

# Public Health Nutrition

Volume 24, 2021 ISSN: 1368-9800  
journals.cambridge.org/phn

## **Publishing, Production, Marketing, and Subscription Sales Office:**

Cambridge University Press  
Journals Fulfillment Department  
University Printing House  
Shaftesbury Road  
Cambridge CB2 8BS  
UK

## **For Customers in North America:**

Cambridge University Press  
1 Liberty Plaza  
Floor 20, New York  
NY 10006  
USA

## **Special sales and supplements**

This journal accepts advertising and inserts. We also provide bulk reprints of suitable papers to meet teaching or promotional requirements. The journal also publishes supplementary material including conference proceedings on behalf of academic and corporate sponsors. Please contact Sarah Maddox at Cambridge University Press for further details (email: smaddox@cambridge.org).

## **Subscription information**

*Public Health Nutrition* is an international journal published 18 times per year by Cambridge University Press on behalf of the Nutrition Society. The online edition is available at journals.cambridge.org/PHN, with free table of contents alert (upon registration).

## **Annual subscription rates**

Volume 24, 2021 (18 issues):  
Internet/print package: £1390/\$2666 Americas only/€2227 EU only  
Internet only: £1006/\$1909 Americas only/€1599 EU only

**Any supplements** to this journal published in the course of the annual volume are normally supplied to subscribers at no extra charge.

**Claims** for non-receipt of journal issues will be considered on their merit and only if the claim is received within six months of publication. Replacement copies supplied after this date will be chargeable.

**Advertising:** The Nutrition Society is willing to include advertisements in its journals. However, it will retain the right to make decisions on which advertisements are acceptable and which are not, and will not be obliged to give reasons to prospective

advertisers for its decisions. The appearance of an advertisement in the Society's journals does not imply endorsement by the Society. For further details, please contact Cambridge University Press.

**Back volumes** will be available in due course. Please contact Cambridge University Press for further information.

**US POSTMASTERS:** Please send address corrections to Cambridge University Press  
1 Liberty Plaza  
Floor 20, New York  
NY 10006  
USA

**Notes for Authors** are available from the publisher at the given address and can be found inside the back cover.

**Offprints:** The author (or main author) of an accepted paper will receive a free PDF of their paper. Additional offprints are available for a fee and must be ordered at proof stage. **No page charges are levied by this journal.**

**Copyright:** As of 1 January 2001 the copyright of all articles submitted to *Public Health Nutrition* are retained by the authors or their institutions. For articles prior to this date permission for reproduction of any part of the journal (text, figures, tables or other matter) in any form (on paper, microfiche or electronically) should be sought directly from the Society, at: The Editorial Office, The Nutrition Society, 10 Cambridge Court, 210 Shepherds Bush Road, Hammersmith, London, W6 7NJ, UK.

**Disclaimer:** The information contained herein, including any expression of opinion and any projection or forecast, has been obtained from or is based upon sources believed by us to be reliable, but is not guaranteed as to accuracy or completeness. The information is supplied without obligation and on the understanding that any person who acts upon it or otherwise changes his/her position in reliance thereon does so entirely at his/her own risk. Neither the Society, nor Cambridge University Press accepts responsibility for any trade advertisement included in this publication.

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see [www.fsc.org](http://www.fsc.org) for information. Typeset by Macmillan India Limited, Bangalore, India and Printed in Europe by Bell and Bain, Glasgow.

*Public Health Nutrition* is covered in Science Citation Index Expanded (Web of Science), Current Contents, Agriculture, Biology & Environmental Sciences, Current Contents, Clinical Medicine, CAB ABSTRACTS<sup>®</sup>, Global Health, Index Medicus<sup>®</sup> (MEDLINE<sup>®</sup>), EMBASE, Excerpta Medica, BIOSIS<sup>®</sup> Database and CINAHL<sup>®</sup> Database  
*Public Health Nutrition* participates in the following initiatives: HINARI by WHO and AGORA by FAO.

*Public Health Nutrition (PHN)* provides a forum for the presentation of original research findings and high quality reviews of key topics, and for discussion of and debate on of current issues and controversies. It also publishes special issues on major topics of interest. Our field includes research, scholarship, and discussions on public health nutrition, that take a population, health promoting and preventive approach. Papers that do not have this emphasis may be directed to more appropriate journals. Potential contributors are encouraged to read the aims and scope of the journal, and to note and follow the guidelines set out below.

## Content:

- **Original research findings and scientific reviews** are published as full papers usually less than 5000 words, not including the abstract, references, tables, figures and acknowledgements.
- **Editorials** express the opinion of the journal, as represented by its central editorial team, on topics judged by them to be important. Editorials, including guest editorials, are usually co-ordinated and developed by the editorial team.
- **Position papers**, including declarations and other statements of policy, may be invited or unsolicited.
- **Invited commentaries and book reviews** are expressions of opinion on a topical subject. These are commissioned by the members of the editorial team.
- **Letters to the Editors** are usually in response to material published in *PHN*. Submissions are sent to the author for comment and, when possible, published together with the author's reply.

**Submission:** PHN operates an online submission and reviewing system. All manuscripts should be submitted to <http://mc.manuscriptcentral.com/phnutr>. Please contact the Editorial Office on [phn.edoffice@cambridge.org](mailto:phn.edoffice@cambridge.org) regarding any other types of submission.

**Refereeing:** Review articles and articles reporting original research are subject to external review by two or more referees who evaluate manuscripts based on their importance, relevance, and originality. Authors are asked to submit names and contact details (including email address) of up to four potential referees. All other contributions (editorials, position papers, invited commentaries, book reviews, and letters to the Editors) undergo an internal review process by at least two members of the editorial team. Invited commentaries and book reviews may also be checked externally as necessary to avoid technical errors and to improve salience.

**Copyright:** At the time of acceptance, authors will be asked to provide a completed copy of the 'Licence to Publish' (in lieu of copyright transfer), available at <https://www.nutritionociety.org/>. It is the author's responsibility to obtain written permission to reproduce any material (including text and figures) that has appeared in another publication.

**Preparation of manuscripts:** Please refer to the full Directions to Contributors on our website (<http://www.nutritionociety.org>). Manuscripts should be in clear and concise English, and spelling should follow the Oxford English Dictionary. For authors whose native tongue is not English, in-house editorial attention to their contributions will improve clarity. On acceptance, all contributions are subject to editorial amendment to conform to house style. Manuscripts should be prepared in a common word processing package (Word for Windows is preferred) in Times New Roman or other common typeface, prepared with double-spaced text, at least 2 cm margins, and page and line numbers. Standard abbreviations and SI units must be used.

## Disclosure of financial support and any competing interests.

The submission must include a statement within an Acknowledgements section reporting any competing interests (financial and non-financial), all sources of funding, and the nature of the contribution of each author to the manuscript. If there are no competing interests, this must be stated. Authors are asked to provide this information during the submission process and should not include it as part of the manuscript to allow for double-blind reviewing.

## Arrangement of papers:

1. **Title page** should include the article title, author(s), affiliation(s), up to eight keywords, one author identified for correspondence (with full postal address, telephone and fax numbers, and email address), and a running title of up to 45 characters. The title page should be submitted online as a separate cover letter, not as part of the manuscript, to enable double-blind reviewing.
2. **Abstract** should be structured, usually using the following internal headings: Objective, Design, Setting, Subjects, Results, Conclusions. Abstracts should be intelligible without reference to text or figures and should not exceed 250 words.
3. **Text** should be divided under headings (typically to include Introduction, Methods, Results, Discussion and Conclusions), and sub-headings as appropriate. Conclusions should include recommendations that derive from the research and that are concrete, feasible, and potentially effective. Emphasising that more research is needed is usually not necessary unless there is specific reason to say so. All submissions must include a statement that the research was conducted in accordance with guidelines laid down by the Declaration of Helsinki and approved by an ethics review committee.
4. **Acknowledgements** (sources of funding, competing interests declaration, authorship responsibilities, acknowledgements) should be provided during the submission process, not as part of the manuscript.
5. **References** should be in Vancouver style. Please refer to the full Directions to Contributors.
6. **Tables** should be reduced to the simplest form and should not be used where text or figures give the same information. Each table must be accompanied by a clear and concise caption that is comprehensible without reference to the text. Longer tables may be published online only.
7. **Figures** should be numbered, and legends should be provided. Each figure, with its legend, should be comprehensible without reference to the text and include definitions of abbreviations.

**Proofs:** Correspondence and proofs for correction will be emailed to the first named author unless otherwise indicated. The author will receive a PDF proof for checking. It is important that proofs be returned promptly. Authors may be charged for any alterations in excess of 10% of original setting.

**Offprints:** The corresponding author will receive a PDF of the published paper free of charge. Offprints are available to purchase and must be ordered before publication.

**Monitoring and surveillance**

Women's perceptions about changes in food-related behaviours at home during COVID-19 pandemic in Chile  
*Maria-Fernanda Jara, Barbara Leyton, Carla Cuevas and Patricia Gálvez Espinoza* 4377

**Assessment and methodology**

Development of an index to assess adherence to the traditional Mexican diet using a modified Delphi method  
*Selene Valerino-Perea, Miranda Elaine Glynis Armstrong and Angeliki Papadaki* 4387

Intake of vitamin B<sub>12</sub> and other characteristics of women of reproductive age on a vegan diet in Australia  
*Amanda J Benham, Danielle Gallegos, Katherine L Hanna and Mary T Hannan-Jones* 4397

**Nutritional status and body composition**

Is bioelectrical impedance vector analysis a good indicator of nutritional status in children and adolescents?  
*Yohanne L Almeida, Carla S Costa Maia, Natássia ERP Barros, Luis A Moreno, Antônio Augusto F Carioca and Adriano CC Loureiro* 4408

Food insecurity and the double burden of malnutrition in Colombian rural households  
*Ana María Sansón-Rosas, Jennifer Bernal-Rivas, Stan Kubow, Andrés Suarez-Molina and Hugo Melgar-Quinonez* 4417

**Nutrition communication**

Nutritional marketing of plant-based meat-analogue products: an exploratory study of front-of-pack and website claims in the USA  
*Jennifer Lacy-Nichols, Libby Hattersley and Gyorgy Scrinis* 4430

**Behavioural nutrition**

Feeding practices and factors associated with the provision of iron-rich foods to children aged 6–23 months in Matam area, Senegal  
*Kossi Akpaki, Isabelle Galibois and Sonia Blaney* 4442

**Nutritional epidemiology**

Changes in micronutrient intake and factors associated with this change among older Australian men: the Concord Health and Ageing in Men Project  
*Arpita Das, Robert G Cumming, Vasi Naganathan, Fiona Blyth, David G Le Couteur, David J Handelsman, Rosilene V Ribeiro, Louise M Waite, Stephen J Simpson and Vasant Hirani* 4454

Associations between dietary patterns and physical fitness among Chinese elderly  
*Yan Lyu, Xiao Yu, Huacai Yuan, Xiangren Yi, Xiaosheng Dong, Meng Ding, Xinying Lin and Baozhen Wang* 4466

Diet-dependent acid load and the risk of colorectal cancer and adenoma: a case-control study  
*Saeede Jafari Nasab, Pegah Rafiee, Alireza Bahrami, Nasim Rezaeimanesh, Bahram Rashidkhani, Golbon Sohrab, Farah Naja, Ehsan Hejazi and Amir Sadeghi* 4474

Orange juice intake and anthropometric changes in children and adolescents  
*Junichi R Sakaki, Jing Li, Melissa M Melough, Kyungho Ha, Rulla M Tamimi, Jorge E Chavarro, Ming-Hui Chen and Ock K Chun* 4482

Associations between nutrient intakes and dietary patterns with different sarcopenia definitions in older Australian men: the concord health and ageing in men project  
*Arpita Das, Robert G Cumming, Vasi Naganathan, Fiona Blyth, David G Le Couteur, David J Handelsman, Louise M Waite, Rosilene V Ribeiro, Stephen J Simpson and Vasant Hirani* 4490

Dietary patterns and glycaemic control among Qatari adults with type 2 diabetes  
*Marwa Alaradi, Asma Ouagueni, Rim Khatib, Grace Attieh, Hiba Bawadi and Zumin Shi* 4506

Sociodemographic inequalities in eating practices and concerns  
*Lhais de Paula Barbosa Medina, Marilisa Berti de Azevedo Barros, Regina Mara Fisberg, Daniela de Assumpção and Antônio de Azevedo Barros Filho* 4514

High BMI: an important health risk factor among older adults in Ghana  
*E Yorke, J Tetteh, Vincent Boima and AE Yawson* 4522

Validation of estimated glycaemic index and glycaemic load, stratified by race, in the Adventist Health Study-2 (AHS-2)  
*Carmen N Wright, Karen Jaceldo-Siegl, Andrew Mashchak, Pramil N Singh and Gary E Fraser* 4530

B-vitamins and metabolic syndrome in Mesoamerican children and their adult parents  
*Claudia R Villatoro-Santos, Manuel Ramirez-Zea and Eduardo Villamor for the Nine Mesoamerican Countries Metabolic Syndrome (NiMeCoMeS) Study Group* 4537

Adherence to the Mediterranean diet in Cyprus and its relationship to multi-morbidity: an epidemiological study  
*Maria Kyprianidou, Demosthenes Panagiotakos, Antigoni Faka, Maria Kambanaros, Konstantinos C Makris and Costas A Christophi* 4546

Functional dentition and changes in dietary patterns among older adults in Thailand  
*Piyada Gaewkhiew, Wael Sabbah and Eduardo Bernabé* 4556

Nutrient density and affordability of foods in Brazil by food group and degree of processing  
*Kennya Beatriz Siqueira, Cristiano AV Borges, Mirella L Binoti, Amanda F Pilati, Paulo HF da Silva, Shilpi Gupta and Adam Drewnowski* 4564

Unhealthy food options in the school environment are associated with diet quality and body weights of elementary school children in Canada  
*Shannon Sim, Paul J Veugelaers, Rachel Prowse, Candace U Nykiforuk and Katerina Maximova* 4572

Association between alcohol consumption and metabolic syndrome among Chinese adults  
*Yi Lin, Yan-Yan Ying, Si-Xuan Li, Si-Jia Wang, Qing-Hai Gong and Hui Li* 4582

Multiple burdens of malnutrition and relative remoteness in rural Ecuadorian communities  
*Gwenyth O Lee, Cynthia Gutierrez, Nancy Castro Morillo, William Cevallos, Andrew D Jones and Joseph NS Eisenberg* 4591

Organic food consumption is associated with inflammatory biomarkers among older adults  
*Elizabeth Ludwig-Borycz, Heidi M Guyer, Abeer A Aljhdali and Ana Baylin* 4603

Projected effects on salt purchases following implementation of a national salt reduction policy in South Africa  
*Rhoda N Ndanuko, Maria Shahid, Alexandra Jones, Terry Harris, Joel Maboreke, Adele Walker, David Raubenheimer, Stephen J Simpson, Bruce Neal, Jason HY Wu, Sanne AE Peters and Mark Woodward* 4614

Do adults and older people follow current guidelines for milk consumption?  
*Renata Luz, Marilisa Berti de Azevedo Barros, Daniela de Assumpção, Semiramis Martins Álvares Domene and Antonio de Azevedo Barros Filho* 4622

**Economics and environment**

Are neighbourhood restaurants related to frequency of restaurant meals and dietary quality? Prevalence and changes over time in the Multi-Ethnic Study of Atherosclerosis  
*Amy H Auchincloss, Jingjing Li, Kari AB Moore, Manuel Franco, Mahasin S Mujahid and Latetia V Moore* 4630

**Community nutrition**

Characteristics of successful primary school-based experiential nutrition programmes: a systematic literature review  
*Karen Charlton, Teagan Comerford, Natika Deavin and Karen Walton* 4642

Food advertising during children's television programmes in Italy  
*Silvano Gallus, Elisa Borroni, Chiara Stival, Sharanpreet Kaur, Sofia Davoli, Alessandra Lugo, Tobias Effertz, Silvio Garattini and Silvia Scaglioni* 4663

Maternal dietary diversity during pregnancy and risk of low birth weight in newborns: a systematic review  
*Sorayya Kheirouri and Mohammad Alizadeh* 4671

Food security mediates the decrease in women's depressive symptoms in a participatory nutrition-sensitive agroecology intervention in rural Tanzania  
*Hollyn M Cetrone, Marianne V Santos, Rachel Bezner Kerr, Lucia Petito, Lauren Blacker, Theresia Nonga, Haikael D Martin, Neema Kassim, Elias Mtinda and Sera L Young* 4682

Outcome evaluation of fruits and vegetables distribution interventions in schools: a systematic review and meta-analysis  
*Mariam R Ismail, Jamie A Seabrook and Jason A Gilliland* 4693

Food environment research is needed to improve nutrition and well-being in Asia and the Pacific  
*Penny Farrell, Cut Novianti Rachmi, Georgina Mulcahy, Matthias Helble and Anne Marie Thow* 4706

Effect of using commercial pre-packaged baby foods on the Fe intake of 7–8 months old infants  
*Celeste Tsz Hei Cheung, Anna M Rangan, Iris Mei Ying Tse, Wai Hung Sit and Jimmy Chun Yu Louie* 4711

**Interventions**

Nutrition and physical activity interventions for the general population with and without cardiometabolic risk: a scoping review  
*Mary Rozga, Kelly Jones, Justin Robinson and Amy Yahiro* 4718

**Public policies**

The impact of health warnings for sugar-sweetened beverages on consumer perceptions of advertising  
*David Hammond, Rachel B Acton and Samantha Goodman* 4737

Implications of international trade and investment agreements on policy space for restricting marketing of unhealthy food and beverages to children: lessons from inter-disciplinary expert interviews  
*Kelly Garton, Boyd Swinburn and Anne Marie Thow* 4750

Developing sugar-sweetened beverage warning labels for young adults  
*Jennifer Falbe, Astrid Montuclard, Alina Engelman, Sabrina Adler and Athena Roesler* 4765

Cambridge Core For further information about this journal please go to the journal website at: [cambridge.org/phn](http://cambridge.org/phn)