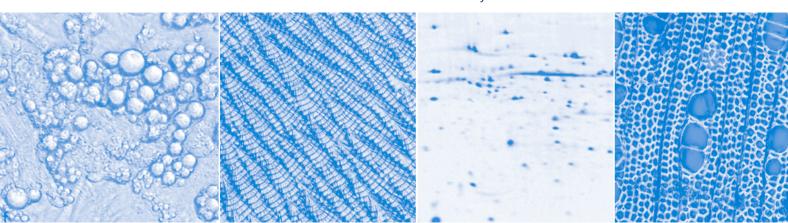
## Published online by Cambridge University Press

# British Journal of Nutrition

**BJN** An International Journal of Nutritional Science

Volume 105 Number 3 14 February 2011



### **British Journal of Nutrition**

An International Journal of Nutritional Science

Volume 105, 2011 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 Tables of contents and abstracts are available free at the same website.

### **Editor-in-Chief**

P C Calder, School of Medicine, University of Southampton, Southampton, UK

### **Deputy Editors**

F Bellisle, INRA, University of Paris, Bobigny, France

D R Jacobs Jr, School of Public Health, University of Minnesota, Minneapolis, MN, USA R J Wallace, Gut Health Programme, Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, UK

S J Whiting, College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Sask., Canada

I S Wood, Institute of Ageing and Chronic Disease, University of Liverpool, Liverpool, UK

### **Reviews Editors**

J C Mathers, Institute of Ageing and Health, Newcastle University, Newcastle upon Tyne, UK P Aggett

### **Systematic Reviews Editor**

M Makrides, Women's and Children's Health Research Institute and University of Adelaide, Adelaide, Australia

### **Supplements Editor**

C Seal, School of Agriculture, Food and Rural Development, Newcastle University, Newcastle upon Tyne, UK

### **Book Reviews Editor**

O B Kennedy, School of Food Biosciences, University of Reading, Reading, UK

### **Editorial Board**

J J B Anderson, Chapel Hill, NC, USA D Attaix, Ceyrat, France Y Bao, Norwich, UK

J H Beattie, Aberdeen, UK G Bell, Stirling, UK

M Blaut, Bergholz-Rehbrücke, Germany

K Botham, London, UK

G C Burdge, Southampton, UK

A E Buyken, Dortmund, Germany

J Buyse, Leuven, Belgium

K D Cashman, Cork, Ireland

M S Choi, Daegu, Korea

A Chwalibog, Frederiksberg, Denmark

S J Duthie, Aberdeen, UK K Eder, Giessen, Germany

A Esmaillzadeh, Isfahan, Iran

C J Field, Edmonton, Alta., Canada

B A Fielding, Oxford, UK

J L Firkins, Columbus, OH, USA

J K Friel, Winnipeg, MB, Canada

M Fukushima, Obihiro City, Japan

S Garnett, Sydney, Australia

B A Griffin, Surrey, UK

J C G Halford, Liverpool, UK

E Herrera, Madrid, Spain

M M Hetherington, Leeds, UK

D J Hoffman, New Brunswick, NJ, USA

E J Johnson, Boston, MA, USA

S J Kaushik, Saint Pée-sur-Nivelle, France

D S Kelley, Davis, Ca., USA C W C Kendall, Toronto, Ont., Canada

H J Lightowler, Oxford, UK A M López-Sobaler, Madrid, Spain

J A Lovegrove, Reading, UK

H C Lukaski, Grand Forks, ND, USA

R D Mattes, West Lafayette, IN, USA

C Mayer, Aberdeen, UK

S McCann, Buffalo, NY, USA

N M McKeown, Boston, MA, USA

G McNeill, Aberdeen, UK

J G Mercer, Aberdeen, UK

A M Minihane, Auckland, New Zealand

T A Mori, Perth, Australia

M Murphy, Reus, Spain

P Nestel, Southampton, UKU Nöthlings, Kiel, Germany

M C Ocké, Bilthoven, The Netherlands

J H Y Park, Chuncheon, Korea

C J Petry, Cambridge, UK

V Ravindran, Palmerston North,

New Zealand

W D Rees, Aberdeen, UK

G Rimbach, Kiel, Germany

S M Robinson, Southampton, UK

E Ros, Barcelona, Spain

S Salminen, Turku, Finland

M B Schulze, Nuthetal, Germany

A J Sinclair, Geelong, Australia

C R Sirtori, Milan, Italy

K S Swanson, Urbana, IL, USA

M W A Verstegen, Wageningen,

The Netherlands

F Visioli, Madrid, Spain

M S Westerterp-Plantenga, Maastricht,

The Netherlands

B Woodward, Guelph, Ont., Canada M R Yeomans, Sussex, UK

### **Publications Staff**

C Goodstein (Publications Manager), C Jackson (Deputy Publications Manager), L Weeks, H Zdravics and C T Hughes (Publications Officers) and S Hui (Publications Assistant)

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

The Nutrition Society Home Page is at http://www.nutritionsociety.org

## **Contents**

| Molecular Nutrition  |         |
|--|---------|
| Maternal consumption of high-prebiotic fibre or -protein diets during pregnancy and lactation differentially influences satiety hormones and expression of genes involved in glucose                         |         |
| and lipid metabolism in offspring in rats.  A. D. Maurer & R. A. Reimer  | 329-338 |
| Flaxseed cotyledon fraction reduces tumour growth and sensitises tamoxifen treatment of human breast cancer xenograft (MCF-7) in athymic mice.   |         |
| <ul> <li>J. Chen, J. K. Saggar, P. Corey &amp; L. U. Thompson</li> <li>EPA inhibits the inhibitor of κΒα (ΙκΒα)/NF-κΒ/muscle RING finger 1 pathway in C2C12 myotubes in a PPARγ-dependent manner.</li> </ul> | 339-347 |
| F. Huang, H. Wei, H. Luo, S. Jiang & J. Peng   | 348-356 |
| Metabolism and Metabolic Studies   |         |
| Oral bioavailability of ATP after prolonged administration.  |         |
| E. J. C. M. Coolen, I. C. W. Arts, O. Bekers, C. Vervaet, A. Bast & P. C. Dagnelie   | 357–366 |
| Free acid gel form of β-hydroxy-β-methylbutyrate (HMB) improves HMB clearance from   |         |
| plasma in human subjects compared with the calcium HMB salt.   | 367-372 |
| J. C. Fuller Jr, R. L. Sharp, H. F. Angus, S. M. Baier & J. A. Rathmacher<br>Products deriving from microbial fermentation are linked to insulinaemic response in pigs                                       | 307-372 |
| fed breads prepared from whole-wheat grain and wheat and rye ingredients.  |         |
| P. K. Theil, H. Jørgensen, A. Serena, J. Hendrickson & K. E. B. Knudsen  | 373-383 |
| 1. R. Then, II. Syrgensen, A. Serena, J. Henarienson & R. E. B. Khaasen  | 313 303 |
| Nutritional Toxicology   |         |
| Calcium carbonate suppresses haem toxicity markers without calcium phosphate side effects  |         |
| on colon carcinogenesis.   |         |
| O. Allam, D. Bahuaud, S. Taché, N. Naud, D. E. Corpet & F. H. F. Pierre  | 384-392 |
| Hamman and Clinical Nation   |         |
| Human and Clinical Nutrition  Effect of milk protein addition to a carbohydrate-electrolyte rehydration solution ingested after  |         |
| exercise in the heat.  |         |
| L. J. James, D. Clayton & G. H. Evans  | 393-399 |
| Weight loss during tuberculosis treatment is an important risk factor for drug-induced   | 373 377 |
| hepatotoxicity.  |         |
| I. Warmelink, N. H. ten Hacken, T. S. van der Werf & R. van Altena   | 400-408 |
| Bifidobacterium animalis subsp. lactis BB-12 in reducing the risk of infections in infancy.  |         |
| T. Taipale, K. Pienihäkkinen, E. Isolauri, C. Larsen, E. Brockmann, P. Alanen, J. Jokela &   |         |
| E. Söderling   | 409-416 |
| High-oleic rapeseed (canola) and flaxseed oils modulate serum lipids and inflammatory  |         |
| biomarkers in hypercholesterolaemic subjects.  | 415 405 |
| L. G. Gillingham, J. A. Gustafson, SY. Han, D. S. Jassal & P. J. H. Jones  | 417-427 |
| Distant Company and Natritional Enidomiology   |         |
| Dietary Surveys and Nutritional Epidemiology  Comparison of the effects of dietary protein, androstenediol and forearm muscle area on  |         |
| radial bone variables in healthy prepubertal children.   |         |
| L. Libuda, S. A. Wudy, E. Schoenau & T. Remer  | 428-435 |
| Higher risk of zinc deficiency in New Zealand Pacific school children compared with their  | 120 133 |
| Māori and European counterparts: a New Zealand national survey.  |         |
| R. S. Gibson, K. B. Bailey, W. R. Parnell, N. Wilson & E. L. Ferguson  | 436-446 |
| Two non-consecutive 24 h recalls using EPIC-Soft software are sufficiently valid for comparing   |         |
| protein and potassium intake between five European centres – results from the European   |         |
| Food Consumption Validation (EFCOVAL) study.   |         |
| S. P. Crispim, J. H. M. de Vries, A. Geelen, O. W. Souverein, P. J. M. Hulshof,  |         |
| L. Lafay, AS. Rousseau, I. T. L. Lillegaard, L. F. Andersen, I. Huybrechts,  |         |
| W. De Keyzer, J. Ruprich, M. Dofkova, M. C. Ocke, E. de Boer, N. Slimani   | 447-458 |
| & P. van't Veer, on behalf of the EFCOVAL consortium  Diet and risk of endometriosis in a population-based case—control study.   | 44/-438 |
| B. Trabert, U. Peters, A. J. De Roos, D. Scholes & V. L. Holt  | 459-467 |
| Sources of sodium in Australian children's diets and the effect of the application of sodium   | 155 107 |
| targets to food products to reduce sodium intake.  |         |
| C. A. Grimas V. I. Campbell I. I. Piddell & C. A. Noussen  | 169 177 |

| Innovative Techniques   |           |
|---|-----------|
| Accuracy of a digital skinfold system for measuring skinfold thickness and estimating body fat.<br>T. F. Amaral, M. T. Restivo, R. S. Guerra, E. Marques, M. F. Chousal & J. Mota |           |
|   | 478-484   |
|   |           |
| Letter to the Editor  |           |
| Randomised trials on vitamin C.   |           |
| H. Hemilä   | 485 - 487 |
| Reply to Hemilä by Lykkesfeldt and Poulsen.   |           |
| J. Lykkesfeldt & H. E. Poulsen  | 488       |
|   |           |