated with excess adiposity and physical inactivity. Data on OSA and VDD is lacking. Methods: Recently diagnosed OSA cases had 25-hydroxy-vitamin D (25(OH)D) levels measured, body composition analyzed and free-living physical activity measured. Results: 36 individuals (24 male; mean age = 51y; mean BMI = 35.9kg/m²) enrolled. Compared with mild OSA, severe OSA cases had greater adiposity levels (p = 0.001) and lower serum 25(OH)D (p=0.15). No participant had sufficient vitamin D (>80nmol/L). 25(OH)D correlated negatively with sedentary time, fat%, fat mass, apnoea-hypopnea index, average heart-rate and hsCRP. 25(OH)D correlated positively with activity duration, fat free mass and average oxygen saturation.

Table 1: Characteristics per OSA severity class (mean values)

	Mild	Moderate	Severe
N=	6	12	18
AHI	8.8	21.4	63.7
Body fat (%)	29.4	35.5	41.9
25(OH)D (nmol/L)*	45.1	44.3	33
Steps taken/d	7589	6509	7610
Sedentary time/d	21.7h	20.1	21.3

Conclusions: Among this sample, activity levels were low and adiposity was high. Lifestyle intervention should be encouraged for all overweight, sedentary OSA cases. Consideration of hypovitaminosis D among OSA cases is warranted, though its clinical significance is as of yet unclear. References:1. Hollis BW(2005) J Nutr. 135(2):317-22.

Conflict of Interest: None declared

Funding: No funding

876 accepted poster

WAIST CIRCUMFERENCE AS A MARKER FOR SCREENING OBESE ADOLESCENTS AT NAFLD

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Abstract Text:

Table - Descriptive parameters of obese adolescents, according gender

	Girls		p	Boys		p
	1. NAFLD (n=78)	2. NAFLD (n=43)		1. NAFLD (n=20)	2. NAFLD (n=23)	
BMI, kg/m ²	34.8±4.1	36.8±4.4	0.00	34.5±4.8	35.6±4.9	0.008
Visceral fat (cm)	3.3±1.3	4.1±1.3	<0.001	2.8±1.3	3.4±1.6	0.001
Subcutaneous fat (cm)	3.2±0.7	3.6±0.8	0.036	2.8±0.5	3.3±0.7	0.002
Waist circumference (cm)	92.6±13.5	100.6±13.9	0.003	97.5±13.7	116.2±13.3	0.008
Body fat (%)	40.2±5.1	47.1±6.0	0.007	39.5±5.7	35.6±6.4	0.034

Introduction: Augmented waist circumference (WC) is associated with metabolic disease and could represent a valuable marker in screening for metabolic dysfunctions. Studies have shown that nonalcoholic fatty disease (NAFLD) be more closely related to metabolic disease (NCDs). The present study has evaluated the relationship between WC and NAFLD, in order to identify critical values for the group with obesity. Methods: The cross sectional study was conducted, whose population consisted of a sample of 181 adolescents of both genders (12 - 19 years old), with BMI >25 kg/m², divided into two groups with 99 patients without NAFLD and with 82 NAFLD. Receiver operating characteristic curves (ROC) were constructed to determine WC cut-off points that could be used to identify girls and boys individuals with NAFLD. Results: Table - Descriptive parameters of obese adolescents, according gender. The ROC curve analysis showed different cut-off points for WC between the genders. Girls cut-off point was found to be 98 cm and for boys was 104.7 cm. Conclusion: Our findings reinforce the importance to determine WC values that represents a risk factor to develop NAFLD in obese adolescents.

Conflict of Interest: There is no conflict of interest.

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877 accepted poster

WEIGHT OUTCOMES OF 497,777 PARTICIPANTS IN SLIMMING WORLD'S PROGRAMME DURING THEIR FIRST 12 WEEKS OF MEMBERSHIP.

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Abstract Text: Introduction. Recent studies report the effectiveness of referring patients to commercial weight management organisations (CWMOs) as part of primary care obesity services. This analysis examined weight-loss outcomes in 497,777 self-funding participants (4.95 per week) of Slimming World. **Methods.** Participants' gender, height, age and weekly weight measures were collected during the first 12 weeks of attendance for comparison with a previously published 12-week referral audit¹. Data were analysed by regression using the GENSTAT 5 statistical program. **Results.** Mean (SD) BMI change was -1.3kg/m² (1.2), weight change -3.4kg (3.2), percent weight change -3.9% (3.4) and number of sessions attended 6.9 (3.6) of 12. For patients attending ≥10 of 12 sessions (n=161,663 or 32%), mean

(SD) BMI change was -2.2kg/m^2 (1.1), weight change -6.0kg (3.2) and percent weight change -6.7% (3.2), compared to those attending <10 of 12 sessions ($p<0.001$). Weight loss was greater in men than women ($p<0.001$). Compared to an audit of 12-week free referral to this CWMO in 34,271 patients, percent weight changes were similar (3.9 versus 4.0%), start BMI was lower, the percentage attending 10 of 12 sessions was lower and percent weight lost by those attending ≥ 10 weeks was higher (6.7 versus 5.5%) (all $p<0.001$). **Conclusion.** Slimming World achieves large-scale, community-based, clinically safe and effective weight loss while placing minimal health care costs on primary care services. ¹ Stubbs et al. *Obes Facts*. 2011; 4:113-120.

Conflict of Interest: All authors work for Slimming World.

Funding: This work was funded by Slimming World.

878 accepted poster

WHY PARENTS HAVE TO BE INVOLVED IN TREATMENT FOR OBESE TEENAGERS? RESULTS OF A QUALITATIVE STUDY

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Abstract Text: Introduction: Family dynamics are strongly associated with teenagers' obesity. Our aim was to assess parents' perceptions before and at the end of a six month Family-Based Behavioral Treatment (FBBT) for obese teenagers. **Methods:** We conducted a qualitative research including 13 parents in two focus groups, one at the beginning and one at the end of a FBBT for obese teenagers. Four open ended questions were used to explore parents' perceptions: 1) How do they live their child's obesity? 2) What can they say about their child's well-being? 3) How are family interactions? 4) What do they think about their participation in the program? Sessions were recorded, transcribed and content analysis was performed. **Results:** Preliminary findings indicated that parents felt isolated in regards to their teenager's obesity. They were scared about psychological and somatic consequences: "it is a lot of suffering", "it is a source of conflict and worry". Meeting other parents and sharing their difficulties and tiredness related to this chronic condition helped them to decrease guilt: "it's tiring, we tried all techniques: hiding, being nice, being mean, and blackmail, it's been six months since I lock all the food". Parents' interaction raised questions on family functioning, bringing less attention to the diet of their child. Group discussions made them aware of the importance of family involvement in the weight management process. Final results will be presented. **Conclusions:** Parents of obese teenagers need to be involved in weight management programs to relieve their distress, modify family's interactions and enhance teenager's autonomy and self-efficacy.

Conflict of Interest: No disclosed

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T5:PS8 - Pregnancy in Obese Patients

879 accepted poster

APPLICATION OF ASIAN CUT-OFF CRITERIA TO DETECT MATERNAL OBESITY

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Abstract Text: Introduction: Alternative BMI cutoffs have been proposed for Asian populations to inform public health action points. However, there is debate as to whether these are warranted. If their application in pregnant women improves the prediction of adverse pregnancy outcomes, there is a persuasive argument for their use. **Objectives:** To determine maternal obesity prevalence using different cut-off criteria and explore whether application of Asian cut-off's relate to increased incidence of macrosomic births ($>4\text{kg}$) using longitudinal data from 10,245 pregnant women from a multi-ethnic birth cohort (Born-in-Bradford). **Methods:** Age-adjusted prevalence of obesity were calculated using booking appointment data based on WHO ($\text{BMI} \geq 30\text{kg/m}^2$) and Asian ($\text{BMI} \geq 27.5\text{kg/m}^2$) criteria. We examined whether application of Asian cut-offs related to increased risk of macrosomia in South Asian women compared to WHO cut-offs using Poisson regression (adjusted incidence rate ratios). **Results:** Using WHO criteria, 25.3% (95% CI 25.0,27.8) of White women were obese at booking, compared to 18.5% (95% CI:17.4,19.6) of Pakistani women. Application of Asian cut-offs increased obesity prevalence to 30.9% (95% CI 29.1,31.7) in Pakistani women. However, it did not appreciably alter risk of having a macrosomic infant (WHO criteria: 2.74 (2.02,3.73) vs. SA criteria 2.66 (1.97,3.60)), although risk in this group was greater than obese White women (1.70 (1.40,2.05)). **Conclusion:** Macrosomia is a key obstetric outcome in obese women and is associated with higher risk of other adverse perinatal outcomes. Our data suggest that application of Asian specific obesity cut-offs may not be warranted.

Conflict of Interest: None

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880 accepted poster

BODY MASS INDEX IN PREGNANCY AND CAESAREAN SECTION: A HOSPITAL BASED STUDY

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Abstract Text: Introduction: Evidence suggests that delivery by caesarean section (CS) in obese women (body mass index (BMI) $\geq 30\text{kg/m}^2$) carries a higher risk of postoperative complications. **Aim:** The aim of this study was testing the hypothesis that overweight (BMI 25-29.9 kg/m^2) and obese pregnant women have more post CS complications than pregnant women of recommended BMI (18.5-24.9 kg/m^2) resulting in a longer length of stay in hospital. **Methods:** Using a piloted proforma, we undertook a case note review of a sample of women with a singleton pregnancy, aged ≥ 16 years and delivered by CS in a district general hospital in 2008. **Results:** A total of 205 case notes were reviewed (27.9% of all CS deliveries in 2008). Overall, 86 (42.0%) women were of recommended BMI, 54 (26.3%) were overweight and 65 (31.7%) were obese. Fourteen (22.2%) obese women had a wound infection compared to five (9.3%) overweight and 17 (20.2%) women of recommended BMI. Of these, 13 (92.2%) obese women received antibiotics for ≥ 7 days compared to three (75%) overweight and 11 (68.8%) women of recommended BMI. Thirty eight (58.5%) obese women stayed in hospital for ≥ 3 days compared to 27 (50%) overweight and 42 (49.4%) women of recommended BMI. However, none of these findings reached statistical significance. **Conclusion:** We did not find significant differences in postoperative complications and length of stay in hospital between overweight and obese pregnant women compared to women of recommended BMI.

Conflict of Interest:

Funding:

881 accepted poster

EXPLORING MIDWIVES' PERSPECTIVES OF MIDWIFERY TRAINING REQUIREMENTS FOR MATERNAL OBESITY MANAGEMENT: A QUALITATIVE STUDY

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Abstract Text: Introduction: Maternal obesity has been described as the biggest challenge for maternity services. National guidelines recommend training for healthcare professionals. However, there is a lack of evaluated training interventions in the UK. **Methods:** An interpretive constructionist approach explored midwives' views on maternal obesity training. Eleven focus groups with 46 midwives (21 community-based; 25 hospital-based) were facilitated and observed by two researchers. Emerging themes were explored until saturation. Thematic analysis was carried out by both researchers independently; triangulating focus group transcripts, observer field notes, and debrief notes. **Results:** Four themes emerged. *'Justification for Maternal Obesity Training'* was based on the extent to which obesity impacted on midwifery practice. This theme is central to all others. *'Discussing Obesity'* was perceived to be highly sensitive, and counter-intuitive to developing a trusting midwife-woman relationship. This was the greatest concern for midwives. *'Weight Management'* knowledge among midwives varied, and primarily originated from personal experience rather than evidence-based knowledge. A strong view was that weight-management training needed to be appropriate to midwifery practice (i.e. not midwives assuming the role of dietitians for example). *'Practicalities of Training'* includes the training environment and delivery considered to be most effective. These were small groups, interactive, including women's perspectives, with regular updates. **Conclusion:** All participants felt maternal obesity training was necessary. Sensitive communication is of paramount importance. Maternal obesity training is required to provide a more systematic approach to support midwives in developing the knowledge and skills they feel are required to confidently deliver the nationally recommended standard of care.

Conflict of Interest: None Disclosed

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882 accepted poster

MAXIMISING WOMEN'S ENGAGEMENT WITH MATERNAL OBESITY INTERVENTION: A QUALITATIVE STUDY OF PREGNANT WOMEN'S EXPERIENCES AND PRIORITIES

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Abstract Text: Introduction: Pregnancy is an opportunity for obesity intervention. Guidelines recommend dietetic involvement, however uptake of referrals in this population is low (~10%). The evidence-base for effective intervention is limited, therefore understanding women's perspectives is important for intervention development. **Methods:** An interpretive approach explored obese pregnant women's experiences of dietetic intervention in Gateshead, UK. One-to-one, low-structured, in-depth interviews allowed women to define their own issues. When saturation was confirmed (n=15), two researchers carried out thematic analysis independently to assess inter-rater reliability. **Results:** Three themes emerged. 1) *'Key Issues for Women'* were shaped by past experiences and women's pregnancy priorities. Their predominant priority was their baby's health. Past negative experiences with healthcare professionals and members of society were prevalent. Terminology and tone of expression women used to describe their weight became increasingly self-derogatory when discussing these negative experiences. 2) *'Structure and Process Issues'* centred on a lack of intervention explanation at referral. This resulted in women forming inaccurate expectations making them fearful of engaging. 3) The *'Content of the Service'* most motivating to behaviour change included personalised advice, written information, and weight monitoring. Women wanted more physical activity and pregnancy specific information (e.g. linking diet to fetal development rather than "5-a-day" messages). **Conclusion:** In the absence of robust effectiveness evidence, women's perspectives are vital when developing maternal obesity intervention. General population approaches to intervention development are inadequate. Interventions need to include (and promote) pregnant women's priorities to maximise the pregnancy 'window of opportunity', encourage engagement, and motivate behaviour change in this population.

Conflict of Interest: None Disclosed

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