DESCRIPTION

*Nutrition Research*: An International Publication for Nutrition to Advance Food and Life Science Research

*Nutrition Research* publishes research articles, communications, and reviews on all aspects of basic and applied nutrition. The mission of *Nutrition Research* is to serve as the journal for global communication of nutrition and life sciences research on diet and health. The field of nutritional sciences includes, but is not limited to, the study of nutrients during growth, reproduction, aging, and disease.

Articles covering basic and applied research on all aspects of nutritional sciences are encouraged, including: nutritional biochemistry and metabolism; metabolomics, nutrient and gene interactions; nutrient requirements in health and disease; digestion and absorption; nutritional anthropology and epidemiology; the influence of socioeconomic and cultural factors on nutrition of the individual and the community; the impact of nutrient intake on disease response, work performance and behavior; the consequences of nutritional deficiency on growth and development, endocrine and nervous systems, and immunity; food intolerance and allergy; nutrient drug interactions; nutrition and aging; nutrition and cancer; obesity; diabetes; and intervention programs.

A principal focus of the journal is to publish research that advances the understanding of nutrients and health protectants in food for improving the human condition. Of interest are manuscripts on the development of biomarkers for assessing how dietary components influence health status in the human.

The journal also encourages submission of manuscripts describing investigations in animal models and cell cultures that utilize methodologic approaches or techniques in biochemistry, immunology, molecular biology, toxicology, and physiology. Epidemiologic studies on nutrient and phytochemical intakes in human populations and novel analytical techniques for these compounds are within the scope of the mission for *Nutrition Research*.

*Nutrition Research* is affiliated with the [The Korean Nutrition Society](http://www.kns.or.kr) and [The Korean Society of Community Nutrition](http://www.knscn.or.kr).
AUDIENCE

Nutrition Scientists, Dietitians, Physicians, Biochemists, Epidemiologists.

IMPACT FACTOR

2017: 2.707 © Clarivate Analytics Journal Citation Reports 2018

ABSTRACTING AND INDEXING

SciSearch
Index to Scientific Reviews
BIOMED
Science Citation Index
Elsevier BIOBASE
Reference Update
Current Contents/Life Sciences
Index Medicus
MEDLINE®
EMBASE
Scopus

EDITORIAL BOARD

Editor-in-Chief
Bruce A. Watkins, Dept. of Nutrition, University of California, Davis, California, USA

Regional Editors
Philip Calder, University of Southampton, UK, Region: United Kingdom
Young-Hee Kang, Hallym University, South Korea, Region: South Korea
Helen Truby, Monash University, Australia, Region: Australia
Mark Wahlqvist, Monash University, Australia and Zhejiang University, Hangzhou, China, Regions: China, Hong Kong, and Taiwan
Hope A. Weiler, McGill University, Canada, Region: Canada

Editorial Advisory Board
Donald Beitz, Iowa State University, Ames, Iowa, USA
Kevin Fritsche, University of Missouri, Columbia, Missouri, USA
Ruth S. MacDonald, Iowa State University, Ames, Iowa, USA
Sue A. Shapses, Rutgers University, New Brunswick, New Jersey, USA
Cornelia M. Ulrich, Huntsman Cancer Institute, University of Utah, Salt Lake City, Utah, USA
Hope A. Weiler, McGill University, Ste-Anne-de-Bellevue, Quebec, Canada

Board of Review Editors
G. Harvey Anderson, University of Toronto, Toronto, Ontario, Canada
John Anderson, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA
David J. Baer, USDA-ARS, Beltsville Human Nutrition Research Center, Beltsville, Maryland, USA
John Bogden, Rutgers New Jersey Medical School, Newark, New Jersey, USA
Bradley Bolling, University of Wisconsin at Madison, Madison, Wisconsin, USA
Jennie Brand-Miller, The University of Sydney, Sydney, New South Wales, Australia
Richard S. Bruno, The Ohio State University, Columbus, Ohio, USA
Wayne Campbell, Purdue University, West Lafayette, Indiana, USA
Tim P. Carr, University of Nebraska at Lincoln, Lincoln, Nebraska, USA
Gemma Casadesus Smith, Kent State University, Kent, Ohio, USA
Wendy Dahl, University of Florida - IFAS, Gainesville, Florida, USA
Mario G. Ferruzzi, North Carolina State University, Kannapolis, North Carolina, USA
Emma Foster, Newcastle University, Newcastle Upon Tyne, UK
Philippe Frank, University François-Rabelais of Tours, Tours Cedex, France
William S. Harris, University of South Dakota, Vermillion, South Dakota, USA
Kate Huggins, Monash University, Clayton, Victoria, Australia
Amanda B. Hummon, University of Notre Dame, Notre Dame, Indiana, USA
Catherine Itsiopoulos, La Trobe University, Bundoora, Victoria, Australia
Darshan S. Kelley, USDA-ARS-WHNRC, University of California, Davis, California, USA
Jennifer Kerns, Veterans Affairs (VA) Medical Center, Washington, District of Columbia, USA
Marlena Kruger, Massey University, Palmerston North, New Zealand
Christel Lamberg-Allardt, University of Helsinki, Helsinki, Finland
Alessandro Laviano, Sapienza University of Rome, Rome, Italy
Kenneth N. Maclean, University of Colorado School of Medicine, Aurora, Colorado, USA
Denis Medeiros, University of Missouri at Kansas City, Kansas City, Missouri, USA
Nancy E. Moran, USDA-ARS, Children's Nutrition Research Center at Baylor College of Medicine, Houston, Texas, USA
Manabu T. Nakamura, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA
John W. Newman, USDA-ARS-WHNRC, University of California at Davis, Davis, California, USA
Nora O'Brien, University College Cork, Cork, Ireland
Aifric O'Sullivan, University College Dublin, Belfield, Dublin, Ireland
Jung Han Yoon Park, Hallym University, Chuncheon, The Republic of Korea
Yongsoon Park, Hanyang University, Seoul, The Republic of Korea
Kristina Rother, NIDDK, NIH, Bethesda, Maryland, USA
Satoshi Sasaki, The University of Tokyo, Chiba, Japan
Chwan-Li (Leslie) Shen, Texas Tech University, Lubbock, Texas, USA
Brenda J. Smith, Oklahoma State University, Stillwater, Oklahoma, USA
Vivian M.M. Suen, University of Sao Paulo (USP), Sao Paulo, SP, Brazil
Susanne U. Talcott, Texas A&M University, College Station, Texas, USA
Stella L. Volpe, Drexel University, Philadelphia, Pennsylvania, USA
Dayong Wu, Tufts University, Boston, Massachusetts, USA
Steven H. Zeisel, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

Editorial Manager
Angela Ranalli-Curtis, BA, Department of Nutrition, University of California at Davis, Davis, California, USA
GUIDE FOR AUTHORS

INTRODUCTION

Nutrition Research publishes research articles, communications, and reviews on all aspects of basic and applied nutrition. The mission of Nutrition Research is to serve as the journal for global communication of nutrition and life sciences research on diet and health. The field of nutritional sciences includes, but is not limited to, the study of nutrients during growth, reproduction, aging, and disease.

Articles covering basic and applied research on all aspects of nutritional sciences are encouraged, including: nutritional biochemistry and metabolism; metabolomics, nutrient and gene interactions; nutrient requirements in health and disease; digestion and absorption; nutritional anthropology and epidemiology; the influence of socioeconomic and cultural factors on nutrition of the individual and the community; the impact of nutrient intake on disease response, work performance and behavior; the consequences of nutritional deficiency on growth and development, endocrine and nervous systems, and immunity; food intolerance and allergy; nutrient drug interactions; nutrition and aging; nutrition and cancer; obesity; diabetes; and intervention programs.

A principal focus of the journal is to publish research that advances the understanding of nutrients and health protectants in food for improving the human condition. Of interest are manuscripts on the development of biomarkers for assessing how dietary components influence health status in the human.

The journal also encourages submission of manuscripts describing investigations in animal models and cell cultures that utilize methodologic approaches or techniques in biochemistry, immunology, molecular biology, toxicology, and physiology. Epidemiologic studies on nutrient and phytochemical intakes in human populations and novel analytical techniques for these compounds are within the scope of the mission for Nutrition Research.

Dr. Bruce A. Watkins, Editor-in-Chief (baw@purdue.edu or bawatkins@ucdavis.edu)
Angela Ranalli-Curtis, Managing Editor (alrcurtis@gmail.com)

Nutrition Research
Department of Nutrition
University of California, Davis
One Shields Avenue
3135 Meyer Hall
Davis, CA 95616-5270, USA

BEFORE YOU BEGIN

Ethics in publishing

Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication. Nutrition Research has a policy to follow all aspects of publication ethics and depends on the authors of submitted manuscripts to provide complete information on conflict of interests for the execution of research and data collection. The editorial office and publishers of Nutrition Research rely on the authors and their respective institutions to follow the policies to preserve scientific integrity in research and support publication ethics. For information on Ethics in publishing and Ethical guidelines for journal publication see http://www.elsevier.com/publishingethics and http://www.elsevier.com/journal-authors/ethics.

Declaration of interest

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double-blind) or the manuscript file (if single-blind). If there are no interests to declare then please state this: 'Declarations of interest: none'. This summary statement will be ultimately published if the article is accepted. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. More information.
**Submission declaration and verification**
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

**Preprints**
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

**Use of inclusive language**
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

**Authorship**
All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

**Copyright**
Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

**Author rights**
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing
Find out how you can share your research published in Elsevier journals.

**Role of the funding source**
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.
Funding body agreements and policies
Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the gold open access publication fee. Details of existing agreements are available online.
After acceptance, open access papers will be published under a noncommercial license. For authors requiring a commercial CC BY license, you can apply after your manuscript is accepted for publication.

Open access
This journal offers authors a choice in publishing their research:

Subscription
- Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs.
- No open access publication fee payable by authors.
- The Author is entitled to post the accepted manuscript in their institution's repository and make this public after an embargo period (known as green Open Access). The published journal article cannot be shared publicly, for example on ResearchGate or Academia.edu, to ensure the sustainability of peer-reviewed research in journal publications. The embargo period for this journal can be found below.

Gold open access
- Articles are freely available to both subscribers and the wider public with permitted reuse.
- A gold open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.

For gold open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:

Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)
For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The gold open access publication fee for this journal is USD 3000, excluding taxes. Learn more about Elsevier's pricing policy: https://www.elsevier.com/openaccesspricing.

Green open access
Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our green open access page for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. Find out more.

This journal has an embargo period of 12 months.

Elsevier Researcher Academy
Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop.
**Informed consent and patient details**

Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in the paper. Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in an Elsevier publication. Written consents must be retained by the author but copies should not be provided to the journal. Only if specifically requested by the journal in exceptional circumstances (for example if a legal issue arises) the author must provide copies of the consents or evidence that such consents have been obtained. For more information, please review the Elsevier Policy on the Use of Images or Personal Information of Patients or other Individuals. Unless you have written permission from the patient (or, where applicable, the next of kin), the personal details of any patient included in any part of the article and in any supplementary materials (including all illustrations and videos) must be removed before submission.

**Submission**

Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

**Submit your article**
Please submit your article via our online system, EVISE

**Referees**
Please submit the names and institutional e-mail addresses of several potential referees. For more details, visit our Support site. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

**PREPARATION**

Research articles and Reviews should generally not exceed 6000 words and Communications should not exceed 2,500.

Each manuscript submitted must provide a title page, list of abbreviations, abstract page, introduction, methods and materials, results, discussion, list of references, and appropriate presentation of data in tables and figures. In some cases, the results and discussion sections can be combined (e.g., communications).

Text must be in 12-point font (Times New Roman or Arial), double-spaced, with 1-inch margins. Consecutive line numbers must be included in the left margin, starting with the title page and ending with the reference section. Page numbers must be included in the bottom right-hand corner of each page. Text must be aligned to the left only and include 2 hard returns at the end of each paragraph, heading, and subheading.

Text should be clear and concise. Tables, figures and references must be cited in sequence in the text. Past tense should be used in reference to the work on which the paper is based, while present tense is normally limited to existing knowledge and prevailing concepts. Previous knowledge and new contributions should be clearly differentiated.

**Peer review**

This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. More information on types of peer review.

**Use of word processing software**

It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see
also the Guide to Publishing with Elsevier). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

**Embedded math**

If you are submitting an article prepared with Microsoft Word containing embedded math equations then please read this related support information (http://support.elsevier.com/app/answers/detail/a_id/302/). Displayed formulae should be numbered consecutively throughout the manuscript as (1), (2), etc. against the right-hand margin of the page. In cases where the derivation of formulae has been abbreviated, it is of great help to the referees if the full derivation can be presented on a separate sheet not to be published.

**Article structure**

**Subdivision - numbered sections**

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

**Glossary**

Please supply, as a separate list, the definitions of field-specific terms used in your article.

**Abbreviations and Symbols**

Use only standard abbreviations (Scientific Style and Format, The CBE Style Manual for Authors, Editors, and Publishers, 6th ed. Council of Biology, Chicago IL 1994). Abbreviations should not be used in the title or major headings. The full term for which an abbreviation stands for should precede its first use in the text.

**Appendices**

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

**Essential title page information**

- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
- **Corresponding author.** Is responsible for ensuring that all research protocols were approved and for ethical execution of the research. Will handle correspondence at all stages of refereeing and publication, also post-publication. Ensure that the e-mail address is given and that contact details are kept up to date. The requirements for the corresponding author are detailed in the Author Submission Checklist which must be completed for manuscript submission.
- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

**Abstract**

A concise and factual abstract is required. The abstract (limited to 250 words) should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.
Keywords
Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Experimental Diets
All studies that include experimental diets must provide a table that lists the ingredients and enough detail for the nutrient content of those diets. Reference to established diets (such as AIN 93G) is appropriate when the major ingredients are listed and the premix levels are provided (actual details of each vitamin and mineral source listed is not necessary in this case). Diets that are developed with different lipid sources should provide a fatty acid compositional analysis of the lipids. In addition, studies that test a botanical or phytochemical ingredient should provide enough chemical compositional analysis as well as the amount of the active compounds.

Statistical Methods
Tests of statistical analysis must be fully described. Statements about statistical significance of results must be accompanied by indications of the level of significance. This information must be included where numerical and graphic presentation of data is made in the manuscript in footnotes to tables and in the captions of figures rather than in the text only. Also in the statistical methods section of the manuscript, indicate how the data are presented. For example, means - standard deviation must be shown. Always take special care to present only the significant figures for a measurement and appropriate sample size relevant to a power analysis.

Acknowledgements
Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Formatting of funding sources
List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Units
Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI.

Footnotes
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Artwork
Electronic artwork
General points
• Make sure you use uniform lettering and sizing of your original artwork.
• Embed the used fonts if the application provides that option.
• Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Provide captions to illustrations separately.
• Size the illustrations close to the desired dimensions of the published version.
• Submit each illustration as a separate file.
A detailed guide on electronic artwork is available.

You are urged to visit this site; some excerpts from the detailed information are given here.

**Formats**
If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.
Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):
- EPS (or PDF): Vector drawings, embed all used fonts.
- TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
- TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
- TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

**Please do not:**
- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

**Color artwork**
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

**Illustration services**
Elsevier's WebShop offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

**Figure captions**
Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

**Tables**
• Must be numbered consecutively with Arabic numerals.
• Start each table on its own page.
• Use minimal horizontal lines and no vertical lines.
• Must have a description so that reader can understand the table without referring to the text.
• Must have an explanation of the values and statistics used for analysis of the data and properly referenced.
• Tables must be in an editable (word) file.

* All studies that include experimental diets must provide a table that lists the ingredients and enough detail for the nutrient content of those diets. Reference to established diets (such as AIN 93G) is appropriate when the major ingredients are listed and the premix levels are provided (actual details of each vitamin and mineral source listed is not necessary in this case). Diets that are developed with different lipid sources should provide a fatty acid compositional analysis of the lipids. In addition, studies that test a botanical or phytochemical ingredient should provide enough chemical compositional analysis as well as the amount of the active compounds.

**References**
Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Reference links
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley and Zotero, as well as EndNote. Using the word processor plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/nutrition-research
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference style
Text: Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.
List: Number the references (numbers in square brackets) in the list in the order in which they appear in the text.
Examples:
Reference to a journal publication with an article number:

Reference to a book:

Reference to a chapter in an edited book:

Reference to a website:

Reference to a dataset:

Note shortened form for last page number. e.g., 51–9, and that for more than 6 authors the first 6 should be listed followed by 'et al.' For further details you are referred to 'Uniform Requirements for Manuscripts submitted to Biomedical Journals' (J Am Med Assoc 1997;277:927–34) (see also Samples of Formatted References).

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations.

Data visualization
Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

Supplementary material
Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Research data
This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

Data linking
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.
In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

**Mendeley Data**
This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the [Mendeley Data for journals page](#).

**Data in Brief**
You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed and published in the open access data journal, Data in Brief. Please note an open access fee of 500 USD is payable for publication in Data in Brief. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief.

**Data statement**
To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

**Submission Checklist**
- A downloadable checklist is available [here](#).
- The checklist must be completed and signed by the Corresponding Author and uploaded as a "supporting file" during the submission process.

**Document File**
- Title page - page 1
Title - single, declarative statement, stating the major finding of the work.
First name, Middle initial, and Last name of each author (no titles such as MD or PhD).
The affiliations of each author noted with superscripts.
Complete contact information for corresponding author.
Running heads, word counts, and any other information other than that stated above should not be included.
- Abbreviations page - page 2
Must include 1 abbreviation with meaning per line.
Abbreviations should be listed first followed by a semicolon and then the meaning.
Abbreviations must be spelled out when used in the text for the first time.
- Abstract page - page 3
A single, double-spaced paragraph (250 word limit) that includes the hypothesis for the study, experimental design, use of the model for the study, major results, and conclusion.
Do not include subheadings in this section.
It must follow the same format as the rest of the text (alignment, spacing, line numbering, etc.).
- List of at least 5 keywords/phrases taken from the medical subject headings of the Index Medicus ([http://www.nlm.nih.gov/mesh/](http://www.nlm.nih.gov/mesh/)) below the abstract. The model used in the study must be included in the keywords.
- Manuscript text
- Manuscript has been 'spell-checked' and 'grammar-checked'
- Main headings and subheadings must be numbered with Arabic numerals.
- Text must start on a new page and include the following main headings:
Introduction - must state the hypothesis for the research and the supporting objectives to test the hypothesis. Must also state how this study advances human nutrition.
Methods and materials - must explain the experimental design, control and treated groups; details of ingredient composition of diets should be presented in a table; all procedures and techniques must be explained and referenced; method of euthanasia for experimental animals must be stated; statistical analyses section must be complete with information on data presentation; must contain statistical tests and appropriate references; and must include an institutional statement of protocol approval for animal or human subjects (human consent is required).

Results - must thoroughly describe the data presented in tables and figures.

Discussion- should contain a specific description of the literature findings relevant to the results of the current investigation but not go beyond the data presented in the results. The limitations of the study should be included in this section.

Acknowledgment (note spelling).

• Technical or editorial assistance must be acknowledged.
• Financial (grants or gifts) and other support as deemed as appropriate for the study must be indicated.

Do not include author contributions or individual titles (i.e., Dr., PhD, etc...) in this section.

If there is a conflict of interest, that must be stated in this section.

• References

Number consecutively in the order in which they are first mentioned in the text.

In-text citations and reference list numbers must be enclosed within brackets, e.g., [1,2].

The author should make certain that there is a strict one-to- one correspondence between references cited in the text and those in the reference list.

• Permission has been obtained for use of copyrighted material from other sources (including the Web)
• Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print, or to be reproduced in color on the Web (free of charge) and in black-and-white in print
• If only color on the Web is required, black-and-white versions of the figures are also supplied for printing purposes.

For any further information please visit our customer support site at http://support.elsevier.com.

AFTER ACCEPTANCE

Online proof correction

Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

Offprints

The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier’s Webshop. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

AUTHOR INQUIRIES

Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.

You can also check the status of your submitted article or find out when your accepted article will be published.