

CLINICAL SCIENCE

Guidance for Authors 1997

CONTENTS

	<i>page</i>
I. Policy of the journal	
1.1. Scope	i
1.2. Availability on the World Wide Web (WWW)	i
1.3. The editorial process	i
1.4. Ethics of investigations	i
1.5. Originality of papers	ii
2. Submission of Manuscripts: General Information and Format	
2.1. General	ii
2.2. Use of authors' diskettes	ii
2.3. Full Papers	iii
2.4. Rapid Communications	iii
2.5. Correspondence	iii
2.6. Editorial Reviews	iii
2.7. Arrangements for large amounts of information	iii
2.8. Proof corrections	iv
2.9. Offprints	iv
2.10. Availability on MEDLINE and from Adonis	iv
3. Miscellaneous Notes	
3.1. Abbreviations	iv
3.2. Anatomical nomenclature	iv
3.3. Animals, plants and micro-organisms	iv
3.4. Biochemical nomenclature	iv
3.5. Buffers and salts	iv
3.6. Computer modelling	iv
3.7. Doses	iv
3.8. Enzymes	iv
3.9. Evaluation of measurement procedures	v
3.10. Figures and Tables	v
3.11. Footnotes	v
3.12. 'Homology'	v
3.13. Isotope measurements	v
3.14. Radionuclide applications in man	v
3.15. Methods	vi
3.16. Nomenclature of disease	vi
3.17. Powers in Tables and Figures	vi
3.18. References	vi
3.19. Solutions	vi
3.20. Spectrophotometric data	vi
3.21. Spelling	vi
3.22. Statistics	vi
3.23. Trade names	vii
4. Units: The SI System	vii
5. Abbreviations, Conventions etc.	vii

I. POLICY OF THE JOURNAL

I.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 broadest 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, Rapid Communications and Correspondence. In addition, *Clinical Science* publishes abstracts of the proceedings of the Medical Research Society (as Supplements) and also the Bayer Lecture.

I.2. Availability on the World Wide Web (WWW)

In 1997, headers of all articles will become available on the journal's home page on the WWW (<http://cs.portlandpress.co.uk>).

I.3. The editorial process

Membership of the Editorial Board covers as wide a range of interests as possible.

A submitted paper is considered by an appropriate editor together with (usually) two Referees from outside the membership of the Board. The Editor returns it with a recommendation to the Editor in Chief or Regional Editor, who then writes formally to the authors. The ultimate responsibility of acceptance for publication lies with the Editor in Chief.

Authors may suggest potential referees for their papers in the submission letter. The journal is under no obligation to follow such suggestions, but, if it does so, only **one** of the referees will be chosen from the authors' nominations, as the other referee will be selected independently.

I.4. Ethics of investigations

(a) Human subjects. Authors must state in the text of their paper that the research has been carried out in accordance with the Declaration of Helsinki (1989) of the World Medical Association, and has been approved by the Ethics Committee of the institution in which the work was performed. Consent **must** be obtained from each patient or subject after full explanation of the purpose, nature

and risk of all procedures used, and the fact that such consent has been given should be recorded in the paper.

(b) **Animals.** Care must always be taken to ensure that experimental animals do not suffer unnecessarily. Authors must state in the text the anaesthetic procedures used in full, and all precautions they took to ensure that the animals did not suffer unduly during and after the experimental procedure. Authors must confirm that the work was undertaken as required by the appropriate national legislation governing the use of animals, or, in the absence of such legislation, that the experimental procedures were carried out in accordance with the United States NIH guidelines [Guide for the care and use of laboratory animals, DHEW Publication no. (NIH) 85-23, Bethesda, MD: Office of Science and Health Reports, DRR/NIH, 1985].

The Editorial Board will not accept papers where the ethical aspects are, in the Board's opinion, open to doubt.

1.5. Originality of papers

Submission of a paper to *Clinical Science* implies that it has been approved by all the named authors, that all persons entitled to authorship have been so named, that it reports unpublished work that is not under consideration for publication elsewhere, that proper reference is made to the preceding literature, and that if the paper is accepted for publication the authors will transfer to the Biochemical Society the copyright of the paper, which will then not be published elsewhere in the same form, in any language, without the consent of the Society. Authors will be required to sign an undertaking to these effects. The restriction on previous publication does not usually apply to previous publication of oral communications in brief abstract form. In such cases authors should enclose three copies of the abstracts of previous publications. However, the restriction does apply to papers on the WWW. Requests for consent for reproduction of material published in *Clinical Science* should be addressed to the Managing Editor.

2. SUBMISSION OF MANUSCRIPTS: GENERAL INFORMATION AND FORMAT

2.1. General

Papers submitted for publication (together with correspondence about papers, proofs and requests for permission to reproduce material) should be sent to: The Managing Editor, *Clinical Science*, 59 Portland Place, London W1N 3AJ, U.K. [telephone: (UK) 0171-637 5873, (from overseas) +44 171-637 5873; fax: (UK) 0171-323 1136, (from overseas) +44 171-323 1136; e-mail: edit@portlandpress.co.uk]. The covering letter should include the author's telephone and fax numbers and e-mail address (if available).

Please note: authors in the Pacific Rim countries should submit their papers to Professor S. B. Harrap, Regional Editor, University of Melbourne, Department of Physiology, Parkville, Victoria 3052, Australia (telephone +61 3 9344 5836; fax +61 3 9349 4519).

The submission should contain four copies (of which three may be photocopies, except for half-tone figures) 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.

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, three copies or reprints of the publication (including papers on the WWW) should be sent 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 and the revised paper may be treated as a new submission. 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.

Typescripts of rejected work will not be returned to authors unless a specific request for the return has been made at the time of submission.

2.2. Use of authors' diskettes

Authors should submit diskettes of revised papers to the editorial office. If the revised paper is acceptable every effort will be made to use the diskette during typesetting, but this cannot be guaranteed. Authors must ensure that files have been updated to incorporate all revisions, and hence that the version on the diskette matches the revised hard copy. We use WordPerfect for Windows, but we are able to read most 5.25" and 3.5" diskettes whether they have been created on an IBM PC or Macintosh computer. Our conversion software can translate a wide variety of commercially available word-processing packages and saving files in ASCII or DOS format is not necessary. The diskettes should be accompanied by a covering letter specifying manuscript number, operating system and software program.

(a) *Text.* Files should be formatted double-spaced with no hyphenation and automatic wordwrap (no hard returns within paragraphs). Please type your text consistently, e.g. take care to distinguish between '1'(one) and 'l' (lower case L), and '0' (zero) and 'O' (capital O), etc.

(b) *Tables.* Tables should be typed as text. The use of graphics programs and 'table editors' should be avoided.

(c) *Figures.* No artwork should be incorporated into the text files. Figures are normally handled conventionally, but

artwork may be provided on disk either in TIFF or EPS format and saved as a separate file. We can also accept CorelDraw files. Hard copy of illustrations must also be supplied (see p. v).

(d) *Mathematics*. In-line equations should be typed as text. The use of graphics programs and 'equation editors' should be avoided. Displayed equations (unless prepared by the 'MathType Equation Editor') are re-keyed by our printer.

2.3. Full Papers

These may be of any length that is justified by their content. Authors should, however, note that because of pressure for space in the journal no paper, whatever its scientific merits, will be accepted if it exceeds the minimum length required for precision in describing the experiments and clarity in interpreting them. As a guide, most papers published in the journal are of between six and eight printed pages. A concise well-written paper tends to be published more rapidly. Extensive Tables of data can be deposited with the Royal Society of Medicine (see 2.7). *Guidance for Authors* is usually published in the January issue of the journal, and is revised periodically.

The authors should refer to a current issue of *Clinical Science* to make themselves familiar with the general layout. 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. It should not contain any abbreviations. 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 and should not contain any abbreviations.

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. 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 be comprehensible to the general reader and 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. v.

2.4. Rapid Communications

The passage of these papers through the editorial process will be expedited and contributors are encouraged to take advantage of this facility when data are novel and exciting, when rapid publication is of importance and when material can be presented concisely. Authors **must** include in their letter of submission a brief statement explaining the novelty of their work. Rapid Communications should describe completed work and should not be merely a preliminary communication.

Rapid Communications should be similar in format to full papers, except that they must occupy not more than four printed pages. This is about 3000 words, with appropriate deductions (at the rate of 1000 words/page) for Figures and Tables.

To achieve rapid publication, authors of accepted Rapid Communications will not be sent proofs. Rejection of a paper submitted as a Rapid Communication does not preclude its re-submission as a full paper for publication in *Clinical Science*, in which event the paper would be reviewed and reports provided with the editorial decision in the normal way.

2.5. Correspondence

Letters containing original observations or critical assessments of material published in *Clinical Science*, including Editorial Reviews, will be considered for the Correspondence section of the journal. Letters should be no longer than 750 words, with one Figure or Table and up to six references, or 1000 words maximum without a Figure or Table. Letters relating to material previously published in *Clinical Science* should be submitted 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.

2.6. Editorial Reviews

These are normally commissioned. However, unsolicited reviews will be considered. Prospective authors should first submit a synopsis of their proposed review rather than the full typescript.

2.7. 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, U.K., who will issue copies on request. Experience has shown that such requests are frequently received.

2.8. Proof corrections

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

2.9. 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 (except for Rapid Communications, where they should be ordered when the subedited typescript is returned).

2.10. Availability on MEDLINE and from Adonis

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

Full text with illustrations of individual papers can be obtained from Adonis Document Delivery Service, PO Box 839, 1000 AV Amsterdam, The Netherlands.

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, except those indicated by an asterisk in the list on p. vii, should not appear in the title and short title nor, if possible, in the Summary. Numbers, not initials, should be used for patients and subjects.

3.2. Anatomical nomenclature

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

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. Biochemical nomenclature

As far as possible authors should follow the recommendations of the Nomenclature Committee of IUBMB and IUPAC-IUBMB Joint Commission on Biochemical Nomenclature (see *Biochemical nomenclature and related documents*, 2nd ed., London: Portland Press, 1992; for corrections see *Eur J Biochem* 1993; **213**: 1-3).

3.5. 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 *Biochem J* 1996; **313**: 1-15.

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.

3.6. Computer modelling

Papers concerned primarily with computer modelling techniques are acceptable provided that use of such techniques leads to a clear choice between two or more alternative hypotheses, or to the formulation of a new hypothesis amenable to experimental challenge or verification, or provides some new insight into the behaviour of a particular physiological system. Extensive technical details of hardware and software should not be given.

3.7. 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 masses of many drugs may be found in *The Merck Index*, 11th ed. Rahway, NJ, U.S.A.: Merck and Co. Inc., 1989.

3.8. Enzymes

Nomenclature should follow that given in *Enzyme Nomenclature* (San Diego: Academic Press, 1992); for corrections and additions see *Eur J Biochem* 1994; **223**: 1-5 and *Eur J Biochem* 1995; **232**: 1-6. The 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 can be expressed as that amount of material which will catalyse transformation of 1 μmol of the substrate/s under defined conditions, including temperature and pH. This gives the unit of the amount of enzyme named the katal (symbol kat). 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 prepara-

tion, assayed under identical conditions. Activities of enzymes should normally be expressed as units/ml or units/mg of protein.

3.9. 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 of 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.

For methods or assays crucial to the understanding of the paper, information should normally be provided on the validity, accuracy and precision of those methods.

3.10. Figures and Tables

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.

Figures should be supplied in a form that can be reproduced directly by the printer, 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. Figures are not routinely relettered. Authors should ensure that nomenclature, abbreviations, etc. used in lettering of Figures correspond to those used in the text. Separate panels within Figures should be clearly marked (a), (b), (c), etc. so that they can be referred to easily in the legend and text. Acceptable symbols for experimental points are ●, ▲, ■, ○, △, □. The symbols × or + should be avoided. Symbols should not be generated by using tints or a graphics program. 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, nor should axes extend appreciably beyond the data. Only essential information that cannot readily be included in the legend should be written within the Figure.

▶ The use of tints should be avoided; however, if tints are necessary, please ensure that a dot fill of 100 lines per

inch or lower is used. Columns in histograms should be differentiated by the use of simple hatching etc.

Figures for half-tone reproduction should be submitted as glossy prints. **Four copies (not photocopies) of each print should be provided.** All lettering should be placed directly on to the Figure, not on a clear film overlay. Where the magnification is to be indicated (e.g. on electron micrographs), this should be done by adding a bar representing a stated length.

Colour figures are accepted when, in the opinion of the Editorial Board, they are essential to illustrate a particular scientific point. Authors will normally be required to pay the full cost of colour separation and printing (at 1997 prices, approximately £1000 for the first Figure and £200 for each subsequent Figure).

Tables should be typed separately from the text. They should have an underlined title followed by any legend. Parameters being measured, with units if appropriate, should be clearly indicated in the column headings.

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.

Care is needed when using powers in Figure and Table headings to avoid numbers with too many digits (see 3.17).

3.11. 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.

3.12. 'Homology'

The term 'homologous' has a precise meaning in biology of 'having a common evolutionary origin', but it has often been used in work on protein and nucleic acid sequences to mean simply 'similar'. A group of experts has urged that the interests of clarity are best served by restricting use to the more precise definition (Reeck GR, et al. *Cell* 1987; 40: 667; Lewin R. *Science* 1987; 237: 1570). *Clinical Science* agrees with these arguments and aims to preserve the distinction between 'homologous' and 'similar' in its pages.

3.13. Isotope measurements

Where possible radioactivity should be expressed in absolute terms; the SI unit for radioactivity is the becquerel (Bq), defined as 1 disintegration/s, but the Curie (Ci; 1 Ci = 3.7×10^{10} Bq) may also be used. Alternatively, radioactivity may be expressed as disintegrations (or counts) per unit of time, e.g. disintegrations/s (d.p.s.) or counts/min (c.p.m.).

3.14. 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.

For the time being this can continue to be expressed in rems, but with the corresponding figure in sieverts (Sv) given in parentheses after it.

3.15. 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, *Biochem J* 1997; **321**: 1–16).

3.16. Nomenclature of disease

This should follow the International Classification of Disease (9th revision. Geneva: World Health Organization, 1979) as far as possible.

3.17. 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 $10^3 k$ 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 heading 'concn. ($\mu\text{mol/l}$)' or as 15 under the heading ' $10^5 \times \text{concn. (mol/l)}$ ', but not as 15 under the heading ' $\text{concn. (mol/l} \times 10^{-5})$ '.

3.18. References

The 'Vancouver' system is used: references in the text are numbered consecutively in the order in which they are first mentioned, the numerals being given in brackets, e.g. [22]. References cited in Figure legends or Tables only should be numbered in a sequence determined by the position of the first mention in the text of the Figure or Table. References should be listed in numerical order and the names of all authors of a paper should be given (except where there are seven or more when only the first three should be listed and et al. added), with the full title of the paper and the source details in full including the first and last page numbers, e.g.

- Mathur R, Mortimore IL, Jan MA, Douglas NJ. Effect of breathing pressure and posture on palatoglossal and genioglossal tone. *Clin Sci* 1995; **89**: 441–5.

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

- Cornish-Bowden A. *Fundamentals of enzyme kinetics*. London: Portland Press Ltd, 1995.
- Hainsworth R, Drinkhill MJ. Regulation of blood volume. In: Jordan D, Marshall JM, eds. *Cardiovascular regulation*. London: Portland Press Ltd, 1995: 77–91.

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. In the case of quotations from personal communications the authors **must** provide documentary evidence that permission for quotation has

been obtained. 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.

3.19. 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 $\mu\text{g/l}$. 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 compounds in a reaction mixture are final concentrations or the concentrations in solutions added.

3.20. Spectrophotometric data

The general name for the quantity $\log(I_0/I)$ is attenuation, and it reduces to absorbance when there is negligible scattering or reflection. The more general term 'attenuance' should be used when scattering is considerable, e.g. when the quantity is measured to estimate the cell density of a culture. Otherwise the term absorbance should be used; neither should be called extinction or optical density. Symbols used are: A , absorbance; D , attenuation; a , specific absorption coefficient ($\text{litre g}^{-1} \text{cm}^{-1}$) (alternatively use $A_{1\%}^{1\text{cm}}$); ϵ , molar absorption coefficient (the absorbance of a molar solution in a 1 cm light-path) ($\text{litre mol}^{-1} \text{cm}^{-1}$, *not* $\text{cm}^2 \text{mol}^{-1}$).

3.21. Spelling

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

3.22. 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. Authors are recommended to consult the statistical guidelines presented by Altman et al. in 'Statistical

tical guidelines for contributors to medical journals' *Br Med J* 1983; **286**: 1489–93.

The type of statistical test used should be stated in the Methods section. A reference should be given for the less commonly encountered statistical tests. The format for expressing mean values and standard deviations or standard errors of the mean is, for example: mean cardiac output 10.4 litres/min (SD 1.2; $n = 11$). Degrees of freedom should be indicated where appropriate. Levels of significance are expressed in the form $P < 0.01$.

3.23. Trade names

The name and address of the supplier of special apparatus and of biochemicals should be given. Registered trademarks should be identified by the symbol ® where they appear in the text. 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 in physical chemistry*, Oxford: Blackwell Scientific Publications Ltd, 1988) are used by *Clinical Science*. All papers submitted should use these units except for blood pressure values, which should be expressed in mmHg, and gas partial pressures, where values at the author's discretion may be given in mmHg (with kPa in parentheses) or as kPa (with mmHg in parentheses). Airways pressure should be expressed in kPa. Where molecular mass 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	$\text{kg m}^2 \text{s}^{-2}$
force	newton	N	$\text{kg m s}^{-2} = \text{J m}^{-1}$
power	watt	W	$\text{kg m}^2 \text{s}^{-3} = \text{J s}^{-1}$
pressure	pascal	Pa	$\text{kg m}^{-1} \text{s}^{-2} = \text{N m}^{-2}$
electric charge	coulomb	C	A s
electric potential difference	volt	V	$\text{kg m}^2 \text{s}^{-2} \text{A}^{-1} = \text{J A}^{-1} \text{s}^{-1}$
electric resistance	ohm	Ω	$\text{kg m}^2 \text{s}^{-3} \text{A}^{-2} = \text{V A}^{-1}$
electric conductance	siemens	S	$\text{kg}^{-1} \text{m}^{-2} \text{s}^3 \text{A}^2 = \Omega^{-1}$
electric capacitance	farad	F	$\text{A}^2 \text{s}^3 \text{kg}^{-1} \text{m}^{-2} = \text{A s V}^{-1}$
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 sub-multiples. The prefixes should be as follows:

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

*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 m μ m.

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 $\text{ml min}^{-1} \text{kg}^{-1}$.

5. ABBREVIATIONS, CONVENTIONS, DEFINITIONS, SYMBOLS AND SPECIAL COMMENTS

Standard symbols and abbreviations that can be used without definition are indicated by an asterisk; this list also 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 mono-phosphate (cyclic AMP)	cAMP*
adenosine 5'-phosphate	AMP*
adenosine 5'-diphosphate	ADP*
adenosine triphosphatase	ATPase*
adenosine 5'-triphosphate	ATP*
adrenoceptor (see also blocking agents)	
adrenocorticotrophic hormone	ACTH
alanine	Ala
alternating current	a.c.*
alveolar minute ventilation	\dot{V}_A
alveolar to arterial oxygen partial pressure difference	($P_{A\text{O}_2} - P_{a\text{O}_2}$)
aminolaevulinic acid	ALA
ampere	A
angiotensin	ANG; reference amino acid abbreviations are used as prefix within brackets: e.g. [Sar ¹ , Val ⁵ , Ala ⁸]ANG
ångstrom	Å (1 ångstrom = 10^{-10} nm)
antidiuretic hormone	ADH (when referring to the physiological secretion)
arginine	Arg

arteriovenous	a–v: <i>permitted</i> in Figures and Tables	minus log of doses	pK avoid Latin designations such as b.d. and t.i.d.
asparagine	Asn	dyne	dyn
aspartic acid	Asp	elastance	<i>E</i> ; express in Pa m ⁻³
atmosphere (unit of pressure)	<i>not used</i> ; express in kPa (1 atmosphere = 101.325 kPa)	electrocardiogram	ECG*
attenuance	<i>D</i>	electroencephalogram	EEG*
base pair	bp*	electromotive force	e.m.f.*
becquerel	Bq (1 d.p.s.)	electron paramagnetic (or spin) resonance	EPR*, ESR*
blocking agents	e.g. β -adrenoceptor antagonists preferred	electronvolt	eV (or radiation energies)
blood pressure	express in mmHg	enzyme-linked immunosorbent assay	ELISA*
blood urea nitrogen	<i>not used</i> ; recalculate as urea, express in mmol/l	equation	eqn.
blood volume	BV	equivalents (amount of a chemical)	<i>not used</i> ; recalculate in molar terms
body temperature and pressure, saturated	BTPS*	erythrocyte count	express as 10 ¹² cells/l
bovine serum albumin	BSA*	ethanol, ethanolic	<i>not</i> ethyl alcohol or alcoholic
British Pharmacopoeia calculated	write in full and give edition calc. (in Tables only)	ethylenediaminetetra-acetate	EDTA*
'Calorie' (= 1000 cal)	<i>not used</i> ; recalculate as kilojoules (1 'Calorie' = 4.184 kJ)	'ethyleneglycolbis(aminoethyl-ether)tetra-acetate'	EGTA*
carbon dioxide output (in respiratory physiology)	\dot{V}_{CO_2} ; express in ml STP/min	exchangeable	Na _c , K _c etc. for total exchangeable sodium, potassium etc. Expt.; plural, Expts.
cardiac frequency	f_c in beats/min	Experiment (with reference numeral)	
cardiac output	express in l/min	expired minute ventilation	\dot{V}_E
centimetre	cm	extinction	use absorbance
clearance of x	C_x	extracellular fluid	ECF
coenzyme A and its acyl derivatives	CoA* and acyl-CoA*	extracellular fluid volume	ECFV
compare	cf.	extraction ratio of x (renal)	E_x
complement components	C1–C9*	fast protein liquid chromatography	FPLC*
compliance (respiratory physiology)	C; express in 1 kPa ⁻¹	Figure (with reference numeral)	Fig.; plural, Figs.
concentrated	conc.	filtered load of x (renal)	F_x
concentration	concn.; may be denoted [], e.g. plasma [HCO ₃ ⁻]	flavin-adenine dinucleotide	FAD*
concentration giving half-maximal response	EC ₅₀ *	flavin mononucleotide	FMN*
concentration giving half-maximal inhibition	IC ₅₀ *	follicle-stimulating hormone	FSH
conductance (respiratory physiology)	G; express in 1 s ⁻¹ kPa ⁻¹	forced expiratory volume in 1.0 s	FEV _{1.0}
correlation coefficient	<i>r</i>	fractional concentration in dry gas	<i>F</i>
counts/min, counts/s	c.p.m.*, c.p.s.*	fractional disappearance rate	<i>k</i> (as in $A = A_0 e^{-kt}$)
cubic centimetres	use ml	frequency of respiration	f_R ; in breaths/min
curie	Ci (1 Ci = 3.7 × 10 ¹⁰ d.p.s.)	functional residual capacity	FRC
cycle/s	Hz	gas–liquid chromatography	GLC*
cysteine	Cys	gas transfer factor	<i>T</i> ; in mmol min ⁻¹ kPa ⁻¹
dates	e.g. 11 August 1970	glomerular filtration rate	GFR
dead-space minute ventilation	\dot{V}_D	glutamic acid	Glu
dead-space volume	V_D	glutamine	Gln
degrees, Celsius or centigrade	°C	glutathione	GSH (reduced); GSSG (oxidized)
deoxy (prefix)	<i>not</i> desoxy	glycine	Gly
deoxycorticosterone	DOC	gram	g
deoxycorticosterone acetate	DOCA	gravitational field, unit of (9.81 m s ⁻¹)	g
deoxyribonucleic acid	DNA*	gray	Gy (100 rads)
complementary	cDNA*	growth hormone	GH; if human, hGH
deoxyribonuclease	DNase*	guanine-nucleotide-binding regulatory protein	G-protein*
diethylaminoethylcellulose	DEAE-cellulose*	haematocrit	Hct; no units
differential of x with respect to time	\dot{x} (= dx/dt)	haemoglobin	Hb*; express in g/dl
1,25-dihydroxycholecalciferol	1,25-(OH) ₂ D ₃	half-life	$t_{1/2}$
dilute	dil.	hertz (s ⁻¹)	Hz
dimethyl sulphoxide	DMSO*	high-pressure (or high-performance) liquid chromatography	HPLC*
2,3-diphosphoglycerate	2,3-DPG	histidine	His
direct current	d.c.*	hour	h
disintegrations/min	d.p.m.*	human chorionic gonadotropin	hCG
disintegrations/s	d.p.s.*	human placental lactogen	hPL
dissociation constant		hydrocortisone	use cortisol
acidic	K_a		
apparent	e.g. K'_a		
basic	K_b		

hydrogen ion activity minus log of	aH; express in nmol/l pH	minute (60 s)	min
25-hydroxycholecalciferol	25-(OH)D ₃	molal	mol/kg
4-(2-hydroxyethyl)-1-piperazine-ethanesulphonic acid	Hepes*	molar (concentration)	mol/l; <i>not M</i>
hydroxyproline	Hyp	molar absorption coefficient	ϵ (the absorbance of a molar solution in a 1 cm light-path)
immunoglobulins	IgA, IgD, IgE, IgG, IgM*	mole	mol
infrared	IR*	molecular mass	express in Da or kDa
injection routes:	use abbreviations only in Figures	molecular mass (relative)	M_r (no units)
intra-arterial	i.a.	4-morpholine propanesulphonic acid	Mops*
intramuscular	i.m.	nicotinamide-adenine dinucleotide	NAD if oxidation state not indicated*
intraperitoneal	i.p.		NAD ⁺ if oxidized*
intravenous	i.v.		NADH if reduced*
subcutaneous	s.c.	nicotinamide-adenine dinucleotide phosphate	NADP if oxidation state not indicated*
international unit	i.u. (definition and reference should be given for uncommon or ambiguous applications, e.g. enzymes)	normal	NADP ⁺ if oxidized*
			NADPH if reduced*
			should not be used to denote the concentration or osmolarity of a solution
intracellular fluid	ICF	normal temperature and pressure	use standard temperature and pressure (STP*)
intracellular fluid volume	ICFV	nuclear magnetic resonance	NMR*
ionic strength	<i>I</i>	number (in enumerations)	no. (in Tables only)
isoleucine	Ile	observed	obs. (in Tables only)
isotonic	specify composition of fluid, e.g. 150 mmol/l NaCl	ohm	Ω
	e.g. [U- ¹⁴ C]glucose, [1- ¹⁴ C]glucose, sodium [1- ¹⁴ C]acetate; use ¹³¹ I-labelled albumin, <i>not</i> [¹³¹ I]albumin	ornithine	Orn
isotopically labelled compounds	for simple molecules: ¹⁴ CO ₂ , ³ H ₂ O	<i>ortho</i> -orthophosphate (inorganic)	<i>o</i> -P _i
		osmolarity	express in osmol (or mosmol)/l
		oxygen uptake per minute (in respiratory physiology)	V_{O_2} ; express in ml STP/min
joule	J	packed cell volume	PCV; express in %
katal	kat	page, pages	p., pp.
kilobases	kb*	<i>para</i> -	<i>p</i> -
kilogram	kg	<i>para</i> -aminohippurate	PAH
lactate dehydrogenase	LDH	partial pressure	<i>P</i> ; express in either kPa or mmHg (see p. vii)
leucine	Leu		P_{AO_2}
leucocyte count	express as 10 ⁹ cells/l	e.g. alveolar, of O ₂	P_{ACO_2}
lipoproteins (serum)		arterial, of CO ₂	P_{capO_2}
high density	HDL	capillary, of O ₂	P_{ETCO_2}
low density	LDL	end-tidal, of CO ₂	P_{VCO_2}
very low density	VLDL	mixed venous, of CO ₂	
litre	l (write in full if confusion with the numeral 1 is possible)	pascal	Pa
logarithm (base 10)	log	per	/
logarithm (base e)	ln	per cent	%
luteinizing hormone	LH	petroleum ether	<i>not used; use light petroleum and give boiling range</i>
lysine	Lys	phenylalanine	Phe
mass spectrometry	MS*	phenylmethanesulphonyl fluoride	PMSF*
maximum	max.	phosphate-buffered saline	PBS*
mean corpuscular haemoglobin	MCH; express in pg	plasma renin activity	express as pmol of angiotensin I h ⁻¹ ml ⁻¹
mean corpuscular haemoglobin concentration	MCHC; express in g/dl	plasma volume	PV
mean corpuscular volume	MCV; express in fl (1 $\mu\text{m}^3 = 1 \text{ fl}$)	poise	1 poise = 10 ⁻¹ N s m ⁻²
melting point	m.p.	polyacrylamide-gel electrophoresis	PAGE*
<i>meta</i> -	<i>m</i> -	potential difference	p.d.
methanol, methanolic	<i>not</i> methyl alcohol	power output	W (1 kpm/min = 0.1635 W)
methionine	Met	precipitate	ppt.
metre	m	pressure	<i>P</i> ; express in kPa (except for blood pressures and gas partial pressures: see p. vii); 1 kPa = 7.5 mmHg
Michaelis constant	K_m	probability of an event being due to chance alone	<i>P</i>
micromole	μmol	proline	Pro
micron (10 ⁻⁶ m)	μm ; <i>not</i> μ	pulmonary capillary blood flow	\dot{Q}_c
milliequivalent	<i>not used; give amount in mmol</i>	pyrophosphate (inorganic)	PP _i *
millilitre	ml		
millimetre of mercury	mmHg; for blood pressure and, at authors' discretion, for gas partial pressures: see p. vi (1 mmHg = 0.133 kPa)		
millimolar (concentration)	mmol/l; <i>not mM</i>		
millimole	mmol		
minimum	min.		

rad (radiation dose; 10^{-5} J absorbed/g of material)	not abbreviated (100 rads = 1 Gy)	steroid nomenclature	see Eur J Biochem 1989; 186 : 429–58 and Eur J Biochem 1993; 213 : 1–3
radioimmunoassay	RIA*	sulphydryl	<i>use</i> thiol or SH
red blood cell	<i>use</i> erythrocyte; express counts as 10^{12} cells/l	sum	Σ
relative band speed (partition chromatography)	R_f	Svedberg unit	S
rem	100 ergs/s \times quality factor	temperature (absolute)	T
renin	<i>see</i> plasma renin activity	(empirical)	t
residual volume	RV	temperature, thermodynamic	K
resistance (rheological)	R ; express in $\text{kPa l}^{-1} \text{s}$	thin-layer chromatography	TLC*
respiratory exchange ratio (pulmonary)	R	threonine	Thr
respiratory quotient (metabolic)	RQ	thyrotrophic hormone	TSH
revolutions	rev.	thyrotrophin-releasing hormone	TRH
rev./min	<i>not</i> r.p.m.; <i>use</i> g if possible (see p. viii)	tidal volume	V_T
ribonucleic acid	RNA*	time (symbol)	t
messenger	mRNA*	time of day	e.g. 18.15 hours
transfer	tRNA*	torr	<i>not</i> used; <i>use</i> kPa (1 torr = 0.133 kPa)
ribonuclease	RNase*	tryptophan	Trp
röntgen	R	tubular maximal reabsorptive capacity for x	$T_{m,x}$
saline	define at first mention [e.g. NaCl solution (154 mmol/l)]	tyrosine	Tyr
saturation	S , e.g. S_{aO_2} for arterial oxygen saturation (see partial pressure for other analogous abbreviations)	ultraviolet	UV*
second (time)	s	urinary concentration of x	U_x
serine	Ser	valency	e.g. Ca^{2+} , <i>not</i> Ca^{++}
sievert	Sv (1 J/kg \times quality factor)	valine	Val
solvent systems	e.g. butanol/acetic acid/water (4:1:1, by vol.), butanol/acetic acid (4:1, v/v)	variance ratio	F
sodium dodecyl sulphate	SDS*	vascular resistance	express in $\text{kPa l}^{-1} \text{s}$ (with value in dyn s cm^{-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
species	sp., plural spp.	velocity	v ; express as m s^{-1}
specific activity	sp. act. Confusion must be avoided between e.g. specific radioactivity and the specific activity of an enzyme	venous admixture	Q_{va}
specific conductance of airways	$sGaw$; express in $\text{s}^{-1} \text{kPa}^{-1}$	viscosity, dynamic	η
standard deviation	SD*	viscosity, kinematic	ν
standard error of the mean	SEM*	vital capacity	VC
standard temperature and pressure	STP	volt	V
		volume of blood (in cardio-respiratory physiology)	Q ; <i>use</i> \dot{Q} for blood flow rate
		watt	W
		wavelength	λ
		weight	wt.
		white blood cell	<i>use</i> leucocyte; express counts as 10^9 cells/l

Volume 92

AUTHOR INDEX

- Aalkjaer, C. 455-465
Aarsen, M. 367-374
Agapitos, E.B. 315-320
Al-Ani, M. 175-180
Alcolado, J.C. 225-235
Alcolado, R. 103-112
Al-Khalidi, A.H. 175-180
Allaway, S.L. 261-268
Anderson, N.H. 237-246
Ando, S.-i. 543-550
Andreasen, J. 423-430
Anthony, F. 567-571
Arnold, J.M.O. 559-566
Arthur, M.J.P. 103-112
Asghar, M.S. 529-541
Avanzolini, G. 351-359
- Bäcker, A. 579-585
Baker, R. 37-44
Banide, H. 63-67
Barden, A. 37-44
Barry, P.W. 593-598
Beesley, C.M. 307-313
Beilin, L.J. 37-44
Berg, J.N. 95-101
Bergström, J. 391-396
Bianco, F. 351-359
Bolla, G. 285-289
Boon, N.A. 133-138
Borthwick, A. 291-296
Brooke-Wavell, K. 75-80
Burton, G. 87-93
Busby, M. 481-486
Butler, G.C. 543-550
- Calvo, M. 331-333
Camisasca, P. 505-510
Camus, G. 415-422
Carr, S.J. 497-503
Carstens, J. 397-407
Casado, F.J. 247-253
Caslake, M. 237-246
Castaño, E. 247-253
Cavalcanti, S. 351-359
Charles, C.J. 159-165
Cheung, B. 59-62
Chiari, L. 351-359
Christensen, N.J. 423-430
Collier, D.J. 593-598
Cooper, A. 551-557
Cooper, G.J.S. 467-471
- Coote, J.H. 175-180
Coy, D.H. 467-471
Cumin, F. 455-465
Cummins, A.G. 385-389
- Dabrosin, C. 493-496
Dale, B.M. 385-389
Davaris, P.S. 315-320
Dave, S. 277-284
Dawodu, J.B. 69-73
De Caterina, R. 45-50
De Vries, P.M.J.M. 367-374
Deby, C. 415-422
Deby-Dupont, G. 415-422
Delgado, J.A. 269-275
Dell'Omo, G. 45-50
Dessauer, C.W. 223
Devlin, A.M. 237-246
Di Bello, V. 45-50
Dipietro, J.A. 345-349
Dittrich-Hannen, B. 379-383
Docherty, K. 321-330
Dominiczak, A.F. 237-246
Dominiczak, M.H. 237-246
Donaldson, G.C. 261-268
Donker, A.J.M. 51-58, 367-374
Dores, J. 147-152
Driscoll, M.D. 559-566
Drüeke, T.B. 63-67
Duchateau, J. 415-422
Dwarakanath, A.D. 307-313
- Eldrup, E. 423-430
Endo, T. 123-131
Enzmann, G. 351-359
Ercilla, G. 331-333
Espiner, E.A. 159-165, 255-260
Etolhi, G. 69-73
Evans, P. 567-571
- Fallen, E.L. 167-174
Fanning, L. 587-592
Farrance, D.P. 277-284
Fearon, K.C.H. 215-221
Felipe, A. 247-253
Feng, C. 95-101
Finnie, I.A. 307-313
Fischer, J.E. 519-525
Fitzpatrick, D. 167-174
Fleisher, L.A. 345-349
Floras, J.S. 13-24, 543-550
Florkowski, C.M. 255-260
- Forsberg, A.M. 391-396
Förster, G. 511-517
Fraiture, B. 511-517
Frampton, C.M. 159-165, 255-260
Franklyn, J.A. 181-188
Fraser, R. S. 593-598
Fritsche, K.L. 95-101
- Galley, H.F. 361-365
Gammage, M.D. 181-188
Gans, R.O.B. 51-58
Garber, D.W. 473-479
García-Sacristán, A. 269-275
Garrido, E. 331-333
Geisler, P. 335-343
Gemmell, C.G. 69-73
Genovesi, S. 505-510
Gilman, A.G. 223
Golin, R. 505-510
Goutas, N.D. 315-320
Graham, D. 37-44
Grassi, G. 285-289
Green, N.K. 181-188
Grimble, R.F. 297-305
Grover, P.K. 205-213
Gulledge, T.P. 481-486
- Hackney, A.C. 481-486
Haffner, S. 573-578
Hallström, Å. 493-496
Hammar, M. 493-496
Hansen, Ch. 511-517
Haq, I.H. 431-432
Harada-Shiba, M. 197-203
Hardman, A.E. 75-80
Harker, L.A. 559-566
Hasselgren, P.-O. 519-525
Hayasaki, K. 453-454
Heagerty, A.M. 181-188, 551-557
Heine, R.J. 51-58
Hernández, M. 269-275
Hesselink, M.K.C. 189-195
Hezier, W. 481-486
Hironaga, K. 123-131
Hirooka, Y. 123-131
Hochmuth, K. 335-343
Hoeks, A.P. 487-491
Hoffman, E. 481-486
Hoogland, H.J. 487-491

- Howdle, P.D. 361–365
 Hultman, E. 391–396
 Hunt, R.H. 167–174
 Hunter, E.A.L. 297–305
 Husain, A. 69–73
 Imai, Y. 453–454
 Imaizumi, T. 123–131
 Iredale, J.P. 103–112
 Jackson, P.R. 431–432
 James, M.A. 139–145
 Javierre, C. 331–333
 Jensen, K.T. 397–407
 Jiang, N.-Y. 467–471
 Johnson, R.R. 379–383
 Johnson, T.R.B. 345–349
 Jones, P.R.M. 75–80
 Jones, S. 481–486
 Jouhanneau, P. 63–67
 Kadowaki, T. 453–454
 Kahaly, G. 511–517
 Kahr, O. 455–465
 Kamath, M. 167–174
 Kamijukkoku, S. 453–454
 Karhunen, L. 573–578
 Kawaguchi, A. 197–203
 Keefe, D.M.K. 385–389
 Keizer, H.A. 487–491
 Kelly, F.J. 87–93
 Kelly, M. P. 455–465
 Keyl, C. 335–343
 Kittas, C.N. 315–320
 Kondo, I. 527–528
 Kosaka, Y. 527–528
 Kotasek, D. 385–389
 Kramer, H.J. 579–585
 Kubik, P. 379–383
 Lacour, B. 63–67
 Lainchbury, J.G. 467–471
 Lamy, M. 415–422
 Lanfranchi, A. 285–289
 Lappalainen, R. 573–578
 Lee, W.K. 237–246
 Lemberger, P. 335–343
 Lenders, J.W.M. 13–24
 Leung, R. 59–62
 Lewis, L.K. 467–471
 Lindholm, B. 391–396
 Lindpaintner, K. 45–50
 Lombard, M. 375–377
 MacDermott, M. 587–592
 MacLeod, M.J. 237–246
 Maekawa, H. 453–454
 Maingay, J.P. 215–221
 Mamo, J.C.L. 197–203
 Mancia, G. 285–289
 Marchiori, G.E. 559–566
 Margeli, A.P. 315–320
 Marshall, J.M. 153–158
 Martin, I. 593–598
 Marzabal, P. 247–253
 Mason, N.P. 593–598
 McIntosh, R.S. 529–541
 McMurray, J. 431
 Meyer, T.A. 519–525
 Meyer-Lehnert, H. 579–585
 Michael, C.A. 37–44
 Miettinen, H. 573–578
 Milledge, J.S. 593–598
 Miller, M.R. 593–598
 Milner, R. 113–122
 Mohan, J.S. 153–158
 Mohsenifar, Z. 81–85
 Mæller, S.E. 423–430
 Monaghan, J.C. 409–414
 Moore, D. 497–503
 Moore, K. 433–443
 Morrison, C. 431
 Munro, L.H. 87–93
 Namba, T. 123–131
 Napoli, V. 45–50
 Nash, J. 307–313
 Newby, D.E. 133–138
 Nicholls, M.G. 159–165,
 467–471
 Nomoto, M. 527–528
 Norman, R.I. 497–503
 Nys, M. 415–422
 O'Dowd, G.M. 307–313
 O'Rahilly, S. 3–11
 Ogle, C.K. 519–525
 Ohanian, V. 181–188
 Orringer, E.P. 481–486
 Orvig, C. 379–383
 Osmond, C. 567–571
 Otto, E. 511–517
 Oyama, J. 123–131
 Packard, C.J. 237–246
 Panzetta, G. 351–359
 Parker, N. 307–313
 Pastor-Anglada, M. 247–253
 Payne, J.N. 431–432
 Pedersen, E.B. 397–407
 Pedrinelli, R. 45–50
 Petrucci, R. 45–50
 Pfeifer, M. 335–343
 Phillips, D.I.W. 291–296
 Pickin, D.M. 431–432
 Pieruzzi, F. 505–510
 Pillai, D.N. 409–414
 Pincus, S. 345–349
 Pollard, A.J. 593–598
 Pollard, P.F.A. 593–598
 Pollard, R.C. 593–598
 Poortmans, J. 415–422
 Posner, B.A. 223
 Potter, J.F. 139–145
 Prieto, D. 269–275
 Prins, J.B. 3–11
 Radda, G.K. 291–296
 Rademaker, M.T. 159–165
 Raisbeck, G. 63–67
 Ramsay, L.E. 431–432
 Reid, H.L. 153–158
 Reid, J.L. 237–246
 Reneman, R.S. 487–491
 Resell, L. 269–275
 Rhodes, J.M. 307–313
 Richards, A.M. 159–165,
 255–260, 467–471
 Ritchie, J. 37–44
 Robb, T.A. 385–389
 Robins, K. 175–180
 Robinson, D. 261–268
 Rodas, G. 331–333
 Rongen, G.A. 13–24
 Rooyackers, O.E. 189–195
 Ross, D.J. 81–85
 Ross, J.A. 215–221
 Rouhi, R. 511–517
 Russell, R.I. 69–73
 Ryall, R.L. 205–213
 Saenz de Tejada, I. 269–275
 Sage, R.E. 385–389
 Sakomura, Y. 453–454
 Samani, N.J. 455–465
 Sandeman, D. 291–296
 Sanderson, A.L. 291–296
 Savage, M.W. 147–152
 Schönholzer, K.W. 379–383
 Schulzer, M. 379–383
 Schwarting, K. 579–585
 Seguro, R. 331–333
 Seko, Y. 453–454
 Seravalle, G. 285–289
 Serjeant, G.R. 153–158
 Severi, S. 351–359
 Shahbazian, L.M. 95–101
 Sherebrin, M.H. 559–566
 Sherratt, E.J. 225–235
 Shiramoto, M. 123–131
 Sikand, K. 497–503
 Simonsen, U. 269–275
 Sloop, G.D. 473–479
 Smith, D. 197–203

- Smits, P. 13–24
Smulders, R.A. 367–374
Sossi, V. 379–383
Stehouwer, C.D.A. 367–374
Stein, C. 291–296
Stella, A. 505–510
Stokes, G.A. 409–414
Strayhorn, D. 481–486
Sturgess, R.P. 375–377
Suter, M. 379–383
Sutton, R.A.L. 379–383
Suzuki, S. 453–454
Swales, J.D. 139–145
Sybertz, E. 255–260

Takahashi, N. 453–454
Takeshita, A. 123–131
Teerlink, T. 367–374
Ter Maaten, J.C. 51–58
Ter Wee, P.M. 51–58
Theocharis, S.E. 315–320
Thien, T. 13–24
Thomas, A.W. 225–235
Thomas, M.G. 375–377
Thomas, P.W. 153–158
Thompson, C.H. 291–296

Thornton, J. 361–366
Thurston, H. 139–145
Tiao, G.M. 519–525
Tobe, K. 453–454
Tougas, G. 167–174
Townend, J. 175–180
Tsai, H.H. 307–313
Turpeinen, A. 573–578
Turri, C. 285–289

Ungerstedt, U. 493–496
Upton, A.R.M. 167–174
Uusitupa, M. 573–578

Vaile, J. 175–180
Van Kamp, G.J. 367–374
Venczel, E. 379–383
Ventura, J.L.I. 331–333
Vetterli, D. 379–383
Voorburg, A. 51–58

Wagenmakers, A.J.M. 189–195
Walker, A.B. 147–152
Walker, B.E. 361–365
Walker, V.R. 379–383
Walters, B.N. 37–44W

Wang, J.J. 519–525
Warrens, A.N. 25–36
Watt, P.A.C. 139–145
Watteel, G. 167–174
Webb, D.J. 133–138
Webster, N.R. 361–365
Weetman, A.P. 529–541
Wheeler, T. 567–571
Whitehead, S.A. 277–284
Wigmore, S.J. 215–221
Willekes, C. 487–491
Williams, G. 147–152
Withers, D.J. 445–451
Wu, P. 81–85

Yamamoto, A. 197–203
Yamamura, T. 197–203
Yamashiki, M. 527–528
Yandle, T.G. 255–260, 467–471
Yazaki, Y. 453–454
Yeo, W.W. 431–432
Yiou, F. 63–67
Yu, K.C.-W. 197–203

Zanchetti, A. 505–510
Zhang, Q.B. 69–73

Volume 92

SUBJECT INDEX

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

- Acetylcholine
 endothelium 123–131
 penile small arteries, nitric oxide 269–275
 substance P, *N*^G-monomethyl-L-arginine 133–138
- Acute-phase response
 cachexia, eicosapentaenoic acid 215–221
- Adipocyte
 differentiation, apoptosis 3–11*
- Adrenomedullin
 hypotension 467–472
 plasma levels, disease 59–62
- Aerobic metabolism
 human leucocyte antigen system 331–333
- Age
 hypertension, vascular resistance 551–557
 resistance arteries, endothelium-derived relaxing factor 139–145
 sympathetic activity, noradrenaline 285–289
- Aldosterone
 brain natriuretic peptide, endopeptidase inhibition 255–260
- Altitude sickness
 hypoxia, spirometry 593–598
- Aluminium
 intestinal absorption, accelerator mass spectrometry 379–383
 intestinal absorption, silicon 63–67
- Amino acids
 breast tissue, microdialysis 493–496
 diet, catecholamines 432–430
 vasodilatation, nitric oxide 367–374
- Angiotensin-converting enzyme inhibition
 renin–angiotensin system, heart failure 455–465
- Anion-exchange chromatography
 glycosaminoglycan analysis, Graves' disease 511–517
- Antibody response
 autoimmune thyroid disease 529–541*
- Antioxidants
 blood pressure 361–365
 vitamin E, smoking 87–93
- Apoptosis
 adipocyte 3–11*
- L-Arginine
 endothelium 123–131
 vasodilatation, nitric oxide 367–374
- Arterial pressure
 adrenomedullin 467–472
- Arterial pressure pulse
 non-invasive measurement, Fourier analysis 559–566
- Arterial wall properties
 menstrual cycle, sex hormones 487–491
- Artery structure
 hypertension 551–557
- Ascites
 hepatorenal syndrome 433–443*
- Atherosclerosis
 blood viscosity, lipoproteins 473–479
 chylomicron remnants, hypercholesterolaemia 197–203
 urinary albumin excretion, hypertension 45–50
- Atrial natriuretic peptide
 brain natriuretic peptide, endopeptidase inhibition 255–260
 haemodynamics, natriuresis 159–165
 tubular function, lithium clearance 397–407
- Autoimmune thyroid disease
 antibody response 529–541*
- Autonomic control
 heart rate variability, spectral analysis 351–359
- Autonomic nervous system
 oesophageal stimulation, heart rate variability 167–174
- Bile-duct ligation
 renal failure, endothelin 579–585
- Blood pressure
 antioxidants 361–365
 artery structure 551–557
 heart rate variability, fractal component 543–550
 urinary albumin excretion, hypertension 45–50
- Blood viscosity
 atherosclerosis, lipoproteins 473–479

- Body retention
 aluminium 63–67
 Bone mineral density
 walking 75–80
 Bosentan
 obstructive jaundice, renal failure 579–585
 Brachial artery
 arterial pressure pulse, non-invasive
 measurement 559–566
 Brain
 cytokines, endotoxaemia 519–525
 Brain natriuretic peptide aldosterone,
 endopeptidase inhibition 255–260
 haemodynamics, natriuresis 159–165
 Breast tissue
 menstrual cycle, microdialysis 493–496
 Bronchoconstriction
 oxygen saturation, altitude sickness 593–598

 Cachexia
 acute-phase response, eicosapentaenoic
 acid 215–221
 Calcium oxalate crystallization
 monosodium urate seeds, uric acid
 seeds 205–213
 Cardiac frequency
 heart failure, fractal component 543–550
 Cardiac myocytes
 transfection, hypertrophy 181–188
 Cardiac vagal tone
 muscle–heart reflex, isometric
 contractions 175–180
 Cardiovascular pharmacology
 purines 13–24*
 Carotenoids
 blood pressure 361–365
 Catecholamines
 amino acids, diet 423–430
 natriuresis 409–414
 Cell engineering
 insulin replacement, diabetes mellitus 321–330*
 Cell proliferation
 cyclic AMP, protein kinase 445–451*
 vitamin D₃, duodenal epithelium 375–377
 Cell–matrix interaction
 hepatic stellate cells 103–112*
 Central nervous system
 cytokines, endotoxaemia 519–525
 Chemoreceptors
 afferent nerve fibres, kidney 505–510
 Chemotherapy
 intestinal permeability 385–389
 Cholesterol
 coronary heart disease 431–432

 Chondroitin sulphate
 Graves' disease 511–517
 Chronic obstructive pulmonary disease
 adrenomedullin 59–62
 Chylomicron remnants
 phagocytosis, hypercholesterolaemia 197–203
 Cirrhosis
 adrenomedullin 59–62
 renal failure 433–443*
 Citrate
 aluminium, intestinal absorption 63–67
 Coronary heart disease
 lipids 431–432
 Crohn's disease
 lactoferrin, myeloperoxidase 307–313
 Cyclic AMP
 mitogenesis, protein kinase 445–451*
 Cyclic GMP
 natriuretic peptides 159–165
 Cysteine
 glutathione synthesis, inflammation 297–305
 Cytokine cascade
 granulocyte-colony-stimulating factor, hepatic
 regeneration 315–320
 Cytokine production
 T-lymphocytes, hepatitis B vaccination 527–528
 Cytokines
 endotoxaemia, central nervous system 519–525

 Demyelination
 multiple sclerosis 113–122*
 Dermatan sulphate
 Graves' disease 511–517
 Diabetes
 genetics, mitochondrial DNA 225–235*
 Diabetes mellitus
 insulin gene, gene therapy 321–330*
 Diet amino acids, catecholamines 423–430
 Dietary fat
 Listeria, mice 95–101
 Dietary protein
 glutathione synthesis, inflammation 297–305
 Differentiation
 adipocyte 3–11*
 Duodenal epithelium
 cell proliferation, vitamin D₃ 375–377

 Eating disorder
 obesity, leptin 573–578
 Eicosapentaenoic acid
 acute-phase response, cachexia 215–221
 Electric stimulation
 muscle contraction, zymosan 189–195

- Electrolyte content
 membrane potential, skeletal muscle 391–396
- Endopeptidase inhibition
 aldosterone, brain natriuretic peptide 255–260
- Endothelin
 bile-duct ligation, renal failure 579–585
 neutrophil activation, pre-eclampsia 37–44
- Endothelium
 L-arginine, *N*^G-monomethyl-L-arginine 123–131
- Endothelium-derived relaxing factor
 resistance arteries, age 139–145
- Endotoxaemia
 inflammatory response, exercise 415–422
 interleukin, gene expression 519–525
- Energy metabolism
 fatiguability, zymosan 189–195
- Epitaxy
 monosodium urate seeds, uric acid
 seeds 205–213
- Erectile dysfunction
 penile small arteries, nitric oxide 269–275
- Essential hypertension
 adrenomedullin 59–62
- Exercise
 bone mineral density 75–80
 endotoxaemia, inflammatory response 415–422
- Extracellular matrix
 oligodendrocyte, migration 113–122*
- Familial hypocholesterolaemia
 sodium transport, membrane
 microviscosity 237–246
- Fanconi syndrome
 maleic acid, sodium, potassium-ATPase 247–253
- Fatiguability
 muscle mitochondria, zymosan 189–195
- Fetal development
 heart rate variability 345–349
- Fetal growth
 glucose metabolism, muscle 291–296
- Fish oil
Listeria, mice 95–101
- Fourier analysis
 arterial pressure pulse, non-invasive
 measurement 559–566
- Fractal spectra
 heart rate variability, heart failure 543–550
- Free radicals
 vitamin E, smoking 87–93
- Gas chromatography–mass spectroscopy
 vitamin E 87–93
- Gender
 heart rate variability, fetal development 345–349
- Gene expression
 interleukin, endotoxaemia 519–525
 renin–angiotensin system, heart failure 455–465
- Gene therapy
 insulin gene, diabetes mellitus 321–330*
- Genetics
 mitochondrial DNA, diabetes 225–235*
- Glucose metabolism
 fetal growth, muscle 291–296
- Glutathione synthesis
 inflammation, dietary protein 297–305
- Glycosaminoglycan analysis
 high performance liquid chromatography, Graves'
 disease 511–517
- Granulocyte-colony-stimulating factor
 cytokine cascade, hepatic regeneration 315–320
- Granulosa cells
 steroidogenesis, nitric oxide 277–284
- Graves' disease
 antibody response 529–541*
 glycosaminoglycan analysis, high-performance
 liquid chromatography 511–517
- Gravity
 pulmonary perfusion 81–85
- Haematology
 temperature, seasonal mortality 261–268
- Haemodynamics
 natriuretic peptides 159–165
- Hashimoto's thyroiditis
 antibody response 529–541*
- Heart failure
 adrenomedullin 59–62
 heart rate variability, fractal component 543–550
 natriuretic peptides 159–165
 renin–angiotensin system, gene
 expression 455–465
- Heart rate variability
 autonomic nervous system, oesophageal
 stimulation 167–174
 fetal development 345–349
 heart failure, fractal component 543–550
- Heart rate
 isometric contractions 175–180
- Heart rate variability
 spectral analysis, autonomic control 351–359
 spectral analysis, sleep apnoea
 syndrome 335–343
- Helicobacter pylori* inflammation
 interleukin 8, reactive oxygen radicals 69–73

- Hepatic regeneration
 granulocyte-colony-stimulating factor, cytokine cascade 315–320
- Hepatic stellate cells
 matrix, liver fibrosis 103–112*
- Hepatitis B vaccination
 cytokine production 527–528
 hepatorenal syndrome 433–443*
- Homozygous sickle cell disease
 ulcer, posture 153–158
- Human chorionic gonadotrophin
 pregnancy, vascular endothelial growth factor 567–571
- Human leucocyte antigen system
 aerobic metabolism 331–333
- Hyaluronic acid
 Graves' disease 511–517
- Hydroxyurea
 physical activity, sickle-cell anaemia 481–486
- Hypercholesterolaemia
 chylomicron remnants, phagocytosis 197–203
- Hypertension
 antioxidants 361–365
 artery structure 551–557
 sodium–lithium countertransport, membrane microviscosity 497–503
 sympathetic activity, noradrenaline 285–289
 temperature, seasonal mortality 261–268
 urinary albumin excretion, atherosclerosis 45–50
- Hypertriglyceridaemia
 sodium transport, membrane microviscosity 237–246
- Hypertrophy
 cardiac myocytes, transfection 181–188
- Hyperuricosuria
 calcium oxalate crystallization 205–213
- Hypocapnia
 altitude sickness, spirometry 593–598
- Hypotension adrenomedullin 467–472
- Hypoxia
 altitude sickness, spirometry 593–598
 myocardial infarction, vascular endothelial growth factor 453–454
- Impotence
 penile small arteries, nitric oxide 269–275
- Infective diarrhoea
 lactoferrin, myeloperoxidase 307–313
- Inflammation
 glutathione synthesis, dietary protein 297–305
 Helicobacter pylori 69–73
- Inflammatory bowel disease
 lactoferrin, myeloperoxidase 307–313
- Inflammatory response
 endotoxaemia, exercise 415–422
- Insulin
 renal sodium and urate excretion 51–58
- Insulin gene
 gene therapy, diabetes mellitus 321–330*
- Insulin resistance
 fetal growth, muscle 291–296
 renal sodium and urate excretion 51–58
 urinary albumin excretion, hypertension 45–50
- Insulin vasodilatation
 resistance arteries, nitric oxide 147–152
- Integrin
 oligodendrocyte, migration 113–122*
- Interleukin
 acute-phase response, cachexia 215–221
 gene expression, endotoxaemia 519–525
 reactive oxygen radicals, *Helicobacter pylori* inflammation 69–73
- Intestinal absorption
 aluminium, accelerator mass spectrometry 379–383
 aluminium, silicon 63–67
- Intestinal permeability
 chemotherapy 385–389
- Isometric contractions
 muscle–heart reflex, cardiac vagal tone 175–180
- Isometric torque
 muscle weakness, zymosan 189–195
- Kidney
 afferent nerve fibres, chemoreceptors 505–510
- Lactoferrin
 inflammatory bowel disease, infective diarrhoea 307–313
- Laser Doppler flowmetry
 homozygous sickle cell disease 153–158
- Leptin
 eating disorder, obesity 573–578
- Lipids
 coronary heart disease 431–432
- Lipoproteins
 blood viscosity, atherosclerosis 473–479
- Listeria*
 fish oil, mice 95–101
- Lithium clearance
 atrial natriuretic peptide 397–407
 renal sodium and urate excretion 51–58
- Liver
 regeneration, granulocyte-colony-stimulating factor 315–320
- Liver disease
 renal failure 433–443*

- Liver fibrosis
 - hepatic stellate cells, matrix 103–112*
- L-Lysine
 - vasodilatation, nitric oxide 367–374
- Macrophages
 - nitric oxide, steroidogenesis 277–284
- Major histocompatibility complex
 - T-lymphocytes 25–36*
- Maleic acid
 - Fanconi syndrome, sodium, potassium-ATPase 247–253
- Mass spectrometry
 - aluminium, intestinal absorption 379–383
- Mast cell
 - lactoferrin, inflammatory bowel disease 307–313
- Matrix
 - hepatic stellate cells, liver fibrosis 103–112*
- Matrix regulation
 - metalloproteinase-1 103–112*
- Mechanoreceptors
 - afferent nerve fibres, kidney 505–510
- Membrane microviscosity
 - sodium transport, familial hypocholesterolaemia 237–246
 - sodium–lithium countertransport, hypertension 497–503
- Membrane potential
 - skeletal muscle, electrolyte content 391–396
- Menstrual cycle
 - amino acids, breast tissue 493–496
 - arterial wall properties, sex hormones 487–4991
- Metalloproteinase-1
 - matrix regulation 103–112*
- Methionine
 - glutathione synthesis, inflammation 297–305
- Mice
 - fish oil, *Listeria* 95–101
- Microdialysis
 - breast tissue, amino acids 493–496
- Migration
 - oligodendrocyte, multiple sclerosis 113–122*
- Mitochondria
 - muscle fatiguability, zymosan 189–195
- Mitochondrial disorders
 - genetics, diabetes 225–235*
- Mitochondrial DNA
 - genetics, diabetes 225–235*
- Mitogenesis
 - cyclic AMP, protein kinase 445–451*
- N*^G-Monomethyl-L-arginine
 - acetylcholine, substance P 133–138
 - endothelium 123–131
- Monosodium urate seeds
 - calcium oxalate crystallization 205–213
- Mucositis
 - chemotherapy 385–389
- Multiple sclerosis
 - oligodendrocyte, migration 113–122*
- Muscle
 - glucose metabolism, fetal growth 291–296
- Muscle contraction
 - fatiguability, zymosan 189–195
- Muscle–heart reflex
 - isometric contractions, cardiac vagal tone 175–180
- Muscle weakness
 - muscle mitochondria, zymosan 189–195
- Myeloperoxidase
 - inflammatory bowel disease, infective diarrhoea 307–313
- Myoblasts
 - T-lymphocytes, tolerance 25–36*
- Myocardial infarction
 - reperfusion therapy, vascular endothelial growth factor 453–454
- Myotonia
 - temperature, skeletal muscle 587–592
- Natriuresis
 - brain natriuretic peptide, endopeptidase inhibition 255–260
 - natriuretic peptides 159–165
 - prostaglandins, catecholamines 409–414
- Natriuretic peptides
 - haemodynamics, natriuresis 159–165
- Near infrared spectroscopy
 - muscle, fetal growth 291–296
- Nephrotoxicity
 - maleic acid, sodium, potassium-ATPase 247–253
- Neutrophil activation
 - pre-eclampsia, pregnancy 37–44
- Nitric oxide
 - endothelium, age 139–145
 - insulin vasodilatation, resistance arteries 147–152
 - penile small arteries, impotence 269–275
 - steroidogenesis, granulosa cells 277–284
 - vasodilatation, amino acids 367–374
- Noradrenaline
 - acetylcholine, substance P 133–138
 - aging, hypertension 285–289
- Obesity
 - adipocytes 3–11*
 - eating disorder, leptin 573–578

- Obstructive jaundice
 renal failure, endothelin 579–585
- Oesophageal stimulation
 autonomic nervous system, heart rate variability 167–174
- Oligodendrocyte
 migration, multiple sclerosis 113–122*
- Osteoporosis
 prevention, walking 75–80
- Oxidative stress
 vitamin E, smoking 87–93
- Oxygen saturation
 altitude sickness, bronchoconstriction 593–598
- Penile small arteries
 nitric oxide, impotence 269–275
- Phagocytosis
 chylomicron remnants, hypercholesterolaemia 197–203
- Physical activity
 hydroxyurea, sickle-cell anaemia 481–486
- Physical performance
 human leucocyte antigen system 331–333
- Physical training
 sympathetic activity, noradrenaline 285–289
- Polymorphism
 major histocompatibility complex 25–36*
- Portal hypertension
 renal failure 433–443*
- Posture
 homozygous sickle cell disease, ulcer 153–158
- Power spectrum analysis
 heart rate variability, oesophageal stimulation 167–174
- Preadipocyte
 differentiation, apoptosis 3–11*
- Pre-eclampsia
 neutrophil activation, pregnancy 37–44
- Pregnancy
 neutrophil activation, pre-eclampsia 37–44
 vascular endothelial growth factor, progesterone 567–571
- Progesterone
 vascular endothelial growth factor, pregnancy 567–571
- Progesterone synthesis
 granulosa cells, nitric oxide 277–284
- Prone posture
 pulmonary perfusion 81–85
- Prostaglandins
 endothelium 123–131
 natriuresis 409–414
- Protein kinase
 mitogenesis, cyclic AMP 445–451*
- Proto-oncogenes
 transfection, hypertrophy 181–188
- Pulmonary blood flow
 prone posture 81–85
- Pulmonary perfusion
 prone posture 81–85
- Purines
 cardiovascular pharmacology 13–24*
- Radial artery
 arterial pressure pulse, non-invasive measurement 559–566
- Radioimmunoassay
 adrenomedullin 59–62
- Reactive oxygen radicals
 interleukin 8, *Helicobacter pylori* inflammation 69–73
- Remyelination
 multiple sclerosis 113–122*
- Renal afferent nerves
 chemoreceptors 505–510
- Renal disease
 sodium–lithium countertransport, membrane microviscosity 497–503
- Renal failure
 adrenomedullin 59–62
 bile-duct ligation, endothelin 579–585
 liver disease 433–443*
- Renal sodium excretion
 insulin 51–58
- Renal urate excretion
 insulin 51–58
- Renin
 brain natriuretic peptide, endopeptidase inhibition 255–260
- Renin–angiotensin system
 gene expression, heart failure 455–465
- Reperfusion therapy
 vascular endothelial growth factor, myocardial infarction 453–454
- Resistance arteries
 endothelium-derived relaxing factor, age 139–145
 insulin vasodilatation, nitric oxide 147–152
- Sepsis
 interleukin, gene expression 519–525
- Sex hormones
 arterial wall properties, menstrual cycle 487–491
- Sickle-cell anaemia
 physical activity, hydroxyurea 481–486

- Signal transduction mitogenesis, protein kinase 445–451*
- Silicon
aluminium, intestinal absorption 63–67
- Single-photon emission computerized tomography
pulmonary perfusion, prone posture 81–85
- Skeletal muscle
membrane potential, electrolyte content 391–396
myotonia, temperature 587–592
- Sleep apnoea syndrome
heart rate variability, spectral analysis 335–343
- Smoking
vitamin E 87–93
- Sodium
excretion, insulin 51–58
tubular function, atrial natriuretic peptide 397–407
- Sodium, potassium-ATPase
Fanconi syndrome, maleic acid 247–253
- Sodium-hydrogen exchange
familial hypocholesterolaemia, hypertriglyceridaemia 237–246
- Sodium-lithium countertransport
membrane microviscosity, familial hypocholesterolaemia 237–246
membrane microviscosity, hypertension 497–503
- Spectral analysis
heart rate variability, autonomic control 351–359
heart rate variability, sleep apnoea syndrome 335–343
- Spirometry
hypoxia, altitude sickness 593–598
- Steroidogenesis
granulosa cells, nitric oxide 277–284
- Substance P
acetylcholine, *N*^G-monomethyl-L-arginine 133–138
- Survival
mice, dietary fat 95–101
- Sympathetic activity
aging, hypertension 285–289
- Sympathetic nervous system
hepatorenal syndrome 433–443*
purines 13–24*
- T-lymphocytes
cytokine production, hepatitis B vaccination 527–528
major histocompatibility complex 25–36*
- Temperature
haematology, hypertension 261–268
myotonia, skeletal muscle 587–592
seasonal mortality, hypertension 261–268
- Thyroid stimulating hormone receptor
antibody response, autoimmunity 529–541*
- Tissue inhibitor of metalloproteinase-1
matrix regulation 103–112*
- Tolerance
T-lymphocytes, myoblasts 25–36*
- Transfection
cardiac myocytes, hypertrophy 181–188
- Transforming growth factor β
hepatic stellate cells 103–112*
- Transplantation
oligodendrocyte 113–122*
- Tubular function
atrial natriuretic peptide 397–407
- Tumour necrosis factor
glutathione synthesis, dietary protein 297–305
- Ulcer
homozygous sickle cell disease, posture 153–158
- Ulcerative colitis
lactoferrin, myeloperoxidase 307–313
- Ultrasound
bone mineral density 75–80
- Urate excretion
insulin 51–58
- Uric acid seeds
calcium oxalate crystallization 205–213
- Urinary albumin excretion
atherosclerosis, hypertension 45–50
- Urinary aluminium excretion 63–67
- Urine
calcium oxalate crystallization 205–213
- Urodilatin
tubular function, lithium clearance 397–407
- Urolithiasis
calcium oxalate crystallization 205–213
- Vascular endothelial growth factor
myocardial infarction, reperfusion therapy 453–454
pregnancy, progesterone 567–571
- Vascular resistance
hypertension, age 551–557
- Vasodilatation
nitric oxide, amino acids 367–374
- Venous occlusion plethysmography
acetylcholine, substance P 133–138

- Ventilation–perfusion
 - prone posture 81–85
- Ventricular pacing
 - natriuretic peptides 159–165
- Visceral perception
 - autonomic nervous system, heart rate variability 167–174
- Vitamin C
 - blood pressure 361–365
- Vitamin D
 - blood pressure 361–365
- Vitamin D₃
 - cell proliferation, duodenal epithelium 375–377
- Vitamin E
 - smoking 87–93
- Walking
 - bone mineral density 75–80
- Zymosan
 - fatiguability, muscle mitochondria 189–195