




*The Nutrition Society of Australia 46th Annual Scientific Meeting was held at the Parmelia Hilton in Perth, WA on 29 November–2 December 2022*

## Editorial

### Conference on ‘Sustainable nutrition for a healthy life’

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Nutrition scientists are currently facing a substantial challenge: to feed the world population sustainably and ethically while supporting the health of all individuals, animals and the environment. The Nutrition Society of Australia’s 2022 Annual Scientific meeting theme ‘Sustainable nutrition for a healthy life’ was a timely conference focusing on the environmental impact of global, national and local food systems, how nutrition science can promote sustainable eating practices while respecting cultural and culinary diversity and how to ensure optimal nutrition throughout life to prevent and manage chronic diseases. Comprehensive, diverse, collaborative and forward-thinking research was presented in a 3 d programme of keynote presentations, oral and poster sessions, breakfast and lunch symposiums, ending with a panel discussion to answer the question of how we can best achieve a nutritious food supply that supports human and planetary health. We concluded that this complex issue necessitates coordinated efforts and multi-faceted responses at local, national and global levels. Collaboration among consumers, scientists, industry and government using a systems approach is vital for finding solutions to this challenge.

#### Sustainability: Food systems: Food supply: Nutrition: Planetary health

##### Sustainable food and nutrition

The EAT-Lancet Commission has asked an important question ‘Can we feed a future population of 10 billion people a healthy diet within planetary boundaries?’<sup>(1)</sup>. The degradation of environmental and natural resources amid high rates of poor nutrition continues to be a challenge. Nutrition science plays a key role in providing the evidence base to address these challenges, as we work to feed the population in a healthy and sustainable way well into the future. The 2022 Nutrition Society of Australia’s Annual Scientific Meeting (NSA ASM 2022) theme was

a timely focus on ‘sustainable nutrition for a healthy life’ with consideration to global, national and local food systems, and their environmental impact; how nutrition science can inform eating sustainably, acknowledging culture and cuisine; and the provision of optimal nutrition across the lifespan to prevent and treat chronic disease.

The NSA ASM 2022, the first in-person NSA conference since 2018, took place in Perth, Western Australia on 29 November to 2 December 2022. The conference hosted over 250 delegates from eight different countries: Australia, Denmark, India, Netherlands, New Zealand,

**Abbreviation:** NSA ASM 2022, 2022 Nutrition Society of Australia’s Annual Scientific Meeting.

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Qatar, United Kingdom and United States. The conference was organised into: (i) three plenary sessions with six keynote speakers; (ii) fifteen oral presentation sessions with a total of eighty-eight presentations under the following themes: food sustainability and food security, early childhood nutrition, nutrition and disease, nutrition and food supply, nutrition mechanisms, nutrition, mental health and cognition, nutrition across the lifespan, nutrition communication and education, food and agriculture, nutrition and cardiometabolic health, dietary intake and assessment, nutrition, diabetes and weight management and public health nutrition; (iii) six poster presentation sessions; (iv) a breakfast symposium, two sponsored lunch symposiums and a sponsored lecture; (v) student masterclass and 'Meet the Experts' sessions; (vi) awards of excellence and (vii) a panel discussion.

### Plenary highlights

The opening plenaries were delivered by Professor Jayne Woodside (Queen's University Belfast) and Dr Stephanie Godrich (Edith Cowan University), and chaired by NSA President Elect, Professor Victoria Flood and the NSA ASM 2022 Organising Committee Chairperson, Dr Catherine Bondonno.

Professor Woodside set the stage for the meeting by delivering a compelling overview of the complexities that underlie achieving a sustainable global food supply, describing the nutritional challenges, interactions between climate change, world events and planetary health<sup>(2)</sup>. Professor Woodside provided an outline of a systems thinking approach to effect behaviour change, whereby multilevel interventions are needed across structures and systems of the food system and supply chain, at both the international and national levels.

Dr Godrich followed on by emphasising the complex food system, and focused on the value of transforming local food systems to address sustainable nutrition<sup>(3)</sup>. Dr Godrich provided important examples of community co-design to support food security within local communities, including community level food policy groups, distribution of culturally appropriate food and local food procurement in schools. Dr Godrich concluded with presenting international evidence supporting such local food policy groups being an impactful mechanism for change across several food system aspects.

The second day opened with a plenary session delivered by Professor Carol Boushey (University of Hawaii Cancer Centre) and PhD candidate Luke Williams, Indigenous Pre-doctoral Research Fellow (RMIT University), and was chaired by Associate Professor Kim Bell-Anderson. Professor Boushey shared data examining dietary patterns across the lifespan in Hawaii and the Pacific regions of the United States. Professor Boushey highlighted findings from the dietary patterns methods project that used an index-based approach aiming to represent whole dietary patterns and how these have shown fairly consistent assessment of diet-disease relations<sup>(4)</sup>. Mr Williams, a Gumbaynggirr man of northern New South Wales,

brought First Peoples food sovereignty to the fore, providing an overview of the current state of the Australian native foods industry and explaining the development of a novel food regulatory framework aiming to promote the safe consumption and commercial production of traditional food products<sup>(5)</sup>.

The final plenary turned attention back to the impact of food sustainability. The first presentation was delivered by Associate Professor Sonja de Vries (Wageningen University) who explored rethinking of animal nutrition for future food systems to ensure balance between ecological impact and nutrient supply<sup>(6)</sup>. Associate Professor de Vries emphasised the importance of considering whole of diet on overall nutrition by arguing for the critical role of circular, sustainable, food production systems and suggested the need for new product footprint approaches that encompass feed-food competition and bioavailability of the complete diet (beyond total protein).

Professor Sam Abraham (Murdoch University) concluded this plenary session by sharing insights into multidisciplinary approaches in controlling antimicrobial resistance in livestock. Professor Abraham presented a range of data exploring the control of resistant zoonotic pathogens from Australian animals, including data using technology from genomics, robotics and *in vivo* animal models.

### Other special symposiums and sessions

The first symposium of the NSA ASM 2022, titled 'printing an appetite for life', explored three-dimensional food printing for a sustainable future. This was a Breakfast Symposium featuring Dr Liezhou Zhong (Edith Cowan University) and Amanda Orchard (Maggie Beer Foundation) and was facilitated by Professor Jonathon Hodgson.

The main sponsored symposium at the NSA ASM 2022 included the Dairy Australia Lecture. The theme of this symposium was 'health across the lifespan' and was chaired by Professor Welma Stonehouse and facilitated by Joel Ferrin. The symposium featured three complementary perspectives on the impact of consuming diets rich in dairy products. Associate Professor Therese O'Sullivan (Edith Cowan University) highlighted findings from the Milky Way study, a double-blind randomised controlled trial in forty-nine healthy children aged 4 to 6 years who consumed whole-fat dairy or reduced-fat products for 3 months. The results of this pilot study showed no significant differential changes in energy intake or markers of adiposity or cardiometabolic disease risk, suggesting the reduced-fat dairy products do not have health advantages over whole-fat dairy for children<sup>(7,8)</sup>. Professor Ian Givens (University of Reading) then raised the question of potentially unnecessary restriction of dairy products in the diet due to their high-saturated fat content and therefore increased risk of CVD<sup>(9)</sup>. Professor Givens pointed to data that do not support a positive relationship between SFA intake and the risk of CVD in middle age, and therefore recommended the need for further



understanding into associations of different dairy food types. Dr Sandra Iuliano (University of Melbourne) provided a final perspective by sharing insights from a 2-year clustered-randomised trial in >7000 older adults clinical trial examining dairy food intake and reduction of falls and fractures in residential aged care facilities<sup>(10)</sup>. The results indicated that intervention residents increased their dairy intake to 3.5 servings daily, which was associated with a 33 % reduction in fractures and 46 % reduction in hip fractures. Dr Iuliano's presentation concluded with reflections of how these findings have been translated into practice, including implementation into residential aged care homes as well as aligning with important national priorities, such as the recent Australian Royal Commission into aged care quality and safety<sup>(11)</sup>. This symposium concluded with a panel discussion that highlighted the critical role of advocacy for nutritional care and quality of life across the lifespan.

A highlight of the NSA ASM 2022 for early career researchers was the 'Meet the Experts' lunchtime session. This is an annual event for the NSA ASM, representing its commitment to offering unique networking and upskilling opportunities for early career nutrition scientists. This session allowed early career nutrition scientists to discuss their career pathways with experts, creating valuable dialogue for experts to share insights and strategies to help achieve long-term career goals. Another highlight of the NSA ASM 2022 was a pre-conference student masterclass delivered by Glenn Cardwell, which focused on how to present science to the public.

Two other lunchtime sessions were sponsored by Nestle Nutrition Institute and V2 Foods. The former was presented by Professor Tim Green (SAHMRI), Dr Merryn Netting (SAHMRI) and Najma Moumin (SAHMRI) and delivered key findings and ways forward for research in the first 1000 d of life, such as findings from the 2021 Australian feeding infants and toddlers study. The latter unpacked the role of plant-based foods in a shift to more sustainable diets by exploring the nutrition opportunities and challenges of these shifts. This session was chaired by Charlotte Strand (Grains and Legumes Nutrition Council) and the speakers included Professor Bev Muhlhausler (CSIRO), Dr Brad Ridoutt (CSIRO), Teri Lichtenstein (FoodBytes), Kathy La Macchia (Grains and Nutrition Council) and Nick Hazell (V2 Foods). A large proportion of this discussion focused on the challenges and preconceptions regarding the concept of ultra-processed and meat alternatives.

### Nutrition Society of Australia awards of excellence

Award winning contributions to nutrition science were recognised in the NSA Awards of Excellence session. The fellowship of the NSA was awarded to Professor Jonathan Hodgson (Edith Cowen University) for contributions of special merit to the scientific study of nutrition and its applications to human subjects. Professor Hodgson provided an overview of over 25 years of impactful research on how specific dietary components, namely nitrate and flavonoids, and their food sources enhance

vascular health. Professor Lisa Wood (University of Newcastle) was awarded the prestigious NSA Medal in recognition of an outstanding track record in the field of human nutrition in Australia. Professor Wood's research has advanced understanding of nutritional approaches to managing respiratory diseases, with a focus on asthma. Professor Wood concluded by acknowledging the importance of family and colleagues in this career journey. The NSA Mid-career Researcher Award was bestowed upon Dr Katherine Livingstone (Deakin University). This award recognises excellence in nutrition science for researchers who are in the 5–15 years period after being awarded a PhD. Dr Livingstone provided an overview of her research programme to improve dietary patterns in young adults using personalised nutrition approaches. Lastly, Dr Malcolm Riley (CSIRO) was awarded the NSA Honorary member to acknowledge eminent service rendered to the Society.

### Panel discussion

The NSA ASM 2022 culminated with a panel discussion facilitated by Professor Tim Gill (University of Sydney), on the topic 'How we can best achieve a nutritious food supply that supports human and planetary health'. Panel members had a breadth of expertise on the subject: expertise in farming systems and production agronomy (Professor Kadambot Siddique, University of Western Australia), food systems (Professor Jayne Woodside, Queen's University Belfast), public health (Associate Professor Christine Pollard, Curtin University) and life-cycle sustainability (Dr Brad Ridoutt, CSIRO). This served as an opportunity to bring together the many facets of the NSA ASM 2022 themes, with consideration to the intersection between the practical application of food and farming systems, and balancing the needs for an individual, population and planetary health. The discussion highlighted the complexity of the science, alongside the need for pragmatism and continual reflection on providing an evidence base that assesses the environmental impact of dietary habits, locally, nationally and globally. The panel reminded us that solutions may come from examining existing practices across the world, as much as seeking new and innovative approaches to food production and consumption. Professor Siddique highlighted valuable lessons from low-income countries on integrating more legumes in the diet and Professor Woodside also reminded us that the most appropriate dietary pattern will vary in different parts of the world. Dr Ridoutt encouraged a focus on changes to food production systems rather than just individual dietary choice and Associate Professor Pollard highlighted communication challenges and the need for consistent messaging on sustainable healthy diets.

### Summary

Overall, we experienced an invigorating and thought-provoking NSA ASM 2022. We grappled with important



and emerging themes on sustainable nutrition for a healthy life, with recognition that nutrition scientists face significant challenges. We must simultaneously improve the sustainability of the food supply and minimise waste, whilst ensuring ethical issues arising for food production are addressed and that these foods meet our nutritional needs across the lifespan.

This continues to be the challenge of our time – the need to feed the world's population, in a sustainable and ethical way that supports the health of all (people, animals and the physical world). This requires local, national and global responses, with vigilance to address the complex conditions for nutrition and food insecurity in the midst of financial challenges, climate change, natural disasters and political unrest. We need to work together using a systems approach, including engagement from consumers, scientists, industry and government.

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#### Conflict of Interest

None.

#### Authorship

K. M. L., J. R. B., C. P. B. and V. M. F. jointly planned, wrote and edited the manuscript.

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