

DORLAND'S ILLUSTRATED

Medical Dictionary

Twenty-sixth Edition

W. B. SAUNDERS COMPANY Philadelphia London Toronto
Mexico City Sydney Tokyo

**The Library of Congress Cataloged the First Issue
of this Serial as follows:**

Dorland's illustrated medical dictionary. [1st] — ed.

Philadelphia, Saunders, 1900—

illus. (part col.) 23–25 cm.

Title varies: 1st–22d ed., The American illustrated medical dictionary.

- | | |
|---------------------------|-------------------------------------|
| 1. Medicine—Dictionaries. | I. Dorland, William Alexander |
| Newman, 1864–1956. | II. Title: The American illustrated |
| medical dictionary. | |

R121.D73 610.3 0-6383 rev 4*

Library of Congress [r65i²7] MARC-S

© 1981 by W. B. Saunders Company

Copyright 1900, 1901, and 1903 by W. B. Saunders and Company. Copyright 1906, 1909, 1911, 1913, 1915, 1917, 1919, 1921, 1923, 1925, 1927, 1929, 1932, 1935, 1938, 1941, 1944, 1947, 1951, 1957, 1965, and 1974 by W. B. Saunders Company.

Copyright under the Uniform Copyright Convention. Simultaneously published in Canada. All Copyright Renewals Registered.

Derechos reservados conforme a la ley para la Republica Mexicana.

All Rights Reserved. This book is protected by copyright. No part of it may be duplicated or reproduced in any manner without written permission from the publisher. Made in the United States of America. Press of W. B. Saunders Company.

Some of the words appearing in the Dictionary are proprietary names (trademarks) even though no reference to this fact is made in the text. The appearance of any name without designation as a trademark is therefore not to be regarded as a representation by the editors or publisher that it is not a trademark or is not the subject of proprietary rights.

The use of portions of the text of the *United States Pharmacopeia*, Twentieth Revision, official from July 1, 1980, of the *National Formulary*, Fifteenth Edition, official from July 1, 1980, and of *USAN and the USP Dictionary of Drug Names 1981* is by permission received from the Board of Trustees of the United States Pharmacopeial Convention, Inc. The said Convention is not responsible for any inaccuracy of quotation, or for any false or misleading implication that may arise by reason of the separation of excerpts from the original context or by obsolescence resulting from publication of a supplement.

Listed here are the latest translated editions of this book together with the languages for the translations and the publishers.

Japanese (25th Edition)—Hirokawa Publishing Company, Tokyo, Japan

Spanish (25th Edition) (Adaptation)—El Ateneo, Buenos Aires, Argentina

Braille edition (24th Edition)—American Printing House for the Blind, Louisville, Kentucky

ISBN 0-7216-3150-9 Standard
ISBN 0-7216-3151-7 Indexed

Library of Congress Catalog Card Number: 78-50050

Last digit is the print number: 9 8 7 6 5 4 3 2 1

Preface

Each day, through the efforts of workers in the scientific community, including the many specialties and subspecialties of medicine and related fields, new concepts are formed and old theories are discarded, answers to hitherto seemingly unanswerable questions are found, and new techniques evolve. The results of these efforts must be made known to all who are concerned with or interested in what is current in the language of science. This places strenuous demands on those who have the obligation of recording and defining these developments in a manner that may be comprehended readily not only by specialists in a particular field but also by those who, for various reasons, seek to learn more about an unfamiliar subject.

As in all previous twenty-five editions of Dorland's Illustrated Medical Dictionary, the compilers of this, the twenty-sixth, edition have endeavored to meet the challenges presented by the ever-expanding terminology of all the sciences.

The use of computer technology for composition of the twenty-fifth edition of the Dictionary served us well in preparing the present edition. The coded master file on which the entire contents of the Dictionary had been transcribed and stored enabled us to sort and retrieve all entries relating to a particular discipline, thereby allowing us and our consultants to review the entire lexicon of each discipline. Also, the system of computer coding enabled us to integrate new terms and to revise others without disturbing already existing material — that is, only new portions of the vocabulary or those that needed emendation were phototypeset. The time saved in typography and the flexibility of this method made it possible for us to continue updating our material even after the phototypesetting process had begun and to utilize the latest data gathered from our reference sources during the final stages of manuscript preparation. Such methods helped to ensure that the vocabulary recorded here is as current as the increasingly rapid expansion of the terminology of science allows at any given time.

While making full use of such new tools and procedures, however, we have adhered to the fundamental concepts that have guided our efforts throughout the history of the Dictionary. These concepts have been stated in previous editions:

All learning in science is based on education in vocabulary, for the imagery of words and symbols is the only means to expression of scientific data and concepts. For the continuing successful interchange of ideas, the words and ideographs of science must have precise and specific meanings and these must be recorded in a carefully arranged repository of such information. Accuracy, comprehensiveness, ease of understanding, and typographic legibility are obvious standards of usefulness in such a work. The occasional assembly of related data in tables and illustrations serves the additional purpose of grouping information under broad headings of reference or educative value.

Codification of knowledge is made increasingly difficult by the steadily broadening scope and mounting complexity of contemporary medical science. In this situation we believe that writers and editors constitute the first line of defense, particularly against erosion and adulteration of the language. We believe that editors should not be unmindful of the advisability of safeguarding the faithful transmission of ideas, by insuring the integrity of the words in which they are expressed. In furtherance of this purpose, we believe that the exercise of judgment is a legitimate activity of the compiler of a dictionary of scientific terms: to lend support to words properly compounded and to favor such terms over words which may bear the taint of ambiguity.

The function of a dictionary must then be something more than that of a record of usage. It is our belief that maintenance of certain standards of etymological propriety and of selection is also a responsibility of the lexicographer — no less in the language of science than in that of imaginative or creative writing. Validity of formation of a word supplies its best assurance of intact passage across language barriers that are fast disappearing in medicine, as in other sciences. And the extensive usage of this Dictionary outside the United States makes us all the more aware of this responsibility.

In exercising this belief, it is not our intention to assume an unyielding attitude toward words that, although imprecisely coined, enjoy a ready, almost universal acceptance within the biomedical sciences. Rather, we attempt to lend our influence to the preference of etymologically sound and unambiguous terms to communicate new concepts. In most instances, this preference is indicated within the Dictionary by assigning the definition to the "term of choice" and cross-referring synonyms to that term.

Certain questions that arise in writing or editing, as those regarding the use of diphthongs or the hyphenation of compound words, may be entirely a matter of style, and their answers are not primarily to be established by recourse to a dictionary. It would be impossible, except in unabridged volumes, to present every variation on such themes that might be completely acceptable and proper.

ACKNOWLEDGMENTS

As in the preceding edition, the definitions of the various anatomical structures are placed on the NA terms, that is, on the terms as they appear in the *Nomina Anatomica* as approved by the Sixth International Congress of Anatomists held in Paris in 1955, and revised by the Seventh and Eighth Congresses held respectively in New York in 1960 and in Wiesbaden in 1965.

In enzyme nomenclature, we have relied heavily on the Recommendations of the International Union of Pure and Applied Chemistry and the International Union of Biochemistry on the Nomenclature and Classification of Enzymes.

For psychiatric terms, we have been guided in many instances by *A Psychiatric Glossary*, edited by the Subcommittee on Public Information and published by the American Psychiatric Association.

In pharmacology, as noted on the copyright page, we have made use of portions of the text of the *United States Pharmacopeia*, the *National Formulary*, and *USAN and the USP Dictionary of Drug Names*, all publications of the United States Pharmacopeial Convention, Inc.

In acknowledging our indebtedness to the compilers, editors, and publishers of the aforementioned publications, we emphasize that any inaccuracies that may have arisen from our transcription or interpretation of this material are our sole responsibility.

In addition to the contributions from these publications, hundreds of persons have made valuable suggestions for this book of words. To them, we gratefully acknowledge our great debt for help beyond measure, help that can be repaid only insofar as we have succeeded in combining these separate threads into a fabric useful and authoritative to all.

The more than 50 new illustrations were drawn by Susan Shapiro Brenman. Her fine drawings with their precise attention to detail and structure not only enhance the pages of the Dictionary but also provide at a glance information that is sometimes difficult to convey in words.

We would also like especially to thank Dr. I. Eban of London, England, for all the useful advice and suggestions that he has given us over so many years.

Lastly and most importantly, we must express our overwhelming debt and enduring gratitude to our Consultants, whom we take great pleasure in listing on the following page. Without their dedication, forbearance, and expert knowledge, the massive and intricate task of compiling this twenty-sixth edition of the Dictionary could never have been completed.

JOHN P. FRIEL

Dictionary Editor for the Publisher

Notes on Use of This Dictionary

The new user of this Dictionary, we believe, will profit from an understanding of the policies that have been followed in its actual construction. This section is therefore presented to explain some of the mechanics which were involved in the compilation of the material.

It is our hope that a corollary of the conventional use of this Dictionary, to discover the spelling, meaning, and derivation of specific terms, will be assistance in the reverse direction—to aid in the creation of words desired to express new concepts. To this end individual elements—prefixes, suffixes, and stems—may be found both in the vocabulary portion and in the section entitled Fundamentals of Medical Etymology. An understanding of the elements of a term encountered for the first time, if the term is too new to be in any dictionary, will aid one in arriving at an approximation if not an exact distillation of its meaning. Similarly, knowledge of these elements and of the conventions governing their combination will be of help to a person seeking to construct a new word. We believe the serious user of the Dictionary will find familiarity with these features highly rewarding.

ARRANGEMENT OF ENTRIES

Quick simple usefulness continues to be one of the principal objectives of this work. Words appearing as main entries are recognizable at a glance, not being distorted by accents or other indication of syllabication. Accents and syllables are shown in the phonetic respelling immediately following the bold face entry. Subentries—terms consisting of two words which are ordinarily defined under the second (or principal) word, the *noun*—are immediately apparent as subentries, run on in the same paragraph, and set in the same bold face type as the word constituting the main entry. For example, acetic acid, acetrizoic acid, iopanoic acid, neuraminic acid, shikimic acid, and the like, are included as subentries under acid, regardless of the pH of the specific compounds. Absorption bands, Büngner's bands, Lane's band, Parham band are defined under band; Heinz-Ehrlich bodies, Howell-Jolly bodies, Leishman-Donovan bodies are defined under body.

The space-imposed practice of defining a term only once accounts for the cross references necessitated on eponymic terms where biographical information is given. Thus you will find such entries as "Apgar score . . . See under *score*" and "Budin's joint, rule . . . See under *joint* and *rule*." An exception to this policy of arrangement occurs in the case of specific chemical terms embodying the name of the element: aluminum acetate, aluminum hydroxide, aluminum sulfate, and the like are defined under aluminum; calcium carbonate, calcium oxide, calcium sulfate under calcium.

If biographical information is not given for an individual named in an eponymic term, such as Kortzeborn's operation, the definition should be sought directly under the noun, in this case under operation. For certain phrases, because of prevalent multiplicity of terminology, it may be necessary to look in more than one place. For example, what one person may speak of as a disease may originally have been called a syndrome; if the desired term does

not appear under one, it should be sought under the alternative term. Similarly for phenomenon and sign, and numerous other entities.

SEQUENCE OF ENTRIES

Entries will be found alphabetized on the sequence of the letters, regardless of space or hyphens which may occur between them. Thus sequences such as

bloodless,	or	formboard,
blood plasma,		form-class,
blood pressure,		forme,
bloodroot		form-family

appear in that order. An exception to this occurs in the case of compound eponymic terms: Bard-Pic's syndrome precedes Bardach's test. In eponymic terms, the apostrophe s ('s) is ignored in determining the alphabetical sequence, thus *Addison's planes* precedes *addisonian*, *Sabouraud's agar* precedes *Sabouraudia*, and *Förster's operation* precedes *Förster-Penfield operation*, both as a main entry and under operation. Similarly umlauts (ö, ü) are ignored in alphabetizing the entries, and *Löwenthal's tract*, *Lower's rings*, *Löwitt's bodies*, *Lowman balance board*, and *Lowry's test* appear in that sequence. Proper names beginning with "Mc" or "Mac" are alphabetized as though spelled "mac" in every instance, the sequence being determined by the letters immediately following the c.

Proper names (or capitalized entries) commonly appear before a common noun (or lower case entry) with the identical spelling. Thus *Diplococcus* precedes *diplococcus*, *Micrococcus* precedes *micrococcus*.

INDICATION OF PRONUNCIATION

As in the twenty-five preceding editions, phonetic respelling of a term appears in parentheses immediately following the main bold face entry. As a rule only the most commonly heard pronunciation is given, with no effort to represent any variants. Such phonetic respelling is presented in the simplest possible manner, with a minimum of diacritical markings. The basic rule is this: An unmarked vowel ending a syllable is long; an unmarked vowel in a syllable ending with a consonant is short. By this same token, a long vowel in a syllable which must end with a consonant is indicated by a macron (ā, ē, ī, ō, ū, and ōō): for example ah-bāt', lēd, la'bil, mi'o-fōn, mol'e-kūl, tōoth. A short vowel ending or alone constituting a syllable is usually indicated by use of the breve (ĕ, ĭ, ȳ, ŭ, ȳȳ): for example ĕ-fish'ent, ĭ-mu'nĭ-te, ȳ-kloo'zhun.

The use of the syllable *ah* for the sound of *a* in open, unaccented syllables (ah-bāt', ah-lu'mĭ-num, ah-pof'i-sis, ah-tak'se-ah) has been continued; *ah* is also used in syllables ending with a consonant, to indicate a broader *a* sound (fahr'mah-se, in contrast to am-ne'se-ah). No effort has been made to complicate the system by introduction of additional diacritical marks showing the finer gradations of sound, such as the circumflex (â, ô), diaeresis (ä, ü), tilde (ẽ). The primary (') and secondary (") accents are indicated in polysyllabic words (as pol'e-sĭ-lab'ik); an unstressed syllable is followed by a hyphen.

To recapitulate, unmarked vowels not followed by a consonant have the long sound:

- ba, da, ka, la, ma, na, etc., are all pronounced to rhyme with *fay*
(bāt, kām, mām, etc., have the same vowel sound).
- be, de, le, re, te, we, etc., are all pronounced to rhyme with *fee*
(bēm, dēp, rēt, etc., have the same vowel sound).
- bi, di, ni, pi, ti, zi, etc., are all pronounced to rhyme with *sigh*
(bid, pint, tīm, etc., have the same vowel sound).
- bo, do, lo, mo, to, wo, etc., are all pronounced to rhyme with *go*
(bōd, lōm, tōt, etc., have the same vowel sound).
- bu, du, hu, mu, nu, su, etc., are all pronounced to rhyme with *few*
(kūt, mūt, etc., have the same vowel sound).

Short vowels terminating syllables are affected by the value or the consonantal sounds of the adjoining syllables. For example, as usually pronounced, the sound of *i* in the second syllable more closely approaches that of long *e* in multiarticulate than it does in multigravida,

It has been impossible, within the framework of this simplified system, to represent the exact pronunciation of many foreign words and proper names which have entered the medical vocabulary. They have been represented as well as possible by an English approximation.

The important key to remember in interpreting the phonetic respelling is that an unmarked vowel not followed by a consonant has the long value; one followed by a consonant has the short. A long vowel which must perforce be followed by a consonant is indicated by use of the macron; a short vowel ending its respective syllable is indicated by use of the breve.

The plural of a word which is irregularly formed or of a foreign word is given following the phonetic respelling and often, but not invariably, is given a separate bold face listing in proper alphabetical order. Alternate plurals (e.g., exanthemas, exanthemata) are frequently shown. Subentries appear in proper alphabetical order, determined by the subsequent, modifying word or phrases, regardless of whether they are singular or plural. For example, under *ligamentum*, the entries

- l. annulare baseos stapedis
- ligamenta annularia digitorum manus
- ligamenta annularia digitorum pedis
- l. annulare radii
- ligamenta annularia (trachealia).

ETYMOLOGY

Information on the derivation of a word appears in square brackets following the phonetic respelling, or following the plural form of the word, when that is given. Greek characters are no longer used in presentation of the etymological information in the vocabulary portion of this book,* being transliterated into the English alphabet as shown in the following tabulation:

initial	α = a	λ = l	
"	ά = a	μ = m	
diphthong	αι = ai	ν = n	
initial	αλ = al	ξ = x	
"	αλ = hai	ο = o	
diphthong	αυ = au	δ = o	
initial	αῡ = au	δ = ho	
"	αῡ = hau	diphthong	οι = oi
	β = b	initial	οι = oi
	γ = g	"	οι = hoi
	γγ = ng [as in "angeion"]	diphthong	ου = ou
	γκ = nk [as in "ankyle"]	initial	οῡ = ou
	γξ = nx [as in "salpinx"]	"	οῡ = hou
	γκ = nch [as in "anchousa"]	π = p	
	δ = d	ρ = r	
	ε = e	initial	ρ = rh
initial	έ = e	ρρ = rrh [used in compounds,	
"	ê = he	although the root has	
diphthong	ει = ei	only initial rh, e.g.	
initial	ει = ei	diarrhoia—(English)	
"	ει = hei	diarrhea]	
diphthong	ευ = eu		
initial	εῡ = eu	σ, s = s	
"	εῡ = heu	τ = t	
	ζ = z	υ = y	
	η = ē	[initial	ϕ does not occur]
initial	ῆ = ē	"	ϕ = hy
"	ῆ = hē	diphthong	υι = ui
	θ = th	initial	υι = hui
	ι = i	φ = ph	
initial	l = i	χ = ch	
"	l = hi	ψ = ps	
	κ = k	ω = ō	
		initial	ω = ō
		"	ω = hō

*The Greek characters do appear, however, in the section entitled Fundamentals of Medical Etymology (pp. xvii-xxix).

The original words from which the terms presented in this Dictionary are derived are reproduced in *italic*, the language of their origin being indicated by the appropriate abbreviation (see Abbreviations Used in This Dictionary).

As a guide to related vocabulary, especially on anatomical terms, the main entry may be followed in brackets by its Latin and/or Greek equivalent, such as "liver [L. *jecur*; Gr. *hepar*]" and "kidney [L. *ren*; Gr. *nephros*]."

SYNONYMS AND THE PLACEMENT OF DEFINITIONS

With few exceptions in this Dictionary, a definition (as opposed to a cross-reference) is given at only one place for two or more synonymous terms. Thus, for example, definitions of most anatomical terms appear on the terms official in the *Nomina Anatomica*, and the common names are cross-referred to the official names. The reader, then, will find on the anglicized common names of anatomical structures, as those under artery, ligament, muscle, nerve, and vein, a cross-reference to the official name of the specific structure. The complete descriptions, in these particular instances, are given in the tables of arteriae, ligamenta, musculi, nervi, and venae.

Such cross-references are also given for synonyms of terms listed in other official publications, including the *United States Pharmacopeia* and the *National Formulary*, the full descriptions again being given on the official names.

This practice of cross-referring is also followed for earlier terms that have been supplanted in the vocabulary as well as for terms which are currently used with the same meaning as the term on which a full description is given. In most such instances, the term on which the definition appears is the currently preferred term for the entity. In others, the shade of preference may be slight, or even denied by some persons. In the latter cases, the practice has been adhered to as a means of keeping down the size of the Dictionary by avoiding duplication of definitions.

ABBREVIATIONS USED IN THIS DICTIONARY

a.	artery (L. <i>arteria</i>); agar	l.	ligament (L. <i>ligamentum</i>); left
aa.	arteries (L. <i>arteriae</i>)	lat.	lateral
ant.	anterior	lev.	levator
Ar.	Arabic	m.	muscle (L. <i>musculus</i>); medium
A.S.	Anglo-Saxon	med.	medial, median
b.	broth	Mex.	Mexican
bas.	basal	n.	nerve (L. <i>nervus</i>)
br.	branch	NA	Nomina Anatomica
C.	cervical	neg.	negative
c.	about (L. <i>circa</i>); culture medium	NF	National Formulary
cf.	compare (L. <i>confer</i>)	obs.	obsolete
Coc.	coccygeal	Peruv.	Peruvian
Dan.	Danish	pl.	plural
def.	definition	Port.	Portuguese
dim.	diminutive	post.	posterior
e.g.	for example (L. <i>exempli gratia</i>)	priv.	privative
Fin.	Finnish	q.v.	which see (L. <i>quod vide</i>)
Fr.	French	r.	right
gen.	genitive	Russ.	Russian
Ger.	German	S.	sacral
Gr.	Greek	sing.	singular
Hind.	Hindu	Sp.	Spanish
i.e.	that is (L. <i>id est</i>)	sup.	superior
inf.	inferior	T.	thoracic
It.	Italian	USP	United States Pharmacopeia
Jap.	Japanese	v.	vein (L. <i>vena</i>)
L.	Latin; lumbar		

Fundamentals of Medical Etymology

BY LLOYD W. DALY, A.M., PH.D., LITT.D.

Allen Memorial Professor of Greek, University of Pennsylvania

The very size of current medical dictionaries is evidence of the massive proportions which the medical, scientific, and technical vocabulary has attained within the English language. As this vocabulary grows, its mastery by each succeeding generation becomes increasingly difficult. It is popularly believed that the study of Latin at least, if not also of Greek, is prerequisite for the study of medicine. Although this is no longer literally true, the composition of the medical vocabulary makes it evident why such study was formerly considered necessary. At least fifty per cent of the general English vocabulary is of Greek and Latin derivation, and it is a conservative estimate that as much as seventy-five per cent of the scientific element is of such origin.

Some familiarity with these two languages which contribute so largely to the terminology must obviously simplify the task of learning a basic vocabulary and of comprehending new words as they are encountered. Experience shows that it does. However, since it no longer seems economical to learn to read the two languages for this purpose, some short cut to the necessary information is needed, and again experience has shown that certain fundamentals of vocabulary and linguistic principle can easily be mastered and are of great assistance. The purpose of the present introduction is to present those fundamentals in as practical and concise a form as possible; any statements in the following pages which are contrary to historical linguistic fact are made deliberately, in keeping with this purpose.

GREEK

Alphabet and transcription

The Latin alphabet as we use it is derived, with slight modifications, from the Greek alphabet, which is almost completely phonetic. The table (p. xviii) shows as nearly as possible the sound equivalent of each letter in terms of our own alphabet, the names of the letters, and their transcribed equivalents in English. The first syllable of the name of each letter, properly pronounced, also gives its sound equivalent.

Greek words are written with an accent (*θέσις, φῶλον*); for present purposes, the two kinds of accent mark may be regarded simply as indicating the syllable on which the stress of accent is placed. Words beginning with a vowel, diphthong, or *rho* (*ρ*) are written with a breathing mark over the initial vowel or *rho*, or over the second vowel of the diphthong (*ἄλλος, ῥυθμός, αὐτός*). The so-called rough breathing mark (') indicates that the syllable over which it is placed should be initiated in pronunciation with an *h* sound, and words beginning with such a sound are usually transcribed into English with an initial *h*. Rarely they may appear with or without the *h*. * The smooth breathing mark (ˊ) has no effect on pronunciation.

*For example, in the Analytical Word List, following, compare -em- and hem(at)-, -aph- and hapt-, -ele- and helc-; such forms without the *h* rarely appear as the initial element of a compound.

CAPITAL	SMALL LETTER	SOUND	NAME	TRANSCRIPTION
A	α	aha	alpha	a
B	β	bet	beta	b
Γ	γ	get	gamma	g
Δ	δ	do	delta	d
E	ε	egg	epsilon	e
Z	ζ	adze	zeta	z
H	η	fête	eta	ē
Θ	θ	thin	theta	th
I	ι	{ it machine	iota	i
K	κ	key	kappa	k
Λ	λ	let	lambda	l
M	μ	met	mu	m
N	ν	net	nu	n
Ξ	ξ	hex	xi	x
O	ο	oho	omicron	o
Π	π	pet	pi	p
P	ρ	r (trilled)	rho	r
Σ	σ, s*	set	sigma	s
T	τ	tell	tau	t
Υ	υ	ü (German)	upsilon	y
Φ	φ	photo	phi	ph
X	χ	ach (German)	chi	ch
Ψ	ψ	tips	psi	ps
Ω	ω	oho	omega	ō

* Sigma is written σ at the beginning or in the middle of a word and ς at the end of a word. E.g., σινδρις.

The vowels are α, ε, η, ι, ο, υ, and ω, which may be combined to give the diphthongs shown in the listing below. The letter *iota* (ι) may also be written as a subscript (α, η, φ), but as such it has no effect on pronunciation.

DIPHTHONG	SOUND	TRANSCRIPTION
ai	aisle	ae, é, or ai
au	out	au
ei	eight	i, e, or ei
eu	eh-oo	eu
oi	oil	oe or e
ou	ghoul	ou or u
ui	quit	ui

Words are transcribed from Greek into our own alphabet as indicated in the foregoing tables, with the following exceptions: *Gamma* (γ) before *gamma* (γ), *kappa* (κ), *chi* (χ), or *xi* (ξ) is nasal and so is transcribed as *n*. Initial *rho* (ρ) is transcribed as *rh*, and double *rho* (ρρ) as *rrh*. *Upsilon* (υ) is transcribed as *y* except in diphthongs, where it is reproduced by *u*, as indicated in the table.

Many Greek words have come into English through Latin, in which they have undergone some change (Greek στέονον, Latin *sternum*), or through a second intermediary language, such as French, with still further change (Greek χειρουργία, Latin *chirurgia*, French *chirurgie*, English *surgery*). Such evolution explains many of the apparent peculiarities of Greek words in English. Other changes are accounted for by our tendency to drop inflectional terminations which indicate grammatical function in Greek but have no function in English (σπέρμα, sperm), or to simplify the termination (γονοφόρος, gonophore).

Combining forms The most constant change, however, in the transition of Greek words to English, is the loss of termination which produces what we may call the *combining form*. This combining form, which is used when the word enters into a compound with another word, may differ markedly from the *lexical form*, under which the word would be located in a dictionary of the Greek language.

For most nouns (those ending in -η, -α, -ος, -ον), the combining form may be derived by dropping the termination from the lexical form. For another large class the combining form must be derived from a secondary form of the word (indicated in parentheses in the following table) by dropping the ending -ος. For most words ending in -ις only ς need be dropped. In some instances, as in terms derived from the words for blood (hemat-) and body (somat-), different

combining forms are used, derived from either the lexical or the secondary form. Adjectives are similar in formation to nouns. For those ending in -υς only the ς need be dropped.

LEXICAL FORM	COMBINING FORM	ENGLISH
ἀρχή	ἀρχ-	archenteron
ἰδέα	ἰδε-	ideology
τόπος	τοπ-	topesthesia
ὀστέον	ὀστε-	osteotome
βάσις	βασι-	basiscranial
μῦς (μυός)	μυ-	myectomy
αἷμα (αἱματος)	αἱμ-, αἱματ-	hemangioma, hematophyte
παῖς (παιδός)	παιδ-	pediatrics

For verbs the combining form may be derived from several of the six principal parts, which may show a variable vowel just as English verbs do (sing, sang, sung). Thus the verb meaning to *stretch* has the forms *τείνω* and *τέτακα*, and English words may be derived from either, e.g., *teinoscope*, *ectasis*. In most cases, however, the combining form may be derived from the lexical form ending in -ω, -μαι, or -μι, or from the infinitive form ending in -ειν, -αν, -ουν, -σθαι, or -ναι, the latter being the form often cited in the etymology given in dictionaries. The commonest vowel variation is from ε to ο, as in the verb *τρέφω*, which frequently shows the combining form *τροφ-*, as in *atrophy*.

Compounds Most derivatives are composed not of single Greek words but of a combination of two or more words or word elements. Thus the word *osteotome* is composed of the noun *ὀστέον* (oste) plus *τέμνω* (tom). When the second member of the compound begins with a consonant, as in this instance, a connective *o* is usually inserted between the two members to facilitate pronunciation.

Prefixes Many compounds consist of a word preceded by a prefix, commonly a preposition. As shown in the table, most of these prepositions have a final vowel, which is dropped when the word to which it is affixed begins with a vowel, the prefix *περί* (peri-) being an exception. A final consonant may also be changed as indicated, to accommodate it to a succeeding initial consonant. The negative prefix *ἀν-* before a vowel (*anomaly*) must not be confused with the preposition *ἀνά* with the final vowel dropped (*anode*).

PREPOSITION	COMBINING FORMS	ENGLISH
ἀμφί	ἀμφι-	amphicrania
ἀνά	ἀμφ-	ampheclaxis
ἀντί	ἀνα-	anabolism
ἀπό	ἀν-	anode
διά	ἀντι-	antigen
ἐκ	ἀντ-	anthelminthic
ἐξ	ἀπο-	apophysis
ἐν	ἀπ-	apandria
ἐπί	δια-	diathermy
κατά	δι-	diuretic
μετά	ἐκ-	ectopia
παρά	ἐξ-	exosmosis
περί	ἐν-	enostosis
πρό	ἐμ-	embolus
σύν	ἐπι-	epinephrin
ὑπέρ	ἐπ-	eparterial
ὑπό	κατα-	catalepsy
	κατ-	cation
	μετα-	metamorphosis
	μετ-	metencephalon
	παρα-	paramastoid
	παρ-	parotid
	περι-	peritoneum
	προ-	prognosis
	συν-	synthesis
	συμ-	symphysis
	συν-	symplesis
	συσ-	systole
	ὑπερ-	hypertrophy
	ὑπο-	hypodermic
	ὑπ-	hypaxial

Suffixes Suffixes, which constitute a third element in the formation of compounds, are added directly to the combining forms of words without insertion of a connective *o*, but when the result would be a combination of consonants difficult to pronounce, certain euphonic changes are made in the final consonant of the combining form. The combinations shown

CONSONANT CHANGES

β or φ + τ = $\pi\tau$
 γ or χ + τ = $\kappa\tau$
 δ or θ + τ = $\sigma\tau$
 π , β or φ + μ = $\mu\mu$
 κ , γ or χ + μ = $\gamma\mu$
 τ , δ or θ + μ = $\sigma\mu$
 π , β or φ + σ = ψ
 κ , γ or χ + σ = ξ
 τ , δ or θ + σ = σ

ENGLISH

epileptic
 tactic
 schist
 lemma
 paradigm
 plasma
 autopsy
 cachexia
 dose

in the following table represent the results of the addition of those suffixes which are the commonest in the vocabulary. The suffixes *-της* (*-t*), *-τηρ* (*-ter*), *-σις* (*-sis*), *-σια* (*-sia* or *-sy*), *-μος* (*-m*), *-μα* (*-ma* or *-m*) are usually added to verbal combining forms to produce nouns; *-τος* (*-t*, *-te*) and *-τικός* (*-tic*) are added to verbal combining forms to produce adjectives or nouns; *-ιζω* (*-ize*) is added to noun or adjective combining forms to produce verbs; *-ια* (*-ia* or *-y*) is added to noun or verb combining forms to produce nouns; *-ιτις* (*-itis*) and *-κος* or *-ικος* (*-c* or *-ic*) are added to noun combining forms to produce nouns or adjectives. The following examples illustrate such compounding and indicate some of the possibilities of adding one suffix to another. It should be noted that nouns ending with the suffix *-μα* have a combining form ending in *-ματ-* and that verbs ending with the suffix *-ιζω* have a combining form ending in *-ιδ-*.

GREEK COMPONENTS

ὀστέον + *κλάω* + *-της*
σφίγγω + *-τηρ*
ἐμέω + *-σις*
κινέω + *-σια*
ἐπί + *λαμβάνω* + *-σια*
σπάω + *-μος*
καρκινώω + *-μα*
ὄραω + *-τος* + *μέτρον*
ζυγώω + *-τος*
ἴστημι + *-τικός*
κρύσταλλος + *-ιζω*
μαίνω + *-ια*
νεῦρον + *γράφω* + *-ια*
οὖς + *-ιτις*
κόλον + *-ικος*
φύσις + *-κος*
ἄρθρον + *-ιτις* + *-κος*
συμπίπτω + *-μα* + *-ικος*
κρέας + *φαγείν* + *-ιζω* + *-μος*
φύω + *-σις* + *-κος* + *-ιζω* + *-της*

ENGLISH

osteoclast
 sphincter
 emesis
 cinesia
 epilepsy
 spasm
 carcinoma
 optometer
 zygote
 static
 crystallize
 mania
 neurography
 otitis
 colic
 physic
 arthritic
 symptomatic
 creophagism
 physicist

In the formation of compounds English follows natural tendencies of the Greek language but often goes far beyond the actual Greek vocabulary. For example, there is no such Greek verb as *φυσικίζω* nor even such an English verb as *physicize*, yet the word *physicist* is formed as though there were, on the analogy of such verbs as *stigmatize*, which actually have Greek counterparts. In a similar manner, the need for new terms is met by coining new words composed of prefixes, combining forms, and suffixes, on the basis of analogy.

LATIN

A high percentage of medical terms is of Latin origin, but a good proportion of this element, being in the form of anatomical nomenclature, is original Latin and not derivative. The purpose of this introduction is to explain derivatives, words which have undergone some change in the transfer to English. For original Latin words the reader may refer to the body of the Dictionary.

Alphabet

The Latin alphabet is a modification of the Greek which has been adopted for English with the addition of the characters *J*, *U*, and *W*, which were developed

during the Middle Ages. The ease with which the Romans adapted the Greek alphabet is evidence of the close relationship of the two languages.

The inflectional terminations of Latin words, as of Greek, tend to be modified or to be dropped in English. Thus *nervus* becomes nerve, *spina* becomes spine, *penicillum* becomes pencil, and *oleum* appears usually as -ol. However, Latin terminations are more frequently tolerated than those of Greek, and are adopted into English, as occurred with the terms *fetus*, *rectum*, *pelvis*, and *vagina*.

Combining forms Combining forms of Latin words, as of Greek, are derived by dropping an inflectional termination. Thus for most nouns ending in -a, -us, or -um, this ending must be dropped from the lexical form, whereas for others -is must be dropped from a secondary form (indicated in parentheses in the table).

LEXICAL FORM	COMBINING FORM	ENGLISH
<i>retina</i>	<i>retin-</i>	<i>retinopapillitis</i>
<i>bulbus</i>	<i>bulb-</i>	<i>bulbiform</i>
<i>ovum</i>	<i>ov-</i>	<i>oviduct</i>
<i>frons (frontis)</i>	<i>front-</i>	<i>frontoparietal</i>
<i>cortex (corticis)</i>	<i>cortic-</i>	<i>corticipetal</i>

Adjectives follow these same patterns. The comparative form, ending in -ior, frequently appears in English without change, as in *inferior*.

The lexical forms of all regular Latin verbs end in either -o or -or, but the forms most commonly used in English derivatives are the participles, or verbal adjectives, present and past. Whereas the English present participle ends in -ing, the combining form of the Latin ends in -nt preceded by a vowel, either a or e. Whereas the English past participle usually ends in -ed or -en, the combining form of the Latin regularly ends in -t or -s, which may be preceded by a vowel, either a or i. The -us termination of these past participles is regularly modified to an e, thus producing the common English ending -ate.

LEXICAL FORM	ENGLISH	
	(From Pres. Part.)	(From Past Part.)
<i>consulto</i>	<i>consultant</i>	<i>consultation</i>
<i>aperio</i>	<i>aperient</i>	<i>aperture</i>
<i>nutrio</i>	<i>nutrient</i>	<i>nutritive</i>
<i>sentio</i>	<i>sentient</i>	<i>sensory</i>

Use of the past participial form ending in -atus is greatly extended in English by the formation of numerous derivatives, including not only such verbs as rotate, from the Latin verb *roto* but also, by analogy, such verbs as aerate, although there is no such Latin verb as *aero*.

Compounds In the formation of compound derivatives from Latin words a combining form is linked to the following element by what may be called, regardless of its origin, a connective vowel. This vowel is most commonly either o (lumbocostal, genitourinary) or i (nervimotor, bilirubin), or less frequently u (granulation).

Prefixes As in Greek, most of the prefixes in Latin are prepositions. Most of these may be added to other words without change, but some of those which end in a consonant assimilate this consonant to the initial sound of the word to which it is affixed.

CONSONANT CHANGES		ENGLISH
<i>ad-</i>	before <i>c</i> becomes <i>ac-</i>	<i>accelerate</i>
<i>ad-</i>	before <i>f</i> becomes <i>af-</i>	<i>affinity</i>
<i>ad-</i>	before <i>g</i> becomes <i>ag-</i>	<i>agglutinant</i>
<i>ad-</i>	before <i>p</i> becomes <i>ap-</i>	<i>appendix</i>
<i>ad-</i>	before <i>s</i> becomes <i>as-</i>	<i>assimilate</i>
<i>ad-</i>	before <i>t</i> becomes <i>at-</i>	<i>attrition</i>
<i>ex-</i>	before <i>f</i> becomes <i>ef-</i>	<i>effusion</i>
<i>in-</i>	before <i>l</i> becomes <i>il-</i>	<i>illinition</i>
<i>in-</i>	before <i>m</i> becomes <i>im-</i>	<i>immersion</i>
<i>in-</i>	before <i>r</i> becomes <i>ir-</i>	<i>irradiation</i>
<i>ob-</i>	before <i>c</i> becomes <i>oc-</i>	<i>occlusion</i>
<i>sub-</i>	before <i>f</i> becomes <i>suf-</i>	<i>suffocate</i>
<i>sub-</i>	before <i>p</i> becomes <i>sup-</i>	<i>suppository</i>
<i>trans-</i>	before <i>s</i> becomes <i>tran-</i>	<i>transpiration</i>

The addition of a prefix may also affect the following word by changing its characteristic vowel; thus *ob* + *caput* becomes *occiput*, and *in* + *iactus* becomes *inject*.

Suffixes The commonest Latin suffixes used in forming nouns are: *-arium*, *-orium* (-ary, -ory), *-io* (-ion added to past participles), *-or* (-or added to past participles), and *-tas* (-ty). Those used in forming adjectives are: *-abilis*, *-ibilis* (-able, -ible), *-alis*, *-ilis* (-al, -ile), *-aris* (-ar), *-arius*, *-orius* (-ary, -ory), *-atus* (-ate), *-idus* (-id), *-ivus* (-ive), and *-osus* (-ous or -ose).

LATIN COMPONENTS	ENGLISH
<i>avis</i> + <i>-arium</i>	aviary
<i>dormio</i> (<i>dormitus</i>) + <i>-orium</i>	dormitory
<i>nutrio</i> (<i>nutritus</i>) + <i>-io</i>	nutrition
<i>moveo</i> (<i>motus</i>) + <i>-or</i>	motor
<i>porosus</i> + <i>-tas</i>	porosity
<i>frio</i> + <i>-abilis</i>	friable
<i>edo</i> + <i>-ibilis</i>	edible
<i>corpus</i> (<i>corporis</i>) + <i>-alis</i>	corporal
<i>febris</i> + <i>-ilis</i>	febrile
<i>oculus</i> + <i>-aris</i>	ocular
<i>cilium</i> + <i>-arius</i>	ciliary
<i>sensus</i> + <i>-orius</i>	sensory
<i>reticulum</i> + <i>-atus</i>	reticulate
<i>morbis</i> + <i>-idus</i>	morbid
<i>aborior</i> (<i>abortus</i>) + <i>-ivus</i>	abortive
<i>squama</i> + <i>-osus</i>	squamous
<i>adeps</i> (<i>adipis</i>) + <i>-osus</i>	adipose
<i>prae</i> + <i>caveo</i> (<i>cautus</i>) + <i>-io</i> + <i>-arius</i>	precautionary

HYBRID TERMS

The examples hitherto cited have been purely Greek or purely Latin, but elements from the two languages are often combined in one compound word, which is called a hybrid. A prefix from one language may be added to a word from the other (*de* + *ὑδωρ* + *-atus* = *dehydrate*), or a Greek and a Latin word may be combined (*δολιχος* + *facialis* = *dolichofacial*). However, the most productive source of such hybrids is the addition of a Latin suffix to a Greek word (*κρανίον* + *-alis* = *cranial*) or vice versa (*cerebellum* + *-itis* = *cerebellitis*).

ANALYTICAL WORD LIST

The following list includes those Greek and Latin words which an actual count* shows occur most frequently in the vocabulary of this dictionary, arranged alphabetically under their English combining forms as rubrics. The dash appended to a combining form indicates that it is not a complete word and, if the dash precedes the combining form, that it commonly appears as the terminal element of a compound. Infrequently a combining form is both preceded and followed by a dash, showing that it usually appears between two other elements. Closely related forms are shown in one entry by the use of parentheses: thus *carbo(n)-*, showing it may be either *carbo-*, as in *carbohydrate*, or *carbon-*, as in *carbonuria*.

Following each combining form the first item of information is the Greek or Latin word from which it is derived. Those words which are not printed in Greek characters are Latin. Occasionally both a Greek and a Latin word are given. Presence of a dash before or after such an element indicates that it does not occur as an independent word in the original language. Information necessary to the understanding of the form appears next in parentheses. Then the meaning or meanings of the word are given, followed where appropriate by reference to a synonymous combining form in the other language, that is, on a combining form of Latin derivation, to the synonymous form of Greek derivation, and vice versa. Finally, an example is given to illustrate use of the combining form in a compound English derivative.

If this list is used in close conjunction with the etymological information given in the body of the Dictionary, no confusion should be caused by the similarity of elements in such words as *melalgia*, *melancholia*, and *melicera*, where the similarity is only apparent and the derivation of each word is different.

*For the count upon which the selection was based, thanks are due to my wife, Bernadine A. Daly, whose expert work will, I am sure, greatly increase the practical usefulness of the list.

a-	a- (<i>n</i> is added before words beginning with a vowel) negative prefix. Cf. in- ³ . ametria	arter(i)-	ἀρτηρία elevator (?), artery. arteriosclerosis, periarteritis
ab-	ab- away from. Cf. apo-. abducent	arthr-	ἄρθρον joint. Cf. articul- synarthrosis
abdomin-	abdomen, abdominis. abdomin- noscopy	articul-	articulus joint. Cf. arthr- disarticulation
ac-	See ad-. accretion	as-	See ad-. assimilation
acet-	acetum vinegar. acetometer	at-	See ad-. attrition
acid-	acidus sour. aciduric	aur-	auris ear. Cf. ot-. aurinasal
acou-	ἀκούω hear. acouesthesia. (Also spelled acu-)	aux-	αὐξω increase. enterauxe
acr-	ἄκρον extremity, peak. acromegaly	ax-	ἄξων or axis axis. axofugal
act-	ago, actus do, drive, act. reaction	axon-	ἄξων axis. axonometer
actin-	ἄκτις, ἀκτίνος ray, radius. Cf. radi-. actinogenesis	ba-	βαίνω, βα- go, walk, stand. hypnobia
acu-	See acou-. osteocutis	bacill-	bacillus small staff, rod. Cf. bacter-. actinobacillosis
ad-	ad (<i>d</i> changes to <i>c</i> , <i>f</i> , <i>g</i> , <i>p</i> , <i>s</i> , or <i>t</i> before words beginning with those consonants) to. adrenal	bacter-	βακτήριον small staff, rod. Cf. bacill-. bacteriophage
aden-	ἀδὴν gland. Cf. gland-. adenoma	ball-	βάλλω, βολ- throw. ballistics. (See also bol-)
adip-	adeips, adipis fat. Cf. lip- and stear-. adipocellular	bar-	βάρος weight. pedobarometer
aer-	ἄηρ air. anaerobiosis	bi- ¹	βίος life. Cf. vit-. aerobic
aesthe-	See esthe-. aesthesioneurosis	bi- ²	bi- two (see also di- ¹). bilobate
af-	See ad-. afferent	bil-	bilis bile. Cf. chol-. biliary
ag-	See ad-. agglutinant	blast-	βλαστός bud, child, a growing thing in its early stages. Cf. germ-. blastoma, zygoblast.
-agogue	ἀγωγός leading, inducing. galactagogue	blep-	βλέπω look, see. hemiamblyopia
-agra	ἄγρα catching, seizure. podagra	blephar-	βλέφαρον (from βλέπω; see blep-) eyelid. Cf. cili-. blephar- oncus
alb-	albus white. Cf. leuk-. albinaceous	bol-	See ball-. embolism
alg-	ἄλγος pain. neuralgia	brachi-	βραχίων arm. brachiocephalic
all-	ἄλλος other, different. allergy	brachy-	βραχύς short. brachycephalic
alve-	alveus trough, channel, cavity. alveolar	brady-	βραδύς slow. bradycardia
amph-	See amphi-. amphiclexis	brom-	βρώμος stench. podobromidrosis
amphi-	ἀμφί (<i>i</i> is dropped before words beginning with a vowel) both, doubly. amphilous	bronch-	βρόγχος windpipe. bronchocopy
amyl-	ἄμυλον starch. amylosynthesis	bry-	βρύω be full of life. embryonic
an- ¹	See ana-. anagoric	bucc-	bucca cheek. distobuccal
an- ²	See a-. anomalous	cac-	κακός bad, abnormal. Cf. mal-. cacodontia, arthrocace. (See also dys-)
ana-	ἀνά (final <i>a</i> is dropped before words beginning with a vowel) up, positive. anaphoresis	calc- ¹	calx, calcis stone (cf. lith-), limestone, lime. calcipexy
ancyl-	See ankyl-. ancylostomiasis	calc- ²	calx, calcis heel. calcaneotibial
andr-	ἀνήρ, ἀνδρός man. gynandroid	calor-	calor heat. Cf. therm-. calorimeter
angi-	ἀγγεῖον vessel. Cf. vas-. angi- emphraxis	cancr-	cancer, cancri crab, cancer. Cf. carcin-. cancrology. (Also spelled chancr-)
ankyl-	ἄγκυλος crooked, looped. anky- lodactylia. (Also spelled ancyl-)	capit-	caput, capitis head. Cf. cephal-. decapitator
ant-	See anti-. antophthalmic	caps-	capsa (from capio; see cept-) container. encapsulation
ante-	ante before. anteflexion	carbo(n)-	carbo, carbonis coal, charcoal. carbohydrate, carbonuria
anti-	ἀντί (<i>i</i> is dropped before words beginning with a vowel) against, counter. Cf. contra-. antipyogenic	carcin-	καρκίνος crab, cancer. Cf. cancr-. carcinoma
antr-	ἄντρον cavern. antrodynia	cardi-	καρδία heart. lipocardiac
ap- ¹	See apo-. apheter	cary-	See kary-. caryokinesis
ap- ²	See ad-. append	cat-	See cata-. cathode
-aph-	ἄπτω, ἄφ- touch. dysaphia. (See also hapt-)	cata-	κατά (final <i>a</i> is dropped before words beginning with a vowel) down, negative. cata- batic
apo-	ἀπό (<i>o</i> is dropped before words beginning with a vowel) away from, detached. Cf. ab-. apophysis	caud-	cauda tail. caudad
arachn-	ἀράχνη spider. arachnodactyly	cav-	cavus hollow. Cf. coel-. concave
arch-	ἀρχή beginning, origin. arch- enteron	cec-	caecus blind. Cf. typhl-. ceco- pexy
		cel- ¹	See coel-. amphilous
		cel- ²	See -cele. celectome
		-cele	κῆλη tumor, hernia. gastrocele
		cell-	cella room, cell. Cf. cyt-. celliferous
		cen-	κοινός common. cenesthesia

cent-	<i>centum</i> hundred. Cf. <i>hect-</i> . Indicates fraction in metric system. [This exemplifies the custom in the metric system of identifying fractions of units by stems from the Latin, as centimeter, decimeter, millimeter, and multiples of units by the similar stems from the Greek, as hectometer, decameter, and kilometer.] <i>centimeter</i> , <i>centipede</i>	cor- ²	See <i>con-</i> . <i>corrugator</i>
cente-	<i>κεντέω</i> puncture. Cf. <i>punct-</i> . <i>enterocentesis</i>	corpor-	<i>corpus</i> , <i>corporis</i> body. Cf. <i>somat-</i> . <i>intracorporal</i>
centr-	<i>κέντρον</i> or <i>centrum</i> point, center. <i>neurocentral</i>	cortic-	<i>cortex</i> , <i>corticis</i> bark, rind. <i>corticosterone</i>
cephal-	<i>κεφαλή</i> head. Cf. <i>capit-</i> . <i>encephalitis</i>	cost-	<i>costa</i> rib. Cf. <i>pleur-</i> . <i>intercostal</i>
cept-	<i>capio</i> , <i>-cipientis</i> , <i>-ceptus</i> take, receive. <i>receptor</i>	crani-	<i>κράνιον</i> or <i>cranium</i> skull. <i>pericranium</i>
cer-	<i>κηρός</i> or <i>cera</i> wax. <i>ceroplasty</i> , <i>ceromel</i>	creat-	<i>κρέας</i> , <i>κρεαρ-</i> meat, flesh. <i>creatorrhea</i>
cerat-	See <i>kerat-</i> . <i>aceratosis</i>	-crescent	<i>cresco</i> , <i>crescentis</i> , <i>cretus</i> grow. <i>excrecent</i>
cerebr-	<i>cerebrum</i> . <i>cerebrospinal</i>	cret- ¹	<i>cerno</i> , <i>cretus</i> distinguish, separate off. Cf. <i>crin-</i> . <i>discrete</i>
cervic-	<i>cervix</i> , <i>cervicis</i> neck. Cf. <i>trachel-</i> . <i>cervicitis</i>	cret- ²	See -crescent. <i>accretion</i>
chancr-	See <i>cancr-</i> . <i>chancriform</i>	crin-	<i>κρίνω</i> distinguish, separate off. Cf. <i>cret-¹</i> . <i>endocrinology</i>
cheil-	<i>χείλος</i> lip. Cf. <i>labi-</i> . <i>cheiloschisis</i>	crur-	<i>crus</i> , <i>cruris</i> shin, leg. <i>brachio-crural</i>
cheir-	<i>χείρ</i> hand. Cf. <i>man-</i> . <i>macrocheiria</i> . (Also spelled <i>chir-</i>)	cry-	<i>κρύος</i> cold. <i>cryesthesia</i>
chir-	See <i>cheir-</i> . <i>chiromegaly</i>	crypt-	<i>κρύπτω</i> hide, conceal. <i>cryptorchism</i>
chlor-	<i>χλωρός</i> green. <i>achloropsia</i>	cult-	<i>colo</i> , <i>cultus</i> tend, cultivate. <i>culture</i>
chol-	<i>χολή</i> bile. Cf. <i>bil-</i> . <i>hepatocholangitis</i>	cune-	<i>cuneus</i> wedge. Cf. <i>sphen-</i> . <i>cuneiform</i>
chondr-	<i>χόνδρος</i> cartilage. <i>chondromalacia</i>	cut-	<i>cutis</i> skin. Cf. <i>derm(at)-</i> . <i>subcutaneous</i>
chord-	<i>χορδή</i> string, cord. <i>perichordal</i>	cyan-	<i>κύανος</i> blue. <i>anthocyanin</i>
chori-	<i>χόριον</i> protective fetal membrane. <i>endochorion</i>	cycl-	<i>κύκλος</i> circle, cycle. <i>cyclophoria</i>
chro-	<i>χρῶς</i> color. <i>polychromatic</i>	cyst-	<i>κύστις</i> bladder. Cf. <i>vesic-</i> . <i>nephrocystitis</i>
chron-	<i>χρόνος</i> time. <i>synchronous</i>	cyt-	<i>κύτος</i> cell. Cf. <i>cell-</i> . <i>plasmocytoma</i>
chy-	<i>χέω</i> , <i>χυ-</i> pour. <i>ecchymosis</i>	dacry-	<i>δάκρυ</i> tear. <i>dacryocyst</i>
-cid(e)	<i>caedo</i> , <i>-cismus</i> cut, kill. <i>infanticide</i> , <i>germicide</i>	dactyl-	<i>δάκτυλος</i> finger, toe. Cf. <i>digit-</i> . <i>hexadactylism</i>
cili-	<i>cilium</i> eyelid. Cf. <i>blephar-</i> . <i>superciliary</i>	de-	<i>de</i> down from. <i>decomposition</i>
cine-	See <i>kine-</i> . <i>autocinesis</i>	dec- ¹	<i>δέκα</i> ten. Indicates multiple in metric system. Cf. <i>dec-²</i> . <i>decagram</i>
-cipient	See <i>cept-</i> . <i>incipient</i>	dec- ²	<i>decem</i> ten. Indicates fraction in metric system. Cf. <i>dec-¹</i> . <i>decipara</i> , <i>decimeter</i>
circum-	<i>circum</i> around. Cf. <i>peri-</i> . <i>circumferential</i>	dendr-	<i>δένδρον</i> tree. <i>neurodendrite</i>
-cis-	<i>caedo</i> , <i>-cismus</i> cut, kill. <i>excision</i>	dent-	<i>dens</i> , <i>dentis</i> tooth. Cf. <i>odont-</i> . <i>interdental</i>
clas-	<i>κλάω</i> , <i>κλασ-</i> break. <i>cranioclast</i>	derm(at)-	<i>δέρμα</i> , <i>δέρματος</i> skin. Cf. <i>cut-</i> . <i>endoderm</i> , <i>dermatitis</i>
clin-	<i>κλίνω</i> bend, incline, make lie down. <i>clinometer</i>	desm-	<i>δεσμός</i> band, ligament. <i>syn-desmopexy</i>
clus-	<i>claudio</i> , <i>-clusus</i> shut. <i>Malocclusion</i>	dextr-	<i>dexter</i> , <i>dextr-</i> right-hand. <i>ambidextrous</i>
co-	See <i>con-</i> . <i>cohesion</i>	di- ¹	<i>di-</i> two. <i>dimorphic</i> . (See also <i>bi-²</i>)
cocc-	<i>κόκκος</i> seed, pill. <i>gonococcus</i>	di- ²	See <i>dia-</i> . <i>diuresis</i> .
coel-	<i>κοίλος</i> hollow. Cf. <i>cav-</i> . <i>coelenteron</i> . (Also spelled <i>cel-</i>)	di- ³	See <i>dis-</i> . <i>divergent</i> .
col- ¹	See <i>colon-</i> . <i>colic</i>	dia-	<i>διά</i> (<i>a</i> is dropped before words beginning with a vowel) through, apart. Cf. <i>per-</i> . <i>diagnosis</i>
col- ²	See <i>con-</i> . <i>collapse</i>	didym-	<i>δίδυμος</i> twin. Cf. <i>gemin-</i> . <i>epididymal</i>
colon-	<i>κόλον</i> lower intestine. <i>colonic</i>	digit-	<i>digitus</i> finger, toe. Cf. <i>dactyl-</i> . <i>digitigrade</i>
colp-	<i>κόλπος</i> hollow, vagina. Cf. <i>sin-</i> . <i>endocolpitis</i>	diplo-	<i>διπλός</i> double. <i>diplomelia</i>
com-	See <i>con-</i> . <i>commasculation</i>	dis-	<i>dis-</i> (<i>s</i> may be dropped before a word beginning with a consonant) apart, away from. <i>dislocation</i>
con-	<i>con-</i> (becomes <i>co-</i> before vowels or <i>h</i> ; <i>col-</i> before <i>l</i> ; <i>com-</i> before <i>b</i> , <i>m</i> , or <i>p</i> ; <i>cor-</i> before <i>r</i>) with, together. Cf. <i>syn-</i> . <i>contraction</i>	disc-	<i>δίσκος</i> or <i>discus</i> disk. <i>disco-placenta</i>
contra-	<i>contra</i> against, counter. Cf. <i>anti-</i> . <i>contraindication</i>	dors-	<i>dorsum</i> back. <i>ventrodorsal</i>
copr-	<i>κόπρος</i> dung. Cf. <i>sterc-</i> . <i>coproma</i>	drom-	<i>δρόμος</i> course. <i>hemodromometer</i>
cor- ¹	<i>κόρη</i> doll, little image, pupil. <i>isocoria</i>	-ducent	See <i>duct-</i> . <i>adducent</i>
		duct-	<i>duco</i> , <i>ducentis</i> , <i>ductus</i> lead, conduct. <i>oviduct</i>