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CLINICAL SCIENCE

Guidance for Authors

CONTENTS

1. POLICY OF THE JOURNAL

1.1. *Scope*

Clinical Science publishes papers in the field of clinical investigation, provided they are of a suitable standard and contribute to the advancement of knowledge in this field. The term 'clinical investigation' is used in its broad sense to include studies in animals and the whole range of biochemical, physiological, immunological and other approaches that may have relevance to disease in man. Studies which are confined to normal subjects, or animals, or are purely methodological in nature may be acceptable. The material presented should permit conclusions to be drawn and should not be only of a preliminary nature. The journal publishes four types of manuscript, namely invited Editorial Reviews, Full Papers, Short Communications and Correspondence. In addition, *Clinical Science* publishes abstracts of the proceedings of the Medical Research Society and also that Society's Annual Guest Lecture.

1.2. *The Editorial Board*

The Board comprises Editors for the Medical Research Society and the Biochemical Society and a Chairman and Deputy Chairman who are drawn alternately from the two Societies. Members of the Board retire after a maximum of 5 years; the Chairman serves in his capacity for 2 years. The membership of the Board is designed to cover as wide a range of interests as possible.

The main function of the Board is to decide on the acceptability of submitted papers, but it also deals with general matters of editorial policy. Financial policy is dealt with separately by the Committee of Management.

1.3. *The editorial process*

A submitted paper is first read by the Chairman of the Editorial Board who then sends it to an Editor. The latter considers the paper in detail and sends it to one or more referees (who remain anonymous) from outside the membership of the Board. The Editor returns it with his recommendation to the Chairman who then writes formally to

the authors. The ultimate responsibility of acceptance for publication lies with the Chairman. If the Chairman is for any reason unavailable, the Deputy Chairman assumes this function.

1.4. *Ethics of investigations on human subjects*

Authors must state in the text of their paper the manner in which they have complied, where necessary, with the recommendations on human investigations published in the Medical Research Council report of 1962/63 [*British Medical Journal* (1964) **ii**, 178–180]. Consent **must** be obtained from each patient or subject after full explanation of the purpose, nature and risks of all procedures used and the fact that such consent has been given should be recorded in the paper. Papers should also state that the Ethical Committee of the Institution in which the work was performed has given approval to the protocol. The Editorial Board will not accept papers the ethical aspects of which are, in the Board's opinion, open to doubt.

1.5. *Originality of papers*

Submission of a paper to the Editorial Board is taken to imply that it reports unpublished work, that it is not under consideration for publication elsewhere and that, if accepted for publication by *Clinical Science*, it will not be published elsewhere in the same form, either in English or in any other language, without the consent of the Editorial Board. This does not usually apply to previous publication of oral communications in brief abstract form. In such cases authors should enclose copies of the abstracts. When a paper has been accepted for publication the author, or in the case of multiple authorship the author with whom correspondence has taken place, will be asked to sign a statement vesting the copyright in the Editorial Board. Requests for consent for reproduction of material published in *Clinical Science* should be addressed to the Chairman of the Editorial Board.

2. SUBMISSION OF MANUSCRIPTS: GENERAL INFORMATION AND FORMAT

2.1. *General*

Papers submitted for publication should be sent to the Chairman of the Editorial Board (Dr D. J. Galton, Department of Medicine, St Bartholomew's Hospital, West Smithfield, London EC1M 6BQ).

The submission should contain three copies (of which two may be photocopies) of the typescript, Tables, Figures etc. The authors should retain one copy of the paper. The Editorial Board does not accept responsibility for damage or loss of papers submitted, although great care is taken to ensure safety and confidentiality of the typescript during the editorial process. In the case of multiple authorship, the covering letter should indicate that the approval of all co-authors has been obtained.

Papers should be presented so that they are intelligible to the non-specialist reader of the journal. This is particularly important in highly specialized fields and a very brief résumé of the current state of knowledge is usually helpful. Certain types of material, e.g. mathematical formulations requiring more than trivial derivations, should be given in a separate Appendix.

Where the reader is referred to previous works by the same author(s) for important details relevant to the present work, it often speeds up assessment if reprints are enclosed with the typescript. This is of particular importance in relation to methodology.

The dates of receipt and acceptance of the paper will be published. If the paper has to be returned to the authors for revision and is not resubmitted within 1 month, the date of receipt will be revised accordingly. For Short Communications the published date will always be that of receipt of the final version. It is emphasized that badly presented or unduly long papers will be returned for revision and delays in publication will be inevitable. Similar delays will be incurred if the typescript is not prepared strictly in accordance with the instructions detailed below.

2.2. *Full papers*

The authors should refer to a current issue of *Clinical Science* to make themselves familiar with the general layout. Concise presentation is very important for rising costs are a severe constraint on space. **The length of manuscript and the number of Figures and Tables must be kept to a minimum.** Extensive Tables of data can be deposited with the Royal Society of Medicine (see 2.5). *Guidance for Authors* is usually published in the January issue of the journal, and revised periodically.

Typescripts should be, in general, arranged as follows:

(a) *Title page.* Title: this should be as informative as possible, since titles of papers are being increasingly used in indexing and coding for information storage and retrieval. The title should indicate the species in which the observations reported have been made. The numbering of parts in a series of papers is not permitted.

List of authors' names (degrees and appointments are not required).

Laboratory or Institute of origin.

Key words: for indexing the subject of the paper; they should, if possible, be selected from the current issues of 'Medical Subject Headings' (MeSH), produced by the *Index Medicus*.

Short title: for use as a running heading in the printed text; it should not exceed forty-five characters and spaces.

Author for correspondence: the name and address of the author to whom queries and requests for reprints should be sent.

(b) *Summary*. This should be a brief statement arranged **in numbered paragraphs** of what was done, what was found and what was concluded and should rarely exceed 250 words. Contributors from non-English speaking countries are invited to include a translation of the summary in their own language. Abbreviations should be avoided as far as possible and must be defined. Statistical and methodological details including exact doses should also be avoided unless they are essential to the understanding of the summary.

(c) *Introduction*. This should contain a clear statement of the reason for doing the work, but should not include either the findings or the conclusions.

(d) *Methods*. The aim should be to give sufficient information in the text or by reference to permit the work to be repeated without the need to communicate with the author.

(e) *Results*. This section should not include material appropriate to the Discussion section.

(f) *Discussion*. This should not contain results and should be pertinent to the data presented.

(g) *Acknowledgments*. These should be as brief as possible.

(h) *References*. See p. v for the correct format.

(i) *Figures and Tables*. See p. iv.

2.3. *Short Communications*

The Short Communication should describe completed work, and should not be merely a preliminary communication. The format of Short Communications should be similar to that of Full Papers, but should not exceed 1200 words of text. **One Figure or Table** is allowed, but if neither is included the text may be expanded to 1400 words. The passage of Short Communications through the editorial process can frequently be expedited and contributors are encouraged to take advantage of these facilities when rapid publication is of importance and the material can be presented concisely. The paper should appear in print within 3 months of acceptance. When submitting Short Communications, authors should make it quite clear that the work is intended to be treated as a Short Communication.

2.4. *Correspondence*

Letters containing critical assessments of material published in *Clinical Science*, including Editorial Reviews, will be considered for the Correspondence section of the journal. Such letters should be sent to the Chairman of the Editorial Board within 6 months of the appearance of the article concerned. They will be sent to the authors for comment and both the letter and any reply by the author will be published together. Further correspondence arising therefrom will also be considered for publication. Consideration will also be given to publication of letters on ethical matters.

2.5. *Arrangements for large amounts of information*

It is impracticable to publish very large sets of individual values or very large numbers of diagrams, and under these circumstances a summary of the information only should be included in the paper. The information from which the summary was derived should be submitted with the typescript and, if the latter is accepted, the Editors may ask for a copy of the full information and diagrams to be deposited with the Librarian, the Royal Society of Medicine, 1 Wimpole Street, London W1M 8AE, who will issue copies on request. Experience has shown that such requests are frequently received.

2.6. *Proof corrections*

These are expensive and corrections of other than printers' errors may have to be charged to the author.

2.7. *Offprints*

Twenty-five offprints are supplied free and additional copies may be obtained at terms, based upon the cost of production, that will be given with the proofs. All offprints should be ordered when the proofs are returned.

2.8. *Availability on* MEDLINE

Summaries of papers in *Clinical Science* are available on-line on teleprinters participating in the MEDLINE system run by the National Library of Medicine, National Institutes of Health, Bethesda, Maryland, U.S.A.

3. MISCELLANEOUS NOTES

3.1. *Abbreviations*

Abbreviations should be avoided; if used they must be defined at the first mention; new abbreviations should be coined only for unwieldy names which occur frequently. Abbreviations should not appear in the title nor, if possible, in the Summary. A list of accepted abbreviations appears at the end of this document.

3.2. *Anatomical nomenclature*

This should follow the recommendations of the International Anatomical Nomenclature Committee (1966) *Nomina Anatomica*, 3rd edn, Excerpta Medica Foundation, Amsterdam.

3.3. *Animals, plants and micro-organisms*

The full binomial specific names should be given at first mention for all experimental animals other than common laboratory animals. The strain and, if possible, the source of laboratory animals should be stated. Thereafter in the text, single letter abbreviations may be given for the genus; if two genera with the same initial letter are studied, abbreviations such as *Staph.* and *Strep.* should be used.

3.4. *Buffers and salts*

The acidic and basic components should be given, together with the pH. Alternatively, a reference to the composition of the buffer should be given. Further details are provided in the *Biochemical Journal* (1978) **169**, 9.

When describing solutions containing organic anions and their parent acids, the salt designator (e.g. lactate, urate, oxalate) should be used in preference to the name of the acid (lactic, uric, oxalic) unless it is certain that virtually all of the acid is in the undissociated form.

The composition of incubation media should be described, or a reference to the composition should be given.

3.5. *Doses*

Doses of drugs should be expressed in mass terms, e.g. milligrams (mg) or grams (g), and also (in parentheses) in molar terms, e.g. mmol, mol, where this appears to be relevant. Molecular weights of many drugs may be found in *The Merck Index*, 8th edn, Merck and Co. Inc., N.J., U.S.A.

3.6. *Enzymes*

Nomenclature should follow that given in *Enzyme Nomenclature* (1972), Elsevier Publishing Co., Amsterdam, and Enzyme Commission (EC) number should be quoted at the first mention. Where an enzyme has a commonly used informal name, this may be employed after the first formal identification. A unit of enzyme activity should preferably be expressed as that amount of material which will catalyse transformation of 1μmol of the substrate/min under defined conditions, including temperature and pH. Alternatively, or when the natural substrate has not been fully defined, activity should be expressed in terms of units of activity relative to that of a recognized reference preparation, assayed under identical conditions. Activities of enzymes should normally be expressed as units/ml or units/mg of protein.

3.7. *Evaluation of measurement procedures*

When a new measuring procedure has been used, or when an established procedure has been applied in a novel fashion, an estimate of the precision of the procedure should be given. This should, as far as possible, indicate what sources of variation have been included in this estimate, e.g. variation of immediate replication, variation within different times of day, or from day to day etc.

If the precision of measurement varies in proportion to the magnitude of the values obtained, it can best be expressed as the coefficient of variation; otherwise it should be expressed by an estimate of the (constant) standard error of a single observation, or by estimates at several points within the range of observed values.

When recovery experiments are described the approximate ratio of the amount added to the amount already present and the stage of the procedure at which the addition was made should be stated.

3.8. *Figures and Tables*

These are expensive to print and their number should be kept to a minimum. Their appropriate position in the paper should be indicated in the margin of the text. References to Figures and Tables should be in Arabic numerals, e.g. Fig. 3, and they should be numbered in order of appearance. In general, the same data should not be presented in both a Figure and a Table; simple histograms recording only a few values can more economically be replaced by a Table.

Figures, with captions attached, should be supplied as original drawings or matt photographs together with photocopies. All Figures should have their number and the authors' names written in pencil on the back; the top of the Figure should be

indicated with a pencilled arrow. A horizontal or square layout is preferred to a vertical one. Acceptable symbols for experimental points are ●, ▲, ■, ○, △, □. The symbols × or + must be avoided. The same symbols must not be used for two curves where the points might be confused. For scatter diagrams, solid symbols are preferred. When a particular variable appears in more than one Figure, the same symbol should be used for it throughout, if possible.

Curves should not be drawn beyond the experimental points, neither should axes extend appreciably beyond the data. Only essential information that cannot readily be included in the legend should be written within the Figure.

Figures for half-tone reproduction should be submitted as glossy prints. They are particularly expensive to print and their use should be avoided as far as possible.

Tables should be typed separately from the text. They should have an underlined title followed by any legend.

Captions for the Figures, and titles and legends for the Tables, should make them **readily understandable** without reference to the text. Adequate statistical information, including that on regression lines, should be included in Figure captions where appropriate.

3.9. *Footnotes*

These should be avoided as far as possible but where they are used in Tables they should be identified by the symbols * † ‡ § ‖ ¶, in that order.

3.10. *Isotope measurements*

The information given should include (a) conditions of radioactivity counting, e.g. infinitely thick, infinitely thin; (b) the nature of the phosphor used in liquid-scintillation counting; (c) details of corrections made to the observed count rate, e.g. for 'quenching' or 'cross-over'; (d) standard deviation of the results or a statement of the minimum total counts above background collected and the background value.

In general the specific radioactivity of the starting materials should be given, preferably in terms of curies per unit weight or, for stable isotopes, as atoms % excess.

Where possible, radioactivity should be expressed in terms of curies (Ci) or of disintegrations/s (d.p.s.).

3.11. *Radionuclide applications in man*

If new or modified radionuclide applications in man are described, an estimate of the maximal possible radiation dose to the body and critical organs should be given.

3.12. *Methods*

In describing certain techniques, namely centrifugation (when the conditions are critical), chromatography and electrophoresis, authors should follow the recommendations published by the Biochemical Society (currently, *Biochemical Journal* (1978) **169**, 1–21).

3.13. *Nomenclature of disease*

This should follow the *International Classification of Disease* (8th revision, World Health Organization, Geneva, 1969) as far as possible.

3.14. *Powers in Tables and Figures*

Care is needed where powers are used in Table headings and in Figures to avoid numbers with an inconvenient number of digits. For example: (i) an entry '2' under the heading 10^3k means that the value of k is 0·002; an entry '2' under the heading $10^{-3}k$ means that the value of k is 2000. (ii) A concentration 0·00015 mol/l may be expressed as 0·15 under the heading 'concn. (mmol/l)' or as 150 under the heading 'concn. (μmol/l)' or as 15 under the heading '$10^5 \times$ concn. (mol/l)', but not as 15 under the heading 'concn. (mol/l $\times 10^{-5}$)'.

3.15. *References*

These should be in alphabetical order of first authors. The full title of the paper, the journal and the **first and last** page numbers should be given, e.g.

CLARK, T.J.H., FREEDMAN, S., CAMPBELL, E.J.M. & WINN B.R. (1969) The ventilatory capacity of patients with chronic airways obstruction. *Clinical Science*, **36**, 307–316.

When the quotation is from a book, the following format should be used, giving the relevant page or chapter number:

MOLLISON, P.L. (1967) *Blood Transfusion in Clinical Medicine*, 4th edn, p. 50. Blackwell Scientific Publications, Oxford.

REID, L. (1968) In: *The Lung*, p. 87. Ed. Liebow, A.A. & Smith, D.E. Williams and Wilkins, Baltimore.

References in the text should follow the style: Clark, Freedman, Campbell & Winn (1969) on the first quotation and, if there are more than two authors, 'Clark *et al.* (1969)' or '(Clark *et al.*, 1969)' in subsequent quotations.

References to 'personal communications' and 'unpublished work' should appear in the text only and not in the list of references. The name and initials of the source of information should be

given. When the reference is to material that has been accepted for publication but has not yet been published, this should be indicated in the list of references by 'In press' together with the name of the relevant journal and, if possible, the expected date of publication. If such a citation is of major relevance to the manuscript submitted for publication authors are advised that the editorial process might be expedited by the inclusion of a copy of such work. In the case of quotations from personal communications the authors should state in the covering letter that permission for quotation has been obtained.

3.16. *Solutions*

Concentration of solutions should be described where possible in molar terms (mol/l and subunits thereof), stating the molecular particle weight if necessary. Values should not be expressed in terms of normality or equivalents. Mass concentration should be expressed as g/l or subunits thereof, for example mg/l or μg/l. For solutions of salts, molar concentration is always preferred to avoid ambiguity as to whether anhydrous or hydrated compounds are used. Concentrations of aqueous solutions should be given as mol/l or mol/kg (g/l or g/kg if not expressed in molar terms) rather than % (w/v) or % (w/w). It should always be made clear whether concentrations of components in a reaction mixture are final concentrations or the concentrations in solutions added.

3.17. *Spectrophotometric data*

The term 'absorbance' [$\log (I_0/I)$] should be used rather than 'optical density' or 'extinction'. The solvent, if other than water, should be specified. Symbols used are: A, absorbance; a, specific absorption coefficient (litre g^{-1} cm^{-1}) (alternatively use $A^{1\%}_{1cm}$); ε, molar absorption coefficient (the absorbance of a molar solution in a 1 cm light-path) (litre mol^{-1} cm^{-1}, *not* cm^2 mol^{-1}).

3.18. *Spelling*

Clinical Science uses as standards for spelling the *Concise* or *Shorter Oxford Dictionary of Current English* (Clarendon Press, Oxford) and *Butterworth's Medical Dictionary* (Butterworths, London).

3.19. *Statistics*

Papers are frequently returned for revision (and their publication consequently delayed) because the authors use inappropriate statistical methods. Two common errors are the use of means, standard deviations and standard errors in the description and interpretation of grossly non-normally distributed data and the application of t-tests for the significance of difference between means in similar circumstances, or when the variances of the two groups are non-homogeneous. In some circumstances it may be more appropriate to provide a 'scattergram' than a statistical summary.

A reference should be given for all methods used to assess the probability of a result being due to chance. The format for expressing mean values and standard deviations or standard errors of the mean is, for example: mean cardiac output 10·4 l/min (SD 1·2; $n = 11$). Degrees of freedom should be indicated where appropriate. Levels of significance are expressed in the form $P < 0{\cdot}01$.

3.20. *Trade names*

The name and address of the supplier of special apparatus and of biochemicals should be given. In the case of drugs, approved names should always be given with trade names and manufacturers in parentheses.

4. UNITS: THE SI SYSTEM

The recommended Système International (SI) units [see *Quantities, Units and Symbols*, 2nd edn (1975) The Royal Society, London] are used by *Clinical Science* . **All papers submitted should use these units** except for blood pressure values, which should be expressed in mmHg, or gas tensions, where values at the author's discretion may be given as mmHg (with kPa in parentheses) or as kPa (with mmHg in parentheses) in the text and either as mmHg or as kPa in Figures, which (if practicable) should have scales in both units. Airways pressure should be expressed in kPa. Where molecular weight is known, the amount of a chemical or drug should be expressed in mol or in an appropriate subunit, e.g. mmol. Energy should be expressed in joules (J).

The basic SI units and their symbols are as follows:

Physical quantity	*Name*	*Symbol*
length	metre	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K
luminous intensity	candela	cd
amounts of substance	mole	mol

The following are examples of derived SI units:

Physical quantity	*Name*	*Symbol*	*Definition*
energy	joule	J	$kg\ m^2\ s^{-2}$
force	newton	N	$kg\ m\ s^{-2} = J\ m^{-1}$
power	watt	W	$kg\ m^2\ s^{-3} = J\ s^{-1}$
pressure	pascal	Pa	$kg\ m^{-1}\ s^{-2} = N\ m^{-2}$
electric charge	coulomb	C	A s
electric potential difference	volt	V	$kg\ m^2\ s^{-2}\ A^{-1} = J\ A^{-1}\ s^{-1}$
electric resistance	ohm	Ω	$kg\ m^2\ s^{-3}\ A^{-2} = V\ A^{-1}$
electric conductance	siemens	S	$kg^{-1}\ m^{-2}\ s^3\ A^2 = \Omega^{-1}$
electric capacitance	farad	F	$A^2\ s^3\ kg^{-1}\ m^{-2} = A\ s\ V^{-1}$
frequency	hertz	Hz	s^{-1}
volume	litre	l	$10^{-3}\ m^3$

The word 'litre' has been accepted as a special name for cubic decimetre (1 litre = 1 dm^3).

Both the basic and derived SI units, including the symbols of derived units that have special names, may be preceded by prefixes to indicate multiples and submultiples. The prefixes should be as follows:

Multiple	*Prefix*	*Symbol*
10^6	mega	M
10^3	kilo	k
10^2	hecto	h*
10	deka	da
10^{-1}	deci	d*
10^{-2}	centi	c*
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f

* To be avoided where possible (except for cm).

Compound prefixes should not be used, e.g. 10^{-9} m should be represented by 1 nm, not 1 mμm.

Notes:

(i) Full stops are not used after symbols.

(ii) Minutes (min), hours (h), days and years will continue to be used in addition to the SI unit of time [the second (s)].

(iii) The solidus may be used in a unit as long as it does not have to be employed more than once, e.g. mmol/l is acceptable, but ml/min/kg is not, and should be replaced by ml $min^{-1}\ kg^{-1}$.

5. ABBREVIATIONS, CONVENTIONS DEFINITIONS, SYMBOLS AND SPECIAL COMMENTS

As well as standard symbols and abbreviations that have been accepted by international bodies, and which can be used without definition, this list shows selected abbreviations in the form of groups of capital letters (e.g. ALA, ECF, MCHC) which when used must be defined in the text as indicated on p. iv. The standard abbreviations for amino acids are only for use in Figures and Tables or for peptide sequences.

absorbance	*A*
acceleration due to gravity	*g*
adenosine 3′:5′-cyclic monophosphate	cyclic AMP
adenosine 5′-phosphate	AMP
adenosine 5′-pyrophosphate	ADP
adenosine 5′-triphosphate	ATP
adenosine triphosphatase	ATPase
adrenocorticotropic hormone	ACTH
adrenoreceptor (see also blocking agents)	
alanine	Ala
alternating current	a.c.
alveolar minute ventilation	$\dot{V}_A$
alveolar to arterial oxygen tension difference	$(P_A O_2 - P_a O_2)$
ampere	A
aminolaevulinic acid	ALA
Ångstrom (Å)	*not used*; express in nm (1 Ångstrom = 10^{-1} nm)
antidiuretic hormone	ADH (when referring to the physiological secretion)
arginine	Arg
arteriovenous	a–v: *permitted* in Figures and Tables
asparagine	Asn
aspartic acid	Asp
atmosphere (unit of pressure)	*not used*; express in kPa (1 atmosphere = 101·325 kPa)
atomic weight	at. wt.
blocking agents	e.g. β-adrenoreceptor antagonists preferred
blood pressure	express in mmHg
blood urea nitrogen	*not used*; recalculate as urea, express in mmol/l
blood volume	BV
body temperature and pressure, saturated	BTPS
British Pharmacopoeia	write in full and give edition
calculated	calc. (in Tables only)
'Calorie' (= 1000 cal)	*not used*; recalculate as kilojoules (1 'Calorie' = 4·184 kJ)

carbon dioxide output (in respiratory physiology)	$\dot{V}_{CO_2}$; express in ml STP/min
cardiac frequency	f_c; in beats/min
cardiac output	express in l/min
centimetre	cm
clearance of x	C_x
Coenzyme A and its acyl derivatives	Coa and acyl-CoA
compare	cf.
complement fractions	C1–C9
compliance (respiratory physiology)	C; express in 1 kPa^{-1}
concentrated	conc.
concentration	concn.; may be denoted []; e.g. plasma $[HCO_3^-]$
conductance (respiratory physiology)	G; express in 1 s^{-1} kPa^{-1}
correlation coefficient	r: may be used without definition
counts/min, counts/s	c.p.m., c.p.s.
cubic centimetres	*use* ml
curie	Ci (1 Ci = $3{\cdot}7 \times 10^{10}$ d.p.s.)
cycle/s	Hz
cysteine	Cys
dates	e.g. 11 August 1970
dead-space minute ventilation	$\dot{V}_D$
dead-space volume	V_D
degrees, Celsius or centigrade	°C
deoxy (prefix)	*not* desoxy
deoxycorticosterone	DOC
deoxycorticosterone acetate	DOCA
deoxyribonucleic acid	DNA
dialysate	diffusate preferred; 'dialysate' should be clearly defined
diethylaminoethylcellulose	DEAE-cellulose
differential of x with respect to time	$\dot{x}$ (= dx/dt)
1,25-dihydroxycholecalciferol	1,25-$(OH)_2D_3$
dilute	dil.
2,3-diphosphoglycerate	2,3-DPG
direct current	d.c.
disintegrations/min	d.p.m.
disintegrations/s	d.p.s.
dissociation constant	
acidic	K_a
basic	K_b
apparent	e.g. K'_a
minus log of	pK
doses	avoid Latin designations such as b.d. and t.i.d.
dyne	*not used*; express in newtons (1 dyne = 10^{-5} N)
elastance	E; express in Pa m^{-3}
electrocardiogram	ECG
electroencephalogram	EEG
electromotive force	e.m.f.
electron spin resonance	e.s.r.
electronvolt	eV (for radiation energies)
equation	eqn.
equivalents (amount of a chemical)	*not used*; recalculate in molar terms
erythrocyte count	express as 10^{12} cells/l
erythrocyte sedimentation rate	ESR
ethanol, ethanolic	not ethyl alcohol or alcoholic
ethylenediaminetetra-acetate	EDTA
exchangeable	Na_e, K_e etc., for total exchangeable sodium, potassium etc.
Experiment (with reference numeral)	Expt.; plural, Expts.
expired minute ventilation	$\dot{V}_E$
extinction	*use* absorbance
extracellular fluid	ECF
extracellular fluid volume	ECFV
extraction ratio of x (renal)	E_x
Figure (with reference numeral)	Fig.; plural, Figs.
filtered load of x (renal)	F_x
follicle-stimulating hormone	FSH
forced expiratory volume in 1·0 s	$FEV_{1.0}$
fractional concentration in dry gas	F
fractional disappearance rate	k (as in $A = A_0e^{-kt}$)
frequency of respiration	f_R; in breaths/min
functional residual capacity	FRC
gas–liquid chromatography	g.l.c.
gas transfer factor	T; in mmol min^{-1} kPa^{-1}
glomerular filtration rate	GFR
glutamic acid	Glu
glutamine	Gln
glutathione	GSH (reduced); GSSG (oxidized)
glycine	Gly
gram(me)	g
gravitational field, unit of (9·81 m s^{-1})	g
growth hormone	GH; if human, HGH
haematocrit	not allowed; *use* packed cell volume (PCV)
haemoglobin	Hb; express in g/dl
half-life	$t_{\frac{1}{2}}$
hertz (s^{-1})	Hz
histidine	His
hour	h
human chorionic gonadotropin	HCG
human placental lactogen	HPL
hydrocortisone	*use* cortisol
hydrogen ion activity minus log of	aH; express in nmol/l pH
25-hydroxycholecalciferol	25-$(OH)D_3$
hydroxyproline	Hyp
immunoglobulins	IgA, IgD, IgE, IgG, IgM
injection routes:	use abbreviations only in Figures
intra-arterial	i.a.
intramuscular	i.m.
intraperitoneal	i.p.
intravenous	i.v.
subcutaneous	s.c.

international unit	i.u. (definition and reference should be given for uncommon or ambiguous applications, e.g. enzymes)
intracellular fluid	ICF
intracellular fluid volume	ICFV
ionic strength	I
isoleucine	Ile
isotonic	*not used*; specify composition of fluid, e.g. NaCl, 150 mmol/l
isotopically labelled compounds	e.g. [U-^{14}C]glucose, [1-^{14}C]glucose, sodium [1-^{14}C]-acetate; *use* ^{131}I-labelled albumin, *not* [^{131}I]albumin, since native albumin does not contain iodine for simple molecules: $^{14}CO_2$, ^3H_2O
joule	J
kilogram(me)	kg
kilopond	*not used*; 1 kilopond = 9·8067 N
lactate dehydrogenase	LDH
leucine	Leu
leucocyte count	express as 10^9 cells/l
lipoproteins (serum)	
high density	HDL
low density	LDL
very low density	VLDL
litre	1 (write in full if confusion with the numeral 1 is possible)
logarithm (base *10*)	log
logarithm (base e)	ln
luteinizing hormone	LH
lysine	Lys
maximum	max.
mean corpuscular haemoglobin	MCH; express in pg
mean corpuscular haemoglobin concentration	MCHC; express in g/dl
mean corpuscular volume	MCV; express in fl (1 μm^3 = 1 fl)
median lethal dose	LD_{50}
meta-	*m*-
melting point	m.p.
methanol, methanolic	*not* methyl alcohol
methionine	Met
metre	m
Michaelis constant	K_m
micromole	μmol
micron (10^{-6} m)	μm; *not* μ
milliequivalent	*not used*; give amount in mmol
millilitre	ml
millimetre of mercury	mmHg; for blood pressure and, at authors' discretion, for gas tensions: see p. vi (1 mmHg = 0·133 kPa)
millimolar (concentration)	mmol/l; *not* mM
millimole	mmol
minimum	min.
minute (60 s)	min
molal	mol/kg
molar (concentration)	mol/l; *not* M
molar adsorption coefficient	ε (the absorbance of a molar solution in a 1 cm light-path)
mole	mol
molecular weight	mol. wt.
nicotinamide–adenine dinucleotide	NAD if oxidation state not indicated NAD^+ if oxidized NADH if reduced
nicotinamide–adenine dinucleotide phosphate	NADP if oxidation state not indicated $NADP^+$ if oxidized NADPH if reduced
normal	should not be used to denote the concentration or osmolarity of a solution
normal temperature and pressure	*use* standard temperature and pressure (STP)
nuclear magnetic resonance	n.m.r.
number (in enumerations)	no. (in Tables only)
observed	obs. (in Tables only)
ohm	Ω
ornithine	Orn
ortho-	*o*-
orthophosphate (inorganic)	P_i
osmolality	express in mol (or mmol)/kg
oxygen uptake per minute (in respiratory physiology)	$\dot{V}O_2$; express in ml STP/min
packed cell volume	PCV
page, pages	p., pp.
para-	*p*-
para-aminohippurate	PAH
partial pressure	*P*; express in either kPa or mmHg (see p. vi)
e.g. alveolar, of O_2	P_{A,O_2}
arterial, of CO_2	Pa,CO_2
capillary, of O_2	Pc,O_2
mixed venous, of CO_2	$P\bar{v},CO_2$
pascal	Pa
per	/
per cent	%
Petroleum ether	*not used*; *use* light petroleum and give boiling range
phenylalanine	Phe
plasma renin activity	express as pmol of angiotensin I h^{-1} ml^{-1}
plasma volume	PV
poise	1 poise = 10^{-1} N s m^{-2}
potential difference	p.d.
power output	W (1 W = 0·1635 kpm/min)
precipitate	ppt.

pressure	*P*; express in kPa (except for blood pressures); 1 kPa = 7·5 mmHg
probability of an event being due to chance alone	*P*
proline	Pro
protein-bound iodine (plasma)	PBI
pulmonary capillary blood flow	$\dot{Q}c$
pyrophosphate (inorganic)	PPi
rad (radiation dose; 10^{-5} J absorbed/g of material)	not abbreviated
red blood cell	*use* erythrocyte; express counts as 10^{12} cells/l
red cell mass	RCM
relative band speed (partition chromatography)	R_F
renin	*see* plasma renin activity
residual volume	RV
resistance (rheological)	*R*; express in kPa l^{-1} s
respiratory quotient (time-averaged)	R
revolutions	rev.
rev./min	*not* r.p.m.; *use* ***g*** if possible (see p. viii)
ribonucleic acid	RNA
röntgen	R
saturation	*S*, e.g. Sa,O_2 for arterial oxygen saturation (see partial pressure for other analogous abbreviations)
second (time)	s
serine	Ser
solvent systems	e.g. butanol/acetic acid/water (4:1:1, by vol.), butanol/acetic acid (4:1, v/v)
species	sp., plural spp.
specific activity	sp. act. Confusion must be avoided between e.g. specific radioactivity and the specific activity of an enzyme
specific conductance of airways	s*G*aw; express in s^{-1} kPa^{-1}
standard deviation	SD } may be used without definition
standard error of the mean	SEM }
standard temperature and pressure	STP
steroid nomenclature	see *Biochemical Journal* (1969) **113**, 5–28; (1972) **127**, 613–617
sulphydryl	*use* thiol or SH
sum	Σ
Svedberg unit	S
temperature (absolute)	*T*
(empirical)	*t*
temperature, thermodynamic	°K
thin-layer chromatography	t.l.c.
threonine	Thr
thyrotrophic hormone	TSH
thyrotrophin releasing hormone	TRH
tidal volume	V_T
time (symbol)	*t*
time of day	e.g. 18.15 hours
torr	not used; *use* kPa (1 torr = 0·133 kPa)
total lung capacity	TLC
tryptophan	Trp
tubular maximal reabsorptive capacity for x	$T_{m,x}$
tyrosine	Tyr
ultraviolet	u.v.
urinary concentration of x	U_x
valency	e.g. Fe^{2+}, *not* Fe^{++}
valine	Val
variance ratio	*F*
vascular resistance	express in kPa l^{-1} s (with value in dyne cm s^{-5} in parentheses); primary values of differential vascular pressure (mmHg) and flow (l/min) should always also be given in Tables or text as appropriate
velocity	*v*; express as m s^{-1}
venous admixture	$\dot{Q}_{va}$
veronal	used only for buffer mixtures; otherwise use 5,5′-diethylbarbituric acid
viscosity, dynamic	η
viscosity, kinematic	*v*
vital capacity	VC
volt	V
volume of blood (in cardio-respiratory physiology)	*Q*; use $\dot{Q}$ for blood flow rate
watt	W
wavelength	λ
weight	wt.
white blood cell	*use* leucocyte; express counts as 10^9 cells/l

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First and last page numbers of papers to which entries refer are given.
Page numbers marked with an asterisk refer to Editorial Reviews.