

# Roots

A dictionary of parts of words e.g. prefixes, roots or stems, and suffixes.

e.g. (1) supersonic jet  
(super- (prefix = above or beyond),  
-son- = sound, -ic an ending (suffix)).

e.g. (2) hydrogen (hydro- = water, -gen = maker)

Edition 2

© Andrew Fitzgerald 2006-2007



## Introduction

Sometime in the 1970s I read a book mentioning prefixes, suffixes, and so forth and I wanted to write one like it. This is the result.

All words are made up of one or more of these pieces: affixes (prefixes and suffixes), the combining forms, the stems or roots, and maybe more. I call all these parts of words, particles – but just for now. I have listed more than 900 of them, and this deals with a huge range of words.

Many basic words which turn up in compound words, were left out, usually when the meaning was obvious e.g. self-, wall, (used in wallflower, wallpaper...), room, penny, -footed, -headed and so on.

English imported words from at least 350 languages, but the particles used here mostly come from Latin and Greek. In choosing them I looked for ones easy to explain, with only one or two possible meanings, and occurring with a high frequency. Hundreds of particles (e.g. -fully, -lessness, -icity) were rejected using these criteria, producing a huge saving of time and effort on my part – and yours.

The results are interesting, but not 100% reliable, not because of any errors I may have made, but because languages are like that. An example of unreliability is the following collection of words: concussion, discussion, and percussion. The words percussion and concussion come from a word meaning to quake (i.e. shake). In theory the word discussion should also have something to do with shaking, but of course, it doesn't.

Other words in English that obviously don't 'fit' the theoretical mould are: awesome, awful, brilliant, fantastic, terrible, terrific. The meaning of the word 'nice' has changed a number of times.

However, I feel that English is full of interesting words, and that this dictionary gives a slightly unusual way to learn a little about many of them. Even a word that you have never seen before becomes partly familiar through studying the particles that make up most long words and many short ones.

# Top 50

Here is a list of prefixes, suffixes etc. It's sorted by frequency of occurrence in a large list of words.

|                      |                          |
|----------------------|--------------------------|
| 1. re- = again       | 26. mini- = small        |
| 2. un- = not         | 27. trans- = across      |
| 3. -ion = noun       | 28. dia- = through       |
| 4. con- = with       | 29. counter- = against   |
| 5. pre- = before     | 30. -ify = make          |
| 6. dis- = bad        | 31. epi- = upon          |
| 7. -ness = adj.      | 32. para- = beside       |
| 8. pro- = forward    | 33. syn- = with          |
| 9. mis- = bad        | 34. iso- = same          |
| 10. ex- = out        | 35. mono- = one          |
| 11. di- = two        | 36. mal- = bad           |
| 12. -able = able     | 37. -pend- = hang        |
| 13. bi- = two        | 38. -ology = study of    |
| 14. sub- = under     | 39. pan- = all           |
| 15. -less = without  | 40. uni- = one           |
| 16. com- = with      | 41. multi- = many        |
| 17. non- = not       | 42. mid- = middle        |
| 18. inter- = between | 43. -voc- = call         |
| 19. -ism = creed     | 44. -ol = alcohol        |
| 20. tri- = three     | 45. extra- = outside of  |
| 21. anti- = against  | 46. sym- = with          |
| 22. -ful = full      | 47. -fication = making   |
| 23. fore- = before   | 48. -gram = draw / write |
| 24. under- = under   | 49. dur- = lasting       |
| 25. super- = above   | 50. demo- = people       |

## A

a- = not, without e.g. agnostic, acephalous (Amoebas are acephalous), amoral, azygous

ab- = away from e.g. abdicate, abduct, aberrant, abhor, abject

-able = able, able to, in accordance with e.g. abominable snowman, acceptable, admirable, agreeable, reasonable

abs- = away from e.g. abscond, abstain, abstract, abstruse

ac- = ad- (to) e.g. accession, accent, accept

acantho- = thorn e.g. acanthaceous, acanthus

acerb- = bitter e.g. acerbic

aceto- = acetyl- ( $\text{CH}_3\text{COO}^-$ )

acetyl- =  $\text{CH}_3\text{COO}^-$  derived from acetic acid e.g. acetylsalicylic acid (Aspirin)

acoust- = sound e.g. acoustician, acoustic tiles, electro-acoustic equipment

acro- = 'summit' e.g. acrobat, acromegaly (an abnormal growth of the hands or feet), acrophobia

acrylo- = acrylic (a polymer) e.g. acrylonitrile

actino- = 'ray' e.g. actinobacillus, actinometer, actinomorphic, actinomycete (a type of bacteria), actinotherapy

ad- = to e.g. adapt, adhere, adjacent, administer, admire, admit, advise, advocate *see -voc-*

adeno- = gland e.g. adenoids, adenosine triphosphate i.e. ATP (Biochemistry)

adren(a)- = on a kidney e.g. adrenaline, noradrenaline ('emergency' hormones)

-aemia = blood e.g. anaemia, hypoglycaemia, leukaemia, septicaemia *see also* a-, hypo-, leuco-

aero- = air e.g. aerobics, aerodynamic, aerology, aeronautical, aerosol, anaerobic bacteria

af- = ad- (to) e.g. affable, affect, affluent

afore- = before e.g. aforementioned (appears in archaic or legal documents)

afro- = African

ag- = ad- (to) e.g. agglutinate, aggression, aggregate

agr(o/i)- = 'field', agriculture e.g. agriculture, agribusiness, agrochemicals, agronomy

al- = ad- (to) e.g. alleviate, alliteration, allude, allure

-al = ending for aldehydes e.g. methanal, ethanal, propanal, butanal, pentanal, hexanal, heptanal, octanal, nonanal, decanal

-algia = pain e.g. analgesic, myalgia (muscle pain), neuralgia (nerve pain), nostalgia

alien- = other e.g. alienability, alienated, inalienable

allo- = other e.g. allogamy (Biology), allopathy (Medicine), allotrope (Chemistry)

alter- = other e.g. alteration, alternative, alternator

alti- = height e.g. altimeter, altitude

alto- = height e.g. altostratus (Meteorology)

ambi- = both e.g. ambidextrous, ambiguous, ambilateral, ambisexual, ambivalent

am(ic)- = friend e.g. amiable, amicable

amorph- = lacking in shape (a- means not, -morph means shape) e.g. amorphous

amphi- = both, around e.g. amphibian, amphibrachs, amphibolic, amphimixis (true sexual reproduction), amphipod, amphitheatre

amylo- = starch e.g. amylase and amylopsin are digestive enzymes that break down starch

an- = not, without e.g. anaemia *see also* a-

ana- = up, back, again e.g. anabolic steroids, analyse, anaphylactic shock (e.g. from a bee sting)

andro- = man e.g. androcentric, androgens, android, andrology, androsterone, polyandry

-ane = ending for alkanes e.g. methane, ethane, propane, butane, pentane, hexane, heptane, octane, nonane, decane *see also* -ol for methanol, ethanol. *see also* -yl for radicals

anemo- = wind e.g. anemometer (Meteorology)

angio- = vessel e.g. angiogram, angiosperm, gametangium

Anglo- = English e.g. Anglo-Irish Agreement

ant- = anti- e.g. antacid

ante- = before e.g. antecedent, anticipate, antenatal

antho- = flower e.g. anthocyanin, anthology

anthropo- = mankind e.g. philanthropist, anthropology

anti- = against, opposite e.g. antibiotic, anticlockwise, anticyclone, antidepressant, antidote, antilogarithm, antioxidant

api- = related to bees e.g. apiary, apiculture

apo- = away from, separate e.g. apogee

aqua- = water e.g. aquarium, aquifer

ar- = ad- (to) e.g. array, arrears, arrival

arachno- = spider e.g. arachnophobia

arbor- = tree e.g. arboretum

arch- = chief, main e.g. archbishop

-archy = a form of rule or government e.g. monarchy, oligarchy

archaeo- = ancient e.g. archaeology

-arium = noun denoting a place e.g. aquarium, herbarium

aroma- = 1) smell 2) related to a molecule containing a ring structure like benzene

arterio- = artery e.g. arteriosclerosis

arthro- = joint e.g. arthritis, arthropod, osteoarthritis

as- = ad- (to) e.g. assailant, assemble, assess

-ase = used in naming many enzymes and types of enzymes e.g. amylase, catalase, esterases

-asis = in the name of some diseases e.g. amoebiasis, giardiasis, psoriasis

astro- = star e.g. astrology, astrolabe (a measuring instrument), astronaut, astrophysics

at- = ad- (to) e.g. attain, attempt

-ator = used in nouns denoting agents e.g. abdicator, creator, defibrillator, illustrator

atto- = Numeric prefix meaning  $10^{-18}$  i.e. 0.000 000 000 000 000 001 e.g. 3 attograms

audio- = hearing or sound e.g. audible, audiometer (tests hearing), audiovisual aids, audition

auri- = gold e.g. auric, auriferous

Austro- = Austrian or Australian

auto- = self e.g. autobiography, autograph, automobile, autonomy

avi- = bird, flight e.g. aviary (for birds), aviator, avionics

azo- = nitrogen (i.e. NN in the middle of an organic compound) e.g. benzodiazepine

## B

bacterio- = literally 'rod', bacteria e.g. bactericide, bacteriolysin, bacteriologist, bacteriophage (a virus that reproduces in bacteria), bacterium

-bar- = pressure e.g. barograph, barometer, baryon (a heavy subatomic particle), isobars on a weather map, hyperbaric oxygen

bary- = heavy e.g. baryon (Nuclear Physics)

batho- = depth e.g. batholith (Geology), bathometer

bathy- = deep e.g. bathysphere (Oceanography)

be- = thoroughly, excessively e.g. besmear, belabour

belli- = war e.g. bellicose, belligerent

bene- = well / good e.g. benediction, benefactor, beneficial, benevolent

benzo- = benzene e.g. benzoic acid

bi- = two e.g. bicarbonates, bicameral system of government, biceps, bicentenary, potassium dichromate, biconcave lens, bicuspid (a kind of tooth), bicycle, biennial, bifurcation, bisect

biblio- = book e.g. bibliography, bibliophile

bin- = bi- (two) e.g. binaural, binoculars

bio- = life e.g. aerobiologist, amphibious, autobiographical, biochemistry, biology, biophysics

-blast = a cell or layer of an embryo e.g. myoblast (a cell not yet differentiated into a muscle cell)

blepharo- = eyelid e.g. blepharitis

boro- = Boron e.g. borosilicates

brachio- = arm e.g. brachial artery, brachiopod, brachiosaurus (a dinosaur with long forelimbs)

brachy- = short e.g. brachycephalic, brachydactylic, brachypterous (short-winged)

brady- = slow e.g. bradycardia (abnormally slow heart beat), bradypeptic

bromo- = shows that bromine is present in a substance e.g. sodium bromide

broncho- = windpipe e.g. bronchiole, bronchitis

bryo- = 'moss' e.g. bryology, bryophyte

by- = secondary e.g. bystander

bye- = secondary *see* by-

## C

caco- = bad e.g. cacographer, cacophony, cacotopia

calc- = calcium e.g. calciferol, calcifuge (Botany), calcite

calli- = beautiful e.g. calligraphy, callisthenics

calor- = heat e.g. calorie, calorific, calorimeter

campano- = bell e.g. campanology, campanile, campanula (a flower)

carbo- = carbon e.g. carbonates, carbohydrate, carbonic acid, carboniferous

carcino- = cancer e.g. carcinogen, carcinology, carcinoma

cardio- = heart e.g. cardiovascular system, electrocardiograph, pericardium

carn- = flesh / meat e.g. carnal desire, carnivorous, discarnate, reincarnation

-carp- = fruit (Botany) e.g. pericarp

carto- = map e.g. cartography

cata- = 'down' e.g. cataclysm, catacombs, catalyst, catastrophe

catena- = chain e.g. concatenation

-cele = a swelling, hernia e.g. haematocele, hydrocele

-celer- = swift e.g. accelerate, celerity

cent- = one hundred e.g. centipede, century

centi- = one hundredth e.g. Centigrade, centigram, centilitre, centimetre

-centric = having a specified centre e.g. egocentric (self), heliocentric (sun), theocentric (God)

-ceps = head e.g.(biceps, triceps) (Anatomy)

-cephal- = head e.g. an octopus is a cephalopod (Marine Biology), encephalitis (brain inflammation)

cerebro- = brain e.g. cerebrospinal fluid

cero- = wax e.g. cerography

chem(i/o)- = chemical e.g. chemiluminescence, chemotherapy

Chino- = China

chiro- = hand e.g. chiropodist, chiropractor, chiroptera (Bats)

chloro-(1) = green e.g. chlorophyll

chloro-(2) = Chlorine

chole- = bile e.g. cholangiography

choreo- = dance e.g. choreographer

Christo- = Christ e.g. Christology

chrom(ato)- = colour e.g. chromatography, monochromatic

chromo- = colour e.g. chrominance, chromosome (Biology)

chrono- = time e.g. anachronism, chronology, chronometer

chryso- = golden e.g. chrysalis (Biology), chrysanthemum

-cide = kill e.g. fungicide, homicide, insecticide, pesticide, suicide

cine- = cinema e.g. cineaste (cinema enthusiast), cine-camera

circum- = around e.g. circumcentre, circumference, circumstantial

cirro- = high-altitude clouds

cis- = 'on this side of' used in the naming of chemical compounds (trans- is similarly used)

-cise- or -cide = to cut e.g. circumcision, incision, excise, (also, surprisingly: concise, decide, precise) [another -cide means to kill]

-cle = This originally formed diminutive nouns e.g. barnacle, canticle, corpuscle, denticle

clept- = steal e.g. kleptomaniac

-cline- = slope e.g. clinometer, decline, incline, inclinometer, monocline (Geology)

-clude (-clus-) = 'shut' e.g. exclusive, include, preclude

co- = com- ("with") e.g. cooperate, coordination

-coele- = hollow e.g. coelenterate, coelom

col- = with e.g. collaborate

cole- = sheath e.g. coleoptile (Biology)

colpo- = womb e.g. colposcope

com- = with combination, comfort

con- = com- (with) e.g. concatenation (Computer Programming), concord, concelebrate, condense, congratulate, connect, conquer

conic- = cone e.g. conic section

contra- or contro- = against e.g. contraception, contradictory, contrast, contravene, controversial

copro- = dung, faeces e.g. coprolite (fossil dung), coprophilia

cor- = with e.g. correct, correspond, corrode

corona- = ring, 'crown' e.g. coronagraph (Astronomy), coronary thrombosis (Medicine)

corp- = body e.g. corporal, corporation, corpse

cosmo- = universe, world e.g. cosmologist, cosmonaut, cosmopolitan

counter- = against e.g. counteraction, counterargument, counterbalance, counterbid, countercharge, counterfeit, counterfoil, countermand, counterweight

-cracy = a form of rule e.g. aristocracy, bureaucracy, democracy, plutocracy (by the rich)

cranio- = skull e.g. craniometry

-crat = a person who rules or has influence e.g. bureaucrat

-cratic = a type of government or rule e.g. democratic

-cred- = believe e.g. credence, credential, credible, creditworthy, incredible

cruc- = cross e.g. crucial, crucible, Cruciferae (Botany), crucifix

cryo- = extreme cold e.g. cryology

crypto- = secret, hidden e.g. cryptography, decrypt, encrypt

-cule = originally used to mean small e.g. molecule

cumulo- = a kind of bulky cloud

cupro- = copper e.g. cupro-nickel

curvi- = curve e.g. curvilinear

-cuss- = 'shake' e.g. percussion, concussion

-cy = state, condition or rank e.g. accuracy, secrecy

cyano- = blue OR cyanide group –CN e.g. a cyanotic baby (blue), sodium cyanide

cyber- = related to electronic communications e.g. cybercafe

cyclo- = circle, cycle e.g. cycloalkanes (Organic Chemistry)

cysto- = cyst / bladder e.g. cystoscopy (Medicine)

-cyte = cell e.g. erythrocyte, leucocyte

cyto- = cell e.g. cytochrome, cytology, cytomegalovirus, cytoplasm

## D

dactyl = finger e.g. pterodactyl, zygodactyl (Zoology) [*see also* ptero-]

de- = down, away from, completely e.g. deactivate, debar, debase, descend

deca- = ten e.g. decade, decagon, decahedron

deci- = Numeric prefix denoting one tenth e.g. decigram, decimetre

dei- = God e.g. deify

demi- = half e.g. demisemiquaver (Music)

demo- = people e.g. demagogue, democracy, demographer, endemic, epidemic, pandemic

dendro- = tree e.g. dendrite (Mineralogy, Chemistry, Medicine), dendrochronology

-dent- or -dont- = tooth e.g. dentiform, dentifrice, dentigerous, dentine, dentist, dentition, denture, dicynodont, orthodontist

-derm- = skin e.g. dermatitis, hypodermic needle, mesoderm

dermato- = skin e.g. dermatology, dermatophyte

deutero- = both e.g. deuterium dioxide is heavy water (Nuclear Physics)

dextro- or dexter- = 'right' e.g. ambidextrous, dexterity, dextrose, dextrorotatory sugar

di- = two e.g. butadiene, carbon dioxide, carbon disulphide, dilemma, dichotomy, dicotyledon (Botany), dihedral angle (Aeronautics), a dimer (e.g. sucrose), dipterous (having two wings)

dia- = through e.g. diabetes, diaglyph, diagnosis, diagram, dialysis, diameter, diaphanous, diarrhoea, diastole, diathermy

dicho- = in two parts e.g. dichotomous key (Biology)

dict- = speak e.g. contradict, dictator, diction, indict, jurisdiction, malediction, predict

dif- = not, intense e.g. differentiation (Mathematics), diffract (Physics)

digit- = number, finger e.g. digital, prestidigitation (used in Stage magic)

diplo- = double e.g. diplococcus (Microbiology), diploma, diplopia (double vision)

dis- = not, intense e.g. disappoint, disassociate, disbar, discount, disgust, disorder

dodeca- = twelve e.g. dodecahedron

-dom = state, type, domain e.g. freedom, kingdom, officialdom

dont- = tooth (see dent-)

dorm- = sleep e.g. dormant, dormitory, dormouse

dors(o/i)- = back e.g. dorsal fin

-dox = opinion e.g. heterodox, orthodox, unorthodox

-drome = 'run' e.g. aerodrome, hippodrome, syndrome (Medicine)

dubi- = doubt e.g. dubious, indubitably

-duce = lead e.g. deduce, induce, introduce, produce, reduce, seduce, transducer

dulc- = sweet e.g. dulcimer (a musical instrument)

dur- = hard, lasting e.g. enduring, epidural anaesthetic, indurate, obdurate

dyna- = power e.g. aerodynamic, dynamic equilibrium (Organic Chemistry), dynamite

dys- = bad, diseased, abnormal e.g. dysentery, dyslexia, dysuria

## E

e- = out (see ex-) e.g. ebullient, eclosion (Entomology)

ecclesi- = church e.g. ecclesiology

eco- = 'house' (Gr. oikos means house) e.g. ecology, economy

ecto- = outside e.g. ectoderm, ectoparasite, ectoplasm

-ectomy = surgical removal of e.g. appendectomy, hysterectomy, mastectomy

educa(t)- = 'lead out', educate e.g. educational

-ee = a person affected by or concerned with something e.g. amputee, appointee, devotee

-een = small, or in certain numbers e.g. colleen, fourteen, poteen, spalpeen

-eer = a person who does or is affected by certain things e.g. auctioneer, engineer, musketeer

ef- = out of (ex-) e.g. effervesce, efficient, efflorescence (Biology and Chemistry)

ego- = self e.g. egocentric, egoist, superego

eigen- = characteristic e.g. eigenvector

elast- = stretchable or bendable e.g. elastic, elasticity, elastomer [see -mer]

elect- = choose e.g. election, elector, electoral roll

electric- = electric e.g. electrician, electrical goods

electro- = electric e.g. electrocardiogram, electrochemistry, electromagnetic spectrum, electroencephalogram (Lit: an electric picture of what is in the head)

em- = in (en-) e.g. embalmer, embarrass, embezzle, embryo

embryo = unborn animal or human e.g. embryologist

-eme = 'unit' e.g. glosseme, lexeme, morpheme (all in Linguistics)

en- = in, causing e.g. encapsulate, enchant, encipher, endanger, engrave

enantio- = mirror image e.g. enantiomer (Biochemistry, Organic Chemistry, Molecular Biology)

encephalo- = brain, literally 'in the head' e.g. encephalogram (a picture of the brain), encephalomyelitis, encephalitis

endo- = inside e.g. endocrine glands, endoderm, endogenous depression

-ene = an ending denoting substances that are alkenes e.g. ethene, propene, butene, pentene

-ennial = 'year' e.g. biennial, perennial

entero- = intestine e.g. dysentery, gastroenteritis

ento- = within e.g. entoderm, entozoa

entomo = insect e.g. entomology

ephemer(a) = short-lived e.g. ephemera, ephemeral, ephemeris (a table or book of table of celestial positions)

epi- = upon e.g. epidural anaesthetic, epidemic, epidermis, epiphany, episcopo, epitome, epizoon

equi- = equal e.g. equation, equipollence (Mathematics), equivocal, equinox

eroto- = erotic

erythro- = red e.g. erythroblast, erythrocyte

eschato- = (lit. 'last' ) related to death and destiny e.g. eschatology

-ess = female e.g. actress, countess, hostess, poetess, waitress

ethan- = organic compounds based on ethane e.g. 1,2 dichloroethane, ethanoic acid

ethno- = race, people e.g. ethnicity, ethnology

ethyl- = organic compounds containing an ethyl group ( $\text{CH}_3\text{CH}_2-$ ) e.g. 3,4 diethyl octane

-ette = small, substitute, female e.g. cigarette, leatherette, rosette, statuette, usherette

eu- = good e.g. eulogy, euphemism, euphony, euphoria

Euro- = European e.g. eurocheque

ex- = out, away from, past e.g. ex-husband, exclude, exodus

exa- = Numeric prefix meaning  $10^{18}$  i.e. 1,000,000,000,000,000,000 (a million million million)

exo- = external e.g. exocarp, exoderm, exorcise, exoskeleton

extero- = outside e.g. exterior, external, exteroceptive

extra- or extro- = outside of, beyond e.g. extracurricular activities (e.g. chess, debating), extragalactic (outside our galaxy), extraordinary, extrasensory perception, extrovert

## F

facil- = easy e.g. facile, facilitator

felic- = happy e.g. felicitations, felicitousness, infelicity

femto- = Numeric prefix meaning  $10^{-15}$  i.e. 0.000 000 000 000 001

-fer = carry e.g. aquifer, conifer

-ferous = carrying or containing e.g. auriferous, carboniferous

ferri- = Iron e.g. ferric oxide  $\text{Fe}_2\text{O}_3$ , ferritin (a protein)

ferro- = Iron e.g. ferroconcrete, ferromagnetism, ferrous oxide  $\text{FeO}$

fibro- = fibre e.g. fibrinogen (Biochemistry, Haematology), fibroblast, fibrous

-fic = 'make' e.g. beatific, horrific, soporific, sudorific (perspiration-producing), terrific

-fication = making or causing e.g. amplification, calcification, denitrification, glorification, identification, magnification

fict- = fictional, fictitious, non-fiction

-fid-(1) = faith e.g. fidelity, confidant, confidence, diffident, fidelity, perfidious

-fid(2) = divided into parts e.g. bifid, trifold, quadrifid

fiss- = split e.g. binary fission (Biology), nuclear fission (Nuclear physics)

flagella- = (L. flagellum means whip) e.g. flagellation, flagellum (Microbiology)

flavo- = 'yellow' e.g. flavone, flavoprotein, riboflavin

flect- or flex- = bend e.g. circumflex, deflect, flexibility, genuflect, inflexible, reflex, retroflex

-flop = floating point operations per second e.g. five megaflop

flori- = flower or plant e.g. flora, floriculture, florist

-flu- = (see -flux) e.g. affluence, confluence, effluent, fluency, fluid

fluoro- = contains fluorine or can fluoresce e.g. fluorescein

fluvio- = river e.g. fluvial plain, fluviometer

fluct- or -flux- = flow e.g. fluctuation, reflux condenser (Chemistry)

foli- = leaf e.g. foliar feeding (Gardening)

fore- = before e.g. foreboding, weather forecast, forehead, foreknowledge, forewarn, unforeseen

-form = shape or number e.g. cruciform

fort- = strong e.g. comfort, fortification, fortitude, fortress

fract- = 'break' e.g. diffract, refract

Franco- = French

frat(e)r- = brother e.g. fraternal, fraternise

-free = without e.g. sugar-free

fruct- = fruit e.g. fructose

-fuge = flee from e.g. centrifugal force

-ful = full of e.g. beautiful, dutiful, grateful, lawful, merciful, neglectful, powerful, remorseful, stressful, tearful, useful, wonderful

fulg- = shining e.g. effulgency

fulmin- = explosive e.g. fulminate

fungi- = fungus e.g. fungicide

-fy = make, cause to happen e.g. amplify, codify, deify, electrify, glorify, intensify, magnify, notify, ossify, petrify, quantify, ratify, satisfy, terrify, unify, verify

## G

galacto- = milk e.g. galactose

Gallo- = French

galvan- = electric or full of energy e.g. galvanise

gameto- = gamete (sperm or egg) e.g. gametangium

gamo- = sexual union, reproduction

gastro = stomach e.g. gastritis (Medicine), gastropod (Biology)

gemmo- = jewelry e.g. Gemmology

-gen- = make e.g. hydrogen, nitrogen, progeny, generator

genito- = genital (reproductive) e.g. genitourinary specialist

geo- = earth e.g. geography, geology, geometry, geophysics, geosynchronous orbit

Germano- = Germany

geronto- = old people e.g. gerontologist

giga- = One thousand million i.e. 1,000,000,000

glob- = sphere e.g. global, globigerina (Marine Biology), globular cluster (Astronomy)

gloss = 'tongue' or 'language' e.g. glosseme, glossitis, isogloss, odontoglossum (Botany)

gluco- = sweet e.g. glucose

glyco- = sweet e.g. glycerol, glycogen, glycoside

glyph- = a carved character e.g. hieroglyph

gnath- = jaw e.g. prognathous

-gnos(is) = knowledge e.g. agnostic, diagnosis, gnosis, prognosis

-gon = 'angle' e.g. hexagonal, heptagon, octagon, nonagon, decagon

gonado- = reproductive e.g. gonadotrophic hormone

goni- = angle e.g. goniometer

-gonium = seed/ reproductive cell e.g. archegonium (Botany), spermatogonium

Graeco- = Greek

-grad- or -grade = 'step' or walk e.g. Centigrade, gradation, gradual, plantigrade (Biology)

-gram = draw or write e.g. electrocardiogram, photogram, telegram [most such words represent a document or picture, produced by the corresponding -graph e.g. an electrocardiograph produces an electrocardiogram]

-graph- = 'draw', 'write' e.g. photographer, lithography, electroencephalograph [most such words represent a device which produces a document or picture or graph]

-grat- = please e.g. congratulate, gratify, gratitude

grav(it)- = associated with gravity or weight e.g. aggravate, gravimetry

greg- = 'flock' (Latin grex, gregis) e.g. aggregate, congregation, segregationist

gymno- = 'bare, naked' e.g., gymnastics, gymnosperm (Botany)

gynaeco- = woman e.g. gynaecology, gynaecium (Botany)

-gyn- = woman e.g. misogynist, polygyny

gyro- = rotating e.g. gyrating, gyrocompass, gyroscope, spirogyra (Botany)

## H

-haemia = blood e.g. ischaemia (Medicine) [*see also* -aemia]

haemo- = blood e.g. haemoglobin, haemophilia

hagio = 'saint' e.g. hagiography, hagiolatry

-hal(e)- = breathe e.g. exhale, inhale

hallucin- = to see what is not present to others e.g. hallucinogenic drugs

halo- = 'salt' e.g. halogen (Chemistry)

haplo- = single/simple e.g. haploid (Botany)

harmoni- = harmony e.g. harmonics, inharmonious

hecto- = 100 e.g. 5 hectometres is 500 metres, hectolitre

-hedron = having a specified number of faces e.g. tetrahedron

heli- = a modern prefix meaning helicopter e.g. heliport

helico- = spiral or helix e.g. helicobacter (Microbiology)

helio- = sun e.g. anthelion, helianthus, heliotrope, helium, spectroheliograph

helminth- = parasitic worm e.g. helminthiasis, helminthology, platyhelminthes

hemi- = half e.g. hemianopsia, hemiplegia (Medicine), hemisphere

hendeca- = eleven e.g. hendecagon

hepato- = liver (Gk: hepar) e.g. heparin, hepatitis

-here = 'stick' e.g. adhere, cohere, inherent

hepta- = seven e.g. heptagon, heptahedron, (heptane, heptavalent (Chemistry))

herbi- = plant e.g. herbaceous, herbalist, herbicide, herbivore

herpeto- = reptile e.g. herpetology

hetero- = other e.g. heterodoxy, heterogeneous, heteromorphic, heterosexual

hexa- = six e.g. hexagonal, hexameter, hexapod

Hiberno- = Irish

hier- = holy e.g. hierocracy, hierogram, hierology

hippo- = horse e.g. hippodrome, hippopotamus

Hispano = Spanish

histo- = tissue (Biology, Medicine) e.g. histochemistry, histology

holo- = whole, entire e.g. hologram (Physics)

homeo- = like, similar e.g. homeopathy

homo- = same e.g. homogeneous, homograft, homomorphic, homosexual

homoeo- = homeo- (like, similar)

-hood = state, condition e.g. boyhood, nationhood, parenthood, sainthood

horo- = time e.g. horology, horoscope

hyalo- = transparent like glass e.g. hyaline cartilage, hyalite

hydra- = water (or other fluid) e.g. dehydration, hydraulic

hydro- = water e.g. hydroelectric power generation, hydrogen

hydroxy- = (Chemistry) indicates that the hydroxyl group (-OH) is present

hyeto- = rain e.g. isohyet (Meteorology)

hygro- = moisture e.g. hygrometry, hygrometer (Meteorology), hygrophyte *see also* -phyte

hymen- = membrane e.g. hymenoptera (Entomology)

hymno- = hymn e.g. hymnographer, hymnology

hyper- = above, beyond, excessive e.g. hyperactive, hyperbola, hypercholesterolaemia, hyperfocal distance (Photography), hyperglycaemia, hyperinflation, hypersonic, hypertension

hypno- 'sleep', hypnosis e.g. hypnotherapy

hypo- = below, less than e.g. hypodermic needle, hypothalamus, hypotonic (Biology)

hypso- = height e.g. hypsography, hypsometer

hystero- = uterus e.g. hysterectomy

|

-iasis = a disease e.g. giardiasis, psoriasis, trypanosomiasis

iatro- = medical e.g. iatrogenic disorder

-iatry = medical e.g. podiatry, psychiatry

Ibero- = Iberian

-ible = -able

ichthyo- = fish e.g. ichthyologist

icono- = image e.g. iconoclastic, iconography, iconology

icosa- = twenty e.g. icosahedron

ideo- = idea, form, shape e.g. ideogram, ideological

idio- = own e.g. idiom, idiopathy, idiosyncratic

-ific = make (*see also* fic-)

igni- = fire e.g. ignition, igneous rocks (Geology) [Limestone, a sedimentary rock, became marble, an igneous rock, when limestone was subjected to intense heat (and pressure) in the ground.]

il- = not, in, (*see also* in-) e.g. illegible, illogical, induce

im- = not e.g. immaculate, immunity

immuno- = immune e.g. immunoassay, immunology, immunosuppressive drug

in- = not e.g. inactive, inadvisable, inalienable rights, inappropriate, infinite

-in = often used in names of organic compounds e.g. aspirin, vitamin, warfarin

Indo- = Indian

inferior- = lower; poorer quality e.g. inferiority

infra- = beneath, below e.g. infrared rays, infrasonic, infrastructure

inter- = between, among e.g. interatomic forces, intercession, interdenominational, interfere, intergovernmental, intermarriage, international

intra- = within (sometimes in) e.g. intracellular, intracranial pressure, intramolecular, intravenous injection

intro- = into e.g. introduce, introspection, introvert

iodo- = Iodine e.g. iodoform

-ion = action, state or product e.g. ablation, absolution, acidification, addition

ir- = not e.g. irreversible, irrevocable [*see also* voc], irrefutable

irid- = iris, colour, iridium e.g. iridescent, iridology

-ism = a system of philosophy or belief e.g. agnosticism, anarchism, capitalism, Catholicism, communism

iso- = equal e.g. anisotropic, [isobar, isotherm (Meteorology)], isodynamic, isotope (Chemistry)

-ist = 'a person ...' e.g. alarmist, anarchist, artist, economist, geologist, realist

Italo- = Italian

-itis = inflammatory disease or condition e.g. appendicitis (of appendix), arthritis (of joints), dermatitis (of skin), gingivitis (of the gums), nephritis (of the kidneys), phlebitis (of veins)

## J

-ject- = 'to throw' (Now often used in abstract nouns) e.g. conjecture, injection, project

joc(o/u)- = in jest e.g. jocularly

journal- = diary, newspaper e.g. journalism, photojournalist

Judaeo- = Jewish

judic- = judge, law court, sensible e.g. judicial review, judicious, prejudice

juris- = law, legal e.g. jurisprudence

juven- = young e.g. juvenile

juxta- = next e.g. juxtaposition

## K

karyo- = the nucleus of a cell e.g. karyotype

kerat- = hard (Greek keratos = horn) e.g. keratin

kilo- = one thousand (but a kilobyte is 1024 bytes), e.g. kilometre, kilowatt

kine- = motion e.g. kinetic energy of a projectile (Physics, Mechanics)

## L

labio- = lip e.g. labial, labiodental

-labor- = 'work' e.g. laboratory, laborious

lachryma- = associated with tears or weeping e.g. lachrymatory gland

lacto- = milk e.g. lactic acid, lactose

laevo- = 'left' e.g. laevorotatory compounds (Chemistry)

-lalia = 'talk' e.g. echolalia (excessively repeating what someone else says), glossolalia (speaking in tongues), xenolalia (speaking in a foreign language)

lamina- = layer e.g. laminate, laminitis (Veterinary Medicine)

laparo- = abdomen e.g. laparoscopy

laryng- = larynx e.g. laryngitis, laryngoscope

-latry = worshipping something e.g. demonolatry, idolatry, zoolatry

laud- = praise e.g. laudable, laudatory

lav- = wash e.g. lavage, lavatory

lepid- = 'scale' e.g. a lepidopterist studies moths and butterflies

lepto- = small, narrow e.g. leptospirosis

-less = without e.g. aimless, careless, effortless, timeless, useless, weightless, worthless

-let = in nouns meaning 'small' e.g. booklet, droplet, eyelet, leaflet

leuco- = white e.g. leucoma, leucocyte (Medicine)

-levi = light (not heavy) e.g. alleviate, levitate

lexico- = word, dictionary e.g. lexicography, lexicology, lexicon

liber- = free e.g. liberal, liberator, libertarian, liberty

ligni- = wood e.g. lignify, lignin

lingu- = language, tongue e.g. linguistics

lipo- = (lipid is fat) e.g. lipase, liposuction

-lite = 'stone' (used in naming many substances e.g. zeolite)

liter- = 'letter', read or write e.g. alliteration, illiterate, literal interpretation, literature

-lith- = stone e.g. lithophyte, lithosphere, lithotripsy (a Medical procedure), megalith, otolith

-log- = word, speech e.g. apologist, dialogue, astrologer, biology, geology, histology

-looking = having the appearance of e.g. good-looking

loqua- = 'talk' e.g. loquacious, ventriloquism

luc- = 'light' e.g. elucidate, pellucid (clear), translucent

lucr- = profit e.g. lucrative

lumin- = light e.g. luminosity (Astronomy)

luteo- = orange-coloured

lyc- = wolf, lycanthrope means werewolf [*see also* anthropo-]

lymph- = bodily fluid, (Lit. 'water')

-lys- = split e.g. analysis, autolysis, catalysis, hydrolysis, lysozyme, photolysis

-lytic = that which splits e.g. catalytic, cryptanalytic, haemolytic toxin (e.g. some snake venoms)

## M

-machy = fight e.g. taumachy (bullfighting), theomachy (fighting among or against the gods)

macro- = big e.g. macroeconomics

magneto- = magnetic e.g. electromagnetic spectrum

magni- = great e.g. magnanimous, magnificent

mal- or male- = bad, evil, ineffective e.g. maladapted, maladjusted, maladroit, malaise, malevolent, malfunction, malicious, malnourished

malaco- = soft e.g. malacology (the study of molluscs, including snails and slugs)

Malayo- = Malayan

mammo- = breast e.g. mammogram

-mancy = 'divination by' e.g. cartomancy (map), chiromancy (hand), oneiromancy (dreams), rhabdomancy (rod)

man(u/i)- = hand e.g. manual work, manuscript

-mania = a strong or unnatural obsession e.g. bibliomania, dipsomania, kleptomania, pyromania

-manship = denotes skill e.g. craftsmanship, gamesmanship, marksmanship, salesmanship

masto- = breast e.g. mastectomy

mater- = mother e.g. maternal instinct, maternity

matri- = mother e.g. matricide

maxi- = very large or long e.g. maximum, maxiskirt

mechano- = mechanical e.g. mechanic, mechanoreceptor

medi- = middle e.g. intermediary, median, mediator, Mediterranean Sea

medic- = medical e.g. medicable, medication

mega- = (1) large OR (2) one million times e.g. (1) megalith, (2) Megawatts

megalo- = 'great' e.g. megalomaniac, megalopolis, megalosaurus, splenomegaly

mela(n)- = 'black' e.g. melancholic, melanine

melli- = sweet e.g. melliferous, mellifluent

meningo- = skull membrane e.g. meningococcus, meningitis

meno- = menstruation e.g. menopause, menorrhoea

-mer = thing, 'body', unit e.g. monomer, dimer, polymer

mercapto- = HS- group (sulfhydryl group) is present

mero- = partly, partial

meso- = middle e.g. mesoblast (Embryology), mesomorph, mesophyll

meta- = beyond, change e.g. metabolism, metamorphosis, metapsychology

metoro- = weather e.g. meteorologist

-meter- = measure e.g. altimeter, ammeter, anemometer, barometer, calorimeter, chronometer, clinometer, colorimeter, densitometer, dosimeter, galvanometer, goniometer, hydrometer, hygrometer, interferometer, lactometer, magnetometer, manometer, spectrometer, micrometer, nephelometer, odometer, ohmmeter, optometer, photometer, pluviometer, polarimeter, psychrometer, pyrometer, radiometer, refractometer, saccharimeter, salinometer, sclerometer, seismometer, spectrophotometer, speedometer, sphygmomanometer, thermometer

methyl- = the  $-CH_3$  group present in many organic compounds e.g. 3,5 dimethyl heptane

metro = womb / measure e.g. endometriosis (Medicine)

-metry = measuring e.g. seismometry

mezzo = half e.g. mezzo forte, mezzotint

micro- = 1) small, 2) one millionth of e.g. microbe, microscope, micrometre

mid- = middle e.g. midday, midfielder, midland, midnight, midsummer, midweek, midwinter

mini- = small e.g. miniature, minibike, minibus, minicab, minidisk, minimise, minirugby, miniscule, miniskirt, minivolley

mille- = one thousand e.g. millennium, millepore (Zoology)

milli- = one thousandth e.g. milliamp, milligram, millimetre, millisecond, millivolt

mis- = wrong / bad e.g. misbehave, misconstrue, misdiagnosis, misfortune

misa- or miso- = hatred (of) e.g. misandry, misogamist, misogynist

-miss- = 'to send' e.g. missive

-mit = 'to send' e.g. transmit

mobil- = motion / movement e.g. immobile, mobility

moll- = 'soft' e.g. mollify, mollusc

mono- = one e.g. monobasic, monochromatic, monoclonal antibody, monopod (used in photography), monotheistic, monotonous

-mony = used in (mainly) abstract nouns e.g. harmony, hegemony, matrimony

-moral- = moral e.g. amoral, immoral

-morph- = shape e.g. amorphous, polymorphic, ectomorph, endomorph, metamorphosis, morphology

mort- = dead e.g. mortgage, mortician

-most = used in words denoting an extreme e.g. centremost, uppermost

moti- = motion / movement e.g. motility

muco- = mucus e.g. mucopolysaccharide

musco- = moss e.g. muscology

multi- = many e.g. multicultural, multifaceted, multilateral, multitalented

myelo- = bone marrow or spine e.g. myeloma

-mycin = used in names of antibiotics derived from fungus e.g. streptomycin

myco- = fungus e.g. mycology, mycorrhiza

myo- = muscle e.g. myocardial infarct (Medicine), myoglobin, myology

myria- = very many e.g. myriapod

myrmeco- = ant e.g. myrmecology

mysti(c)- = other-worldly e.g. mysticism, mystify

mytho- = myth e.g. mythology

myxo- = mucus e.g. myxomatosis

## N

nano- = Numeric prefix meaning  $10^{-9}$  i.e. 0.000 000 001 e.g. nanofarad (Electronics)

narco- = numb e.g. narcotics (Pharmacology)

naso- = nose e.g. nasal, nasogastric tube

nav(i)- = ship e.g. naval, navy

navig- = to direct a ship (or other vehicle) e.g. navigable, navigation

nebul = 'mist' e.g. the Crab Nebula (Astronomy), nebuliser, nebulous

necro- = 'corpse', dead e.g. necromancy, necrophilia, necrosis

neo- = new e.g. neodymium - chemical element, neon, neophyte, neoteny

nepho- = cloud e.g. nephology

nephro- = kidney e.g. nephridium, nephritis

-ness = state or condition e.g. acuteness, airworthiness, baldness, boldness

neuro- = nerve e.g. neuralgia, neuroanatomy, neurologist, neuropathology, neurotransmitter

nitro- = organic substance containing a  $\text{-NO}_2$  group e.g. nitroglycerine, trinitrotoluene

noct- = night e.g. noctilucent clouds, nocturnal animals

nomen- = name e.g. nomenclature

nomin- = name e.g. denomination, nominate

nomy- = field of study e.g. Astronomy, economy

non- = not e.g. non-addictive, non-affiliated, non-biological, nonchalance, non-Christian, nondescript, non-fiction

nona- = nine e.g. nonagon, nonane

norm(al)- = standard, customary e.g. abnormal, normality, normative

noso- = disease e.g. nosology

nov- = new e.g. (nova, supernova (Astronomy)), novel, novice

nucleo- = (Literally: 'little nut'), kernel, nuclear e.g. nuclear power, cell nucleus, nucleotide (Biochemistry)

nud(i)- = bare, exposed e.g. denude, nudibranch (Biology), nudism

null- = none e.g. annul, nullify, nullipore (Biology)

numer- = number e.g. enumerator, numerical, numerology

numismat- = coins or medals e.g. numismatics

nutri- = food e.g. malnutrition, micronutrient, nutrition

-nym = name e.g. antonym, homonym, paronym, patronym, synonym, toponym

## O

occipito- = the back of the head

-ock = diminutive e.g. bullock, dunnock (Ornithology), hillock

octo- = eight e.g. octane, octet, October, octopus

oculo- = eye e.g. binocular, monocular, ocular, oculist

-ode = electrode e.g. anode, cathode, photodiode, tetrode

odonto- = tooth e.g. glyptodont, orthodontist, periodontics

oen- = wine e.g. oenology, oenophile

oestro- = 'heat' i.e. sexual receptivity in some female mammals e.g. oestradiol, oestrogen

offic- = office, task e.g. officer, official

-oid = resembling e.g. android, arachnoid membrane (Anatomy)

-ol = the ending for the systematic name of alcohols e.g. (methanol, ethanol, propanol, butanol, pentanol, hexanol, heptanol, octanol, nonanol, decanol ....), butanediol, oestradiol

-ole = heterocyclic compounds e.g. indole

oleo- = oil e.g. oleometer, oleoresin

oligo- = few e.g. oligopeptide (Biochemistry), oligarchy (Political Science)

-ology = field of study or interest e.g. Anthropology (mankind), Archaeology (ancient history), Astrology (fortune telling using star charts), Biology, Biotechnology, Bryology (moss), Cardiology (heart), Choreology (dance), Cytology (cells), Dendrology (study of trees), Deontology (A word used in Philosophy to denote the study of duty), Dermatology (skin), Endocrinology (endocrine hormonal system), Entomology (insects), Enzymology (part of Biochemistry), Epidemiology (diseases in populations), Epistemology (part of Philosophy), Eschatology (part of Theology), Etymology (development of words), Exobiology (extraterrestrial life), Gastroenterology (stomach and intestines), Gemmology (jewellery), Geology (earth), Gerontology (aging), Glaciology (glaciers), Graphology (handwriting or writing), Gynaecology (Medicine related to women and girls), Haematology (blood), Hagiology (saints), Helminthology (parasitic worms), Heortology (church festivals), Herpetology (reptiles), Hierology (sacred literature), Histology (tissues), Histopathology (disease tissue), Horology (time and timepieces), Hydrogeology (water in the ground), Hygrology (humidity), Hymnology (hymns), Hypnology (sleep), Ichthyology (fish), Iconology (images), Ideology (ideas), Immunology (immunity), Kinesiology (body movement), Lexicology (words), Lichenology (Lichens), Limnology (lakes), Lithology (stones), Malacology (molluscs e.g. snails), Martyrology (martyrs), Metapsychology (mind), Meteorology (weather), Metrology (measurement), Microbiology (microorganisms), Molecular Biology (Biochemistry), Morphology (shape), Muscology (mosses), Musicology (music), Mycology (fungi), Myology (muscles), Myrmecology (ants), Mythology (myths), Nanotechnology (smaller than 100 nanometres), Nephology (clouds), Nephrology (study of kidneys), Neurology (nervous system), Nosology (disease classification), Numerology (alleged mystical influence of numbers), Odontology (teeth), Oenology (wine), Oncology (tumours e.g. cancer), Ontology (being), Oology (eggs), Ophthalmology (eyes), Orchidology (orchids), Ornithology (birds), Osteology (bones), Otology (ear), Palaeontology (fossils), Palynology (pollen), Papyrology (papyrus), Parapsychology (Study of e.g. telepathy), Parasitology (parasites), Pathology (disease), Pedology (soil), Penology (punishment), Pestology (pests), Petrology (rocks), Pharmacology (drugs), Phenomenology (conscious experience), Philology

(language), Phonology (sounds in a language), Physiology (physical functioning), Pomology (fruit-growing), Primatology (primates), Proctology (anus and rectum), Psephology (elections, and voting), Psychology (mind), Reflexology (foot, hands and head massage), Rheology (flow), Rheumatology (rheumatism), Seismology (earthquakes), Selenology (the moon), Sexology (sex), Sociobiology (behaviour), Sociology (society), Speleology (caves), Symbolology (symbols), Technology, Teratology (congenital abnormality), Thanatology (death), Theology (God), Topology (certain properties of surfaces and solids...), Toxicology (poison), Tribology (friction), Trichology (hair), Urology (urinary system), Venereology (venereal disease), Virology (viruses), Vulcanology (Volcanology, volcanoes), Zoology (animals), Zymology (fermentation)

-oma = tumour e.g. adenoma, carcinoma, fibroma, haematoma, melanoma

ombro- = rain

omni- = all e.g. omnidirectional, omnipotent, omniscient, omnivorous

omphalo- = navel

-on = substances or particles e.g. electron, proton, neutron

onco- = tumour e.g. oncology (Medicine)

-one = an ending for ketones e.g. acetone, also propanone, butanone, pentanone, hexanone

oneiro- = dream e.g. oneiromancy

-onomy = field of study or interest e.g. agronomy, astronomy, taphonomy (i.e. fossils) taxonomy

-ont = an individual of a specified type e.g. diplont, symbiont

oo- = egg e.g. oocyte, oogamy, oology

opera- = 'works' e.g. opera, operator, operetta, operon

operculi- = 'lid' e.g. operculum

ophio- = snake e.g. ophidian, ophiology

ophthalmo- = eye e.g. ophthalmologist, ophthalmoscope

-opia = a visual disorder e.g. diplopia, myopia, presbyopia

optic- = related to eyes or light e.g. optical microscope, optician

opto- = vision e.g. optoelectronics, optometer, optometrist

-or = agent (animate or inanimate) e.g. abductor, actor, senator, tractor

orchido- = of a testicle or testicles e.g. orchidectomy, orchitis

organo- = organ OR organic chemistry (chemistry of carbon) e.g. organometallic

-orium = a place for a specific function e.g. auditorium, crematorium, sanatorium

ornitho- = bird e.g. ornithology, ornithorhynchus (platypus)

oro- = mountain e.g. orogenic processes, orography

ortho- = 'correct' e.g. orthochromatic, orthodontist, orthodox, orthography, orthopaedic

oscillo- = oscillation e.g. oscilloscope

-osis = process, state or unwell condition e.g. osmosis, necrosis

ossi- = bone e.g. ossify, ossuary

osteo- = bone e.g. osteoarthritis, osteoclast, osteologist, osteoporosis

oto- = ear e.g. otolaryngologist, otolith, otorhinolaryngology, otoscope

out- = away, exceeding e.g. outbalance, outburst, outflank, outwit

over- = excessive e.g. overambitious, overbearing, overtake

ovi-(1) = egg e.g. oviduct, ovum, ovulation

ovi-(2) = sheep e.g. ovine

ox- = oxy- (oxygen)

oxid- = related to oxygen or oxidation e.g. oxidizing agent

oxy-(1) = oxygen e.g. oxyacetylene, oxyhaemoglobin

oxy-(2) = sharp e.g. oxymoron

## P

pachy- = thick e.g. an elephant is a pachyderm

paedo- = child e.g. paediatrician

palaeo- = ancient e.g. palaeoanthropology, palaeoclimatology, palaeontology

palp- = feel e.g. palpable, palpitations

palyno- = pollen e.g. palynology

pan- = all e.g. panacea, panchromatic, pancreas, pandemonium, pandemic, panorama, panophobia, panopticon, pansophist, pantheism

panto- = all, universal e.g. pantomime, pantothenic acid

pap(a/i)- = pope e.g. papacy, papal nuncio

par- = para-(1), beside

para-(1) = beside e.g. parabola, parachronism, paradigm, paradox, paragraph, parallel, paramecium, parapsychology

para-(2) = protect e.g. parachute, parapet, parasol

-parous = giving birth to e.g. viviparous

partheno- = virgin e.g. Aphids reproduce by parthenogenesis.

pater- = father e.g. paternal

patri = father e.g. patriarch, patricide, patrimony

-path = a healer or a disease e.g. allopath, homeopath, naturopath, osteopath, psychopath

patho- = disease e.g. pathogenic

-pathy = therapy, feeling, perception, disease e.g. cardiomyopathy, empathy, sympathy, telepathy

pecca- = sin / fault e.g. impeccable, peccable, peccadillo

-ped- = foot e.g. biped, cirriped, pedestrian, pinniped, pedicure, quadruped

-pend- = hang (also abstractly) (also -pens-) e.g. appendectomy, independent, pending, pendulum, perpendicular, suspension

-penia = shortage especially in a medical context e.g. thrombocytopenia

pen(o)- = punishment e.g. penal system, Penology

penta- = five e.g. pentachord, pentadactyl, pentagon, pentanoic acid, pentathlete

per- = 1) through, intensive 2) maximum possible number of elements in a compound or salt e.g. perceive, percolate, potassium permanganate

peri- = 1) around 2) nearest to e.g. perigee (Astronomy), pericarp, perimeter, periscope

peta- =  $10^{15}$  i.e. 1,000 million million

petro- = rock, petroleum e.g. petrification, petroglyph, petrology

-phagous = something that eats e.g. anthropophagous (cannibalistic), sarcophagus, xylophagous

-phag- = eating e.g. bacteriophage, phagocytosis

pharmaco- = pharmaceutical e.g. pharmacist, pharmacology, pharmacopoeia

pharyngo- = pharynx e.g. glossopharyngeal

pheno-(1) = (also phenyl), benzene e.g. chloramphenicol (Pharmacology), phenobarbitone, phenol, phenylketonuria (Genetics)

pheno-(2) = showing e.g. phenomenon, phenomenology, phenotype (Biology)

-phil(e)- = like, love e.g. acidophilic, drosophila (Zoology), bibliophile, electrophile (Chemistry), haemophilia (Medicine), philogynist, philology, philosophy

phleb- = vein e.g. phlebitis

-phobia = fear (often strong) e.g. acrophobia (heights), agoraphobia (open places), ailurophobia (cats), algophobia (pain), amathophobia (dust), amnesiophobia (amnesia), antlophobia (floods), apiphobia (bees), arachnophobia (spiders), bathophobia (depth), batrachophobia (amphibians), brontophobia (thunder and lightning), chemiphobia (chemicals), claustrophobia (confined spaces), dementophobia (insanity), dentophobia (dentists), entomophobia (insects), glossophobia (speaking in public), helminthophobia (worms), hippophobia (horses), menophobia (menstruation), necrophobia (death), neophobia (new things), numerophobia (numbers), ombrophobia (rain), parasitophobia (parasites), photophobia (light), polyphobia (many things), pteromerhanophobia (flying), radiophobia (radiation), satanophobia (Satan), selachophobia (sharks), spheksophobia (wasps), tachophobia (speed), technophobia (technology), testophobia (taking tests), thanatophobia (death or dying), tomophobia (surgical operations), triskaidekaphobia (13), trypanophobia (injections), xenophobia (foreigners), zoophobia (animals)

-phon(e)- = sound e.g. allophone (Linguistics), antiphon (Ecclesiastical), aphonia (Medicine), euphony, microphone, symphony

-phore = carrier (also -phora) e.g. anaphora, ctenophore ( a kind of jellyfish), dysphoria, electrophoresis (a scientific analytical method), euphoria, oophorectomy, phoresy (Biology)

phospho- = phosphorus e.g. adenosine triphosphate, phospholipid, phosphorylation

-photo- = light e.g. macrophotography, photochemistry, photocopy, photolithography, photometer, photomicrograph, photolysis, photosynthesis, spectrophotometer

phyco- = algae e.g. phycology

phylo- = phylum (Biology), (Lit. 'race') e.g. phylogenesis, phylum

phyllo- = leaf e.g. aphyllous (leafless), chlorophyll, mesophyll, phyllode, phyllophagous, sclerophyll, theophylline (a drug in tea)

physio- = nature e.g. physiognomy, physiology, physiotherapy

-phyt- = plant e.g. bryophyte, entophyte, epiphyte, gametophyte, phytogeography, saprophyte, sporophyte, thallophyte, zoophyte

pico- = Numeric prefix meaning  $10^{-12}$  i.e. one million millionth e.g. 7 picofarads

piezo- = press e.g. piezoelectric effect

pinni- = wing, fin e.g. a seal is a pinniped

pisci- = fish e.g. piscatorial, pisciculture, piscivorous

-plac- = please e.g. complacent, implacable, placate, placid

plan(i/o)- = flat, plane e.g. planoconvex lens, planometer

-plasm- = 'stuff' e.g. cytoplasm, ectoplasm, endoplasmic reticulum, neoplasm, plasma (Physics), plasmolysis, protoplasm

-plasty = a surgical repair e.g. angioplasty, rhinoplasty

platy- = flat e.g. duck-billed platypus, platyrrhine

pleo- = 'more' e.g. a pleochroic crystal, pleomorphism, pleonastic

pleuro- = membrane surrounding lung e.g. pleurisy

-ploid = specifies the number of sets of chromosomes in a cell e.g. haploid, diploid, triploid, tetraploid, polyploid

plumb- = lead, measuring depth of water e.g. plumber, plumbing, unplumbed

pluri- = several

pluvio- = rain e.g. pluvial, pluviometer (rain gauge)

pneumato- = air, wind, lungs e.g. pneumatic drill, pneumatics, pneumatophore

pneumo- = air, wind e.g. pneumococcus (a type of bacterium), pneumonia

-pod = foot e.g. amphipod, arthropod, cephalopod, chiropodist, monopod, podiatrist (foot doctor), rhizopod, tripod (Photography)

polari- = polar (often used for words dealing with plane or circularly polarized light) e.g. polarimeter, polarity (electric or magnetic), polarography

poly- = many e.g. polyandry, polycyclic, polygamy, polyglot, polygyny, polymerisation, polynomial (a type of mathematical expression or equation), polymorphous, polysaccharide (e.g. starch), polytetrafluoroethylene (used in non-stick frying pans), polyunsaturated fats

popul- = people e.g. depopulate, export, import, populace, population, populism

-port- = carry e.g. deport, portable, portmanteau, support, transport

post-(1) = after e.g. postgraduate, posthumous, post-mortem, postpone, postnatal

post-(2) = mail e.g. postman, postmaster, postmistress, Post Office

potent- = power e.g. impotent, omnipotent, plenipotentiary, potential

pre- = before e.g. preamplifier, precaution, predict, prefer, prejudice, preliminary

presby- = 'old' e.g. presbyopia, presbytery

prim(o)- = first e.g. primal, primate, primeval, primitive, primogeniture (History, Sociology)

pro- = forwards, favouring, in front, before e.g. proactive, proboscis, procure, product

procto- = anus and rectum e.g. proctology, proctoscope

-proof = resistant to e.g. bullet-proof, soundproof, waterproof

propan(e)- =  $C_3H_8$ , an alkane. Here are some related compounds: propanol, propanal, propanoic acid

pros- = to, towards, in addition e.g. proselytise, prosody

proto- = first, original e.g. protein, protocol, proton, protoplasm, protoplast, prototype, protozoan

pseudo- = false e.g. pseudepigrapha, pseudocarp, pseudonym, pseudopodium

psycho- = mind e.g. neuropsychologist, parapsychology, psyche, psychedelic drug, psychic, psychiatry, psychoanalysis, psychology, psychometric tests, psychopathology

ptero- = wing e.g. apterous (wingless), Archaeopteryx, chiropteran (bat), helicopter, macrolepidoptera, pteridophyte (ferns etc.), pterodactyl, tetrapterous

-pugn- = 'fight' e.g. impugn, pugnacious, repugnant

pulmon- = lung e.g. pulmonary artery

pulver- = powder e.g. pulverise

pur- = pro- (favouring)

putr(e/i)- = rotten e.g. putrefaction (Forensic pathology), putrid

pyo- = pus e.g. pyorrhoea

pyro- = fire e.g. antipyretic drug (antifever), pyracantha, pyroclastic flow (Vulcanology), pyromaniac, pyrometer, pyrophoric, pyrotechnics (fireworks)

## Q

quadr(i)- = four e.g. quadrangle, quadrant, quadriplegia, quadruped, quadruple

quasi- = 'sort of', seemingly, partly e.g. quasi-judicial

quinque- = five e.g. quinquennial, quinquere (Roman history)

quint- = five e.g. quintessential, quintet

## R

radio- = radio, radiation e.g. radiator, radioactivity, radio astronomy, radiobiology, radiocarbon dating

re- = again, back e.g. irrevocable, reactivate, refer, renegotiate, repel, replicate, repossess, rescind, retrain, retribution, revoke

-rel = small, or one who is not well respected e.g. cockrel, doggerel, kestrel, scoundrel

retro- = back, behind e.g. retroactive, retrograde, retro-rocket, retrospective

-rheo- = flow e.g. diarrhoea, haemorrhage, rheology, rheostat

rhino- = nose e.g. antirrhinum, rhinitis, rhinoceros, rhinoplasty

rhizo- = root e.g. (mycorrhiza, rhizocarp, rhizopus (Botany))

rhodo- = rose-coloured e.g. rhodamine (a textile dye), rhododendron

rid- or -ris- = laugh e.g. derision, risible

Romano- = Roman

-rupt- = break e.g. abrupt, corrupt, erupt, interrupt, rupture

Russo- = Russian

## S

saccharo- = sugar e.g. monosaccharide, polysaccharide, saccharin (Biochemistry, Pharmacology)

sacr(a/i)- = sacred e.g. sacrament, sacrifice, sacrilege, sacrosanct

sacro- = sacrum (in the back) e.g. sacroiliac

sal- = salt e.g. salary (!), saliferous, saline solution, salinometer

sanct- = from sanctus: holy e.g. sanctify, sanctimonious, sanctity, sanctuary

sanit- = health e.g. sanitary engineer, sanitation

sapon- = soap e.g. saponification, saponin (Botany)

sapro- = rotten e.g. saprogenic, saprophyte

sarco- = flesh e.g. sarcoma (tumour), sarcophagus (a type of coffin)

-scape = something scenic e.g. landscape, skyscape, snowscape

scato- = dung e.g. scatology, scatophagous

schizo- = split e.g. schizocarp, schizoid, schizophrenia

schol- = school e.g. scholar, scholastic

scia- = shadow e.g. sciagram, sciamachy

scintilla- = spark e.g. scintigraphy, scintillation counter (Nuclear Physics)

sclero- = hard e.g. sclera, sclerenchyma, scleroderma, multiple sclerosis

-scope- = see e.g. bronchoscope, colonoscope, diascope (a kind of projector), endoscope, hygroscope, kaleidoscope, microscope, telescope

-scribe = 'write' e.g. describe, inscribe, prescribe, subscribe

script- = 'write' e.g. script, scripture

se- = apart, without e.g. seclusion, seduce, select

-sec(t)- = 'cut' e.g. antivivisectionism, dissect, intersection

seismo- = earthquake e.g. seismograph, seismology

seleno- = moon, selenium e.g. selenology

semi- = half, partly e.g. semi-finals, semi aquatic, semicolon, semi conducting, semiskilled, semiquaver (Music)

semio- = sign e.g. semiotics (The study of signs and symbols.)

senti- = felt, perceived e.g. presentiment, sentience

sept- = seven e.g. September, septet

Serbo- = Serbian

seri- = silk e.g. sericulture

sero- = (blood) serum e.g. serology, seropositive, serotonin

sesqui- = one and a half e.g. sesquipedalian

sex(i)- = six e.g. sextant, sextet, sextuplet

-ship = state or condition e.g. ambassadorship, chairmanship, friendship, leadership, ownership

sidero- = iron, stars e.g. sidereal year, siderite

simil- = like e.g. assimilation, dissimilar, facsimile, simile, verisimilitude

Sino- = Chinese

socio- = dealing with society e.g. sociobiology, sociology, sociometry

sol(ar)- = sun e.g. circumsolar, solar eclipse, solarium

-solu- = solve, dissolve e.g. solubility, solute, solution

somato- = the human body e.g. somatogenic, somatology, somatotrophin

-some = a portion e.g. autosome, chromosome, lysosome, ribosome

-somm(i/o)- = sleep e.g. insomnia, somnambulism (sleep walking)

-son(o)- = sound e.g. dissonance, infrasonic, sonorous, supersonic

soph- = 'wisdom' e.g. philosophy, pseudosophistication, sophistry

sous- = under, subordinate e.g. sous-chef

-spect- = to look e.g. aspect, circumspect, inspect, perspective, prospect, respect, retrospective, spectacle, spectator

spectro- = spectrum e.g. mass spectrometer, spectrochemistry, spectroheliograph

speleo- = cave e.g. speleology

spermato- = sperm or seed e.g. spermatocyte, spermatogonium, spermatozoa

spermo- = spermato- (sperm or seed)

spheno- = the sphenoid bone

-sphere = sphere or region e.g. atmosphere, biosphere, hemisphere

sphygmo- = pulse e.g. sphygmogram, sphygmomanometer

spiro-(1) = coil e.g. spirochaete, spirogyra

spiro-(2) = breath e.g. inspiration, spiograph, spirometer

splen- = spleen e.g. splenectomy, splenetic, splenology, splenomegaly

sporo- = spore e.g. sporangium (spore vessel), sporocyst

staphylo- = looking like a bunch of grapes e.g. staphylococcus looks like a bunch of grapes when seen using a powerful microscope.

-stasis = stopping e.g. bacteriostasis, haemostasis

-stat = a thing which stops something e.g. cryostat, heliostat, rheostat

stella- = star e.g. constellation, interstellar, stellar

steno- = 'narrow' e.g. stenography (shorthand)

step- = a relationship generated by remarriage e.g. stepson, stepdaughter

-ster = specifies when someone is associated with something e.g. adjuster, barrister

stereo- = solid, 3 dimensional e.g. stereochemistry, stereoisomerism, stereoscope (a device to perceive in 3D by using two pictures taken near each other), stereospecificity (Stereochemistry)

stetho- = 'breast' e.g. stethoscope (used to listen to breathing and heart)

stoma- = 'mouth' e.g. cyclostome (lit. 'circular mouth', Ichthyology), peristome, stoma, (Botany), stomach (!), stomatology (the study of mouths)

strato- = describes clouds formed in layers e.g. stratocirrus

strepto- = 'twisted' e.g. streptococcus (describes how they look using a microscope)

sub- = under, below e.g. subatomic particles, subcontractor, subcutaneous, subject, submarine, subordinate, subsonic speed, subterranean, subversive

suc- = sub- (under) e.g. succeed

suf- = sub- (under) e.g. suffer, suffice

sug- = sub- (under) e.g. suggest

sulph- = sulphur e.g. copper sulphate, dimethyl sulphoxide, hydrogen sulphide

sup- = sub- (under) e.g. suppose

super- = above, beyond e.g. insuperable difficulties, superabundant, superannuation, superconductive materials, supersonic aircraft

supra- = above, beyond e.g. supranational considerations (beyond the limits of any one country)

sur-(1) = super- (above, beyond, over) e.g. surface, survive

sur-(2) = Assimilated form of sub- (under) before r

sus- = sub- (under) e.g. suspect

syl- = syn- (with) e.g. syllable

sym- = syn- (with) e.g. symbol, symmetry, sympathy

syn- = with e.g. synagogue, synapse, syncline, syndrome, synthesis

synchro- = asynchronous, geosynchronous orbit, synchrocyclotron, synchronised

Syro- = Syrian

## T

tacho- = speed e.g. tachograph, tachometer

tachy- = speed e.g. tachycardia (heart beats quickly), tachyon (Physics)

tardi- = slow e.g. retardation, tardigrade, tardiness

tauto- = the same (often implies repetition) e.g. tautology, tautomer, tautophony (e.g. 'hello, hello')

tax(i)- = arrangement e.g. taxidermist, taxonomy

techno- = associated with technology e.g. technocrat, technology, technophile, technophobe

tele- = at a distance e.g. telecommunication, telegram, telepathy, telekinesis, telemetry (e.g. monitoring astronauts vital signs), telephone, telephoto lens, telescope, television

teleo- = purpose, reason e.g. teleology (tries to explain occurrences by the purpose or goal(s) they serve, and not by what caused them)

temp(o)- = time e.g. contemporary, temporal, temporary, temporise (delay)

ter- = three, three times e.g. tercentenary

tera- =  $10^{12}$  i.e. 1,000,000,000,000

terato- = 'monster' e.g. teratogen, teratology (studies congenital abnormalities)

-teria = self-service e.g. cafeteria, washeteria

terra- = earth, soil e.g. extraterritorial, subterranean passages, terrain

terr(i/o)- = 'frightening' e.g. terrible, terrify, terrorist

tetra- = four e.g. carbon tetrachloride, tetrahedron, tetrapterous (having four wings)

Teuto- = Teutonic tribe e.g. German (Historical)

-th = used in ordinal numbering, some fractions e.g. fourth, fifth, sixth, three fifths

thalasso- = 'sea' e.g. thalassaemia (Genetics), thalassotherapy

thanato- = 'death' e.g. thanatology, euthanasia

thauma- = 'marvel', 'wonder', 'miracle' e.g. a thaumaturge

the(o/i)- = 'God' e.g. theobromine, theology, and even enthusiasm!

therap- = 'healing' e.g. hypnotherapy, physiotherapy, psychotherapy, therapeutic

thermo- = heat e.g. thermochemistry, thermocouple, thermodynamics, thermogram, thermoluminescence, thermosetting plastic, thermotropism (Botany)

thigmo = 'touch' e.g. thigmotropism (Biology)

thio- = sulphur e.g. thiamine, thiopentone, thiourea

thrombo- = clot e.g. thrombin (an enzyme involved in blood clotting), thrombocytopenia (shortage of thrombocytes), thrombus (blood clot)

thyro- = thyroid e.g. hyperthyroidism, hypothyroidism, parathyroid, thyroxine (a hormone)

-tome = cut e.g. cyclostome, epitome, microtome (used in microscopy)

-tomy = cut e.g. appendectomy, mastectomy

topo- = (Greek topos = 'place'), sometimes surface e.g. isotopes, topography, topology

toxi- = poisonous e.g. autointoxication, detoxify, endotoxin, neurotoxin, toxicology

tracheo- = trachea (an air passage) e.g. tracheotomy

tracho- = rough e.g. trachome (an eye disease), trachyte (a type of volcanic rock)

-tract- = to pull or drag e.g. attract, detract, subtract, tractor

trans- = 'across' e.g. transatlantic voyage, transducer (Electronics), blood transfusion, intransigence, neurotransmitter, transcendental meditation, translate, transport

tri- = three e.g. amitriptyline, triangle, triathlon, trichloroethane, tricolour, trident, trifoliolate (Botany), trilateral agreement, trimaran, trinity, tripod, triptych

tribo- = rubbing, friction e.g. lithotripsy, tribology, triboluminescence, tribometer

tricho- = hair e.g. trichinosis (disease caused by worms), trichology, trichome (Botany)

trito- = 'third' e.g. tritagonist, tritium is a radioactive isotope of hydrogen, tritone (Music)

-trix = forms feminine nouns e.g. administratrix, dominatrix, victrix

-tron = subatomic particle, particle accelerator, valve e.g. betatron, cyclotron, electron, klystron, neutron

-troph- = 'feed', regulate e.g. adrenocorticotrophin, atrophy, autotrophic organism, dystrophy, eutrophication, heterotrophic organism, trophoblast

-tropic = turning towards, affecting e.g. geotropism of a germinating plant, heliotrope

tubercule = a small lump e.g. tuberculin, tuberculosis

-tude = in abstract nouns e.g. beatitude, exactitude, fortitude, platitude, sanctitude

turbo- = turbine e.g. turbocharger, turbojet

Turco- = Turkish

tympan- = 'drum' e.g. tympanic membrane (eardrum)

tyrann- = cruel e.g. tyrannosaurus, tyranny, tyrant

## U

-uble = -able e.g. voluble

-ule = diminutive nouns e.g. animalcule, capsule, cellule, ferrule, granule, reticule

ultim(a/o)- = last e.g. penultimate, ultimatum

ultra- = beyond, extremely e.g. ultracentrifuge, ultramarine, ultramicroscopic, ultrasonic

un- = not e.g. unable, unbending, uncanny, undaunted, unflagging, ungrateful, unhurried, uninvolved, unloving, unnoticed, unobtainable, unquestioning, unreliable, unyielding

-uncle = something small e.g. carbuncle, peduncle

under- = under, incomplete e.g. underachiever, undercooked, undercurrent, underexposed (Photography), undervalue, underwater

uni- = one e.g. unanimous, unicorn (a mythical animal with one horn), unidirectional, unify, unilateral, unipolar, universal, university

urano-(1) = uranium e.g. uranium hexafluoride

urano-(2) = sky e.g. uranography

-uria = when a substance is present in urine e.g. albuminuria, haematuria, phenylketonuria

uro-(1) = urine e.g. urologist, uroscopy

uro-(2) = tail e.g. urochordate

## V

vaso- = a vessel, (for example a blood vessel) e.g. vasoconstriction, vasodilatation

-vect- = to carry e.g. convection, ejection, vector

veh- = to carry e.g. vehicle

ventr- = abdomen e.g. ventricle, ventriloquism

veri- = 'true' e.g. unverifiable, veridical, verify, verisimilitude

vermi- = worm e.g. vermicelli, vermicide, vermifuge, vermivorous

-vers- = 'to turn' e.g. version

-vert- = 'to turn' e.g. avert, extrovert, convert, divert, revert, vertigo

vice- = second in command e.g. vice-president

vini- = wine e.g. viniculture, vinification

visco- = viscous e.g. viscometer

-vita- = life e.g. aqua vitae, revitalise, vitality, vitamin

vitri(i/e) = glass e.g. devitrification, in vitro (lit. 'in glass' e.g. test tube), vitreous humour (Anatomy)

viv(i/a)- = life e.g. convivial, ovoviviparous, revive, survive, vivacity, vividly

-voc- or vok- = 'call' e.g. advocate, equivocation, evocative, invoke, irrevocable, provocation, subvocal, vocalisation, vocation, vociferous

-vol- = wish, want e.g. benevolent, involuntary, malevolent, volition, volunteer

-vore = an organism which eats a specific food e.g. cows are herbivores

-vorous = the property of eating something e.g. carnivorous, omnivorous

vulcan- = volcano e.g. vulcanise, vulcanite (a kind of hard rubber), vulcanologist

## W

-ward = in the direction of e.g. forward, upward

-ways = in the manner of e.g. edgeways, sideways

-worthy = deserving, suitable of e.g. blameworthy, praiseworthy, seaworthy

## X

xeno- = foreign e.g. xenolith, xenon (one of the inert / noble gases), xenophobia

xero- = dry e.g. xeroderma, xerograph, xerophilous (Botany), xerophyte (Botany)

xylo- = 'wood' e.g. xylem (Botany), xylophone (musical instrument)

## Y

-yl = radicals (i.e. 'incomplete molecules' – author's partial definition) e.g. benzyl, carbonyl, methyl, ethyl, propyl, butyl.

-yne = an ending used in naming alkynes (Chemistry) e.g. ethyne, propyne, butyne, pentyne, hexyne, heptyne, octyne, nonyne, decyne

## Z

zoo- = 'animal' e.g. anthozoan (e.g. coral), bryozoology, cryptozoa, Mesozoic (Geology), protozoa, zoology

zygo- = joining, 'yoke' e.g. azygous, dizygous, heterozygote, zygomorphic shape (has a plane of symmetry. Used in describing shape of flowers.), zygospor