NUTRITION RESEARCH REVIEWS

Volume: 32

Number: 2

December 2019

Available online at www.journals.cambridge.org



Nutrition Research Reviews

Volume 32, 2019 ISSN: 0954-4224

Aims and Scope

Nutrition Research Reviews publishes comprehensive and challenging review articles on selected key topics in nutritional science. Authors are encouraged to take a critical approach in appraising the literature while also aiming to advance new concepts and hypotheses. The journal publishes both solicited and unsolicited articles.

Nutrition Research Reviews is published twice a year by Cambridge University Press on behalf of The Nutrition Society.

Editor-in-Chief

J V Woodside, Belfast, UK

Deputy Editor

Jos Houdijk, Scotland's Rural College, UK

Editorial Board

M Ashwell, Ashford, UK J L Black, Warrimoo, Australia D Dardevet, Theix, France C Edwards, Glasgow, UK Javier Gonzalez, Bath, UK C Haskell-Ramsey, Newcastle-upon-Tyne, UK J M Hibbert, Atlanta, GA, USA T Hill, Newcastle-upon-Tyne, UK J K Lodge, Newcastle-upon-Tyne, UK C Lowis, York, UK N W Solomons, Guatemala City, Guatemala W Stonehouse, Adelaide, Australia C M Weaver, West Lafayette, IN, USA K M Younger, Dublin, Republic of Ireland

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

Nutrition Research Reviews Volume 32, 2019 ISSN: 0954-4224

Publishing, Production, Marketing, and Subscription Sales Office:

Cambridge University Press University Printing House Shaftesbury Road Cambridge CB2 8BS, UK

For Customers in North America:

One Liberty Plaza New York NY 10006 United States

Publisher: Caroline Black

Nutrition Research Reviews is an international journal published biannually (June and December) by Cambridge University Press on behalf of the Nutrition Society.

Subscription information:

Volume 32 2019 (2 issues) Internet/print package: £318/\$621 American only/€494 EU only Internet only: £215/\$398 Americas only/€323 EU only

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 *Nutrition Research Reviews*, Cambridge University Press, 100 Brook Hill Drive, West Nyack, New York 10994–2133.

Information for Authors: The journal publishes both solicited and unsolicited review articles. For unsolicited material, authors are asked to submit a summary of the article to the Editor-in-chief in the first instance:

Professor Jayne Woodside Centre for Public Health Queen's University Belfast Institute of Clinical Science B Grosvenor Road Belfast, BT12 6BJ UK

Tel: 44(0)2890632585 Fax: 44(0)2890235900 Email: j.woodside@qub.ac.uk

Directions to Contributors: are available from the Editor-in-chief.

Offprints: The author (or main author) of an accepted paper will receive a free PDF of their paper and a voucher copy of the issue in which their paper has been published. Additional offprints are available for a fee and should be ordered at proof stage. **No page charges are levied by this journal.**

Copyright: As of July 2000 the copyright of all articles submitted to *Nutrition Research Reviews* 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, 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.

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 for information.

Subscribers may register for free access to the electronic version of *Nutrition Research Reviews*. For more information visit the website at: journals.cambridge.org

Nutrition Research Reviews is covered by the Science Citation Index®, Current Contents® / Agriculture, Biology & Environmental Sciences, SciSearch®, Research Alert®, Index to Scientific Reviews®, EMBASE/Excerpta Medica, Chemical Abstracts Services, CINAHL® Database, CAB ABSTRACTS®, Global Health, BIOSIS® Database, SIIC Databases