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Obesity *Facts*

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ABSTRACTS

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The estimate of overweight students' diet: The imbalance lipid and fat-soluble vitamins

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Introduction: The study aimed to assess and analyze the fat component (including fat-soluble vitamins) of diet students Kazan Federal University with overweight and obese.

Methods: Participants were 151 students aged 19–23. The method of 24-hour recall was used and the nutrient content was further estimated using standard data base.

Results: 32 students were estimate as overweight and obese (21,2% of the target group): 23 people were overweight and 9 people were estimated as obese. In this group the percentage of energy from total fat was higher than RDA: 40,7% and 39,9% in men and women respectively. The sum of essential fatty acids (linoleic and α -linolenic) composed 7,8% and 5,6% of total energy. The consumption of n-3 longer chain polyunsaturated fatty acids (EPA and DHA) was extremely low: $32,4 \pm 22,3$ mg and $140,2 \pm 112,8$ mg of respectively for males: $27,7 \pm 12,7$ mg and $74,9 \pm 21,3$ mg for females. Cholesterol and plant sterols intake as well as their ratio have been found as negative 1,97/1. As far as fat-soluble vitamins are concerned, the significant deficiency has been shown: an average content of vitamin A is $0,68 \pm 0,17$ mg, vitamin D – $2,7 \pm 0,19$ μ g, vitamin E – $6,7 \pm 4,9$ mg and vitamin K – 74 ± 18 μ g which is equal to 50–58% of these substances' RDA respectively.

Conclusion: The results have shown that there is significant imbalance within fat component of students' diet. The imbalance revealed within fat component along with deficiency of fat-soluble vitamins may contribute to further weight gain and result in metabolic syndrome development in the future. It is essential to decrease the proportion of total fat as well as to optimize the ratio of different food sources of fatty acids and vitamins by taking some measures including functional products use.

Acknowledgement: Research relating to this abstract was funded by the subsidy allocated to Kazan Federal University for the project part of the state assignment in the sphere of scientific activities

T3:PO.025

Gelesis100 significantly decreases carbohydrate intake in overweight and obese subjects with high fasting glucose

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Introduction: Changes in macronutrient intake induced by Gelesis100 were assessed in overweight and obese subjects based on fasting glucose at baseline ($>$ or \leq median of all study subjects) in the FLOW (First Loss Of Weight) study.

Methods: Changes in macronutrient intake (24-h recall) were assessed in 114 overweight and obese adult subjects (38 males, 76 females) including 56 with high (> 5.15 mmol/L) and 58 with low (≤ 5.15 mmol/L) fasting glucose, following Gelesis100 administration (2.25 g, n = 41, and 3.75 g, n = 34, twice daily) vs placebo (n = 39). Gelesis100 was administered orally, before lunch and dinner, in a double-blind fashion, over 12 weeks, together with an energy-restricted diet (-600 kcal/day). Subjects received instructions at baseline, without enforcement thereafter, to optimize ca-

loric intake from macronutrients (carbohydrate 45–50%, fat 30%, protein 20–25%). Statistical comparisons used analysis of covariance adjusting for relevant parameters.

Results: Unlike subjects with low fasting glucose, subjects with high fasting glucose on Gelesis100 2.25 g and 3.75 g had a significant decrease from baseline to the end of treatment in carbohydrate intake compared to those on placebo. Changes for percent calories from carbohydrate intake (mean \pm standard deviation) were -4.6 ± 9.1 (P = 0.003), -2.9 ± 11.6 (P = 0.043), and 4.7 ± 11.1 , with Gelesis100 2.25 g, Gelesis100 3.75 g, and placebo, respectively.

Conclusion: Chronic administration of Gelesis100 to overweight and obese subjects induces a significant decrease in carbohydrate intake in subjects with high fasting glucose at baseline. This finding may support the glucostatic theory of appetite control as an explanation for the dramatic weight loss results observed in prediabetic subjects in the FLOW study.

T3:PO.026

Prevalence of micronutrient deficiency in patients with morbid obesity before bariatric surgery

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Background and aims: Postoperative micronutrient deficiency is a known side effect of bariatric surgery. In this study we examined the prevalence of micronutrient deficiency in patients with morbid obesity (MO) preoperatively. **Materials and methods:** 1541 patients with MO wishing to undergo bariatric surgery (age: 40 ± 12 years, mean BMI: 44 ± 9 kg/m², means \pm SEM, 77.3% female) were analyzed in this cross sectional examination. Iron state, vitamin B12, folic acid, 25hydroxy(OH)-vitamin D, vitamin A and vitamin E levels were determined. Subsequently, patients underwent nutritional counseling and were substituted accordingly.

Results: 63.2% (n=974) of the patients had a deficit in folic acid (<5.3 ng/ml), 97.5% (n=1502) in 25OHvitamin D (<75 nmol/l), 5.1% (n=80) in vitamin B12 (<188 pg/ml), and 6.2% (n=96) in vitamin A (<1.05 μ mol/l). 9.6% (n=148) exhibited iron deficiency (ferritin <15 μ g/l). None of the patients had a deficit in vitamin E.

Conclusion: Our data show a high prevalence of micronutrient deficiency in patients with morbid obesity preoperatively and emphasize the importance of exact preoperative evaluation and adequate substitution as well as postoperative surveillance.

T3:PO.027

Evaluation of body fat ratio according to the mediterranean diet quality index

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Objective: Mediterranean diet is a sample nutrition model that help to prevent risk of obesity. This research was planned to identify the body fat ratio according to the Mediterranean diet quality index.

Method: In this study, a total of 313 university students (41.5% of males, 58.5% of females), between the ages of 18–26 (mean 21.7 ± 1.90) years were included. Body fat ratio was determined by Tanita MC-980MA Body Composition Analyzer. A questionnaire form was applied to determine general nutrition habits. University students' adherence to the Mediterranean diet was assessed by the 16 item questionnaire Mediterranean Diet Quality Index (KIDMED index). KIDMED index (range 0–12) classified as ≥ 8 score as optimal diet (high), 4–7 score as improvement need (intermediate) or ≤ 3 score as very low diet quality (low) according to the total score.

0.037

Clinical inertia in following the rules of diabetic diet in patients with type 2 diabetes mellitus

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Introduction: The aim of the study was to assess the knowledge about the principles of a diabetic diet in patients with type 2 diabetes mellitus (T2DM) hospitalized for various reasons and to correlate the results with the type of medical care, anthropometric measurements and mean A1c value (HbA1c).

Methods: The study included 100 patients (58 women, 42 men) with T2DM hospitalized in 2014 in the Department of Internal Medicine, Diabetology and Clinical Pharmacology, Medical University of Lodz. Patients were asked to fill the questionnaire concerning knowledge about diabetic diet and to indicate the type of medical care, under they reside: Diabetic Outpatient Clinic and/or GP Clinic. In each patient following data were collected: anthropometric measurements (BMI, waist and hip circumference, WHR) and HbA1c test was performed

Results: Patients were in mean age 63.52 ± 12.64 years, mean duration of diabetes 11.89 ± 11.03 years, mean BMI 30.68 ± 6.93 kg / m², mean HbA1c value $8.87 \pm 1.76\%$. Patients gave 74.6% correct answers in the test of knowledge about diabetic diet. In the study group, 53 patients were under the care of Diabetic Outpatient Clinic and GP Clinic(A), 47 patients only under GP Clinic (B). Patients in group A had mean BMI 30.57 ± 6.7 kg / m² (vs. group B 30.8 ± 7.26 kg / m²), mean HbA1c value $8.36 \pm 1.75\%$ (vs. group B $9.46 \pm 1.5\%$) and gave 76.6% correct answers in the test of knowledge about diabetic diet (vs. group B 72.3%).

Conclusion:

1. The majority of patients with T2DM are overweight or obese.
2. Despite the good results of the test of knowledge about diabetic diet, patients did not follow rules of diabetic lifestyle (clinical inertia).
3. Patients under care of GP Clinic and Outpatient Diabetes Clinic had higher knowledge of the diabetic diet and achieved better therapeutic targets than patients only under care of GP Clinic.
4. Patients need permanent education on every medical visit.

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T3:PO.038

Obesity and health-related lifestyle factors in romania – “oro” study

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Introduction: Regional studies have shown around 50% prevalence of adult overweight/obesity in Romania, with limited data on lifestyle patterns. The cross-sectional ORO-Study aimed to evaluate prevalence of obesity and related lifestyle risk factors at national level.

Methods: The study included 8 regional centers. Collected data were: anthropometric, social status, family/personal medical history, lifestyle and eating habits. A 24h food recall diary and two questionnaires were used: Global Physical Activity (WHO) and food frequency Nurses Health Questionnaire, translated and validated.

Results: Representative sample of 2103 individuals were enrolled, mean age 41.5 years, mean BMI 29.9 kg/m², 61.9% women, 72.8% from urban area. Prevalence of overweight / obesity was 31.1% / 21.3%; obesity 9.9% in 18–39 years, 30.1% in 40–59 years, 41.6% in 60–79 years age groups ($p < 0.001$). Overweight / obesity in men was 41.6% / 23.0%, in women 24.7% / 20.3% ($p < 0.001$) and higher in rural area: 33.0% vs 30.3% and 25.7% vs 19.7% ($p = 0.004$). Overweight and obese people had ≥ 3 meals/day (36.0% and 38.8% vs 29.8% ($p = 0.002$), most consistent meal after 9 pm (22.8% vs 15.4%), large food quantities eaten less than 2h following

another meal, less physical activity, less night sleep. Eating while watching TV was more frequent in normal BMI (51.8% vs 41.5%, $p < 0.001$), same for drinking water (56.1% vs 40.8%, $p < 0.001$) and sugar-sweetened carbonated drinks (6.6% vs 6.2%, $p < 0.006$).

Conclusions: High prevalence of overweight and obesity increasing with age was found. Irregular meals, eating while watching TV were the most frequent unhealthy eating habits, although not always related to obesity. Despite some study limitations, the results suggest the complexity of the obesity-related risk factors.

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T3:PO.039

The effect of weight loss on body composition and serum lipid profiles in obese women

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Introduction: Obesity is one of the most important health problems among the advanced and developing countries in recent years. An imbalance of energy intake and energy expenditure leads to obesity which is associated with increased morbidity and mortality. In contrast, persistent weight loss significantly reduces overall mortality. This study was planned to investigate the effects of weight loss on body composition and serum lipid profiles in obese women.

Methods: Obese women with body mass index (BMI) >30.0 kg/m² (n:25) and aged 20–43 years were included in this study. According to the needs of each individual, dietary program was maintained to provide a weight loss 0.5–1 kg/week. The body composition was measured using bioelectrical impedance analyzer (BIA). All of the measurements (BIA, serum lipid profiles, and anthropometric measurements) were taken before initial diet and after 12 weeks.

Results: The mean age of women was 31.56 ± 7.3 years. There were significant differences in body composition between initial and at the end of the diet programme. Body weight (kg), BMI, fat mass (kg), fat percentage (%), fat free mass, waist circumference (cm) and waist/hip ratio decreased significantly at the end of the diet programme. ($p = 0.00$). Also, decreasing in the level of serum total cholesterol (TC) and low-density lipoprotein cholesterol (LDL-C) were found significant ($p = 0.001$).

Conclusion: As a result of this study, the diet has positive effects on body composition and serum lipid profiles. And this findings help to decrease mortality and morbidity.

T3:PO.040

Evaluation of iodine deficiency in kazan city students the problem of iodine deficiency in the environment and deterioration of health status associated with it is vital for the tatarstan.

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Introduction: The problem of iodine deficiency in the environment and deterioration of health status associated with it is vital for the Republic of Tatarstan with its geochemical peculiarities of nature and soil structure. The incidence of endocrine diseases, eating disorders, metabolic and immune disorders (ED) under 14 years of age increased 1.6 fold for the period from 1996 to 2012 in the city of Kazan, and the 2,1 – 2,7 fold increase was registered for the period from 2007–2009. All these years, iodine deficiency disorders (IDD) made 23.5–28.0% of ED.

Methods: 220 children aged 12–14 living in Kazan and studying in gymnasiums No.3 and No.7 were examined. Prevention of iodine deficiency is carried out in gymnasium No.7 on a regular basis. Study included clinical