

---

# PHN

## PUBLIC HEALTH NUTRITION

---

Volume 19

---

Number 13

---

September 2016

---

Available online at  
[www.journals.cambridge.org/phn](http://www.journals.cambridge.org/phn)

# Public Health Nutrition

Volume 19, 2016 ISSN: 1368-9800

Eighteen issues per year

## Aims and Scope

*Public Health Nutrition* provides an international forum for the publication and dissemination of research and scholarship in the form of peer-reviewed original papers and reviews, and for discussion in the form of editorials, commentaries, and correspondence, with a specific focus on nutrition-related public health.

The scope of *Public Health Nutrition* encompasses nutrition and nutrition policy at a population level, including work on assessment of nutritional status and nutritional environments, communication of nutrition-related information, implementation of programs and interventions, and sustainability of dietary patterns, food systems and supplies. We welcome papers that:

- Address assessment, monitoring, and surveillance of nutritional status or the quality of nutritional environments
- Describe the development and evaluation of methodology for assessment, monitoring, and surveillance in population-based samples
- Identify and analyse behavioural, social, cultural, environmental, economic, and political determinants of nutrition-related public health, and dietary and nutritional factors as determinants of health outcomes

- Build intelligence about the development, implementation, and evaluation of interventions and community nutrition programs and efforts
- Describe, discuss, debate and influence nutrition-related public policies
- Serve to build capacity for effective public health nutrition action, including workforce development and educational issues
- Develop perspectives and models to study diet and nutrition as related to the environment and sustainability.

We prefer papers that are innovative and contribute new knowledge to the literature. Papers should be succinct (ie, usually well under 5000 words not including the abstract, references, tables, figures and acknowledgements). Short communications (<2000 words) are welcome. We publish research, scholarship, and discussions that take a population and preventive approach. In addition to original contributions, ideas and suggestions for topics for debate are also welcome. We publish special issues.

*Public Health Nutrition* is available on the Internet at: [journals.cambridge.org/phn](http://journals.cambridge.org/phn)

## International Editorial Board

### Editor-in-Chief

**Research Professor Marilyn Tseng**  
California Polytechnic State University  
San Luis Obispo, USA  
Email: [phn@nutsoc.org.uk](mailto:phn@nutsoc.org.uk)

### Deputy Editors

**Dr Allison Hodge**  
University of Melbourne, Australia

**Dr Carl Lachat**  
Gent University, Belgium

**Dr Eduardo Villamor**, University of Michigan  
School of Public Health, USA

**Dr. Stefanie Vandevijvere**, University of  
Auckland, New Zealand

### Supplement and Special Issues Editor

**Dr Irja Haapala**  
University of Eastern Finland, Finland

### Statistics Editor

**Mrs Zulfa Abrahams** Human Sciences Research  
Council, South Africa

**Dr Flávia Barbosa** State University of Rio de  
Janeiro, Brazil

**Dr Vassiliki Bountziouka** University College  
London, UK

**Mr Fabio S. Gomes** National Cancer Institute,  
Brazil.

**Dr Graham Horgan** Rowett Institute, University  
of Aberdeen

**Dr Eva Maria Navarrete Munoz**  
Universidad Miguel Hernandez

**Systematic Reviews and Meta-Analyses Editor**  
**Dominique Roberfroid**, Institute of Tropical  
Medicine, Belgium

### Associate Editors

**Dr Leila Azadbakht**, Isfahan University of  
Medical Sciences, Iran

**Dr Simon Barquera**, National Institute of Public  
Health, Mexico

**Dr Kaleab Baye**, Addis Ababa University, Ethiopia

**Dr Shawna Berenbaum**, University of  
Saskatchewan, Canada

**Dr Maxine Bonham**, Monash University,  
Australia

**Dr Julie Kay Brimblecombe**, Royal Darwin  
Hospital Campus, Australia

**Dr Maree Brinkman**, University of Melbourne,  
Australia

**Dr Mona Calvo**, U.S. Food and Drug  
Administration Department of Health and  
Human Services, USA

**Professor Sandra Capra**, University of  
Queensland, Australia

**Professor Karen Cullen**, Baylor College of  
Medicine, USA

**Professor Lisbeth Dahl**, National Institute of  
Nutrition and Seafood Research, Norway

**Prof. Hélène Delisle**, University of Montreal,  
Canada

**Dr Colleen Doak**, VU University, Amsterdam

**Professor Mieke Faber**, Medical Research Council,  
South Africa

**Dr. Anouk Geelen**, Wageningen University,  
The Netherlands

**Professor Denise Gigante**, Federal University of  
Pelotas, Brazil

**Professor Ted Greiner** Hanyang University, Republic  
of Korea

**Dr Jennifer L Harris**, Yale University, USA

**Dr Sophie Hieke**, European Food Information  
Council (EUFIC), Belgium

**Dr Alexis Hure**, University of Newcastle, Australia

**Dr John Kearney** Dublin Institute of Technology

**Dr Bridget Kelly**, University of Wollongong,  
Australia

**Dr Colette Kelly**, National University of Ireland,  
Northern Ireland

**Professor Sharon Kirkpatrick** University of  
Waterloo, Canada

**Dr Cécile Knai**, London School of Hygiene &  
Tropical Medicine, University of London, UK

**Professor Salome H Kruger**, North-West  
University, Potchefstroom, South Africa

**Professor Christel Lamberg-Allardt**  
University of Helsinki, Finland

**Dr Cindy Leung**, University of California,  
United States

**Dr Nanna Lien**, University of Oslo, Norway

**Dr Rachael McLean**, University of Otago,  
New Zealand

**Prof Alida Melse**, Wageningen University, Netherlands

**Assistant Professor Androniki Naska**  
University of Athens Medical School, Greece

**Professor Wendy Oddy**, University of Western  
Australia, Australia

**Dr Punam Ohri-Vachaspati**  
Arizona State University, USA

**Professor Nicholas Ollberding**, Cincinnati  
Children's Hospital Medical Center, United States

**Dr Demosthenes Panagiotakos**,  
Harokopio University, Greece

**Dr Natalie Parletta**, University of South Australia,  
Australia

**Dr Emma Patterson**, Centre for Epidemiology  
and Social Science

**Professor Lisa Pawloski**, George Mason  
University, USA

**Dr Natalie Pearson**, Loughborough University, UK

**Dr Dora Romaguera-Bosch** Imperial College  
London, UK

**Professor Rosangela Pereira**, Federal University  
of Rio de Janeiro, Brazil

**Associate Professor Eva Roos**, Folkhälsan  
Research Institute, Finland

**Professor Marjanne Senekal** University of Cape  
Town, South Africa

**Dr Kevin Sullivan**, Rollins School of Public Health  
at Emory University, USA

**Professor Inge Tetens** National Food Institute,  
Denmark

**Dr Lukar E Thornton**, Deakin University,  
Australia

**Dr Anne Marie Thow**, University of Sydney,  
Australia

**Professor Gavin Turrell**, Queensland University of  
Technology, Australia

**Prof Jolieke Van der Pols** University of  
Queensland, Australia

**Dr Wendy Van Lippevelde** University of Gent,  
Belgium

**Dr Jesus Vioque**, Universidad Miguel Hernandez,  
Spain

**Dr Christina Vogel** University of Southampton,  
UK

**Dr Yanfang Wang**, Peking University Clinical  
Research Institute, China

**Dr. Wilma E. Waterlander**, University of  
Auckland, New Zealand

**Assistant Professor Wen You**  
Virginia Polytechnic University, USA

## The Nutrition Society

The society has as its objective the advancement of the scientific study of nutrition and its application to the maintenance of human and animal health.

Particulars of The Nutrition Society and application forms for membership are available from the Honorary Secretary,

The Nutrition Society, 10 Cambridge Court, 210 Shepherds Bush Road, London W6 7NJ, UK.

Telephone +44 (0)20 7602 0228, Fax +44 (0)20 7602 1756

The Nutrition Society home page is at: <http://www.nutrition-society.org>