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# CLINICAL SCIENCE

1986

## Guidance for Authors

### CONTENTS

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

### 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 (as Supplements) 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 two Deputy Chairmen 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 or one of the Deputy Chairmen 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 publica-

tion lies with the Chairman. If the Chairman is for any reason unavailable, a Deputy Chairman assumes this function.

#### 1.4. *Ethics of investigations*

(a) 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.

(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.

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 the Editorial Board is taken to imply that it reports work that has not been published in either the same or a substantially similar form, 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 or previous publications. The author, or in the case of multiple authorship the authors, will be asked to sign a statement vesting the copyright in the publishers. Requests for consent for reproduction of material published in *Clinical Science* should be addressed to the Editorial Manager.

## 2. SUBMISSION OF MANUSCRIPTS: GENERAL INFORMATION AND FORMAT

### 2.1. *General*

Papers submitted for publication should be sent to the Editorial Manager, *Clinical Science*, 7 Warwick Court, London WC1R 5DP.

The submission should contain four copies (of which three 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 and should be signed by all authors.

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, copies or reprints of the publication 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. Papers returned by authors later than 3 months after notification that revision is required will normally be treated as new submissions. 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.

**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. *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. 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. iv.

### 2.3. Short Communications

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 when material can be presented concisely. The Short Communication should describe completed work and 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. **If a Short Communication requires major revision or resubmission it will not be given priority for publication** and will be handled as for a full paper. Occasionally, authors who have submitted a full paper may be given the option of re-submitting their work in the Short Communication format. Such re-submissions will not normally be given priority for publication over other papers.

### 2.4. 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.

### 2.5. 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

Fifty 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 is on p. vii. 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 (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* (1984) **217**, 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. 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.

### 3.6. 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.

### 3.7. Enzymes

Nomenclature should follow that given in *Enzyme Nomenclature* (1978), Academic Press, London and New York, and 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 should preferably be expressed as that amount of material which will catalyse transformation of 1  $\mu$ mol 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.

### 3.8. 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.

### 3.9. 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.

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. 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, 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.

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.

### 3.10. 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.

### 3.11. 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 radioactivity per unit weight or, for stable isotopes, as atoms % excess.

Pending the general introduction of SI units radioactivity should continue to be expressed in terms of the curie (Ci) followed by the corresponding figure in terms of the becquerel (Bq; disintegrations/s), in parentheses, and suitably rounded.

### 3.12. 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.

### 3.13. 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* (1985) 225, 1-26).

### 3.14. Nomenclature of disease

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

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

### 3.16. References

The numerical citation system is now 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, with the full title of the paper and the source details in full including the first and last page numbers, e.g.

2. 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:

20. Mollison, P.L. (1967) *Blood Transfusion in Clinical Medicine*, 4th edn, p. 50. Blackwell Scientific Publications, Oxford
22. Reid, L. (1968) In: *The Lung*, p. 87. Ed. Liebow, A.A. & Smith, D.E. Williams and Wilkins, Baltimore.

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.

### 3.17. 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 components in a reaction mixture are final concentrations or the concentrations in solutions added.

### 3.18. 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 ( $\text{litre g}^{-1} \text{cm}^{-1}$ ) (alternatively use  $A_{1\text{cm}}^{1\%}$ );  $\epsilon$ , molar absorption coefficient (the absorbance of a molar solution in a 1 cm light-path) ( $\text{litre mol}^{-1} \text{cm}^{-1}$ , not  $\text{cm}^2 \text{mol}^{-1}$ ).

### 3.19. 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).

### 3.20. 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  $P < 0.01$ .

### 3.21. 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 in 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	$\text{kg m}^2 \text{s}^{-2}$
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	$\Omega$	$\text{kg m}^2 \text{s}^{-3} \text{A}^{-2} = \text{V A}^{-1}$
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	$\text{s}^{-1}$
volume	litre	l	$10^{-3} \text{ m}^3$

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

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:

Prefix	Symbol	Multiple	Prefix	Symbol	
10 <sup>6</sup>	mega	M	10 <sup>-3</sup>	milli	m
10 <sup>3</sup>	kilo	k	10 <sup>-6</sup>	micro	$\mu$
10 <sup>2</sup>	hecto	h*	10 <sup>-9</sup>	nano	n
10	deka	da	10 <sup>-12</sup>	pico	p
10 <sup>-1</sup>	deci	d*	10 <sup>-15</sup>	femto	f
10 <sup>-2</sup>	centi	c*			

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

Compound prefixes should not be used, e.g. 10<sup>-9</sup> m should be represented by 1 nm, not 1 m $\mu$ 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 ml min<sup>-1</sup> kg<sup>-1</sup>.

## 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 mono-phosphate	cyclic AMP
adenosine 5'-phosphate	AMP
adenosine 5'-pyrophosphate	ADP
adenosine 5'-triphosphate	ATP
adenosine triphosphatase	ATPase
adrenocorticotrophic hormone	ACTH
adrenoceptor (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
angiotensin	ANG; reference amino acid abbreviations are used as prefix within brackets: e.g. [Sar <sup>1</sup> , Val <sup>5</sup> , Ala <sup>8</sup> ]ANG
Ångstrom (Å)	<i>not used</i> ; express in nm (1 Ångstrom = 10 <sup>-10</sup> nm)
antidiuretic hormone	ADH (when referring to the physiological secretion)
arginine	Arg
arteriovenous	a-v: <i>permitted</i> in Figures and Tables
asparagine	Asn
aspartic acid	Asp
atmosphere (unit of pressure)	<i>not used</i> ; express in kPa (1 atmosphere = 101.325 kPa)
atomic weight	at. wt.
becquerel	Bq (1 d.p.s.)
blocking agents	e.g. $\beta$ -adrenoceptor antagonists preferred
blood pressure	express in mmHg
blood urea nitrogen	<i>not used</i> ; recalculate as urea, express in mmol/l
blood volume	BV
body temperature and pressure, saturated	BTPS
British Pharmacopoeia calculated	write in full and give edition calc. (in Tables only)
'Calorie' (= 1000 cal)	<i>not used</i> ; recalculate as kilojoules (1 'Calorie' = 4.184 kJ)



carbon dioxide output (in respiratory physiology)	$\dot{V}_{\text{CO}_2}$ ; express in ml STP/min	extinction	use absorbance
cardiac frequency	$f_c$ ; in beats/min	extracellular fluid	ECF
cardiac output	express in l/min	extracellular fluid volume	ECFV
centimetre	cm	extraction ratio of x (renal)	$E_x$
clearance of x	$C_x$	Figure (with reference numeral)	Fig.; plural, Figs.
coenzyme A and its acyl derivatives	CoA and acyl-CoA	filtered load of x (renal)	$F_x$
compare	cf.	follicle-stimulating hormone	FSH
complement fractions	C1-C9	forced expiratory volume in 1.0 s	FEV <sub>1,0</sub>
compliance (respiratory physiology)	C; express in l kPa <sup>-1</sup>	fractional concentration in dry gas	F
concentrated	conc.	fractional disappearance rate	k (as in $A = A_0 e^{-kt}$ )
concentration	concn.; may be denoted [ ]; e.g. plasma [HCO <sub>3</sub> <sup>-</sup> ]	frequency of respiration	$f_R$ ; in breaths/min
conductance (respiratory physiology)	G; express in l s <sup>-1</sup> kPa <sup>-1</sup>	functional residual capacity	FRC
correlation coefficient	r: may be used without definition	gas-liquid chromatography	g.l.c.
counts/min, counts/s	c.p.m., c.p.s.	gas transfer factor	T; in mmol min <sup>-1</sup> kPa <sup>-1</sup>
cubic centimetres	use ml	glomerular filtration rate	GFR
curie	Ci (1 Ci = 3.7 × 10 <sup>10</sup> d.p.s.)	glutamic acid	Glu
cycle/s	Hz	glutamine	Gln
cysteine	Cys	glutathione	GSH (reduced); GSSG (oxidized)
dates	e.g. 11 August 1970	glycine	Gly
dead-space minute ventilation	$\dot{V}_D$	gram(me)	g
dead-space volume	$V_D$	gravitational field, unit of (9.81 m s <sup>-2</sup> )	g
degrees, Celsius or centigrade	°C	growth hormone	GH; if human, HGH
deoxy (prefix)	not desoxy	guery	Gy (100 rads)
deoxycorticosterone	DOC	haematocrit	not allowed; use packed cell volume (PCV)
deoxycorticosterone acetate	DOCA	haemoglobin	Hb; express in g/dl
deoxyribonucleic acid	DNA	half-life	$t_{1/2}$
dialysate	diffusate preferred; 'dialysate' should be clearly defined	hertz (s <sup>-1</sup> )	Hz
diethylaminoethylcellulose	DEAE-cellulose	histidine	His
differential of x with respect to time	$\dot{x}$ (= dx/dt)	hour	h
1,25-dihydroxycholecalciferol	1,25-(OH) <sub>2</sub> D <sub>3</sub>	human chorionic gonadotropin	HCG
dilute	dil.	human placental lactogen	HPL
2,3-diphosphoglycerate	2,3-DPG	hydrocortisone	use cortisol
direct current	d.c.	hydrogen ion activity minus log of	aH; express in nmol/l pH
disintegrations/min	d.p.m.	25-hydroxycholecalciferol	25-(OH)D <sub>3</sub>
disintegrations/s	d.p.s.	hydroxyproline	Hyp
dissociation constant		immunoglobulins	IgA, IgD, IgE, IgG, IgM
acidic	$K_a$	injection routes:	use abbreviations only in Figures
basic	$K_b$	intra-arterial	i.a.
apparent	e.g. $K'_d$	intramuscular	i.m.
minus log of	pK	intrapertoneal	i.p.
doses	avoid Latin designations such as b.d. and t.i.d.	intravenous	i.v.
		subcutaneous	s.c.
		international unit	i.u. (definition and reference should be given for uncommon or ambiguous applications, e.g. enzymes):
dyne	dyn; used for vascular resistance	intracellular fluid	ICF
elastance	E; express in Pa m <sup>-3</sup>	intracellular fluid volume	ICFV
electrocardiogram	ECG	ionic strength	I
electroencephalogram	EEG	isoleucine	Ile
electromotive force	e.m.f.	isotonic	not used; specify composition of fluid, e.g. NaCl, 150 mmol/l
electron spin resonance	e.s.r.	isotopically labelled compounds	e.g. [U- <sup>14</sup> C]glucose, [1- <sup>14</sup> C]glucose, sodium [1- <sup>14</sup> C]acetate; use <sup>131</sup> I-labelled albumin, not [ <sup>131</sup> I]albumin
electronvolt	eV (for radiation energies)		for simple molecules: <sup>14</sup> CO <sub>2</sub> , <sup>3</sup> H <sub>2</sub> O
equation	eqn.		
equivalents (amount of a chemical)	not used; recalculate in molar terms		
erythrocyte count	express as 10 <sup>12</sup> cells/l		
erythrocyte sedimentation rate	ESR		
ethanol, ethanolic	not ethyl alcohol or alcoholic		
ethylenediaminetetra-acetate	EDTA		
exchangeable	Na <sub>e</sub> , K <sub>e</sub> etc., for total exchangeable sodium, potassium etc.	joule	J
Experiment (with reference numeral)	Expt.; plural, Expts.	kilogram(me)	kg
expired minute ventilation	$\dot{V}_E$	kilopond	not used; 1 kilopond = 9.8067 N
		lactate dehydrogenase	LDH
		leucine	Leu

leucocyte count	express as $10^9$ cells/l	arterial, of $\text{CO}_2$	$P_{\text{aCO}_2}$
lipoproteins (serum)		capillary, of $\text{O}_2$	$P_{\text{cPaO}_2}$
high density	HDL	mixed venous, of $\text{CO}_2$	$P_{\text{vCO}_2}$
low density	LDL		Pa
very low density	VLDL		/
litre	l (write in full if confusion with the numeral 1 is possible)	pascal	%
logarithm (base 10)	log	per cent	<i>not used; use light petroleum and give boiling range</i>
logarithm (base e)	ln	petroleum ether	Phe
luteinizing hormone	LH	phenylalanine	plasma renin activity
lysine	Lys		express as pmol of angiotensin $\text{I h}^{-1} \text{ ml}^{-1}$
maximum	max.	plasma volume	PV
mean corpuscular haemoglobin	MCH; express in pg	poise	1 poise = $10^{-1} \text{ N s m}^{-2}$
mean corpuscular haemoglobin concentration	MCHC; express in g/dl	potential difference	p.d.
mean corpuscular volume	MCV; express in fl ( $1 \mu\text{m}^3 = 1 \text{ fl}$ )	power output	$W$ ( $1 W = 0.1635 \text{ kpm/min}$ )
median lethal dose	$\text{LD}_{50}$	precipitate	ppt.
meta-	m-	pressure	$P$ ; express in kPa (except for blood pressures and gas tensions: see p. vi); 1 kPa = 7.5 mm Hg
melting point	m.p.		
methanol, methanolic	<i>not methyl alcohol</i>	probability of an event being due to chance alone	$P$
methionine	Met	proline	Pro
metre	m	protein-bound iodine (plasma)	PBI
Michaelis constant	$K_m$	pulmonary capillary blood flow	$\dot{Q}_c$
micromole	$\mu\text{mol}$	pyrophosphate (inorganic)	PPi
micron ( $10^{-6} \text{ m}$ )	$\mu\text{m}$ ; <i>not <math>\mu</math></i>	rad (radiation dose; $10^{-5} \text{ J absorbed/g of material}$ )	<i>not abbreviated</i> (100 rads = 1 Gy)
milliequivalent	<i>not used; give amount in mmol</i>	red blood cell	<i>use erythrocyte; express counts as <math>10^{12}</math> cells/l</i>
millilitre	ml	relative band speed (partition chromatography)	$R_F$
millimetre of mercury	mmHg; for blood pressure and, at authors' discretion, for gas tensions: see p. vi (1 mmHg = 0.133 kPa)	rem	100 ergs/s x quality factor
millimolar (concentration)	mmol/l; <i>not mm</i>	renin	<i>see plasma renin activity</i>
millimole	mmol	residual volume	RV
minimum	min.	resistance (rheological)	$R$ ; express in $\text{kPa l}^{-1} \text{ s}$
minute (60 s)	min	respiratory exchange ratio (pulmonary)	$R$
molal	mol/kg	respiratory quotient (metabolic)	RQ
molar (concentration)	mol/l; <i>not M</i>	revolutions	rev.
molar absorption coefficient	$\epsilon$ (the absorbance of a molar solution in a 1 cm light-path)	rev./min	<i>not r.p.m.; use g if possible</i> (see p. viii)
mole	mol	ribonucleic acid	RNA
molecular weight	mol. wt.	röntgen	R
nicotinamide-adenine dinucleotide	NAD if oxidation state not indicated NAD <sup>+</sup> if oxidized NADH if reduced NADP if oxidation state not indicated NADP <sup>+</sup> if oxidized NADPH if reduced	saline	define at first mention [e.g. NaCl solution (154 mmol/l)]
nicotinamide-adenine dinucleotide phosphate	should not be used to denote the concentration or osmolarity of a solution	saturation	$S$ , e.g. $S_{\text{aO}_2}$ for arterial oxygen saturation (see partial pressure for other analogous abbreviations)
normal	<i>use standard temperature and pressure (STP)</i>	second (time)	s
normal temperature and pressure	use standard temperature and pressure (STP)	serine	Ser
nuclear magnetic resonance	n.m.r.	sievert	Sv (1 J/kg x quality factor)
number (in enumerations)	no. (in Tables only)	solvent systems	e.g. butanol/acetic acid/water (4:1:1, by vol.), butanol/acetic acid (4:1, v/v)
observed	obs. (in Tables only)	species	sp., plural spp.
ohm	$\Omega$	specific activity	sp. act. Confusion must be avoided between e.g. specific radioactivity and the specific activity of an enzyme
ornithine	Orn	specific conductance of airways	$sGaw$ ; express in $\text{s}^{-1} \text{ kPa}^{-1}$
ortho-	<i>o-</i>	standard deviation	SD } may be used
orthophosphate (inorganic)	$P_i$	standard error of the mean	SEM } without definition
osmolarity	express in osmol (or mosmol)/l	standard temperature and pressure	STP
oxygen uptake per minute (in respiratory physiology)	$\dot{V}O_2$ ; express in ml STP/min	steroid nomenclature	<i>see Biochemical Journal</i> (1969) 113, 5-28; (1972) 127, 613-617
packed cell volume	PCV		
page, pages	p., pp.		
para-	<i>p-</i>		
para-aminohippurate	PAH		
partial pressure	$P$ ; express in either kPa or mmHg (see p. vi)		
e.g. alveolar, of $\text{O}_2$	$P_{\text{AO}_2}$		

sulphydryl	use thiol or SH	variance ratio	$F$
sum	$\Sigma$	vascular resistance	express in $\text{kPa l}^{-1} \text{s}$ (with value in $\text{dyn s cm}^{-5}$ in parentheses); primary values of differential vascular pressure (mmHg) and flow (l/min) should always also be given in Tables or text as appropriate
Svedberg unit	S		$v$ ; express as $\text{m s}^{-1}$
temperature (absolute)	$T$	velocity	$\dot{Q}_{va}$
temperature (empirical)	$t$	venous admixture	used only for buffer mixtures; otherwise use 5,5'-diethylbarbituric acid
temperature, thermodynamic	$^{\circ}\text{K}$	veronal	
thin-layer chromatography	t.l.c.	viscosity, dynamic	$\eta$
threonine	Thr	viscosity, kinematic	$\nu$
thyrotrophic hormone	TSH	vital capacity	VC
thyrotrophin-releasing hormone	TRH	volt	V
tidal volume	$V_T$	volume of blood (in cardio-respiratory physiology)	$\dot{Q}$ ; use $\dot{Q}$ for blood flow rate
time (symbol)	$t$	watt	W
time of day	e.g. 18.15 hours	wavelength	$\lambda$
torr	not used; use kPa (1 torr = 0.133 kPa)	weight	wt.
		white blood cell	use leucocyte; express counts as $10^9 \text{ cells/l}$
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. $\text{Fe}^{2+}$ , <i>not</i> $\text{Fe}^{++}$		
valine	Val		

# Volume 70

## AUTHOR INDEX

- Abraham, R.R. 285-293  
 Abrahams, J.M. 191-198  
 Adams, L. 131-140  
 Albajar, M. 627-634  
 Alberti, K.G.M.M. 23-29,  
 317-320  
 Allen, J.M. 485-488  
 Allison, D.J. 555-564  
 Amtorp, O. 513-522  
 Andersen, E.B. 321-325  
 Anderson, J. 327-331  
 Anderson, J.V. 507-512  
 Ang, V.T.Y. 177-184  
 Ansari, A.F. 103-110  
 Ardailou, R. 233-241  
 Aronson, J.K. 611-616  
 Asscher, A.W. 531-538  
 Avioli, L.V. 333-338
- Bäcker-Kreutz, E. 13-17  
 Ball, S.G. 347-352  
 Barres, C. 167-175  
 Beacham, J.L. 389-393  
 Bean, C. 263-269  
 Beastall, G.H. 99-102  
 Behrens, R.H. 469-475  
 Bennett, E.D. 177-184  
 Bennett, T. 111-117, 307-315  
 Berkin, K.E. 347-352  
 Bernheim, J. 527-530  
 Betteridge, D.J. 495-500  
 Biggi, A. 523-526  
 Bing, R.F. 485-488  
 Binkhorst, R.A. 399-410  
 Bishop, N. 601-609  
 Bissiouli, Z. 565-569  
 Blacklock, N.J. 359-363  
 Bloom, S.R. 327-331,  
 485-488, 507-512  
 Blumgart, L.H. 73-79  
 Boesen, F. 321-325  
 Boon, N.A. 611-616  
 Borland, C. 301-306  
 Boyle, R. 601-609  
 Breckenridge, A.M. 635-638  
 Brewerton, D.A. 409-416  
 Brown, M.J. 389-393
- Cabrol, C. 233-241  
 Carlier, P.G. 617-626  
 Cecchin, E. 213-214  
 Cerutti, C. 167-175  
 Chowdury, S. 359-363  
 Christofides, N. 327-331  
 Chronos, N. 131-140
- Coerwinkel, M.M. 399-401  
 Colina, I. 477-484  
 Collier, J.G. 177-184  
 Coruzzi, P. 523-526  
 Corzo, J. 477-484  
 Cotter, T.G. 59-62  
 Cowley, A.J. 155-157  
 Cunningham, J. 81-90  
 Currie, W.J.C. 501-505
- Da Costa, P.E. 39-45  
 Danpure, C.J. 417-425  
 Davie, M.W.J. 285-293  
 Deighton, N. 147-153  
 De Marchi, S. 213-214  
 Dickinson, K.E.J. 159-165  
 Dirks, J.H. 277-284  
 Dixey, J.J. 409-416  
 Drieu, L. 233-241  
 Duncan, H.J. 249-255
- Elamin, M.S. 601-609  
 Elliott, H.L. 147-153  
 Empey, D.W. 81-90, 91-98  
 Esnouf, M.P. 595-599
- Fagher, B. 63-72, 435-441  
 Faris, I.B. 249-255  
 Favre, L. 371-377  
 Few, J.D. 81-90  
 Finer, N. 395-398  
 Francis, M.J.O. 339-346  
 Freyschuss, U. 199-206  
 Fukuo, K. 333-338
- Gage, J.P. 339-346  
 Gallery, E.D.M. 263-269  
 Gardiner, S.M. 111-117,  
 307-315  
 Geiseler, D. 31-38  
 Giembczyk, M. 147-153  
 Gilles-Baillien, M. 617-626  
 Goatcher, A. 555-564  
 Godden, D.J. 301-306  
 Godfrey, N.P. 485-488  
 Gokal, R. 501-505  
 Grahame-Smith, D.G. 611-616  
 Gray, H.H. 583-586  
 Gregory, H. 359-363  
 Griffin, S. 73-79  
 Griffiths, P. 243-247  
 Grigg, R. 263-269
- Guarner, C. 477-484  
 Guarner, F. 477-484  
 Guz, A. 131-140
- Hadjis, N.S. 73-79  
 Hallis, K.F. 611-616  
 Hamilton, C.A. 147-153  
 Harber, M.J. 531-538  
 Hart, G. 601-609  
 Hassan, A.A.K. 577-582  
 Haylor, J. 141-145  
 Heaton, A. 23-29  
 Hebden, R.A. 111-117  
 Hems, R. 627-634  
 O. Henriksen, 321-325  
 Hewins, B. 285-293  
 Higenbottam, T.W. 301-306  
 Hilton, P.J. 583-586  
 Hiwatari, M. 191-198  
 Hjelm, M. 31-38  
 Hjemdahl, P. 199-206  
 Hodgetts, J. 47-51, 53-57  
 Holgate, S.T. 461-468  
 Howden, C.W. 99-102  
 Hoy, T.G. 47-51, 53-57  
 Huang, W.-C. 453-460  
 Hughes, J.M.B. 547-554,  
 555-564
- Imanaka, S. 333-338  
 Inglis, G.C. 347-352  
 Ivanov, V.E. 7-12
- Jacobs, A. 47-51, 53-57  
 Jandhyala, B.S. 103-110  
 Jeffrey, P.K. 427-433  
 Jelinek, J. 185-189  
 Jenkins, J.S. 177-184  
 Jennings, P.R. 417-425  
 Johnston, C.I. 191-198,  
 353-357  
 Johnston, D.G. 23-29,  
 317-320  
 Jones, C.R. 147-153  
 Jones, N.L. 207-210  
 Joosten, E.M.G. 399-401  
 Jordanoglou, J. 565-569  
 Juhlin-Dannfelt, A. 199-206
- Kariv, N. 527-530  
 Kassis, E. 513-522  
 Kavanagh, J.P. 359-363  
 Kay, J.D.S. 31-38

- Kenyon, C.J. 99-102  
 Kerr, D.N.S. 23-29  
 Kirby, J.D.T. 257-261  
 Kirk, J.M.E. 39-45  
 Kitazumi, T. 489-494  
 Klim, R.A. 627-634  
 Knox, P. 73-79  
 Koh, E. 333-338  
 Kolloch, R. 13-17  
 Kovacs, I.B. 257-261  
 Kumahara, Y. 333-338  
 Kuneš, J. 185-189
- Lane, R. 131-140  
 Lant, A.F. 409-416  
 Laurent, G.J. 39-45  
 Ledingham, J.G.G. 595-599  
 Lee, S.P. 271-276  
 Lepilin, M.G. 7-12  
 Leung, E. 353-357  
 Liedholm, H. 435-441  
 Lightman, S.L. 409-416  
 Linde, B. 199-206  
 Linden, R.J. 601-609  
 Littleton, R.J. 39-45  
 Lote, C.J. 141-145, 501-505  
 Loup, R. 371-377  
 Lowry, R. 301-306  
 Lunn, P.G. 469-475
- Macdonald, D.W.R. 389-393  
 Macdonald, I.A. 111-117  
 MacDougall, J.D. 207-210  
 MacIntyre, I. 389-393  
 Mackay, A.R. 257-261  
 Mallick, N.P. 501-505  
 Mann, J.S. 461-468  
 Marklund, S.L. 365-369  
 Marshall, M.O. 19-22  
 Martin, J. 469-475  
 Mary, D.A.S.G. 601-609  
 Matthewson, K. 295-299  
 Maxwell, D.L. 547-554  
 McCulloch, R. 211-212  
 McLaughlin, B. 59-62  
 Mehta, N. 177-184  
 Meyrick Thomas, R.H. 257-261  
 Miller, N.E. 221-231  
 Mills, P.G. 91-98  
 Mistry, C.D. 501-505  
 Mitchell, F.T. 395-398  
 Miyauchi, A. 333-338  
 Monti, M. 63-72, 435-441  
 Morimoto, S. 333-338  
 Moritz, U. 435-441  
 Morris, H.R. 389-393  
 Morrison, R. 155-157  
 Müller, H.-M. 13-17  
 Murlas, C. 571-575  
 Musiari, L. 523-526
- Newland, A.C. 81-90, 91-98  
 Nolop, K.B. 547-554  
 Northrop, C.A. 469-475  
 Novarini, A. 523-526
- Oei, T.L. 399-401  
 Oerlemans, F.T. 399-401  
 Ogura, H. 489-494  
 Öhman, M. 365-369  
 O'Malley, K. 59-62  
 Onishi, T. 333-338  
 Overlack, A. 13-17  
 Ozawa, T. 489-494
- Packard, C.J. 1-6  
 Paultre, C.Z. 167-175  
 Payne, N.N. 507-512  
 Pencharz, P.B. 587-593  
 Peters, S.W. 47-51  
 Pickles, C. 155-157  
 Pirie, S.C. 443-452  
 Pisarenko, O.I. 7-12  
 Podjarny, E. 527-530  
 Potts, D.J. 443-452  
 Prichard, B.N.C. 495-500  
 Prieto, J. 477-484  
 Purkiss, P. 417-425
- Quamme, G.A. 277-284
- Rainfray, M. 233-241  
 Ratcliffe, P.J. 595-599  
 Rathaus, M. 527-530  
 Ravanetti, C. 523-526  
 Rayman, G. 577-582  
 Record, C.O. 295-299  
 Reichl, D. 221-231  
 Reid, J.L. 99-102, 147-153  
 Renwick, A.G. 461-468  
 Ressel, C. 13-17  
 Richards, R.C. 359-363  
 Richardson, P.J. 583-586  
 Roberts, A.P. 127-129  
 Roberts, D.H. 635-638  
 Rodger, I.W. 147-153  
 Rogers, D.F. 427-433  
 Rorive, G.L. 617-626  
 Rudd, R.M. 159-165  
 Rustin, M.H.A. 257-261  
 Ryall, R.G. 127-129
- Sadakane, N. 489-494  
 Saito, T. 191-198  
 Sassard, J. 167-175  
 Sauer, P.J.J. 587-593  
 Saunders, D.M. 263-269  
 Seakins, J.W.T. 31-38
- Sestoft, L. 19-22  
 Sever, P.S. 159-165  
 Shapira, J. 527-530  
 Shepherd, J. 1-6  
 Shimada, K. 489-494  
 Shirley, D.G. 379-387  
 Silverton, N.P. 601-609  
 Simpson, H.C.R. 177-184  
 Sinkeler, S.P.T. 399-401  
 Skagen, K. 513-522  
 Skehan, J.D. 91-98  
 Slater, J.D.H. 507-512  
 Smith, C.C.T. 495-500  
 Smith, D.R. 601-609  
 Smith, G.W. 271-276  
 Smith, J.M. 587-593  
 Smith, R. 339-346  
 Sonne, M. 321-325  
 Stainer, K. 155-157  
 Stevenson, J.C. 389-393  
 Stoker, J.B. 601-609  
 Story, C.J. 127-129  
 Struthers, A.D. 327-331,  
 389-393, 507-512  
 Summerfield, J.A. 539-546  
 Stumpe, K.-O. 13-17  
 Sturgess, M.L. 403-408  
 Sutton, J.R. 207-210  
 Swainson, C.P. 243-247  
 Swan, P.C. 395-398  
 Swyer, P.R. 587-593
- Tasman-Jones, C. 271-276  
 Tatsis, G. 565-569  
 Taylor, M.E. 539-546  
 Taylor, R. 317-320  
 Thewles, A. 141-145  
 Thomson, N.C. 347-352  
 Toews, C.J. 207-210  
 Tooke, J.E. 119-125, 577-582  
 Topley, N. 531-538  
 Tripathi, A. 555-564  
 Tsao, Y. 635-638  
 Tsuchiya, H. 333-338  
 Turner-Warwick, M. 39-45
- Vallotton, M.B. 371-377  
 Van Aerde, J.E.E. 587-593  
 Van Bennekom, C.A. 399-401  
 Vandenburg, M. 501-505  
 Vandongen, R. 211-212  
 Vescovi, P.P. 523-526  
 Vilardell, F. 477-484
- Wadsö, I. 63-72  
 Wainwright, M. 469-475  
 Wallis, P.J.W. 81-90, 91-98  
 Walter, S.J. 379-387  
 Ward, G.R. 207-210

Ward, M.K. 23-29  
Watson, M.L. 243-247  
Watts, R.W.E. 417-425  
Wedzicha, J.A. 91-98  
Weeks, I. 403-408  
Wevers, R.A. 399-401  
Whitaker, G.E. 339-346  
Whyte, K. 147-153  
Wiggins, P.M. 271-276

Williams, D.A. 427-433  
Williams, T.D.M. 409-416  
Williamson, D.H. 627-634  
Willshire, I.R. 359-363  
Wilson, A.P. 495-500  
Winter, R.J.D. 159-165  
Wong, N.L.M. 277-284  
Woodcock, E.A. 353-357  
Woodhead, J.S. 403-408

Worwood, M. 215-220  
Wynn, V. 285-293

Yamamoto, H. 333-338  
Yeats, J.C. 485-488  
Yukawa, S. 333-338

Zicha, J. 185-189  
Zubillaga, J.E. 177-184

## SUBJECT INDEX

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

- Acetaldehyde, alcoholic liver disease 295-299  
 Acid-base micropuncture, renal 277-284  
 Acidosis  
   kidney magnesium 277-284  
   lactate, liver uptake 19-22  
 ACTH *see* Adrenocorticotrophic hormone  
 Adenosine, leucocytes 461-468  
 Adenosine 3':5'-cyclic monophosphate, renal papilla receptors 353-357  
 Adenosine receptors, kidney papilla 335-357  
 Adenosine triphosphatase, Na<sup>+</sup>, K<sup>+</sup>-dependent cation transport, essential hypertension  
   611-616  
   colonic, hypertension 617-626  
   leucocyte sodium transport 583-586  
 Adenosine triphosphate, skeletal muscle activity 207-210  
 Adipose tissue, blood flow 199-206  
 Adrenal cortex, omeprazole 99-102  
 Adrenaline  
    $\alpha_2$ -adrenoceptors 147-153  
   airway calibre, asthma 347-352  
   calcitonin gene related peptide 389-393  
   haemodynamics 199-206  
   measurement technique 211-212  
   platelets 495-500  
 $\alpha_2$ -Adrenoceptor, catecholamines 147-153  
 $\beta$ -Adrenoceptor  
   blockade, muscle thermogenesis 435-441  
   hypoxia 159-165  
   subcutaneous blood flow 513-522  
 Adrenocorticotrophic hormone, omeprazole 99-102  
 Age  
   baroreflex sensitivity 489-494  
   salt hypertension 185-189  
   skin perfusion pressure 249-255  
 Ageing, granulocyte chemotaxis, degranulation 59-62  
 Airway  
   calibre, asthma, catecholamine infusions 347-352  
   epithelial cells, smooth muscle responses 571-575  
   smooth muscle, mucosal removal 571-575  
 Alanine  
   hepatic ammoniogenesis, uraemia 627-634  
   urea synthesis rate 31-38  
 Albumin, *Nippostrongylus brasiliensis* infestation 469-475  
 Alcoholic liver disease, aldehyde dehydrogenase 295-299  
 Alcoholism, superoxide dismutase 365-369  
 Alcohol withdrawal syndrome, orthostatic hypotension 213-214  
 Aldehyde dehydrogenase, erythrocyte, liver 295-299  
 Aldosterone  
   atrial natriuretic peptide 507-512  
   cirrhosis, liver 477-484  
   natriuresis 523-526  
   sulindac 243-247  
   volume depletion 233-241  
 Alkaline phosphatase, gut mucosa 617-626  
 Alkalosis, kidney magnesium 277-284  
 Almitrine, hypoxia, pulmonary vasomotor responses 555-564  
 Alveolar hypoxia, almitrine, pulmonary vasomotor responses 555-564  
 Amino acids, urea synthesis rate 31-38  
 Ammoniogenesis, liver, uraemia 627-634  
 Angina, nifedipine 601-609  
 Angiotensin II  
   aldosterone, atrial natriuretic peptide 507-512  
   prostaglandin synthesis 527-530  
   renal prostaglandins 371-377  
 Apolipoprotein E receptors 1-6\*  
 Apolipoproteins 221-231\*  
 Aprotinin, mineralocorticoid escape 13-17  
 Arginine vasopressin  
   baroreflex mechanisms 307-315\*  
   haemodynamics 177-184  
   hypertension 191-198  
   indomethacin 409-416  
   volume depletion 233-241  
 Argipressin *see* Arginine vasopressin  
 Arterial surgery 249-255  
 Arteriovenous anastomoses, foot skin 577-582  
 Ascites, renal prostaglandins 479-484  
 Asthma  
   adenosine, leucocytes 461-468  
   airway calibre, catecholamine infusions 347-352  
 Atherosclerosis, lipoprotein receptors 1-6\*  
 Atrial natriuretic peptide  
   angiotensin II, aldosterone 507-512  
   sodium excretion 327-331  
 Autonomic dysfunction, heart 233-241  
 Bacteria, urinary, virulence 531-538\*  
 Baroreceptor reflex  
   sensitivity, hypertension 489-494  
   subcutaneous blood flow 513-522

- Baroreflex mechanisms, arginine vasopressin 307-315\*
- Basal metabolism, obesity 395-398
- Benign prostatic hypertrophy, urogastrone-epidermal growth factor 359-363
- Bicarbonate, renal magnesium transport 277-284 (*see also* sodium bicarbonate)
- Bile duct obstruction, plasma fibronectin 73-79
- Blood flow  
 adipose tissue 199-206  
 kidney, sulindac 242-247  
 limb, exercise 635-638  
 skeletal muscle 321-325  
 skin 577-582  
 subcutaneous, congestive heart failure 513-522
- Blood platelets,  $\alpha_2$ -adrenoceptors 147-153
- Blood pressure  
 asthma, catecholamine infusions 347-352  
 calcitonin gene related peptide 389-393  
 captopril 453-460  
 converting enzyme inhibitor S9490-3 167-175  
 kidney function 453-460  
 salt intake 185-189  
 vasopressin 191-198  
 verapamil 453-460
- Bronchial hyper-reactivity, mucosa 571-575
- Bronchitis, nicotine 427-433
- Body fluids, salt intake 185-189
- Body weight, dieting, obesity 285-293
- Bone constituents, dieting 285-293
- Bone marrow  
 ferritin content 47-51, 53-57  
 iron uptake 53-57
- Breathlessness, measurement 131-140
- Butyrate, diffusion in colonic mucus 271-276
- Calcitonin  
 thyroid medullary carcinoma 333-338  
 vasodilatation 389-393
- Calcium  
 calcitonin gene related peptide 389-393  
 muscle, dieting, obesity 285-293
- Calorimetry  
 human obesity 395-398  
 indirect, newborn glucose oxidation 587-593
- Capillary haemodynamics 119-125\*
- Captopril, blood pressure, renal function 453-460
- Cardiac failure, postoperative 7-12
- Cardiac transplantation, volume depletion 233-241
- Cardiovascular reflexes  
 posture 177-184  
 vasopressin 177-184
- Catecholamines  
 $\alpha_2$ -adrenoceptors 147-153  
 calcitonin gene related peptide 389-393  
 platelets 495-500
- Cation transport  
 essential hypertension 611-616  
 leucocytes 583-586
- Cerebrospinal fluid, sodium 103-110
- Chemiluminescence  
 immunoassay 403-408\*  
 polymorphonuclear leucocytes 257-261
- Chemoreceptors, coughing 301-306
- Chemotaxis, granulocyte, ageing 59-62
- Chloride, coughing 301-306
- Cholesterol  
 atherosclerosis 1-6\*  
 transport 221-231\*
- Chronic renal insufficiency, sulindac, prostaglandin synthesis 501-505
- Cigarette smoke, nicotine and secretory cell hyperplasia 427-433
- Cirrhosis, liver, renal prostaglandins 477-484
- Collagen  
 lungs, pulmonary fibrosis 39-45  
 tooth 339-346
- Colonic mucus, butyrate diffusion 271-276
- Congestive heart failure, subcutaneous blood flow 513-522
- Continuous ambulatory peritoneal dialysis 23-29
- Converting enzyme inhibitor S9490-3, hypertension 167-175
- Cor pulmonale, erythraferesis 91-98
- Cough, chemical specificity 301-306
- Creatine phosphate, skeletal muscle activity 207-210
- Cyclic AMP *see* Adenosine 3':5'-cyclic monophosphate
- Cyclo-oxygenase inhibition 571-575
- Cystitis, bacterial 531-538\*
- Cytochrome P-450, omeprazole 99-102
- Dead space, physiological 565-569
- Degranulation, granulocyte 59-62
- Dentine, osteogenesis imperfecta 339-346
- Deoxycorticosterone-salt hypertension, vasopressin 191-198
- Desensitization, platelet  $\alpha_2$ -adrenoceptors 147-153
- Diabetes mellitus  
 electrolytes 111-117  
 erythrocyte 2,3-diphosphoglycerate 127-129  
 microvascular haemodynamics 119-125\*  
 water 111-117
- Dialysis, peritoneal 23-29
- Diet  
 low-energy, muscle constituents 285-293  
 obesity 395-398
- Diethyldithiocarbamate, superoxide dismutase in alcoholics 365-369
- 2,3-Diphosphoglycerate, erythrocyte, diabetes 127-129
- Disulfiram, superoxide dismutase in alcoholics 365-369
- Diuresis  
 captopril 453-460  
 prostaglandin E excretion 141-145  
 verapamil 453-460
- Dopamine blockade, natriuresis 523-526



- Electrolytes  
  streptozotocin-induced diabetes mellitus  
  111-117  
  transport, erythrocyte 263-269
- Eel calcitonin, thyroid medullary carcinoma  
  333-338
- Endogenous inhibitor, leucocyte sodium transport  
  583-586
- Erythroblasts  
  ferritin content 47-51  
  iron uptake 53-57
- Erythrocyte  
  aldehyde dehydrogenase 295-299  
  2,3-diphosphoglycerate, diabetes 127-129  
  electrolyte transport 263-269
- Essential hypertension  
  cation transport 611-616  
  leucocyte sodium transport 583-586
- Exercise, limb blood flow 635-638
- Exercise test  
  angina, nifedipine 601-609  
  muscle diseases 399-401
- Ferritin  
  bone marrow cells 47-51  
  serum 215-220\*
- Fibronectin, bile duct obstruction 73-79
- Gastrointestinal permeability, *Nippostrongylus*  
*brasiliensis* infestation 469-475
- Genetic hypertension 167-175
- Glomerular filtration rate  
  captopril 453-460  
  sulindac 243-247  
  verapamil 453-460
- Glomeruli, isolated, prostaglandin synthesis  
  527-530
- Glucose  
  homoeostasis, liver disease 317-320\*  
  neogenesis, chronic uraemia 627-634  
  oxidation rate, newborn infants 587-593  
  peritoneal dialysis 23-29
- Glutamic acid, heart metabolism 7-12
- Glutamine formation, liver, uraemia 627-634
- Glycerol, peritoneal dialysis 23-29
- Glycoprotein-binding proteins 539-546\*
- Goldblatt hypertension  
  captopril, verapamil 453-460  
  neuropeptide Y 485-488
- Granulocytes, ageing 59-62
- Haematocrit *see* Packed cell volume
- Haemodynamics  
  kidney 81-90  
  lung 91-98  
  microvascular 119-125\*
- Haemoglobin A<sub>1c</sub>, diabetes mellitus 127-129
- Head-up tilt, skeletal muscle blood flow 321-325
- Heart  
  adrenaline 199-206  
  autonomic dysfunction 233-241
- Heart (*continued*)  
  congestive failure 513-522  
  ischaemia 601-609  
  metabolism 7-12  
  nifedipine 601-609  
  pulmonary heart disease 81-90  
  transplantation, volume depletion 233-241
- Heart rate, asthma, catecholamine infusions  
  347-352
- Heat production, skeletal muscle 63-72,  
  435-441
- Helium washout technique,  $V_D/V_T$  ratio  
  565-569
- Hepatocytes  
  ammoniogenesis, uraemia 627-634  
  gluconeogenesis, uraemia 627-634  
  glutamine, uraemia 627-634  
  serine, uraemia 627-634  
  ureagenesis, uraemia 627-634
- Histamine, leucocyte release 461-468
- Hormones, erythrocyte electrolyte transport  
  263-269
- Hydrochlorothiazide, renal function 379-387
- Hydrogen ion, prostaglandin E excretion  
  141-145
- Hypercapnia, somatostatin, naloxone and  
  prochlorperazine 547-554
- Hypertension  
  age, baroreflex sensitivity 489-494  
  capillary 119-125\*  
  converting enzyme inhibitor S9490-3 167-175  
  deoxycorticosterone-salt 191-198  
  erythrapheresis 91-98  
  genetic 167-175  
  Goldblatt 453-460, 485-488  
  gut mucosa 617-626  
  neuropeptide Y 485-488  
  salt intake 185-189  
  vasopressin 191-198  
  venous tone, pregnancy 155-157
- Hypoxia  
   $\beta$ -adrenoceptors 159-165  
  alveolar, almitrine 555-564  
  naloxone 547-554  
  prochlorperazine 547-554  
  somatostatin 547-554
- Immunoassay, chemiluminescence 403-408\*
- Indomethacin, arginine vasopressin response  
  409-416
- Insulin resistance 317-320\*
- Intestine, membrane-bound enzymes, hypertension  
  617-626
- Iron  
  ferritin 215-220\*  
  erythroblast uptake 53-57
- Ischaemia, kidney 185-189
- Ischaemic exercise test, muscle diseases 399-401
- Isoferritins 215-220\*
- Isokinetic contraction,  $\beta$ -adrenoceptor blockade  
  435-441
- Isotope washout technique, skin 249-255

- Kallikrein**  
 arginine vasopressin 409-416  
 mineralocorticoids 13-17
- Kidney**  
 acid-base micropuncture 277-284  
 acute tubular necrosis 443-452  
 adenosine receptors, papillary 353-357  
 arginine vasopressin 409-416  
 captopril, verapamil 453-460  
 circulation 81-90  
 glomerular prostanoid synthesis 527-530  
 Goldblatt hypertension 453-460, 485-488  
 haemodynamics 243-247  
 hydrochlorothiazide 379-387  
 ischaemic damage 185-189  
 myoglobin reabsorption 595-599  
 prostaglandins 141-145, 371-377, 501-505  
 proximal tubule 443-452  
 scarring 531-538\*  
 sulindac 501-505  
 verapamil, captopril 453-460
- Lactate, liver uptake** 19-22
- Laser Doppler flowmetry** 577-582
- Leucocytes**  
 adenosine release 461-468  
 sodium transport 583-586
- Lipids, peritoneal dialysis** 23-29
- Lipogenesis, glucose oxidation, newborn infants**  
 587-593
- Lipoprotein**  
 receptor, atherosclerosis 1-6\*  
 transport 221-231\*
- Liver**  
 alcoholic liver disease 295-299  
 ammoniogenesis 627-634  
 aldehyde dehydrogenase 295-299  
 cholesterol 221-231\*  
 cirrhosis 477-484  
 glucose homeostasis 317-320\*  
 lactate, acidosis 19-22  
 lipoprotein 1-6\*, 221-231\*  
 2-oxoglutarate:glyoxylate carboligase  
 417-425  
 prostaglandins excretion 477-484
- Lung**  
 collagen, pulmonary fibrosis 39-45  
 haemodynamics, erythrapheresis 91-98  
 ventilation 131-140
- Magnesium, renal handling** 277-284
- Mannose-binding proteins** 539-546\*
- McArdle's disease, ischaemic exercise test**  
 399-401
- Medullary thyroid carcinoma, calcitonin**  
 333-338
- Megaloblasts, ferritin content** 47-51
- Metabolism, adrenaline** 199-206
- Microcalorimetry, skeletal muscle** 63-72,  
 435-441
- Micropuncture, hydrochlorothiazide, renal function**  
 379-387
- Mineralocorticoids, escape** 13-17
- Mitochondrial compartmentation, 2-oxoglutarate:**  
 glyoxylate carboligase 417-425
- Models, biological, urea synthesis** 31-38
- Mucus, colonic, butyrate diffusion** 271-276
- Muscle, skeletal**  
 adenosine triphosphate 207-210  
 blood flow 321-325  
 constituents, dieting 285-293  
 exercise tests, muscle disease 399-401  
 heat production 63-72, 435-441
- Muscle, smooth, airway, mucosal removal**  
 571-575
- Myoadenylate deaminase deficiency,**  
 ischaemic exercise test 399-401
- Myocardium**  
 ischaemia, nifedipine 601-609  
 metabolism 7-12
- Myoglobin, tubular reabsorption rates** 595-599
- Naloxone, ventilation control** 547-554
- Natriuresis**  
 arginine vasopressin 409-416  
 atrial natriuretic peptide 507-512  
 captopril 453-460  
 dopamine blockade 523-526  
 hormone 103-110, 327-331  
 verapamil 453-460  
 water immersion 523-526
- Natriuretic factor**  
 angiotensin II, aldosterone 507-512  
 cerebrospinal fluid sodium 103-110  
 sodium excretion 327-331
- Natriuretic hormone, cerebrospinal fluid sodium**  
 103-110
- Nematode infestation, protein losing enteropathy**  
 469-475
- Nephrotoxicity, myoglobin** 595-599
- Neuropeptide Y, Goldblatt hypertension** 485-488
- Nicotine, bronchitis** 427-433
- Noradrenaline**  
 $\alpha_2$ -adrenoceptors 147-153  
 airway calibre, asthma 347-352  
 calcitonin gene related peptide 389-393  
 platelets 495-500  
 renal prostaglandins 371-377
- Normoblasts, ferritin content** 47-51
- Nucleosides, myoadenylate deaminase deficiency**  
 and McArdle's disease 399-401
- Obesity, metabolism** 395-398
- Obstructive jaundice, plasma fibronectin** 73-79
- Oral contraceptives, erythrocyte electrolyte**  
 transport 263-269
- Orthostatic hypotension, alcohol withdrawal**  
 213-214
- Osmotic pressure, peritoneal dialysis fluid** 23-29
- Osteogenesis imperfecta, dentine** 339-346
- Ouabain, erythrocyte electrolyte transport**  
 263-269
- Ovulation, erythrocyte electrolyte transport**  
 263-269

- 2-Oxoglutarate dehydrogenase, liver 417-425  
 2-Oxoglutarate:glyoxylate carboligase, liver mitochondria 417-425  
 Oxygen  
   consumption, obesity 395-398  
   dissociation curve, 2,3-diphosphoglycerate 127-129  
   transport, erythrapheresis 91-98  
 Oxy-radicals, disulfiram, alcoholism 365-369
- Packed cell volume, renal haemodynamics 81-90  
 Papilla, renal, adenosine receptors 353-357  
 Parenteral nutrition, neonates 587-593  
 Pathogens, urinary 531-538\*  
 Peritoneal dialysis, glycerol 23-29  
 pH  
   hepatic lactate 19-22  
   prostaglandin E excretion 141-145  
 Phagocytosis, polymorphonuclear leucocytes 257-261  
 Plasma renin activity  
   aprotinin 13-17  
   cirrhosis, liver 477-484  
   heart transplantation 233-241  
   sulindac 243-247, 501-505  
 Platelets, catecholamines 495-500  
 Plethysmography, limb blood flow 635-638  
 Polycythaemia  
   erythrapheresis 91-98  
   renal haemodynamics 81-90  
 Polymorphonuclear leucocytes, progressive systemic sclerosis 257-261  
 Posture  
   foot skin blood flow 577-582  
   skeletal muscle blood flow 321-325  
   vasopressin 177-184  
 Potassium  
   asthma, catecholamine infusions 347-352  
   kallikrein inhibition 13-17  
   transport, essential hypertension 611-616  
 Pregnancy-induced hypertension 155-157  
 Primary hyperoxaluria type I, liver 2-oxoglutarate:glyoxylate carboligase 417-425  
 Prochlorperazine, ventilation control 547-554  
 Prolactin,  
   dopamine, water immersion 523-526  
 Prostaglandin E, renal excretion 141-145  
 Prostaglandin E<sub>2</sub>  
   angiotensin II 527-530  
   arginine vasopressin 409-416  
   sulindac 243-247  
 Prostaglandins E<sub>2</sub>, F<sub>2 $\alpha$</sub> , noradrenaline, vasopressin and angiotensin II 371-377  
 Prostaglandin F<sub>2 $\alpha$</sub> , angiotensin II 527-530  
 Prostaglandins  
   cirrhosis, liver 477-484  
   mineralocorticoid escape 13-17  
   sulindac 501-505  
 Prostate gland, urogastrone-epidermal growth factor 359-363
- Protein  
   enteropathy 469-475  
   malnutrition 469-475  
 Protein losing enteropathy 469-475  
 Pulmonary circulation, almitrine, vasomotor responses 555-564  
 Pulmonary fibrosis, collagen 39-45  
 Pulmonary heart disease, packed cell volume reduction 81-90  
 Purines, myoadenylate deaminase deficiency and McArdle's disease 399-401  
 Pyruvate dehydrogenase, muscle 207-210
- Receptors, mannose, sinusoidal cell 539-546\*  
 Renal papilla, adenosine receptors 535-357  
 Renal tubules, hydrochlorothiazide 379-387  
 Renin  
   aprotinin 13-17  
   cirrhosis, liver 477-484  
   heart transplantation 233-241  
   renal prostaglandins 371-377  
   sulindac 243-247, 501-505  
 Renin-aldosterone system, dopamine blockade 523-526  
 Renin-angiotensin system  
   atrial natriuretic peptide 507-512  
   packed cell volume decrease 81-90  
 Renovascular hypertension, neuropeptide Y 485-488  
 Reverse cholesterol transport 221-231\*  
 Rubidium transport  
   erythrocyte 263-269  
   essential hypertension 611-616
- Salbutamol,  $\beta$ -adrenoceptors 159-165  
 Salt excretion, atrial natriuretic peptide 327-331  
 Salt hypertension 185-189  
 Sensory scaling 131-140  
 Serine, hepatic ammoniagenesis, uraemia 627-634  
 Short-chain fatty acids, diffusion in colonic muscles 271-276  
 Skeletal muscle *see* Muscle, skeletal  
 Skin  
   blood flow, foot 577-582  
   perfusion pressure 249-255  
   vascular resistance 249-255  
 Smooth muscle *see* Muscle, smooth  
 Sodium  
   atrial natriuretic factor 327-331  
   cerebrospinal fluid 103-110  
   hydrochlorothiazide, renal function 379-387  
   kallikrein inhibition 13-17  
   natriuretic hormone 103-110  
 Sodium bicarbonate, prostaglandin E excretion 141-145  
 Sodium, potassium-dependent adenosine triphosphatase, inhibitor 103-110  
 Sodium pump inhibitor 103-110

- Sodium transport  
 essential hypertension 611-616  
 inhibitor, essential hypertension 583-586
- Somatostatin, ventilation control 547-554
- Steroid  $\beta$ -hydroxylase, omeprazole 99-102
- ST segment/heart rate slope 601-609
- Streptozotocin-induced diabetes mellitus 11-117
- Stroke volume, adrenaline 199-206
- Subcutaneous blood flow, reflex control 513-522
- Sucrase, jejunal brush border 617-626
- Sulindac  
 prostaglandin synthesis 501-505  
 renal haemodynamics 243-247
- Superoxide dismutase, alcoholism 365-369
- Sympathetic reflex, blood flow 321-325
- Systemic sclerosis, polymorphonuclear leucocytes 257-261
- Systems theory, urea synthesis 31-38
- Tetraplegia, skeletal muscle blood flow 321-325
- Thermogenesis, skeletal muscle  $\beta$ -adrenoceptor blockade 435-441
- Thermoregulation, foot skin blood flow 577-582
- Thrombin, platelet catecholamine release 495-500
- Thromboxane B, angiotensin II 527-530
- Tissue preservation 443-452
- Tooth, dentine in osteogenesis imperfecta 339-346
- Transplantation preservation fluids 443-452
- Transport  
 cations, essential hypertension 611-616  
 rubidium 263-269, 611-616  
 sodium, leucocytes 583-586
- Tubular absorption, myoglobin 595-599
- Uraemia, hepatic gluconeogenesis and ammoniogenesis 627-634
- Urea  
 hepatocyte formation, uraemia 627-634  
 short-term synthesis rate 31-38
- Ureagenesis, liver, uraemia 627-634
- Urinary tract infections 531-538\*
- Urine, pathogens, virulence factors 531-538\*
- Urogastrone-epidermal growth factor, prostate gland 359-363
- Valsalva manoeuvre, baroreflex sensitivity 489-494
- Vascular resistance  
 adrenaline 199-206  
 skeletal muscle 321-325  
 skin 249-255
- Vasodilatation, calcitonin gene related peptide 389-393
- Vasopressin  
 baroreflex mechanisms 307-315\*  
 posture 177-184  
 renal prostaglandins 371-377  
 vascular receptor antagonist 191-198
- Veno-arteriolar reflex 321-325
- Venous tone, pregnancy-induced hypertension 155-157
- Ventilation  
 almitrine 555-564  
 naloxone 547-554  
 prochlorperazine 547-554  
 somatostatin 547-554  
 stimulation 131-140
- Verapamil, blood pressure, renal function 453-460
- Water  
 atrial natriuretic factor 327-331  
 clearance, arginine vasopressin 409-416  
 diabetes mellitus 111-117  
 immersion, natriuresis 523-526  
 salt intake 185-189
- Zinc, muscle,  
 dieting, obesity 285-293