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# 12th European Nutrition Conference (FENS)

Berlin, Germany, October 20–23, 2015

## Abstracts

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## **EDITORS ABSTRACT**

Every four years, the Federation of the European Nutrition societies (FENS) organizes a scientific conference that brings together European and Pan-European experts to discuss most recent scientific developments in the food, diet and health arena. The 12th FENS conference took place in Berlin, October 20 to 23, 2015, under the hospice of the German Nutrition Society with the motto “Nutrition and Health during life cycle – science for the European consumer”. Sessions were dedicated to latest research and outcomes of studies on the impact of diet into body functions, on dietary intake and dietary status of the population and of specific groups as well on the role of diets in disease occurrence and prevention. Translational research addressed strategies and approaches to change dietary behavior and policy measures. Four plenary sessions framed the program with distinguished speakers covering health aspects in the life cycle but also the global dimension of food security.

The present supplement comprises the 950 submitted abstracts and additional 320 abstracts of invited and selected speakers. The abstracts are ordered according to the scientific sessions of the conference, and the industry sponsored satellite activities, and posters. Within the program up to eight scientific sessions were held in parallel with thematic areas of (1) Food and nutrient intake, dietary patterns, dietary guidelines, (2) Advances in dietary studies, methodology and design, (3) Metabolic diversity, (4) Nutrition, public health, chronic diseases, and (5) Food quality, food safety, sustainability, consumer, behavior and policy.

The supplement can be searched with pdf-tools by using keywords such as authors, topics, specific compounds, etc.

Keywords: Nutrition, Nutrition policy, FENS, German Nutrition Society

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**Keywords: (maximum 5):** phenolic compounds; buckwheat products

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## 149/447. Plasma fatty acid profile after nutritionally relevant intakes of oily fish and fish oil supplement

**Author(s):** (1) Ivana Djuricic; (1) Ivan Stankovic; (1) Nevena Ivanovic; (1) Vanja Todorovic; (1) Jasmina Timic; (2) Sladjana Sobajic.

**Affiliation:** (1) Assistant. Department of Bromatology. Faculty of Pharmacy. University of Belgrade. Serbia; (2) Professor. Department of Bromatology. Faculty of Pharmacy. University of Belgrade. Serbia.

**Introduction:** It is well known that long-term and regular intakes of long chain (LC) n-3 polyunsaturated fatty acids (PUFAs) from fish or fish oil supplements are useful in improving n-3 fatty status. Dietary guidelines recommend use of these fatty acids in purpose of cardiovascular primary and secondary preventions.

**Objectives:** The objective of this study was to explore the difference in plasma fatty acid profile following general recommendations for fish intake or fish oil supplement usage.

**Method / Design:** Participants were randomised to receive salmon (oily fish) providing 274 mg EPA + 671 mg DHA/day or commercial fish oil supplement providing 396 mg EPA + 250 mg DHA/day in cross-over trial over 8 weeks period separated by the 6 months washout period. Fatty acids were extracted from plasma and analysed by gas chromatography.

**Results:** The initial plasma concentration of fatty acids was not different between groups at baseline and after the washout phase. After 8 weeks, there was a significant increase in the level of EPA, DHA and total n-3 fatty acids in plasma of both groups. The percentage values of EPA increased by 135% in salmon group ( $p < 0.0001$ ) and 152% in fish oil group ( $p < 0.0001$ ), whereas DHA increased by 145% in salmon ( $p < 0.0001$ ) and 121% in fish oil group ( $p < 0.010$ ). The increase of plasma total n-3 fatty acids observed after 8 wks of the salmon consumption was greater when compared with fish oil (45% vs 27%) ( $p < 0.05$ ) and mirrored the content in used dietary sources.

**Conclusions:** Plasma n-3 fatty acid profile was remarkably increased with both salmon and fish oil capsules intervention. Increase of plasma EPA and DHA levels was dose-dependent.

**Keywords: (maximum 5):** plasma, n-3 fatty acids, fish, fish oil supplements

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## 149/449. Dietary determinants of iron intake in Irish pre-school children

**Author(s):** (1) Laura Kehoe; (2) Janette Walton; (3) Breige McNulty; (4) Anne Nugent; (5) Albert Flynn.

**Affiliation:** (1) Research Nutritionist. National Dietary Surveys Research Group. University College Cork. Cork. Republic of Ireland; (2) Research Fellow, School of Food & Nutritional Science. University

College Cork. Ireland.; (3) Research Fellow. UCD Institute of Food and Health, University College Dublin. Dublin, Ireland.; (4) Lecturer in Nutrition. UCD Institute of Food and Health, University College Dublin. Dublin, Ireland.; (5) Professor in Nutrition. School of Food & Nutritional Sciences University College Cork. Cork, Ireland.

**Introduction:** Iron is important for growth and cognitive and neurological development in young children. Inadequate intakes of iron have been reported in Irish children with 23% of 1 year olds and about 10% of 2 and 3 year olds having intakes below recommendations.

**Objectives:** To investigate the dietary patterns influencing iron intakes in 1-4 year (12-59 month) old Irish children.

**Method / Design:** A 4-day weighed food record collected food intake-data from 500 pre-school children in the National Pre-School Nutrition Survey (NPNS; www.iuna.net). Nutrient intake was analysed using WISP© based on UK and Irish food composition databases. Children were divided into three groups based on mean daily iron intake: low medium or high consumers, stratified by age.

**Results:** The mean daily intake of iron ranged from 7.0 to 7.8mg/d for age 1-4 years. The greatest difference in iron intake between high and low consumers was observed for one year olds (6.3mg/d). Infant/Growing-up milks accounted for 54% and 30% of the difference in iron intakes between high and low consumers at age 1 and 2 years. Breakfast cereals were important contributors to the difference at all ages (29%, 32%, 44%, and 67% at age 1, 2, 3 and 4 years respectively). Nutritional supplements accounted for 16% and 30% of the difference at 2 and 3 years respectively, attributable to the number of consumers. Meat accounted for  $\leq 6\%$  of the difference at any age.

**Conclusions:** Most of the difference in iron intakes between high and low consumers at age 1 to 4 years is attributable to fortified foods (infant/growing-up milks for age 1 and 2 years and breakfast cereals for all ages) and nutritional supplements (for age 2 and 3 years). These results are useful in developing age-specific dietary strategies to increase iron intakes in pre-school children.

**Keywords: (maximum 5):** Iron, Pre-school children, Dietary guidelines

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## 149/459. Value of voluntary fortification in reducing risk of micronutrient deficiency during conscious energy restriction (dieting).

**Author(s):** Angie Jefferson.

**Affiliation:** Dietitian. Bracknell. Berkshire. UK.

**Introduction:** Over half of the European Population are overweight and around one-quarter obese. The WHO goal to halt the rise in obesity focuses on correcting energy imbalance, however conscious restriction of energy intake (to prevent weight gain or achieve loss), may have the undesirable consequence of reducing micronutrient intake.