

# THE BRITISH JOURNAL OF NUTRITION

## DIRECTIONS TO CONTRIBUTORS

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The *British Journal of Nutrition* publishes reports in English of original work in all branches of nutrition from any country. It does not print reviews of the literature or polemical articles, but the Editorial Board is willing to consider original articles critically re-examining published information and the conclusions drawn from it. The aim of all work presented should be to develop nutritional concepts.

Papers submitted for publication should be as concise as possible. Economy of space should not, however, be achieved by suppressing useful results.

Papers should be accompanied by a signed statement to the effect that the author accepts the conditions laid down in *Directions to Contributors*. Special attention is directed to the sections below about the preparation of the typescript; care in this matter will hasten publication. The Editors will return any typescript that does not conform to these conditions. Contributors of accepted articles will be asked to assign their copyright, on certain conditions, to The Nutrition Society to help protect their material.

**Communications.** Papers submitted for publication should be sent to Dr G. A. J. Pitt (*British Journal of Nutrition*), Department of Biochemistry, University of Liverpool, PO Box 147, Liverpool L69 3BX.

**General.** Submission of a paper to the Editorial Board will be held to imply that it represents the results of original research or of an original interpretation of existing knowledge not previously published; that it is not under consideration for publication elsewhere; and that if accepted for the *British Journal of Nutrition* it will not be published elsewhere in the same form, in English or any other language, without the consent of the Editorial Board.

Authors' names should be given without titles or degrees. Women are requested to give one forename in full to avoid confusion. The name and address of the laboratory or institution where the work was performed should be given. Any necessary descriptive material about the author, e.g. Beit Memorial Fellow, should appear in parentheses after the author's name or at the end of the paper and not in the form of a footnote.

Typescripts should bear the name and address of the person to whom the proof of the paper is to be sent and should also give a shortened version of the paper's title, not exceeding forty-five letters and spaces in length, suitable for a running title in the published pages of the work.

**Form of Papers Submitted for Publication.** The onus of preparing a paper in a form suitable for sending to press lies in the first place with the author. Authors should consult a current issue in order to make themselves familiar with the practice of the *British Journal of Nutrition* as to typographical and other conventions, use of cross-headings, layout of tables and so on. Attention to these and other details (mentioned below) in the preparation of the typescript before it is sent to the Editors will shorten the time required for publication: the need for undue amounts of editorial revision caused by badly prepared typescript will lead to delay in publication. Papers on specialized aspects of the subject should be so presented as to make them intelligible, without undue difficulty, to the ordinary reader of the *Journal*. Sufficient information should be given to permit repetition of the published work by any competent reader of the *Journal*.

Papers should be in double-spaced typing on one side of sheets of paper (thin paper should not be used) of uniform size with wide margins. At the ends of lines of typing, words should not be hyphenated unless hyphens are to be printed. A space of 50 mm should be left at the top of the first sheet. The use of line-numbered paper is

encouraged. Top copies only should be submitted, packed flat. Photocopied typescripts are unacceptable. The paper should be written in English, the spelling being that of the *Concise Oxford Dictionary*, 6th ed. Oxford: Clarendon Press, 1976, and should, in general, be divided into the following parts. (a) *Synopsis*: each paper must open with a synopsis not more than 5% of the length of the following text. This synopsis should aim at giving a picture in miniature of the entire article. The past tense should be used in referring to the author's experimental work. The present tense may be used where reference to existing knowledge is necessary, or where the author is stating what is shown or concluded. The change of tense should clearly differentiate the author's contribution from what is already known. The sequence in the synopsis should be the same as that in the paper. It is desirable to divide the synopsis into a series of numbered paragraphs giving, where relevant, the following information: a succinct account of the experimental work with essential facts about apparatus, chemicals, methods and animals; the results, singling out new information; the conclusions from the results. (b) *Introductory paragraph*: it is not now customary to introduce a paper with a full account of the relevant literature, but the introductory paragraph should help the reader by indicating briefly the nature of the question asked and the reasons for asking it. The answer obtained should be indicated if it is possible to do so shortly. (c) *Experimental methods adopted*: with chemical papers, the Experimental part will normally appear towards the end, but with other types of publication Methods should appear after the introduction. (d) *Results*: these should be given as concisely as possible, with the help of figures or tables. (e) *Discussion*: it is desirable that the presentation of the results and the discussion of their significance should be considered separately. (f) *References*: these should be given in the text thus: Osborne & Mendel (1916), (Cuthbertson & Thomas, 1934); where a paper to be cited has more than two authors, citations should appear thus (Osborne *et al.* 1919). Where more than one paper by the same authors has appeared in one year the reference should be given as follows: Osborne & Mendel (1914*a*); Osborne & Mendel (1914*b*); or Osborne & Mendel (1914*a, b*); (Osborne & Mendel, 1914*b*, 1916; Cuthbertson & Thomas, 1934). In the text, references should be given in chronological order. Where the lists of authors of two papers appearing in the same year begin with the same name but differ subsequently, references should include sufficient names to differentiate between the two papers, e.g. Thomas, Smith *et al.* (1960), Thomas, Wilson *et al.* (1960). At the end of the paper, on a page(s) separate from the text, references should be

listed in alphabetical order according to the name of the first author of the publication quoted, names with prefixes being entered under the prefix, and should include the author's initials; the title of the paper (except that of a thesis) should not be included. Names and initials of authors of unpublished work should be given in the text and not included in the References. Titles of journals should be abbreviated as in the *World List of Scientific Periodicals*, 4th ed. London: Butterworths, 1963-5. References to books and monographs should include the town of publication and the number of the edition to which reference is made. Thus:

- Ahrens, E. H. Jr, Hirsch, J., Insull, W. Jr & Peterson, M. L. (1958). In *Chemistry of Lipids as Related to Atherosclerosis*, p. 222 [I. H. Page, editor]. Springfield, Ill. C. C. Thomas.
- Culbertson, C. C. & Thomas, B. H. (1934). *Rep. Iowa agric. Exp. Stn* 1933-4, p. 51.
- Fairey, N. H. (1938). *Nature, Lond.* **142**, 1156.
- King, H. (1941). *J. chem. Soc.* p. 338.
- Osborne, T. B. & Mendel, L. B. (1914a). *J. biol. Chem.* **17**, 325.
- Osborne, T. B. & Mendel, L. B. (1914b). *J. biol. Chem.* **18**, 1.
- Osborne, T. B. & Mendel, L. B. (1916). *Biochem. J.* **10**, 534.
- Osborne, T. B., Mendel, L. B. & Ferry, E. L. (1919). *J. biol. Chem.* **37**, 233.
- Starling, E. H. (1915). *Principles of Human Physiology*, 2nd ed. London: J. & A. Churchill.
- Summerson, W. H. (1938). *J. biol. Chem.* **123**, cxix.
- Wilson, J. (1965). Leber's disease. PhD Thesis, University of London.

**Units.** Results should be presented in metric units according to the International System of Units (see *Quantities, Units, and Symbols*. London: The Royal Society, 1971, and *Metric Units, Conversion Factors and Nomenclature in Nutritional and Food Sciences*. London: The Royal Society, 1972 - reproduced in *Proc. Nutr. Soc.* (1972), **31**, 239).

Energy measurements should be expressed in joules.

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

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

**Statistical Treatment of Results.** In general, it is not necessary to publish all the individual results of replicated tests. A statement of the number, their mean value and some appropriate measure of their variability is usually sufficient.

The methods of analysis followed should be indicated, but statistical details, such as tables of analysis of variance, should be given only if they are relevant to the discussion. A statement that the difference between the means for two groups of values is statistically significant should include an indication of the level of significance attained.

Where means are quoted, normally the measure of variation most appropriate is the standard error of the mean; occasionally, as for instance where there is specific interest in the distribution of the individual values in the sample on which the mean is based, the standard deviation may be more appropriate. The measure adopted must be clearly stated in the text and in each table. Where the measure of variation is presented as a separate column,  $\pm$  should not be repeated before each value.

**Figures.** These include graphs, histograms, complex formulas, metabolic pathways. They should be originals

(not photographic prints) and should be submitted on a separate sheet, not larger over all than the sheets on which the paper itself is typed, and packed flat. The width should not exceed 190 mm; all lines, axes and curves should have a thickness of 0.4 mm. In curves presenting experimental results, the determined points should be clearly shown, the symbols used being, in order of preference,  $\circ$ ,  $\bullet$ ,  $\triangle$ ,  $\blacktriangle$ ,  $\square$ ,  $\blacksquare$ ,  $\times$ ,  $+$ . For a 250 mm  $\times$  150 mm figure, the diameter of the circles, the vertical height of the squares and equilateral triangles, and the span of the crosses should be 3 mm. Curves and symbols should be drawn with a mechanical aid and not free-hand, and should not extend beyond the experimental points. Scale-marks on the axes should be on the inner side of each axis, 3 mm long, and should extend beyond the last experimental point.

Numbers and letters should be written not on the figure but in the correct position on a flyleaf of tracing paper firmly attached. On the flyleaf should be typed or stencilled: (a) the title of the paper and names of the authors; (b) the figure number. Legends for all figures should be typed on one separate sheet (two or more, if necessary) and numbered corresponding to the relevant figures. Each figure, with its legend, should be comprehensible without reference to the text. The approximate position of each should be indicated in the margin of the text thus: 'Fig. 1 near here'.

**Plates.** Glossy photographs (unmarked by paper-clips) are required, and should be accompanied by a legend prepared as above. The size of photomicrographs may have to be altered in printing. To avoid mistakes, the magnification will be shown by a scale on the photograph itself, e.g. thus:  $\frac{\text{---}}{1\mu\text{m}}$ . The scale with the appropriate unit should be drawn by the author on the flyleaf together with any lettering and will be inserted by the Press.

**Tables.** Tables should carry headings describing their content and should be comprehensible without reference to the text. The dimensions of the values, e.g. mg/kg, should be given at the top of each column and not repeated on each line of the table. Tables should not normally be included in the body of the text, but should be typed on separate sheets. Tables should not be subdivided by ruled lines. Their approximate position should be indicated in the margin of the text thus: 'Table 1 near here'.

**Diagrams.** Diagrams to appear as tables (e.g. flow diagrams) should be prepared as for tables, but on Bristol board, 190 mm wide, using Letraset or stencils. No flyleaf is required.

**Chemical Formulas.** These should be written as far as possible on a single horizontal line. With inorganic substances, formulas may be used, particularly in the Experimental part, at the discretion of the Editors. With salts, it must be stated whether or not the anhydrous material is used, e.g. anhydrous  $\text{CuSO}_4$ , or which of the different crystalline forms is meant, e.g.  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ ,  $\text{CuSO}_4 \cdot \text{H}_2\text{O}$ .

**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- $\text{NaH}_2\text{PO}_4$ . Compositions expressed as mass per unit mass (w/w) should have values expressed as ng,  $\mu\text{g}$ , mg or g per kg; similarly for concentrations, expressed as mass per unit volume (w/v), the denominator being the litre. Concentrations or compositions should not be expressed on a percentage basis. 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).

**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 *Nutr. Abstr. Rev.* (1970), 40, 395.

Previous name	Recommended name
Vitamin A <sub>1</sub>	Retinol
Retinene or retinal	Retinaldehyde
Vitamin A acid	Retinoic acid
Vitamin A <sub>2</sub> or 3-dehydroretinol	Dehydroretinol
Retinene <sub>2</sub> or 3-dehydroretinal	Dehydroretinaldehyde
Vitamin D <sub>2</sub> or calciferol	Ergocalciferol
Vitamin D <sub>3</sub>	Cholecalciferol
Vitamins E	See <i>Generic descriptors</i>
Vitamin K <sub>1</sub> or phyloquinone	Phylloquinone
Vitamin <sub>2</sub> series	*Menaquinones
Vitamin K <sub>3</sub> , menadione or menaphthone	Menaphthone
Vitamin B <sub>1</sub> , aneurin(e) or thiamine	Thiamin
Vitamin B <sub>2</sub> or riboflavin	Riboflavin
Nicotinic acid or niacin	Nicotinic acid
Niacinamide or nicotinic acid amide	Nicotinamide
Folic acid or folacin(e)	Pteroylmonoglutamic acid
Vitamin B <sub>6</sub> , adermin or pyridoxol	Pyridoxine
Pyridoxal	Pyridoxal
Pyridoxamine	Pyridoxamine
Vitamin B <sub>12</sub> or cobalamine	Cyanocobalamin
Vitamin B <sub>12a</sub> , B <sub>12b</sub> or hydroxocobamide	Hydroxocobalamin
Vitamin B <sub>12c</sub>	Nitritocobalamin
Inositol or meso-inositol	myo-Inositol
Pantothenic acid	Pantothenic acid
Biotin	Biotin
Choline	Choline
p-Aminobenzoic acid	p-Aminobenzoic acid
Vitamin C or L-ascorbic acid	Ascorbic acid
L-dehydroascorbic acid	Dehydroascorbic acid

\* 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 *Biochem. J.* (1967), 102, 15).

**Generic descriptors.** 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'.

**Vitamin E.** The term **vitamin E** should be used as the descriptor for all tocol and tocotrienol derivatives exhibiting qualitatively the biological activity of  $\alpha$ -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**.

**Vitamin K.** 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).

**Niacin.** The term **niacin** should be used as the generic descriptor for pyridine 3-carboxylic acid and derivatives

exhibiting qualitatively the biological activity of nicotinamide.

**Folic acids.** The term **folic acid** may be used to designate the naturally occurring pteroylglutamine acids.

**Vitamin B<sub>6</sub>.** The term **vitamin B<sub>6</sub>** should be used as the generic descriptor for all 2-methylpyridine derivatives exhibiting qualitatively the biological activity of pyridoxine.

**Vitamin B<sub>12</sub>.** The term **vitamin B<sub>12</sub>** 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 B<sub>12</sub>**.

**Amounts of vitamins and summation.** All amounts of vitamins should be expressed in terms of their mass rather than in terms of i.u. See *Metric Units, Conversion Factors and Nomenclature in Nutritional and Food Sciences*. London: The Royal Society, 1972 (paras. 8 and 14-20).

**Nomenclature of Fatty Acids.** In the description of results obtained for the analysis of fatty acids by conventional gas-liquid chromatography, the shorthand designation proposed by Farquhar, J. W., Insull, W., Rosen, P., Stoffel, W. & Ahrens, E. H. (*Nutr. Rev.* (1959), 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, this fatty acid should not be referred to as oleic acid. The shorthand designation should also be used in the synopsis but sentences should be constructed so that it is clear to the non-specialist reader that 18:1 refers to a fatty acid; for example, '...resulted in an increase in the concentration of the fatty acid 18:1 in the liver triglycerides...'. 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 18:2  $\Delta$  9-cis, 12-cis (positions of double bonds related to the  $\alpha$ -carbon atom). However, when essential and related fatty acids derived from animal tissues are being considered, it is preferable to refer to fatty acids such as linoleic acid as 18:2 $\omega$ 6 and arachidonic acid as 20:4 $\omega$ 6 (position of double bonds related to the  $\omega$ -carbon atom); it is assumed that the double bonds are methylene-interrupted and are of the *cis*-configuration (see Holman, R. T. in *Progress in the Chemistry of Fats and Other Lipids*, vol. 9, part 1, p. 3. Oxford: Pergamon Press, 1966). 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<sub>20</sub> fatty acids or C<sub>20</sub> polyunsaturated fatty acids. Impure samples of fatty acids such as those used in the preparation of diets should be referred to, for example as 'linoleic acid'.

**Nomenclature of Enzymes.** The nomenclature should be that of the Recommendations of the Commission on Enzymes of the International Union of Biochemistry, 1972 (*Enzyme Nomenclature*. Amsterdam: Elsevier Publishing Co., 1973). Relevant EC numbers should be given.

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

The following books may be found useful:

- Bergey's Manual of Determinative Bacteriology*, 8th edn (1974), edited by R. E. Buchanan and N. E. Gibbons. Baltimore: The Williams and Wilkins Co.
- The Yeasts, a Taxonomic Study*, 2nd edn (1970), edited by J. Lodder. Amsterdam: North Holland Publishing Co.
- Ainsworth and Bisby's Dictionary of the Fungi*, 6th edn (1971). Kew: Commonwealth Mycological Institute.

**Other Nomenclature, Symbols and Abbreviations.** Authors should follow current numbers of the *British Journal of Nutrition* in this connexion. The IUPAC Rules on chemical nomenclature should be followed, and the Recommendations of the IUPAC-IUB Commission on Biochemical Nomenclature (see *Biochem. J.* (1978) **169**, 11.) The symbols and abbreviations, other than units, are essentially those listed in *British Standard 1991: 1967 Letter Symbols, Signs and Abbreviations: Part 1. General* (incorporating amendment no. 1, issued 7 July 1970). Day should be abbreviated to d, for example 7 d; except for example, 'each day', '7th day' and 'day 1'.

When an element, e.g. nitrogen, is referred to frequently, the first mention, both in the synopsis and the main text, should be in full, after that by its chemical symbol N. 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 may also be abbreviated, the abbreviation being placed in parentheses at the first mention, thus: free fatty acids (FFA) after that, FFA. Well-known terms which are used frequently may be abbreviated in a similar fashion (the abbreviation being in small capitals (underlined twice in the typescript)), thus: basal metabolic rate or basal metabolism (BMR); biological value (BV); dry matter (DM); metabolizable energy (ME). Abbreviations in tables must be defined in footnotes. Signs 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).

Spectrophotometric terms and symbols are those proposed in *IUPAC Manual of Symbols and Terminology for Physicochemical Quantities and Units* (1975) London: Butterworths). For mathematical notation and numerals, the rules laid down in *Proc. R. Soc. A* (1909), **82**, 14 should be followed. The attention of authors is particularly drawn to the following symbols: m (= milli) =  $10^{-3}$ ,

$\mu$  (= micro) =  $10^{-6}$ , n (= nano) =  $10^{-9}$  and p (= pico) =  $10^{-12}$ . Note also that ml (millilitre) should be used instead of cc,  $\mu\text{m}$  (micrometre) instead of  $\mu$  (micron) and  $\mu\text{g}$  (microgram) instead of  $\gamma$ .

Numbers. Figures 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 decimals, 2.5 times), 100 patients, 120 cows, 136 samples.

**Ethics of Human Experimentation.** The notice of contributors is drawn to the guide-lines in the Declaration of Helsinki (1964) (*Br. Med. J.* (1964), ii, 177) and to the Report of ELSE as reprinted in *Br. J. Nutr.* (1973), **29**, 149. A paper describing any experimental work on human subjects should include a statement that the Ethical Committee in the Institution in which the work was performed, where such a Committee exists, has approved it. A paragraph headed *Ethical considerations* in which the experiments are discussed and justified from an ethical standpoint should form the last paragraph of the Experimental section.

**Proofs.** Proofs are sent to authors in order that they may make sure that the paper has been correctly set up in type and not that they may add new material. Otherwise, increased printing charges are inevitable. Excessive alteration may have to be disallowed or made at the author's expense. The symbols used to indicate corrections should be those laid down in *British Standard 5261 C: 1976*. All corrections should be made in ink in the margins; marks made in the text should be only those indicating the place to which the correction refers.

Corrected proofs and typescripts should be returned without delay to Mr Richard Lyons, *British Journal of Nutrition*, Department of Biochemistry, University of Liverpool, PO Box 147, Liverpool L69 3BX.

Contributors who reside outside Europe will receive, by airmail, proofs, but not the typescripts.

**Reprints.** Orders for reprints should be addressed to The University Press, Cambridge. Where at least one author of a paper is a member of The Nutrition Society, twenty-five reprints are supplied free of cost. Additional reprints may be purchased if the Press are notified on the appropriate form immediately the proof is received.

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