

**British Journal of Nutrition**  
**Volume 101, 2009 ISSN: 0007-1145**

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

Cambridge University Press  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 8RU, UK

**For Customers in North America:**

Cambridge University Press  
Journals Fulfillment Department  
100 Brook Hill Drive  
West Nyack  
New York 10994-2133  
USA

**Publisher:** Katy Christomanou

**Special sales and supplements:**

This Journal accepts relevant advertisements and inserts. We also provide bulk reprints of suitable papers to meet teaching or promotional requirements. The journal also publishes supplements on behalf of academic and corporate collaborators. Please contact Katy Christomanou at the Cambridge address for further details. E-mail: [kchristomanou@cambridge.org](mailto:kchristomanou@cambridge.org)

**Subscription information:**

*British Journal of Nutrition* is an international journal published by Cambridge University Press on behalf of The Nutrition Society. The twelve issues starting January 2009 comprise Volume 101, the twelve issues starting July 2009 comprise Volume 102.

**Annual subscription rates:**

Volumes 101/102 (24 issues):  
Internet/print package £917/\$1788/€1469  
Internet only: £803/\$1566/€1283  
Print only: £874/\$1704/€1420

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

**Back volumes** are available. Please contact Cambridge University Press for further information.

**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.

**US POSTMASTERS:** please send address corrections to *British Journal of Nutrition*, Cambridge University Press, 100 Brook Hill Drive, West Nyack, New York 10994-2133.

**Directions to Contributors** are available from the Society at the address below or can be found on the Society's website at <http://www.nutritionistsociety.org> (an abbreviated Notes for Authors can be found inside the back cover).

**Offprints:** The author (or main author) of an accepted paper will receive a copy of the PDF file and a voucher copy of the issue in which their paper has been published. There will be an option to purchase paper offprints, these should be ordered at proof stage. No page charges are levied by this journal.

**Copyright:** As of 1 July 2000 the copyright of all articles submitted to *British Journal of 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 Publications 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 is printed on acid-free paper from renewable sources. Printed in the UK by Bell & Bain Ltd., Glasgow.

*British Journal of Nutrition* is covered in Current Contents®/Agriculture, Biology & Environmental Sciences, SciSearch®, Research Alert®, Current Contents®/Life Sciences, Index Medicus® (MEDLINE®), AGRICOLA®, CAB Abstracts™, Global Health, BIOSIS® Database, EMBASE/Excerpta Medica and Elsevier BIOBASE/Current Awareness in Biological Sciences, CINAHL, and Chemical Abstracts Service.

(Contents continued from back cover)

***Dietary Surveys and Nutritional Epidemiology***

Correlates of soft drink and fruit juice consumption among Swedish adolescents.  
*K. Vågstrand, Y. Linné, J. Karlsson, K. Elfhag & A. K. Lindroos* 1541–1548

Consumption of sugar-sweetened beverages and its association with nutrient intakes and diet quality in German children and adolescents.  
*L. Libuda, U. Alexy, A. E. Buyken, W. Sichert-Hellert, P. Stehle & M. Kersting* 1549–1557

***Nutritional Supplementation***

Arachidonic acid prevents fatty liver induced by conjugated linoleic acid in mice.  
*D. Oikawa, S. Tsuyama, Y. Akimoto, Y. Mizobe & M. Furuse* 1558–1563

***Innovative Techniques***

A new method for the study of essential fatty acid requirements in fish larvae.  
*S. Morais & L. E. C. Conceição* 1564–1568

***Appetite***

Influence of intracerebroventricular or intraperitoneal administration of cannabinoid receptor agonist (WIN 55,212-2) and inverse agonist (AM 251) on the regulation of food intake and hypothalamic serotonin levels.  
*I. Merroun, M. Errami, H. Hoddah, G. Urbano, J. M. Porres, P. Aranda, J. Llopis & M. López-Jurado* 1569–1578

**Directions to Contributors - Concise Version***(Revised August 2007)*

The *British Journal of Nutrition* is an international peer-reviewed journal that publishes original papers, review articles, technical notes and short communications in English in all branches of nutritional science. **Prospective authors should note that they (or their institutions) now retain the copyright of their material published in the *British Journal of Nutrition*.** As a contributor you are asked to follow the guidelines set out below. For detailed information on the presentation of the technical content of your paper please see the full version of the **Directions to Contributors**, which can be downloaded from the Nutrition Society website (<http://www.nutrition.society.org>). Prospective authors may also contact the Publications Office directly on + 44 (0)20 7605 6555 (telephone), +44 20 7602 1756 (fax), or [edoffice@nutsoc.org.uk](mailto:edoffice@nutsoc.org.uk) (email).

**Papers should be accompanied by a statement to the effect that the conditions laid down in the full Directions to Contributors are accepted. The statement should affirm that the submission represents original work that has not been published previously and which is not currently being considered by another journal. It should also confirm that each author has seen and approved the contents of the submitted paper. At the time of acceptance the authors should provide a completed copy of the 'Licence to Publish' (in lieu of copyright transfer). The Licence to Publish is available on the Nutrition Society website (<http://www.nutrition.society.org>). All relevant financial interests should be declared.**

**Text.** Papers should be submitted with 1.5 line spacing and margins of at least 2 cm on each side. Text should be printed without underlining, bold or italics (except for scientific names). Standard abbreviations (e.g. Fig. and Figs.) and SI units should be used. **Typescripts can be submitted as Word, WordPerfect, EPS, Text, Postscript or RTF files. A Word processing format is required for production purposes once papers have been accepted. When substantial revisions are required to typescripts, authors are given the opportunity to do this once only, the need for any further changes should at most reflect any minor issues.**

**Title Page.** The first page should include a concise, informative title together with the names and addresses of the authors. A contact name for correspondence should be given and telephone, fax and email addresses provided. Authors should supply three or four key words or phrases (each containing up to three words). A short title of up to 45 characters is required as a running head.

**Abstract.** Each paper should commence with an accurate and informative abstract, written as a single paragraph. It should be complete in itself and intelligible without reference to the text or figures, and should not exceed 250 words.

**Tables.** Tables should be reduced to the simplest form, and should not duplicate information in the text or figures. They should be typed on separate pages, one page for each Table, at the end of the article and carry headings describing their content.

**Illustrations.** The original illustrations should accompany the submitted typescript. Text figures, line drawings, computer-generated figures and graphs should be of sufficient size and quality to allow for reduction by half or two-thirds. Half-tone photographs are acceptable where they clearly contribute to the text. All figures should be numbered and legends should be provided.

Note that authors will be charged 350 GBP for the publication of colour figures. Authors from countries entitled to free journal access through HINARI will be exempt from these charges.

**References.** References should be based on the numbered (Vancouver) system. **When an article has more than ten authors, only the names of the first three should be given followed by *et al.*; give abbreviated journal titles and conform to the following styles:**

- Goel V, Cheema SK, Agellon LB, Ooraikul B & Basu TK (1999) Dietary rhubarb (*Rheum rhabarbarum*) stalk fibre stimulates cholesterol 7 $\alpha$ -hydroxylase gene expression and bile acid excretion in cholesterol-fed C57BL/6J mice. *Br J Nutr* **81**, 65–71.
- Jenkins DJ, Kendall CW, Marchie A, *et al.* (2003) The effect of combining plant sterols, soy protein, viscous fibres, and almonds in treating hypercholesterolemia. *Metabolism* **52**, 1478–1483.
- Brandtzaeg P (2003) Role of local immunity and breast-feeding in mucosal homeostasis and defence against infections. In *Nutrition and Immune Function*, pp. 273–320 [PC Calder, CJ Field and HS Gill, editors]. Wallingford, Oxon: CAB International.
- Stock M & Rothwell NJ (1982) *Obesity and Leanness: Basic Aspects*. London: John Libbey.

Citations should be numbered consecutively in the order in which they first appear in the text using superscript Arabic numerals in parentheses, e.g. 'The conceptual difficulty of this approach has recently been highlighted<sup>(1,2-4)</sup>. If a reference is cited more than once the same number should be used each time.

**Referees.** Authors are asked to submit the names of up to four scientists who would be well-qualified to review the paper; however, no more than one such reviewer will be used. The email addresses and institutions of the named reviewers should be given.

**Proofs.** PDF page proofs will be emailed to authors for checking, and should be returned within 3 days (by fax or Express mail) to the BJN Production Editor, Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, UK; fax +44 1223 325802, email [bjnproduction@cambridge.org](mailto:bjnproduction@cambridge.org)

**Typescripts. The *British Journal of Nutrition* operates an on-line submission and reviewing system (eJournalPress). Authors should submit to the following address: <http://bjn.msubmit.net/> If any difficulties are encountered please contact the Publications Office (details above) immediately.**

Professor Philip Calder  
Editor-in-Chief  
British Journal of Nutrition  
The Nutrition Society  
10 Cambridge Court  
210 Shepherds Bush Road  
London W6 7NJ  
UK

Tel: +44 (0)20 7605 6555  
Fax: +44 20 7602 1756  
Email: [edoffice@nutsoc.org.uk](mailto:edoffice@nutsoc.org.uk)

## Contents

### Short Communication

- Glycaemic status in relation to oxidative stress and inflammation in well-controlled type 2 diabetes subjects.  
*E. Rytter, B. Vessby, R. Åsgård, C. Johansson, A. Sjödin, L. Abramsson-Zetterberg, L. Möller & S. Basu* 1423–1426
- Association of intakes of fat, dietary fibre, soya isoflavones and alcohol with uterine fibroids in Japanese women.  
*C. Nagata, K. Nakamura, S. Oba, M. Hayashi, N. Takeda & K. Yasuda* 1427–1431

### Molecular Nutrition

- In vivo* vitamin C supplementation increases phosphoinositol transfer protein expression in peripheral blood mononuclear cells from healthy individuals.  
*H. R. Griffiths, R. S. Willetts, M. M. Grant, N. Mistry, J. Lunec & R. J. Bevan* 1432–1439
- Effect of apoE genotype and dietary quercetin on blood lipids and TNF- $\alpha$  levels in apoE3 and apoE4 targeted gene replacement mice.  
*C. Boesch-Saadatmandi, S. Wolfram, A. M. Minihane & G. Rimbach* 1440–1443
- Genetic potential for the regulation of variability in body lipid and protein content of European whitefish (*Coregonus lavaretus*).  
*A. Kaase, C. D. Quinton, K. Ruohonen & J. Koskela* 1444–1451

### Metabolism and Metabolic Studies

- Ontogenic effects of early feeding of sea bass (*Dicentrarchus labrax*) larvae with a range of dietary n-3 highly unsaturated fatty acid levels on the functioning of polyunsaturated fatty acid desaturation pathways.  
*M. Vagner, J. H. Robin, J. L. Zambonino-Infante, D. R. Tocher & J. P.-L. Ruyet* 1452–1462
- Effect of calcium-enriched high-fat diet on calcium, magnesium and zinc retention in mice.  
*L. Pérez-Gallardo, M. Gómez, P. Parra, J. Sánchez, A. Palou & F. Serra* 1463–1466

### Nutrition Endocrinology

- The diabetogenic effects of excessive ethanol: reducing  $\beta$ -cell mass, decreasing phosphatidylinositol 3-kinase activity and GLUT-4 expression in rats.  
*L.-N. Zhao, L.-P. Hao, X.-F. Yang, C.-J. Ying, D. Yu & X.-F. Sun* 1467–1473

### Gene Expression

- Analysis of differential gene-regulatory responses to zinc in human intestinal and placental cell lines.  
*K. A. Jackson, R. A. Valentine, J. A. McKay, D. C. Swan, J. C. Mathers & D. Ford* 1474–1483

### Microbiology

- Inhibition of methanogens by bromochloromethane: effects on microbial communities and rumen fermentation using batch and continuous fermentations.  
*G. Goel, H. P. S. Makkar & K. Becker* 1484–1492
- Comparative effects of very low-carbohydrate, high-fat and high-carbohydrate, low-fat weight-loss diets on bowel habit and faecal short-chain fatty acids and bacterial populations.  
*G. D. Brinkworth, M. Noakes, P. M. Clifton & A. R. Bird* 1493–1502

### Human and Clinical Nutrition

- Acute effects of ingesting glucose solutions on blood and plasma volume.  
*G. H. Evans, S. M. Shirreffs & R. J. Maughan* 1503–1508
- Impact of intestinal permeability, inflammation status and parasitic infections on infant growth faltering in rural Bangladesh.  
*R. Goto, C. G. N. Mascie-Taylor & P. G. Lunn* 1509–1516
- Long-term moderate intervention with n-3 long-chain PUFA-supplemented dairy products: effects on pathophysiological biomarkers in patients with rheumatoid arthritis.  
*C. Dawczynski, R. Schubert, G. Hein, A. Müller, T. Eidner, H. Vogelsang, S. Basu & G. Jahreis* 1517–1526
- Maternal weight and lean body mass may influence the lactation-related bone changes in young undernourished Indian women.  
*B. Kulkarni, V. Shatrugna, B. Nagalla, P. A. Kumar, K. U. Rani & A. C. Omkar* 1527–1533
- Low serum zinc concentrations predict mortality in patients referred to coronary angiography.  
*S. Pilz, H. Dobnig, B. M. Winkhofer-Roob, W. Renner, U. Seelhorst, B. Wellnitz, B. O. Boehm & W. März* 1534–1540

(Contents continued facing inside back cover)