

ESPEN Congress 2023 - 13th September

European Milk Forum Satellite Symposium with Expert Panel

## **Fighting fractures and falls with food: from science to practice**

Preventing fractures, falls and malnutrition - results of a dairy intervention trial for older people in residential care

**Dr Sandra Iuliano** (Australia)

Expert panel – implications and opportunities for food-based approaches for older people in residential care and beyond

**Dr Sandra Iuliano** (Australia)

**Niamh Rice** (Ireland)

**Professor Patrice Fardellone** (France)

**Professor Marian de van der Schueren** (Netherlands)

Chair: **Professor Emeir McSorley** (N. Ireland)



European  
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Forum



# Abstracts

## **Preventing fractures, falls and malnutrition - results of a dairy intervention trial for older people in residential care**

**Dr Sandra Iuliano, University of Melbourne**

The ageing of the population will see a growing burden of fragility fractures and its associated financial and personal costs. While less than 7% of older adults live in aged care homes, they contribute 30% to the burden of hip fractures so targeting anti-fracture interventions at this high-risk group would likely reduce the community burden of fractures. However, any intervention must be effective, safe, and cost saving.

Older adults in aged care homes have inadequate intakes of calcium and protein, risk factors for fractures, so correcting these inadequacies may reduce risk of fractures. Anti-fracture efficacy was demonstrated in a 2-year clustered-randomised trial involving over 7000 older adults, half living in 30 intervention care homes that provided additional milk, yogurt, and cheese on the menu, while those living in the 30 control sites continued consuming from their usual menus. Intervention residents increased their dairy intake to 3.5 servings daily that was associated with a 33% reduction in fractures, 46% reduction in hip fractures and an 11% in falls.

Intervention also abated malnutrition risk and was cost-effective in relations to fracture reduction alone. Most importantly, compliance with the dairy food was maintained for the two years perhaps as these foods are familiar to residents and the dairy foods provided were based on their preferences. All-cause mortality remained unaltered in intervention residents, so relative to mortality risk the intervention was safe. The cost of the additional dairy foods was less than Euro 0.7 per resident per day and was cost saving in terms of aged care and medical costs. Non-skeletal benefits were also observed.

The greatest value of the intervention is its translation into practice. This study provides evidence that provision of high-protein, high-calcium dairy foods to older adults as part of a balanced and nutritious menu in aged care homes, has anti-fracture efficacy and is cost-saving to both the aged care and health systems. These benefits may potentially be gained by older adults in the community with similar levels of nutritional inadequacies of calcium and protein. Food has a critical role to play in the lives of older adults and rigorous scientific evidence is now available demonstrating the clinical benefits of adequate dairy consumption as part of a nutritious balanced eating plan in older adults.

*Iuliano S et al. Effect of dietary sources of calcium and protein on hip fractures and falls in older adults in residential care: cluster randomised controlled trial. BMJ 2021; doi.org/10.1136/bmj.n2364*

*Baek Y et al. Reducing hip and non-vertebral fractures in institutionalised older adults by restoring inadequate intakes of protein and calcium is cost-saving. Age and Ageing 2023; 52: 1–7*

# Biographies



## **Dr Sandra Iuliano**

Dr Sandra Iuliano is a Senior Research Fellow in the Department of Medicine, University of Melbourne. Dr Iuliano researches nutrition and exercise across the lifespan; specifically, to improve musculoskeletal health. Her research includes the effects of exercise and calcium in bone growth in children, vitamin D supplementation to prevent bone loss in adults during prolonged sunlight deprivation, and nutrition-based interventions for falls and fracture prevention in older adults in aged care.

Her recent work has focussed on food-based approaches to prevent falls, fractures, and malnutrition in older adults in aged-care, that involving over 7,000 older adults in 60 residential aged-care homes monitored for two years. This work demonstrated the benefits of a food-based approach to prevent fractures, bone and muscle loss and risk of malnutrition in older adults.

Dr Iuliano advocates for translation of research to practice and has provided evidence at the Royal Commission into Quality and Safety in Aged-Care in Australia regarding nutritional care in aged care homes and advocates for improved nutrition care for older adults in aged care. She regularly presents her work internationally. She is a strong advocate for improving nutritional care and quality of life via improved food provision to older adults in aged care.

# Biographies



## **Niamh Rice**

Niamh Rice is a Director and founding member of the Irish Society for Clinical Nutrition and Metabolism Board and Management Committee (IrSPEN) and an independent consultant in nutrition and medical affairs as CEO of Previs Healthcare, specialising in malnutrition, healthcare policy and advocacy.

A qualified Dietitian and Nutritionist, Niamh has over 30 years' experience working in senior scientific and management roles in the UK, Ireland and Internationally. She worked on several national expert nutrition committees in both UK and Ireland to advance public health strategies, and in her role within IrSPEN, has actively campaigned for improved standards of nutritional care in different care settings. She has published several papers on nutritional screening and health economics, developing the modelling and budget impact analysis to support national clinical guidelines for nutritional screening in acute care settings, which are now mandatory in Ireland.

Niamh has written several expert reports and government submissions on behalf of non-governmental agencies and professional groups and works with clients from all sectors to advise on strategy related to advancing nutritional care and practice.



# Biographies



## **Professor Patrice Fardellone**

Professor Emeritus Patrice Fardellone is a rheumatologist and was the former head of the rheumatologic department of the teaching hospital of Amiens, France.

He also graduated in Endocrinology, Nutrition, Geriatric, Public Health and Epidemiology. He is member of the scientific committees of the GRIO (Groupe de Recherche et d'Information sur les Ostéoporoses – Research and Information French Association on Osteoporosis) and IOF (International Osteoporosis Foundation).

He has published more than 200 scientific papers, mostly in the field of osteoporosis, fractures, calcium and vitamin D and the effects of dairy products on bone health.

# Biographies



## **Professor Marian de van der Schueren**

Marian de van der Schueren (RD, PhD) is a distinguished professor of Dietetics at Wageningen University and Research, and a professor of Nutrition, Dietetics, and Lifestyle at the HAN University of Applied Sciences in the Netherlands. From 1990 to 2019, she held various roles at the Amsterdam University Medical Centres, location VUmc. She served as a clinical dietitian, researcher, department head, and eventually became the research coordinator for the department of Nutrition and Dietetics.

In 2000, she was the first clinical dietitian in the Netherlands to obtain a PhD, focusing on the topic of 'Malnutrition in head and neck cancer patients'. Since 2009, she has dedicated her efforts exclusively to research. Her contributions were recognized with appointments as a professor of Nutrition, Dietetics, and Lifestyle at the HAN University of Applied Sciences in 2013, and in 2020, she became the first Dutch professor of Dietetics at Wageningen University.

Her research interests encompass diverse areas such as malnutrition, nutritional screening and assessment, geriatrics, and cancer. She has actively served as a board member for various national and international committees, including the Dutch Malnutrition Knowledge Center, the Dutch Society for Clinical Nutrition and Metabolism, the European Society for Clinical Nutrition and Metabolism, and NutritionDay. Additionally, she has participated in numerous advisory groups, providing her expertise to organizations like the Dutch Dietetic Association and the Health Council of the Netherlands.

Throughout her career, she has authored approximately 200 peer-reviewed manuscripts and contributed to multiple book chapters. In recognition of her remarkable and significant contributions to dietetic practice, research, and education at national, European, and international levels, she was honored with the prestigious Honorary Dietetic Fellowship Award by the European Federation of Associations of Dietitians in 2019.

# Biographies



## **Professor Emeir McSorley**

Professor Emeir McSorley is Professor of Human Nutrition within the School of Biomedical Sciences at Ulster University, Northern Ireland and is a registered nutritionist with AfN.

Emeir is the Associated Research Group Lead within the Nutrition Innovation Centre for Food and Health (NICHE), a centre of excellence aimed at providing greater understanding of nutrition-related health through the lifecycle and contributing to food and health policy internationally. She leads the research subgroup 'Nutritional immunology' and contributes significantly to the 'Vitamin D', 'Marine Function Food' and 'Nutrition, toxicology and child development' subgroups.

Her research interests are focused on understanding the influence of diet on aspects on cell function and human health, in particular the effects of vitamin D and n-3 PUFAs in relation to bone health, inflammation and immunity, sports performance, cancer and pregnancy. She has an interest in the nutrition of older people and particularly care home residents, including conducting research on vitamin D and bone health of older adults within care homes in Northern Ireland and is currently investigating marine-derived protein and sarcopenia prevention in this group.

She has secured research income (~6M) from prestigious research bodies including the National Institute of Health America (NIH), ESRC Economic & Social Research Council, Swedish Research Council, EU, Food Safety Authority, UK, Health Research Board, Ireland and the Department of Agriculture, Food and Marine (MI/FIRM) as well as industry and technology transfer funds.

Emeir has published ~80 peer reviewed research articles, ~20 reviews and have a h-index of 28. In 2016, she was appointed (by the Minister of Health, Ireland) a member of the Sub-Committee for Public Health Nutrition within the Food Safety Authority of Ireland.



## About EMF

The European Milk Forum (EMF) is a collection of national and regional dairy organisations from ten European countries - Austria, Belgium, Denmark, France, Germany, Ireland, Netherlands, Northern Ireland, Norway and Switzerland.

'Milk, Nutritious by Nature' is a science-based information initiative from EMF addressing issues on dairy and health and engaging in a dialogue with health and nutrition professionals. The aim is to build a clearer understanding of the role of milk and dairy products in a healthy, sustainable diet across Europe.

Find more about EMF here

[www.milknutritiousbynature.eu/home/](http://www.milknutritiousbynature.eu/home/)