the status of these nutrients may help maintain immunity in older adults.

**P.6.36. THE EFFECT OF A HEAT WAVE ON NUTRITIONAL STATUS IN FREE-LIVING ELDERLY**

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Background: The association between heat waves and mortality might be partly explained by the effect of heat waves on nutritional status. The aim of this study was to evaluate the effect of the heat wave of 2003 on nutritional status in a cohort of free-living elderly aged 70 and over in Auvergne, France.

Methods: From February to September 2003, a cohort of elderly subjects, recruited by general practitioners, underwent a nutritional assessment. The nutritional screening, which was performed at 0, 6 and 12 months after inclusion, included anthropometric markers, biological markers (albumin et transthyretin) and several gerontological tests. To estimate the effect of the heat wave, subjects were classified into two groups; those included before the heat wave (n=260, group A) and those included during the heat wave (n=3 B).

Results: At baseline, subjects of group B showed a higher albumin (44.7 vs 42.6 g/L, p<0.001), a lower transthyretine level (268 vs 250 p<0.05), and lower creatinine clearance (Cockroft 49.5 vs 57.8mL/min. After six months their weight was increased (0.6 kg, p<0.05), their level was decreased (-1.1 g/L, p<0.05), and their renal function was improved (Cockroft +5mL/min, p<0.005). Twelve months after the first screen differences between subjects included before and during the heat wave found.

Conclusion: During a heat wave, elderly subjects show a rapid dehydratation (hemoconcentration and renal insufficiency). There are moderately undernourished (decreased transthyretin). However, if correctly treated they recover within six months.
P.6.32. NUTRITIONAL STATUS EVALUATION IN INSTITUTIONALIZED ELDERLY WITH HIP FRACTURE

N. Alimono, A. Isai, B. Bardelli, S. Barale, R. Mariniello, M. Molaschi (Department of Medical and Surgical Disciplines - Geriatric Section – University of Torino, S. Giovanni Battista Hospital – Torino, Italy)

Introduction: Hip fractures commonly occur in older individuals and can have a considerable impact on the subsequent functional and nutritional status of older patient. Functional decline after hip fracture is one of the leading causes of institutionalization.

Objective: The aim of the study was to evaluate nutritional changes in institutionalized elderly patients after hip fracture.

Methods: We examined a sample of 11 patients after hip fracture occurred in a Nursing Home in Turin. The study protocol included: demographic characteristics, gender, comorbidity, complications, functional and cognitive status and nutritional conditions.

Results: Patients were 85.1 ± 9.5 years old, in average. Most 45.5% of patients suffered an inter-trochanteric fracture. Malnutrition was present in 9% of patients; 73% developed anemia. Data on functional and cognitive status show that at pre-fracture time ADL mainscore was 3.8 ± 1.5, IADL mainscore was 2.6 ± 1.6, SPMSQ scored 5.2 ± 2.1, on average CIRS IC was 2.9 ± 0.9. At post-fractural time ADL mainscore was 4.2 ± 1.7, IADL was 1.1 ± 1.1, SPMSQ was 7.1 ± 1.7 and CIRS IC was 2.2 ± 0.8. We observed that Hb levels decreased during the length of staying hospital from 12.1 ± 1.2 to 10.3 ± 1.4 (p<0.001). A reduction of serum albumin and siderophilline was also observed.

Conclusions: Hospital solutions for institutionalized patients who have had a hip-fracture is related to a decline in the main nutritional parameters. A multidisciplinary management and an early discharge from hospital might reduce the risk of malnutrition in elderly institutionalized patients with a recent hip fracture.

P.6.33. THE EFFECTS OF PHYSICAL ACTIVITY AND VITAMIN B SUPPLEMENTATION ON COGNITIVE FUNCTIONING AND PSYCHOSOCIAL HEALTH OF OLDER PERSONS WITH MILD COGNITIVE IMPAIRMENT

P.6.34. NUTRITION KNOWLEDGE IN ELDERLY PEOPLE

M. Daccò, P. Genovese, C. Trentani, A. Repossi Ilaria Tagliabue Nutrition and Eating Disorders Research Centre - University of Pavia School, Pavia, Italy)

The general practitioners (GP) are in the first line of care for elderly whose number is increasing constantly. They have many problems among which is the prevention of nutrition related diseases. Aging add risk of nutritionally inadequate diets due to several social, psycholog physiopathologic factors. Nutrition knowledge can also influence food but has rarely been investigated in the elderly. A simple questionnaire administered to aging people attending the general practitioner included following items: a) the knowledge of the fruit and vegetable recomm dispensing today, b) the links between vegetable consumption and diet interest in obtaining more nutrition information. Moreover, the subje asked to report their height and weight and to classify themselves as normal weight, overweight, obese. The weight and I each subject was measured by the GP and the Body Mass Index calculated. Very few elderly knew the current recommendations for vegetable intake and fewer were aware of the links between fruit and consumption and disease prevention. One third of the subjects mis their weight status and the great majority was interested in receg information on nutrition items. This information may be useful nutrition education session for the elderly in order to improve their habits.

P.6.35. NUTRITIONAL STATUS PREDICTS IMMUNE FUNCTION IN ELDERLY MEN

N. Ahiwaiwa (Department of Nutritional Sciences, SI26 Hen Pennsylvania State University, University Park, PA 16802, USA)

Aging is often associated with a dysregulation in immune f particularly in T cell mediated response, even in the healthy elderly. P nutrition of both macronutrients and micronutrients is prommaintaining optimal immune response. Nutrient deficiencies can, t contribute further to reduced immunocompetence in older pers increase the risk of infections and disease.

Few studies have examined the relationship of nutritional status, comprehensively, on immune function in the healthy elderly. Pos focus on correlations between levels of certain nutrients and immune the effect of nutrient supplements on immune function. Because nutrients can influence immune function, and there are interactions nutrients, determining the relationship of various nutrients m simultaneously with immune function is important. Therefore, we e the relationship of specific nutrients, known to be involved in n immune response, namely protein, iron, zinc, vitamin B12, and folic a tests of acquired immune function in healthy older women (76.7 m=130). Older women were recruited in rural Pennsylvania and l medical history and blood samples to rule out acute and chronic diseases as underlying inflammation that could confound immune. Discriminant analysis approach was used to identify the predictive n nutrients, which could correctly classify women as low and high re (<25th and >75th percentile, respectively) on tests of acquired ir namely, number of T cells and subsets, and lymphocyte proliferation to phytohemagglutinin A (PHA) and concanavalin A (Con A). Protein status variables were identified in the predictive subset for all immune variables examined; zinc emerged in the predictive model for T c subsets, and lymphocyte proliferation response to Con A. The prob correctly classifying women into low or high responders of immune tests by the predictive subset of nutrition variables was high and ran 62.8-83.5% for T cells and subsets, and 79.3-89.7% for lymph proliferation response. In conclusion, protein, iron and zinc em significant predictors of immune function in older women. Thus, ma concentration.

Data analysis: The data set will be analysed according to the intreat as well as per protocol principle.

Results: In total 148 participants with a mean age of 75 were ran (59 percent male, 41 percent female). Preliminary results with respe baseline measurements will be presented.
P.6.27. CONSUMPTION OF SOFT DRINKS AND THE METABOLIC SYNDROME AMONG THE US ADULTS

O. Bermudez (Boston, USA)

We aimed to examine the prevalence of the metabolic syndrome (MetS) and its association with ethnicity (Whites, n=1640; Blacks, n=691; and Mexicans, n=980) and with the consumption of sweetened and alcoholic beverages use by US adults (20+ y). We used the cross-sectional data from the continuous National Health and Nutrition Examination Survey (release 1999-2000). The MetS was defined as the presence of 3+ of the following risk factors: elevated blood pressure, low HDL-cholesterol, hyperglycemia, elevated fasting glucose, and abdominal obesity. Diet was evaluated with a single 24-hr recall. Relative to Whites, the likelihood of having the MetS was significantly higher for Mexicans but not for Blacks. Relative to total energy intake, the percentages of energy (E%) from sweet drinks and soda were among the highest across ethnic and sex groups. E% from soda was about 6% as compared to white bread (at about 5%), the traditional main contributor of energy in the American diet. E% from beer was also high among men (from 3% for Whites and Blacks to 6% for Mexicans). Only for Mexican women (3%), whole milk ranked among the first 10 foods providers of energy. Among Whites, the consumption of sweet drinks, soda and beer were linked to the MetS, while a significant association between the MetS and E% from sweet drinks was observed among Mexicans, after adjustments for age and sex. The MetS was highly prevalent among the American adults (about _ in this study); while, at the same time, sweetened and alcoholic beverages seem to be displacing more healthy foods from their diets. Dietary patterns characterized by the relatively high consumption of beverages that are high in energy but poor micronutrient sources, may impact nutrition and health status among US groups. The metabolic impact of such dietary patterns need to be determined.

P.6.28. NUTRITION OF ELDERLY PERSONS RESIDING IN BOARDING HOMES FOR THE AGED AND DISABLED IN UKRAINE

L.L. Sineok, Y.G. Grigorov, T.M. Semesko, I.V. Sapozhnikov (Institute of Gerontology, Vysyhirskaya st. 67, Kiev 04114, Ukraine)

Purpose: Nutrition of elders residing in boarding homes (BH) for the aged. Subjects and Methods: 8580 elderly residents of 37 BH were examined, in whom an average daily set of food products was determined using menu data. Food chemical composition was determined. Results: A food assortment was wide in boarding homes having over 50 items a year. Analysis and hygienic assessment of nutrition indicated increased daily consumption of bread (387±17.4g), flour (30.4±1.1g) and macaroni (24.9±0.9g). Summary average daily consumption of cereals and beans (80 g) was high as well. This group covered 44.1% of overall energetic value of ration, whereas vegetables, fruits and berries 17% and milk products 9.7%. Chemical composition analysis showed that bread rations were overloaded with carbohydrates and fats (animal fats) determining high nutritional caloricity (3031.1±65.9 kcal/day). There was a deficit of animal proteins and vitamins A, B1, B2, B6 as well as microelements: zinc, iodine and selen. So, the nutrition in BH is excessive and irrational promoting age pathology onset. Conclusion: Considering changes found in the structure of nutrition ensured for the elderly residents of boarding homes, we proposed the set of food products ensuring aging organism’s optimal needs in the major substances and energy. Such set of food stuffs possess the geroprotective properties.

P.6.29. NUTRITIONAL STATUS OF TURKISH 65 AGED AND OVER LIVING IN THE BLACK SEA URBAN REGION

E. Aksoydan, M. Bas, N. Cigerim, N. Karagungu, E. Karabudak, G. Kızılan, M. Tayfur (Baskent University, Faculty of Health Science, Department of Nutrition and Dietetics, Ankara-Turkey)

PURPOSE: The purpose of the study was to determine the nutritional status of Turkish elderly population in the Black Sea urban region.

METHODS and RESULTS: The study population was consisting of 468 men, 640 women, totally 1108 elderly with mean age of 71years. Dietary intake of the subjects was determined by three consecutive days by 24-hour dietary recall. Health status and other indicators examined by a questionnaire. Also, anthropometric measurements were evaluated. The body mass index (BMI) of the subjects was 26.1±8.4kg/m² for men, 30.8±14.8kg/m² for women. Hip to waist ratio was 0.93±0.11cm and 0.89±0.08 cm respectively.

The average energy intake was 1597±622kcal for men, 1465±679kcal for Both men and women had high dietary total fat (30.5% for men; 37% for women) and saturated fatty acids (18.3%, 17.2%, respectively) intake. two common chronic diseases for men and women were hypertension 49.7 %; respectively) and cardiovascular diseases (20.3 %, respectively).

CONCLUSION: Imbalanced nutrition, especially high total fat and : fatty acid intake was a risk factor for chronic heart diseases in the older

P.6.30. EFFECT OF FERMENTED MILK CONTAINING PROBIOTIC LACTOBACILLUS CASEI DN-114001 ON W INFECTIONS IN FREE-LIVING ELDERLY SUBJECT RANDOMISED, CONTROLLED PILOT STUDY

P. Turchet, M. Laurenzano, S. Auboiron, J.M. Antoine (Italy, France)

Probiotics are being increasingly studied for their ability to enhance resistance to, and recovery from, infection. The probiotic strain Lact casei DN-114001 has previously been shown to reduce the incidence duration of episodes of diarrhoea in children. Our controlled pilot study to evaluate the effect of supplementation for 3 weeks with milk fermented yoghurt cultures and L. casei DN-114001 on the incidence and se: winter infections (gastrointestinal and respiratory) in elderly people, V no difference in the incidence of winter infections between groups. I duration of all pathologies was significantly lower in the treatment gr 3.2 days, n=570) than in the control group (8.7±7.3 days, n=180) (p=0.01). The potential for a 20% reduction in the duration of winter is that we have found warrants further investigation on a larger scale.

P.6.31. NUTRITIONAL AND FUNCTIONAL STATUS IN ELDERLY PATIENTS AFTER HIP FRACTURE

N. Aimonino Ricauda, G. Isaita, B. Bardelli, M.F. Stasi, V. M. Zanocchi, M. Molaschi (Department of Medical and Surgical Dis. Geriatric Section – University of Torino, Italy)

Introduction: Hip fractures are important causes of decline and mo elderly people. As a result of comorbidity, functional and cs impairments and inadequate social support, many older patient substantial long-term consequences from hip fracture.

Objective: To evaluate nutritional and functional status in frail patients with a recent hip fracture admitted to a Geriatric Hospit Service (GHHS).

Methods: In our study we examined a sample of 17 patients with hip admitted in GHHS following an early discharge from orthopaedic war they had been surgically treated. The study protocol included: dem characteristics, comorbidity, nutritional and functional status, type of and surgical treatment, placement at discharge.

Results: Patients were 85.3 ± 3.5 years old, on average; 76.5% were 59% were demented. A neck fracture was present in 64.7% of patient 35.3% had an intertrochanteric fracture. The mean length of stay in or ward was 17.2 ± 7.8 days. At pre-fracture time 17.7% of patients we walk independently, 35.2% of them walking with cane and 11.8% wi ambulator. On discharge of GHHS, 65% walk with mechanical assist.

On admission in GHHS 35% of patients was malnourished with a improvement during home care (mean albumin serum levels raised fr 0.3 to 3.3 ± 0.4). 25% of patients developed pressure sores during stay; no patients developed pressure sores during home treatment.

Conclusions: A number of interventions may help frail elderly pati a hip fracture to improve functional and nutritional status and to complications. At home we can achieve a better management of nutri functional problems through the collaboration between GHHS team, and caregivers.
P.6.23. DIETARY INTAKE AND PHYSICAL ACTIVITY AMONG 80-YEAR-OLD DANISH MEN AND WOMEN – WITH FOCUS ON REPORTED LOW ENERGY INTAKE AND UNDERREPORTING

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Objective: Evaluate the dietary intake of 80-year-old non-institutionalised Danes and their physical activity level (PAL) and describe the nutritional consequences of reported low energy intake.

Setting: Cross-sectional study of 80-year-old Danish men and women participating in the Glostrup longitudinal population study.

Subjects and methods: The nutritional status of 121 men and 113 women was assessed using a modified dietary history method. In addition height and weight, self-reported physical activity and blood sampling was performed.

Results: On average the subjects had a sufficient dietary intake, however the fat intake was higher and the carbohydrate intake lower than recommendations. The average intake of protein was 0.98 g/kg body weight. After separating the energy intake into very-low-energy reporters (less than 6.3 MJ/d), low-energy reporters (6.3 - 8 MJ/d) and reporters with a higher energy intake (>8 MJ/d), we found the highest median BMI and the highest amount of under-reporters (i.e. EI/BMIrest c.1.14) among the very-low-energy reporters while PAL was almost the same in the three groups. A substantial number of the low- and very-low-energy reporters had reported intakes below the lower limit of recommended intake for vitamin A, D, E, B6, iron and iodine. The blood levels of the vitamins A, beta-carotene, alpha-tocopherol, D, B6, folate, and homocystin, ferritin, methymalonate and homocysteine were not significantly different among the low- and very-low energy reporters compared to subjects with a reported higher energy intake. PAL was an average 1.72 for men and 1.62 for women indicating a rather high activity level for this age group.

Conclusions: The nutritional status among 80-year-old non-institutionalised Danes was sufficient, but it is difficult to evaluate the nutritional consequences of low energy intake because of a substantial underreporting among low energy reporters. This supports the finding that low energy intake did not result in a reduced blood status of selected biomarkers.

P.6.24. DOES ERECTILE DYSFUNCTION PRESENT DIFFERENTLY IN ASIAN POPULATION?

N. Shah, T.C.N. Lo (Specialist Registrar in Medicine for the Elderly, Leicester, United Kingdom)

Introduction: Erectile dysfunction (ED) is defined as an inability to obtain and/or maintain a penile erection sufficient for satisfactory sexual intercourse. Although non-white racial status showed negative interest in a sexual problem evaluation (1), a study comparing Asian and White people attending sex-therapy clinic found no differences in diagnoses, time of referral and outcome of treatment (2).

The aim of this study was to confirm whether there is any difference in the presenting symptoms & duration of ED in White & Asian groups.

Method: Retrospective review of 71 consecutive case notes for patients with confirmed ED attending Sexual Function Clinic at Leicester General Hospital from 1st January 2002 to 31st March 2002. Ethnic origin other than White and Asian were excluded.

Fisher’s Exact Test was used for statistical analysis.

Results:

<table>
<thead>
<tr>
<th></th>
<th>White (n=47)</th>
<th>Asian (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main symptoms</strong></td>
<td></td>
<td></td>
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<tr>
<td>Organic symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty initiating, achieving or maintaining erection</td>
<td>32 (68%)</td>
<td>7 (58%)</td>
</tr>
<tr>
<td>Psychological (functional) symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premature ejaculation, difficulty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ejaculating, fear of failure</td>
<td>15 (32%)</td>
<td>5 (42%)</td>
</tr>
<tr>
<td>Mean duration of ED awareness before presentation</td>
<td>22.5 months</td>
<td>19.4 months</td>
</tr>
</tbody>
</table>
P.6.19. ROLE OF NUTRITIONAL FACTOR IN HEALTH STATUS OF THE ELDERLY IN UKRAINE
Y.G. Grigorov, T.M. Semesko, S.G. Koclovskaya (Institute of Gerontology, Vygshgorodskaya str. 67, Kiev 04114, Ukraine)

More than 2000 elderly people, aged 64 to 89 years, residing in urban and rural areas of Ukraine have been examined.

The following parameters were studied: factual nutrition, chewing and taste sensations, anthropometric indices, health indices and blood biochemistry.

It has been found that nutrition of elderly persons differs from that of the young, showing the distinct sex differences.

The level of chewing efficiency and changes in tasteful sensation along with certain environmental factors exert an essential influence on the choice and consumption of separate food products.

The specificities of nutrition of elderly people do influence the change of anthropometric indices such as the height-weight index, lean mass reduction and fat mass increase.

There has been found a relationship between the endogenic and exogenic risk factors promoting the development of age-dependent pathology.

P.6.20. ASSESSMENT OF THE EFFECTS OF REGULAR PHYSICAL EXERCISE IN ELDERLY WOMEN.
E. Deiuri1, C. Mazzi2, A. Cappozzo2, G. Toigo2 (1. Dipartimento di Scienze Cliniche Morfologiche e Tecnologiche, S.C. di Geriatria, Università degli Studi di Trieste, Trieste, Italy; 2. Dipartimento di Scienze del Movimento Umano e dello Sport Istituto Universitario di Scienze Motorie, Roma, Italy)

With the projected growth of the old adult population, preventing or delaying physical disability in later years has become an international goal.

Evidence suggests that physiological decline, especially associated with physical inactivity, is modifiable through proper exercise.

The aim of the study is to evaluate the effects of a regular training on the maintenance of high performance during the third age. This was done by means of physiological and biomechanical parameters recorded during selected motor tasks in strongly physically active elderly women and in a sedentary control group.

Forty healthy female subjects (age 65.93±.53), split into two groups according to their habits regarding physical activity, were involved in the study. Subjects in the first group (41) have always been active, while subjects in the second group (28) underwent a regular (2 times a week) training activity. Each training session lasted one hour and included different exercises aiming at improving balance, flexibility, strength, endurance, and agility.

Health status, depression, cognition, anthropometry, dietary habits, physical activity history, drug use, falls questionnaires, physiological measures (maximal aerobic capacity, energy cost of locomotion, lower limb and trunk maximum isometric strength), and physical performance measures were used [2]. A biomechanical approach [1], based on the use of a forceplate, was also used to assess the two groups motor capacity as associated with the execution of a Sit-To-Stand (STS) motor task.

Results showed differences of about 40% between the sedentary and the active groups (p<0.05), in the maximal strength values (trunk flexion/extension, lower leg right/left flexion/extension), in the Gericci Depression Scale index (1.79 ± 1.23 for W2 and 3.42 ± 2.99 for W1), and in the Mini Mental State Examination (28.75 ± 1.02 for W2 and 27.06 ± 1.63 for W1). In particular, it was possible to describe the different motor strategies used by the two groups by means of biomechanical data measured during STS and their association with the level of upper and lower body strength. No differences were found in the FHI (Fall Handicap Inventory).


P.6.21. ANTHROPOMETRIC AND FUNCTIONAL STAT CHINESE ELDERLY IN A RURAL AREA IN MALAYSIA
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The objective of this study was to assess the anthropometric and functional status of a sample of Chinese elderly in a rural area in Kuala Selangor. Socio-demographic background was obtained through face-to-face interview using a structured questionnaire. Anthropometric measurements were taken using appropriate tools and standard procedures. Instrumental Activities of Daily Living (IADL), cognitive test and physical ability test v performed by the subjects and observed by the researcher. A total of 120 subjects participated in this study, 73% were females and 27% were males. Majority of the subjects (80%) were in the 60 to 74 age group, 28% widowed, 56.4% had completed primary level education, about 1/3 living alone, 49.5% had retired and 76.2% were dependent financially. Based on the anthropometric measurements, subjects in the 65 years old group were heavier and taller (p<0.05) than the older age group. The male subjects were also taller and had bigger circumference than the females (p<0.05), while female subjects had higher circumferences and body mass index (BMI) than the males. Majority of the subjects were able to perform the IADL without help and were significant differences between the male and female subjects ability to perform the task of making phone calls (p<0.05) and handlin (p<0.05). The males had stronger handgrip (26.7±14 kg) than (16.5±4.9 kg). The mean cognitive score were 83±1.2, 6.9±1.9, 1, and females, respectively. There was a significant negative correlation waist circumference and IADL score (r=-0.24, p<0.05). Overall, the differences in some of the anthropometric measurements and function between the male and female subjects and between the younger and older group. With increasing age, there may be decline in some of the fit ability which may affect their nutritional and health status. Th monitoring and periodic assessment may be necessary to identify rura who may be at risk.

P.6.22. DEMENTIA DUE TO VITAMIN B12 DEFICIENCY: HOS BASED STUDY FROM A TERTIARY CARE CENTER IN INDIA
S. Kumar, M. Alexander, C. Gnanamuthu (Neurology Unit, Depar Neurological Sciences, Christian Medical College, Vellore, Tamil Nadu, India)

Objectives: To study the clinical & imaging features and to detect dementia due to Vitamin B12 deficiency.

Methods: Patients presenting with dementia to our Hospital betw and in 2002 were screened for Vitamin B12 deficiency. Those with the features of Vitamin B12 deficiency had a detailed higher mental assessment done at baseline and at follow up. They were treated with injections and folate.

Results: 17 (13 males, 4 females) out of 212 (8%) cases of dementia due to Vitamin B12 deficiency. Average age was 37.6 years (range years). Mean duration of symptoms prior to presentation was 19.1 months. 50% of cases had impaired at concentration and orientation. Immediate recall and new learning ability impaired in all. Frontal and temporal lobe involvement were seen in parietal lobe in 87% of cases. Diagnosis was based on elevated cupular volume, megaloblastic bone marrow and low serum vita levels. Imaging findings (cerebral atrophy and T2W hypertensins lesion non-specific. 80% of patients improved 50% completely, 30% partly mean follow up of 25 months.

Discussion: Vitamin B12 deficiency dementia occurred irrespective sex or geographical distribution. No specific cognitive or imaging abno were seen. Good therapeutic response was seen.

Conclusions: Vitamin B12 deficiency is a common cause of dementia in South India.
P.6.15. HEALING OF HEEL PRESSURE SORES RELATED TO THE NUTRITIONAL STATE IN ELDERLY MALNURISHED PATIENTS (A PRELIMINARY STUDY)
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(1. Centre de gérontologie des Abondances 92100 Boulogne Billancourt. France; 2. Hôpital Sainte Périne 75016 Paris, France)

Introduction: Heels pressure sores are common in the ageing, malnourished with limited movements (armchair/bedridden) patients.

This study aims to evaluate the heels pressure sores healing, related to nutritional status, assessed by the Mini Nutritional Assessment (MNA) and serum albumin levels.

Methods: Ten patients (mean age 85 years), presented heel pressure sores, mean size 12cm2, stage III, according to National Pressure Ulcer Advisory Panes (NPUAP) classification. They were suffering of advanced dementia, and malnutrition. The nutritional status was evaluated with MNA and serum albumin levels at pressure sores appearance and at 4 and 8 weeks later. Tissues aspect and healing surface were regularly evaluated.

Results: Scores of the MNA were <17 points for all patients. Patients were classified in two groups: group A: 4 patients: MNA score >10, serum albumin levels ≥ 26 g/l. Group B: six patients: MNA score ≤ 10, serum albumin levels <26 g/l. At 8 weeks, in group A: heel pressure sore surface was not improved in 3 patients, however, the tissue regeneration process started nearly during the 4 weeks. For the other patient, the wound didn’t change significantly, inspite of slight improvement of the MNA score. In group B: 4 patients present slow improvement of wound (without change in surface) related to higher MNA score. One of the patient died after having the heel pressure scores started to healing. Two patients presented local infection and complication such as osteitis.

Conclusion: Heel pressure sores in malnourished elderly patients can be improved with increasing of the MNA score. Complications of wound are more frequent in patients with very poor nutritional status. At least, the healing of pressure sore is possible in very malnourished patients. Additional research is needed to increase the understanding of the relationship between ulcer healing, nutrition and other factors in elderly malnourished patients.

P.6.16. DIETARY STATUS OF FEMALES IN INDIA
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The study was undertaken to report daily dietary intake of nutrients by the females from age 30-50 years.

The present study was conducted on 400 adult women, belonging to the state of Punjab. The subjects were divided into four five yearly age groups on the basis of their age (Group-I 30-35 years, Group –II 35-40 years, Group-III 40-45 years & Group-IV 45-50 years). Daily dietary record was collected for three consecutive days for all the subjects. Analysis of dietary intake of nutrients and energy expenditure was carried out using Dine Healthy Nutrition Software, USA.

It is concluded from the study that, females gain weight with increase in age. On an average the females especially after the age of 40 years, exhibit greater caloric intake than the younger ones. Analyses of the dietary composition of females reveal a greater amount of fats as well as proteins in their daily diets than the recommended values. All these factors indicate a negative lifestyle lead by them. Middle-aged women are also found to fall short of RDA in their natural sugar consumption, iron and vitamins A & C intakes. In addition to this, they are also found to ingest greater amounts of sodium in their daily diets, making them prone to hypertension. The results, in general indicate a disturbed dietary profile in the females of the present study. The various suggestions for improving this are given in the paper.

P.6.17. EFFECT OF MULTIPLE ANTIOXIDANTS SUPPLEMENTATION ON PROGRESSION AND MANAGEMENT OF PARKINSON’S DISEASE
P. Kaan1, A.P. Garg2, M. Behari3, S. Vivekanandh4 (All India In. Medical Sciences, New Delhi, India 1.; Prof & Head Dept. of Micro. C.G.S. University, Meerut 2.; Prof & Head Dept. of Neurology, i. Institute of Medical Sciences 3.; New Delhi, Central Lab Faculty, C.N. All India Institute of Medical Sciences, New Delhi, India 4.)

Objective: To study the effect of anti-oxidative compounds on pr and management of Parkinson’s disease (PD).

Design: An open randomized controlled trial.

Setting: The study was conducted the neurology clinic of All India of Medical Sciences, New Delhi, India.

Subjects: A total of 125 subjects were randomly selected out of patients either declined or dropped out.

Interventions: 90 PD patients were assigned randomly either to the control group. Coenzyme Q10+90mg, Vitamin C-250mg & E-200 IU/ administered to the case group for six months duration and anthropometric measurements were assessed at the beginning of the six months in both the groups.

Results: Difference in the total carbohydrate, protein and fat intake end of sixth month was found to be extremely statistically significant 0.001. Unified Parkinson’s disease rating scale (UPDRS) total score patients in the case group depicted slight decrease in total UPDRS sco 29.17 + 14.01 at baseline to 24.58 + 14.32 but the scores were not for statistically significant (p > 0.05).

Conclusions: It is reasonable to expect that multiple anti supplementation in PD patients should be able to prevent disease pro However, large-scale clinical trials are required to confirm these trials determine the exact dosages that are likely to be effective.

P.6.18. THE SOCIAL AND HEALTH PROFILE OF 820 ELDERLY MALAYS IN FOUR RURAL DISTRICTS IN MALAYSIA
F. Arshad (Dept. of Nutrition and Dietetics, FAHS, UKM, Kuala Malaysia)

A total of 820 elderly Malays aged between 60-97 years both r female were involved in a study to determine the health and nutrition the elderly. The four rural districts are Sabak Bernam, Selangor; Klu Kegeri Sembilan; Pasir Mas, Kelantan and Kodiang, Kedah. There were males (52.8%) and 387 females (47.2%) recruited for the study. Th elderly aged 60-74 years comprised of 64.5% whereas the old elderly n 75 years were 35.5%. The mean age is 69.0 ± 6.75 years and age range years. The anthropometric measurements showed that about half of the 395 (49.0%) are within normal weight range. Whereas 291 (36.1%) a 120 (14.9%) are underweight. 68.4% of the subjects are still living their spouses. Another 31.1% are widowed. Among the total subject: about 36.5% of them stayed with their children indicating that the pr extended family is still prevalent in the rural areas. About 90 elder alone. The majority 74 (82.2%) are female. This indicate that female are independent. More than half of the male elderly (58.8%) working such as farming, fisherwoman, security guards and busin Meanwhile there are only 13.8% of the female elderly who are wo farmers and doing odd jobs. The rest are housewives. The overall heal of the rural elderly Malays are quite well. About one third (32.7%) of hypertensive with treatment and 29.6% are diagnosed with gout or Very few of them are anemic (2.9%). There are more hypotensive 35.1% as compared to the males (34.1%). The other chronic diseases are respiratory diseases 14.%, diabetes mellitus 11.7%, gastrointestin chronic heart disease 8.4% and renal complications 3.4%. The health behaviour of the elderly are quite positive whereby 535 (65.2%) favours treatments from hospital and health clinics. Only a small n them 20.5% seek help from pharmacists, Malay traditional practitioners and Chinese medicine (2.9%). 131 (16.0%) from the total subjects having personal problem and depression. The majority of them are men (58%) and 55 (42%) males. There are still about 89 (10.9%) subjects not interested in community participation especially the females (75.7% prevalence of smoking is quite low 25.9%. The majority are male subj detail information will be presented in the main paper.
Figure 1
Individual values of RPCr in community-living (COM) and hospitalised older subjects (HOSP)

In conclusion, the differences in PCR recovery rates between hospitalised and community-living older people can not be explained by changes in nutritional evaluation.

P.6.11. THE LOSS OF AUTONOMY FOR INSTRUMENTAL ACTIVITIES OF DAILY LIVING IN ALZHEIMER’S DISEASE PATIENTS. EVOLUTIONARY STUDY OF THE FRENCH REAL.FR COHORT

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Introduction: Alzheimer’s disease is characterized by a loss of autonomy for activities of daily living (ADL). Progressive characteristics and different profiles of the loss of autonomy are today unknown. The aim of our study was to search, in a French cohort of Alzheimer’s disease (AD) patients (REAL.FR), one or more leading profiles of this loss of autonomy of ADL, analysing progressive data of this cohort. Materials and methods: We studied the autonomy for 8 instrumental ADL called “common” (IADLCe) evaluated by the latest items of IADL scale of Lawton. Each activity were quoted 0 (dependence) or 1 (autonomy) according to Lawton. Groups of patients were made according of the value of IADLCe and the analysis of the loosed items made. This analysis were realized with data of initial, 6 months an 1 year evaluations. Results: 694 patients were included between April 2000 and June 2002. the analysis of IADLCe were available for 471 women. When the sum varied of 8 to 0, Mini-Mental and IADL scores declined. Incapacity for ADL appeared in some order. This progression were found with data of 6 months and 1 year evaluation. Conclusion: Decline of autonomy for ADL observed in this cohort fitted a leading profile. A late evaluative study of the loss of autonomy of this patients will help to analyse the decline for the less autonomous patients.

P.6.12. CHARACTERISTICS OF ALZHEIMER’S PATIENTS WITH A STRONGLY LOSS OF AUTONOMY FOR ACTIVITIES OF THE DAILY LIVING. REAL.FR FRENCH COHORT STUDY

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The loss of autonomy for activities of daily living (ADL) is one of the more important consequence of Alzheimer’s disease and cause a major cost.

We studied characteristics of the patients of the French REAL.FR cohort (n=493) for which the loss of autonomy for ADL at 1 year of evolution were the more important, with a decline of the ADL score (Katz) were 1.5 or more.

Patients were included (mean age = 77.3 years ± 7.0) between 2000 and 2002, with a MMS score (Mini-Mental State) between 10 and 26. At initial visit, the 91 patients with the strongest loss of autonomy were not different, nor for the age, nor for the proportion of patient’s who live alone, nor for the sex ratio. These 91 patients had a lower initial ADL score than the other patients (5.3 versus 5.6). The Zarit scale (burden) were higher for these patie versus 20.8). At last, behavioural symptoms (NPI, Neuropsychiatric In were more frequent (19.6 versus 14.3). Monopodal station for 5 seco impossible for 46% of these patients (versus 28%) and the MNA sco Nutritional Assessment) were lower than for the other patients (23, 24.3).

In this cohort, the patients with cognitive and behavioural disturb: the strongest loss of autonomy for ADL. Evaluation of nutritional st monopodal station for 5 seconds might facilitate to spot these v patients.

P.6.13. EVOLUTIONARY CHARACTERISTICS OF 266 PA WITH ALZHEIMER’S DISEASE 80 YEARS OR MORE AGED. OF THE FRENCH REAL.FR COHORT

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Alzheimer’s octogenerians patients represent 2/3 of Alzheimer’s They are also very frail. Evolutionary characteristics of these pati unknown.

We compared characteristics of octogenerians patients with younger of the French REAL.FR cohort. Patients were included between 2002. The MMS (Mini-Mental State) were scored between 10 and 2670 patients were octogeners. The initial autonomy for activities of Living, evaluated with the ADL scale (Katz) and the IADL scale (I were lower in octogeners. The MMS score were also lower and g symptoms were more frequent (23% versus 17%). Monopodal stati seconds were impossible in more octogeners than in younger patient versus 10%). Octogeners lived alone more frequently and were les with anticholinesterasic drugs (74% versus 80%). Data at 1 ye characterized by a loss of autonomy more important in octogeners other hand, the decline of cognitive functions and the evolution of bel symptoms were similar in the 2 groups of patients.

Very elderly Alzheimer’s patients were characterized by a mon autonomy for activities of the Daily Living than younger patients with cognitive decline. Further studies will be able to determine other factor of autonomy, to aim at more effective interventions for very elderly pat

P.6.14. EFFECTS OF A SPECIAL DIET ON THE NUTRIT STATUS IN ELDERLY ALZHEIMER’S SUBJECTS SPECIALIZED CARE UNIT: A SIX-MONTHS STUDY

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Elderly subjects with Alzheimer’s disease are particularly ex protein-energetic malnutrition with many severe consequences or mortality. Among Alzheimer’s patients, the prevalence of malnutrition high, even in institution. The aim of this study was to assess a nutritional intervention to improve or maintain the nutritional institutionalized Alzheimer subjects.

This study was carried out in an Alzheimer specialized care unit. Twelve subjects have been included.

The nutritional intervention was consisting in a high energy and pro without use of nutritional supplements. We used anthropo criteria(weight, Body Mass Index, mild-arm circumference, shank six skinfold thickness), biochemical criteria(albumin, prealbumin, C-protein) and the MNA to assess the nutritional status. The mesure were performed monthly during six months.

Twelve subjects were included in this study. The analysis of criteri Newman-Keuls test) showed a significant increase of the weight, t Mass Index and the triceps skinfold thickness. The prealbumin and levels also increased without reaching the level of significance.

In conclusion, our results suggest that a high energy and protein diet nutritional supplements can improve or maintain the nutritional institutionalized elderly Alzheimer’s patients.
P.6.8. WEIGHT LOSS AND CHOLINESTERASE INHIBITORS IN ALZHEIMER’S DISEASE. THE REAL.FR STUDY  
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Background: Several epidemiologic studies have indicated an association between Alzheimer’s Disease (AD) and weight loss. Some hypotheses have been proposed to explain it (eg. atrophy of the mesial temporal cortex, biological disturbances, ...); however, none has been proven. We currently wonder about the nature of the association between weight loss and cholinesterase inhibitors (ChEIs). An increased incidence of weight loss is reported in patients being treated with higher doses of ChEIs compared to placebo patients in several clinical trials. The proportion of patients losing weight is extremely variable from one study to another and further analysis are necessary to be able to conclude about this association.  

Objective: The present study explores the association between significantly clinical weight loss and ChEIs using data collected in a French prospective multicentric study of AD patients.  

Participants: 692 AD patients (NINCDS-ADRDA and DSMIV criteria) were initially recruited between 2000 and 2002 in 16 french departments of neurology, geriatrics or psychiatry within the REAL.FR study. Hereafter they are presented the data of 486 AD patients that we followed during one year (initial mean age : 77.3 ± 7.7 years ; initial mean MMS score : 20.3 ± 4.2).  

Measure: A comprehensive geriatric and neuropsychological assessment was conducted 6 monthly. The cholinergic treatment use (ie : an acetylcholinesterase inhibitor with indication of the drug name and the last daily dose) was collected on each visit as well as the concomitant medication in relation with dementia, psychotropic and other concomitant medication. We defined clinically significant weight loss as 4% or more of the subject’s initial weight based on the last measured weight. The data were initially evaluated categorically to identify those who had lost ≥ 4 % of their initial weight or stayed the same. To further determine the significance of clinically important weight loss, the presence of a 4% weight loss was the variable selected for bivariate analysis. Our results were compared with data collected among 311 AD patients, which have been followed during one year in the Elsa study upon a similar protocol used in Real.fr. Elsa is a prospective study of AD patients who took place in Toulouse in 1994.  

Results: 89% of AD patients were treated with ChEIs during the first year of the follow-up (that’s to say three consecutive exposures). Twenty one percent of the subjects (n=102) underwent a clinically significant weight loss during this period. The frequency of weight loss was similar that AD patients were treated with ChEIs or not (respectively 21.1 and 19.5 %, p=0.81). As compared with the REAL.FR study, the percentage of subjects losing weight during one year was significantly higher in the Elsa study (21% in REAL.FR study vs 31.4 % in ELSA study, p=0.0011). In this study, only 15.8% of the subjects were treated by ChEIs at three consecutive exposures. In this cohort, we found a significant decrease of weight loss among patients regularly exposed to ChEIs (three consecutive exposures : 18.7%) compared to the untreated patients (33.9%) (p=0.0053).  

Conclusions: ChEIs have proven to be the most effective class of medication for improving cognitive function and activities of daily living in AD patients. The occurrence of weight loss may influence the decision to continue or stop the medication. In our study, we did not found a positive association between weight loss and exposure to ChEIs as suggested in several randomised clinical trials. Data from the Elsa study also showed that patients being treated with ChEIs would lose less weight. Our results suggest that ChEIs may improve general health status of AD patients by reducing nutritional disorders especially weight loss. It is probably another consequence of the beneficial effect of ChEIs on AD but also of the whole care improvement of the patients in relation with the knowledge of the disease from the hospital workers and caregivers.  

P.6.9. EFFECT OF A WHOLE FORMULA DIET ON NUTRIENT STATUS IN PATIENTS WITH ALZHEIMER DISEASE  

Introduction: To evaluate the effect of a whole formula diet on ni and cognitive status in 56 Alzheimer’s Disease patients with a Pfeiffer and losso5% of body weight, during last year.  

Methods: Randomly, patients received a whole formula diet based o lyophilised foods (Study-group, n=24) or nutritional advice (Contr. n=29). Energy and macronutrient intake; body weight and MNA ass biochemical parameters and Pfeiffer test were determined at baseline months of treatment.  

Results: No significant differences at baseline in age, gender, BM variable measured were observed between groups. A similar rate of adverse events (hospitalisation or death) was observed in both g: patients in Control-group vs 6 in Study-group, p=NS). A trend to energy intake in Study-group and to decrease in Control-group was s without significant differences. Score improvement in MNA and Pfei was higher in the Intervention-group but not significantly. Mean body increased by 2.06±1.9 kg in the Intervention-group and by 0.32±0.3 kg /Control-group (p=0.007). Similarly, the Study-group showed higher in albumin (3.7± 5.0 mg/dL vs 1.1± 5.7 mg/dL, p=0.07), haemoglobin g/dL vs –0.2±0.9 g/dL(p=0.002) and serum ferritin (25.4±35.5 vs 8.6±9.8 g/dL, p=0.009) compared to Control-group.  

Discussion: According to our results nutritional intervention commercial whole formula diet based on natural lyophilised foot- positive impact on nutritional status. The great diversity in textures a offered by these formulations allows their administration to a wide patients either with or without liquid dysphagia.  

P.6.10. THE RATE OF MUSCLE PHOSPHOCREATINE RECOVERY UNRELATED TO NUTRITIONAL EVALUATION IN HOSPIT. OR COMMUNITY-LIVING OLDER PEOPLE  
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The muscle mitochondrial function in vivo could be investigated u NMR spectroscopy. The rate of post-exercise phosphocreatine recovery (mS) is used for evaluation of muscle oxidative capacities. Physical increases these capacities and the effect of ageing is debated. Hospit and malnutrition are associated with decrease muscle strength and alte functional autonomy. We have here investigated RPC in 24 older hos subjects (HOSP: 8 men, mean age 86.9y, sd 6.3) after clinical stabil 26 community-living older volunteers (COM: 5 men, aged 75.5y. The subjects were described for BMI, serum albumin, haemoglobin, recent weight loss, handgrip-strength, and 10-meter walking time at us HOSP patients were all autonomous for walking before hospitalisati subjects were younger, had higher handgrip strength, higher serum haemoglobin concentrations and tended to have higher BMI than hos subjects. Six additional HOSP patients have been unsuccessfully exp to inability to deplete sufficient amount of PCR during exercise. RPC from 0.170 to 0.669 mS in COM (mean 0.39 mS, sd 0.13) and fr 0.409 mS in HOSP (mean 0.20 mS, sd 0.11, p<0.0001). The R significantly lower in HOSP than in COM (figure). There was no effe sex on RPC. In each group no relation has been found between R BMI, handgrip strength, weight loss, serum albumin, haemoglobin or time.
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P.6.4. SOCIAL DETERMINANTS OF FOOD PROVISIONING AMONG FRENCH ELDERLY : TOWARDS A TYPOLOGY OF CONSUMERS
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Until now, at least in food studies, the category of “elderly people” was more often considered as a whole, opposed to younger people. The heterogeneity of food habits and practices among the elderly was neglected. Our sociological investigation makes it possible to approach in more details the socio-demographic determinants which influence the elderly alimentary practices and to highlight their diversity. Using data from a statistical survey on 800 French households with at least one person over 60 years old, in free-living situations, we first present the most striking global results: region of habitation and socioeconomic status are the main determinants of food consumption. We then use a factorial analysis to show the large categories of households which behave in a similar manner in terms of food purchase and to reveal their social characteristics. This analysis allows us to distinguish three types of consumers, according to the products and the quantities they purchase, to their shopping practices and to the diversity of items in their food basket. We then characterize those three types in terms of age group, past professional occupation, region of habitation, household composition, and help for food provisioning.

P.6.5. EFFECTS OF FERMENTED MILK WITH LACTOCOCCUS LACTIS SUBSP. CREMORIS FC ON DEFECATION FREQUENCY, FECAL MICROFLORA AND IMMUNE SYSTEM IN HEALTHY ELDERLY VOLUNTEERS
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Caspian Sea Yogurt, viscous fermented milk with L. lactis subsp. cremoris, has become popular in Japan. Since its health effect was not studied in men, the fermented-milk L. lactis subsp. cremoris FC was tested for the effects on defecation frequency, fecal microflora and immune system in healthy elderly volunteers.

70 volunteers aged in average, 67.3 ± 4.2 and 66.9 ± 5.3 years in males and females, were randomized into 2 groups for double-blind placebo-controlled crossover study. 150 g of fermented milk drink containing 20% soybean milk (1.5 x 10^{-7} - 2.9 x 10^{10} CFU/g) of L. lactis subsp. cremoris FC, and 3.1 x 10^{-7} - 5.0 x 10^{10} CFU/g of Streptococcus salivarius subsp. thermophillus) or 150 g of fermented products without L. lactis subsp. cremoris FC were consumed daily for 1 month test and control periods, between which there was 1 month washout period. The defecation frequency and fecal characteristics were observed during these test, control and washout periods. The fecal microflora, ammonia concentration were examined in 9 subjects, and NK cell activities and immunoglobulin levels were determined.

The volume of defecation was significantly increased 2 weeks after the administration in both groups. The frequency and number of days of defecation were significantly increased only in the test group. The fecal shape and color were improved in both groups particularly in constive subjects. The ratio of Bifidobacteria to total bacteria significantly increased and the number frequency of occurrence of Clostridium perfringens decreased in the test group, but there was no change in the control group. The fecal ammonia concentration decreased in the test group. The NK-cell activity significantly increased groups, and IgE level significantly decreased only in the test group.

P.6.6. MNA RELATED TO ENERGY INTAKE IN ELDEI SWEDISH SHELTERED HOUSING
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Background - The Mini Nutritional Assessment (MNA) has been in many settings, but few studies have been reported on MNA related t intake (EI) in frail elderly living in sheltered housing (SH).

Objective - To study the correlation of MNA to EI in frail elderly SH.

Results - The mean EI in the elderly classified as well nourished (1 1579 kcal for women and 2153 for men, for the elderly at risk of mal (58%) 1633 kcal for women and 1915 for men, and for the elderly Clarke malnourished (28%) 1496 kcal for women and 1879 for men (p=0.03 for men). The EI in kcal/kg bodyweight (BW) reversed figures; for elderly women 25, 27 and 30 respectively (p=0.04 elderly men 29, 26 and 30 respectively (p=0.06).

Conclusion - The results showed a weaker correlation between classification and EI of frail elderly in SH than earlier presented rest other studies. Furthermore the EI by kcal/kg BW showed that the main frail elderly are getting a higher EI per kg BW than the elderly satisfactorily MNA score. These results indicate non-individualized car all residents are served the same amount of food.

P.6.7. IMPROVEMENT OF WEIGHT AND FAT-FREE MASS ORAL NUTRITIONAL SUPPLEMENTS IN ALZHEIMER’S D PATIENTS AT RISK OF MALNUTRITION: A PROSPECT RANDOMIZED STUDY
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Objectives: To study the effects of oral nutritional supplements weight, body composition, nutritional status and cognition in Alzheimer’s disease patients (AD).

Design: Prospective controlled randomized study.

Setting: Geriatric wards and day care centres in the Toulouse area, F Participants: Ninety-one AD subjects, aged 65 and older at undernutrition as evaluated by the Mini Nutritional Assessment.

Intervention: After randomization, 46 patients (intervention group) 3-month oral nutritional supplementation. The other 45 patients (control received usual care. MEASUREMENTS: Weight, body composition (c by dual energy x-ray absorptiometry), cognitive function, activities living, eating behavior and dietary intakes were evaluated at the begi the study (T0), at 3 months (T3) and 6 months (T6). Supplement co was recorded each day.

Results: Between T0 and T3, energy and protein intakes sign improved in the intervention group, resulting in a significant increase i and fat-free mass. However, no significant changes were found for dep cognitive function or biological markers. The nutritional ben maintained in the intervention group after discontinuation of oral sup at T3.

Conclusion: Three-month daily oral supplementation significantly i body weight. It is practicable, effective, and was well accepted by our The improvement observed even in the control group showed that c education is an important factor in maintaining the nutritional status patients. Moreover, regular courses of oral supplements may help to the increase in fat-free mass and improve the nutritional status of these
exclusively dement, an architectural available, a person experienced, a specific plan of care...
The main goals of this unit are the following: neurodegenerative diseases diagnosis, treatment and follow-up; social-caring, family and caregivers forming and clinical research.
This unit can accommodate much more demented patients living in nursing home residence every year.
Setting: An acute care unit for Alzheimer patients in a teaching hospital.
Objective: To identify the nutritional status patients living in nursing home and admitted in this special care unit, comparing their characteristics to patients coming from home and hospitalized in this unit too.
Patients and method: We selected 147 demented patients institutionalized and hospitalized in this specific care unit between the 01/01/02 and the 31/12/03. We also randomized 147 demented patients living at home. Using bivariate analysis, we compared data relating to patients who were living in nursing home with data of patients living at home. Comparison was based on the standar gerontological evaluation of each patient carried out at the time of admission. Multivariate analysis was the carried out take into account potential confounding factors.
Results: In the bivariate analysis, the institutionalized patients appear to be older (p = 0.0089), predominantly women. The most frequent hospitalization reasons were behavioral problems (p= 0.0273), altered general status (p=0.0006), and intercurrent pathologies (p=0.0012).
The biological tests were significantly more affected (p= 0.0010). The institutionalized patients also appeared to be more dependent (ADL scale) (p<0.0001), with more splinter dysfunction (p=0.0001). Cognitive impairment is on average more important (MMSE) (p=0.0135).
Concerning nutritional status, those patients have a lower food supply (p=0.0183), a lower albumin index (p=0.0093), a lower body weight (p=0.0001), and a more precarious nutritional status (MNA) (p=0.0493). The risk of pressure sores (Norton scale) is higher (p=0.0001). Multivariate analysis is still in progress.
Conclusions: The demented institutionalized patients are at a later stage of their disease, and they are more dependent and more fragile. Their nutritional profile is overall more affected than home living patients. Therefore, a specific management in nursing home residence is essential to prevent complications inherent in their precarious nutritional status.

**P6.2: EffecT of a Nutrition SuppleMenTatioN ResISTence TRAIINING oN boNe HeALTb IN CH ELDERLY wITH FEmORAL osteOPOROSIS**

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Background: Nutritional factors may influence bone mineralization. Isoflavones, vitamin D, vitamin K and proteins may increase mineral density as well as resistance training. Aim: To study the effect of the special nutritional supplement and resistance training on bone miner and bone turnover markers in Chilean elderly subjects with osteoporosis. Patients and methods: Free living elderly subjects with osteoporosis were randomized to receive the usual nutritional supplement provided by the Chilean government or a special nutritional supplement providing, among other nutrients, 90 mg isoflavones, 800 mg calcium vitamin D, 60 ug vitamin K and 31 g proteins per day. The subje further randomized to participate in a resistance training exercise program baseline, six- and twelve-months after start of treatment, body core bone mineral density, serum 1,25 OH vitamin D, intact parathyroid (iPTH), osteocalcin, decarboxylated osteocalcin, urinary amino peptide of type I collagen (NTX) and deoxypyridinoline cross link were measured. Every month, urinary daidzein and genistein were measured in a morning urine sample. Results: No differences between treated groups were observed for changes in body composition or bone mineral However subjects in the upper quartile of urinary daidzein ex throughout the year of follow up, had a significant increase of 5.7 ± 0.17 femur bone mineral density compared with a 0.64 ± 4.4 gain in the re subjects. The group supplemented with the special supplement had a si increase in serum 1-25 OH vitamin D and a significant decrease in se and decarboxylated osteocalcin. No effect of exercise was observed of Conclusions: Femur bone mineral density improved in osteoporotic subjects receiving a special supplement.

**P6.3: WAIST CIRCUmFERENCE, WAIST-HIP RatiO PERCENTAGE OF boDY FAIT: THEIR ASSOCIATION WITH PRESSURE IN BAHRAINI OLDER ADULTS**

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Background: Fat distribution, as well as total body fat, is a major risk for the development of diet related diseases in adults. However there less research on this area in older adults. Objective: The nutritional at status of a nationally representative sample of 800 Bahraini adults years and above was examined in a cross-sectional survey. The obp this part of the study were to assess adiposity using percentage of (overall adiposity), waist-hip ratio (WHR) and waist circumference indicators of central obesity) and to assess their association with Hype Design: Data collected included blood pressure and diagnosed hype waist and hip circumferences (used to calculate WHR) and thic
P.5.4. DESCRIPTIVE DATA ON LIFESTYLE, ANTHROPOMETRIC STATUS AND COGNITIVE IMPAIRMENT IN AN ITALIAN ELDERLY POPULATION


In order to recruit the subjects for the European ZENITH study “Zinc effects on nutrient/nutrient interactions and trends in health and ageing” we have selected 362 volunteers (168 men and 194 women) aged between 70 and 85 years, free-living in Rome.

Each subject underwent a full clinical examination which included a detailed medical and surgical history, concomitant use of medication, the measurement of blood pressure, heart rate frequency, anthropometric measurements (height, weight). A semi-structured questionnaire was administered to each subject on demographic data, educational level, smoking habits, alcohol consumption and physical activity. Cognitive impairment and depression were undertaken by the Mini Mental State Examination (MMSE) and 15-items Geriatric Depression Scale (GDS). Full blood profile and liver and kidney function tests have been performed on a sub-sample of 192 subjects (89 men and 103 women).

The prevalence of overweight and obesity was high (men: 55% overweight and 22% obese; women: 43 % overweight and 27% obese). Only 4 females were underweight. Although the sample was selected by family doctors and it was apparently healthy, after the medical screening we observe the presence of several pathologies (especially diabetes) in 24% of males and 19% of female. MMSE questionnaire showed the prevalence of cognitive impairment (about 6% of subjects had a MMSE score <23). GDS indicated that 13% of subjects had a possible mild depression (GDS score between 6-10), while 2% had a severe depression (GDS scores>11). Physical activity levels were low overall. Men were more active in recreational activities than women, but women were more active in household activities. Most of time was spent in light activities such reading, watching TV or playing cards.

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P.5.5. DIETARY FAT INTAKE AT MIDLIFE AND THE RISK OF LATE-LIFE DEMENTIA: A POPULATION-BASED STUDY

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Background: Vascular risk factors have been linked to dementia and Alzheimer’s disease (AD), but the role of dietary fats in the development of dementia is less clear. The few earlier studies on this issue have had relatively short follow-up times and yielded conflicting results.

Objectives: To investigate the association between midlife dietary fat intake and late-life dementia and the possible effect modification of this association by apolipoprotein E (ApoE) genotype.

Methods: Participants were derived from random, population-based studied in 1972, 1977, 1982 or 1987 (the North Karelia Proj FINMONICA study). Fat intake was assessed using a structured ques and an interview. After an average follow-up time of 21 years, 144 individuals aged 65-79 years participated in the examination in 1998. Results: There was a U-shaped relationship between midlife total (1) and late-life dementia (n = 117, 65% diagnosed with AD). The pers used no or very little spreads (OR 1.7, 95% CI 1.1-2.7), and large amounts (OR 1.6, 1.0-2.6) had increased risks of dementia compared to moderate users. Persons with late-life dementia had used proportionally more spreads with saturated fats and less monounsaturated fats than those without dementia (p = 0.035). Accordingly, higher intake of saturated fat was associated with an increased risk of dementia compared to lower intakes after several adjustments (OR 2.2, 1.0-4.8). In contrast, moderate intake of monounsaturated fats decreased the risk of dementia (OR 0.47, 0. compared to low intake. These associations were significant only among ApoE e4 carriers.

Conclusions: Dietary fat intake at midlife is related to late-life dementia; high intake of saturated fats increases the risk whereas moderate intake of monounsaturated fats is protective, especially among the ApoE e4 carriers. Thus, dietary interventions may modify the risk of dementia, par among genetically susceptible individuals.

P.5.6. COGNITIVE IMPAIRMENT, BODY COMPOSITION POSTURAL BALANCE

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Background: A continuum between memory complaint, cognitive and dementia may exist (1). A mnemonic complaint is an indicator of intellectual decomposition, to develop the Alzheimer’s disease, independent the memory test’s performance. Some studies showed that cogni memory impairment is associated with a change of body composition postural balance. It has also been observed that Alzheimer patients weight loss(2), a and balance disorders(2)(3).

Objectives: To test the potential association between cognitive impairment postural balance and body composition in the Guideau study.

Methods: The Guideau study will include, between March 2002 2004, about 2400 patients aged 75 and more, complaining of memory d It is a multi-center, randomized, in double-blind and placebo-control This study test the efficacy of Eg 761, 120 mg, twice per day, during about the appearance of a dementia type Alzheimer; versus placebo patients are re-examined every year. About 200 men and women from will be tested in the present study.

The population is assessed using many cognitive tests (DSM-IV, ADRDA, Grober and Buschke test, trail making test, verbal fluency test, IADL, and depression), the DEXA to estimate body composition poststructural measures with SATEL (wait, static and dynamic balance)


P.5.7. NUTRITIONAL STATUS OF DEMENTED PATIENTS IN NURSING HOME RESIDENCE AND HOSPITALIZE ALZHEIMER’S SPECIAL CARE UNIT

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Alzheimer’s special care units were created in order to improve management of demented patients. The Alzheimer’s Acute Care Toulouse University Hospital meets the criteria defining such unit:

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But de l’étude : Les Haut de Seine ont porté un lourd tribut aux conséquences catastrophiques liées à la canicule (+ 161% de décès). Le But de l’étude est de savoir quand les patients sont surtout décédés. Si les symptômes liés à l’hypothermie sont ceux classiquement décrits dans la littérature chez les personnes âgées institutionalisées. Quelle typologie de patients ou profil? a été le plus touché? Si l’âge dans l’extrême intervient dans le nombre des décès.

C’est pourquoi 4 établissements de Long-séjour et Maison de retraite médicalisés du département ont participé à cette enquête essentiellement tournée vers les institutions publiques du 92.

Conclusion : Le les établissements des hauts-de-Seine prennent en charge des patients très âgés (51% de 90 ans et plus) et très dépendants (89.5% de GIR 1,2 et 3)

Le maximum des décès ont eu lieu comme l’enquête INSERM nationale entre le 11, 12 et 13 Août 2003

Les très " vieux " n’ont pas eu un surcroît de décès dans notre étude par rapport aux " plus jeunes vieux ". Ce sont plutôt les déments décédés qui étaient les moins sujets à l’hypothermie selon la définition classique par rapport aux autres patients. Les déments (67 des% patients) étaient sensibles surtout à la déshydratation entraînant le décès. Il est observé une implication directe entre le nombre de déshydratés et le nombre de soignants La rareté du personnel soignant à disposition doit faire réfléchir sur les moyens notamment financiers, stratégiques, humains- et de coopération entre les différents intervenants à mettre à disposition du résident fragile, polyvalent, dément, notamment déambulant? Ainsi que pour les plus dépendants physiquement aussi, afin de mieux faire face à de telles tragédies climatiques et environnementales.

P5.: Alzheimer

P.5.1. NUTRITIONAL AND FUNCTIONAL STATUS AMONG ALZHEIMER’S DISEASE PATIENTS

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A total of 26 Alzheimer’s Disease (AD) patients (11 men, 15 women) aged between 50 to 86 years old selected from the outpatient clinic of Psychiatric Clinic, Hospital Sultanah Aminah, Johor Bahru were assessed for their nutritional and functional status. These assessments were compared to measurements from 26 controls (without AD) (matched for age, sex and ethnic) selected from housing areas in Johor Bahru and Pontian. Information on social and health status were obtained using and interviewed based questionnaire with the subjects and their caregivers. Anthropometric measurements and food consumption were also assessed. Results showed that the controls were more at risk of overweight (46.2%) and underweight (19.2%) as compared to the cases (23.1% and 7.7%, respectively). There were no significant differences in nutrient intake in both groups for all nutrients, except for potassium, with the controls had a higher intake (p<0.05).

Most of the nutrients consumed by both groups met the Malaysian RDA, with exceptions for energy and niacin among men in the cases, niacin in women and thiamin among women in the control group. Control subjects obtained a higher score in ADL and IADL as compared to the cases (p<0.05).

The AD stage correlated negatively with ADL (r = -0.603, p < 0.01) and IADL (r = -0.471, p < 0.05), but positively with BMI (r = 0.417, p < 0.05). Duration of AD correlated positively with % body fat (r = 0.406, p < 0.05) and lean body mass (r = 0.446, p < 0.05).

However, more cases had experienced weight changes as compared to the controls. In conclusion, it is important for AD’s patient to consume a nutritious diet and obtain good functional status in order to minimize undesirable outcome related to poor nutritional and functional status.

P.5.2. DEMENTIA AND NUTRITION

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Introduction: Malnutrition is common in hospitalized patient demonstrated that late stages of dementia are associated with an increase of weight loss and subsequent higher mortality rate, but adequate advancedly demented patients can prevent malnutrition.

Objectives: Aim the study was to evaluate nutritional status in patients with advanced dementia admitted on acute hospital ward or to a Hospital Home Service (GHHS).

Methods: A Geriatric Home Hospitalization Service (GHHS) 1 operating in Torino at S. Giovanni Battista Hospital since 1985. GHHS includes geriatricians, nurses, physiotherapists, dieticians, social counselors.

In our study we examined a sample of 109 elderly patients with dementia requiring medical and nursing care for acute illnesses: 56 were randomly assigned to GHHS and 53 to General Medical Ward (GI).

The study protocol included: demographic character, disease duration/year/severity of dementia, social background, nutritional functional/cognitive status, primary diagnosis, com complications, mortality, length of stay.

Results: Patients were 83.5 years old, on average 66.1% were female patients had a severe degree of dementia (CDR mean score: 3) Malnutrition was the main reason for hospitalization in about 17% of all in both groups. Nutritional parameters, cause of admission, complementary functional and cognitive status on admission and length of stay significantly different in the two groups. Problems with food intake acute care period were showed by 23.9% of demented patients (3 GMW, 8.9% in GHHS; p<0.001).

Nutritional parameters on discharge improved in both groups but more evidently in the GHHS groups.

Conclusions: Home Hospital can represent an alternative to hospital severely demented patients. Our study showed that an appropriate nursing and counselling support at home can reduce problems with food and help to improve nutritional parameters.

P.5.3. A 1 YEAR PROSPECTIVE STUDY ON THE CHANGING NUTRITIONAL STATUS IN 498 PATIENTS. THE REAL.FR STI.

F. Cortes, S Gillette-Guyonnet, C. Cantet, B. Vellas and the R group (France).

Background: Alzheimer’s disease (AD) is a major problem of public health. Many complications occurred during its evolution such as weight loss contribute to the worsening of the disease. A better knowledge of the history of AD and its complications, especially nutritional disorders necessary in order to improve the care given to the patients.

Objectives: To study the evolution of cognitive and non cognitive parameters and particularly nutritional status in a population of 498 AD followed during one year.

Methods and subjects: 498 AD subjects (mean age:77.21 ± 6.91 years MMSE score: 20.32 ± 4.16 points) were recruited from the cohort Real.fr is a French prospective multicentre study of AD patients with duration sample was conducted in 46 months. Each visit, the recourse and use of treatments for AD (Acetyl-Choline Esterase Inhibitors, AChEI) were noted. The evolution of body weight was studied during the one year as well as the nutritional status assessed using the MNA. Social parameters and the burden of AD measured by the Zarit scale were also assessed.

Results: As expected, after a year follow-up we observed a significant improvement of the disease with a significant reduction of the MMS score (3.74, p<0.0001) measuring the cognitive function, a significant improvement in the ADL and IADL scales (0.56 ± 0.105 point ADL, p<0.0001, - 0.96 ± 1.56 for the IADL daily maintenance, p<0.0001 and a 1.46 for the IADL activities, p<0.0001) and a significant increase of the NPI score (+1.38 ± 1.69 points, p<0.0001 ) an evaluation of the burden of care. Interestingly most of the patients (86%) were under AChEI during all the year. Mean body weight remained stable (0.01 ± 0.081) during the period of the study and 20 % of the subjects had significant loss of weight (∆% 4%). At baseline, 31.72 % of the subject-
P.4.9. VALIDATION OF MALNUTRITION RISK SCREENING TOOL IN IDENTIFYING MALNUTRITION AMONG HOSPITALISED GERIATRIC PATIENTS IN UNIVERSITY MALAYA MEDICAL CENTRE

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Nutritional screening is essential for early intervention and thus reduce morbidity and health care cost. A Malnutrition Risk Screening Tool (MRST) has been developed and validated for identifying of elderly individual at risk of malnutrition in the community. However, it’s validity for usage among hospitalised elderly people is yet to be assessed. The aim of this study is to validate a MRST in detecting high risk hospitalised geriatric patients for malnutrition. A cross sectional study was carried out among hospitalized elderly patients from Geriatric Ward 13, University Malaya Medical Centre (UMMC). A total of 181 newly admitted subjects aged 65 years and above (82 men, 99 women; mean age = 73.38 ± 6.2 years; range: 65 to 90 years) were recruited to participate from April to August 2003. The MRST consist of two parts, MRST (A) which constitute of three questions to determine the malnutrition risk (overweight and underweight) (52.3% of sensitivity and 55.6% of specificity) and MRST (B) which constitute of three questions to determine under nutrition risk (32.1% of sensitivity and 86.3% of specificity). The MRST was validated using Patient Generated Subjective Global Assessment (PG-SGA), Mini Nutritional Assessment (MNA), anthropometric measurements and biochemical parameters. The results indicated that the MRST(A) has a low sensitivity (0 % to 40.7%) and high specificity (52.6% to 100%) for identification of malnutrition among the subjects. The MRST(B) has a low sensitivity (0 % to 37.9 %) and high specificity (57.9% to 100%) for identification of under nutrition among the subjects. The use of other objective indicators of malnutrition indices such as calf circumference (CC), mid upper arm circumference (MUAC), Body Mass Index (BMI), hemoglobin (Hb), albumin (Alb), total cholesterol (Cho) and total lymphocyte count (TLC) may increase the sensitivity and specificity of the MRST.

P.4.10. PREDICTORS OF BODY MASS INDEX IN PATIENTS WITH MODERATE TO SEVERE EMPHYSEMA

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Patients with emphysema often have poor nutrition status as measured by BMI and intake of calories and protein. We studied predictors of BMI in 44 weight stable emphysema patients (FEV1 = 43 + 16% predicted (SD), age 69+6.5 yrs, DCO 38+11% predicted undergoing baseline evaluation for the Feasibility of Retinoid Therapy in Emphysema (FORTE) trial. Trained dietary assessors collected food intake data via telephone on four separate days, including two weekend days. Food intake was entered) real time into a computerized database (Minnesota Nutrition Data System, Ver 2.92 and total kilocalorie intake averaged and adjusted to body weight (kgal/kg). BMI ranged from 17.2 to 35.9 kg/m2 (27.0+4.7). Whole lung CT scan were assembled into a three-dimensional data set and CT lung volume calculated, counting pixels in a consistent density range from -1024 (air) to -600 (tissue and air) and converting to cubic centimeters. A CT emphysema score was calculated as the total volume of lung represented by pixels greater than -910 and expressed as a percentage of the entire lung volume. Neither hemoglobin, albumin, FEV1, lung volumes, nor arterial blood gases were predictors of BMI. In univariate analysis, BMI was inversely correlated with caloric intake expressed as Kcal/kg body weight (Slope = -.435, r2=.51, p<.001, protein/kg body weight (slope= 9.8, r2=.41, p<.001) and CT emphysema score (slope=-.131, r2=.15, p=.014). However, by backwards stepwise multiple regression, only Kcal/kg was a significant predictor of BMI. We conclude that moderate to severe emphysema patients with low BMI are not nutritionally deprived and low body weight in these patients cannot be attributed to decreased caloric intake. Supported by NIH NIH/NHLBI(01 HR96144).

P.4.11. CONSEQUENCES OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY – PEG INSERTION IN ELDERLY

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Background: Dysphagia and eating disorders are common problem elderly with neurological damage. PEG is a common ambulatory procedure which has been done since 1982 and provide feeding ca dysphagic subjects.

Objective: Evaluation of the benefit in life expectancy, quality of nutritional status in elderly subjects.

Methods: Retrospective study of 162 subjects older than 65 who have inserted during the period of 1991 to 1999. Demographic, clinical and characteristics, the indication for PEG and outcomes were analyzed.

Results: For 106 subjects follow up was available, they were s according to sex (54% females), age groups: 65 to 79, and over 80 (46 older), and whether the patient was ambulatory or hospitalized at the time of PEG insertion (58% ambulatory). Significant differences were found in the ambulatory and hospitalized patients in nutritional parameters: Hb 11.5 lymphocytes count 2322 vs 1501, and serum Albumin 3.5 vs 3 and it survival time 48 vs 8 weeks. The older ambulatory patients survive than the younger ambulatory. Short and long term’s complications we name rate as in other studies.

Conclusions: PEG is an available technology for tube feeding o subjects. Choosing the patients who could benefit from the procedure most important task for the clinician. This study shows that the differentiation of ambulatory versus hospitalized patients differentiate subjects with severe neurological status, probably due to acute and comorbidity, and worse prognosis with this feeding device.

P.4.12. COMORBIDITY, FRAILTY AND EVOLUTION OF PRI ULCERS IN GERIATRIC AGE


The prevalence of pressure ulcers (PU) ranges from 1 to 18% of in and from 3 to 28% of those admitted to long-term settings.

Objective: The aim of our study was to verify, a posteriori, how and frailty influenced the course of PU in a population of elderly hospitalised in a long-term care setting.

Materials and Methods: the clinical charts of 125 patients with ulcer nectotic pressure ulcers were evaluated retrospectively. PU chara (stage, ulcer surface, evolution) and clinical characteristics (com adverse clinical events, cognitive, functional and nutritional status patients have been recorded. Frailty was defined considering age, c functions, functional and nutritional status.

Results: in 58 patients (46.4%) there was overall resolution of th while in 39 patients (31.2%) we had however an “improvement” of PU.

The course of PU was not significantly influenced by the i physiological characteristics, by cognitive status or by initial character PU. Instead, we noticed a significant difference in the course of function of the level of autonomy, clinical and nutritional status. Their correlation between frailty score or initial stage and the course of PU observed. During the observation period, instead, statistically sig differences concerning the frailty scores have been observed: 87.2% who had an improvement in the score had resolution or improver while this occurred in only 27.3% of those who had a worsening in the frailty (p=0.000).

Conclusions: The development of PU is multifactorial. We maintain integration between the multidimensional assessment upon admis special attention to comorbidity status and to frailty (particularly, the autonomy and nutritional status), and the different approaches may optimal healing of the PU.
showed a risk of malnutrition the MNA was used. The time to complete the MNA-sf and the MNA, the outcome of nutritional assessment and the implications on nutritional intervention have been recorded for one year (2000) in the geriatric ward and two years (2002-2003) in the GDD.

According to the MNA-sf 130 patients (93%) in the geriatric ward were at risk of malnutrition while the MNA showed 57 malnourished patients and 37 patients at risk of malnutrition.

In the GDD 144 patients (50.5%) were at risk of malnutrition according to the MNA-sf whereas 53 patients were malnourished and 85 patients were at risk after completion of the MNA.

Completion of the MNA-sf took 5 minutes in the geriatric ward and the GDD. The MNA took approximately 10 minutes in the GDD and this is consistent with the time mentioned in the literature. Completion of the MNA for patients from the clinical ward took approximately 30 minutes. Time had to be spent on communication with the family. Concordant with the literature (Rubinstein, 1999) 35-65% of the outpatients were malnourished. The percentage (93%) of malnourished patients in the geriatric ward is higher than in the GDD (50.5%). Patients in the geriatric ward are very ill on admission and high sensitivity (97.9%) and specificity (100%) of the MNA-sf affects the outcome. The dietician visited 13 malnourished patients in the GDD based on the outcome of the MNA. All patients showed bad appetite and loss of weight. The dietician has visited all patients in the clinical ward showing a low score on the MNA-sf. A new food policy has been developed due to the increase in patients with malnutrition who had to be visited by the dietician.

Application of the MNA-sf followed by the MNA is useful to diagnose malnourished patients in the GDD in a short time. The MNA-sf score is low for the majority of patients in the geriatric ward. The MNA is extremely useful for the dietician to decide on nutritional intervention in this situation.

**P.4.7. SCREENING FOR MALNUTRITION IN A SWISS LONG CARE SETTING**

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Introduction: Between 29 and 54% of newly admitted patients to a long care setting have a malnutrition. Patients and methods: over 10 month admissions in a geriatric long-term division were evaluated by the median using the MNA-SF (mini nutritional short form). Albumin, lymph cholesterol were measured. The nursing staff documented food intake for 4 days, after which the dietician completed the mini nutrition assessment (MNA). We also compared the screening results with the evaluations provided by the mini data set (MDS) as part of the assessment instrument (RAI). Results: During 10 months 45 new adm 66.7% women, mean age 83 years (54-99) were evaluated. 22% malnutrition (MNA score <17 points), 42% were at risk for one (MP 17-23.5 points). According to the MNA-SF 75% of the new admission risk for malnutrition (MNA-SF score ≤11 points). The MNA-SF’s sensitivity of 96% and a specificity of 67%. MNA correlated significantly MNA-SF, r=0.907; albumin, r=0.409; and lymphocytes r=0.376. Mini were in 37 of the cases available. 40% of these pointed out a nutrition The mean MNA of these patients was 18.5 points versus 22 points without a nutritional problem. We found no significant correlation nutritional problem according to the mini data set and MNA or N.

Conclusions: Malnutrition continues to be a reality in a Swiss long-term setting. The MDS is not sensitive enough for screening, the MNA-SF specific enough. MNA-SF together with albumin and lymphocytes will be helpful in the screening for malnutrition.

**P.4.8. THE IMPACT OF NUTRITION ON ELI REHABILITATION AND ON PRESSURE SORES PREVENT CASE REPORT**

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Background: otherwise a healthy subject, M, aged 83, is diagnosed of cervical myelopathy due to a cervical canal stenosis. He undergoes cervical decompression and fixation. At wake-up he presents with con level sensitivo motor (ASIA A) tetraplegia. He progressively recovers motor function but after 3 months of acute rehabilitation, functional paresis are scarce.

Mr. is then transferred to our long-term rehabilitation facility, wait retirement home. He presents with: overall muscle weakness, low 5 total score on the Functional Independence Measure (FIM®) scale (29/95 33/35 cognitive), low Norton score (10/20), bad nutritional status and stage 1-2 pressure sores.

With the patient’s consent, enteral nutrition through a naso gastric tube duration of 8 weeks was undertaken.

This lead to rapid improvement in his general condition which a new rehabilitation program to begin. After a few months he showed improvement. The FIM® score progressed to 96 points (61/91 motor cognitive), nutritional status greatly improved, Norton score (20/20) status normalized. These results showed to be stable one year later.

This case report will allow us to stress out the important role of nutrition in rehabilitation, especially in a geriatric population.

Conclusion: nutrition is a vital aspect of both rehabilitation and pressure prevention. Therefore, our utmost must be done to take it into account as possible. This being particularly true in geriatric rehabilitation as proportion of patients is already largely undernourished before the onset of neurological event.
self-reported parameters. In female subjects R2 fluctuated between 0.65 and 0.76; in male subjects between 0.33 and 0.56. Discussion. Height and weight estimation using self-reported parameters is an acceptable method. Its precision is not so high in subjects older than 75 years. Height over-estimation is an expected finding congruent with age-related corporal changes. Conclusion: Height and weight self-report is a valid method that may be used to accurately estimate height and weight in Mexican people.

**P4.4. SHORT-TERM EFFECT OF A PROTEIN LOAD ON APO AND FOOD INTAKE IN DISEASED MILDLY UNDERNOURISHED ELDERLY PEOPLE**

P. Rizzi\(^1\), P. Irvine\(^1\), J. Baptiste Mourez\(^2\), C. Marteau\(^2\), A. Salle\(^2\), M. G A. M. Favreau\(^3\), G. Bertral (1. Inserm EMU 0018, 2. Departure geriatrics, 3. Department of dietetics, CHU Angers, France)

Background and aims Malnutrition is a risk factor for mortality and morbidity in the elderly. A low energy intake often prevails and therapeutic interventions include the administration of dietary supplements, sometimemention in proteins. We have tested the hypothesis that a protein-rich supplement inhibits appetite and decreases voluntary food intake.

Methods Twelve mildly undernourished (BMI 21.3±2.4 kg/m\(^2\); 84±7.8 yrs) diseased persons were each studied under 3 conditions, they were given in random order at breakfast, and on consecutive day no supplement, a 250 kcal, 20g protein supplement or a 250 kcal, 5.5 kcal supplement. Hunger, fullness, and desire to eat sensations were monitored hourly from before breakfast until lunch, and hourly from lunch until Food intake was assessed by weighing food before and after meals and macronutrient intakes were calculated over 24 hours.

Results Both supplements increased energy intake (+185 kcal supplement, +176 kcal). Protein supplementation induced a net 17g in protein intake (P<0.0003). Neither supplement affected spontaneous intake at lunch, dinner, or over the 24 hours. Protein supplements significantly depressed appetite in the breakfast to lunch period.

Conclusion, a 250 kcal, 20g protein supplement depresses hunger affecting food intake in elderly diseased mildly undernourished persons.

**P4.4. SHORT-FORM MNA IS NOT RELIABLE IN ELDERLY AT SHELTERED HOUSING**

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Background - Malnutrition in elderly living at sheltered housing is an important clinical and public health problem. The Mini Nutritional Assessment (MNA) is a screening tool designed to detect risk of malnutrition in the elderly. The study was performed to test the validity of the MNA for the elderly in Malmo, Sweden.

Methods - Using the MNA 28% was classified as “malnourished” compared to the full MNA (MNA malnutrition indicator score)

Objective - To study if short-form MNA screening reliable compared to the full MNA (MNA malnutrition indicator score)

Design - Risk of malnutrition was assessed with the Swedish version MNA in 146 elderly, 113 women and 33 men, with a mean age of living at four SH as a part of the study “Diet and nutritional routines in the elderly in Malmo. Sweden”.

Results - Using the full MNA 28% was classified as “malnourished” compared to the full MNA. Using only the short-form MNA clinically can lead to underestimation of “possible malnutrition” according to the original score. Perhaps this misclassification is due to the fact that the elderly in this study were living in SH. We recommend using the full MNA and not just the short MNA in screening elderly living at institutions such as SH.

**P4.5. PRACTICABILITY OF THE MNA:SF AND THE MNA CLINICAL WARD AND THE GERIATRIC DIAGNOSIS CENTRE**

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The Mini Nutritional Assessment-short form (MNA:SF) and the Nutritional Assessment (MNA) have been applied in the clinical ward Geriatric Diagnostic Day Centre (GDD) of the Department of C Medicine, University Medical Centre Nijmegen (UMCN). When the
ambulance were enrolled in this study. Virtual body image – Before the medical examination, the patient was requested to estimate own height and weight, used by interviewer to calculate the virtual BMI. Real body composition – Afterward, height, weight, skinfolds, arms and body circumference were measured with the common methods. Body compartments – The size of body compartment (water, fat, lean, cellular, muscular masses) were evaluated by BIA. Results and Discussion – The subjects enrolled in this study were also required to indicate which weight they hoped to reach. By using this last value we calculated the desired BMI (dBMI). The results showed that referred BMI (rBMI) was significantly lesser than BMI in all the groups. However no differences in underestimation were found among the groups. As to dBMI, the 50% of overweight elderly desired to reach a normal weight, where 12% of obese elderly desired to reach the same result. The following controls made after the end of dietic therapy demonstrate that the knowledge of their weight contributed to maintain the reached weight during the time.

P.3.9. MUSCULAR STRENGTH IN A HEALTHY ITALIAN ELDERLY SUBJECTS
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Muscle mass and function declines with age may be significant limiting factors in reduced physical activity. Muscle strength was measured in Italian elderly subjects participating in the Survey in Europe on “Zinc effects on nutrient/nutrient interactions and trends in health and ageing” (ZENITH project). ZENITH is a longitudinal study conducted in three European countries (France, Northern Ireland and Italy) with baseline measurements on behavioural and psychological factors (taste acuity, food choice, cognitive function) and surrogate biological markers (antioxidants/oxidative stress, immunity, thyroid functions etc) repeated after three and six month of zinc supplementation. The subjects were randomised into three groups receiving zinc supplementation (15mg/d or 30 mg/d) or placebo. The objectives of this part of the study are to explore the influence of zinc supplementation on muscle strength and to evaluate associations between changes in muscle strength, physical performance and spontaneous physical activity. Zinc supplementation has been reported to improve the muscular strength, effect due to the participation of zinc in the formation of several enzymes of energy metabolism. Data at baseline are presented here.

We have measured 132 subjects (66 men, age 74±4yrs; BMI 26.4±2.4kg/m²; 66 women, age 74±4yrs; BMI 25.2±2.9kg/m²). Muscular strength was measured by dynamometry: the upper extremity force with a hand-held dynamometer (Jamar) and the lower extremity force with a Manual Muscle Test System, MMT (Lafayette). Body composition was predicted by anthropometric measurements (4 skinfold thickness and circumferences), while the physical activity level was determined by questionnaire.

Muscle strength was higher in men than in women in both absolute value (+36%, p=0.0000) and when standardised for body weight (+20%, p=0.0000) or for fat free mass (+12%, p=0.005). This result should be related to the different activity patterns. The effect of the zinc supplementation on muscular strength will be evaluated at the end of the supplementation phase. ZENITH is supported by the European Community “Quality of Life and Management of Living Resources” Fifth Framework Programme, Contract No: QLK1-CT-2001-00168.

P.3.10. RELATIONSHIP BETWEEN BODY MASS INDEX AND MEASURES OF ADIPOSITY IN THE ELDERLY OF THE CITY OF RIO DE JANEIRO, BRAZIL

The correlation between Body mass Index (BMI=kg/m²) and measures of adiposity was used to define whether BMI is a good or poor indicator of nutritional status to the elderly in Brazil. Data from a po based survey conducted in 1996 was used to compare anthropometri for middle-aged adults (N= 1306; 40-59.9 years) and elderly (N=699: or more). Height, waist, hip and skinfolds were measured using stan procedures. About 50% of the elderly were classified as overweight (≥ 3 kg/m²) and more than 50% of women of all age groups had waist and hip ratio (WHR) out of the normal range. Among men these percenta about 40% for waist and 20% for WHR. Correlations between each skinfolds indicate that results for the elderly are similar to those of middle-aged adults.

P.3.11. PROSPECTIVE EVALUATION OF ANTHROPOMETRIC CHARACTERISTICS IN SENIEUR HEALTHY ELDERLY
L. Todorowska (Department of Human Physiology and Anthropology, Faculty, Skopje)

Introduction: In 1984 y. Lightart G proposed a protocol for select category “healthy elderly”, so called SENIEUR protocol.

Aim: Assess some anthropometric characteristics and their lon changes in healthy elderly, selected according to the SENIEUR protocol

Design: 3-year longitudinal study, with anthropometrical measure each 6 months.

Subjects: 51 healthy elderly (mean age 72 ± 4 y) selected from 363 older than 65 years, who were evaluated at the start point.

Methods: Demographic and medical data were collected for each and it was done clinical investigation; biochemical analyses sedimentation, hematocrit, BMI, acaloric phosphatase, glykoza, urea SGGT and urinanalysis); and anthropometry. Those elderly, who ful clinical, biochemical and pharmaceutical criteria of the SENIEUR were selected like healthy elderly (HE), Following anthropometric pa were evaluated: stature, knee height, weight, body mass index (BMI skinfolds (biceps, triceps, forearm, sub-scапularis, thorax, abdominal calf and front thigh), six circumferences (upper arm, forearm, thigh, waist) and elbow diameter. Statistical analyses were done with SPSS.

Results: Mean stature and weight decreased by 0.6 ± 5.4 cm and 0.9 cm in men and by 0.5 ± 6.4 cm and 0.5 ± 3.2 kg in women. From inv circumferences only mean upper arm circumference decreased by 0.4 ± 1 cm in men and 0.3 ± 1 cm in woman. The SENIEUR healthy elderly are representative group of geriatric population, and this could be on reasons why longitudinal changes of all anthropometric characteristics investigatet group are lower, compared with data from the outer author

Conclusion: All investigated anthropometric characteristics don’t significant longitudinal changes in SENIEUR healthy elderly during the study period.

P.3.12. VALIDITY OF HEIGHT AND WEIGHT SELF-REPORTED MEXICAN ADULTS: RESULTS FROM THE NATIONAL H AND AGING STUDY
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Introduction: Height and weight self-report is considered a useful al for the estimation of BMI. The validity of the self-report is an issue that been dealt with in developing countries. Aim: To assess the valid height and weight self-report in adult Mexicans. Design: Transvers Study population: 1707 persons (836 male, 871 female) from the National Health and Aging Study were asked for their height and we measured. Results: Mean age was 59.09 ± 9.86 SD; mean education y. 5.51 ± 4.67. We found a high correlation between self-reported and r weight (R2= 0.837); difference between both values rose along with a 0.4 kg to 1.74 kg). A systematic difference between self-reported and r height was found. Self-reported height was over-estimated, bias increas with age and gender. For the height of the subjects (from 1.57 m to 2.57 m) further, over-es was larger in females (+2.22 cm in female vs. +1.21 cm in male subje calculated a linear model that predicts real height from self-reported he moderate, although statistically significant results (R2 = 0.39 ± 0.50, f and male, respectively, p<0.0001). Knee height was also used to adapthuy height” and thus, BMI. This method showed age dissimilarities, and the linear regression model yielded an unaccept correlation (R2= ± 0.10). The best method to estimate real BMI was to
Results: We found lower dynamometry mean values (Kg) for undernourished female patients 1.2 ± 1.2 versus 2.7 ± 2.9 (p=0.025) and for males 7.7 ± 6.0 versus 14.2 ± 8.2 (p=0.017). Dynamometry values above median are associated with a non-significant lower risk of having longer length of stay: crude OR=0.52 (CI=0.25-1.08); adjusted OR=0.67 (CI=0.32-1.41) and a lower risk of being undernourished (NRS 2002<3) crude OR=0.21 (CI=0.09-0.51) and adjusted OR=0.33(CI=0.13-0.80).

Conclusion: Handgrip strength dynamometry and undernutrition are inversely related, dynamometry values above median are independently associated with a lower risk of being undernourished.

P.3.5. MUSCLE STRENGTH IN OBSESE ELDERLY WOMEN: IMPACT OF RECREATIONAL PHYSICAL ACTIVITY. A CROSS-SECTIONAL STUDY

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Background: Muscle strength (MS) may be impaired in the obese and this may be a consequence of both obesity and low physical fitness.

Objective: This study investigated whether MS differed between obese (body mass index, BMI≥29 kg/m2), normal (BMI 24-29 kg/m2) and lean (BMI<24 kg/m2) elderly, and compared MS of sedentary and active subjects according to their BMI group.

Design: 215 obese (age 80.0±3.5Y, BMI 31.9±2.6 kg/m2), 630 normal (age 80.2±3.7Y, BMI 26.3±1.4 kg/m2) and 598 lean (age 80.7±3.5Y, BMI 21.6±1.8 kg/m2) women with good functional ability. A cross-sectional design was used. Anthropometric measures (weight, height), appendicular skeletal muscle mass (dual energy X-ray absorptiometry), isometric knee and elbow extension (statometers), isometric handgrip (dynamometer), health status and self-reported recreational physical activities (RPA) (walking, gymnastics, cycling, swimming, gardening) were collected.

Results: Absolute MS (non-adjusted strength) was greater in obese than in lean women (p<0.01), except for handgrip strength (p=0.05). When adjusted for age, height, RPA, pain, depression and appendicular skeletal muscle mass, MS did not significantly differ between obese, normal and lean subjects except for knee extension (significant interaction effect with RPA; p=0.01). Lower limb strength did not change in the sedentary women with increasing BMI but increased in active (21hour/week in ≥1RPA for ≥1month) women with increasing BMI. All adjusted MS of active participants were significantly higher (p<0.001) than in their sedentary peers.

Conclusions: Adjusted MS of elderly women is not associated with obesity, however it is higher in active participants, especially in the lower limbs of obese subjects.

P.3.6. RELATIONSHIP BETWEEN BODY MASS INDEX AND DIFFERENT DOMAINS OF DISABILITY IN OLDER PERSONS: THE 3C STUDY

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Objective: To study the relationships between Body Mass Index (BMI) and different domains of disability in elderly subjects from the French 3C study.

Methods: 8966 elderly community dwellers aged 65 and over were included. Three domains of disability were explored: Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL) and Mobility. Contingency was also considered apart from others ADL. Logistic regressions were performed to estimate the risk of disability for each domain according to BMI. Potential confounding variables were age, educational level, lifestyle, cognitive function, risk of smoking and drinking history, depression, dyspea, diabetes and indicator of cardiovascular disease. Analyses were performed separately for men and women. Results: Obesity (BMI≥30) was significantly associated with disability in each domain for women. The relationship tended to be linear for ADL and for continence; whereas for IADL, underweight women (BMI<21) were also at higher risk of disability. In men, relationships were weaker since BMI was only associated with mobility restriction, with a higher risk for both underweight and obese subjects. Conclusion: These results are in favor of a strong association between obesity and the three types of disabi incontinence. Weaker relationship between underweight and disabled observed. Results suggest that maintaining a BMI in the healthy range prolong independence in activities of daily living.

P.3.7. COMPARISON OF TWO DIFFERENT METHO IDENTIFY SARCOPENIC INDIVIDUALS: FINDINGS O EPIDOS STUDY

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Background: Sarcopenia, is major a public health problem because cause subsequent loss of autonomy. Actually, only few methods exist sarcopenia. Two index were defined by Baumgartner et al(1) and more by Newman et al(2). The first index of sarcopenia is defined with the LBM and height squared (LBM/h2) but it is challenged in the : Newman, who takes the fat into account. This index uses the residuals from linear regression of LBM on height and fat. So, this new i sarcopenia, including fat, must be compared with the current index.

Objectives: To assess the pertinence of the two different i sarcopenia from data collected in the French Epidos study.

Methods: Epidos is a study of 7592 women aged 75 years recruited between 1992 and 1994 in five French cities. The present study with data from 1462 women recruited in Toulouse.

In the Epidos study, body composition was assessed using dual energy absorptiometry ( Lunar DEXA) during basely visit. Women are iden sarcopenic using two different index : the ratio LBM/h2 and the 1. In our model, the equation of the regression found was : LBM = 14.82 ± height (m) ± 0.104x fat (kg) = 10.01. A woman is class sarcopenic if her value ratio or residuals falls lowest 20th percent distribution. The cutpoints found are 5.75 for the ratio and –1.31 for the residuals.

Results: 5.01% are identify sarcopenic with the ratio measure, 4.9 the residuals and 12.97% with both the index. The ratio index tend estimate the obese (BMI>30) as sarcopenic : 1.14% of sarcopenic compared with 4.98% using the residuals method, and the one (25=≤BMI<30) : 15.28% compared with 32.95%. The two population are not significantly different in are in BMI. Both classification of sarcopenia are significantly associated with age and BMI.


P.3.8. BODY COMPOSITION AND BODY IMAGE: A PSY LOGICAL APPROACH TO DIETARY PATTERN


The Body Mass Index (BMI) represents a normal approach height/weight ratio, and represents a more used risk index related to the The BMI is strictly related to the total weight of the subject, but is evaluates the real compartments of the body. In our visit protocol, various parameters connected to this theoretical approach: anthropometric measures (height, weight, skinfolds, arms and body circumferences) electric impedance (BIA – Akern – Florence – Italy) that evaluate all compartments. It’s possible that the obese patient have a splendid idea body image, and this can influence the own relationship with the f elaborated a method to have notices on the virtual body image and to them to the reality. Materials and methods – All the patient that con
(Northern Ireland); Grenoble and Clermont-Ferrand (France). This project is studying the effects of two nutritional levels of zinc supplementation (15 or 30 mg/day) during 6 months in older men and women, using a placebo controlled double-blinded design. Health zinc effects will be assessed on psychological and behavioral factors (changes in taste acuity, food choice, mood, cognitive function) and on surrogate biological markers (particularly antioxidants/oxidative stress balance, immunity and thyroid functions, bone metabolism and protein synthesis). The absence of potentially toxic effects will also be evaluated on lipid profile and on the metabolism of other minerals and vitamins (iron, copper, folate, vitamins A and E). The data obtained should provide the basis for specific dietary recommendations for zinc intake in late middle-aged and older people. The first results are expected for 2004 – 2005. Here will be reported the study design and the different measured parameters.

ZENITH is supported by the European Commission "Quality of Life and Management of Living Resources" Fifth Framework Programme, Contract No: QLK1-CT-2001-00168.

P.3.: Body Composition

**P.3.1. BODY COMPOSITION BY THE FOUR-COMPARTMENT MODEL IN MEXICAN HEALTHY ELDERLY SUBJECTS**


Background: The four-compartment (4C) model is an accurate method to estimate body composition, because it controls for the biological variability in part of the fat-free mass components.

Objective: To assess the body composition of healthy elderly subjects using the 4C model as well as to validate some field and laboratory methods.

Subjects and Methods: Fifty healthy elderly subjects over 60 years old from rural and urban areas and nursing homes were included. Body composition was estimated by the 4C model, which included body density (Db), total body water (TBW) and total body bone mineral content (TBBCM). Db was measured by air displacement plethysmography (BOD-POD). TBW was estimated by multi-frequency bioelectrical impedance (BIA HYDRA ECF/ICF system), and TBBCM by DXA. Body fat was calculated using the equation proposed by Baumgartner (1991).

Results: A total of 24 men and 41 women were assessed. BMI, height, and percent body fat measured by the 4C model were different by gender (p<0.05), but not weight and age. Mean body fat in males was 34.7 ± 5.5% versus 45.5 ± 4.8% in women (p<0.05). As a group TBW (L) was 30.4 ± 6.1, bone mineral content (g) was 2340.5±505, body density (kg/L) was 1.007 ± 0.0017 and % body fat by the 4C model was 41.5 ± 7.2. The results from two-way analysis of variance showed that % body fat by single-frequency BIA using the equation provided by RJL systems-Cyprus, and skinfold thickness by Durnin and Womersley (1974), and by Deurenberg (1989) was different from % body fat by the 4C model. Percent body fat using BIA HYDRA, BOD-POD and DXA was not different from the 4C model. Conclusion: In this group of elderly subjects, these laboratory methods and BIA-HYDRA could be used interchangeable to estimate group means of percent body fat.

**P.3.2. DISCRIMINANT ANALYSIS BY ANTHROPOMETRIC MEASURES IN ELDERLY BENGALI HINDUS OF CALCUTTA, INDIA**

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Backgrounds: According to the 2001 census, the total aged (55 years and above) population of India is approximately 112 millions, or approximately 14% of the total population. This percentage will be increased to 14.8% by the year 2020. Although the sizeable proportion of India’s population is elderly (55 years and above), but to best of author’s knowledge no information exists on how well anthropometric measures could be utilized to correct age group size in elderly individuals.

Aims: The present investigation was aimed to study how well anthropometric measures could be used for corrected group size in elderly Bengalee Hindu population of Calcutta, India.

Subjects and Methods: A cross-sectional study was under taken arr (men = 210, women = 200) Bengalee Hindu elderly (55 years and above individuals of Calcutta utilizing various anthropometric measures height, weight, body mass index, mid-upper arm circumference, arm skinfold. All subjects were classified into three age groups: In 55- (men = 40; women = 49), II 60-69 years (men = 90; women = 102), years and above (men = 80; women = 49). ‘Discriminant analysis’ under taken separately for men and women using above-me anthropometric measures.

Results: Results revealed that overall 77.1% for men and 78.6% for all cases were correctly classified. No individuals were misclassified predicted group III and I for both the sexes. In the present study, none the Group I individuals were misclassified into Group III and vice versa most discriminating variable for groups was triceps skinfold in both sex.

Conclusions: These results provided the evidence that anthropometric characteristics of Group III and I were very different from each other those belonging to Group II having intermediate characteristics. At 1 time ageing process was more pronounced on subcutaneous fat (e.g. than on overall fat mass (e.g. BMI).

**P.3.3. ANTHROPOMETRIC CHARACTERISTICS OF HOSPITAL/ FEMALE ELDERLY**

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The present study assessed the anthropometric status (height, weig arm circumference, triceps skinfold thickness, weight/height, weight arm muscle circumference, arm muscle area) of 451 hospitalized patients aged 70 or more, at their admission to hospital, in referen healthy women of the same age and from the same region. The los female elderly patients had lower values for mid-arm circumference skinfold thickness, weight, weight/height, and weight/height2, but values for arm muscle circumference and arm muscle area compared healthy women. Decreased values for arm muscle circumference muscle area were noted in the people aged 85 or more. Thus, the experienced a moderate protein-energy malnutrition which affected m body fat and probably the muscle volume. In fact, the triceps skinfold t was found to be the most decreased index in the diseased people. The with cancer, blood disease, respiratory disease, digestive disease, tissue particular those with mental disturbance had the lowest values. Thus, it to evaluate regularly their nutritional status with the indices studied e as they are easy to use, and to try to ensure them a good nutrition. nutritional status assessment with the anthropometric indices especially as they are easy to use.

**P.3.4. HANDGRIP STRONG DYNAMOMETRY UNDERNUTRITION IN HOSPITALISED ELDERLY PATIENTS**

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Introduction: Handgrip strength can be an indicator of nutrition when anthropometric data fail in distinguishing undernourished patie those who have chronic low weight. However, the efficiency of this p in identifying undernourished elderly patients remains unknown.

Aim: To analyse the association between handgrip strength and mal in hospitalised elderly.

Subjects and Methods: Patients with 65 years and older, con collaborating admitted for more than 24 hours in the Orthopaedic Department of HGS, S.A. in Porto, during a 4 month perin consecutively included in this study. A total of 143 patients perfor handgrip strength dynamometry test (65.7% (n=94) women and 34.3% (n=49)), and cut off values were established using median values separ males and females. Nutrition Risk Screening 2002 (NRS 2002) was a identify undernourished patients. Means were compared by Stude Kruskal-Wallis tests. The independent effect of handgrip strength (of and years of school) in undernutrition was evaluated using non-co logistic regression and odd ratios (OR) 95% confidence intervals ( were calculated.
pathways, particularly in brain. The aim of this study is to clarify whether aging modifies the retinoid and thyroid signaling in human. Using real time RT-PCR we quantify the relative amount of mRNA of the retinoid (RARα, RARγ, and RXRα) and thyroid (TRα2 and TRβ1) nuclear receptors in peripheral blood mononuclear cells (PBMC) of young (24-57 years old, n = 22) compared to elderly (60-96 years old, n=24) healthy subjects. Classical plasma parameters, used to characterize these status - retinol (ROH), Retinol Binding Protein (RBP), free T3 (FT3) and T4 (FT4), thyroid stimulating hormone (TSH) and transthyretin (TTR) - were also assessed. RARγ expression was significantly decreased in elderly versus young subjects while no modification of the retinoid-related plasma parameters ROH and RBP were emphasized by aging. Concerning thyroid criterions, the elderly exhibited a rise of TSH concentration (+39%) without significant modifications of FT3 and FT4 what it seemed highlight an age-related subclinical hypothyroidism. In the same time the amount of TR mRNA (α as well as β subtypes) were significantly decreased in the elderly. These data constitute the first evidence of an age-related hypoactivation of the retinoid and thyroid nuclear pathways in PBMC. Alterations of the thyroid status on one hand and the retinoid status on the other hand have been shown to induce cognitive impairment. Further investigations would be interesting to study the possible association between the expression of the retinoid and thyroid nuclear receptors and age-related cognitive alterations.

P.2.16. B VITAMIN STATUS, FOLATE BIOAVAILABILITY AND METABOLIC CHANGES IN A MODEL OF DIETARY FOLATE DEFICIENCY IN OLD AND YOUNG ADULT RATS

Introduction : Folate plays a fundamental role as methyl donors in amino acid and nucleic acid metabolism. Old people commonly display a deficient status of B vitamins including folate. Inadequate intake is known to contribute to this situation, but the role of changes in folate bioavailability, mainly absorption and metabolism, has also been envisaged. Objectives : To determine the effects of ageing on : (i) folate status and bioavailability and (ii) the metabolic response to folate depletion. Materials and methods : Eighteen-month (old adult) and four-month (young adult) aged rats were fed a synthetic diet with or without folate during 28 days. Plasma and red blood cells folate concentrations, plasma levels of vitamins B6 and B12, and homocysteinaemia were measured. HPLC assays with fluorescence and UV detection were specifically used to determine total folate levels and to identify different forms of this vitamin in tissues. Results : Plasma concentrations of folate and vitamin B12 were significantly lower in old adult than in young adult rats. Homocysteinaemia was augmented in old adult rats relatively to young adult rats, but the difference was not significant. In both groups of rats, folate depletion caused a dramatic (p 90%) decrease in plasma folate concentrations, and also a significant increase in homocysteinaemia. Those observations were associated with a significant decrease in hepatic levels of several forms of folate (especially 5-methyltetrahydrofolate). However, the decrease in the plasma folate concentration observed in normally-fed old rats relative to young adult rats was not accompanied by a diminution in the hepatic level of 5-methyltetrahydrofolate. Conclusion : Old adult rats present relatively to young adult a folate deficient status. Studies are currently carried out to understand the mechanisms leading to this situation. Especially folate absorption and tissue metabolism will be compared in old and young adult rats.

P.2.17. LIFESTYLE INTERVENTIONS (DIET & EXERCISE) IN THE PREVENTION OF AGE-RELATED DISEASE – A PRACTICAL APPROACH
   C. B. Heward (President – Kronos Science Laboratories, Inc.)

Technological advances in the past 100 years have resulted in an increase in human life expectancy of more than 50%. In spite of the great strides of the 20th century, most gerontologists agree that a similar improvement in human life expectancy will not be possible in the 21st century without interventions specifically targeted to combat aging. Of the top ten causes of death in most developed countries today, all but two (accidents and HIV) are diseases either directly or indirectly related to aging (i.e. cardiovascular disease, osteoporosis, type II diabetes, arthritis, senile dementia, cancer, and stroke). Unfortunately, true anti-aging interventions do not yet exist. Modern medical practice, with its traditional “diagnose and treat” approach, can do little to retard the normal progressive degenerative functional decline associated with aging. Clinical interventions are currently limited to those addressing contributing factors over which we have some control. Although we can directly combat aging itself, it is now possible to delay or prevent onset of many age-related diseases and disease processes. This is best in an agressor(s) preventive medicine paradigm involving early detect, targeted intervention. Of all known factors contributing to premature diet and activity patterns rank second only to tobacco as causativ Theoretically, such “lifestyle” factors lend themselves quite well to inte and treatment. However, in practice, for many patients, changing thes can be challenging. Practical lifestyle interventions currently used suc reduce the risk of age-related diseases will be discussed in detail, include the proper use of clinical and laboratory testing to assess nutrition, health status, and functional capacity.

P.2.18. ALIMENTARY - NUTRITIONAL BEHAVIOUR AMBULATORY ELDERY PATIENTS ACCORDING TO NUTRITIONAL ASSESSMENT

Objective: Evaluate alimentary - nutritional behaviour in ambulator patients according to MNA applied in the National Institute of Geriatrics.

Method: MNA is applied in 80 patients over 60 years, who use Daily Hospital, the doctors office and the Nutritionist. during a mo sample was formed by 62 women and 18 men, who aged between 6. years old. Were analyzed: anthropometric index, global, dietetic and si assessment

Results: 22.5% were men and 77.5% were women. Anthrop: 88.7% have BMI => 23, 3.7% with MAC over 22, 81.2% with O - 45.7% has not lost weight on the last three months. Global Assessments live in their houses. 65% suministrate less than 3 prescription drugs, 4 not suffered from any acute disease or psychological stress in the la months. 73.5% have no problems in their movility and 46.3% do r neuropsychological problems. Dietetic Parameters: 36.2% eat three f daily...31.2% consume protein. Foods or vegetables are intaken by 73.7% show the non – presence of appetite loss. 28.5% drink.. mor glasses of liquids. 96% do not need help to feed Subjective Value: 8 considered to have good nutritional status in comparison with other the same age. Total Score 48.75% have a satisfactory nutrition 41.25% are considered in risk of Malnutrition and 10% presents Malm

Conclusion : A high percentage of elderly people show high sco anthropometric index, but it does not indicate they have an adequate a behaviour. Their perception of their nutritional and health status is ce by them as very good, however, it exists a high percentage of elderly risk and malnutrition status.

P.2.19. ZINC EFFECTS ON NUTRIENT-NUTRIENT INTERACTIONS AND TRENDS IN HEALTH AND AGING : THE EUROPEAN 2 PROJECT

Zinc is an essential trace element for human health and well However, a moderate deficiency is often observed in elderly, even in d countries. In order to evaluate the health effect of zinc supplemental middle-aged (55-70 years old) and older population (> 70 years European project ZENITH has been launched in 2002. This project place in parallel in 4 different European centres (Rome (Italy), C
P.2.11. TASTE ACUITY IN YOUNGER AND OLDER ADULTS IN THE NORTHERN IRISH POPULATION

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Objective: To determine the extent to which taste acuity declines with age.

Rationale: Taste acuity declines with age (Bartoshuk, Rifkin, Marks and Bars, 1986; Schiffman and Graham, 2000). This study aims to compare taste acuity on the four basic tastes between younger and older adults, employing Signal Detection Theory (SDT), which requires the individual to detect a signal (tastant) from background noise (water). SDT has been applied previously to studies on taste perception (O’Mahony 1972).

Design: An independent subjects design using a single blind method was employed, participants were not informed of the content of solutions prior to testing, signals were randomly presented within each trial and standardised across participants.

Methods: The participants were from Northern Ireland; comprising a community sample of 100 males and females aged 55-70 years, recruited by the Zenith study. Thirty younger males and females were recruited from a university population, aged 20-30 years. Taste data was analysed using Signal detection theory, employing a three alternative forced choice format with 6 concentrations presented in ascending order for the basic tastes, sweet, salty, bitter and sour.

Procedure: Participants fasted overnight and in the morning completed taste acuity tests in a food sensory laboratory.

Results: Data will be statistically analysed using Microsoft Excel and SPSS, employing multivariate statistics.


P.2.12. DECREASE IN FREE RADICALS SCAVENGER ENZYMES ACTIVITY IN HEALTHY AGING AND IN DIABETIC SUBJECTS

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Background: The free radical damage to the cellular function and structure function, is one of the theories for the aging process. Diabetes mellitus is prevalent condition in adult reaching up to 25% of elderly, accompanying with higher morbidity and mortality.

Subjects: 74 healthy individuals in the age range of 24 to 76 of both gender. Coming for check up and 88 subjects with type II diabetes mellitus in the age range of 35-80 who came to routine checkup.

Methods: Blood was drawn from the decubital vein and stored with heparin. Plasma was separated and cholesterol levels were determined. The red blood cells, usually thrown, were washed and using kinetic enzymatic methods. Determining the rate of change of substrates. Superoxide dismutase (SOD) and Glutathione-peroxidase (GLU-Px) activities were determined and referred to the protein content of the cells.

Results: Increasing age correlate significantly with SOD activity in the red blood cells but not with GLU-Px. This enzyme has even demonstrated decrease activity with age.

These finding were not found in subjects with Diabetes. With higher GLU-Px activity in diabetic males.

Discussion: Our observation manifest that with aging red blood cells has decreased capacity to deal with certain changes derived from oxygenation. The red blood cell has increased SOD activity with aging which may be a marker to increased free radicals activity in the cell with aging. Nevertheless, GLU-Px activity is declining with age in the RBC. These findings diminished in diabetic subjects.

P.2.13. LOW MAGNESIUM IN SICK ELDERLY

Y. Berner1, B.-S. Katz2 (1. Geriatric Medicine Meir Hospital, ‘ University Sackler School of Medicine, 57 Tchernichovski st,Kfar Saba Israel; 2. Geriatric Medicine, Kaplan Hospital Affiliated to the University Medical School, Rehovot, Israel)

Background: Magnesium is the main intracellular bivalent Intracellular magnesium plays an important role in maintain transsarcolemmal and intracellular ionic gradients, and in the regu myocardial metabolism and contractility.

Population and methods: I. Measurement of Magnesium in c populations using ICP. II. point prevalence of Mg in the seru hospitalized subacute geriatric patients. III. measured Mg serum conc on admission of 360 consecutive hospitalized patients in the subacute geriatrics ward.

Main study: Magnesium was measured in 28 elderly subjects wi After separation, Lymphocytes’ intracellular Mg concentrations as serum concentrations were determined. Measurements were taken on a day and in the 5th day of disease.

Results: I. low and borderline Mg in different populations. II. e (33%)elderly patients had low serum magnesium levels of 1.27-1.6 (normal above 1.7). III. 28% of all serum magnesium measurement on a were below normal (1.7 mg/dl).

Specific magnesium study consist of 28 patients age range 68 to fever 10M,18F. 18 had acute lung, urinary and gall bladder infection subacute soft tissue infections. Serum Mg levels declined from 1.95 the first day to 1.72 mg/dl on the fifth day, Mean lymphocyte levels from 5.84 to 3.33 fento mole/cell during the same period.

Conclusions: The study demonstrate decline in Mg concentrations the extra cellular and the intra cellular fluids in elderly patients duri illness. During infection Mg concentration declined within 5 days sign Therefore it is suggested to conserve Mg concentration in the pla within cells using both dietary and pharmacological means. It beneficial to survival in this special population of elderly subjects from the stress states as a result of acute and subacute infections.

P.2.14. XANTHINE OXIDASE INHIBITORY ACTIVITY OF ALGERIA PLANT

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Xanthine oxidase activity was tested from 31 species belonging to 8 traditionally used for the treatment of symptoms related to gout by aut peoples of north Algeria. The variation of activity was determ measuring the increase in absorbance at 295 nm associated wi formation. Ninety three percent of the assayed plants were found inhibitory activity at 165 ,35% having greater than 50% in Mallet sylvesteris exhibited the highest activity with an inhibition of 72. The inverse representation namely Lineweaver-Burk plots showed inhibition mode of the species with the highest activity was a comb linear mixed-type, uncompetitive and incompetitive. Inhibitory activi plants correlated significantly with their phenolic content (r = 0.68 P< 0.001)

P.2.15. AGING AFFECTS THE RETINOIC ACID AN TRIIODOTHYRONINE NUCLEAR RECEPTOR MRN EXPR IN HUMAN PERIPHERAL BLOOD CELLS

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Inadequate retinoid status is often described as occurring wit Moreover, a hypothroid status, defined as subclinical, was also evol elderly. Several studies performed in animals described the crucial inci the age-related hypofunctioning of these retinoid and thyroid si
stress markers in response to dietary and nutritional habits in 132 subjects enrolled in Italy (70-85 yrs). Dietary assessment was performed by a four-day record. Oxidative stress was determined by the activities of antioxidant enzymes including superoxide dismutase (SOD), catalase (Cat) and glutathione peroxidase (GPx) in lymphocytes and the erythrocytes levels of reduced glutathione (GSH) and thiol groups (SH). Here we report data at the baseline on the cellular antioxidant status and its relationship with diet.

ZENITH is supported by the European Commission “Quality of Life and Management of Living Resources” Fifth Framework Programme, Contract No: QLK1-CT-2001-00168.

P.2.7. TOTAL PLASMA HOMOCysteINE IS NOT ASSOCIATED WITH AND OXIDATIVE STRESS IN ELDERLY HUMANS.
J.M. Huerta, S. González, S. Fernández, A.M. Patterson, C. Lasheras
(Departamento de Biología Funcional. Área de Fisiología. Facultad de Medicina. Universidad de Oviedo. Julián Clavería s/n, 33006, Oviedo, Spain)

Introduction: Oxidative stress has been suggested as one of the physiopathologic condition underlying the association of total plasma homocysteine (p-Hcy) with cardiovascular disease, but this hypothesis has not been validated in human epidemiological studies. Subjects and methods: P-Hcy was quantified by HPLC, plasma malondialdehyde (p-MDA) was determined as a marker of lipid peroxidation, and plasma and erythrocyte antioxidant enzymes glutathione peroxidase (GPx) and superoxide dismutase (SOD) were measured, in a sample of 123 healthy elderly (54 men, 69 women). Results: No significant differences were found for p-MDA, GPx or SOD activities in subjects with elevated p-Hcy (>15 mmol/L) as compared to those with lower plasma homocysteine. Hyperhomocysteinemia did not lead to increased risk of having the highest p-MDA values, in any gender. Conclusions: We found no evidence that p-Hcy was associated with lipid peroxidation in this elderly human sample. Our results do not support the view that hyperhomocysteinemia would induce an adaptive response of antioxidant enzymes, either.

P.2.8. SERUM SELENIUM IS ASSOCIATED WITH PLASMA HOMOCysteINE CONCENTRATIONS IN AN ELDERLY POPULATION.
S. González, J.M. Huerta, S. Fernández, A.M. Patterson, C. Lasheras
(Departamento de Biología Funcional. Área de Fisiología. Facultad de Medicina. Universidad de Oviedo. Julián Clavería s/n, 33006, Oviedo, Spain)

INTRODUCTION: The negative health impact of poor selenium status has been declared in several studies, while the mechanism underlying its inverse association with cardiovascular disease (CVD) remains unsolved. Nevertheless a prior animal investigation found a direct association between Se intake and total plasma homocysteine (tHcy) concentrations, a well-known CVD risk factor. To date, the importance of serum selenium levels on tHcy in humans without supplementation has not been determined. SUBJECTS AND METHODS: We evaluated the cross-sectional association of blood selenium concentrations with plasma tHcy and several related factors such as folate, vitamin B12 and creatinine in 202 elderly subjects. RESULTS: Serum selenium was inversely associated with tHcy, explaining 5.8% of Hcy variance with respect to 2.2% accounted for by serum folate. Subjects with high selenium have a moderately low tHcy (<12.9 mmol/L) even when their folate concentration is within the lowest tertile, while the opposite is not true, since the high-folate-low-selenium group shows higher tHcy concentrations (>14.0 mmol/L). Furthermore, results showed a 66% decreased risk of higher tHcy concentrations (>14 mmol/L) for subjects with serum selenium in the highest tertile (p=0.013). CONCLUSION: Selenium should be considered as a new potential factor to lower tHcy concentrations.

P.2.9. LOW MICRONUTRIENT INTAKES IN ELDERLY PEOPLE IN EUROPE AND THE UNITED STATES.
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Our population is ageing. From 2000 to 2050 the percentage of elderly older than 60 years will double, world wide. One of the biggest challenges is the prevention and postponing of disease and disability and the maintenance of health of our ageing population. In this trend towards living health longer lives, nutrition plays an important role.

Comparing micronutrient intakes with dietary recommendations is identify possible nutritional gaps. Ideally, this should be confirmed by showing the percentage of people not meeting the recommendations. Recent guidelines provide a safety factor and exceed actual requirements for most individuals. However, mean intakes which fall below 75% recommended intake indicate the likelihood that some individual population are at nutritional risk.

Mean micronutrient intakes for elderly from national survey compared with national recommendations for the United States, the Kingdom, France, Germany, Belgium and the Netherlands.

Results indicate that calcium and vitamin D are the most common for which elderly are at risk of low intakes. Mean intakes below 75% recommendations were also shown for magnesium, folate and vitamin more than one country. Low intakes of iodin, selenium and copper apparent in one of the countries studied.

Low nutrient intake might lead to impaired nutrient status and wellbeing: Vitamin D and calcium deficiency increase the risk of oste and bone fractures and thus reduce independence and mobility. Fortified foods with vitamin D, calcium and possibly other nutrients could maintenance of health of this growing elderly population.

P.2.10. ZENITH PROJECT: THE EFFECTS OF SUPPLEMENTATION ON TASTE ACUITY IN HEALTHY ADULTS.
L. Simpson1, H. Harr1, B. Stewart1, G. Rae1, C. McConville1, V. A. Polito2, N. Meunier4, M. Andriolo1, N. Boreir2, M. Rambaud1,1, J Psycholgy/Northern Ireland Centre for Food and Health (NICHE), 1 Ireland, 2 National Institute for Food and Nutrition Research, Italy, 3 de Recherche en Nutrition Humaine d’Avignon, France, 4: Labora Biologie de Stress oxydant, France)

Objective: The objective of this part of the zenith study is to deter effects of zinc on taste acuity.

Rationale: Taste acuity declines with age (Bartoshuk, Rikfikin, M Bars, 1986; Schiffman and Graham, 2000). This may be associate decline in serum zinc in later life (Gilbridge, Amella, Breines, Mar Mezey, 1998). Zinc supplementation has been reported to improve taste (Henkin, Schechter, Hoyabd Mattern, 1971) but requires further invest

Design: This is a random placebo controlled double blind intervent of zinc supplementation of either 15mg or 30 mg Zn/day or placebo la six months. It is a European multicentre study, with centres in France, Northern Ireland.

Methods: At baseline 96 volunteers were recruited from community at each centre. Participants received a full medical screening that depression using the Geriatric Depression Scale (Yesavage et al, 1987) screened for dementia by the Mini Mental State Examination (Folst 1975). Taste data will be analysed using Signal detection theory, trem three alternative forced choice format with 6 concentrations pres ascending order for each of the basic tastes, sweet, salty, bitter and sour.

Procedure: Participants fasted overnight prior to morning tast testing, taking place in a food sensory laboratory.

Results: The preliminary baseline results will be reported looking an age and cultural differences in relation to taste acuity prior to supply with zinc.

Conclusion: Results will be used to form the basis of analysis:

D intake.
Ingestion of vitamin B1, B6 and B12 was statistically higher in supplemented versus non supplemented women (p<0.05). In men supplementation lead to significant intakes of B1, B6 vitamin E and Iron (p<0.05). Nevertheless, the intake of all these nutrients was already adequate in the diet of the supplemented group. We must remark that the energy and macronutrients intake of the supplemented men was statistically higher compared to the non supplemented ones.
In conclusion, dietary intakes of the studied population showed a good adequacy to the Spanish recommendations. With the exception for vitamin D, vitamin and mineral supplementation is unnecessary.

P.2.3. ANTIOXIDANT PROPERTIES OF HUMAN MILK, ALTERATIONS AND PREVENTION OF FUTURE PAYHOLOGIES.
M. Miranda, M. Muriach, I. Almansa, E. Jareho, F. Bosch-Morell, J. Romero, D. Silvestre (City: Moncada, Valencia, Spain)

Among the numerous benefits of the maternal milk which makes it the best food for babies during the first 4-6 months of life, are the ones which come from its basic composition: enough supply of energy and nutrient constituents, specific and appropriate supply for the immaturity of the baby’s organs and systems, reduction of the incidence and severity of the illnesses which may come at that early age, prevention of pathologies in the future adult life, like diabetes and Alzheimer.

Human breast milk storage for use later is on the increase as a result of economic activities of mothers. It is thought that free radicals play a role in the pathogenesis of several disease processes in premature infants. The aim of this study was to assess the changes in an lipid peroxidation indicator (MDA) and in glutathione peroxidase (GPx) activity when human milk was kept in refrigeration during 48h, or in congelation during 10 days.

Results: 32 human milk samples are analyzed. Samples were divided in three parts, first to be analyzed immediately, second is left in refrigerator 4°C and it is analyzed 24h after and third is congelated –20°C and it is analyzed 10 days after. MDA concentration was measured by liquid chromatography according to the method of Richard et al. GPx activity was measured according to the method of Lawrence et al. We also analyzed human milk content in total proteins and IgA.

Conclusions: MDA was significantly increased during and after 10 days of congelation. There was no difference between MDA from fresh milk or refrigerated milk. GPx activity was significantly increased in refrigerated milk and in congelated milk. We conclude that it seems better to congelate milk than to refrigerate it in order to prevent oxidative stress in milk samples and prevent future pathologies in the adult life.

P.2.4. A DIETARY SUPPLEMENT (MMT) IMPROVES AN EXPERIMENTAL INFLUENZA-MODEL IN OLD MICE

Given the constant search for validated natural products for common ailments such as flu, and especially in the elderly whom are often prescribed multiple drugs, this study was designed as follows. 20-month old swiss mice were allocated into: A) control; B) infected group and C) MMT-treated infected group. Mice were infected intranasally with 30ml of 1ml of MMT viral units. MMT group received 5mg of MMT t.i.d (ginger, strobilanthus cusia, panax pseudo-ginseng, eucumina ulmoides, momordicae grovenori, licorice root, Allium fistulosum). Clinical signs, inflammatory cell counts in nasal washings, virus titres in lungs homogenates and plasma MDA were serially determined for 8 days. At sacrifice bronchial lavage fluid (BALF) collection and lung tissue were examined. MMT markedly blunted the nasal signs of virus infection and the febrile response. Formazan-positive cells, lung and plasma lipoperoxides as well as of T/NF-a in lung tissue significantly increased during viral infection (p<0.05 vs control) but a significant improvement was observed in MMT-treated group. SOD, catalase activities and ascorbic acid significantly decreased in the infected groups. However, supplemented groups showed activities similar to control group. MMT-treated animals showed a significant decrease of lung but not nasal viral titre but nasal inflammatory infiltrate significantly dropped in MMT-treated mice. No toxicity was detected up to dosages over 50-fold higher. MMT has potential clinical application as an excellent safety profile even in old animals while further studies are or elucidate its mechanism of action in more detail.

P.2.5. CONTRIBUTION TO THE VITAMIN D STATUS OF EL SPANISH WOMEN BY DIETARY INTAKE AND SUN EXPOSURE

Introduction: Vitamin D status decreases with age mainly as restricted capacity of the skin to produce vitamin D. The Euronut SENI strictly standardised protocol evaluated serum 25 (OH) D concentrations in 2586 elderly people living in 12 European countries. Surprising concentrations were found in the elderly living in southern countries of Spain among the lowest. The conclusion was that the reasons should be quantified.

Aim: Within the European Fifth Framwork Programme: T (Towards a strategy for vitamin D fortification) QLK1-CT-2000-00 works presents the vitamin D status and the contribution from diet and in elderly women living in Spain.

Design: A cross-sectional observation study conducted June and 2002. Vitamin D intake was assessed by mean of 3-d record and a 1 ascertainment the foods (including fortified) contributing to 95% of the intake. Sun exposure was measure use a dosimeter (UV VisP sor (25-OH)D was analysed by HPLC discarding women with a sup vitamin D.

The sample was of 53 woman (age 71.5 ± 2.5 y.). Results:

<table>
<thead>
<tr>
<th>Vitamin D intake (mg/day)</th>
<th>Mean (SD)</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunlight exposure (mJ/m2)</td>
<td>741.3 (624.4)</td>
<td>42</td>
<td>3008</td>
</tr>
<tr>
<td>MMT-treated (nmol/l)</td>
<td>36.8 (16.3)</td>
<td>10.7</td>
<td>91.9</td>
</tr>
</tbody>
</table>

Conclusions: A high prevalence of hypovitaminosis D was presented elderly women, 39,9 % had vitamin deficiency (defined by S-25OH nmol/l) and 85,7% insufficiency (defined by S-25OHD < 50 nmol/l).

The main dietary sources of vitamin D were fish and eggs. Use of vitamin supplements should be determined for a good status.

P.2.6. ANTIOXIDANT ENZYMES AND OXIDATIVE S MARKERS IN ITALIAN ELDERLY SUBJECTS
M. D’Aquino1, G. Maiani1, E. Venneria1, C. Devirigilis1, A. A. Baguzzini1, E. Azzini1, G. Catasta1, M. Zaccario1, L. Palombo1, O. I and C. Coudray2 (1. National Institute for Food and Nutrition R Human Nutrition Unit, Via Ardeatina 546, 00178 Roma, Italy; 2. C. Recherche en Nutrition Humaine d’Auvergne Unité Maladies Métabo Micronutriments, Centre de Recherche INRA Clermont-Ferrand/Thé. Saint Genes’Champelane, France)

The Zenith project is a multicentre European study. The aim of this study to investigate the beneficial effects of oral zinc intake on healthy recruited in three European countries (France, Italy and Northern I late middle-age (55-70 yrs) and older age (70-85 yrs), supplemented nutritional levels of zinc (15 or 30 mg/day) during 6 months, using a controlled double-blind design. Reactive oxygen species (ROS) are generated under normal conditions during aerobic metabolism: include free radicals such as superoxide anion, hydroxyl radicals nonradical hydrogen peroxide. As a consequence each cell is equipped extensive antioxidant defence system to combat excessive production Oxidative damage has been associated with ageing but there is no agreement to whether or not it is produced by a decrease in antioxidant defences ageing processes. This presentation is focused on the evaluation of t
P.1.17. SUPPLEMENTATION PRACTICE AND MORTALITY IN SENECIA POPULATION

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The aim of this paper was to determine whether supplementation practice was associated with all-cause mortality in the participants of SENeca study. The analysis included 1020 men and 1048 women from 15 small towns in 11 European countries, aged 70-75 years in baseline study carried out in 1988/89. Subjects declared suffering from stroke, malignancy and chronic liver diseases were excluded. The mortality follow-up lasted until April 30, 1999.

During the baseline study the significantly higher percent of smoking men and smoking women used supplements (14.6% and 35.2% respectively) in comparison to non-smoking subjects (10.3% and 13.6%). Among smokers Kaplan-Meier analysis and log-rank test indicated a higher mortality rate among supplement users than among non-users. The unadjusted HR (Hazard Ratio) was 1.57 (95% CI: 1.08 – 2.29) among smoking men and 1.54 (95% CI: 0.71 – 3.36) among smoking women. After multiple adjustments for age, years of education, physical activity (Voorrips-score), chronic disease, alcohol use, Mediterranean Diet Score (modified by Knoops et al) and place of living (latitude) Cox’s proportional hazards regression analysis indicated no significant differences in all cause mortality between supplement users and non-users. Although the risk estimates for smokers (men and women) were not statistically significant, the data suggested that using supplements (HR: 1.46, 95% CI: 0.95-2.26, table 3) or vitamin C supplements (HR: 1.50, 95% CI: 0.91-2.47, table 3) by smoking men and using supplements by smoking women (HR: 2.58, 95% CI: 0.98 – 6.78) resulted in higher mortality rate.

This research is part of HALe project, funded by the EU (QLK6-CT-2000-00211)

P.1.18. CHOICE OF FUNCTIONAL FOODS (YOGHURTS) IN LATER LIFE

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Since the population of elderly people is increasing in many European countries, there is a great need to understand perception of foods among consumers in advanced age, so that healthy food products available on the market are suitable and enjoyable to the seniors, helping maintain their nutritional status and quality of life on satisfactory level.

Forty eight free-living women (BMI = 27.83 ± 3.76) and 48 free-living men (BMI = 26.75 ± 3.21) aged between 65-74 or 75 and over, living either alone or with at least 1 other person were recruited. They were all Warsaw citizens, of mainly secondary or high education level, with diverse monthly incomes.

The Repertory Grid Method (RGM) was employed to assess yoghurts preference. Empty packages of 7 different yoghurts were presented to the elderly subjects in 3 random triads: 5 functional yoghurts (two probiotic, one low fat, one enriched in vitamins and one containing a component that beneficially affects the body, ie cereals) and 2 conventional natural yoghurts. Then personal constructs were defined for each yoghurt and then scored using a 5-point scale.

The subjects generated a large number of constructs, related to yoghurts' sensory attributes, nutritional value, packaging attractiveness, brand name, etc. The highest number of subjects (n=86) regarded 'taste' as the most important factor affecting their food preferences, and then 'impact on their health' (n=75), fat content (n=48), ‘trust to the producer’ (n=22), ‘packaging’ (n=20), ‘texture’ (n=11). Some other product attributes were also named. Further in-depth analysis is to follow.

This research is part of “SeniorFoodQoL” project, funded by the EU (QLK1-CT-2002-02447)

P.2.1. ANALYSIS OF IMMUNE RESPONSE IN ELDERLY SUBJECTS

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Zinc is fundamental for the activity of the immune system: deficiency can adversely affect different organs and tissues with the system being one of the most seriously impaired. Inadequate zinc intake has often been seen in the elderly population and therefore one of the aim of the current study was to investigate the effect of zinc supplements (15 or 30 mg/day) in late middle-aged (55-70 years old) and older (70-79 years old) women and men. This was a 6-month placebo controlled double intervention study design, with 96 volunteers in each centre.

Baseline data on several markers of immune response to the two age groups, late middle-aged Northern Irish volunteers and older volunteers will be presented. Proliferative response was assessed by stimulation with phytohemagglutinin (PHA) and mitomycin C, as well as lymphocyte subsets (Total T-lymphocytes, T-helper lymphocytes subsets, Natural Killer cell %, Activated T-lymphocytes). In early and late-activated intracellular cytokines (IL-2, interferon-gamma, tumor necrosis factor-α, IL-4, IL-6, IL-10, tumor necrosis factor-alpha, phagocytes apoptosis). Proliferative response was measured as 3H-thymidine incorporation.

Cytokine gene expression was analyzed by RT-PCR. The levels of cytokines were assessed with ELISA. Lymphocyte and leucocyte intracellular cytokines, phagocytes apoptosis and apoptosis were all measured by cytometry.

We hope that this investigation will give an insight into the biological effects of zinc supplementation on the immune status of these two age groups and highlight markers that are indicative of trends better health in these vulnerable population groups.

ZENITH is supported by the European Commission "Quality of Management of Living Resources" Fifth Framework Programme, Con QLK1-CT-2001-00168

P.2.2. USE OF VITAMIN AND MINERAL SUPPLEMENT NUTRITIONAL ASSESSMENT IN A SPANISH ELDERLY POPULATION

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Poor nutritional status is an usual problem in elderly people which i the rates of mortality and morbidity in this age group. Several factors a an inadequate ingestion of food and nutritional deficiencies, s vitamins and minerals.

The objective of this study was to evaluate the daily intake of vita minerals, from food and supplements, in a population of elderly people analyse its adequacy to the Spanish Recommended Intakes (RIs) for per day.

This Study was undertaken in 85 people (44 women and 41 men) aged from Pelayos de la Presa (Comunidad de Madrid). Data were regist food frequency questionnaire (adapted from Martin-Moreno y col., 1’ ianalysed using a software programme (Alimentación y Salud, ) and Food Composition Tables (Moreiras y col.).

Results: 38% of women and 26% of men were taking a vitamin supplement.

Mean energy intake was of 120% of the Spanish recommended women and of 82% of RIs in men. Nutrient intakes covered Spanish I the studied population, excepting for vitamin D which was only of a of RIs in the non supplemented women, 30% of IRs in supplemented m 24% in non supplemented men. Supplemented women had an adequate
nutrition and aging and workshops). The strategies of nutritional intervention encourage the integration between extension activities (nutritional attention to the elderly who take part in the project), education (the project gives opportunity to the development of practical activities required by subjects studied at the graduation course on Nutrition), research (scientific works comes from the assistance activities) and also works as a useful tool in the development and improvement of health professionals as well as professionals of other fields, due to the partnerships established. Each year an average of 400 elderly people are attended and 150 undergraduate students on Nutrition took part in it. The educational improvement of the crew is exemplified by thesis and the enrollment of ex-members in graduate and master’s courses, doctorate and positions related to health/nutrition to the elderly and the great demand of elderly people serves as a measure of the success of the Project. Despite the difficulties, the perspectives are promising. The approach based on structural themes glimpses the creation of new research fields especially at the perspective of integration between nutrition, health, and healthy aging. Support: Rio de Janeiro State University – UERJ/SR3

P.1.13. SELF-REPORTED OBESITY AND WEIGHT LOSS PRACTICES IN PORTUGUESE ELDERLY
C. Afonso, P. Graça, M.D.V. de Almeida (Faculty of Nutrition and Food Sciences of Porto University, 465 Porto, Portugal)

Objectives: To analyse in the Portuguese senior population, the prevalence of overweight and obesity, to describe recent weight changes and weight loosening practices. This study belongs to the multicentric Pan-Eu Survey on Consumer Attitudes to Physical Activity, Body Weight and Health, under the leadership of the Institute of European Food Studies and sponsored by DG V.

Methods: A representative sample of 171 Portuguese citizens, aged 65 years plus were selected by quota control sampling. BMI was calculated by self-assessed weight and height (wh/h²). Garrow’s classification was used to determine the prevalence of overweight and obesity. The data descriptive analysis, was followed by uni and multifactorial analyse to characterize the study sample.

Results: Half of the Portuguese seniors were within the normal weight range, 38.5% were overweight, 11% obese and 6% underweight. Factors found to increase the risk of overweight/obesity were: male gender (p=0.05), belonging to the lowest social class (OR=3.91 vs. those in the highest), and feeling fat (OR=29.2 and p<0.001). In the previous 6 months 33% of the subjects were in a state of weight change, and from these, more participants reported that they had put (20%) rather than lost weight (12.6%). Besides, from the 50% of the overweight and obesity only 18% were trying to loose weight and the most common method was diet (60%). Only 7.6% used physical activity and the association between diet and physical activity was used by 3.3% of the seniors.

Conclusion: The prevalence of overweight and obesity in the elderly call for the need to develop and implement strategies to solve this public health problem. As an essential component for health promotion, chronic disease management and quality of life in the later years, the programmes to prevent overweight and obesity, need to become effective in Portugal, preventing the weight gain and improving quality of life.

P.1.14. FACTORS INFLUENCING FOOD CHOICE BY PORTUGUESE SENIORS
C. Afonso, P. Graça, M.D.V. de Almeida (Faculty of Nutrition and Food Sciences of Porto University, 465 Porto – Portugal)

Objectives: To identify in the elderly Portuguese population, the main determinants of food selection, in order to plan adequate strategies and policies of health promotion in this growing sector of population.

Methods: Cross-sectional survey using a face-to-face interview-assisted questionnaire. The study was carried out within the multicentric Pan-EU Survey on European Older Population regarding attitudes and behaviours through nutrition and health, under the leadership of the Institute of European Food Studies – Dublin with the cooperation of members from all EU countries. 406 Portuguese aged ≥ 55, were interviewed. The data’s descriptive analysis was followed by uni and multivariate analysis to characterise the study’s sample according to the defined objectives.

Results: To eat a healthier diet was the most frequently mentioned factor in the promotion of a good health (66%), followed by going for medical check-ups (27%) and to give up or cut down on smoking (26%). Regar factors influencing elderly’s food choice, trying to eat a healthy diet habit or routine and price (28%) were the most important factors. Aros of the elderly mentioned that they had changed their eating habits, reasons (62%) and becoming more health conscious (25%) were the perceived to have the greatest influence on this change. The major dietary habits include increase in fruit (73%) and vegetable consumption more fish (55%) and more water (52%).

Conclusion: These results will help to improve eating habits in the as health professionals will be able to choose the most appropriate strat different groups and settings, and will provide a base for interventions.

P.1.15. DIETARY INTAKE AND MEALTIME HABITS IN REI TO DIETARY REQUIREMENTS IN ELDERLY LIVING IN SHELTERED HOUSING IN SWEDEN
R. Stefanovic-Andersson, M. Persson, K. Ulander (1. Division of Medicine, Department of Community Medicine; 2. Department of Lund University, Sweden)

Background: A complete dietary intake and many mealtimes are in prevention for malnutrition in elderly living at sheltered housing (SH)

Objective: To study the dietary intake and mealtimes in relation to requirements in elderly living at SH in Sweden.

Design: A 7-day dietary record was completed in 166 elderly, 121 and 37 men, with a mean age of 85 years, living at four different SH, in the study ‘Diet and nutritional routines in the care of the elderly in Sweden’.

Outcome: Mean daily energy intake in women was 1591 kcal and 1894 kcal. According to the calculated individual energy needs an intake was recorded for 63% of the elderly. Furthermore the intake of D, folate, iron and selenium were below the recommended daily intake 100% of the women and 80-100% of the men. Most of the diets took place during 10 hours in the daytime. The energy intake from m 86% and 14% as snacks.

Discussion: Many of the elderly living at SH have an insufficient intake and are served all meals in a few hours during daytime with few The there is a great need of developing nutritional routines and educate nutritional care. All elderly living at SH in Sweden should be offered multivitamin and mineral supplementation. A large number of resident in SH are not eating according to dietary requirements and more recommendations, especially the snacks in between meals are insufficient.

P.1.16. NUTRITIONAL STATUS IN MACEDONIAN ELDERLY
A. Mitrakos1, L. Todorovski2, D. Todorovski3 (1. Geriatric Cen October; 2. Department of Human Physiology and Anthrop. Medical Faculty, Skopje; 3. Macedonian Red Cross, Skopje)

Introduction: There is little data about the nutritional status Macedonian geriatric population. Aim: Assess the nutritional status Macedonian elderly in cross-sectional study.

Subjects: 613 home free-living subjects older than 65 years, mean ± 6.9 y (292 m; 321 f)

Methods: Nutritional status was assessed with clinical evaluation and functional status, muscle strength, ADL, IADL, geriatric depression and MNA) biochemical (hematometry, MCV, prealbumin, albumin, ANA and anthropometric parameters (stature, weight, BMI, waist/hip ratio, triceps and sub-scarpularis, upper arm circumference, elbow diameter, upper muscle and fat area).

Results and discussion: Analysis of the anthropometric data that 14.6% of investigated Macedonian elderly were obese, 41.2% malnourished and 32.4% were at risk of malnutrition. T1I malnourished elderly had chronic, non-edematous and mild to moderate energy malnutrition. Our results shown higher percent of malnourish free-living elderly, compared with many epidemiological studies. T1 reason is very low social-economic status of Macedonian elderly. Con Nutritional disorders are prevalent health problem in Macedonian el there is a need of nutritional intervention in this population.
b. Instrumental data:
- Bio electric impendence that is able to divide the total body into different compartments;
- Gas analysis that transform analytical data into rest metabolic rate
3. Minimental test:
- Memory test (few time after the reading, to remember a passage)
- Attention test
- Elaboration ability.

The ability of the sanitary operator consists in a detailed explanation of the results step by step, intriguing the patient and learning eventually the more common mistakes in nutrition. The successful of the dietary approach, applying to work together the sanitary, the patient and their household, recognizes the initial moment in the active cooperation from sanitary team and patient.

P.1.9. COMPUTERIZED MANAGEMENT OF BIOSPECIMEN REPOSITORIES: THE NUAGE COHORT STUDY EXAMPLE

P. Gaudreau1, P. Pomerleau1, J. Morais1, A. Khalili1, I. Dionne1, G. Ferland2, T. Fulop3, K. Gray-Donald4, D. Jacques5, M.J. Kergoual1, H. Payette1, B. Shatenstein1, D. Tessier1, C. Veyrat-Durechex1, R. Wagner2
(Nutrition and Successful Aging Section, Quebec Network on Research on Aging; 1. University of Montreal; 2. McGill University and 3. University of Sherbrooke, Quebec, Canada)

NuAge is a prospective, observational, five-year study on nutrition as a determinant of successful aging. In addition to data collection from questionnaires as well as anthropometric, clinical and functional measures, biological samples (50 ml blood, 2 ml saliva, 20 ml urine) are obtained yearly from 1,800 68- to 82-year-old participants. Blood is immediately used to perform a complete blood test and to determine serum albumin and glucose levels. As with saliva and urine, blood is treated, aliquoted and frozen at -80°C for a posteriori multiple analyses needed in various NuAge-embedded studies. Objective: Since over 450,000 serum, plasma, saliva and urine samples will be generated until 2008, optimal management of the biospecimen repositories is necessary for the development of a computer-assisted system with bar code identification. Materials and methods: The system consists of a PDT8100 Symbol portable terminal/bar code reader and a personal computer. The portable terminal employs MW® for Pocket PC software and includes sample list, sample specification and sample storage modules. The computer has a MW® Access 2002 platform and comprises modules for sample selection, sample selection based on a list of participants, sample specification, and sample or data addition. Perspective: This biospecimen management system constitutes a reliable tool, allowing efficient follow-up at all times. Moreover, it will serve as a model for other studies involving the collection of a large number of biological samples. Supported by the Canadian Institutes of Health Research and Fonds de la recherche en santé du Québec.

P.1.10. COMPUTER-BASED DATA COLLECTION FOR THE NUAGE LONGITUDINAL STUDY OF NUTRITION AS A DETERMINANT OF SUCCESSFUL AGING

H. Payette1, V. Boutron1, C. Coulombe2, P. Gaudreau1, K. Gray-Donald1, J. Morais1, B. Shatenstein1, I. Dionne1, G. Ferland2, T. Fulop3, D. Jacques5, M.J. Kergoual1, A. Khalili1, D. Tessier1, C. Veyrat-Durechex1, R. Wagner2
(Nutrition & Successful Aging Section, Quebec Research Network on Aging, 1. University of Sherbrooke; 2. University of Montreal; 3. McGill University, Quebec, Canada)

The NuAge study aims to establish a cohort of 1,800 subjects aged 68 to 82 years at baseline in a five-year longitudinal investigation using a plamethodological (fundamental, clinical, epidemiological and social) approach. In addition to biological samples, nutritional (e.g. diet, taste, food habits, anthropometry and body composition), functional (e.g. muscle strength, physical activity and performance), medical (e.g. physical, mental and cognitive health) and social data (e.g. network, support, participation) are collected by questionnaires or direct measurements. More than 1,000 variables per subject will be collected annually by 15 research dieticians/nurses. Objective: To maximize data quality by optimizing data collection, treatment and database management. Methods: Data are entered directly into a database during computer-assisted personal interviews with WilliamTM data entry software and interactive, custom-designed (WilliamTM) questionnaires (n=16). Standardisation is achieved by a priori defined response set compulsory fields and outlier markers. A MW® Access 2000 pla employed for preliminary data treatment and transfer to an ASCI- (individual/interviewer and central) compatible with data analyses such as SPSS or SAS. Results: To date, about 200 participants have recruited, examined and interviewed. Computer-based data collection reliable and flexible approach which is also appropriate and satisfies both interviewers and subjects. This study is supported by the C Institutes of Health Research and Fonds de la recherche en santé du Qu

P.1.11. RELATIONSHIP BETWEEN LONG-TERM ALCOHOL CONSUMPTION AND RETINOIC ACID AND TRIIODOTHYRONINE NUCLEAR RECEPTOR EXPRESSION IN MONONUCLEAR OF ELDERLY SUBJECTS

S. Alfos1, C. Boucheron1, C. Fétart2, L. Letenneur2, D. Hig V. Enderlin3, J.F. Durtigue3, V. Pallet3, H. Piguet4 (1. Unité de Nu Signalisation Cellulaire (E.A. MENRT, Usc INRA) ISTAR, Talence; 2. U593 Université Victor Segalen Bordeaux 2; 3. Service de Bioél (Hôpital Pellegrin, Hôpitaux de Bordeaux, Centre Hospitalier Univers Bordeaux, France)

Retinoid acid and triiodothyronine, the active metabolites of vitamin thyroid hormones respectively, play a key role in maintenance of homeostasis of numerous adult tissues mainly through binding to nuclear receptor act as transcription factors. The objective of the present study was to: in elderly subjects, the effect of long-term alcohol consumption on retinol (RAR and RXR) and triiodothyronine (TR) nuclear receptor mRNA Peripheral Blood Mononuclear Cells (PBMC).

To this aim, PBMC were obtained from an elderly sample of 42 drinkers and 24 non-drinkers, drawn from a population-based study, the City Study. Vitamin A and thyroid hormone status were assessed by bl and the effects of long-term ethanol consumption on RARx, RARy, TRx1, TRx1 mRNA levels were measured in PBMC using a real-time method involving the LightCycler™ technology.

Our results show that elderly drinkers did not display any significant alteration in vitamin A or thyroid hormone status. Moreover, nuclear mRNA levels in PBMC were not significantly different between drink or non-drinkers. However, a significant correlation was observed between intake and RARx and TRx1 mRNA expression in PBMC of healthy subjects.

These results demonstrated for the first time a relationship between consumption and RARx and TRx1 mRNA expression levels in P elderly subjects in spite of no change in vitamin A or thyroid hormone elderly drinkers. This suggests an ethanol-induced increase in retinoic triiodothyronine bioavailability in PBMC from elderly subjects. It is clear that PBMC can be used as effective markers of ethanol-induced modifications of retinoic acid and triiodothyronine signalling pathways in healthy subjects.


The Project is developed by the Institute of Nutrition in a partners the Universidade Aberta da Terceira Idade at Rio de Janeiro State ur since 1993, has been promoting evaluative and educational act nutrition with elderly people, focusing on issues including aliments nutrition and healthy aging, which are topics of great importance of the collective health of our population. The structural themes - Ni- epidecom: anthropometric and dietary analysis; Educatice practice- and methods: Alimentary behavior: food, lifestyle, memory, culture, a health, are worked by promoting individual care (personnalized nu orientation) as well as collective care (waiting rooms, meetings, et al.)
models were used with subject as random effect.

Results: Results show that the food, energy and macronutrient intake of the GISELA subjects stayed fairly stable over the period of eight years. However, some significant changes in the consumption pattern are observed. Most obvious changes observed are the increased intake of water in all study groups (between +2.05 and +4.61 ml d-1 year-1) as well as the reduced consumption of coffee and tea in the women of both age groups and the old men (between -10.65 and -15.99 ml d-1 year-1). Furthermore, the intake of meat among the younger women (-1.79 g d-1 year-1) and younger men (-2.56 g d-1 year-1) shows a significant decrease. In all age and sex groups, except for the older women, a significant higher intake of vegetables is observed (between +2.94 and +3.38 g d-1 year-1).

Conclusion: The healthier food choices and the ability to change food habits could be related to the relatively high health-awareness of the GISELA subjects compared to the federal average of equivalent age groups.

P.1.5. ELDERLY PEOPLES’ MEALS. A COMPARATIVE STUDY BETWEEN ELDERLY LIVING IN A NURSING HOME AND FRAIL, SELF-MANAGING ELDERLY

S. Engelheart, E. Lammes, G. Akner (Nutrition and Pharmacotherapy Unit, Research and Development Unit for the Elderly North West, Dept. of Geriatric Medicine, Karolinska Hospital, Karolinska Institute, 171 76 Stockholm, Sweden)

Background: Sweden is one of few countries that have specific recommendations regarding meal frequency and the distribution of meals throughout the day. The importance of mealtime habits for health outcome is inadequately studied in elderly subjects.

Objective: The aim of the study was to investigate elderly peoples’ meals; the distribution of energy intake throughout the day and the number of eating episodes per day, as well as the participants’ estimated appetite, motivation to eat, sense of taste and sense of smell. Comparisons were made between results from elderly people living in nursing home and a group of frail, self-managing elderly.

Design: Exploratory study. All analyses of energy intake are based on food records: weighed in the nursing home and estimated in the frail, self-managing elderly. Subjective variables were estimated using a 10-point VAS scale.

Results: On average there were 4-5 daily eating episodes in both groups, but more widespread over the day in the self-managing elderly, including a shorter fasting at night. Appetite and sense of smell was estimated as reduced in about 30-40% in both groups. Sense of taste was estimated as reduced in 40 % of the males and 10-20 % of the females. Energy intake was similar in both groups, 25 kcal/kg, with more than a three-fold variation among participants. Energy intake/kg body weight correlated with shorter night fast in the nursing home residents, however, did not correlate with ADL number of eating episodes per day, appetite, motivation to eat, or senses of taste or smell.

Conclusion: The self-managing elderly had more widespread eating episodes than the elderly in the nursing home, indicating that self-managing elderly exhibit larger variations in food intake preferences, but without affecting mean energy intake. The lack of correlation between energy intake and estimated appetite, taste and smell is in line with previous findings in elderly and is further discussed.

P.1.6. REPEATED ASSESSMENT OF ENERGY AND NUTRIENT INTAKE IN NURSING HOME RESIDENTS

E. Lammes, G. Akner (Nutrition and Pharmacotherapy Unit, Research and Development Unit for the Elderly North West, Dept. of Geriatric Medicine, Karolinska Hospital, Karolinska Institute, 171 76 Stockholm, Sweden)

Background/objective: Elderly people with chronic diseases often lose weight. This may be caused by a lower energy and nutrient intake and/or an increased metabolic rate. To analyse on the one hand the relation between energy intake and body weight over time and on the other hand mortality we carefully monitored the energy and nutrient intake, as well as the body weight, of elderly people with multiple diagnoses in a nursing home for over one year.

Design: We assessed the food and fluid in 52 nursing home residents intake during five week-days on three different occasions with six months interval by weighed food intake analysis. Energy and nutrient content was calculated. The subjects were weighed every third month. Mortality was analysed two years after the study was completed. The functional ability, measured as activities of daily living (Katz ADL-score), was examined.

Results: The mean age was 84 years, 79% were female. Mean body weight was 61kg. Mean energy intake was 1501, 1544 and 1357 kcal/d at 1 assessments respectively. A similar intake pattern was seen for most subjects. For half of 16 micronutrients analysed, the mean intake was recommended.

The two-year mortality was 52%. Comparing groups showed that t body weight of those who died was nine kg lower (57kg vs. 66kg, p=0.05). Energy and nutrient intake was similar. In a multivariate model for mortality highest hazard ratio was found for sex ADL and body weight.

Conclusion: Intake of energy and nutrients was low, and diminishes after one year. This may contribute to the development of protein malnutrition in elderly in nursing homes.

P.1.7. NUTRITIONAL DIARY AND FOOD PATTERNS IN AGIN


As nutrition can also be considered an environmental exposure, everyone experiences, we have studied its role on people’s health and development of chronic diseases. Given a regular usual intake, n, researches have studied the intraday variation in the intake. Profitable font of information on dietary habits of a large group of people comes from statistical analysis conducted by the National Institute of R (ISTAT), which locates the home consumption and its variation = Other help can come from family physicians if in the whole medical history the patient this information is available and it’s been recorded. The r study to have real knowledge on nutritional habits of a people nutritional epidemiology. For this goal we used a week dietary recall: list the foods they have ingested in a certain period of time, usual previous 24 hours. Multiple 24 hours recalls collected over a long period time may also be used to assess the intake. Materials and methods: patients who coming to the outpatient Dietetic unit were requested to fill nutritional diary within a week. During the dietician examination the d verified using a photographic specimen, reporting house portion weight correspondence. Informational data acquisition - Food intake subjects, as shown in the 24 hours chart, was stored in a PC using Excel software by Medimatica (Martinsciuro - Italy). The stored data w exported to a Microsoft Excel electronic sheet and then transferred to S statistical software for statistical analysis and graphic elaboration A geographical location of a subject - Using ZIP code as informational b possible to group the entire subject inhabitant in a definite geographic i in a district of the town. The informational elaboration of the process can be based on a so-called “informational button cascade”: Res discussion - The nutritional knowledge of a people represent an ir source of information on nutritional habits and on nutritional impact can be used as a medical educational approach and to prevent campaign.

P.1.8. HOW TO USE DIETETIC EXAMINATION PROTOCOL GOOD NUTRITIONAL BEHAVIOUR


The dietetic examination in a dietetic outpatient clinic and the su dietetic prescription assumes in the case of obesity high importance nutritional education. In our reality, the examination protocol was: 1. Preliminary aspects: • Blood analysis check-up to investigate possible pathological comp • Week recall nutritional card filled by the subject, reporting food weighed • Outpatient clinic dietetic examination: a. Anthropometric measures: • Height and weight • Arm girths and arm folds
P.1.: Nutritional Intake

P.1.1. REDUCTION OF AEROBIC BACTERIA PROLIFERATION RATE (SPOILAGE) IN REFRIGERATED APPLES EXPOSED TO POTASSIUM PERMANGANATE (KMNO₄)
R. Miener (Edk, Washington, USA)

Objective: To simultaneously assess the rate of aerobic bacteria, yeast-mold proliferation count in 2 each red delicious apple sections from a parent apple specimen, with and without proximal exposure to a packet of Zeolite-coated Potassium Permanganate (Z-KMNO₄).

Design, sample, location: Following 28-days refrigeration in separate compartments, two "Red Delicious" apple samples excised from a single specimen were reduced to 1:1000 solutions then incubated for 36 and 72 hours to determine aerobic bacteria and yeast-mold counts respectively, in Northeastern Washington. One sample was exposed to an anti-microbial mineral compound, Z-KMNO₄, while the other sample was isolated (compartment-separated) from the anti-microbial Z-KMNO₄ mineral compound.

Results: As harvested apples predictably release ethylene gas, which acts as a ripening hormone. As ripening progresses, communal environmental microbes proliferate in samples exposed to air. Eating over-ripened, microbe-infected spoiled produce has been associated with severe gastric stress, compromised immunity, and allergic reactions. The spoilage rate of stored produce is dependent upon time, temperature, viscosity, pH, humidity, space, and nutrient access. Refrigeration in temperatures below 50 degrees F and under 45% humidity delays the rate at which produce deteriorates by inhibiting ethylene gas ripening hormone release, hence the rate at which aerobic bacteria, yeast, and mold grows in produce. Zeolite-coated Potassium Permanganate (Z-KMNO₄) placed proximal to refrigerated produce reduces ripening rate, inhibits microbial growth, and spoilage. Identifying which microbes and how many are inactivated by packets of Z-KMNO₄ in refrigerator compartments, until now, has not been identified. A randomly selected Red Delicious apple sample was refrigerated for 28-days and enclosed adjacent to a single Z-KMNO₄ packet. This sample, following incubation, yielded 10,000 aerobic bacteria per milliliter count. Simultaneously, an apple section from the same apple was refrigerated for 28-days without Z-KMNO₄ exposure. This sample yielded a count of 1,000,000 aerobic bacteria per milliliter. From the same Red Delicious apple sample, both sections after being refrigerated for 28-days surprisingly yielded an equal ratio of 100,000 yeast/mold per milliliter in the sample with Z-KMNO₄, and 100,000 yeast/mold per milliliter in the sample isolated from exposure to Z-KMNO₄.

Conclusion: This shows that a single packet (Z-KMNO₄) stored with a refrigerated apple sample reduced the aerobic bacteria (AB) proliferation growth count by a factor of 1000, (10,000 AB Z-KMNO₄ as compared to 10,000,000 AB non-exposed samples). Surprisingly, Z-KMNO₄ exposure did not reduce yeast/mold growth in either sample (100,000 Z-KMNO₄ as compared to 100,000 in non-exposed samples). Given the cost to health from incidental consumption of spoiled produce, reducing the rate of aerobic bacteria growth in produce is a nutrient-protective intervention with disease-preventative implications. This single experimental study is conclusively limited and therefore requires more extensive research in order to explain or confirm the evidence reported.

P.1.2. CHARACTERIZATION OF THE FOOD-RELATED SERVICE OF A PORTUGUESE ELDERLY INSTITUTION
A. Rocha (Nutritionist at Santa Casa da Misericórdia – Obra da Figueira, Largo Silva Soares 3080 Figueira da Foz, Portugal)

Over the last decades the older population has expanded rapidly and become increasingly diverse. As people get older, their ability of being able to manage house hold tasks and to be capable of living independently is reduced. Nutrition services in health care institutions and community based-program play an important role on quality of life in this stage. The social support given by institutions as residential homes, day care centres and home care, is essential when elderly people are forced to their own homes losing their independence.

Since 1498 there exists in Portugal an important institution, found Queen D. Leonor de Leitancastre, the ‘Confraria das Misericórdias’. there are more than 390 institutions widespread throughout the country. According to the words of the president of União das Misericórdias Portuguesas, Padre Victor Melicais, the ‘Misericórdia or Santa Casa is most genuine sense of the words, the home or the common place everyone and each one can give and receive according to their own possibilities’.

The aim of this presentation is to characterize the food-related services of the Portuguese Misericórdia located at Figueira da Foz, a littor Portugal. The Santa Casa da Misericórdia – Obra da Figueira was fo 1839. This institution accommodates more than 150 of reside accomplishes home-care and day care centre to about 80 elderly. In years a great concern was dedicated to professional training of all emp order to improve the quality of the service. At the same time p transformations were developed in the building and equipments aiming secure procedures and to offer the best quality of life to the residents.

P.1.3. EVALUATING INDIRECT AND DIRECT INVOLVEMENT OLDER PEOPLE IN FOOD POLICY DEVELOPMENT
M.M. Raats, L. Timotijvic (University of Surrey, Guildford, GU2 7XH)

Indirect communication mechanisms between the public and food making community in England were mapped out and evaluated through of 60 in-depth, semi-structured interviews conducted with stakeholder four main sectors (voluntary, private, public, academic) at central a level covering the structures and processes of communication. Analysis to stakeholder influence being perceived by most informants to be d upon the message, the positioning of the stakeholders in relation to the well as the central level public sector, the size and history of the sta group, as well as its connection to other significant stakeholders. TI considerable convergence between the stakeholders as to the perceivable to influencing policy development. The barriers identified related to the aspects of socio-political context, including economic and social s ideology and institutional culture of the UK policy-making communit involvement of older people in food policy development was inv through the comparison of two deliberative methods of public parti citizens’ workshop and citizens’ jury. A quasi-experimental, between pre- and post-participation design using participants’ and ob: perceptions of the processes and outcomes of the methods, against evaluation criteria, spanning both the individual and group level of was used to evaluate the methods. The properties of the methods alone availability of extra information, had little impact on both satisfaction process and the actual task outcomes. It further The importance of gro for the perceived satisfaction with the process and the subjective out the event was emphasised. The study illustrated that a high level of satisfaction was not contemporaneous with the perceived in participation, such as its perceived influence of policy decision- indicating that the relationship between the participation outcomes processes was complex.

P.1.4. EIGHT-YEAR TRENDS IN FOOD, ENERGY MACRONUTRIENT INTAKE IN AN ELDERLY GE POPULATION
P.M. Lähnemann, S.M. Jungjohann, R. Bender, M. Bleitner, N. Berthold (1. Institute of Nutritional Science, Justus-Liebig-Un Giessen, Germany; 2. Department of Medical Biometry, Epidemi Informatics, Johannes Gutenberg-University, Mainz, Germany)

Objective: Trends in the food and the corresponding macronutrient intake over a period of eight years (1994 – 2002) are inv: as part of the longitudinal study on nutrition and health status in a population in Giessen (GISELA), Germany.

Methods: The dietary intake is assessed via a 3-day estimated diet especially developed and validated for this study. A total of 2135 reco 532 subjects (373 women and 159 men), aged 60 years and over, are separately according to sex and age groups (born between 1904-1928 a 1942). To analyse the influence of time on the variables studied, line:
O.6.5. NUTRITION SCREENING AMONG OLDER HOSPITAL INPATIENTS

J. Byles, L. Parkinson, C. Collins, B. Blades, D. Vanderkerf, J. Leahy
(The University of Newcastle and Central Coast Area Health Servi
South Wales, Australia)

Poor nutrition commonly underlies or complicates illness in older people. It is estimated that up to 50% of people aged 65 years and over who are admitted to hospital have some form of malnutrition. This study used several nutrition assessment tools to examine the prevalence of malnutrition among older people at admission to hospital in Australia. The assessment tools included biochemical testing for markers of nutrition status (albumin, prealbumin, magnesium, lipids, haemoglobin, vitamin B12, zinc, soluble transferrin receptor, haemoglobin and red cell folate), anthropometric measures, dietitian assessment, screening instruments (The Australian Nutrition Screening Initiative Malnutrition Screening Tool, the Mini Nutritional Assessment, Nutrition Risk Assessment Tool). The study also assessed the number of the four screening tools to identify those people identified as malnourished on dietitian assessment (using Subjective Global Assessment) and the correlation between screening instruments and anthropometric and biochemical markers of nutrition. Ultimately, the study aimed to identify the most useful assessment tool for use in hospital practice.

O.6.6. THE ROLE OF FOOD AND MEALS IN SUSTAINABLE INDEPENDENCE AND QUALITY OF LIFE IN OLD AGE: AN INVESTIGATION OF THE FOOD SUPPLIES IN NURSING HOMES IN FRANCE

M. M. Raats, M. L. Lumbers (University of Surrey, Guildford, GU2 7XH, UK)

Qualitative and quantitative techniques are being used to investi
relationship between food intake, nutritional well being, health and quality of life among older people in a series of six studies in eight European countries. The project aims to better understand the specific food procurement and consumption requirements of older men and women living alone or with others in the community. The extent to which convenience, enjoyment and risk drive food selection in later life is investigated using semi-structured interviews and questionnaires (Study 1, n=768). The interpretation of the results, food selection, economic constraints and meal preparation issues are investigated using questionnaires, observations and semi-structured interviews in the home and in a centre-based setting (Study 2, n=320). Study 3 is being used to determine the role of formal (e.g. food-related, health-related) and informal (e.g. family, friends, neighbours) networks and their contribution to the promotion of healthy eating among older people (Study 4); and to determine the difference between regular and infrequent eating habits in enhancing health in later life (Study 5). The findings from these studies will influence the development of future nutrition policies and practices in the UK and other European countries.
decreased by 25% and HDL LlId increased by 50%. All patients adapted to the diet without difficulty.

Conclusions: The Restore Diet, which stresses raw nuts, green vegetables, olive oil, avoidance of refined carbohydrates, but allows lean meats, has dramatic effects on weight and both physiologic and metabolic parameters in patients with coronary artery disease. Patient acceptance is high. Based on these preliminary observations, we continue to place patients with treated coronary artery disease on the Restore Diet.

O.5.7. DOES INTERLEUKIN-6 GENOTYPE INFLUENCE IMPROVEMENTS IN MUSCLE STRENGTH AS WELL AS BONE DENSITY AFTER HORMONE-REPLACEMENT-THERAPY?

G. Pearson, S.A. Bruce, L. James1, H. Montgomery2, R.C. Woledge (RC. UCL Institute of Human Performance and Centre for Cardiovascular Genetics, 1, UK)

We have previously shown that angiotensin-converting-enzyme (ACE) genotype influenced improvements in both bone density and muscle strength after a year’s hormone-replacement-therapy (HRT) in post-menopausal women who were not formerly HRT users(1). Lower circulating levels of ACE predisposed to larger responses after HRT. We have also shown that interleukin-6 (IL-6) genotype influenced bone density improvements in the same subject(2). IL-6 is well known to be involved in bone metabolism(3) and increased levels are also associated with sarcopenia and disability in older people(4). The mechanism of the oestrogen effect on muscle is unknown but oestrogen negatively controls IL-6 production(4) which also depends on angiotensin-II release in endothelial smooth muscle(5). We have therefore tested whether IL-6 genotype influences the response of skeletal muscle to HRT.

IL-6 genotype was determined in 69 women who had taken part in the year-long study of the effect of HRT on muscle strength. The joint UCL/UCH committee on the ethics of human research approved the follow-up study.

Results are shown in Table 1. Homozygotes and heterozygotes for C were combined, as there were only two CC subjects in the HRT group.

<table>
<thead>
<tr>
<th>IL-6 genotype</th>
<th>GG</th>
<th>CC/CG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>HRT</td>
<td>Control</td>
</tr>
<tr>
<td>Subjects (n)</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Baseline MVF</td>
<td>59.8±1.45</td>
<td>57.4±2.13</td>
</tr>
<tr>
<td>Increase in MVF</td>
<td>15.0±3.27%</td>
<td>-1.8±1.82%</td>
</tr>
</tbody>
</table>

No correlation was found between response to HRT treatment and IL-6 genotype.


O.6.: Epidemiology

O.6.1. PLASMA LEVELS OF CAROTENE AND a-TOCOPHEROL AND 10-YEAR CARDIOVASCULAR MORTALITY IN THE ELDERLY: THE SENeca STUDY

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Purpose: To investigate the association between plasma levels of carotene and a-tocopherol with cardiovascular mortality among elderly men and women who participated in a European prospective study.

Methods: For this analysis data was used from 1,169 men and women who participated in the SENeca-study. At baseline all participants were between 70-75 years of age and free of chronic diseases. Plasma levels of carotene and a-tocopherol were determined in one laboratory. Causes of death were during 10 years of follow-up. After 10 years follow-up 148 participants from cardiovascular diseases, of which 34% from coronary heart disease from heart failure and 32% from stroke.

Results: Plasma levels of carotene were associated with a reducino of 10-year cardiovascular death [adjusted relative risk (RR) for an increment 0.5 mmol/l: 0.79; 95% confidence interval [CI]: 0.63-1.00]. This association was observed for mortality due to heart failure (RR: 0.72; 0.42-1.24) and stroke (RR: 0.78; 95%CI: 0.54-1.13), but not for coronary disease mortality (RR: 0.94; 95% CI: 0.66-1.35). Furthermore, the a-105 between plasma carotene and cardiovascular death was modified by sex index (BMI: P value interaction=0.04). The reduction in cardiovascular risk was preserved for those with a BMI <25 kg/m2 (RR: 0.60; 95% CI: 0.91) and not for those with a BMI ≥25 kg/m2 (RR: 0.97; 95%CI: 0.74-1.26). Plasma levels of a-tocopherol were non-significantly inversely associ cardiovasular mortality (RR for an increment of 8.5 mmol/l: 0.87, 0.70-1.07). The association between plasma antioxidant lev cardiovascular mortality did not differ between smokers and non-smokers.

Conclusion: This European prospective study suggest that a high level of carotene is associated with a 20% reduction in cardiovascular elderly people, especially in those with a body mass index of less kg/m2.

O.6.2. EMOTIONS GENERATED BY FOODS IN ELDERLY F PEOPLE

S. Roussel, I. Narchi (Institut National de la Recherche Agronomique de Recherches sur la Viannde, equipe proprietes sensorielles et pre Thez, 63 122 Saint Genes Champanelle, France)

Eating behaviour depends partly on food preference which may determined by different types of emotions. Among the emotions gens food, disgust and pleasure are common and can lead to increased and food consumption. We tested the hypothesis that 1) old men and wo different emotions towards food and 2) low energy intake is related to emotions towards food. Food intake of 52 elderly aged 65-75 ys followed throughout each day for one week and allowed us to assign e two groups (low and high energy intake from food consumption data) the flowing month, each of them assessed their like or dislike of pictures (vegetables, cheeses, fruits, starchy foods, sweets, meat, fish, eggs) using 19 emotional words (8 words with a positive valence: ‘thrilled’, ‘satisfaction’, ‘surprise’, ‘serene’, ‘amused’, ‘pride’, ‘inter 13 other words with a negative valence: ‘disgust’, ‘indifference’, ‘inesiness’, ‘nostalgia’, ‘impatience’, ‘doubt’, ‘frustration’, ‘embar ‘disappointment’ and ‘lissitude’. The emotional intensities experien different the pictures were analysed by ANOVA for each group (i women, small eaters and big eaters). There were small differences i dislikes between men and women. Nevertheless liking scores toward f overall slightly higher in women than in men. Differences were most concerning guilt for cream cakes, dry sausage, pasta and bread wh higher for women than men. Big eaters felt more thrilled and more it and had less doubt, unease, disappointment and nostalgia towards f small eaters. In conclusion, low food intake was related to more feelin feelings towards foods in general that might lead to malnutrition.

O.6.3. PLASMA FOLATE AND HOMOCYSTEINE LEVEL MORTALITY AT 75-84 YEARS IN OLDER PEOPLE: FIN FROM THE NUTRITION ADD-ON STUDY TO THE ME RESEARCH COUNCIL TRAIL OF ASSESSMENT MANAGEMENT OF OLDER PEOPLE IN THE COMMUNITY A.D. Dangour, E. Breeze, A.E. Fletcher (Nutrition and Public Intervention Research Unit, Non-communicable Disease Epidemiology Department of Epidemiology and Population Health, London S. Hygiene & Tropical Medicine, Keppel Street, London WC1E 7HT, UK)

Background: Older people are at risk of poor nutritional status and previously shown that low blood vitamin C strongly predicts mortality age group. The relationship between plasma folate and homocysteine and mortality is at present poorly understood.

Design: We randomly selected people aged 75-84 years old from th 51 General Practitioners in the United Kingdom. A total of 822 par
Objective: To determine the dietary glycemic values in 1993 and their relation to subsequent six-year changes in functional capacity in elderly Europeans.

Methods: A seven-item physical performance test (PPT) was used to measure the functional capacity. The habitual diet was assessed using a modified diet history method. Overall glycemic index and glycemic load were calculated based on international tables. The confounding variables included baseline PPT score, age, location, BMI, relative physical activity, smoking, socio-economic status, chronic disease, general health and other diet components. Results: In general, neither dietary glycemic index (Men: β=0.01; SD=0.06; Women: β=0.04; SE=0.04) or glycemic load (Men: β=-0.57; SD=1.3; Women: β=0.37; SE=0.95) was associated with changes in functional capacity. However, for women who did not engage in a high activity level, a functional decline was predicted by a high glycemic index (β=-0.15; SE=0.07). Results were in the same direction for the men not being highly active, but not significant (β=-0.009; SE=0.09). Conclusion and discussion: Among elderly people, the physiological quality of the dietary carbohydrate may play a role for functional decline, except for those with a high physical activity level. A relation between glycemic index and functional capacity in elderly people has not earlier been revealed, but needs to be investigated in future studies.

O.5.3. GLYCEMIC INDEX AND GLYCEMIC LOAD IN RELATION TO SIX-YEAR CHANGES IN FUNCTIONAL CAPACITY IN ELDERLY EUROPEANS. THE SENeca STUDY 1993-1999

1. Kyndt1, K.S. Bjornson1, J. Te Matthews, B.L. Heitmann1 (1. The Research Unit for Dietary Studies and Danish Epidemiology Science Centre at Institute of Preventive Medicine, Copenhagen University Hospital, Denmark; 2. The Department of Human Nutrition, The Royal Veterinary and Agricultural University, Denmark)

Objective: To determine the dietary glycemic values in 1993 and their relation to subsequent six-year changes in functional capacity in elderly Europeans.

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Conclusions: These results suggest that the food behaviors of diabetics differed partly from those of non-diabetics of the same age. Some discrepancies with the recommendations, diabetic patients improve their food behavior.

O.5.5. THE VARIETY OF A FOOD DIARY AS A MEASURE OF PROTEIN AND ENERGY INTAKE IN ELDERLY PATIENTS

S.E. Forster, S.E. Gariballa (The Human Nutrition Unit, The University of Sheffield, Corder House, Northern General Hospital, Herries Rd, S5 7AU, UK)

Background: Dietary intakes during hospital stays have been shown below requirements. Valid and reliable methods of assessing diet both in hospital and the community need to be established.

Aim: The aim of this study was to investigate whether patient k diaries are a valid method of dietary assessment for older people in hospital and the community.

Methods: The aim of this study was to investigate whether patient k diaries are a valid method of dietary assessment for older people in hospital and the community.

Results: 18 patients participated in the study (9 women, 9 men), median 75.65yrs. In hospital and at home the correlation between the two met energy was highly significant (hospital r=0.604, p<0.017 vs. 0.621, p=0.024).

<table>
<thead>
<tr>
<th>Macronutrient</th>
<th>Food Diary</th>
<th>Hospital</th>
<th>Weighted</th>
<th>P-value*</th>
<th>Food Diary</th>
<th>Home</th>
<th>Weighted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (kcal)</td>
<td>1349</td>
<td>1532</td>
<td>0.281</td>
<td>675</td>
<td>879</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>148</td>
<td>184</td>
<td>0.256</td>
<td>90</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>62</td>
<td>70</td>
<td>0.609</td>
<td>44</td>
<td>49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat</td>
<td>53</td>
<td>55</td>
<td>0.320</td>
<td>21</td>
<td>30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P value for the difference between recorded and weighed intakes.

Conclusion: These results would suggest the food diary is an accurate method of dietary intake of elderly patients in hospital and in the community, consistent with the literature.

O.5.6. EFFECT OF NUTRITIONAL INTERVENTION ON W: CHOLESTEROL, AND METABOLIC SYNDROME IN P:11 WITH CORONARY ARTERY DISEASE

S.R. Gandy, W.J. Ehrman (Center for Restorative Medicine, The Integrative Heart and Lung Institute, Palm Springs, California, USA and Los Angeles University School of Medicine, Loma Linda, California, USA)

Coronary artery disease is associated with obesity and the metabolic syndrome. Although coronary artery interventions such as stents or surgery can ameliorate symptoms, new lesions will invariably occur steps are undertaken to address the underlying vascular pathology. Patients appear to be reluctant to make dietary changes based on the low fat American Heart Association diet, and are invariably started or continued on cholesterol lowering therapies. Based upon previous work, we have noted that patients frequently have elevations in LDL, HDL and triglycerides.

Methods: We studied 10 patients (ages 53-84, mean 76 yrs) pr treated for coronary artery disease who were placed on The Restore Diet consisted of 1 oz of raw mixed nuts twice daily, liberal use of olive oil, or cooked green vegetables, and lean protein sources from fish and combined with elimination of refined carbohydrates for one month. S were taking statins at the start of the study. Total cholesterol was 240 mg/dL, LDL was 148±20, HDL was 57±5, and HDL/LDL ratio was 3.5. The treatment was a 24% decrease in total cholesterol, a 20% decrease in LDL, a 10% increase in HDL, and a 20% decrease in triglycerides. The results were statistically significant (p<0.05).

Results: Average weight loss was 13 lbs (6 kg). BMI decreased fr 30.5. Systolic blood pressure decreased by 24mm Hg. Total cholesterol decreased 25%, LDL decreased 40%, HDL increased 9%.
Conclusion: Crystalline cobalamin added to milk is an effective alternative for cobalamin capsules in improving cobalamin status.

O.4.12. RISK FACTOR CHANGE IN PREDICTION OF CORONARY HEART DISEASE DEATH. THE HALE PROJECT
M. Laniti, A. Meriotti, D. Kromhout (1. Association for Cardiac Research, Rome, Italy; 2. National Institute of Public Health and Environment, Bilthoven, the Netherlands)

Ten cohorts for a total of 5131 men aged 40-59 years at entry examination in 5 European countries (Finland, the Netherlands, Italy, Serbia-former Yugoslavia, Greece) were enrolled in the study. Measurements of risk factors were available at entry and after 10 years together with a complete follow-up for mortality and causes of death for a total of 35 years.

Changes in systolic blood pressure (Delta-SBP) and serum cholesterol (Delta-CHOL) levels were computed as annual mortality and for the first 10 years of follow-up. Multivariate models were used to predict coronary heart disease (CHD) mortality between year 10 and year 35 feeding as covariates baseline age, smoking habits, systolic blood pressure and serum cholesterol, and separately the same risk factors plus Delta-SBP and Delta-CHOL. In both cases dummy variables identified the 5 countries.

Coefficients of base-line risk factors levels were all predictive of CHD events. The addition of Delta-SBP and Delta-CHO improved the predictive power of the model since the risk factor changes were directly and significantly predictive of events, while baseline levels retained their predictive power.

The hazard ratio for an observed increase of 10 mm Hg of systolic blood pressure was associated with a relative risk of 1.10 (95% c.l. 1.06-1.14); while a decrease of 10 mm Hg was associated with a relative risk of 0.91 (95% c.l. 0.87-0.94). The corresponding relative risks for a change of 20 mg/dl of serum cholesterol were 1.06 (95% c.l. 1.02-1.09) and 0.95 (95% c.l. 0.92-0.98).

Spontaneous changes in blood pressure and serum cholesterol levels are associated with benefits or harms in the development of CHD fatal events.

O.4.13. SOCIOCULTURAL DETERMINANTS OF HEALTH. THE HALE PROJECT
M. Tijhuis (National Institute of Public Health, Centre for Prevention and Health Services Research, Bilthoven, the Netherlands)

Part of the HALE (Healthy Ageing: Longitudinal study in Europe) project is to investigate two indicators of health and quality of life – self-perceived health and social functioning – in more detail and compare the results between Northern and Southern European populations. In this presentation we focus on the effects of lifestyle determinants on self-perceived health and social functioning, and on the relationships of self-perceived health and social functioning with morbidity and mortality. For this purpose, existing databases of two longitudinal studies are used, which include data of approximately 3500 individuals, collected in the period 1990-2000.

In general, indicators of social functioning (marital status, living together, having children, frequency of receiving visits from relatives and friends, number of close friends, frequency of contact with close friends, participation in community organisations, number of neighbours to call on, possible help from others in case of illness) are related to lifestyle (smoking, alcohol consumption, diet and physical activity) in the sense that more contacts are related to a more healthy lifestyle. More contacts are related to less morbidity (cardiovascular diseases, cancer and diabetes) and mortality. Better self-perceived health is in general also related to a more healthy lifestyle and less morbidity and mortality. Comparison between Northern and Southern populations did not reveal major differences.

Our results indicate that self-perceived health and social functioning are important determinants of lifestyle and health in old age, in several European countries. Public health policy makers and health care providers should include interventions regarding these concepts in their daily work.

O.5.: ENERGY EXPENDITURE AND DIABETES

O.5.1. MEASURING ENERGY EXPENDITURE OF ACUTE ELDERLY PATIENTS BOTH IN HOSPITAL AND IN THE COMMUNITY
S.E. Forster, S.E. Gariballa (The Human Nutrition Unit, The Univ. of Sheffield, Coleridge House, Northern General Hospital, Herries Rd., S1 7AU, United Kingdom)

Background: Poor dietary intakes may lead to poor nutritional status outcomes in acutely ill elderly patients. Energy expenditure measurements taken of patients whilst acutely ill and when back in community can give us vital information about their dietary requirement.

Aim: To assess the reliability of Delta Tract Metabolic Monitor measurement of EE in acutely ill elderly and then to determine the Metabolic Rate (BMR) in hospital and their Resting Metabolic Rate (weeks later in the community).

Methods: Reliability of Delta Tract Machine: Eight acutely ill patients (>65yrs) had their BMR measured using a Delta Tract M Monitor on one day and then repeated the next day at the same time.

Results: For reliability study the correlation coefficient for EE on and two were r=0.95, p<0.001. BMR and RMR measurements (Me 68.5 yrs):

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Hospital (n=20)</th>
<th>Community (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted BMR (kcal)</td>
<td>1338(1045-1803)</td>
<td>1338(1045-18)</td>
</tr>
<tr>
<td>Measured BMR/RMR (kcal)</td>
<td>1474(733-2005)</td>
<td>1360(953-288)</td>
</tr>
<tr>
<td>C-reactive protein (mg/L)</td>
<td>22(5-191.1)</td>
<td>5(5-42)</td>
</tr>
<tr>
<td>TSH (mU/L)</td>
<td>1.470(69-3.27)</td>
<td>1.370(43-27)</td>
</tr>
</tbody>
</table>


EE was higher in hospital than that in the community although difference did not reach statistical significance (Wilcoxon p=0.05).

Conclusion: The Delta Tract Metabolic Monitor is a reliable means of measuring resting metabolic rates in acutely ill elderly patients. Patien metabolic rates were higher in hospital compared to resting metabolic measured in the community, after adjusting for physical activity.

O.5.2. ENERGY AND THE AGING SYSTEMS
Y. Bernard (Geriatric Medicine, Meir Hospital Kfar Saba, Tel Aviv U Sackler School of Medicine. 57 Tichernichovski street, Kfar Saba 44281)

Background: The proportion of elderly in the general population is the rate of 6% a year. Elderly are characterized by changes in physiological activities as well as multiple pathologies. Cellular function based on Hormones, Cytokines and Neurrotransmitters acting through receptors and altered cellular function. Dietary structure is considered i.e. the components of health and well-being. The purpose of this workshop describe the impact of dietary patterns on the regulation of cell metabolism through the endocrine system with aging.

Methods: Literature research of current data using Medline and reviews.

Results: Since the work of McCay in 1935, demonstrating the energy restricted diet in about 30%, on median and maximal life span many works have confirmed these findings in different species: mice, fish, flies, water fleas and partially in Rhesus monkeys. Certain wo demonstration minor effect of lower protein intake, but the major effect lower energy intake starting in young adult life. Aging is associated metabolic changes about 30 of them were declined with lower consumption in different studies. The elderly eat considerably smaller of food and eat less often than younger adults. Especially at times of chronic illness, this lower intake leads to energy deficit and malnutrition accompanied by deteriorated mood, a condition often described as ‘steroid’.
0.4.8. INSTITUTIONALISED ELDERLY AND THE EFFECT OF A NUTRIENT DENSE SUPPLEMENT ON HEALTH STATUS


Background: In institutionalised elderly inadequate food intake is often found. Because of this they are at risk of malnutrition. Multi nutrient supplementation probably has a positive effect on mental and physical functioning and with that on the degree of dependence on care.

Objective: This study aims to investigate if daily intake of a nutrient dense product not only has a positive effect on nutritional status, but also on mental and physical functionality.

Subjects and design: Participants were recruited in 9 homes for the elderly and nursing homes. Institutionalised elderly were eligible to participate if they were aged 60 years or older and had a BMI ≥ 30 kg/m2. Residents with a MMSE score ≥ 20 points were allowed to participate.

176 Elderly people randomly received a nutrient dense product or a placebo product twice a day during 24 weeks in addition to their usual diet. Allocation to treatment took account of sex, MMSE score and homocysteine levels to minimize differences in health status at baseline in both groups.

Measurements: At the start and the end of the intervention period ADAS-cog, GDS, Barthel index, grip strength, weight, knee height, calf circumference, biochemical indicators and occurrence of diseases were measured.

Results: A per-proto-col analysis showed a significant effect on the nutritional status but not on functionality for the intervention group (n=81) compared with the placebo group (n=33) for the entire 24-week period. We could detect a subgroup of participants with a low BMI at baseline that benefited from the intervention product.

Discussion & Conclusion: Although compliance to the intervention was low, this study showed beneficial effects on nutritional status but not in all participants on functionality. The results of our trial suggest that the used intervention product is effective as treatment for decreasing functionality in older people with low BMI.

0.4.9. MORTALITY PATTERNS RELATIVE TO BODY MASS INDEX IN MIDDLE AGE AND OLD AGE

E. Breeze1, D. A Leon1, R. Clarke1, M. Shipley1, M.J. Marmot1, A.E. Fletcher1 (1. Department of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine. 2. Clinical Trial Service Unit, University of Oxford; 3. Department of Epidemiology and Public Health, University College, London)

Objective: To explore associations between body mass index (BMI) in middle age (baseline), in old age (resurvey) and respectively mortality from all-causes, circulatory disease (CVD), cancers, and respiratory disease

Design: Postal resurvey of survivors of a cohort of male London civil servants first screened 28 years earlier; height and weight measured by family doctor. Follow-up for mortality (median 5.4 years).

Methods: Cox proportional hazard regression. Adjustments for major cardiovascular risk factors and for self-reported cardiovascular disease or cancer, general health and functioning.

Results: 4984 men were included in the analysis (median age 76 years). Mortality was relatively high for the lowest quartile of BMI (≥22.7 kg/m2) for respiratory mortality (Hazard Ratios for other quartiles being 0.3 or 0.4) and relatively high for the highest quartile (≥26.1 kg/m2) for CVD mortality during the first two years (HR 2.0, 95%CI 1.3-3.0). BMI in old age was not associated with cancer mortality. The association of all-cause and CVD mortality with late-life BMI depended on BMI in middle age. The lowest all-cause rates occurred among those who were in middle categories at both times (HR 0.5 95%CI 0.4-0.6 with reference to those with low BMI at both times). The highest rates occurred in those who had moved from low BMI to high (HR 2.2, 95%CI 1.3-3.7) or high to low BMI (HR 1.8, 95%CI 1.3-2.5). Major change in weight was associated with increased CVD mortality but those heavy at both times were at increased risk particularly during the first two years.

Conclusions: The pattern of all-cause mortality relative to BMI depends on the distribution of cause of mortality. Men who have experienced major change in weight over time or low weight in old age have increased mortality risks that are not explained by the health symptoms and risk factors include analyses.

0.4.10. LOSS OF APPETITE FOR PROTEINS DURING AGEING OF AN ANIMAL MODEL

J. Alliot, G. N. Nguyen, E. Debras1, J. Grizard1 (Laboratoire d'endocrinologie du vieillissement, Université Blaise Pascal 63177: cereeds France and 1. Nutrition et métabolisme protéique, INRA, S. Champannée- 63 Ceyrat cedex, France)

Previous studies led in our laboratory on LOU/cjall rats eviden related changes in macronutrient free choices as rats grow old. A energetic nutrient preference from carbohydrates to lipids and a des protein intake were observed in both sexes. However, a sexual dim appeared in old age. Females maintained their protein intake around the caloric diet until 28 months of age while males strongly decreased 5% of the caloric diet) from 16 months of age. This reduction of consumption was concurrent with body weight (BW) loss, skeletal atrophy and IGF1 plasma level decrease. (Veysart-Durebe and Alliot 1)

The loss of regulation of food intake has been proposed by Robert explain weight body loss in elderly. Adult rats are able to adjust intake to needs. To test if old rats have lost this ability, they were sub situations in which energetic and/or nutritional needs were increas obtained showed that old rats as mature ones, are able to adapt their for to the specific needs induced by a period of fasting or protein depriva As several metabolic disorders occur with senescence, a second by could be that the decrease in protein intake expresses an adaptation to in elderly organism’s needs. To test this second hypothesis, several proteins were successivly proposed to male and female rats, usin sectional or longitudinal designs. The results showed that the g precocious decrease of protein consumption observed in males with source of protein was not observed in male groups when lactoserum w or when amino acid composition of the casein was modified. Th suggested that casein could be an inadequate source of protein for old and thus could induce an avoidance behaviour. Finally, experime amino-acid supplementation of casein were performed to more p identify amino-acids requirements of aged animals.

0.4.11. EFFECT OF COBALAMIN SUPPLEMENTATION - CJ EITHER BY A MILK PRODUCT OR A CAPSULE - IN M COBALAMIN DEFICIENT DUTCH ELDERLY PEOPLE

R.A.M. Dronenks-Rutten, M. van Zutphen, L.C.P.G.M. de S.J.P.M. Eussen, H.J. Blom, W.A. van Staveren (Human Nutrition, Wa, University, P.O. Box 8129, NL-6700 EW Wageningen, The Netherlands)

Background: A high prevalence of cobalamin deficiency exists in th population, which may be treated orally or with injections. Little i about the relative bioavailability of crystalline cobalamin added products.

Objective: To assess the effect of supplementation with 1000 γ ci cobalamin, carried either by a milk product or a capsule, on cobalamin mildly cobalamin deficient Dutch elderly people.

Design: Two double-blind randomized controlled interventions, each a 12-week supplementation period, were carried out in parallel cobalamin deficiency was defined as a cobalamin concentration betw 300 pmol/L, and a plasma methylmalonic acid (MMA) concen 0.30 μmol/L or higher. Mildly cobalamin deficient elderly (n = 11 separately recruited for the milk and capsule trial. Allocation of the pl cobalamin carrier was carried out independently for both trials. All pair were matched on sex, MMA concentration and age to either receive th or the cobalamin carrier. Concentrations of serum cobalamin, plas and plasma homocysteine (Hcy) were measured.

Results: In the cobalamin fortified milk group the mean ± SD in serum cobalamin was 250 ± 96 pmol/L. All changes (including MMA changes) were significantly different from those in the placebo milk group (p < 0.01). Likewise in the cobalamin capsule group the mean increase in cobalamin was 281 ± 136 pmol/L. Again, all changes were sign different from the placebo milk group (p < 0.01). No differences in eff observed between groups receiving cobalamin fortified milk or cc capsules (p > 0.40).
O.4.5. MANAGING QUALITY OF LIFE HEALTH PERCEPTIONS CONNECTED TO FOOD AND MEALS: RESULTS FROM THE FOOD IN LATER LIFE PROJECT

K. Gustafsson1, Y. Mattsson Sydner2, M. Nydahl2, C. Fjellström2, B. Sidenvall1 (1. Department of Public Health and Caring Sciences, University of Uppsala, Sweden; 2. Department of Domestic Sciences, University of Uppsala, Sweden)

Background: FOOD IN LATER LIFE is a cross-cultural European project entitled ‘Choosing foods, eating meals: sustaining independence and quality of life in old age’. Nine research teams in eight countries are involved: Sweden, Portugal, Spain, Italy, Poland, Germany, Denmark, and England who coordinate the project. Health can be seen from different perspectives, e.g. biological, social, psychological. For example, among older women it was found in a Swedish study that eating in companionship made the meal a pleasure of the day, while eating alone was just a way to stay alive. Thus, food and meals had different meanings for the women’s well-being and health perceptions. Within the project, these perspectives of the meal are now being studied in all the participating countries.

Aim: The aim of the present study is to explore health perceptions of food and meals among Swedish women and men, aged 65-74 years and 75 years and over, cohabiting or living alone.

Method: Qualitative interviews are being conducted with 80 people in Sweden. The informants are recruited from pensioner organisations. They are grouped according to gender, age (65 – 74 years and 75+), and living circumstances (living alone or with partner), and are participating in several studies in the project. An interview guide is used, and the interviews are tape recorded. The in-depth interviews are transcribed verbatim, and thematically coded and analysed using a computer analysis package for qualitative data, MAXqda.

Preliminary results: Findings from the interviews will be presented according to health perceptions connected to food and meals. How is a healthy meal defined or exemplified, and how do the informants define a non healthy meal? What are healthy foods, and what is unhealthy to eat? Further, are there any differences in women’s or men’s points of view, and do age groups or living circumstances make any differences in these respects?

O.4.6. NUTRITIONAL INTAKES AND EATING BEHAVIOR MIDLIFE TO OLDER RURAL WOMEN IN MIDWESTERN US

L.S. Boeckner, S.N. Walker, C.H. Pullen, P. Hageman, M. Obe
M. Ratledge (University of Nebraska, Scottsbluff, Nebraska, United States)

Women’s health risks increase at menopause but healthy lifestyle alleviate some health consequences and high costs of chronic disease ages. Changes in eating activity towards increased fruit and vegetable increased whole grain intake, and reduced fat intake are appropriate in the US.

Methods: A rural population of 225 midwestern US women aged ≥ 65 were randomly selected for the 12-month intervention/12 month follow-up study. Women were assigned to receive 18 newsletters over the 12 months which contained either nutrition messages tailored to their specific needs and goals, or more generalized nutrition messages. Benefits/barriers, self and inter-personal support for healthy eating were addressed. Biomarker eating outcomes related to nutrient and food intake were measured at intervals.

Results: At baseline, both groups of women did not meet recommended targets for fruit or whole grain intake, and percent kilocalories from fat intervention midpoint, both groups made changes in fruit/vegetable intake (5.5 serv/day) to 6 months (6.5 serv/day) with no group interaction. Likewise, percent of kilocalories from fat decreases groups (39.0% to 37.0%, p=0.001), with no time by group interaction significant changes were found in intake of whole grain foods. Of the selected eating goals at baseline, the most frequently selected eating goal to avoid fatty snacks (44%), add a daily fruit serving (29%) and eat product at morning meal (45%).

Implications: Women aged 50-69 who received either generalized or nutrition messages made some eating habits changes by 6-months which are compatible with some of their predominantly selected eating goal. Sustainability of changes over time will continue to be monitored and determine if tailored or generalized messages are equally efficacious facilitating change.

O.4.7. TASTE AND SMELL IMPAIRMENTS IN THE ELDERLY

S. Washburn1, B. Fromm2 (1. Seattle Cancer Care Alliance, Nu, Services, Seattle, Washington, USA; 2. Nutritional S Harborview Medical Center, University of Washington, Seattle, WA, USA)

The tasting experience is personal and has a profound effect on influencing both our pleasure and our health. However, taste impairments are rarely acknowledged in the medical community, despite estimates that people over the age of 60 years are likely to have some degree of either taste or smell, or both. There are many medical conditions and medications that can impact one’s ability to taste and smell. Studied shown that taste and smell impairments are associated with vulnerability, isolation, anorexia, depression, decreased immuno -decreased quality of life.

Standard educational curricula for nutrition professionals do not instruction regarding the management of taste and smell impairments interdisciplinary program can be designed in a variety of health care environment to increase the awareness of taste and smell impairments. An expe focused program can expose the professional to the physiology of those throughout the lifecycle, the genetic and psychological components can influence taste and smell, and the pathophysiology and management taste and smell impairments. Management strategies include analysis food delivery system, the menu choices and individual counseling tech optimize the elderly’s experience around eating. Knowledge of taste a impairments can aide the nutrition professional in providing more guidance regarding food choices, which may ultimately enhance the hs well-being of the elderly client.
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O4. MICRONUTRIENT STATUS AND SURVIVAL IN PEOPLE OVER 75 YEARS OLD
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To assess the association between micronutrient status and survival in older people we studied 207 men and 197 women who were living in the community in Aberdeen, Scotland. Baseline measurements were made between April 1999 and June 2000 using blood samples taken after a light breakfast without breakfast cereal or fruit juice. The median age at baseline was 79 (range 75-93) y in men and 80 (range 76-96) y in women. By April 2004, 85 subjects (50M, 35F) had died. The table shows median levels of serum ferritin, vitamin B12, vitamin C, 25-hydroxy vitamin D and red cell folate in survivors and non-survivors:

<table>
<thead>
<tr>
<th></th>
<th>Ferritin (μg/L)</th>
<th>Vitamin B12 (ng/L)</th>
<th>Vitamin C (μmol/L)</th>
<th>Vitamin D (nmol/L)</th>
<th>Folate (μg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survivors</td>
<td>60.2</td>
<td>333.0</td>
<td>43.4</td>
<td>32.0</td>
<td>253.0</td>
</tr>
<tr>
<td>Non-survivors</td>
<td>54.8</td>
<td>326.0</td>
<td>35.7</td>
<td>23.0</td>
<td>270.0</td>
</tr>
</tbody>
</table>

The cumulative survival was 0.58 in subjects in the lowest third of vitamin D status, 0.80 in the medium status and 0.89 in the high status groups. Cox regression with adjustment for age and gender showed a significant trend towards lower survival with lower vitamin D status (p=0.001). The trend was more marked in the men than the women. The relative hazard rates of lowest third and medium status to the highest status third were 4.09 (p=0.0001) and 1.81 (p=0.067) respectively. There were no significant trends in survival in relation to status of the other four micronutrients.

O4.2. ACUTE ELEVATION OF PLASMA FREE FATTY ACIDS IS ASSOCIATED WITH IMPAIRED CIRCULATING LYMPHOCYTE ACTIVATION AND SURVIVAL IN HEALTHY MIDDLE AGED HUMANS.
T. Tulop, A. Larbi, A. Grenier, F. Frisch, A. Carpentier1 (1. Centre de recherche sur le vieillissement, Service d’endocrinologie, Université de Sherbrooke, Sherbrooke, Québec, Canada)

T lymphocytes are key players in the immune response. Their activation of T cell receptor (TCR) leads the production of interleukine-2 and to cellular proliferation. It has been suggested that changes in serum lipid postprandial composition can modulate immune functions and play a role in the pathogenesis of type 2 diabetes and atherosclerosis. Here, we investigated whether in vivo ~2-fold elevation of plasma free fatty acids with intravenous infusion of heparin + Intralipid (HI) for 2hrs could have immuno-mc effects on circulating T lymphocytes. We were interested in early as w events of the TCR signalling cascade, as well as functions. First, we r the proliferative capacities of T lymphocytes from donors before and a of HI. We found that T lymphocytes assessed after HI were not able t an efficient proliferative response after 72hr stimulation (only 55 % c the untreated donors). Moreover, this lack of proliferation was acc with a higher susceptibility to cell death since after 24h almost 45 lymphocytes were positively stained for cell death (Trypan blue) when of cell survival is found in control cells. We also assessed the a inducing effect of elevation of plasma FFA. Since cholesterol is ne proliferation, we measured cholesterol influx during 24hrs and four lymphocytes from FFA treated donors displayed a reduced extra-cell cholesterol uptake from the medium. Moreover, cholesterol turne altered. Then, we investigated whether changes in membrane properti explain these defects. We incubated control and treated cells with bea with anti-CD3 and anti-CD28 and measured the number of T lympho complexes formed by flow cytometry. We found that only 63 lymphocytes after FFA treatment were able to associate to beads. For were interested in intracellular signalling and found that the phospho pattern was changed after FFA treatment. The changes in early membrane properties as well as proliferative capacities altogether l inhibition of lymphocyte activation. In conclusion, elevation of plas have immuno-modulatory effects on primary T lymphocytes and co major clinical implications in states associated with high plasma FF such as insulin resistance and type 2 diabetes.

O4.3. THIAMINE DEFICIENCY AND IN ELDERLY ALCOHOL I.E. Ortiz, G. Thaler, D. Leech, L. J. Romero, S.P. Verney, S. Saenz, P. (University of New Mexico, School of Medicine)

Objective: Thiamine is known to play a role in the development Wernicke encephalopathic and Korsakoff amnestic syndromes, m associated with alcohol intoxication. Little is understood about the effect of thiamine deficiency in older alcoholics, including those v drinking. This study examined serum thiamine levels in 54 men who r referred to a psychiatric evaluation clinic. We examined thiamin cognitive function, mood, alcohol history and current use.

Method: 54 men referred for psychiatric evaluation were eval mental status examination by a board-certified geropsychiatrist. Eci was evaluated for history of alcohol use. Patterns of alcohol abu specified and dates of abstinence were noted. Cognitive assessment e included evaluation of orientation, attention, immediate and sh memory, and visuospatial skills. Serum thiamine levels of each pat measured by high performance liquid chromatography.

Results: 65% of men who were evaluated demonstrated thiamine de 80% of patients with a history of alcohol dependence demonstrated deficiency. (p=0.002). Age, ethnicity, and cognitive function did t significance as predictors of thiamine deficiency.

Conclusion: A history of alcohol dependence is a predictor of th deficiency. Serum thiamine levels should be considered for eval elderly patients with a history of alcohol abuse, even if it has been r for many years. Further data are needed to understand when thiamine s is indicated, the degree to which this affects cognitive function and the thiamine replacement in thiamine deficient patients.

O4.4. REDUCED ASCORBIC ACID CONCENTRATIONS 1 HOSPITALIZED AND HOME LIVING ELDERLY.
T. Bøhmer, L. Diep, M. Mowé (Dept of Geriatrics, Aker University HF, Oslo, Norway)

Background: Ascorbic acid is a cofactor in hydroxylation re catalysis, katecholamines and peptide amination giving stability to a v hormones as ACTH and vasopressin. Ascorbic acid is an anti-oxidant, membrane tocopherol reduced. Moderate deficiency of ascorbic ac depression, asthma and arthralgia. Ascorbic acid is not synthesizes body and must be obtained in the food. Intake of fruit and vegetables i in the elderly in Nordic countries and may give rise to ascorbic acid def

As part of a more comprehensive nutritional study (ref 1), the s acid concentration (ASC) was measured in elderly (> 69 y) hospi
O.3.8. EFFECT OF LACTOBACILLUS JOHNSONII LA1 ON THE NUTRITIONAL CONDITION, IMMUNITY AND MRSA CARRIER IN ELDERLY INPATIENTS

S. Miyaguchi1, T. Kaboruki1, T. Yamano3, F. Toichi1, K. Sato2 (1. Harunaso Hospital; 2. Division of Clinical Nutrition, Department of Food and Nutrition, Japan Women’s University; 3. Nestlé Japan Ltd. Nutrition Business Group)

Background and objectives: In these recent years, the number of elderly inpatients with enteral nutrition are enormously increasing in Japan, and their Quality of life (QOL) is threatened because of high risk of infection due to the poor nutritional and immunosuppressive status. Lactobacilli johnsonii L1 (La1) is shown to potent immune function, it is possible to reduce the risk of infection and improve the QOL in the elderly, but no studies have shown the effect of La1 in the elderly. Thereby we designed double blind placebo-controlled study to examine the effect of La1 on MRSA carrier, improvement of their nutritional status and augment of immune function in elderly inpatients.

Study Design: Twenty-four inpatients over 70 years of age were randomly assigned into two groups. Total 900 kcal/day of enteral nutrition was administrated in La1 group (CZ-HI 811 kкал/La1 89 kcal/day) and control group (CZ-HI 900 kcal) for 12 weeks. Blood and fecal samples were collected pre- and post-administration of La1 and their nutritional status immune function and fecal MRSA were analyzed.

Results: Following the administration of La1, 1) Increase in blood albumin and total protein and tendency to increase the thickness of fat and area of muscle, 2) Increase in phagocytic activity in subjects with low initial phagocytic activity, 3) Decrease in fecal MRSA carrier, 4) Decrease in frequency of fever over 37.6° body temperature, were observed. No changes were observed in control group.

Conclusion: La1 can improve the nutritional status and potent the immune function in the elderly. Those changes reduce the infection risk and improve the clinical symptom, suggesting that La1 is effective to improve the QOL in the elderly inpatients.

O.3.9. ORAL SUPPLEMENTS DIFFERING IN FAT AND CARBOHYDRATE CONTENT DO NOT AFFECT FOOD INTAKE AND APPETITE IN THE ELDERLY MALNOURISHED PATIENT

P. Ritz, M. Ryan, J.B. Mouzet, A.M. Favierau, A. Sailé, G. Berrut (Médecine B-CHU, Angers)

Background and aims: Since fat, relative to other macronutrients, has low satiety and high energy density, it may have therapeutic application for supplementing energy intake. This study compared the effect of isoenergetic (1050KJ) high fat or high carbohydrate oral supplements, given at breakfast, on the short-term appetite and energy intake in undernourished elderly subjects.

Methods: Sixteen hospitalised, undernourished (body mass index: 20 ± 3 kg/m2), elderly (77 ± 8 yr.) people were randomly allocated to a control or 1 of 2 supplement groups [fat: carbohydrate: protein (% energy) was 70:25.5 or 25:70:5]. In each group, energy intake (24-hr food consumption) and appetite (visual analogue scales) were assessed over 3 consecutive days.

Results: Mean energy intake significantly (P = 0.0035) increased following supplementation: high fat 6973 (kJ/d), high carbohydrate 6906 (kJ/d) vs. control 6079 (kJ/d) but mean voluntary 24-hr energy intake remained unaffected. Compared to controls, supplemented subjects experienced reduced hunger (p=0.07) between breakfast and lunch, but showed no difference over the whole day (p=0.55).

Conclusions: Under these study conditions a 1050kJ oral supplement, irrespective of macronutrient composition, does not cause voluntary short-term energy intake compensation in undernourished elderly people.

O.3.10. A RANDOMISED CONTROLLED TRIAL OF ANTIOXIDANT VITAMINS SUPPLEMENTATION AFTER ACUTE ISCHAEMIC STROKE

R. Ulegaddi, S.E. Gariballa (Sheffield Institute for Studies on Ageing, University of Sheffield, Northern General Hospital, Sheffield, S5 7AU, U.K.)

Background: Evidence shows that there is a rapid increase in the production of markers of oxidative damage immediately following acute ischaemic stroke and that endogenous antioxidant defences are rapidly depleted, thus permitting further tissue damage.

Objective: To test whether supplementary antioxidant vitamins during this critical period enhances antioxidant capacity and mitigates oxidative damage.

Design: Forty-eight acute ischaemic stroke patients, within 12 symptom onset, were randomly assigned to receive daily oral / naso-supplementation of antioxidant vitamins (500mg vitamin C and 800mg E) [n=24] or no supplementation [n=24] for 14 days. Blood was taken before treatment and at days 7 and 14 for measurement of plasma TAC adjusted vitamin E, vitamin C, total antioxidant capacity (TAC) and malondialdehyde (MDA) concentrations.

Results: Treatment group and controls were matched for stroke subtypes other treatments and subsequent complications. The table shows median (quartile range) concentrations of the vitamins, TAOC and MD, treatment and control groups during the study period.

O.3.11. ISSUES IN LONG-TERM PEG FEEDING

D. Levin, J. Adams (Homerton College, Cambridge, School of Health Homerton Education Centre, Peterborough Districts Hospital, Thory Peterborough PE3 6DA, UK)

Feeding by percutaneous endoscopic gastrostomy (PEG) is now a cc used technique for a wide range of patients, including those who have a stroke, and those with traumatic brain injuries, who are nursed in cc care settings. The literature indicates high success rates in placing PI and commencing feeding regimes. However, evidence on the outcome is much more sparse. The available literature, supplements anecdotal reports from clinicians, suggests that complications may incl blockage, malpositioning, leakage, local sepsis, inadvertent removal; fistula formation, abdominal pain and aspiration pneumonia. Muc medical care for people with a long-term PEG tube falls to general prac (GPs) in the UK, yet surveys of GPs show that nine-tenths of UK GPs’ formal training in respect of managing PEG tubes. There are hosp enteral feeding services, but much of the responsibility for long-term care on nurses working in nursing homes. PEG tubes also pose major chills informal carers. This paper will report the findings of a pilot study, use study design, carried out in an English nursing home. Data sources clinical records and interviews with patients, carers, and staff. It will b that clinical complications are beginning to receive some attention and ethical issues remain largely unrecognised.

O.3.12. REVERSIBILITY OF AGING/PRECANCEROUS CHAN/ GASTRIC MUCOSA: TOWARDS A SAFE NUTRITION/ INTERVENTION

P. Marotta, R. Barreto, H. Tajiri, H. Fuji, E. Fesce (Italy)

The aim of this study was to test the effect of antioxidants supple on enzymatic abnormalities and free radicals-modified DNA asso associated with pre-malignant changes in the upper gastrointestinal elderly patients with longstanding, HP-negative chronic atrophic (CAG). Sixty patients (mean age: 75 years) with atrophic gastritis and i metaplasia underwent a nutritional intervention and a gastroscopy with
O.3.4. NUTRITIONAL STATUS AND PRESSURE ULCERS IN FRAIL ELDERLY PATIENTS TREATED AT HOME BY A GERIATRIC HOME HOSPITALIZATION SERVICE
V. Tibaldi, N. Amonito, C. Scarafotti, D. Roglia, M.F. Stasi, M. Molaschi (Department of Medical and Surgical Disciplines - Geriatric Section - University of Torino, Italy)

Introduction: Malnutrition significantly contributes to morbidity and mortality in older people. It has been demonstrated that several nutritional parameters are associated with an increased risk of pressure ulcer development.

Objectives: To evaluate the prevalence and incidence of pressure sores and their relations with nutritional parameters in frail elderly patients treated at home by the Geriatric Home Hospitalization Service – GHHS.

Methods: The GHHS has been operating since 1985 in S.Giovanni Battista Hospital of Turin. The GHHS team includes geriatricians, nurses, dietitians, physiotherapists, social workers and counselors.

The study included 466 patients (mean age: 80.6 ± 9.7) treated at home by GHHS. We evaluated demographic characteristics, nutritional/functional/cognitive status, primary diagnosis, comorbidity, presence and stage of pressure sores (National Pressure Ucer Advisory Panel-N.P.U.A.P.), mortality, length of stay.

Results: On admission, 79 patients (17%) were affected by pressure sores. Patients with pressure sores on admission had poorer functional and mental state, higher number of comorbidities and a lower nutritional status (serum albumin levels: 3.17 ± 0.61 vs 3.63 ± 0.63, p<0.001; BMI ≥20 Kg/m2<0.05 vs 33.9%, p<0.05). Only 12 patients (3.1% of 387 patients treated by GHHS without sores on admission) developed pressure sores during home treatment (38% developed stage I ulcers and 62% stage II ulcers). Patients who developed sores were affected by terminal illness, were younger but more functionally and mentally impaired, had lower serum albumin levels (3.65 ± 0.63 vs 3.19 ± 0.56, p<0.05) and a greater degree of comorbidity. Length of stay was longer (43.8 ± 45.7 days vs 32.8 ± 38.5, p<0.05) and mortality rate was significantly higher (66.6% vs 16.3%, p<0.001) in patients with pressure sores than in patients without lesions.

Conclusions: Our study demonstrated that serum albumine levels, functional impairment and comorbidity are significantly related to the onset of new sores.

O.3.5. EFFECTS OF SMALL DOSES OF ORAL COBALAMIN SUPPLEMENTS IN THE ELDERLY
K. Zanibbi1, A. Day2, S. Geick,3 L. Hua1, A. Garcia1(1. Department of Medicine, Queen’s University, Kingston, Ontario, Canada; 2. Clinical Research Unit, Kingston General Hospital, Kingston, Ontario, Canada)

Cobalamin (Cbl) deficiency is highly prevalent in the older population. It is estimated that between 6-16% of the older population may have serum Cbl levels under 200pg/ml. We investigated the effect of low-dose oral Cbl supplement use, as frequently found in multivitamin preparations, in older adults on Cbl serum concentrations and function. Cbl function was determined by measurements of the serum Cbl-related metabolites methylmalonic acid (MMA), homocysteine (tHcy) and methylcysteic acid (MCA). Participants were independent, active, community-living, adults over the age of 65 recruited from community events and activities for seniors. Data on vitamin supplement intake, diet, medications, and medical and surgical history were collected. Serum was obtained for Cbl, MMA, tHcy, MCA and creatinine and hematological parameters. Of the 242 participants, 66 were taking oral Cbl supplements (2-37.5 mg/day), and 176 were not. Serum levels of Cbl were significantly higher in subjects on oral Cbl supplements. Similarly, serum levels of the metabolites MMA, tHcy, and MCA were also lower in subjects taking Cbl supplementation. Intake of low-dose oral Cbl supplements of Cbl significantly reduced the odds of low Cbl levels or high MMA. The relationship between Cbl supplement dosage and the biochemical parameters was dose dependent.

Oral Cbl (2-37.5 mg/day) intake by community-dwelling healthy older adults is associated with higher serum levels of Cbl and improved or normalized Cbl function, as indicated by lower concentrations of the metabolites MMA, tHcy and MCA. Use of low-dose oral Cbl replacement therapy might be sufficient to prevent Cbl deficiency in a large proportion of the elderly population.

O.3.6. A COMMUNITY-BASED INTERVENTION STU PROMOTION OF HEALTHY AGING: IDENTIFICAT STATUS OF NUTRITIONAL KNOWLEDGE AND INFORM NEEDS OF RURAL ELDERLY MALAYS
S. Shahar4, S. Nur Ayuara Adznam2, Z. Ibrahim2, S.A. Rahman3, N.A.H. B. Harishad, Z. Yassin(1. Department of Nutrition and Diagnostics, F. Allied Health Sciences, Universiti Kebangsaan Malaysia, Kuala, 2. Department of Nutrition and Health Sciences, Faculty of Med. Health Sciences, Universiti Putra Malaysia, Serdang, Selangor; 3. S. Chemical Sciences and Food Technology, Faculty of Sciences and Tec. Universiti Kebangsaan Malaysia, Bangi, Selangor)

Development of an intervention package for promotion of healthy; an important effort to prevent malnutrition among elderly people. The study was conducted to identify the nutritional knowledge stt information needs among rural elderly Malays and also to investi relationship between nutritional knowledge with social and health sti study was conducted among 267 elderly Malays (55.4% men an women) (mean age 70.6 ± 5.9 years) in 6 sub districts in rural areas Pilah and Sabak Bernam of Malaysia between August to October. Information about social, health and nutritional knowledge (i.e. co understanding of 10 nutrition terminology and 15 statements on n source of nutrition information, preferred method for receiving 1 education and barriers in receiving nutrition education) were collected interview-based questionnaire during a household visit. The anthropo functional measurements were also carried out. The nutrition knowledge was higher among men than women (p<0.0001). Multiple regression indicated that predictors of nutritional knowledge were IADL score hearing problems, receive formal education, younger age group, parti social activities and mid-upper arm circumference (R2 = 0.299, SEM: Majority of the subjects understood terminology of fat and vitamin but knowledge on food pyramid, fiber, carbohydrate, calcium and n Electronic media and health professional were the main source of information. However, the subjects expressed preferences to recei nutrition education via talks, counseling session with health professi electronic media such as television and radio. In conclusion, the kn knowledge of the elderly subjects was unsatisfactory and assoc several social and health variable, thus, development of a suita education package for this highly illiterate subpopulation is essential in increase their nutritional and health status.

O.3.7. LONG TERM EFFECTS OF FOLIC ACID FORTICI HOMOCYSTEINE LEVELS IN A GERIATRIC POPULATION
A Garcia1, K. Zanibbi1, A. Day2, S. Geick, M.V. Zanzege1(1. D. Medicine, Queen’s University, Kingston, Ontario, Canada; 2. Clinical Research Unit, Kingston General Hospital, Kingston, Ontario, 3. Department of Medicine sociale et préventive, Faculté de M Université de Montréal, Montréal, Québec, Canada.)

Elevated homocysteine (tHcy) is a risk factor for cardiovascular dis dementia in older adults. Folic acid, vitamins B12 and B6 reduce tHcy national program of folic acid fortification of grain products was intro Canada in 1998. We have investigated the effect of this fortification on folic acid and tHcy levels in older adults. A cohort of 280 coq normal persons older than 65 at baseline and living in the comm followed for 5 years. Red blood cell folate (RBC folate) and tH determined serially. Hierarchical Linear Models were used for the s analysis. At baseline, the mean age was 73.3 years. Levels of tH significantly increased each year after implementation of the fort program. Mean RBC folate before fortification was 660mM and incr 33%/year to a mean of 2051mM in 2003. Mean tHcy level pre-for was 10.2 mM (range: 5.4 – 44.3mM). tHcy levels significantly d for the first 2 years after fortification (by ~1.8 and ~0.9, respect progressively increased thereafter (by +0.08, +0.6 and +1.2, in the 5 years respectively). When subjects' age was included in the m same pattern of tHcy change was observed. Age alone did not e increases in tHcy despite a significant continuous increase of RBC fola 4 and 5 years after fortification implementation.

These results suggest that there is a threshold of RBC folate level which tHcy can not be further decreased.
cognitive tests at any of the test times. In this preliminary 5 year study in folic acid fortified older adults, we have found that low-dose oral Cbl supplementation results in lower tHcy, but does not affect cognitive scores, when compared to people not taking oral Cbl supplements.

O.2.6. THE DIFFERENT EVOLVING MODES OF WEIGHT LOSS DURING THE ALZHEIMER'S DISEASE: A PROSPECTIVE STUDY

O. Guérin1, P. Brocker1, B. Vellas2 (1. Department of Clinic Gerontology, University Hospital Nice, France; 2. Department of Internal Medicine and Clinical Gerontology, University Hospital Toulouse, France)

Background: Alzheimer’s disease is a very frequent degenerative dementia which is characterised by a progressive loss of cognitive functions. That disease is often followed by an average weight loss and a malnutrition which create many complications. That’s why the analysis of the potential predictive factors of this weight loss and its profile of evolution are truly worthy to identify a risk population and think of a preventive strategy.

Objectives: To analyse the predictive factors of the 4% of the body weight loss during the first year and the 5 kg during the six first months among a population with Alzheimer’s disease, then analyse the factors linked to the 5kg loss in 6 months on the whole following up period (at mean 2.5 years).

Design: There is a monocentric prospective cohort study among 395 patients (271 women, 124 men, mean age 75 years) assessed to have an Alzheimer’s disease (based on criteria of the National Institute of Neurological and Communicative Disorders. All subjects underwent a nutritional, neuropsychological, and functional evaluation. The Zarit scales were used to assess caregiver burden.

Results: Two different ways of weight loss seem to occur: A first one which is chronic and progressive, mainly linked to the disease aggravation (a Reisberg’s scale score4= is associated with, at least, an OR=5.8, 95% CI=1.1-30.2), second one which is acute and linked mostly to intermittent events (OR=2.4, 95% CI=1.2-3.9; when they exist), considering that social factors are involved in both mechanisms.

Treatment by cholesterinase inhibitors is always a protective factor against the weight loss (OR=0.33, 95% CI=0.14-0.79 for the “progressive way”, or OR=0.33, 95% CI=0.15-0.73 for the “acute way”).

Conclusion: It seems to be very important to detect and identify and treat these two different ways of weight loss. This study might make possible to recommend a regular following-up every six month for prevent weight loss.

O.3.: Intervention Studies

O.3.1. IMMUNOPOTENTIATION OF INFLUENZA VACCINATION AND NUTRITIONAL IMPROVEMENT BY LC1® FERMENTED MILK IN THE ELDERLY

Y. Yamori1, M. Sagara1, C. Jian Jun2, T. Yamano2, Y. Fukushima2 (1. International Center for Research on Primary Prevention of Cardiovascular Diseases in Collaboration with WHO, Department of Preventive Nutritional Medicine, Research Institute for Production Development, Kyoto, Japan; 2. Nestlé Japan Ltd., Nutritional Business Group, Tokyo, Japan)

To evaluate the effect of Lactobacillus johnsonii La1 on quality of life (QOL) in the elderly, a double-blind placebo-controlled crossover study was conducted. Forty-four subjects in a special nursing home for the elderly were randomly assigned into two groups, and daily 90 g of either the fermented milk containing L. johnsonii La1 LC1®, or milk jelly with yogurt flavor as placebo was administered for 5 weeks. Nutritional status and immune parameters including phagocytic activity, blood immunoglobulin and antibody titer against Haemophilus influenzae were investigated by taking blood samples at the beginning and the end of each administration period. Defecation frequency and the state of dementia using GBS Scale were also recorded.

After administration of LC1®, 1) enhancement in the antibody titer against H. influenzae type A (H3N2) 2 weeks after vaccination, 2) increase in phagocytic activity in the subjects whose initial phagocytic activity was low, 3) decrease in blood CRP levels in the subjects whose level was over standard value, 4) increase in blood albumin and HDL cholesterol, were observed. These changes were not observed after placebo administration. Defecation frequency and the state of dementia were not influenced by yogurt and placebo administrations.

These results suggest that LC1® has effects to reinforce immune with down-regulating inflammation and improve the nutritional status elderly. In conclusion, LC1® can be a useful tool to control improvement of QOL in the elderly.

O.3.2. POOR NUTRITIONAL STATUS IN ELDERLY SUB ENTERING A GERIATRIC INSTITUTION

M.F.A.M. Mathey, M. Kbler, B. Lesourd (Département de Gériatrye, F. Médecine, CHU Clermont-Ferrand, France)

Background: Aging is often accompanied by a decline in appetite, dietary intake and followed by unexplained weight loss. This may be a sign of malnutrition. Epidemiological studies showed that the percentage of people suffering from protein energy malnutrition is as followed: 2-4% living ‘apparently healthy’ elderly and 30 - 50% of institutionalised However, representative data of the general free-living elderly population is missing. Further, assessment of nutritional status is not common in practice even if nutrition is recognised as a major health determinant.

Objectives: To determine the incidence of malnutrition and related risks in 900 free-living elderly through a systematic nutritional screening it proposeMethods: 20 GP’s randomly screened about 900 elderly jan’03 and augst’04 in Avuverge, France. Subjects aged 70 years and + a nutritional and geriatric screening that involved weight, BMI, bi indicators of nutritional status (albumin, transthyretin) and renal fatty questionnaire on nutritional risk factors for free living elderly (AGE: Mini Nutritional Assessment (MNA), Geriatric Depression test, th Activities of Daily Life (ADL), and Instrumental Activities of Daily Living (IADL).

Results: Subjects were about 79 y of age. Preliminary results showed higher incidence of malnutrition than in other studies about 8% of the 14% of the women. These patients were found to be older, have low BMI and MNA, lower albumin and transthyretin levels, and also low function. They showed more depressive reactions and more food disturbances (data analyses in process).

O.3.3. THE LIPID LOWERING EFFECTS OF THE DII SUPPLEMENT PANTETHINE

S.M. First, J.J. Pins, J.M. Keenan (University of Minnesota Depar Family Practice and Community Health 420 Delaware Street S.E. M Minneapolis, MN 55455, USA)

Pantethine is the stable disulfide form of pantetheine; prec panthenolic acid. This is the first fully powered clinical trial conducted in the United States to evaluate the effect of pantethine on cardiovascular disease. The study is a crossover design with three 6-week treatment periods, placebo, 600mg/d of pantethine and 900mg/d of pantethine assigned in random order. Lipid inclusion criteria, after 4 weeks of diet stabilization: between 100mg/dL-175mg/dL, TG >150mg/dL, and HDL-C <40mg/dL and <45mg/dL for women. Average BMI was 29.4 kg/m2. 48 healthy men and women (average 50.6 yrs; age range 28-74 years) were in random order for 3, 6-week periods with placebo, 600mg of pantethine and 900mg of pantethine per day. Compared to placebo, 600mg of pantethine lowered TG 39.6 11.9mg/dL and 900mg lowered TG 66.9 11.7m significant dose response for TG (+27-3 11.7mg/dL) exists from 6 900mg per day. Pantethine significantly lowered VLDL-C from place 2.6mg/dL at both 600mg (42.6 2.5mg/dL) and 900mg (36.4 2.5mg/dL) significant difference –5.8 2.5mg/dL between 600mg and 900mg. Con placebo TC was significantly reduced from 225.4 ± 30.2mg/dL to 204 mg/dL and 204.1 ± 24.7mg/dL at the 600mg/d and 900mg/d dose resp The LDL-C change from place (148.7 ± 22.1) for the 600mg/d (127 mg/dL) was a significant reduction of 14.3%. LDL-C change from place 900mg/d (122.4 ± 19.2mg/dL) was significant with 17.6% No change was seen in HDL-C. No differences from baseline data treatment measures of safety (liver function, CBC or platelet count) were observed. Two subjects withdrew due to significant gastrointestinal side effect remaining participants, pantethine was well tolerated.

All significant changes with p-value at ≤0.05. All results mean
Society of Canada.

**O.2.2. COGNITIVE PERFORMANCE IN ELDERLY PEOPLE WITH A MILD VITAMIN B12 STATUS.**

S.J.P.M. Eussen1, L. Joosten2, R. Bloos2, L. van de Ven1, L.C.P.G.M. de Groen1, W.H. Hoefnagel1, W.A. van Staveren1, (1, Wageningen University, Division of Human Nutrition; 2, University Medical Center Nijmegen; Division of Geriatrics, The Netherlands)

An association between neuropsychiatric disorders and vitamin B12 deficiency has been recognized since 1849 when pernicious anemia was first described. Several types of studies have found an association between vitamin B12 deficiency and cognitive impairment in both healthy and demented elderly people. Cognitive performance consists of several cognitive domains such as memory, language, praxis, attention and executive functions.

This study aims to review the proportion of elderly with normal cognitive performance, mild cognitive impairment (MCI) and dementia in a population of elderly people with mild vitamin B12 deficiency, and which cognitive domains are impaired in the different stages of cognitive performance.

Free-living and institutionalized individuals were eligible to participate if they were aged 70 years or greater, had a mild vitamin B12 deficiency, and had no severe cognitive impairment. We defined mild vitamin B12 deficiency as a methylmalonic acid concentration ≥ 0.32 mmol/L and vitamin B12 concentration between 100 and 300 pmol/L. Severe cognitive impairment was defined as a score < 16 points on the Mini-Mental State Exam (MMSE). People with renal dysfunction (creatinine > 120 µmol/L) and who received vitamin B12 injections less than 3 months prior to blood collection were excluded. General cognitive performance was measured by the Clinical Dementia Rating (CDR) scale, in which a score of 0 indicates no cognitive impairment, a score of 0.5 indicates mild cognitive impairment, and a score of 1 indicates severe cognitive impairment. Cognitive performance on more specific domains was measured with the 15 Word test (memory), the Digit Span (attention), Word Fluency (language), Trail Making Test and Stroop (executive functions), and the Figure of Rey (praxis).

Data on cognitive tests of 125 women and 38 men were available for analysis. Mean age was 82 years and 36% lived in nursing homes. Mean vitamin B12 concentration was 186 pmol/L and median MMA concentration was 0.37 mmol/L. Preliminary results show that mild cognitive impairment was present in 25%, and dementia in 10% of the studied population. In addition, cognitive impairment in the specific domains is more pronounced when cognitive impairment becomes more severe according to CDR. Especially the cognitive domains memory, praxis and language appeared to be impaired in elderly with mild vitamin B12 deficiency. During the congress, data on cognitive performance in about 200 elderly with a mild vitamin B12 deficiency will be presented. An efficacy study is underway to investigate the effects of vitamin B12 supplementation on cognitive functioning.

**O.2.3. OMEGA3 FATTY ACIDS ARE ASSOCIATED WITH LESS DEPRESSIVE SYMPTOMATOLOGY AND BETTER MEMORY IN A GROUP OF HISPANIC AND NON-HISPANIC WHITE ELDERS IN MASSACHUSETTS**

L.M. Falcon, L.Arsenault, T.S. and K.L. Tucker (Northeastern University and the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University, Boston, MA)

Omega-3 fatty acids, including docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA), may be protective of brain function. DHA, for example, is a crucial component of synaptic cell membrane. Several studies have suggested that these fatty acids may protect against cognitive decline and others, including some clinical trials have suggested that they may be useful in the treatment of depression. In this study of a representative sample of Hispanic elders living in Massachusetts, along with a neighborhood matched group of non-Hispanic white elders, we examined these associations in a cross-sectional design.

Participants were enrolled through a specially designed video frequency questionnaire for this population; depression by the Center for Epidemiologic Depression Scale (CES-D), and memory by story recall. Although depression scores were higher, and memory scores lower for the Hispanic group relative to the non-Hispanic whites, there were no significant interactions between ethnicity and fatty acid intake on either outcome, so the results are presented together. After adjusting for age, sex, ethnicity (Hispanic yes/no), education (years in school), and total energy intake, total i omega-3 fatty acids, but not omega-3/omega-6 ratio, was signiﬁcantly associated with CES-D score (b=-2.0, p=0.02). On the other hand, total of omega-3 fatty acids was not signiﬁcantly associated with story recall ratio of intake of omega-3/omega-6 fatty acids was, (b=55.9, p=0.01). Further research is needed to determine the mechanisms that may be contributing to apparent protective effects of total intake of omega-3 fatty acids on depressed mood and memory.

**O.2.4. RELATIONSHIP BETWEEN SELENIUM EVOLUTION AND COGNITIVE DECLINE IN THE EVA STUDY**

N. Akbaraly1, J. Arnaud1, V. Gouille2, I. Hintsing2, A.M. Rousset2, (1, INSERM E 0361, Pathologies du système nerveux: re: épidémiologie et clinique, Hôpital La Colombière, Pavillon 42 Cavalerie*, 39 Avenue Charles Flohaut, BP 34493, 34093 Montpellier France; 2, NVMC (Unité de Nutrition Vieillissement et 1 Cardiovasculaires) UFR de Pharmacie, Domaine de la Merce, 3- Tronche, France; 3, INSERM U360 Recherches épidémiologie neurologie et psychopathologie, GH Pitié Salpêtrière, 47 bd de l’Hôpital Paris Cedex 13)

Background : The implication of free radical damages in cerebral ageing is a good argument to support the hypothesis that an antioxidant status may be related to cognitive decline in ageing. Oh et al. (2004) This study aimed to examine the longitudinal relationship between the evolution of plasma selenium and the evolution of cognitive functioning elderly population. Methods : At inclusion, in 1991-1993, 1389 subje recruited and subjects were followed-up for 9 years. Plasma selenium concentration was determined at wave 0, 2 (1993- 1995) and 6 (2001) and cognition at each of the 6 waves. Low scoring at the MMSE percentile of the score distribution at each follow-up wave was characterised cognitive decline, Socio-demographic factors, tobacco intake and vascular risk factors (diabetes, dyslipidemia, hypertension) and vascular disease were taken into account in the analyses which were performed separately for men and women. Logistic regression and GEE models were used for transversal and longitudinal analysis respectively. Results : Ir dimnution of plasma selenium (by variation of 0.2 µmol/l) increase probability of having a low MMSE score between eva0 and eva6 : OR 95% [1.02 ; 2.86] p=0.04. In women, this probability increased v plasma selenium level at inclusion, OR=1.27 [1.06 ; 1.49] p=0.01 but the decrease of plasma selenium during the follow-up. Conclusion : Ot show that, in men, cognitive decline seems to be concomitant with selenium decrease. This result reinforces previous results on oxidati and cognitive functioning.

**O.2.5. LONG-TERM SMALL DOSE COBALT SUPPLEMENTATION DOES NOT INFLUENCE COGNITIVE S K. Zanibbi1, A. Day2, S. Geick1, A. Garcia1,(1. Department of M Queen’s University, Kingston, Ontario, Canada; 2. Clinical Resea Kingston General Hospital, Kingston, Ontario, Canada)

Elevated Homocysteine (Hcy) is associated with poor cognitive elderly. THcy levels are inversely related to B-vitamin serum levelcobalamin (Cbl) supplementation has been effective in lowering Hcy. We investigated the effects of low-dose oral Cbl supplement thcy and cognitive test scores over 5 years in an older population. Pat were part of a larger folic acid fortified cohort of 142 healthy, con living adults over the age of 65, who have been tested 3 times over Dat on vitamin supplement intake, diet, medications, and medical and history were collected at each test time. Cognitive testing consist MMSE, the Stroop test, the California Verbal Learning Test, and th Dementia Rating Scale, and was performed at all three visits. Participu selected based on consistent use or not use of low-dose (<50mg/day) vitamin B supplement. There were 58 people who did not take, and 26 Pe did take, oral Cbl supplements throughout the 5 year period. The two did not differ in terms of age or education level. THcy was con significantly lower in the group taking oral Cbl (mean THcy level: 8.3 m/M at times 1, 2 and 3 respectively) than in those who were not (m level: 10.0, 10.4, 11.0 m/M at times 1, 2 and 3 respectively) However, there were no differences between the two groups on an
strategies, for optimal result in geriatric rehabilitation programs.

0.1.4. NUTRITIONAL ASSESSMENT IN THE RESIDENTIAL HOMES FOR THE ELDERLY: A COMPARISON BETWEEN MENUS PROVIDED AND DIETARY INTAKES

L. Padró, A. Farran, C. Morati, P. Cervera (Centre d’Ensenyament Superior de Nutrició i Dietètica (UB), Recinte Torribera, La Masia, Av. De Prat de la Riba 171, Santa Coloma de Gramanet, 08921 Barcelona, Spain)

We evaluated the nutritional content of the menus provided in residential homes for the elderly (food served) and assessed nutrient intakes (food consumed) of elderly people consuming these meals.

64 elderly people between 75 and 90 years old were recruited from 4 residential homes in Spain. Food portions and intakes were recorded during 3 weeks using double weighed records. The nutritional value of the food served and consumed was estimated using the CESNID-UB Food Composition Tables included in a Nutritional Analysis Software Programme.

The % of the Recommended Dietary Allowance (RDA) provided by the diets were 87% and 112% for vitamin A (for men and women respectively), 79% for Calcium, 63% for Folate, 72% and 94% for Magnesium (for men and women respectively) and 74% and 102% for Zinc (for men and women respectively). The % of the RDA of the actual intakes were 84% and 81% for men and women respectively for vitamin A, 68% and 70% for men and for women respectively for Calcium, 57% and 47% for men and women respectively for Folate, 62% and 78% for men and women respectively for Magnesium and 64% and 82% for men and women respectively for Zinc.

The diets served in the residential homes did not reach the recommended intakes for this age group. Moreover, the percentage of the food that was served but not consumed ranged from 5% (in soups) to 40% (in chicken dishes). The combination of these factors contributed to nutritional deficiencies in the institutionalized elderly, especially for Calcium, Folate, Magnesium, Zinc and vitamin A. The nutritional density of the diets should be improved.

0.1.5. OPTIMIZING THE SOCIAL AND PHYSICAL AMBIANCE DURING MEALTIME IN DUTCH NURSING HOMES

K. Nijis, C. de Graeff, F. Kok, W. van Staveren (Wageningen University and Research, Division of Human Nutrition, PO Box 8129, 6700 EV Wageningen, The Netherlands)

Among elderly in Dutch nursing homes there is a high prevalence of malnourishment. Insufficient food intake among elderly living in a nursing home has been shown to be a risk factor for increased morbidity, lower quality of life, and impaired self-care ability. Recently, Mathey et al. (2001) showed that improving the social and physical ambiance during mealtime has not only a positive effect on reported quality of life, but also on weight gain and biochemical parameters.

In many Dutch nursing homes, meals are not served in a cozy setting. Nijis et al. (2004) made an inventory of project models used in Dutch nursing homes to improve the ambiance during mealtimes. Three different meal ambiance project models were found: restaurant, cooking on the nursing ward and bulk meals. Each of the three models was experienced as a success by the nursing home residents, the nursing home management and the staff. Management and nursing staff pointed out that the cooperation and motivation of staff, adequate space and management support were the most important reinforcing factors of the project models. The most important barriers of the projects models were lack of cooperation and motivation of the staff, insufficient finances and insufficient personnel.

Based on these results we tested the project model bulk meal in a six month controlled intervention study. In five wards in different Dutch nursing homes the project model was implemented. Quality of life, nutritional status, physical performance, anthropometric parameters and biochemical parameters were measured before and six months after the introduction of the project model. There were 90 residents in the intervention group and 82 residents in the control group who participate in the study. Results on the effectiveness of the intervention will be available in November.

0.1.6. NURSING HOME RESIDENTS MALNUTRITION: NUTRITIONAL SUPPORT IN ITALY.

C. Pedrolli (A Costa Nutritional Service Santa Chiara Hospital, Via Pt. n. 1, 38100 Trento, Italy)

Back ground: there are few reports on elderly malnutrition in nursin in Italy and even less on interventional nutritional studies

Methods: MNA was performed on 66 (3M, 63F), age 85.80±8 nursing homes residents in Trento, Italy; out of them 24 (36.3%) had score < 17 (malnourished = MN), 34 (51.5%) scored 17-23.5, consious nutritional risk (NR), and 8 (12.1%) scored 24-30 and consider nourished (WN). MN and NR were supported with a nutritional suq IMPACT ORAL (~) 1 envelope for a day for six mos, coupled with th one spoonful while WN went on with their usual intake. Global MN MNA, weight, BMI, albumin, prealbumin, ceruloplasmin, were coll espressed as mean ± SD before and after the nutritional support.

Results: BMI, weights±SD before and after is indicated in table as resulted as a mean value respectively in MN, NR and WN be 13.88±2.17, 19.65±1.16 and 25.50±1.76 and after ONS 13.50±5.45 3.09 and 24.83±1.47; short MNA in MN, NR and WN respective 1.57, 9.62 ±1 and 12.67 ±1.37 before ONS and 6.82 ±1.81, 7.69± 11.3±0.52 after ONS.

<table>
<thead>
<tr>
<th>Weight before ONS</th>
<th>Weight after ONS</th>
<th>BMI before ONS</th>
<th>BMI a</th>
</tr>
</thead>
<tbody>
<tr>
<td>MN ± SD</td>
<td>48.09±10.05</td>
<td>51.58±11.21</td>
<td>17.72±3.35</td>
</tr>
<tr>
<td>NR ± SD</td>
<td>61.07±11.29</td>
<td>60.29±11.84</td>
<td>22.4±3.86</td>
</tr>
<tr>
<td>WN ± SD</td>
<td>63.80±15.92</td>
<td>63.83±17.15</td>
<td>27.69±4.00</td>
</tr>
</tbody>
</table>

Conclusion: MN gained more than 3 kilograms as a mean after t ONS; NR had all little lack of weight, but not significant; that c previous studies showing that the priority in ONS are people MN.

0.2.: Cognitive Decline

0.2.1. NUTRITIONAL PARAMETERS RELATED TO COGNITIVE FUNCTION IN ELDERLY INDIVIDUALS WITH AND WITI DEMENTIA

B. Shatenstein, I. Reid, M.-J. Kergoat (Centre de recherche, universitaire de gériatrie de Montréal, Université de Montréal, Montréal, Canada)

Decreased food intakes and weight loss may influence nutritional people suffering from Alzheimer’s dementia (AD), thus contrib progressive deterioration in their physical health along with cognitive In addition, specific nutritional parameters, such as folic acid and vita intakes, and elevated serum levels of homocysteine may have an i cognitive function. In ongoing research on the natural prog: undernutrition in elderly persons in early stages of AD, we are atten recruit 75 patients aged 65 and older from memory clinics in Mon ensure feasibility of data collection and continuing patient participation expected cognitive deterioration, their caregivers are also participatin study. To control for aging, patients will be matched by age- g healthy subjects. Participants are followed at 5 timepoints over an 1 period. Study measures document appetite, current and usual dietary and weight stability (dependent variable), as well as clinical, fu biochemical and anthropometric parameters with nutritional relev intake of functional foods are assessed using a non-quantitative f instrument. To date, 17 patient-caregiver pairs and 47 controls ha recruited. Recruitment difficulties in this patient population will be d and data will be presented from the first 2 series of data collection include dietary intakes from a food frequency questionnaire and 3 foo collected at baseline (T0) and at T1, concentrating on estimates of macronutrients, and the micronutrients folic acid and vitamin B12. Bio analyses on blood drawn at T0 will be examined for levels of hom folic acid and vitamin B12, and evaluated in relation to cognitive in screening results in patients and controls. These preliminary results will eary indicators of the evolution of nutrition status, and related factor individuals in early stages of AD. This study is funded by the A/
elderly residing in nursing homes in the Boston area. Unlike free-living elderly, nursing home residents require monitoring of their intracellular/extracellular water balance. Quality of life, longevity and functional capacity are related to the “quality of lean” factor, defined as the intracellular content of fat-free mass (Kehayias et al AJCN 1997; 66: 904-10). This measurement is our best index of nutritional status, but not practical for field application.

Field Methods include a portable multi-frequency bioelectrical impedance analysis (BIA) device for total body water (TBW) and extracellular water (ECW) assessment, a small hand-held dual energy absorptometer (DEXA) for fat and fat-free mass (FFM) measurements and a portable, non-destructive plasma analysis X-ray fluorescence (XRF) instrument developed for rapid in-the-field analysis of Br and thus ECW. Cognitive function was evaluated using the Mini Mental State Examination questionnaire (PAR Inc., Odessa, FL).

Validation Methods: Total body potassium by K-40 counting for muscle mass, neutron inelastic scattering for fat and fat-free mass, isotope dilution for TBW (by D2O) and ECW (by plasma Br neutron activation analysis).

Results: Based on our validation study with 64 non-institutionalized volunteers, BIA provides a good measure for TBW (R=0.962) but fails to predict frailty, defined as ECW/FFM (R=0.403). A similar observation was made with our 28 nursing home residents in the present study. BIA was best correlated to isotope dilution when expressed as bioelectrical impedance vector at 50KHz. XRF correlated perfectly with neutron activation analysis for plasma Br analysis. The hand-held absorptometer provides rapid assessment of FFM in nursing homes and could eliminate the need for D2O analysis. In our study population dehydration was found to be unrelated to cognitive status, as water intake represented the quality of care in the nursing home rather than the self-care of the subject.

S.9.: Realise Project

CRNH, Clermont-Ferrand, France

III - ORAL COMMUNICATIONS

O.1.: Long Term Care

O.1.1. POOR NUTRITIONAL STATUS IN ELDERLY SUBJECTS ENTERING A GERIATRIC INSTITUTION

M. Klerk, M.-F.A.M. Mathey, C. Denizart, B. Lesourd (Département de Gériatrie, Faculté de Médecine, CHU Clermont-Ferrand, France)

Background: Poor nutritional status is highly prevalent in nursing home residents. However, few data are available on the nutritional status at the entrance of nursing home or long-stay unit. Most studies are 10-15 years old and do not reflect the present situation, particularly in France where the allocated fees to stay home have been importantly raised. Age at entrance has raised 4-5 years over the past 10 years.

Objective: To evaluate nutritional status and related risk factors in elderly subjects entering a geriatric institution.

Methods: To date 23 geriatric homes are participating in a programme of which the aim is to introduce a systematic assessment of nutritional status and related risk factors in geriatric homes in Auvergne, France. All subjects aged 70 years and older entering these institutions undergo an extensive nutritional and geriatric screening which involves weight, BMI, biologic markers (albumin, transferritin), a 3-day dietary record, the Mini Nutritional Assessment (MNA), the Mini Mental State Examination (MMSE), the Geriatric Depression Scale (GDS-15), the KATZ-scale for Activities of Daily Life (ADL), and the scale for Instrumental Activities of Daily Life (IADL).

Results: Between September’02 and April’04, 248 patients have entered a geriatric institution. Of these patients 38% had a BMI ≤21 kg/m2, 64% had albumin levels ≤35 g/L, 29% had transferritin levels ≤150 g/L, 39% had an energy intake <20 kcal/kg/day, and 60% had a MNA ≤17 (of 30). Moreover, 51% could be classified as malnourished, because they had values below the threshold for at least two of these variables. In addition, 54% of the patients seemed depressed (GDS>5 of 15), 70% showed potential dementia (MMSE<22 of 30), and the majority needed help with daily activities according to t scale (64%) and IADL-scale (74%).

Conclusion: Nutritional status of elderly subjects is already very poor they enter a geriatric institution.

O.1.2. NUTRITIONAL ASSESSMENT IN PATIENTS OF A GERIATRIC LONG TERM CARE INSTITUTION

S. Gabmayer, G. Wense, T. Frühwald, M. Kandlbauer, B. Kohlmaier (Geriatrizeitzentrum am Wienerwald, Vienna)

In July 2003 the nutrition team of the Geriatrizeitzentrum am Wiener large geriatric institution with predominantly a long term care population – conducted a survey of the nutritional status of its pat means of the BMI.

2245 patients were assessed, 72% were female, 28% male, their age was 80 years. In 321 patients height had to be estimated by meter formula using knee length (Chumlea). The BMI was interpreted acci
geriatric criteria (ESPN).

The majority of the patients (625, corresponding to 36% of the 132% of the female patients) was situated in the normal BMI range (22: BMI of 20% of the male and 16% of the female patients indicated: malnourishment (BMI 20 to 21,99. 12% of all patients had moderate malnourishment (BMI 18,5 to 19,99). 409 Patients (23% of the female and 17% of patient population) had severe malnourishment (BMI ≤ 18,5).

10% of all patients were overweight (pre-adipose state, BMI 27 to 25 patients (7% female and 5% male patients) were manifestly obese 30).

This survey illustrates the prevalence of malnourishment in instituti

geriatric long term care patients, it emphasizes the necessity for sy

O.1.3. IMPACT OF NUTRITIONAL STATUS ON THE ACHIEV

EGERIATRIC REHABILITATION PROGRAMS

L.M. Donini, L. De Bernardini1, M.R. De Felicis1, C. Savina1, C. M. Paolini, C. Cannella (Istituto di Scienze dell’Alimentazione Univ Roma “La Sapienza”, 1. Istituto Geriatrico “Villa delle Querce” (BIM))

At hospital admission, high prevalence of malnourishment has been c

since many years, and further deterioration of the Nutritional Stat occurs during hospitalisation. Malnourishment will thus result in fu

dependence, increased need for care, risk of death. Treating malnur

been shown to be beneficial even in rehabilitation programs: morti

rehabilitation time have been shown to decrease, patient’s perce

wellness and outcome improved with nutritional supplementat

improvement of NS.

Objective is the retrospective control of the impact of NS on the i

to turn to compelling assistance interventions and on the results of a rehabilitation program


Within the first 48 hrs after admission patients were submitte

evaluation of clinical, functional, cognitive and nutritional status.

During the follow-up we recorded the necessity to turn to co

assistance interventions and the results of the geriatric rehabilitation pr

Logistic regression analysis estimated models having the necessity t

compelling assistance interventions and the results of the geriatric rehab program as outcome variables.

Results During the observation period we had the necessity t

compelling assistance interventions in 142 subjects (51.1%). By the s

we had no results from the rehabilitation program in 36 subjects (12.9%)

The logistic regression models were able to predict the “necessity t

compelling assistance interventions” from a constant and the ind

variables cognitive and nutritional status and the “results of the reha

program” from a constant and comorbidity, cognitive and nutritional st

Conclusions Nutritional status emerged as the main independent j

both of the necessity to turn to compelling assistance interventions results of the geriatric rehabilitation program. Our data are in agree in the literature and we also believe that targeting elderly subjects a

malnourishment is a prerequisite for establishing both preventive and t
S.8.2. PROTEIN INTAKE AND LEAN BODY MASS IN FUNCTIONING COMMUNITY DWELLING OLDER ADULT HEALTH ABC STUDY


Background: Sarcopenia is thought to be an important factor prec older adults towards disability. Inadequate protein intake is one determinant of sarcopenia. Dietary surveys suggest that many older i not consume adequate dietary protein but a link with lean body mass has not been shown in community dwelling elderly. Objective: D whether there is a relationship between self-reported dietary protein in LB Methods: Dietary intake was assessed in attendees of the Year Aging and Body (n=2627) using an interviewer administered food f questionnaire. Non-bone LB was assessed by dual energy absorpt Linear models were used to relate total protein intake and LB before adjustment for total caloric intake, age, race, gender, fat mass, height, activity, smoking status, prevalent cardiovascular disease, diabetes, ps disease and the use of oral steroids. Results: The study population rec Memphis and Pittsburgh was 38% African-American, and 51% fem average caloric and protein intakes were 1881 kcals/day (SD=735) : gm/day (SD=28), respectively. Total dietary protein intake was associ non-bone lean body mass (r=0.20; p < 0.001). After adjustment for c protein intake (per gram) was associated with grams of LB (r=1.45(48), p = 0.010). Those in the lowest quintile of calorie-adjuste intake had 0.6 fewer kilograms of LB than those in the highest quint calorie-adjusted protein intake (p=0.018) after adjustment for other cc Conclusion: There is evidence that total dietary protein intake is associ lean mass in older adults. Additional studies with more precise me protein intake should be considered.

S.8.3. DOES SARCOPEenia ORIGINATE IN EARLY LIFE? FD FROM THE HERTFORDSHIRE COHORT STUDY

A. Aihie Sayer1,2, H.E. Syddall1, H.J. Gilbody1, E.M. Dennison1, C. (1. MRC Epidemiology Resource Centre, University of Southampton 2 University Geriatric Medicine, University of Southampton, UK)

Background: Sarcopenia is defined as the loss of skeletal muscle strength with aging. Recent epidemiological studies have shown that women who grew less well in early life have lower muscle strength; objective was to investigate the relationship between birth weight growth and the development of sarcopenia.

Methods: We studied 730 men and 673 women, of known birth wt at one year, who were born in Hertfordshire, UK, between 1939. Subjects completed a health questionnaire and we measured their weight and grip strength. Standard deviation scores for birth weight, infant growth conditional on birth weight, were analysed in relation strength before and after adjustment for adult size.

Results: Grip strength was most strongly associated with birth weight (r=0.19; p<0.001) and women (r=0.16; p<0.001). These relationships significant after adjustment for adult height and weight. In cont associations with infant growth were weakened after allowing for ac Adjustment for age, current social class, physical activity, smoking an did not affect these results.

Conclusions: Birth weight is associated with sarcopenia in men and independently of adult height and weight. The influence of infant gr long-term muscle strength appears to be mediated through ad Sarcopenia may have its origins in early life and identifying in operating across the whole life course may yield considerable adv developing effective interventions.

S.8.4. USE OF NEW FIELD METHODS TO ASSESS COMPOSITION, DEHYDRATION AND FRAILTY IN NU HOMES

J.J. Kehayias, C.A. Sheahan, P. Murphy-Gismondi, J. Laughery, B. M. O’Neill (USDA Human Nutrition Research Center on Aging University, 711 Washington Street, Boston, MA 02111, USA)

The goal of the study is to examine the relationship between com composition, cognitive function, hydration, frailty, and functional stat
Results (mean ± SD):

<table>
<thead>
<tr>
<th></th>
<th>Younger age group (n = 47)</th>
<th>Older age group (n = 19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age [y]</td>
<td>64.4 ± 3.1</td>
<td>74.9 ± 3.7</td>
</tr>
<tr>
<td>Body height [cm]</td>
<td>162.1 ± 6.3</td>
<td>158.8 ± 5.7</td>
</tr>
<tr>
<td>Body weight [kg]</td>
<td>70.7 ± 11.3</td>
<td>64.7 ± 7.8</td>
</tr>
<tr>
<td>BMI [kg/m²]</td>
<td>26.9 ± 4.0</td>
<td>25.6 ± 2.8</td>
</tr>
<tr>
<td>RMR [kJ/d]</td>
<td>5656 ± 671</td>
<td>3537 ± 498</td>
</tr>
<tr>
<td>EPA [kJ/d]</td>
<td>4175 ± 957</td>
<td>3584 ± 811</td>
</tr>
<tr>
<td>TEE [kJ/d]</td>
<td>9435 ± 1356</td>
<td>8566 ± 1134</td>
</tr>
<tr>
<td>Energy intake [kJ/d]</td>
<td>8723 ± 2292</td>
<td>9172 ± 1837</td>
</tr>
</tbody>
</table>

*; **; *** = significant difference in the course of 1994, 1998, and 2002 (repeated measurement analysis of variance): * P < 0.05; ** P < 0.01; *** P < 0.001

Conclusion: The women of the younger age group adapted their energy intake to the decreased TEE and kept their body weight constant. In contrast, the older women lost weight despite a tendentially increased energy intake in conjunction with a decreased TEE.

S.7.: Osteoporosis

S.7.1. EARLY AND/OR AGING DIETARY CALCIUM INTAKE ON HEALTHY ADULT BONE


Bone loss increases with advancing age in women. Large cross-sectional studies have found a strong inverse relationship between age and bone mass. The goal of this study was the evaluation of the dietary calcium intake of young scholar and adult subjects, inhabitants in the different districts of Campania Country. Experiment’s protocol - During the 30 past years, all the patient that came to our outpatient clinic for a dietetic prescription would to fill a week recall nutritional card, reporting all the food they eat including corresponding weight. At the same time, week recall card were handed out to student of 15 primary and 30 secondary school. All the data of nutritional cards were housed in a computer with WinFood software (Medimatica – Martinscuro – Italy). The software is able to transform nutritional data in nutrient intakes. Comparison between calcium and phosphorus intake among all the subjects enrolled in the study was performed transferring all the nutritional data from WinFood to an electronic sheet by Microsoft Excell, and then statistically elaborated by Statview software. Results and discussion - Nutritional epidemiology represents the better approach to the effect that a nutrient level intake can have on a deficiency disease. Furthermore, the postmenopausal osteoporosis, aftermath of woman’s hormone disappearance, can to cause a change of cell membrane permeability and/or receptors number or activity. It is possible that the static indices of remodelling could to be caused also from calcium intake levels during the life. Comparison between dietary habits of young and elderly women demonstrate a loss of calcium intake from 12 to 45 years and then an increase from 46 to 70 years.

S.7.2. FIRST DEMONSTRATION OF THE EFFICACY OF AN ANTI-OSTEOPOROTIC TREATMENT IN VERY ELDERLY OSTEOPOROTIC WOMEN


The burden of fractures is increasing as age advances due to increased longevity. This is particularly the case in over eighty year-olds, a group at highest absolute risk for fracture and so for whom the number needed to treat to prevent one event is lowest. About 25 percent of all fragility fractures, of hip fractures, occur in this high risk group so prevention of fractures to confer the highest benefit at a community level. Moreover, the b fractures will increase as life expectancy is increasing. Despite this any, drugs have proven anti-fracture efficacy in this high risk group. S raluate, a drug that simultaneously increase bone formation and decre resorption, has been reported to reduce the relative risk (RR) of fractures by 41% (p<0.001) and hip fracture by 36% (p=0.046) over 3 the SOTTI and TROPOS studies.

An analysis was performed on the pooled data from these two phase to evaluate the efficacy of strontium ranelate in patients aged 80 years (n=1488). Yearly spinal X-rays were performed in 895 patients, ass grading. There was no difference between groups for baseline characte age 83.5±3.0 years; L-BMD T-score –2.7±1.7; FN-BMD T-score in percent of the patients had at least one prevalent vertebral fracture and least one prevalent osteoporosis-related non-vertebral fracture. In populati, strontium ranelate reduced the RR of vertebral and non-fraction by 32% (p=0.013) and 31% (p=0.011) respectively over compared to placebo. The drug had an excellent safety profile. To th our knowledge, this is the first experimental evidence supporting the r of vertebral and non-vertebral fractures and the safety of an ost agent in osteoporotic women aged 80 years and over.

S.7.3. HIGH PREVALENCE OF VITAMIN D DEFICIENCY IN GERIATRIC OUTPATIENTS

J.W.M. Kruider, M. Müller, T.J.M. van der Cammen (Erasmus MC, R. The Netherlands)

Vitamin deficiency, especially vitamin D deficiency, is a common f elderly patients. Insufficient exposure to sunlight and dietary defici often present in those living in a nursing home or in residential c examined the prevalence in elderly patients at our diagnostic day for this unit, a team consisting of a geriatrician, a specialist t physiotherapist, and a dietician performs a comprehensive geriatric ass Most patients were seen because of falls. Almost all of them were home independently. An extensive laboratory screening, including as vitamin D, B12 and folic acid, was performed routinely. Normal v vitamin D are adjusted per season.

Of 146 patients (110 female, 36 male, mean age 80 years) seen in: (55%) proved to be vitamin D deficient, 3 (2%) folic acid deficient (<5 and 6 (4%) vitamin B12 deficient (< 130 pmol/l).

The unexpectedly high number of vitamin D deficient patient: explained partially by referral bias, because many patients were evaluation of falls. Muscle weakness is a symptom of vitamin D deficiency. Other explanations include a low fat diet, and insufficient exposure to The finding was unexpected because most patients lived independently relatively low number of vitamin B12 deficient patients, compared studies, may be due to a lower normal value in our laboratory. Methy acid levels were not determined; so marginal B12 deficiency may hi unnoticed.

Our findings point at a high prevalence of vitamin D deficiency in outpatients. Especially in fallers the vitamin D status should be a because the deficiency can easily be treated with oral vitamin D suppliments.

S.7.4. PHYSICAL ACTIVITY IS RELATED TO FUNCTIONAL PERFORMANCE BUT NOT TO NUTRITIONAL STATUS IN RANDOMLY SELECTED OLDER WOMEN

D. Volkert, L. Pauly, P. Stehle (Department of Nutrition Science, Uni Bonn, Germany)

Background: It is hypothesised that physical activity in older ag positive effects on functional capacity as well as on nutritional status.

Methods: In a cross-sectional study 159 randomly selected women to 84 years old were divided into active (A; n=57) und inactive (I subjects according to their self-reported sportive activity (>1 or ≤ 1 The ability to perform activities of daily living (ADL) was assessed standardised questionnaires. Functional performance was further determ three standardised tests (balance, 5-chair-stand, timed “up&go”). Boi and weight, waist and hip circumference were measured by trained body-mass index (BMI) and waist-to-hip ratio (WHR) were cal
S.6. Physical Activities

S.6.1. ADEQUACY OF DIETARY INTAKE IN ELDERLY PEOPLE WITH REGULAR LEISURE-TIME PHYSICAL ACTIVITY

S. Veloso², F. Baptista¹, P. Marques-Vidal² (1. Faculdade de Matriculada Humana, Crete, Quebrau; 2. Centro de Nutricao e Metabolismo, Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal)

Objective: to assess the adequacy of dietary intake in a sample of physically active elderly subjects. Methods: 188 subjects participating in a falls and mobility study (132 women, 56 men; mean age 70±6 years) with a regular leisure-time physical activity (at least 45 min twice per week). Dietary intake was assessed by a 72h food diary; quantification was conducted with photographic models and the conversion of foodstuffs to nutrients was performed with the Food Processor 7.3 (ESHA, USA). Individual nutritional intakes were then compared to the established Dietary Reference Intake (DRI) for elderly people. Results: expressed as % of total energy intake, 95% of the subjects (95% men, 95% women, p<0.001) had an adequate protein intake and 32% (30% men, 33% women, p<0.06) an excessive fat intake, whereas only 37% (29% men, 41% women, p=0.13) had an adequate carbohydrate (CHO) intake. Further, 71% of the subjects (84% men, 65% women, p<0.05) had a decreased fibre intake; 10% (20% men, 6% women, p<0.005) an increased cholesterol intake, and 23% (43% men, 14% women, p<0.001) an increased sodium intake. Also, 68% of the subjects (55% men, 73% women, p<0.05) had a decreased calcium intake; 65% (55% men, 70% women, p=0.06) a decreased vitamin B6 intake; 26% (18% men, 30% women, p<0.10) a decreased vitamin B12 intake. Finally, Spearman correlation analysis showed % of calories from fat to be positively and % cal from CH to be negatively related to body mass index (p<0.01), whereas no relationship was found with protein. Conclusions: in this sample of healthy, physically active elderly, a considerable proportion of subjects presents with inadequate nutritional intake. Efforts should be made in order to increase calcium and vitamin intakes, and to decrease fat, protein and sodium.

S.6.2. ENERGY REQUIREMENTS ARE NOT INCREASED IN ELDERLY PATIENTS SUFFERING FROM PRESSURE SORES

P. Ricci¹, B. Dambach¹, C. Marc Aurele¹, J.B. Mourea², A. Ghali¹, A.M. Favreau¹, A. Salie², G. Berra³ (1. Department of medicine; 2. Geriatric departmen, 3. Department of dietetics, University Hospital of Angers, France; 4. Inserm EMI: U 0018, CHU Angers, France)

Background: Although adequate energy intake is considered beneficial in the prevention and healing of pressure sores, specific energy requirements have not been well defined. Objective: The aim of this study was to estimate the energy requirements in diseased elderly patients with pressure sores. Design: It was an open, case-control study, involving 29 patients with pressure sores (Norton index risk 14.3a.3.3) and 27 controls hospitalized for various diseases (Norton 13.9a.3.3). Energy requirements were estimated using measured RMR, and multiplied by 1.26 and 1.5, to range between minimal WHO requirements and those of adults undergoing light physical activity respectively. Energy intakes were estimated using 3-day food weight records. Measured RMR was compared with the prediction equations of Harris-Benedict, WHO, and Schofield. Results: Measured RMR did not differ between the two groups (P=0.48), and was not related either to grade or size of the pressure sores. Calculated RMR was slightly underestimated by the WHO equation (82 kcal/d, P=0.006) and the Schofield formula (57 kcal/d, P=0.046), but was accurately estimated by the Harris-Benedict equation (40 kcal/d, P=0.13). Energy requirements therefore ranged between 153±340 and 182±405 kcal/d i.e. 25 to 30 kcal/kg body weight/d. Energy intake was lower than energy requirements, by 176 to 479 kcal/d. Conclusion: Diseased elderly patients with pressure sores do not have an increased energy expenditure, with their requirements suggested to range between 25 to 30 kcal/kg body weight/d. Malnutrition within this population is most likely the result of reduced energy intake.

S.6.3. BODY FATNESS, MUSCLE FAT OXIDATIVE CAPACITY AND INSULIN SENSITIVITY ARE AFFECTED BY THE VOLUNTARY EXERCISE RATHER THAN BY OVERALL DAILY ACTIVITY

V. Kimbert², C. Montaurier³, M. Bediu², Y. Boitée², B. Moriori¹ (1. Préc. Energy Metabolism Research Unit, UMR INRA/Université d’Auvergne 2. Laboratory of Physiology and Biology of Sport, CHU Clermont- Clermont-Ferrand, France)

The prevalence of obesity and insulin resistance increases with age. Body mass index has beneficial effects on these disorders, possibly three enhancement of muscle fat oxidative capacity. The aim of the study: examine the respective effects of the volume of sport exercising and daily activity on muscle fat oxidative capacity, body composition and insulin sensitivity in 31 healthy elderly volunteers with a large pattern of behaviors. The volume of sport exercising (i.e. intensity x duration x frequency over a year) was assessed using an activity questionnaire (E et al., 1982) validated by an aerobic power test. Daily physical activity (PAL) and the time spent per day at specific intensities of physical activity (slow VO2max) were calculated from 7-day long heart rate recorded individual calibration using whole-body indirect calorimetry. Mit oxidative capacity was measured on fresh tissue homogenate composition using DEXA and insulin sensitivity using an insulin Analyses of correlations and step-by-step regressions showed parameters of interest were significantly determined by:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscle fat oxidative capacity (mmol/min/kg)</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td>Body mass index (kg/m²)</td>
<td>P&lt;0.0001</td>
</tr>
<tr>
<td>Body fat mass index (kg/m²)</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>Truncal fat mass index (kg/m²)</td>
<td>P&lt;0.0001</td>
</tr>
<tr>
<td>Insulin sensitivity (mg glucose min⁻¹ kg⁻¹)</td>
<td>P&lt;0.005</td>
</tr>
</tbody>
</table>

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The present data suggest that, in healthy elderly people, muscle fat capacity, body mass index, truncal fat mass, body fat mass and sensitivity may be primarily modulated by the volume of sport exercise (which take into account the intensity, duration and regularity exercising) and the time spent per day above 60% VO2max rather overall daily physical activity.

S.6.4. ENERGY EXPENDITURE AND BODY WEIGHT OF ELDERLY GERMAN WOMEN OVER THE COURSE OF EIGHT YEARS

P.M. Lührmann, B. Hartmann, B. Herbert, C. Krems, C. Patzak, A. St. M. Neuhäuser-Berthold (Institute of Nutritional Science, Justus University, Giessen, Germany)

Objective: Energy expenditure and body weight were investigated female participants of the longitudinal study on nutrition and health status aging population of Giessen (GISELA), Germany, over the course years.

Methods: Resting metabolic rate (RMR) was assessed by indirect calorimetry after an overnight fast in 1994, 1998 and 2002. Physical activity of the subjects were determined by a questionnaire. Energy expenditure of physical activity (EEPA) and total energy expenditure (TEE) were calculated using multipliers for RMR according to the WHO. Energy intake was via a 3-day estimated dietary record especially developed and validated study. Subjects were separated into two age groups (60–69 y anc according to their age in 1994.

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The table shows the energy expenditure and body weight of elderly German women over the course of eight years. The data indicates a decrease in energy expenditure and an increase in body weight over time.
Subjects were followed for 10 years. Dietary intake was assessed with a dietary history method. The measures of overall diet quality were: 1. The Mediterranean Diet Score, which measures the adherence to the traditional Mediterranean, 2. The Mediterranean Adequacy Index, which assesses how close a diet is to a Reference Mediterranean diet, and 3. The Healthy Diet Indicator, which evaluates the accordance with the WHO guidelines for the prevention of chronic diseases. Having a high-quality diet was defined as scoring equal or above the median for each of the three indexes.

Results: During the follow-up period, 1382 people died due to all-causes. The Mediterranean diet score (HR: 0.82 with 95% CI: 0.73-0.91) and the Mediterranean Adequacy Index (HR: 0.85 with 95% CI: 0.76-0.96) were inversely associated with all-causes mortality. The healthy diet indicator (HR: 0.92 with 95 %CI: 0.83-1.03) was also inversely but not significantly related to mortality. Adjustments were made for age, alcohol, gender, physical activity, smoking, number of years of education, body mass index, chronic diseases at baseline and study centre.

Conclusions: The diet scores which measure the agreement with a Mediterranean diet were more strongly related to mortality than the Healthy Diet Indicator based on the dietary guidelines for prevention of chronic diseases of the WHO.

S.5.2. NUTRITION RECOMMENDATIONS AND ALL-CAUSE MORTALITY IN A COHORT OF ELDERLY MEN FOLLOWED FOR 11 YEARS
F. Meyer, I. Bairati, P. Kégle (Centre de recherche en cancérologie de l'université Laval, Québec, Canada)

Nutrition recommendations have been issued for promoting healthy life and preventing early death. However, few studies have assessed their efficacy in the elderly. We evaluated whether the Canadian recommendations on healthy life and good nutrition were associated with a lower risk of all-cause mortality in elderly men.

The study population comprised 532 men with benign prostatic hyperplasia, aged 68 years on average, who participated in a case-control study of diet and prostate cancer in 1990-1992. Diet in the year preceding the study was assessed by nutritionists using a diet history questionnaire. Follow-up was achieved by record linkage with the Quebec mortality file up to January 2003. We used multivariate Cox models to assess whether following the various recommendations was associated with a lower mortality rate.

During the follow-up 193 men died. The cumulative mortality was 15% at 5 years and 33% at 10 years. After controlling for age, all-cause mortality was associated with smoking (hazard ratio (HR)=1.48, 95% confidence interval (CI): 1.07-2.05), with physical activity (HR=0.73, CI: 0.54-0.98) and with body mass index (BMI) less than 20 kg/m2 (HR=2.24, CI: 1.39-3.60). After controlling for age, smoking, physical activity and BMI, there was a U-shape association between alcohol consumption and mortality. Men who drank between 1 drink/week and 2 drinks/day had the lowest mortality (HR=0.60, CI: 0.43-0.82). After further controlling for alcohol consumption, a dietary fibre intake above 15 g/day was associated with a lower mortality (HR=0.67, CI: 0.40-0.92). None of the nutrition recommendations for total fat, saturated fat, or carbohydrates was associated with mortality. These associations were observed both in the first and in the second halves of the follow-up. Most of these variables were associated with deaths from cancer and with deaths from cardiovascular diseases. This study provides useful suggestions on which recommendations are beneficial for elderly men.

S.5.3. DIETARY FACTORS AND RISK OF STROKE MORTALITY
C. Sauvaget1, J. Nagano1-2, N. Allen3 (1. Department of Epidemiology, Radiation Effects Research Foundation, Hiroshima, Japan; 2. Institute of Health Science, Kyushu University, Fukuoka, Japan; 3. Cancer Research UK, Epidemiology Unit, Oxford, United Kingdom)

Background and purpose – The traditional diet, poor in animal products, has been hypothesized to explain the high rate of stroke death in Japan. Moreover, previous studies have reported a protective effect of fruit and vegetables on stroke mortality. The purpose of the present study was to examine the effects of a diet rich in animal products and rich in fruit and vegetables, on the risk of death from total stroke and the two main subtypes, intracerebral haemorrhage and cerebral infarction, in a large-scale population-based cohort in Japan.

Methods – A prospective study among 40,349 Japanese elderly men and women was conducted from 1980 to 1996. At the baseline survey, 1 subject responded to a food frequency questionnaire including intake of beef/pork, chicken, ham, milk, dairy products, eggs, fish, bro fruit and green-yellow vegetables. During the follow-up period, stroke were monitored. The association between diet and stroke mortality examined using a Cox proportional hazard model.

Results – During the follow-up period, 1462 stroke deaths occur animal products were independently associated with a decreased risk of mortality: eggs, dairy products, fish and broiled fish. Those in the high in consumption of these 4 products had a significant reduced risk of haemorrhage (HR=0.72, 95%CI: 0.53-0.98) compared with the low: Animal products also reduced, although not significantly, the risk of infarction (HR=0.84, 95%CI: 0.67-1.06). Moreover, a high intake of vegetable and fruit was associated with a significant 30% reduction in risk of total stroke. Protective effects were equally strong cerebral haemorrhage and infarction.

Conclusions – Intakes of animal products, specially eggs, dairy proc fish, and of fruit and vegetables are associated with a lower risk of total intracerebral haemorrhage and infarction mortality in this Japanese population.

S.5.4. NUTRITIONAL APPROACHES TO CONSEQUENCE IMMUNOSENSINCE
A. Globerson1, D. Shalhar2-3 (1. The Center for Multidisciplinary Re Aging (CMRA); 2. The S. Daniel Abraham International Center for Hi Nutrition; Ben-Gurion University of the Negev, Beer Sheva, Israel)

The immune system in aging is subject to processes that affect the biological systems on the whole, as well as mechanisms that relate to immunity and immunological consequences. The fact that the immune system affects various other tissues (e.g., by production and release of cytokine growth factors) draws particular attention to the consequence of immunosenescence. Nutritional approaches to modulate the aging system actually address these aspects, with the major goal of alleviating and improving the quality of the relation between the systems and the whole is the caloric restriction studied in experimental models. By the same token, a variety of appr lipid profiles (e.g., cholesterol vs. phospholipids, etc.) have a wide effect on different systems. The observations that the immunological cell inflammation has an impact on the dynamics of pathologies and disease area, has recently drawn attention to the possible modulation of these effects by nutritional avenues.

Our presentation focuses on current evidence on nutritional determinants of aging, inflammation, and points to open questions underlying mechanisms. On the whole, a variety of nutritional regimes seem to o successful aging and longevity. This includes Mediterranean diet (e oil and fresh vegetable products), as well as Japanese traditional diet low fat diet with high intake of omega 3 fatty acids and soy pr Mechanistically, a common denominator factor in both diets could be t omega 3 fatty acids (fish oil) and monounsaturated fatty acids (olive oil) might play a role in reducing the inflammatory response. The effects of mediating the immune response and modification of inflammatory production was described in several studies in the last decade. Dietary intake to enhance, or to inhibit inflammatory stimuli, depending on lipid acids composition. Additionally, fatty acids composition of immune cells to reflect that of fatty acids in the diet, and can thus be modulated.

Taken together, nutritional approaches offer an important tool in the effects of aging on cytokine profiles, including the pro-inflammatory
S.4: Food Intake

S.4.1. CORRELATES OF REGULAR FISH CONSUMPTION IN FRENCH ELDERLY COMMUNITY DWELLERS: DATA FROM THE THREE-CITY STUDY


Objective: To describe the sociodemographic characteristics, dietary habits and health status of older fish consumers, in order to identify potential confounders in the relationship between fish consumption and dementia.

Design: Cross-sectional analysis in a population-based survey.

Setting: Three French cities (Bordeaux, Dijon, Montpellier).

Subjects: 9,280 community dwellers aged 65 and over participating in the Three-City epidemiologic study.

Methods: Face-to-face interview (brief food frequency questionnaire, sociodemographic characteristics, self-reported medical conditions, disability, depressive symptomatology, and physical examination (height, weight, blood pressure, cognitive performance).

Main outcome measure: Regular fish consumption (at least once a week).

Results: Regular fish consumers had a higher education (OR ranging from 1.19 to 1.65, p < 0.0003) and income (OR ranging from 1.37 to 1.89, p < 0.0003). Controlling for age, sex, education, and city, they were characterized by a healthy lifestyle including engagement in leisure activities and a high consumption of fruit and vegetables. They felt in better health, exhibited less depressive symptoms, and had better cognitive performances. Paradoxically, their objective physical health status was not better, except that they were leaner, and they suffered even more often from hypertention and post stroke.

Conclusions: Other dietary habits and lifestyle could act as confounders in the relationship between fish consumption and risk of dementia. Epidemiological studies should adjust for these factors.

S.4.2. TRAINING PROFESSIONALS ABOUT NUTRITIONAL PROBLEMS OF AGED RESIDENTS IN NURSING HOMES

M. Saomine, K.H. Pitka, K. The Central Union for the Welfare of the Aged, Helsinki, Finland.

Background: Nutritional problems are common among the elderly in institutions. Nurses are responsible for nutrient intake of the aged residents. An educational programme was developed for the nurses. The goals of the education were to learn: 1. To evaluate the nutritional status of aged residents with the MNA test. 2. To assess the energy and nutrient intake of them by food diaries and 3. To respond adequately to individual nutritional needs.

Objective: 1. To describe the nutritional education developed for the nurses 2. to evaluate the outcomes of the learning process.

Methods: Altogether 30 nurses took part in the training process. Structured questionnaires were used to evaluate the learning outcome were analyzed both quantitatively and qualitatively.

Results: The whole learning process took place in nurses’ own homes and lasted for nine months. The formal education included six training sessions with lectures, small group discussions and personal feedback. Between the sessions participants learned to use and interpret the food diaries with their own residents. Filling and analyzing the food diaries, the main source getting learning insights for the participating nurse evaluation questionnaires nurses expressed their amazement how sur prise little energy the residents had received. After calculating the data discussing with other nurses they felt easy to respond to the food problems of the aged residents. They had also learnt to understand that is an essential part of the rehabilitative care of older residents. Rea literature and studying alone were the least useful methods in learning. The lack of time and the problems in the flow of information were difficult aspects in the project.

Conclusions: Learning-by-doing and reflecting nutritional issues group discussions were the most effective training methods for professionals who work among aged residents.

S.4.3. HEDONIC AND DIETARY CONSEQUENCES OF DIFFICULTIES ENCOUNTERED BY THE ELDERLY

C. Michon, C. Delahanty, F. Allen (Department of F. Nutritional Sciences, University College Cork, Cork, Ireland; 2. U. Dental School & Hospital, Wilton-Cork, Ireland).

Eating difficulties in the elderly have been reported as a difficulty for those who swallow foods that present textures considered as hard. Difficulties to chew and bite are directly related to wearing dentures, found in the elderly population. Difficulty to swallow is associated with the phenomenon of xerostomia (dryness of the mouth) that is influenced by wearing dentures, but also by certain medical conditions experienced in the elderly. It has been reported that due to these eating difficulties, elderly persons may experience some foods with nutritional value, leading to an increased risk of diet-related health problems. It is also assumed that eating difficulties cause a decreased enjoyment of food in this population.

The present study examined the relationships between dental status, eating difficulties, and food consumption in a group of 60 persons over 60 years. Dental status of participants was assessed using a dental questionnaire. Eating difficulties were assessed by means of a masticatory ability of participants using a chewing test. In the elderly group, difficulty swallowing was assessed using a food frequency questionnaire. The elderly participants were divided into two groups: those with normal swallowing and those with difficulties swallowing. The same foods were collected using hedonic scales and 7 days food diaries.

Results showed that participants who presented a low dental status presented the highest measured and reported difficulties to eat. Differential status and eating difficulties also lead to different food intake consumption patterns. This study underlined the need to maintain an adequate status in the elderly population to improve their quality of life and provide knowledge about possible improvements of different food consumption terms of nutritional status.
S.3.: Epidemiological Study

S.3.1. HOMOCYSTEINE, VITAMINS AND DIETARY LIFE FACTORS IN EUROPEAN ELDERLY: THE SENeca STUDY

G. Varela-Moreiras, L. Quintanilla, E. Alonso-Arrete (Facultad de CC. Experimentales y de la Salud, Universidad San Pablo-CEU, Boudilla del Monte, Madrid, Spain)

Homocysteine (Hcy) is an amino acid produced during methionine metabolism. Folate, pyridoxyl 5'-phosphate (PLP, active B6) and B12 are its main co-factors/substrates. Hcy is a risk factor for a series of pathologic conditions, including cardiovascular disease, adverse outcomes, Alzheimer disease, and cognitive dysfunction. This presentation is related to the current results from SENeca Final, and the comparison with SENeca Baseline for the same individuals (ten years-crossection). Lowest values corresponded to Mediterranean countries (Portugal, Spain, and Greece), compared to central or northern European countries as Netherlands or Belgium (differences higher than 4 mmol/L for SENeca Final in an interesting north-south gradient is observed, with the lowest values corresponding to Betanzos (Spain), 12.38 mmol/L followed by Portugal, whereas the highest concentrations are found in Maki (Poland), 21.92 mmol/L and Culemborg (Netherlands), 20.41 mmol/L, with a mean tHcy concentration for all the centers of 15.98 mmol/L. The effect of sex has been evaluated: those with the lowest tHcy concentration (i.e. Spain or Portugal) show significant (p<0.01) higher tHcy concentration in men vs. women, whereas these differences by sex are not observed in countries with the highest tHcy values. The effect of “aging” (Baseline vs. Final) was also evaluated, with no differences observed for the same individuals in the 10-years period. Folic acid was compared to Hcy, resulting in marked differences between north and southern countries. Plasma vitamin B12 also shows a close pattern. Neither albumin nor total cholesterol, HDL-cholesterol or triglycerides were associated with tHcy. By contrast, total alcohol intake was positively and significantly (p<0.01) correlated with tHcy (no) intake correlated with the lowest tHcy, 14.3 mmol/L vs. “high” intake over 30 g/d with the highest tHcy, 17 mmol/L). The type of alcoholic beverage was also evaluated: wine and spirits drinkers showed positively significant (p<0.005) correlation whereas beer intake was not significantly associated. “Never” smokers had the lowest tHcy concentration (13.82±0.20 mmol/L) vs. “current” smokers (16.64±0.35), a significant difference (p<0.05).

S.3.2. NUTRITIONAL STATUS AND RISK OF FRACTURES IN ROMANS: THE SENeca STUDY

M. Ferry, A. Polo, B. Sidobre, J. Hininger-Favier (France)

The study counts the fractures that occur in the SENeca population residing in Romans during all the follow-up (1989-1999) and three years after the end of the survey. Some risk factors of fracture are analysed. 233 subjects aged of 70-75 y are included at baseline. In 13 y of follow-up 30 women suffered a fracture. Weight, height, body mass index, dietary calcium intake are similar in the women free of fracture and in the women who suffered a fracture. Between 70 and 80 y old, energy and protein intake are low in the group of the women that suffered a fracture. The link between functional status and risk of fracture vary with age. 94% of the subjects who had a calcium intake from all food sources ≥ 600 mg/d don’t use calcium supplements. The majority of the subjects go outside during sunny periods but sun exposure habits were not satisfactory and vitamin D status of the subjects aged 80-85 y was very low.

In conclusion, these results underline the importance of sufficient protein intake to prevent osteoporosis, and the surprising low practice of calcium supplementation in this older population which arerecommendations of public health.

S.3.3. LOW VITAMIN B12 STATUS IN ELDERLY AMERICANS

M. Savaria Morris, P.F. Jacques, J. Selhub, I.W. Rosenberg (Tufts University, Boston, MA, USA)

Thinking has changed regarding the burden of vitamin B12 deficiency in the elderly and how to screen for it. Because only a fraction of the circulating vitamin B12 reaches cells, low serum total B12 is an insensitive indicator. Furthermore, anemia, once considered a classic sign, is often absent in elderly people with other evidence of deficiency. High circulating homocysteine methylnalonic acid concentrations suggest low B12 function, becau increase when vitamin B12 is unavailable to the enzymes methionine and methylnalony-CoA mutase. However, these indicators have pro specific. We defined vitamin B12 deficiency as a combination of bio deficiency and other hematologic abnormality (i.e., anemia or macrocytic), poor recall (to indicate neurologic dysfunction), and used data coll phase 2 (1991-1994) of the third U.S. National Health and N Examination Survey to confirm principles demonstrated previously i patients suspected of being deficient. After accounting for dem factors and other causes of deficiency signs, we estimated that at (95% CI, 20-28%) of Americans aged ≥65 years were deficient. If only 18% (95% CI, 10-26%) of deficient elderly had ser concentrations <148 pmol/L. Furthermore, although 61% (95% CI, 4% of those with serum vitamin B12<148 pmol/L were hematologically 97% (95% CI, 93%-100%) of the latter group had elevated metabolite low red blood cell folate. Finally, non-anemic, deficient subjects rea 3.5% (95% CI, 1.9-2.8) of 6 main ideas of a paragraph, compared to the subjects mean of 3.6 (95% CI, 3.2-4.0). We conclude that 1) vita deficiency is common in the free-living elderly, 2) a low serum t concentration misses most cases, 3) low serum total B12 concentra elderly should not be considered benign, and 4) lack of anemia deficiency suggests worse neurologic status.

S.3.4. MODERATE WINE DRINKERS HAVE LESS HYPERTENSION RELATED MORTALITY: A PROSPECTIVE STUDY IN 36,000 FRENCH MEN


Background: For the same blood pressure, risk of death from coronary disease in Northern Europe and USA is much higher than in the Europe.

Objective: In this prospective cohort study, we tested the hypothergic wine drinking might explain this phenomenon.

Design: We used data on 36,583 consecutive healthy middle-aged t a normal electrocardiogram, not taking drugs for cardiovascular risk. These subjects underwent comprehensive health appraisal in a C Prevention Medicine between January 1st, 1978 and December 31st: Mortality from all-causes and specific causes during a 13 to 21 years f was recorded.

Results: In a Cox model adjusted for six confounding variables, t wine drinkers (<60 g alcohol/day and no beer), compared with abstaine lower risk of death from all-causes by 23% with SBP of 158 mmHg (CI 0.62-0.96, p<0.02), 27% with SBP of 139 mmHg [RR 0.73 (CI 0 p<0.01)] and 37% with a SBP of 116 mmHg [RR 0.63 (CI 0.7 0.001)]. Even for the highest quartile of blood pressure, moderate: drinkers and only them, were protected from all causes mortal significant reduction in all causes mortality in relation to SBP was ob other drinkers (<60 g alcohol/day or consuming beer and wine), partic the highest quartile of blood pressure, where the non moderate drink alcohol/day) had a higher risk [RR 1.26 (CI 1.01-1.57, p<0.04)] for and no beer drinkers and [RR 1.34 (CI 1.07-1.67, p<0.01)] for drinkers.

Conclusions: A moderate intake of wine was associated with a low hypertension related mortality from all-causes.

Supported by the French Ministry of Agriculture and the European for Wine and Health, Montpellier, France

S.3.5. HEALTH AND AGING REGISTRY: INTERDISCIPLINARY COLLABORATIVE APPROACH TO COMMUNITY HEAL ELDERLY

J. Davidson, M. Getz, C. Rybak, (Bradley University, USA)

Registries allow collection of objective information on large cc people to develop representative databases for profiling individuals in geographic areas or with designated health conditions. This press reports on a comprehensive registry of correlates of successful aging n 65 years or older using cities in Central Illinois as geographic foc...
Objective: to analyze the potential protective effect of nutritional factors against cognitive decline and dementia.

Methods: the data come from the PAQUID (Personnes Agées QUId) and EVA (Etude du Vieillissement Artériel) epidemiological studies. A representative sample of 3777 community dwellers aged 65 and over was included at baseline in the PAQUID study and followed for 10 years with repeated neuropsychological testing and an identification of incident cases of dementia. Nutritional data included a brief food frequency questionnaire, a dietary survey in a sub-sample (N=169), and biological data (cholesterol, vitamin E and A, and MDA plasma levels, Apolipoprotein E genotype). In EVA 1389 voluntary participants aged 60-70 were included at baseline and followed for nine years with repeated neuropsychological assessments. Markers of oxidative stress and fatty acids were measured in plasma (selenium, carotenoids, TBARS) or erythrocytes (vitamin E, fatty acids).

Results: moderate wine consumption, a higher intake of flavonoids and higher vitamin E plasma level were associated with a decreased risk of incident dementia in the PAQUID study. MDA was increased, but not significantly, in future dementia cases. In EVA, there was a significant association between a low level of plasma selenium, a high level of lipoperoxidation and cognitive decline. Regarding fatty acids, at least weekly fish consumers included in the PAQUID study had a decreased risk of incident dementia (RR=0.66). In a subsample of 346 EVA participants, there was an increased risk of cognitive decline with increased w6 erythrocyte level (OR=1.26 [1.02-1.55]), and a decreased risk with w3 level (OR=0.74 [0.56-0.97]).

Conclusion: these results are in agreement with other studies showing a protective effect of nutritional anti-oxidants and w3 fatty acids against cognitive decline or dementia.

S.2.2. B VITAMIN INTAKE AND STATUS PROTECT AGAINST COGNITIVE DECLINE IN AGING MEN

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Several studies have shown associations between homocysteine and cognitive function. However, relatively few have assessed cognitive decline in relation to both B vitamins and homocysteine, and the mechanism of association remains unclear. We investigated the dietary intake and plasma status of folate, vitamin B12 and vitamin B6 (PLP) as well as plasma homocysteine, with 3 year change in cognitive tests in 257-307 men, (mean 67±7 years). Tests included the MMSE, verbal fluency, and figure copying. After adjusting for age, education, BMI, smoking, alcohol use, plasma creatinine, blood pressure and diabetes, baseline homocysteine was significantly predictive of 3-year decline in figure copying ability (p<0.001). All three vitamins showed protective associations against decline in figure copying (B12 p<0.05; B6 p<0.01; folate p<0.0001). In addition, baseline dietary intakes of each of these 3 vitamins were protective against decline in figure copying (B12 and B6 p <0.05; folate p=0.001). Folate intake was also associated with less decline in verbal fluency (p<0.05). None of these measures were significantly associated with change in MMSE. Examination by tertiles showed that those with homocysteine > vs < 8.8 nmol/l had average declines of 9% vs. 0% of baseline average figure copying score; those with folate <8.7 vs. >13.4 nmol/l averaged declines of 19% vs 0%. PLP <46 vs >85 nmol/l and B12 < vs >266 nmol/l were each associated with average declines of 13% vs 0%. Similarly, those with dietary folate intakes <338 vs. >523 mg/d lost 13% vs. 0% and those with B6 intake < vs >2.2 mg/d lost 11% vs. 0% of their baseline figure copying score. When all 4 plasma or 3 diet measures were included together, only folate intake or plasma concentration remained independently significant. Further work is needed to determine whether the observed protection is due to homocysteine lowering or to other mechanisms associated with the B vitamins, particularly folate.

S.2.3. BODY MASS INDEX, CLUSTERING OF VASCULAR RISK FACTORS AND THE RISK OF DEMENTIA: A POPULATION-BASED LONGITUDINAL STUDY

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Background: Vascular risk factors may play a role in the development of dementia, including Alzheimer’s disease (AD). High body mass index (BMI) underlies many vascular disorders, and major cardiovascular risk factor cluster together. However, there are only few studies on the relation BMI and clustering of vascular risk factors and the development of den

Objective: To study the relation of midlife BMI and clustering of risk factors to dementia in late-life.

Method: Participants were derived from random, population-based studied in the framework of the North Karelia Project and the FINN study in 1972, 1977, 1982 or 1987. After an average follow-up time, 34% of 1449 (73%) individuals aged 65-79 years participated examination in 1998.

Results: High BMI at midlife (>30 kg/m2) was associated with an increased risk of dementia even after adjustment for age, follow-up time, edca
gender (OR 2.4; 95% CI 1.2-5.1). After further adjustment for systolic blood pressure (BP), cholesterol, smoking, diabetes, insulin, infarction, stroke, and ApoE genotype, the association between high BMI and clustering of vascular risk factors to dementia 0% of around 2 for each of them, and they increased the risk in an manner (OR for the combination 6.2).

Conclusions: High BMI at midlife is associated with an increased dementia later in life. Clustering of vascular risk factors increase the r additive manner. By reducing BMI it is possible to affect several vasfactors, and thus, dietary interventions might modify the risk of dementia

S.2.4. NUTRITIONAL INTERVENTION ON COGNITIVE FUN IN PATIENTS WITH ALZHEIMER’S DISEASE

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BACKGROUND: According to our previous studies, Japanese patients Alzheimer’s disease (AD) showed significant different dietary pathehealthy elderly. AD patients were more likely to have higher intake of fat and lower intake of fish and green vegetables. Most importantly, the ratios of polyunsaturated fatty acid (PUFA) were significantly higher patients than in controls, reflecting higher intake of animal fat and consumption of fish. We conducted a nutritional trial to evaluate effects of diet on cognitive function among demented patients. Furth since previous studies revealed that some of the Japanese patients with a high calorie intake, we also analyzed diabetes and insulin resistant patients.

SUBJECTS AND METHODS: Seventeen patients with AD and 7 with mild cognitive impairment were enrolled. Patients were asked to 80-90g of fish at least once a day, green vegetables twice a day, and fruit, and keep this diet for one and a half years. This diet called “Japanese style diet” was established in order to lower the n-6/n-3 ratio between 2 to 3 and provide enough vitamins and minerals. A Mini-mer Examination (MMSE) was used to assess the cognitive function at last time of the follow-up. We also analyzed insulin resistance on AD by a 75-gm oral glucose tolerance test.

RESULTS: After one and a half years intervention period, the participants showed some improvement in MMSE. Among AD patients, MMSE score improved or was stable in 8 patients out of 17 (47%) patients with MCI tended to have worse performances than AD. Among MCI patients, MMSE score improved or was stable in 2 patients (29%). Seventy five percent of AD patients showed insulin resistance

CONCLUSION: Our nutritional intervention may have several b effects on cognitive function of demented patients. But this interver limitations. The results suggest that improvement of insulin resistancalways related to the treatment of dementia
Some antioxidant micronutrients in the diet, such as zinc, control the development and function of the immune cells, the activity of stress-related proteins [metallothioneins, chaperones, ApoJ, PARP-1, NO, MsrA] and antioxidant enzyme (SOD) and help to maintain genomic integrity and stability, reflecting diet-genie interactions. During ageing, the intake of zinc decreases due to inadequate diet or/and intestinal malabsorption, contributing to frailty, general disability and increased incidence of age-related degenerative diseases (cancer, infections and arteriosclerosis). No focused research has been performed thus far to clarify the intrinsic biochemical mechanisms and the impact of nutrient zinc on the genome during immunosenescence. The consortium will therefore study the role of zinc in the gene expression and functions of metallothioneins, chaperones, NO, MsrA, Apol, telomerase, PARP-1 and DNA-repair as a function of immunosenescence in lymphocytes from old subjects including nonagenarians, as well as in ill old patients affected by age-related diseases and in T-cell clones as in vitro model. Particular attention will be paid to the processing of oxidised proteins by proteasome, which decreases in ageing. The activity of all proteins herein studied is impaired in ageing and this is directly and indirectly controlled by zinc ion bioavailability. The zinc deficiency in the elderly will be evaluated through the screening of polymorphic allele frequency of proteins involved in zinc ion metabolism (such as Hsp70-2 and TNF-alpha) and their relationships to gender. The results will form a rationale for the promotion of healthy ageing through a zinc supplementation with a role also in cognitive performances.

S.1.4. ZENITH PROJECT: THE EFFECTS OF ZINC SUPPLEMENTATION ON COGNITIVE FUNCTION IN HEALTHY OLDER ADULTS


Objective: The objective of this part of the zenith study is to determine the causal relationship between status and cognitive function.

Rationale: Zinc is found in large amounts in all areas of the brain, especially the hippocampus, thought to be responsible for learning and memory (Crawford, 1983). Zinc may influence both development and function in the brain (Sawalaw, Bentley, Black, Dhingra, George and Bhan, 1996; Bentley, Caulfield, Raqu, Sardari, Hurdado, Rivera, Rael and Brown, 1997). As we get older cognition declines, this has been associated with a decline in serum levels of zinc (Kretsch, Fong, Penland, Sutherland and King, 1999). Ortega, Requejo, Andres, Lopez-Sobera and Quintas (1997) suggested zinc supplementation might be beneficial to cognitive functioning in older adults.

Design: It is a random placebo controlled double blind intervention study. The supplementation of zinc either 15mg or 30 mg twice/day or placebo lasted for six months. It is a European multicentre study, with centres in France, Italy and Northern Ireland.

Methods: At baseline 96 volunteers were recruited from community settings at each centre. Participants received a full medical screening and screened for depression using the Geriatric Depression Scale (Yesavage et al, 1983) and dementia by the Mini Mental State Examination (Folstein et al, 1975). Cognition was assessed using a computerised neuropsychological test battery called CANTAB. The tests from this battery can be linked to functioning in certain areas of the brain. Five tests were selected to reflect activity in the areas of the brain thought to be affected by zinc status. The tests will assess visual memory, working memory and attention.

Procedure: On each visit to each centre participants provided a blood and urine sample completed a number of questionnaires and CANTAB tests.

Results: SPSS will be used to analyse the data employing multivariate procedures.


S.1.5. ZENITH STUDY: BASAL METABOLIC RATE AND THI HORMONES IN MIDDLE-AGED AND OLDER POPULATION.

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This paper describes Basal metabolic rate (BMR) of middle aged and people participating in the Survey in Europe on “Zinc effects on nutrient Interactions and Trends in Healthy and ageing” (ZENITH ZENITH is a longitudinal study conducted in three European countries Northern Ireland and Italy) with baseline measurements on behavior psychological factors (faste acuity, food choice, cognitive function: surrogate biological markers (antioxidants/oxidative stress, immunity functions etc) repeated after three and six month of zinc supplementation has been measured on a sub-sample of 203 French and Italian subjects to determine the effects of zinc supplementation on thyroid function and metabolic rate. Data at baseline are presented here.

71 late middle-aged French subjects (35 men, age 61±4y; 263±2.3kg/m2; 36 women, age 61±4y; BMI 25±2.5kg/m2 and 12 older subjects (66 men, age 74±4y; BMI 26±2.4kg/m2; 66 wor 74±4y; BMI 25±2.9kg/m2) participated in the study. BMR was r by indirect calorimetry. Fat free mass was derived by four skinfold t using Durnin and Womersley’s equations. Concentrations of thyroid h (total T3 and T4) were measured using a competitive immunoassay enhanced chemiluminescence endpoint. Italian older subjects have a FFM significantly lower than mid- French subjects (-6% P<0.01). A negative correlation between BMR (men r 0.60 P=0.000000; women r 0.55 P=0.000000) has been observed: significantly lower in Italian elderly subjects (3.95±0.58 kJ/min and 3 kJ/min for men and women respectively) than in middle-aged French (4.75±0.44 kJ/min and 3.78±0.37 kJ/min for men and women resp P>0.000000), even after adjustment for BMI (~11%). No correlation observed between BMR and thyroid hormones both in French an population.

The results confirm the age related decline in BMR not entirely expl body composition or thyroid hormones differences.

ZENITH is supported by the European Commission “Quality of Management of Living Resources” Fifth Framework Programme, Con QLK1-CT-2001-0168.

S.2.: Nutrition and Cognitive Decline

S.2.1. NUTRITION AND COGNITIVE DECLINE: DATA FROM PAQUID AND EVA EPIDEMIOLOGIC STUDIES

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Background: w3 polysaturated fatty acids and anti-oxidants could protective effect against brain aging.
RISK OF BEING DISCHARGED TO GERIATRIC INSTITUTION IS INCREASED IN HOSPITALISED OLDER PATIENTS WITH DELIRIUM SYMPTOMS OR WITH LOW DIETARY INTAKE

1. Boardel-Marchasson1,2, S. Vincent3, C. Germain4, N. Salles1, J. Jenn2, E. Rassoumanariot1, J.-P. Emeriau1, M. Rainfray1, S. Richard-Hurstone1 (1. Département de gériatrie, Hôpital Xavier Arzano, 33604 Pessac cedex France; 2. UMR 5536 CNRS/Université Bordeaux 2, 146 rue Léo Saignat 33076 Bordeaux cedex; 3. Unité de Soutien Méthodologique à la Recherche Clinique et Épidémiologique du CHU de Bordeaux; 4. INSERM U593; 146 rue Léo Saignat, Case 11 33076 Bordeaux cedex)

Objective: to assess the effects of delirium symptoms on the institutionalisation rate, taking into account other geriatric syndromes and nutritional status during hospitalisation.

Design: one-year prospective population-based observational study

Setting: 80-bed acute-care geriatric unit

Subjects: older than 75 y, coming from home and discharged alive from hospital.

Methods: The CAM symptoms were recorded by the nurses within 24 h after admission and each 3-day. Delirium was defined using CAM algorithm, and subsyndromal delirium responded to incomplete CAM symptoms. These delirium categories were either present at admission (prevalent) or occurred during the hospital stay (incident). Dietary intake was continuously observed and subjects were classified as in low dietary intake group when energy intake has been lower than 600 kcal/d during the stay. Baseline data such as age, sex, previously known cognitive impairment, weight, functional dependency and laboratory testing as well as diagnoses were also recorded. Step-by-step backward logistic regression was used to identify predictors of institutionalisation.

Results: Among 427 patients, 310 (72.6 %) were discharged to home and were compared to 117 (27.4 %) subjects admitted in geriatric institution. Female sex (Odds ratio: OR 2.15, 95% Confidence Interval: CI 1.22-3.78, p=0.008), prevalent delirium (OR 3.19, 95% CI 1.33-7.64, p =0.009) and subsyndromal delirium (OR 2.72, 95% CI 1.48-5.01, p =0.001), incident subsyndromal delirium (OR 4.27, 95% CI 2.17-8.39, p<0.0001), low dietary intake (OR 2.50, 95% CI 1.35-4.63, p=0.003) and the diagnosis of falls (OR 2.16, 95% CI 1.22-3.84, p =0.008) or stroke (OR 2.03, 95% CI 1.04-3.94, p =0.04) were independent predictors of institutionalisation.

Conclusions: Symptoms of delirium and severe nutritional impairment lead patients to geriatric institution. Thus, these institutions have to implement policies to address both of these issues.

S.1.: Zenith Project

S.1.1. ZENITH STUDY: DIET AND NUTRITIONAL STATUS OF MIDDLE-AGED AND OLDER ADULT EUROPEANS

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The multicentre European Zenith study is being carried out to investigate the effect of two levels of zinc supplementation on healthy subjects in middle-aged (55-70 yrs) and older age (70-85 yrs). Lifestyle, psychoanthropometry, dietary and nutritional parameters, as well as several functional markers of physiological conditions were measured. The study was randomised into three groups receiving zinc supplementation (1: 30mg/d) or placebo. The study followed a double-blind design and collected data at baseline, at 3 and 6 months.

The study is being carried out on late middle-aged subjects recruiting France (96 subjects) and Northern Ireland (96 subjects) and older recruited in France (92 subjects) and Italy (132 subjects).

Subjects were selected at the basis of BMI, smoking habits, alcohol and usage of medication and excluded if they had abnormal liver function or full blood picture. Dietary intake was measured by self validated four-days record. Fasting blood samples were simultaneously analysed for retinol and tocopherol by HPLC method.

Here we report the dietary intake at baseline (including macro and nutrients), the anthropometry and the vitamin A and vitamin E status.

The results provide information on the intake of energy and adequacy of the dietary intake and vitamin intake as well as their biomarkers.

ZENITH is supported by the European Community “Quality of Management of Living Resources” Fifth Framework Programme, Con QLKI-CT-2001-00168

S.1.2. ZENITH STUDY: COMPARISON OF OXIDATIVE STRESS ON LATE MIDDLE-AGED AND OLDER ADULT EUROPEAN POPULATION

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The ageing process is known to be associated with increased oxidative stress. A role for oxidative damage in normal ageing is supported by s experimental animals, but there is limited evidence in humans. The aim study was to investigate the relationship between the oxidative stress in humans, we determined lipid and protein oxidation in plasma as oxidative stress markers in whole blood of middle-aged and older subjects. This study is a part of the European multicentre ZENITH situ the overall objective is to investigate the effects of a zinc supplement healthy subjects in late middle-aged (55-70 yrs) and older aged (70-85) response of two levels of zinc supplementation (15 mg/d or 30 mg/d) months in women and men, using a placebo controlled double-blind study was carried out in the four participating centres France (Grenoble and C Ferrand), Italy (Rome) and Ireland (Coleraine) recruiting 96 volunteers.

At the entry, we measured plasma thiobarbituric acid reacting su (TBARS), plasma protein thiol groups (SH), and glutathione levels; blood were determined in late middle-aged and older subjects.

The results obtained will provide informations on the oxidative stress in elderly people and underline the need of antioxidants in such a popul ZENITH is supported by the European Community “Quality of management of Living Resources” Fifth Framework Programme, (1 NQLKI-CT-2001-00168)

S.1.3. NUTRITIONAL ZINC, OXIDATIVE STRESS IMMUNOSENESCENCE: BIOCHEMICAL, GENETIC LIFESTYLE IMPLICATIONS FOR HEALTHY AGEING. (E Project ZINCAGE n. FOOD-CT-2003-506850)

E. Mocchegiani1, F. Marcellini1 (1. Immunology Ctr. (section N Immunity and Ageing) and 2. Psycho-social Geriatric Ctr. Res. Dept Ancona, Italy)

A hallmark of cellular ageing is the increase in the oxidatively damaged proteins. Oxidative damage in lymphocytes is critical given the immune system for maintaining good health and for successful...
I - REPORTS

R.1. HIGH DEPRESSION RATE IN AGED, URBAN HISPANIC AMERICANS: CORRELATION WITH DIABETES, DEGREE OF GLYCEMIC CONTROL AND AMOUNT OF FISH CONSUMPTION

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It has been suggested that depression rates may be elevated in older Hispanic Americans. It is also known that Hispanic Americans suffer from a higher than expected rate of type 2 diabetes. In this study we explore possible contributing factors to this geriatric depression rate. SUBJECTS: Two hundred seventeen subjects recruited directly from the Northeastern San Fernando Valley in the Greater Los Angeles area of California participated in this study. This area is home to approximately one million residents 60% of whom are of Hispanic origin, mainly from Mexico. Recruitment was by local flyers, senior center presentations, radio and television announcements and Spanish newspaper ads. Key inclusion criteria for subjects were age over 60 and the listing of at least one principal cognitive complaint by the subject himself or a relative. Exclusionary criteria included age under 60, presence of serious, acute and unstable medical illness or presence/history of serious psychiatric illness such as psychosis or mania. Normal controls needed to be asymptomatic, functioning autonomously in the community and in relatively good health.

METHODS: All subjects admitted to the study received a comprehensive diagnostic work-up including detailed medical, nutritional and psychiatric history, neurological exam, neuropsychological testing, routine clinical labs for detection of organ and systemic disease, and neuroimaging in the form of MRI or CT scan, if MRI was contraindicated. Brain PET scans were used when it was felt they would be diagnostically helpful. Diagnoses were made by using strictly standardized criteria for dementia, depression and other cognitive disorders at a consensus conference of Alzheimer Disease Center geriatric neuropsychiatrists, neurologists and neuropsychologists. RESULTS: N=217: The following diagnostic categories were represented in the sample: Depression only (no dementia) = 53; AD = 64; VescDem = 26; Mixed AD/VascD = 9; Fronto-Temporal Dem = 6; Other Dem = 4; MCI =22; “Normal” Controls = 33. Type 2 diabetes (fasting blood sugar >126 mg/dl) was found in about 1/3 of all pts with a diagnosis of dementia or MCI. In the depressed-only subjects, diabetes was present in 39% of the sample, whereas it was only present in 18% of the normal controls p<0.5. More significantly, when subjects with diabetes but good glycemic control (FBS<126mg/dl) were compared to more poorly controlled diabetics (FBS>126mg/dl), those with the more poorly controlled fasting blood sugar had a 13 fold likelihood of being clinically depressed. This was a highly significant statistical difference. Furthermore, depressed-only and normal groups also differed significantly in their amount of weekly fish consumption. This difference was sustained even when the diabetic subjects were removed from both groups. Depressed subjects consumed significantly less fish than non-depressed normal controls. CONCLUSIONS: A high percentage of the study sample, which was not recruited for depressive symptoms was, in fact, clinically depressed (~25%). Type 2 diabetes was highly prevalent in most diagnostic categories, particularly depression, but significantly less in controls. Poor glycemic control accounted for a high percentage of the depression when depressive symptoms and controls were compared. Significantly greater fish consumption in the non-depressed vs the depressed non-diabetics suggests a possible protective mechanism against depression, possibly via injection of omega-3 fatty acids.

R.2. USING RAPID-CYCLE QUALITY IMPROVE METHODOLOGY TO REDUCE FEEDING TUBES IN PA1 WITH ADVANCED DEMENTIA; BEFORE AND AFTER STUDY

C. Monteleoni, E. Clark (Lenox Hill Hospital, New York, USA)

Problem Despite lack of evidence that enteral feeding tubes benefit with dementia, and often contrary to the wishes of patient and family, with dementia who have difficulty swallowing or reduced food intake receive feeding tubes when hospitalised for an acute illness. De conducted a retrospective chart review of all patients receiving percutaneous gastrostomy or jejunostomy tubes between March and Sep 2002. QI interventions including a palliative care consulting ser educational programmes were instituted. We conducted a second chart for all patients receiving feeding tubes between March and Septemb Setting 652 bed urban acute care hospital. Key measures for improvement measured the number of feeding tubes placed in patients with dementia as number of feeding tubes placed in patients with dementia capable of food by mouth, and the number of feeding tubes placed in patients with dementia with an advance directive stating the wish to forgo artificial and hydration. Strategies for change Medical and allied health staff educational programmes on end of life care and on feeding manag patients with dementia. A palliative care consulting team was esti Effects of change After the interventions, the number of feeding tubes all patients and in patients with dementia was greatly reduced. Lesso Multidisciplinary involvement, including participation by the admin was essential to effect change in practice. The intensive focus on a issue and rapid change led to “culture shift” within the hospital con The need to establish unified goals of care for each patient was hig Background A growing body of research over the past decade has qu the utility of placing feeding tubes (percutaneous endoscopic gast (PEG) or jejunostomy) in patients with advanced dementia. (1) Stud found no evidence that feeding tubes in this population prevent aspir 3) prolong life, (4–6) improve overall function, (7) or reduce pressure Additionally, the quality of life of a patient with advanced dementi adversely affected when a feeding tube is inserted. The patient may wrist restraints to prevent pulling on the tube(1, 3) or may develop ec the gastrostomy site, develop decubitus ulcers,(1) be deprived of f interaction and pleasure surrounding meals, (9,10), and require place nursing home.Unfortunately, many doctors are unfamiliar with this lite face barriers—attitudinal, institutional, or imposed by the healthcare in to applying its findings to their practice.(11)Thus feeding tubes are patients who will not benefit from this intervention and whose quality the terminal stage of their illness will be adversely affected. With the increase of elderly people with dementia,(12) a great change in knowledge, attitudes, and practice is necessary to prevent even greater of patients receiving this futile treatment. 1. Finucane TE, Christmas C, Tube feeding in patients with advanced dementia: a review of the evid 1996;282:1365-70 ; 2. Finucane TE, Bynum JP. Use of tube feeding to prevent pneumonia. Lancet 1996;348:1421-4; 3. Peck A, Cohen CE, Mulvihill MN. I enteral feeding of aged demented nursing home patients. J Am Geriatr Soc 1991; 4. Mitchell SL, Kiley DK, Lipitz LA. Does artificial enteral nutrition prolong th of institutionalized elders with chewing and swallowing problems? J Gerontol / Med Sci 1998;53:M207-13; 5 Meier DE, Ahronheim JC, Morris J, Baskin-Morrison RS. High short-term mortality in hospitalized patients with dementia. A M 2001;161:2385-6; 6. Murphy LM, Gerster DL, Fiedler K. Enteral nutrition: the use of percutaneous endoscopic gastrostomy does not prolong survival in patients with dementia. Arch Intern Med 2003;163: Kaw M, Sekas G. Long-term follow-up of consequences of percutaneous e gastrostomy tubes in nursing home patients. Dig Dis Sci 1995;40:920-2; 8. Finn Malnutrition, tube feeding and pressure sores: data are incomplete. J Am G 1995;43:447-51; 9. Ahronheim JC. Nutrition and hydration in the terminal pat Geriatr Med 1996;12:379-91; 10. Ciconjo JO, Silverstone FA, Graver LM, Foley feedings in elderly patients. Indications, benefits and complications. Arch In