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Læge sessionen Årsmøde 2010 –  
auditoriet afsnit 2121: opgang 2, 12. etage

- 13:30-13:50 TASTE PREFERENCES IN PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES IN CYTOTOXIC TREATMENT  
*B. N. Sørensen, M. L. Kipp, J. R. Andersen*
- 13:50-14:10 PHENYLKETONURIA - THE EFFECTS ON QUALITY OF LIFE AND PLASMA CONCENTRATIONS OF PHENYLALANINE AND TYROSINE OF TWO DIFFERENT AMINO-ACID-SUPPLEMENTATIONS IN DIFFERENT CONCENTRATIONS  
*K. K. Ahring, L. B. Møller, J. R. Andersen*
- 14:10-14:30 REDUCED ENERGY INTAKE WAS THE MAIN CONTRIBUTING FACTOR TO WEIGHT LOSS MAINTENANCE THREE YEARS AFTER GASTRIC BYPASS  
*L. S. Kjelstrup, I. L. Mostad, M. Strømme, J. R. Andersen, B. Kulseng*
- 14:30-14:50 Increased protein intake may affect physiological functions.  
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- 14:50-15:10 FOOD SENSORY ISSUES IN NUTRITIONAL RISK PATIENTS: A QUESTIONNAIRE STUDY  
*J. M. Sorensen, M. B. Frøst, L. Holm, J. Kondrup*
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## TASTE PREFERENCES IN PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES IN CYTOTOXIC TREATMENT

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**Rationale:** Oral nutritional supplements (ONS) are available to accommodate insufficient nutritional intake in cancer patients. However treatment with ONS is often associated with poor product acceptability and patient compliance. Altered taste sensation linked to cancer and chemotherapy is believed to play a significant role. The objective of this study was to investigate taste preferences of the basic qualities, in patients with haematological malignancies during or after cytotoxic treatment.

**Methods:** Thirty-four patients (20 females and 14 males) with self reported taste changes took part in this study. All patients was diagnosed with hematological malignancies (25 with leukemia, 6 with lymphoma and 3 with myeloma). Eleven was ungoing chemotherapy treatment, while 23 had finished their chemotherapy treatment. The patients mean BMI was 23,58 ( $\pm$  3,8) and mean age was 53 ( $\pm$ 13,7) years. None of the patients was fed by tube or parenterally. The patients were blinded and evaluated the acceptability and the taste intensity of the samples, by using a 10 cm visual analogue scale (VAS). Ten different samples was prepared containing either a strong or a weak concentration of one of the 5 basic tastes (sweet, sour, salt, bitter and umami). One random sample of each of the basic tastes was included twice as a control. Data was analyzed using Wilcoxon Rank Sum Test for paired data (non-parametric).

**Results:** The weak concentrations were in general best accepted among the patients except from umami taste, where a difference in concentration did not affect the acceptability. The patients disliked bitter the most.

**Conclusion:** The results indicate that a nutritional product, which is a bit salted, contains umami and is slightly sour would be the best accepted by haematological cancerpatients.

**Disclosure of Interest:** None Declared

## PHENYLKETONURIA - THE EFFECTS ON QUALITY OF LIFE AND PLASMA CONCENTRATIONS OF PHENYLALANINE AND TYROSINE OF TWO DIFFERENT AMINO-ACID-SUPPLEMENTATIONS IN DIFFERENT CONCENTRATIONS

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**Rationale:** Phenyl Keton Urea (PKU) is an inborn error of metabolism. Mental retardation is prevented by early treatment with low protein (LP) diet, supplemented with a phenylalanine (Phe)-free amino acid (AA) mixture. Supplementation of large neutral amino acid (LNAA) and a semi-free (SF) diet has been shown to have a positive effect on well being (1). LNAA has been used as alternative treatment for adult PKU patients in Denmark since 1985. The aim of this study was to investigate the effects of 2 different products, LNAA1\* versus LNAA2\*\*, containing LNAA in different combinations, on plasma Phe levels in early treated adults with PKU, as well as the effects on quality of life (QOL).

**Methods:** Twelve adult PKU patients (6 males, 6 females) entered a double blind, cross over study with four consecutive three-week phases. Ten of the 12 completed all 4 phases. Each phase consisted of LNAA1 or 2, either in low or high dosage. Subjects were instructed to continue their usual SF diet, maintain energy intake and complete a 3-day food record and a SF36 questionnaire during each phase. At the end of each phase, plasma AA profile was quantified.

LNAA1\*: Prekunil tablets

LNAA2\*\*: Neophe tablets

Both manufactured by PreKUlab, Korsør, Denmark, who also sponsored the study together with Merck Serono.

**Results:** There was no correlation between plasma Phe level and LNAA dosage or type of LNAA supplement. However, 2 patients stated that they felt better when taking LNAA-2 in high dosage.

**Conclusion:** LNAA 1 & 2 in higher dosage than usual do not lower Phe level in the blood, and do not systematically change QOL-measurements..

**Reference(s):** Nielsen JB, Lou HC, Güttler F. Effects of Diet Discontinuation and Dietary Tryptophan Supplementation on Neurotransmitter Metabolism in Phenylketonuria. Brain Dysfunction 1988; 1:51-56

**Disclosure of Interest:** None Declared

## REDUCED ENERGY INTAKE WAS THE MAIN CONTRIBUTING FACTOR TO WEIGHT LOSS MAINTENANCE THREE YEARS AFTER GASTRIC BYPASS

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**Rationale:** Gastric bypass is effective in inducing weight loss, but the long-time effects are poorly documented. The aim of the study was to evaluate factors contributing to weight loss and weight maintenance in subjects with morbid obesity 3 yr after Laparoscopic Roux-En-Y gastric bypass surgery (n=17) compared with a lifestyle modification program (n=20) and Pre-surgery (n=14), in a case-control study design.

**Methods:** Body composition (DXA scanning) was measured at baseline and after 3 yr. Prospective food intake (7 days pre coded food diary), energy expenditure (indirect calorimetry) and physical activity (7 days recall questionnaire) were measured after 3 yr. Fat uptake (<sup>13</sup>C<sub>2</sub> triolein breath test) was compared with pre surgery patients (n=14). Median (range) are given.

**Results:** After 3 yr weight loss was 32 (-14 -76) kg in the operated compared with 5 (+9 -23) kg in lifestyle group ( $P<0.001$ ). Fat mass differences were -24 (-9 -62) kg vs. -6 (+0.08 -19) kg ( $P<0.001$ ). Fat free mass decreased in the surgery group -8 (-0.3 -24) kg, but not in the lifestyle group +2 (+14-7) kg ( $P<0.001$ ). Total energy intake was 1608 (1135 - 2555) kcal/d compared with 2219 (1488 - 3747) kcal/d, ( $P<0.001$ ). Energy intake from fat, carbohydrate and protein did not differ. Resting energy expenditure was lower in the operated group 1635 (1500 - 2030) kcal/d vs. 1930 (1450 - 2750) kcal/d ( $P=0.005$ ). Physical activity level did not differ. The <sup>13</sup>C<sub>2</sub> peak expiration was 0.359 (0.244 - 0.518)  $\mu$ mol/min in the surgery compared with 0.347 (0.153 - 0.466)  $\mu$ mol /min in the Pre surgery group ( $P=0.905$ ), indicating gastric bypass operation did not lead to fat malabsorption.

**Conclusion:** Laparoscopic Roux-en-Y gastric bypass operation induced a larger weight loss than lifestyle intervention and maintained it 3 yr post intervention. A lower energy intake was the main contributor, and trunkal fat contributed most.

**Disclosure of Interest:** None Declared

## Lene Holm Jakobsen

### Abstract

**Background:** Evidence is emerging for a positive role of protein in promoting health at intakes beyond the Dietary Reference Intakes. However, there is no evidence as to how increased protein intake may affect physiological functions.

**Objective:** We investigated the effect of a Normal *versus* a High Protein diet on muscle-, cognitive function, bioelectrical impedance analysis, energy expenditure, quality of life, biochemical regulators of protein metabolism, and plasma amino acids.

**Design:** A 3-wk intervention study with virtually complete control of dietary intake was performed in healthy males. Twenty-three men aged 19 - 31 years were included and consumed a Normal Protein diet (1.5 g protein/kg) for a 1-wk run-in period. They were then randomly assigned to continue on the Normal or to a High Protein (3.0 g protein/kg) diet for 3-wk's. The subjects received all food and drink throughout the study from the Department of Human Nutrition.

**Results:** The High Protein group improved their reaction time. Plasma Branched Chain Amino Acids and phenylalanine were increased following the High Protein diet, which may explain the better reaction time.

**Conclusion:** Healthy young males fed a High Protein diet improved reaction time. No adverse effects of the High Protein diet were observed.

## FOOD SENSORY ISSUES IN NUTRITIONAL RISK PATIENTS: A QUESTIONNAIRE STUDY

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**Presentation Method:** Oral or Poster presentation

**Rationale:** The aim was to test hypotheses from a previous qualitative study<sup>1</sup> about food sensory issues in patients at nutritional risk as related to improving food intake.

**Methods:** Patients at nutritional risk (NRS-2002) were surveyed during hospitalisation about their Eating related symptoms (15 three-point scale questions) and Food sensory experiences, Meal preferences and Motivation to eat (46 five-point likert scale questions). Principal Component Analysis (PCA) was done on the survey data to divide patients into segment groups, which were then compared by Mann-Whitney test.

**Results:** Surveys (N=108) were done in infectious medicine (n=32), gastrosurgery (n=32), cardiology (n=19), rheumatology (n=16) and oncology (n=9) patients (57±17 mean±SD years; 54% men). Patients were divided into eating style segment groups: Pleasure (n=57) and Force (n=51) by their position on the PCA biplot as divided by the PC1-axis. Questions scored significantly higher by segment group are shown in Table 1.

**Table 1** Segment group characteristics

Segment group	Eating related symptoms	Food sensory experiences	Meal preferences	Motivation to eat
Pleasure	NS	NS	Garnished* Aromatic* No artificial flavours* Fresh/sour side-dishes*** Umami-rich** Crispy or crunchy*** Varied tastes** Varied consistency** Varied dishes*** Varied from day to day*	Pleasure***
Force	Low appetite*** Early satiety** Nausea*** Vomiting*** Throat* or stomach* pain Chewing*** or swallowing*** problems Diarrhea*	Consistency is important* Problems forming a bolus*** Temperature problems*** Don't know what to eat* Redundant food choices***	Familiar** Simple*** Mild** Not spicy*** Easy to eat*** Soft/fluid*** Moisture giving sauces*	Forced eating***

NS=None Significant

\*p<0.05

\*\*p<0.01

\*\*\*p<0.001

**Conclusion:** Patient segment groups, Pleasure and Force, were identified and characterised. Food products are being developed as per segment group to improve food intake in patients at nutritional risk.

**Reference(s):** <sup>1</sup>Sorensen JM et al. Clin Nutr Suppl 2009;4:91.

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**Keywords:** Food sensory, Nutritional risk