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NUTRITION, COGNITIVE-BEHAVIORAL THERAPY

55. Fat: relation to obesity development and management

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The role of fat in nutrition has been re-evaluated in the last decade. Twenty years ago the increased consumption of fat was considered as one of the main causes of obesity. In last years fat intake is ambiguously connected with obesity development. Some studies show probable evidence for a moderate direct association between total fat intake and BW, some studies show even inverse association. Composition of dietary fat is the major issue. High saturated fat diet decreases insulin sensitivity, is related to abdominal obesity and is more obesogenic in comparison to monounsaturated and polyunsaturated fatty acids (MUFA and PUFA). In obese subjects participating in Kuopio Obesity Surgery Study proportion of saturated fatty acids in adipose tissue correlated positively with inflammation in subcutaneous and visceral adipose tissue, concurrently n-6 PUFA in adipose tissue correlated with liver inflammation. Role of n-6 to n-3 polyunsaturated fatty acid ratio (n-6/n-3) is discussed in relation to obesity. Ailhaud (2006) suggested potential role of high n-6/n-3 perinatally in obesity development. This was found in animal but also human studies Also exercise may impact fatty acid composition of adipose tissue. In rats on high fat diet training led to decrease in palmitoleic fatty acid and increased linoleic acid independently of dietary fat composition, but only endurance training lead to lower inflammatory response in AT. Enhanced uptake, oxidation and accumulation of fatty acids in muscle was found in overweight men after 12-week training. Several derivatives of fatty acids were shown to influence body composition. Monounsaturated fatty acid (MUFA) derivative oleoylethanolamide (OEA) synthesised from oleic acid is a high affinity agonist of the nuclear transcription factor PPAR alpha. High intake of oleic acid increases OEA levels in serum. OEA was shown to stimulate fatty acid uptake, lipolysis, beta oxidation and promote food intake control. Docosahexaenoic acid-derived fatty acid esters of hydroxy fatty acids (FAHFAS) with anti-inflammatory properties synthetised in white adipocytes in mice and human were described recently (Kuda O e al. 2016). Weight reducing regimen may positively influence fatty acid composition in plasma and adipose tissue concurrently with improvement of cardiometabolic profile. This was shown after lifestyle intervention but also as a result of batriatric/metabolic surgery.

56. Fast versus slow weight loss: head to head comparison of effects on body composition and muscle strength in postmenopausal women with obesity – the TEMPO Diet Trial

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Introduction: Clinicians treating obesity may hesitate to use fast weight loss via very-low energy diets due to perceived adverse effects on musculoskeletal integrity relative to effects of slow weight loss, but there is no direct evidence for this. We compared the long-term effects of fast versus slow weight loss on body composition (fat, lean and bone mass) and muscle strength in the randomized controlled TEMPO Diet Trial (Australia and New Zealand Clinical Trials Registry Number 12612000651886). **Methods:** 101 post-menopausal women (BMI: 34.5 ± 2.5 (SD) kg/m^2, age: 57.5 ± 4.2 years) were randomized to either 4 months of FAST weight loss (60–69 % energy restriction) followed by 8 months of slow weight loss (24–33 % energy restriction), or 12 months of SLOW weight loss. Both diets had a prescribed protein intake of 1 g/kg body weight per day, and physical activity was encouraged but not supervised. Body weight, fat mass, lean mass and bone mineral density at the hip (dual-energy X-ray absorptiometry) and muscle strength (hand dynamometry) were measured at baseline and 12 months. **Results:** The FAST group lost more weight and fat mass than the SLOW group (FAST: 15.0 ± 6.7 kg, 11.1 ± 5.6 kg of fat mass; SLOW: 8.9 ± 7.1 kg,

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6.1 ± 5.5 kg of fat mass; P < 0.001 and P < 0.05, respectively). Compared to baseline, both groups lost lean mass, with no significant difference in lean mass lost between groups (FAST: 3.4 ± 1.7 kg, SLOW: 2.4 ± 2.9 kg). Muscle strength decreased in both groups at 12 months compared to baseline (FAST: 4.6 ± 9.5 kg, SLOW: 3.3 ± 9.3 kg, P < 0.01), and bone mineral density decreased from baseline in the FAST (0.03 ± 0.03 g/cm^2, P < 0.01), but not SLOW group (0.01 ± 0.03 g/cm^2), with no significant difference in muscle strength or bone mineral density between groups. **Conclusion:** These findings suggest that when protein intake is adequate there is no greater adverse effect of fast weight loss relative to that of slow weight loss on lean mass or muscle strength, despite fast weight loss inducing a 1.7–1.8-fold greater weight and fat loss over 12 months. However, there may be a greater reduction in bone mineral density during fast weight loss.

57. Obesity and body image

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Introduction: Obesity and its treatment is associated with several mental disorders with disturbed body image being one of them. The term "Body Image" was coined by Prof Paul Schilder, an Austrian neurologist and psychiatrist, and used for the first time in 1935 and its use is not restricted solely to psychiatry but is rather common also in psychology, medicine, philosophy, sports, gender studies and many other areas and no unified definition has been offered. **Aim:** The aim of this contribution is to explicate the concept of body image, specifics among people with obesity and to point out its diagnostic methods and psychotherapeutic treatment. **Results:** In psychology, the concept of body image is defined as a mental representative of own body, i.e. the image of its size as perceived by the subject and the subject's relationship to own whole body and its single parts. The influences on body image development are based on historical aspects (cultural socialization, interpersonal experience, physical characteristics and personal attributes) and, also, on proximal events (internal dialogues, body image emotions, adjusted self-regulatory strategies and activating events). The risk factors that contribute to body image disturbance in obese individuals are physical (weight, weight loss, gender, ethnic origin), mental and cultural (sexual orientation, presence of binge eating disorder, weight cycling, age of obesity onset and social response on state of "being obese"). Serious manifestation of body image distortion may result into Phenomenon fat or Body dysmorphic disorder. 3 categories of methods for diagnosing of body image in obese patients exist and they are as follows: 1. figure preference (e.g. Standard figure rating scale), 2. method based on visual recordings, 3. questionnaires. The cognitive behavioral psychotherapy appears to be a promising and appropriate treatment. **Conclusion:** The Body image is an important aspect of obesity. Its better understanding and adequate psychotherapy may lead to improvements in the quality of life in obese population. Also, they may enhance their compliance with treatment of obesity and its somatic comorbidities.

58. Internet as help in reducing weight and maintaining weight-loss

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Introduction: Today, people are spending more time at their computer than ever. This sedentary lifestyle is one of the reasons of the epidemics of obesity. Internet programs such as STOBklub dedicated to weight-loss and healthy lifestyle are therefore a great help in maintaining healthy weight, being users friendly, offering information and guidance and help to overweight and obese patients in a way that is in accordance with current lifestyle. **Methodology:** Healthy weight-loss and weight maintenance demand more than reducing caloric intake. The first and foremost thing is to change behavior. If people spend so much time looking at screens of their computers, they can learn how to live and reduce weight more healthy this way that is users friendly. At STOBklub we offer not only caloric counters and food database. Using CBT principles, we work with our users more personally and are ready to help them with changing their behavior step by step and show them a way to a more balanced life. Apart from our personal approach, offered also via internet at our community webpage **www.stobklub.cz**, we give them various tools: self-coaching for changing eating habits, psycho-coaching for changing unsuitable thinking patterns, emotion and behavior, fit-coaching for movement; articles and blogs with information from experts. We also create

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specialized projects – for shorter or longer time-span. In 2017, we offer the project called Healthy Year. **Specific project:** In Healthy Year project, we offer 12 months dedicated to 12 topics one at a time. Via internet program, our users get information from expert articles (1 every day on average), in discussion forums (1 for every topic), in open discussions with experts. Every user can actively use the information in choosing their personal challenges working with a given topic of the month: up to 3 per day and 1 for every week. **Results:** At STOBklub , we work with 166,322 users. Thanks to program of self-coaching (at www.stobklub.cz) clients lost 120,000 kg during 7 years. Starting January 1, 2017, our users have lost 667.5 kg (data being from the end of April 2017). Since the beginning of the project Healthy Year in January, there are 6,500+ users actively involved in this new project and they have already chosen 147,871 daily and weekly challenges in the first four months. The average number of expert articles for this project is 35.5 per month. **Conclusion:** Internet can be used as a helping tool in taking care of overweight and obese patients as an added bonus to medical professionals' care or, in some cases of overweight patients, as the main care. With the help of a common communication tool, we can help those patients live more healthily and reduce their weight in healthy way when necessary.

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59. Cognitive Behavioral Treatment of Obesity: Program STOB

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Organisation STOB (Stop Obesity) was founded in 1990 by PhDr. Iva Malkova in Czech Republic and since 2007 STOB also operates in Slovakia. STOB's activities (www.stob.sk, www.stob.cz) are based on the principles of cognitive-behavioral psychotherapy (CBT). Obesity is the failure of normal weight regulation and energy regulation mechanisms leading to an increase in the body "fat mass set point". Obesity treatment is not only the weight reduction itself, much more emphasis is placed on body fat lowering and weight loss maintenance. Therefore, effective treatment must work from the beginning as a prevention of a recurrent increase after weight reduction (so-called JO-JO effect). Obesity treatment is generally divided into conservative and surgical. Conservative evidence based treatment is built on four basic pillars – diet therapy, physical activity, lifestyle change and pharmacotherapy. Both diet pattern changes and ordination of regular aerobic physical activity lead to life style change. One of the most common approach to lifestyle change and maintenance is CBT. STOB program, based on CBT principles, eliminate inappropriate eating habits and teach an obese patient to replace inappropriate thoughts and self-blaming with a positive approach to a new lifestyle. Despite the indisputable benefits of group CBT, comparable results can also be achieved by individual approach. CBT techniques are most effective when applied over a longer period, the usual duration of STOB program is 12-week structured program used in overweight reduction courses. Participants meet once a week for 3 hours, 2 theoretical hours with CBT based techniques and one hour is dedicated to physical activity. The first two lessons are devoted to the diagnosis of obesity, motivation, the real goals, profits and losses during weigh reduction program and patients start they work with food diary. In the 3rd and 4th lesson patients learn how to change the energy value of food, the composition of food and about the modern technological modification of meals. Next lesson is targeted to ordination of physical activity and leads patients to increase energy expenditure and to improved use of the energy they received. Apart from the beneficial effect on the "obesitological equation", there are also many positive psychological impacts. It helps to increase the sense of well-being and improves self-control of the patient. In general, aerobic exercise is recommended and the degree of exercise is adjusted according to the body mass index and patient co-morbidities. Next four lessons works with identification and active control of external meal triggers, internal meal triggers self-control techniques, negative automatic thoughts suppression and identification of mistakes in thinking which lead to undesirable behavior. Last two lessons are about learning how to like your body, reward yourself, weight regain prevention, feedback about the most helpful techniques and tools learned during the STOB course. The advantage of patients group is the fact that clients encounter similar problems in the course and encourage each other to gradually change their lifestyle. The average weight loss is 6.5 kg/12 weeks. In combination with diet, they not only reduce weight, 65–70 % of the weight reduction remain one year after treatment. In contrast to other weight reduction programs, it does not only concern what patient eat but also how to apply theoretical knowledge in everyday practice. The STOB methodology,

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based on the CBT principles, applied in overweight reduction courses is a complex weight management tool. STOB course graduates gain practical skills that correspond with the conservative evidence based obesity treatment built on diet, physical activity and lifestyle changes. A cognitive-behavioral approach is the ideal tool for changing the lifestyle of an obese patient.

60. Motivation of Obese Patients for Changes in Behaviour

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Specialists focusing on the treatment of obesity are daily faced with the fact that the level of motivation of their patients differs considerably case by case. For a long time, motivation has been deemed the key factor of a change. The patients who refuse to co-operate or even fail in treatment are often labelled poorly motivated. Is this assessment not a bit too simplifying, though? As the theory of motivation defines it, motivation is a process consisting of five stages, and before it starts the patient goes through the initial phase of pre-contemplation – they are either unaware of the problem or they do not find it pressing enough as to take appropriate measures against it. The following stages, then, are as follows: 1. contemplation, 2. preparation for a change, 3. action, 4. maintenance, 5. relapse. The motivational therapy, which may be made use of during the psychological treatment of obesity, aims to facilitate faster and internally motivated co-operation of the patient. One of the key aspects is the identification of the patient's level of motivation, and, subsequently, the therapist's flexibility and ability to set and use modified strategies during the individual stages of the process. Common causes for the (self-)inconfidence in the possibility of a change are repeated failures ("I have tried so many times but failed every single time...") or a feeling that the difference between the current and required states is too profound, time-consuming or impossible to reach. Also, the patients often undervalue their ability to persist ("I can never hold on long enough..."), to succeed ("I have never slimmed down enough..."), to withstand the discomfort ("Yes, but..."). So as to improve the level of patient's motivation and a subsequent change in their attitude towards the treatment, a Brief intervention has been created and is widely used in treatment of addictions and Eating Disorders. It is known under the acronym of FRAMES: **F**eedback – identification of the main aspects of the disorder which the patients feel most uncomfortable with and what their fears are; uncovering the positive and negative points of the disorder as seen by the patient. **R**esponsibility – accenting the patient's responsibility and free choice ("no-one but you may solve your problems"). **A**dvice – simple and clear advice on what the necessary steps to produce a change are and how it may be achieved. **M**enu – a list of alternatives/options of possible strategies. **E**mpathy – supportive, warm and attentive attitude. **S**elf-efficacy – inspiring the patient's feeling of competence and increasing their self-confidence. As the treatment may often span longer periods of time, the strategies may need to be modified during the course of it which requires a high degree of flexibility on the part of the therapist. All therapeutic recommendations are to be offered on the basis of a previous dialogue with the patient – partnership, respect, real interest in the patient and his problems and the ability to look at them form the patient's point of view are the key ingredients of the therapeutic approach.