

---

# BJN

## BRITISH JOURNAL OF NUTRITION

---

Volume: 130

---

Number: 10

---

28 November 2023

---

An International Journal  
of Nutritional Science

**British Journal of Nutrition**  
**An International Journal of Nutritional Science**  
*Volume 130, 2023 ISSN: 0007-1145*

**Aims and Scope**

The *British Journal of Nutrition* is an international, peer-reviewed journal publishing original papers, review articles, short communications and technical notes on human and clinical nutrition, animal nutrition and basic science as applied to nutrition. Correspondence is encouraged in a Nutrition Discussion Forum. The Journal recognizes the multidisciplinary nature of nutritional science and encourages the submission of material from all of the specialities involved in research and clinical practice. The Journal also publishes supplements on topics of particular interest.

The *British Journal of Nutrition* is published twice monthly by Cambridge University Press on behalf of  
The Nutrition Society.

The *British Journal of Nutrition* is available online to subscribers at [journals.cambridge.org/bjn](http://journals.cambridge.org/bjn)

Tables of contents and abstracts are available free at the same website.

**Editor-in-Chief**

J Mathers, *Newcastle University Population Health Sciences Institute, UK*

**Deputy Editors**

J Thomas, *Brenna University of Texas at Austin and Cornell University, USA*

C Damsgaard, *University of Copenhagen, Denmark*

É Doucet, *University of Ottawa, Canada*

R Elango, *University of British Columbia, Canada*

K Erickson, *University of California: Davis, USA*

J Phillip Karl, *US Army Research Institute of Environmental Medicine, USA*

J Lapointe, *Agriculture and Agri-Food Canada, Canada*

G Maskarinec, *University of Hawaii, USA*

B Meyer, *University of Wollongong, Australia*

K Murakami, *University of Tokyo, Japan*

M Plourde, *University of Sherbrooke, Canada*

M Denise, *Robertson University of Surrey, UK*

P Sharp, *King's College London, UK*

J L Soengas Fernández, *University of Vigo, Spain*

N Wade, *CSIRO: Commonwealth Scientific and Industrial Research Organisation, Australia*

G Williamson, *Monash University, Australia*

**Reviews Editors**

F Bravi, *Inst. of Pharmacological Research, Mario Negri, Italy*

L Brough, *Massey University, New Zealand*

J Lara, *Gallegos Northumbria University, UK*

D Levitsky, *Cornell University, USA*

Y Liu, *Wuhan Polytechnic University, China*

L O'Connor, *Health Information and Quality Authority, Cork, Ireland*

**Supplements Editor**

S Bath, *University of Surrey, UK*

**Statistics Editors**

A Al-Taiar, *Old Dominion University College of Health Sciences, USA*

Y Bai, *Duke University, USA*

V Bountziouka, *University College London, UK*

M Brabec, *Czech Academy of Sciences, Prague, Czechia*

M Cockeran, *North-West University, South Africa*

E Curis, *University of Paris V: René Descartes, France*

J Hosking, *University of Plymouth, UK*

S Knüppel, *Bundesinstitut für Risikobewertung, Berlin, Germany*

R Leech, *Deakin University, Australia*

C Lilly, *West Virginia University, USA*

C Ricci, *North-West University, South Africa*

S Ullah, *Flinders University, Australia*

C Yuan, *Harvard School of Public Health, USA*

**First Editors**

N Astbury, *University of Oxford, UK*

S Bel-Serrat, *University College, Dublin, Ireland*

M Borack, *Duke University, USA*

G Bosch, *Wageningen University, Netherlands*

D Clayton, *Nottingham Trent University, UK*

P Cutrufello, *University of Scranton, USA*

L Dahl, *Inst. of Marine Research, Bergen, Norway*

K Dhana, *Rush University Medical Center, USA*

M Drehmer, *Universidade Federal do Rio Grande do Sul, Brazil*

J-P Drouin-Chartier, *Université Laval, Canada*

Z-Y Du, *East China Normal University, China*

N Everaert, *KU Leuven, Belgium*

E Feeney, *University College, Dublin, Ireland*

E Gaffney-Stomberg, *USARIEM: US Army Research Inst. of Environmental Medicine, USA*

P Garcia-Solis, *University Autonoma Queretaro, Mexico*

M Habte-Tsion, *University of Maine, USA*

W Hall, *King's College London, UK*

K Hirko, *Michigan State University, USA*

J Hollis, *Iowa State University, USA*

P Horta, *Universidade Federal de Minas Gerais, Brazil*

R Hosomi, *Kansai University, Japan*

M Kruger, *Massey University, New Zealand*

X Luo, *Chinese Academy of Agricultural Science, China*

Z Luo, *Huazhong Agricultural University, China*

D Ma, *University of Guelph, Canada*

C Maffei, *University of Verona, Italy*

R Manchi, *ICAR-Directorate of Coldwater Fisheries Research, Bhimtal, India*

A Marcadenti, *Hospital do Coracao, Brazil*

K Northstone, *University of Bristol, UK*

A Osella, *IRCCS Saverio de Bellis, Italy*

Y Park, *University of Massachusetts: Amherst, USA*

B Qin, *Rutgers Cancer Inst. of New Jersey, USA*

C Reynolds, *University College Dublin, Ireland*

A Rivellesse, *University of Naples: Federico II, Italy*

A Rombeno, *University Autonoma Baja California, USA*

M Ruiz-Canela, *University of Navarra, Spain*

J T Schonewille, *Utrecht University, Netherlands*

F Tabung, *Ohio State University, USA*

S-Y Tan, *Deakin University, Melbourne, Australia*

L Tang, *Roswell Park Cancer Institute, USA*

T Tong, *University of Oxford, UK*

B Vizmanos-Lamotte, *University Centre of Health Sciences, Mexico*

R Winkels, *Wageningen University, Netherlands*

M Zec, *University of Arizona, USA*

The Nutrition Society has as its objective the advancement of the scientific study of nutrition and its applications to the maintenance of human and animal health.

Application of membership is invited from anyone whose work has contributed to the scientific knowledge of nutrition, whether such work has been in the laboratory, the field or the clinic, and whether experimental, clinical, agricultural or statistical in nature. There is also a student membership scheme with reduced subscriptions.

Particulars of The Nutrition Society and application forms for membership are available from The Nutrition Society, 10 Cambridge Court, 210 Shepherds Bush Road, London W6 7NJ, UK. Tel: +44 (0)20 7602 0228, Fax: +44 (0)20 7602 1756, Email: [office@nutsoc.org.uk](mailto:office@nutsoc.org.uk)

The Nutrition Society Home Page is at <http://www.nutritionandsociety.org>

© Nutrition Society 2023