**Directions to Contributors**

**Nutrition Research Reviews**

*(Revised August 2014)*

*Nutrition Research Reviews* is an international journal that 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. NRR publishes both solicited and unsolicited articles.

**SCOPE**

NRR publishes critical, narrative review articles on key topics in nutritional science. The journal does not publish systematic reviews and meta-analyses. These may be considered by one of the other journals published by The Nutrition Society; please see our website for more details. Systematic reviews/meta-analyses will only be considered by NRR if these constitute a minor part (less than 10%) of the text.

**SUBMISSION AND REVIEW PROCESS**

This journal uses ScholarOne Manuscripts for online submission and peer review. **Authors must first complete and submit a review proposal form** through the online submission system before submission of a full manuscript. If you have been asked to write a proposal by a member of the Editorial Board, please indicate this on the form. The proposal will be reviewed by the Editorial Board, and if accepted, you will be invited to submit a full manuscript.

As part of the online submission process, authors are asked to affirm that the submission represents original work that has not been published previously, and that it is not currently being considered by another journal. Authors must also confirm that each author has seen and approved the contents of the submitted manuscript. Finally, authors should confirm that permission for all appropriate uses has been obtained from the copyright holder for any figures or other material not in his/her copyright, and that the appropriate acknowledgement has been made to the original source.

At submission, authors are asked to nominate at least two potential referees who may then be asked by the Editorial Board to help review the work. NRR uses a single blind review process, and manuscripts are normally reviewed by two external peer reviewers and a member of the Editorial Board.

When substantial revisions are required to manuscripts after review, authors are normally given the opportunity to do this once only; the need for any further changes should at most reflect only minor issues. If a paper requiring revision is not resubmitted within 2 months, it may, on resubmission, be deemed a new paper and the date of receipt altered accordingly.

**PUBLISHING ETHICS**

NRR adheres to the [Committee on Publication Ethics (COPE) guidelines](https://www.publicationethics.org/) on research and publications ethics. The Journal considers all manuscripts on the strict condition that:

1. The manuscript is your own original work, and does not duplicate any other previously published work;
2. The manuscript has been submitted only to the journal - it is not under consideration or peer review or accepted for publication or in press or published elsewhere;
3. All listed authors know of and agree to the manuscript being submitted to the journal; and
4. The manuscript contains nothing that is abusive, defamatory, fraudulent, illegal, libellous, or obscene.

Text taken directly or closely paraphrased from earlier published work that has not been acknowledged or referenced will be considered plagiarism. Submitted manuscripts in which such text is identified will be withdrawn from the editorial process. Any concerns raised about possible plagiarism or other violations of
ethical guidelines in an article submitted to or published in NRR will be investigated fully and dealt with in accordance with the COPE guidelines.

DETAILED MANUSCRIPT PREPARATION INSTRUCTIONS

The below guidelines apply to full manuscripts submitted after acceptance of a review proposal form.

Language

Papers submitted for publication must be written in English and should be as concise as possible. We recommend that authors have their manuscript checked by an English language native speaker before submission, to ensure that submissions are judged at peer review exclusively on academic merit.

We list a number of third-party services specialising in language editing and/or translation, and suggest that authors contact as appropriate. Use of any of these services is voluntary, and at the author’s own expense.

Spelling should generally be that of the Concise Oxford Dictionary (1995), 9th ed. Oxford: Clarendon Press. Authors are advised to consult a current issue of the journal in order to make themselves familiar with NRR as to typographical and other conventions, layout of tables etc.

Authorship

The Journal conforms to the International Committee of Medical Journal Editors (ICMJE) definition of authorship. The contribution of individuals who were involved in the review but do not meet these criteria should be described in the Acknowledgments section.

Cover Letter

When invited to submit a full manuscript, authors are also invited to include a cover letter including a brief summary of the review. The text for the cover letter should be entered in the appropriate box as part of the online submission process.

Manuscript Format

The requirements of NRR are in accordance with the Uniform Requirements for Manuscripts Submitted to Biomedical Journals produced by the ICMJE, and authors are encouraged to consult the latest guidelines, which contain useful, general information about preparing scientific papers.

Typescripts should be prepared with 1.5 line spacing and wide margins (2 cm), the preferred font being Times New Roman size 12. At the ends of lines, words should not be hyphenated unless hyphens are to be printed. Line numbering and page numbering are required.

Manuscripts should be organised as follows, with further sub-divisions depending on the nature of the review:

**Title Page**

The title page should include:
1. The title of the article;
2. Authors’ names;
3. Name and address of department(s) and institution(s) to which the work should be attributed for each author;
4. Name, mailing address, email address, telephone and fax numbers of the author responsible for correspondence about the manuscript;
5. A shortened version of the title, not exceeding 45 characters (including letters and spaces) in length;
6. At least four keywords or phrases (each containing up to three words).

Authors’ names should be given without titles or degrees and one forename may be given in full. Identify each author’s institution by a superscript number (e.g. A.B. Smith¹) and list the institutions underneath and after the final author.
Abstract
Each paper must open with an abstract of **not more than 250 words**. The abstract should be a single paragraph of continuous text outlining the aims of the work, the approach taken, the principal findings and the conclusions and their relevance to nutritional science.

Introduction
It is not necessary to introduce a paper with a full account of the relevant literature, but the introduction should indicate briefly the nature of the question asked and the reasons for asking it.

Main body
The main body of the text should use appropriate headings and subheadings to break up the text and guide the reader. Manuscripts should end with a summary of the overall conclusions.

Acknowledgments
Here you may acknowledge individuals or organizations that provided advice and/or support (non-financial). Formal financial support and funding should be listed in the following section.

Financial Support
Please provide details of the sources of financial support for all authors, including grant numbers. For example, “This work was supported by the Medical research Council (grant number XXXXXXX)”. Multiple grant numbers should be separated by a comma and space, and where research was funded by more than one agency the different agencies should be separated by a semi-colon, with “and” before the final funder. Grants held by different authors should be identified as belonging to individual authors by the authors’ initials. For example, “This work was supported by the Wellcome Trust (A.B., grant numbers XXXX, YYYY), (C.D., grant number ZZZZ); the Natural Environment Research Council (E.F., grant number FFFF); and the National Institutes of Health (A.B., grant number GGGG), (E.F., grant number HHHH)”.

Where no specific funding has been provided for research, please provide the following statement: “This research received no specific grant from any funding agency, commercial or not-for-profit sectors.”

In addition to the source of financial support, please state whether the funder contributed to any aspect of the review, including interpretation of findings or the preparation of the manuscript. If the funder made no such contribution, please provide the following statement: “[Funder’s name] had no role in the design, analysis or writing of this article.”

Conflict of Interest
Conflict of interest exists when an author has interests that might inappropriately influence his or her judgement, even if that judgement is not influenced. Because of this, authors must disclose potentially conflicting interests so that others can make judgements about such effects. Please provide details of all known financial and non-financial (professional and personal) relationships with the potential to bias the work. Where no known conflicts of interest exist, please include the following statement: “None.”

For more information on what constitutes a conflict of interest, please see the ICMJE guidelines.

Authorship
Please provide a very brief description of the contribution of each author to the review. Their roles in planning and writing the article should be made plain.

References
References 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(1,2–4).” If a reference is cited more than once the same number should be used each time. References cited only in tables and figure legends should be numbered in sequence from the last number used in the text and in the order of mention of the individual tables and figures in the text.

Names and initials of authors of unpublished work should be given in the text as ‘unpublished results’ and not included in the References.

At the end of the paper, on a page(s) separate from the text, references should be listed in numerical order using the Vancouver system. When an article has more than three authors only the names of the first three authors should be given followed by ‘et al.’ The issue number should be omitted if there is continuous pagination throughout a volume. Titles of journals should appear in their abbreviated form using the NCBI LinkOut page. References to books and monographs should include the town of publication and the number
Examples of correct forms of references are given below.

**Journal articles**

**Books and monographs**

**Sources from the internet**

**Figures**
Figures should be supplied as separate electronic files. Figure legends should be grouped in a section at the end of the manuscript text. Each figure should be clearly marked with its number and separate panels within figures should be clearly marked (a), (b), (c) etc. so that they are easily identifiable when the article and figure files are merged for review. Each figure, with its legend, should be comprehensible without reference to the text and should include definitions of abbreviations.

We recommend that only TIFF, EPS or PDF formats are used for electronic artwork. Other formats (e.g. JPG, PPT and GIF files and images created in Microsoft Word) are usable but generally NOT suitable for conversion to print reproduction. For further information about how to prepare your figures, including sizing and resolution requirements, please see our artwork guide.

In curves presenting experimental results the determined points should be clearly shown, the symbols used being, in order of preference, ○, ●, △, ▲, □, ■, ×, +. Curves and symbols should not extend beyond the experimental points. Scale-marks on the axes should be on the inner side of each axis and should extend beyond the last experimental point. Ensure that lines and symbols used in graphs and shading used in histograms are large enough to be easily identified when the figure size is reduced to fit the printed page.

Colour figures will be published online free of charge, and there is a fee of £200 per figure for colour figures in the printed version. If you request colour figures in the printed version, you will be contacted by CCC-Rightslink who are acting on our behalf to collect colour charges. Please follow their instructions in order to avoid any delay in the publication of your article.

Images submitted with a manuscript should be minimally processed; some image processing is acceptable (and may be unavoidable), but the final image must accurately represent the original data. Grouping or cropping of images must be identified in the legend and indicated by clear demarcation. Adjustment of brightness, contrast or colour balance is acceptable if applied to the whole image and to controls and if data do not disappear as the result of the manipulation. Authors should provide sufficient detail of image-gathering procedures and process manipulation in the Methods sections to enable the accuracy of image presentation to be assessed. Authors should retain their original data, as Editors may request them for comparison during manuscript review. If such data are unavailable the manuscript may be withdrawn from the review process. If a concern is raised about possible image manipulation in an article published in NRR,
this will be investigated fully and dealt with in accordance with the Committee on Publication Ethics guidelines.

Tables
Tables should be placed in the main manuscript file at the end of the document, not within the main text. Be sure that each table is cited in the text. Tables should carry headings describing their content and should be comprehensible without reference to the text. Tables should not be subdivided by ruled lines.

The dimensions of the values, e.g. mg/kg, should be given at the top of each column. Separate columns should be used for measures of variance (SD, SE etc.), the ± sign should not be used. The number of decimal places used should be standardized; for whole numbers 1.0, 2.0 etc. should be used. Shortened forms of the words weight (wt) height (ht) and experiment (Expt) may be used to save space in tables, but only Expt (when referring to a specified experiment, e.g. Expt 1) is acceptable in the heading.

Footnotes are given in the following order: (1) abbreviations, (2) superscript letters, (3) symbols. Abbreviations are given in the format: RS, resistant starch. Abbreviations in tables must be defined in footnotes in the order that they appear in the table (reading from left to right across the table, then down each column). Symbols for footnotes should be used in the sequence: *†‡§¶, then ** etc. (omit * or †, or both, from the sequence if they are used to indicate levels of significance).

For indicating statistical significance, superscript letters or symbols may be used. Superscript letters are useful where comparisons are within a row or column and the level of significance is uniform, e.g. \(a,b,c\): Mean values within a column with unlike superscript letters were significantly different \((P<0.05)\). Symbols are useful for indicating significant differences between rows or columns, especially where different levels of significance are found, e.g. *Mean values were significantly different from those of the control group: \(*P<0.05, **P<0.01, ***P<0.001\). The symbols used for \(P\) values in the tables must be consistent.

Supplementary material
Additional data (e.g. data sets, large tables) relevant to the paper can be submitted for publication online only, where they are made available via a link from the paper. The paper should stand alone without these data. Supplementary Material must be cited in a relevant place in the text of the paper.

Although Supplementary Material is peer reviewed, it is not checked, copyedited or typeset after acceptance and it is loaded onto the journal’s website exactly as supplied. You should check your Supplementary Material carefully to ensure that it adheres to journal styles. Corrections cannot be made to the Supplementary Material after acceptance of the manuscript. Please bear this in mind when deciding what content to include as Supplementary Material.

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CONTACT

Prospective authors may contact the Editorial Office directly on +44 (0) 1223 347922 (telephone) or nrr.edoffice@cambridge.org (email).

Additionally, more information about the journal, including recent issues, can be found at http://journals.cambridge.org/nrr.
APPENDIX: MATHEMATICAL MODELLING, STATISTICS AND NOMENCLATURE

Mathematical modelling of nutritional processes

Papers in which mathematical modelling of nutritional processes forms the principal element will be considered for publication provided: (a) they are based on sound biological and mathematical principles; (b) they advance nutritional concepts or identify new avenues likely to lead to such advances; (c) assumptions used in their construction are fully described and supported by appropriate argument; (d) they are described in such a way that the nutritional purpose is clearly apparent; (e) the contribution of the model to the design of future experimentation is clearly defined.

Units

Results should be presented in metric units according to the International System of Units (see Quantities, Units and Symbols in Physical Chemistry, 3rd ed. (2007) Cambridge: RSC Publishing), and Metric Units, Conversion Factors and Nomenclature in Nutritional and Food Sciences (1972) London: The Royal Society — as reproduced in Proceedings of the Nutrition Society (1972) 31, 239–247). SI units should be used throughout the paper. The author will be asked to convert any values that are given in any other form. The only exception is where there is a unique way of expressing a particular variable that is in widespread use. Energy values must be given in Joules (MJ or kJ) using the conversion factor 1 kcal = 4.184 kJ. If required by the author, the value in kcal can be given afterwards in parentheses. Temperature is given in degrees Celsius (ºC). Vitamins should be given as mg or µg, not as IU.

For substances of known molecular mass (Da) or relative molecular mass, e.g. glucose, urea, Ca, Na, Fe, K, P, values should be expressed as mol/l; for substances of indeterminate molecular mass (Da) or relative molecular mass, e.g. phospholipids, proteins, and for trace elements, e.g. Cu, Zn, then g/l should be used.

The 24 h clock should be used, e.g. 15.00 hours.

Units are: year, month, week, d, h, min, s, kg, g, mg, µg, litre, ml, µl, fl. To avoid misunderstandings, the word litre should be used in full, except in terms like g/l. Radioactivity should be given in becquerels (Bq or GBq) not in Ci. 1 MBq = 27·03 µCi (1Bq = 1 disintegration/s).

Statistical treatment of results

Data from individual replicates should not be given for large experiments, but may be given for small studies. The methods of statistical analysis used should be described, and references to statistical analysis packages included in the text, thus: Statistical Analysis Systems statistical software package version 6.11 (SAS Institute, Cary, NC, USA). Information such as analysis of variance tables should be given in the paper only if they are relevant to the discussion. A statement of the number of replicates, their average value and some appropriate measure of variability is usually sufficient.

Comparisons between means can be made by using either confidence intervals (CI) or significance tests. The most appropriate of such measures is usually the standard error of a difference between means (SED), or the standard errors of the means (SE or SEM) when these vary between means. The standard deviation (SD) is more useful only when there is specific interest in the variability of individual values. The degrees of freedom (df) associated with SED, SEM or SD should also be stated. The number of decimal places quoted should be sufficient but not excessive. Note that pH is an exponential number, as are the log(10) values often quoted for microbial numbers. Statistics should be carried out on the scalar rather than the exponential values.

If comparisons between means are made using CI, the format for presentation is, e.g. “difference between means 0.73 (95 % CI 0.314, 1.36) g”. If significance tests are used, a statement that the difference between the means for two groups of values is (or is not) statistically significant should include the level of significance attained, preferably as an explicit $P$ value (e.g. $P=0.016$ or $P=0.32$) rather than as a range (e.g. $P<0.05$ or $P>0.05$). It should be stated whether the significance levels quoted are one-sided or two-sided. Where a multiple comparison procedure is used, a description or explicit reference should be given. Where appropriate, a superscript notation may be used in tables to denote levels of significance; similar superscripts should denote lack of a significant difference.

Where the method of analysis is unusual, or if the experimental design is at all complex, further details (e.g. experimental plan, raw data, confirmation of assumptions, analysis of variance tables, etc.) should be included.
Chemical formulas

These should be written as far as possible on a single horizontal line. With inorganic substances, formulas may be used from first mention. With salts, it must be stated whether or not the anhydrous material is used, e.g. anhydrous CuSO₄, or which of the different crystalline forms is meant, e.g. CuSO₄.5H₂O, CuSO₄.3H₂O.

Descriptions of solutions, compositions and concentrations

Solutions of common acids, bases and salts should be defined in terms of molarity (M), e.g. 0.1 M-NaH₂PO₄. Compositions expressed as mass per unit mass (w/w) should have values expressed as ng, µg, mg or g per kg; similarly for concentrations expressed as mass per unit volume (w/v), the denominator being the litre. If concentrations or compositions are expressed as a percentage, the basis for the composition should be specified (e.g. % (w/w) or % (w/v) etc.). The common measurements used in nutritional studies, e.g. digestibility, biological value and net protein utilization, should be expressed as decimals rather than as percentages, so that amounts of available nutrients can be obtained from analytical results by direct multiplication. See Metric Units, Conversion Factors and Nomenclature in Nutritional and Food Sciences. London: The Royal Society, 1972 (para. 8).

Cell lines

The Journal expects authors to deposit cell lines (including microbial strains) used in any study to be published in publicly accessible culture collections, for example, the European Collection of Cell Cultures (ECACC) or the American Type Culture Collection (ATCC) and to refer to the collection and line or strain numbers in the text (e.g. ATCC 53103). Since the authenticity of subcultures of culture collection specimens that are distributed by individuals cannot be ensured, authors should indicate laboratory line or strain designations and donor sources as well as original culture collection identification numbers.

Gene nomenclature and symbols

The use of symbols and nomenclature recommended by the HUGO Gene Nomenclature Committee is encouraged. Information on human genes is also available from Entrez Gene, on mouse genes from the Mouse Genome Database and on rat genes from the Rat Genome Database.

Nomenclature of vitamins

Most of the names for vitamins and related compounds that are accepted by the Editors are those recommended by the IUNS Committee on Nomenclature. See Nutrition Abstracts and Reviews (1978) 48A, 831–835.

<table>
<thead>
<tr>
<th>Acceptable name</th>
<th>Other names*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>Retinol</td>
</tr>
<tr>
<td>Retinaldehyde, retinal</td>
<td>Retinene</td>
</tr>
<tr>
<td>Retinoic acid (all-trans or 13-cis)</td>
<td>Vitamin A₁, acid</td>
</tr>
<tr>
<td>3-Dehydroretinol</td>
<td>Vitamin A₂</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>Ergocalciferol, ercalciol</td>
</tr>
<tr>
<td>Cholecalciferol, calciol</td>
<td>Vitamin D₃</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>α-, β- and γ-tocopherols plus tocotrienols</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>Phylloquinone</td>
</tr>
<tr>
<td>Menaquinoine-n (MK-n)†</td>
<td>Vitamin K₁, K₂</td>
</tr>
<tr>
<td>Menadione</td>
<td>Vitamin K₃ menaquinone, menaphthone</td>
</tr>
<tr>
<td>Vitamin B₁</td>
<td>Thiamin</td>
</tr>
<tr>
<td>Vitamin B₂</td>
<td>Riboflavin</td>
</tr>
<tr>
<td>Niacin</td>
<td>Nicotinamide</td>
</tr>
</tbody>
</table>

*Other names**
Nicotinic acid
Folic Acid
Pteroyl(mono)glutamic acid
Vitamin B₆
Pyridoxine
Pyridoxal
Pyridoxamine
Vitamin B₁₂
Cyanocobalamin
Hydroxocobalamin
Aquocobalamin
Methylcobalamin
Adenosylcobalamin
Inositol
Myo-inositol
Choline
Pantothenic acid
Biotin
Vitamin C
Ascorbic acid
Dehydroascorbic acid

*Including some names that are still in use elsewhere, but are not used by <JOURNAL NAME>.
†Details of the nomenclature for these and other naturally-occurring quinones should follow the Tentative Rules of the IUPAC-IUB Commission on Biochemical Nomenclature (see European Journal of Biochemistry (1975) 53, 15–18).

The terms vitamin A, vitamin C and vitamin D may still be used where appropriate, for example in phrases such as ‘vitamin A deficiency’, ‘vitamin D activity’.

The term vitamin E should be used as the descriptor for all tocol and tocotrienol derivatives exhibiting qualitatively the biological activity of α-tocopherol. The term tocopherols should be used as the generic descriptor for all methyl tocols. Thus, the term tocopherol is not synonymous with the term vitamin E.

The term vitamin K should be used as the generic descriptor for 2-methyl-1,4-naphthoquinone (menaphthone) and all derivatives exhibiting qualitatively the biological activity of phylloquinone (phytylmenaquinone).

The term niacin should be used as the generic descriptor for pyridine 3-carboxylic acid and derivatives exhibiting qualitatively the biological activity of nicotinamide.

The term vitamin B₆ should be used as the generic descriptor for all 2-methylpyridine derivatives exhibiting qualitatively the biological activity of pyridoxine.

Regarding folate, due to the wide range of C-substituted, unsubstituted, oxidized, reduced and mono- or polyglutamyl side-chain derivatives of pteroylmonoglutamic acid that exist in nature, it is not possible to provide a complete list. Authors are encouraged to use either the generic name or the correct scientific name(s) of the derivative(s), as appropriate for each circumstance.

The term vitamin B₁₂ should be used as the generic descriptor for all corrinoids exhibiting qualitatively the biological activity of cyanocobalamin. The term corrinoids should be used as the generic descriptor for all compounds containing the corrin nucleus and thus chemically related to cyanocobalamin. The term corrinoid is not synonymous with the term vitamin B₁₂.

The terms ascorbic acid and dehydroascorbic acid will normally be taken as referring to the naturally-occurring L-forms. If the subject matter includes other optical isomers, authors are encouraged to include the L- or D- prefixes, as appropriate. The same is true for all those vitamins which can exist in both natural and alternative isomeric forms.

Weight units are acceptable for the amounts of vitamins in foods and diets. For concentrations in biological tissues, SI units should be used; however, the authors may, if they wish, also include other units, such as weights or international units, in parentheses. See Metric Units, Conversion Factors and Nomenclature in Nutritional and Food Sciences (1972) paras 8 and 14–20. London: The Royal Society.
Nomenclature of fatty acids and lipids

In the description of results obtained for the analysis of fatty acids by conventional GLC, the shorthand
17, Suppl.) for individual fatty acids should be used in the text, tables and figures. Thus, 18 : 1 should be
used to represent a fatty acid with eighteen carbon atoms and one double bond; if the position and
configuration of the double bond is unknown. The shorthand designation should also be used in the abstract.
If the positions and configurations of the double bonds are known, and these are important to the discussion,
then a fatty acid such as linoleic acid may be referred to as cis-9,cis-12-18 : 2 (positions of double bonds
related to the carboxyl carbon atom 1). However, to illustrate the metabolic relationship between different
unsaturated fatty acid families, it is sometimes more helpful to number the double bonds in relation to the
terminal methyl carbon atom, n. The preferred nomenclature is then: 18 : 3n-3 and 18 : 3n-6 for α-linolenic
and γ-linolenic acids respectively; 18 : 2n-6 and 20 : 4n-6 for linoleic and arachidonic acids respectively and
18 : 1n-9 for oleic acid. Positional isomers such as α- and γ-linolenic acid should always be clearly
distinguished. It is assumed that the double bonds are methylene-interrupted and are of the cis-configuration
(see Holman RT in Progress in the Chemistry of Fats and Other Lipids (1966) vol. 9, part 1, p. 3. Oxford:
Pergamon Press). Groups of fatty acids that have a common chain length but vary in their double bond
content or double bond position should be referred to, for example, as C_{20} fatty acids or C_{20} PUFA. The
modern nomenclature for glycerol esters should be used, i.e. triacylglycerol, diacylglycerol, monoacylglycerol
not triglyceride, diglyceride, monoglyceride. The form of fatty acids used in diets should be clearly stated, i.e.
whether ethyl esters, natural or refined fats or oils. The composition of the fatty acids in the dietary fat and
tissue fats should be stated clearly, expressed as mol/100 mol or g/100 g total fatty acids.

Nomenclature of micro-organisms

The correct name of the organism, conforming with international rules of nomenclature, should be used. If
desired, synonyms may be added in parentheses when the name is first mentioned. Names of bacteria
should conform to the current Bacteriological Code and the opinions issued by the International Committee
on Systematic Bacteriology. Names of algae and fungi must conform to the current International Code of
Botanical Nomenclature. Names of protozoa should conform to the current International Code of Zoological
Nomenclature.

Nomenclature of plants

For plant species where a common name is used that may not be universally intelligible, the Latin name in
italics should follow the first mention of the common name. The cultivar should be given where appropriate.

Other nomenclature, symbols and abbreviations

Authors should consult recent issues of NRR for guidance. The IUPAC rules on chemical nomenclature
should be followed, and the recommendations of the Nomenclature Committee of IUBMB and the IUPAC-
IUBMB Joint Commission on Biochemical Nomenclature and Nomenclature Commission of IUBMB in
(http://www.chem.qmul.ac.uk/iupac/bibliog/white.html). The symbols and abbreviations, other than units, are
essentially those listed in British Standard 5775 (1979–1982), Specifications for Quantities, Units and
Symbols, parts 0–13. Day should be abbreviated to d, for example 7 d, except for ‘each day’, ‘7th day’ and
‘day 1’.

Elements and simple chemicals (e.g. Fe and CO_{2}) can be referred to by their chemical symbol (with the
exception of arsenic and iodine, which should be written in full) or formula from the first mention in the text;
the title, text and table headings, and figure legends can be taken as exceptions,. Well-known abbreviations
for chemical substances may be used without explanation, thus: RNA for ribonucleic acid and DNA for
deoxyribonucleic acid. Other substances that are mentioned frequently (five or more times) may also be
abbreviated, the abbreviation being placed in parentheses at the first mention, thus: lipoprotein lipase (LPL),
after that, LPL, and an alphabetical list of abbreviations used should be included. Only accepted
abbreviations may be used in the title and text headings. If an author’s initials are mentioned in the text, they
should be distinguished from other abbreviations by the use of stops, e.g. ‘one of us (P. J. H.)...’. For UK
counties the official names given in the Concise Oxford Dictionary (1995) should be used and for states of the
USA two-letter abbreviations should be used, e.g. MA (not Mass.) and IL (not Ill.). Terms such as
‘bioavailability’ or ‘available’ may be used providing that the use of the term is adequately defined.

Spectrophotometric terms and symbols are those proposed in IUPAC Manual of Symbols and Terminology
for Physicochemical Quantities and Units (1979) London: Butterworths. The attention of authors is
particularly drawn to the following symbols: m (milli, 10^{-3}), µ (micro, 10^{-6}), n (nano, 10^{-9}) and p (pico, 10^{-12}).
Note also that ml (millilitre) should be used instead of cc, µm (micrometre) instead of µ (micron) and µg (microgram) instead of γ.

Numerals should be used with units, for example, 10 g, 7 d, 4 years (except when beginning a sentence, thus: 'Four years ago...'); otherwise, words (except when 100 or more), thus: one man, ten ewes, ninety-nine flasks, three times (but with decimal, 2.5 times), 100 patients, 120 cows, 136 samples.

Abbreviations

The following abbreviations are accepted without definition by NRR:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADP (GDP)</td>
<td>adenosine (guanosine) 5'-disphosphate</td>
</tr>
<tr>
<td>AIDS</td>
<td>acquired immune deficiency syndrome</td>
</tr>
<tr>
<td>AMP (GMP)</td>
<td>adenosine (guanosine) 5'-monophosphate</td>
</tr>
<tr>
<td>ANCOVA</td>
<td>analysis of covariance</td>
</tr>
<tr>
<td>ANOVA</td>
<td>analysis of variance</td>
</tr>
<tr>
<td>apo</td>
<td>apolipoprotein</td>
</tr>
<tr>
<td>ATP (GTP)</td>
<td>adenosine (guanosine) 5'-triphosphate</td>
</tr>
<tr>
<td>AUC</td>
<td>area under the curve</td>
</tr>
<tr>
<td>BMI</td>
<td>body mass index</td>
</tr>
<tr>
<td>BMR</td>
<td>basal metabolic rate</td>
</tr>
<tr>
<td>bp</td>
<td>base pair</td>
</tr>
<tr>
<td>BSE</td>
<td>bovine spongiform encephalopathy</td>
</tr>
<tr>
<td>CHD</td>
<td>coronary heart disease</td>
</tr>
<tr>
<td>CI</td>
<td>confidence interval</td>
</tr>
<tr>
<td>CJD</td>
<td>Creutzfeldt-Jacob disease</td>
</tr>
<tr>
<td>CoA and acyl-CoA</td>
<td>co-enzyme A and its acyl derivatives</td>
</tr>
<tr>
<td>CV</td>
<td>coefficient of variation</td>
</tr>
<tr>
<td>CVD</td>
<td>cardiovascular disease</td>
</tr>
<tr>
<td>Df</td>
<td>degrees of freedom</td>
</tr>
<tr>
<td>DHA</td>
<td>docosahexaenoic acid</td>
</tr>
<tr>
<td>DM</td>
<td>dry matter</td>
</tr>
<tr>
<td>DNA</td>
<td>deoxyribonucleic acid</td>
</tr>
<tr>
<td>dpm</td>
<td>disintegrations per minute</td>
</tr>
<tr>
<td>EDTA</td>
<td>ethylenediaminetetra-acetic acid</td>
</tr>
<tr>
<td>ELISA</td>
<td>enzyme-linked immunosorbent assay</td>
</tr>
<tr>
<td>EPA</td>
<td>eicosapentaenoic acid</td>
</tr>
<tr>
<td>Expt</td>
<td>experiment (for specified experiment, e.g. Expt 1)</td>
</tr>
<tr>
<td>FAD</td>
<td>flavin-adenine dinucleotide</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization (except when used as an author)</td>
</tr>
<tr>
<td>FFQ</td>
<td>food-frequency questionnaire</td>
</tr>
<tr>
<td>FMN</td>
<td>flavin mononucleotide</td>
</tr>
<tr>
<td>GC</td>
<td>gas chromatography</td>
</tr>
<tr>
<td>GLC</td>
<td>gas–liquid chromatography</td>
</tr>
<tr>
<td>GLUT</td>
<td>glucose transporter</td>
</tr>
<tr>
<td>GM</td>
<td>genetically modified</td>
</tr>
<tr>
<td>Hb</td>
<td>haemoglobin</td>
</tr>
<tr>
<td>HDL</td>
<td>high-density lipoprotein</td>
</tr>
<tr>
<td>HEPES</td>
<td>4-(2-hydroxyethyl)-1-piperazine-ethanesulfonic acid</td>
</tr>
<tr>
<td>HIV</td>
<td>human immunodeficiency virus</td>
</tr>
<tr>
<td>HPLC</td>
<td>high-performance liquid chromatography</td>
</tr>
<tr>
<td>Ig</td>
<td>immunoglobulin</td>
</tr>
<tr>
<td>IHD</td>
<td>ischaemic heart disease</td>
</tr>
<tr>
<td>IL</td>
<td>interleukin</td>
</tr>
<tr>
<td>IR</td>
<td>infra red</td>
</tr>
<tr>
<td>Kb</td>
<td>kilobases</td>
</tr>
<tr>
<td>Kₘ</td>
<td>Michaelis constant</td>
</tr>
<tr>
<td>LDL</td>
<td>low-density lipoprotein</td>
</tr>
<tr>
<td>MHC</td>
<td>major histocompatibility complex</td>
</tr>
<tr>
<td>MRI</td>
<td>magnetic resonance imaging</td>
</tr>
<tr>
<td>MS</td>
<td>mass spectrometry</td>
</tr>
<tr>
<td>MUFA</td>
<td>monounsaturated fatty acids</td>
</tr>
<tr>
<td>NAD+, NADH</td>
<td>oxidized and reduced nicotinamide-adenine dinucleotide</td>
</tr>
</tbody>
</table>
NADP+, NADPH - oxidized and reduced nicotinamide-adenine dinucleotide phosphate
NEFA - non-esterified fatty acids
NF-κB - nuclear factor kappa B
NMR - nuclear magnetic resonance
NS - not significant
NSP - non-starch polysaccharide
OR - odds ratio
PAGE - polyacrylamide gel electrophoresis
PBS - phosphate-buffered saline
PCR - polymerase chain reaction
PG - prostaglandin
PPAR - peroxisome proliferator-activated receptor
PUFA - polyunsaturated fatty acids
RDA - recommended dietary allowance
RER - respiratory exchange ratio
RIA - radioimmunoassay
RMR - resting metabolic rate
RNA, mRNA etc. - ribonucleic acid, messenger RNA etc.
rpm - revolutions per minute
RT - reverse transcriptase
SCFA - short-chain fatty acids
SDS - sodium dodecyl sulphate
SED - standard error of the difference between means
SFA - saturated fatty acids
SNP - single nucleotide polymorphism
TAG - triacylglycerol
TCA - trichloroacetic acid
TLC - thin-layer chromatography
TNF - tumour necrosis factor
UN - United Nations (except when used as an author)
UNICEF - United Nations International Children's Emergency Fund
UV - ultra violet
VLDL - very-low-density lipoprotein
VO2 - O2 consumption
VO2max - maximum O2 consumption
WHO - World Health Organization (except when used as an author)

Use of three-letter versions of amino acids in tables: Leu, His, etc.
CTP, UTP, GTP, ITP, as we already use ATP, AMP etc.

Disallowed words and phrases

The following are disallowed by NRR:
deuterium or tritium (use 2H and 3H)
c.a. or around (use approximately or about)
canola (use rapeseed)
ether (use diethyl ether)
free fatty acids (use NEFA)
isocalorific/calorie (use isoenergetic/energy)
quantitate (use quantify)
unpublished data or observations (use unpublished results)