**Word Origins**

**BIOL 286**

**Lecture Notes**

**1) Introduction**

Word Parts:      1) root – fundamental meaning

                        2) prefix – modifies root at beginning

                        3) suffix – modifies root at end

                        4) combining vowel – usually “o”, sometimes “i”

Roots:              arthr/o – joint (Ch.14)

                        hepat/o – liver (Ch.11)

                        ven/o – vein (Ch.6)                   (also: phleb/o) (Ch.10)

                        oste/o – bone (Ch.14)

Prefixes:           intra-    within (Ch.4)                (also: endo-) (vs: ex-, exo-, extra-)

                        sub-     under (Ch.4)                 (also: hypo-) (vs: super-, supra-, hyper-)

Suffixes:            …ad - toward

…ic – pertaining to       (also: -ac, -al, -ar, -ary, -eal, -iac, -ial, -ous)

                        …itis – inflammation (Ch.5)

                        …ion - state of

                        …logy – study of (Ch. 2)

                        …logist – one who studies (Ch. 2)

                        …pathy – disease (Ch. 2)

**2) Anatomical Planes & Directions (Ch. 3)**

Directions:        cephal/ic – pertaining to head    (Ch. 9)             (= toward top)

                        super/ior – above

                        caud/al – pertaining to tail                                  (= toward feet)

                        infer/ior – below

                        anter/ior – before, in front of (Ch.9)                  (= toward front)

ventr/al – pertaining to underside

poster/ior – after, behind (Ch. 9)                       (= toward back)

                        dors/al – pertaining to back

                        med/ial – pertaining to middle

                        later/al – pertaining to side

                        proxim/al – pertaining to near

                        dist/al – pertaining to apart

Planes:              sagitt/al – pertaining to arrow (divides body into right & left halves)

                        front/al – pertaining to front (divides front from back)

                                    (= coronal – pertaining to crown)

                                    (= horizontal – pertaining to horizon)

                        trans/verse – turn across (divides top from bottom)

Prefixes:           bi- two                                     Suffixes:            -ad - toward

                        uni- one                                                            -ion – act or state of

                        contra- opposite                                               -ior – pertaining to

                        ipsi- same

                        hemi- half

Abdominal regions:

|  |  |  |
| --- | --- | --- |
| hypochondriac | epigastric | hypochondriac |
| lumbar | umbilical | lumbar |
| iliac | hypogastric | iliac |

Other terms:     ex/tens/ion – stretch away

                        flex/ion – bend

                        ad/duct/ion – lead toward

                        ab/duct/ion – lead away

                        in/vers/ion – turn in

                        e/vers/ion – turn out

afferent – carry toward

                        efferent – carry away

bi/lateral - two sides (Ch.12)

uni/lateral - one side

ipsi/lateral - same side

contra/lateral - other side

hemi/lateral - half side (Ch.11)

**3) Body (Ch. 2)**

somat/o – body (also: soma)

viscer/o – internal organs

system/o – system (= to place together)

organ/o – organ

hist/o – tissue

aden/o - gland

epitheli/o – epithelium (= laid upon)

fibr/o - fibrous tissue (= fiber)

lip/o – fat

my/o – muscle

neur/o – nerve

sarc/o – connective tissue (= flesh)

cyt/o – cell (= hollow space)

kary/o – nucleus (= a nut)

related roots:

path/o – disease (suffering)

carcin/o – cancer (also: cancer/o)(= crab)

onc/o – tumor

eti/o – cause (of disease)

iatr/o – physician (medicine)

gno/o – knowledge

rhabd/o – striated, rod-shaped

lei/o – smooth

color:

chrom/o – color

cyan/o – blue

chlor/o – green

erythr/o – red (also: rubr/o)

leuk/o – white (also: alb/i)

melan/o – black (also: nigr/i)

xanth/o – yellow (also: lute/o)

prefixes:

dia- through, complete

dys- abnormal, difficult

~~hyper- above, excessive~~

~~hypo- below, deficient~~

meta- after, change

neo- new

pro- before

suffixes:

-gen - agent that produces

-genesis - origin

-genic - producing

~~-logy - study of~~

~~-logist - one who studies~~

-osis - abnormal condition

-sis - condition, state of

-plasia - formation, a growth

-plasm - growth, substance

-cyte - cell

-oid - resembling

-oma - tumor

(-sarcoma - malignant tumor)

~~-pathy - disease~~

-stasis - control, stop

**4) Integument**

integument = a covering

derm/o - skin (also: dermat/o, cutane/o)

kerat/o - horny   (also: corn/i)

~~melan/o - black~~

sudoriferous -  “sweat””producing”

sebaceous - “pert. to””fat or grease”

hidr/o - sweat   (also: sud/o)

seb/o - oil (sebum)

trich/o - hair

onych/o - nail (also: ungu/o)

Related:

~~aden/o - gland~~

aut/o - self

bi/o - life

coni/o - dust

crypt/o - hidden

~~fibr/o - fibrous tissue~~

heter/o - other   (vs: hom/o, home/o)

myc/o - fungus

necr/o - death

pachy/o - thick

rhytid/o - wrinkle

staphyl/o - grape-like clusters

strept/o - twisted chains

xer/o - dry

Prefixes:

epi- on, over

~~intra- within~~

para- beside, around

per- through

peri- surrounding

~~sub- under, below~~

Suffixes:

-tome - cutting instrument

from tom/o - to cut

-tomy - incision (Ch. 5)

-ectomy - excision

-stomy - artificial opening (Ch. 5)

-ia - abnormal state

~~-itis - inflammation~~

-malacia - softening

-opsy - to view

-rrhea - excessive flow

-rrhagia - rapid blood flow (Ch. 5)

-phagia - eating

-plasty - surgical repair

-coccus - berry-shaped

-a – a noun ending

**5) Respiratory System**

adenoid/o - adenoids (gland resembling)

alveol/o - alveolus (pit)

bronch/i - bronchus (windpipe)

bronchiol/o - bronchiole (small bronch.)

diaphragmat/o - diaphragm

(across partition)

epiglott/o - epiglottus (upon tongue)

laryng/o - larynx (box)

lob/o - lobe (capsule)

nas/o - nose (also: rhin/o, rostr/o)

pharyng/o - pharynx (ravine)

pleur/o - pleura (side, rib)

pneum/o - lung/air (breathe)

pneumat/o - “

pneumon/o - “

pulmon/o - lung

sinus/o - sinus (hollow)

sept/o - septum (fence)

thorac/o - thorax (breastplate)

tonsill/o - tonsil (mooring stick)

trache/o - trachea (windpipe)

related:

atel/o - imperfect (not complete)

hem/o - blood

hemat/o - “

muc/o - mucus (slime)

orth/o - straight

ox/i, ox/o - oxygen (sour producer)

py/o - pus

somn/o - sleep

spir/o - breathe

mediastinum - “standing””middle”

capn/o – CO2 (smoke)

dem/o - people

prefixes:

a-, an- without

~~endo- within~~

eu- normal

pan- all, total (pandemic vs. epidemic)

poly- many

re- back, again

suffixes:

-algia - pain

~~-ar, -ary - pert. to~~

~~-capnia - CO~~~~2~~~~(smoke)~~

-cele - protrusion

-centesis - surgical puncture

~~-eal - pert. to~~

-ectasis - dilation, expansion

-emia - blood condition

-gram - a record

-graph - instrument to record (Ch.10)

-graphy - act of recording

-meter - instrument to measure

-metry - act of measuring

~~-rrhagia - rapid blood flow~~

~~-stomy - artificial opening~~

~~-tomy - incision~~

-oxia - oxygen

-pexy - suspension, surgical fixation

-phonia - sound (voice)

-pnea - breathing

-scope - instrument to view

-scopic - pert. to visual examination

-scopy - visual examination

-spasm - invol. muscle contraction

-stenosis - constriction

-thorax - chest

**6) Urinary System**

cyst/o - bladder, sac

vesic/o - “

nephr/o - kidney

ren/o - “

glomerul/o - glomerulus (= ball of thread)

meat/o - opening (= to pass)

pyel/o - renal pelvis

ureter/o - ureter

urethr/o - urethra

related:

albumin/o - albumin

azot/o - nitrogen

blast/o - germ cell (= bud)

glyc/o, glycos/o - sugar (= sweet)

hydr/o - water

lith/o - stone

noct/i - night

olig/o - few, scanty

son/o - sound

~~tom/o - cut~~

~~trachel/o - neck (Ch. 8)~~

ur/o, urin/o - urine

~~ven/o - vein~~

suffixes:

-esis - condition of

-iasis - “

-lysis - loosening, separating

-megaly - enlargement

-rrhaphy - suturing

-ptosis - drooping, sagging

-tripsy - surgical crushing

-trophy - nourishment, development

-uria - urine condition

**7-8) Reproductive System**

Male:

balan/o - glans penis (= acorn)

epididym/o - epididymis (= upon twins)

orch/o - testis, testicle

orchi/o - “

orchid/o - “

test/o - “

prostat/o - prostate gland

(= stand before)

vas/o - vessel, duct

vesicul/o - seminal vesicle

(= little bladder)

andr/o - male

sperm/o - sperm (= seed)

spermat/o - “

genit/o - to beget

prefixes:

~~peri- surrounding (outer)~~

~~trans- through, across, beyond~~

suffixes;

-atresia - occlusion, closure

~~-ial - pertaining to~~

-ism - state of

-salpinx - Fallopian (uterine) tube

(= trumpet)

Female:

arche/o - first, beginning

cervic/o - cervix (= neck)

trachel/o -     “

colp/o - vagina (= scabbard)

vagin/o - “

culd/o - cul-de-sac

vulv/o - vulva

episi/o - “

gyn/o - female

gynec/o - “

hymen/o - hymen

(Greek god of marriage)

hyster/o - uterus

metr/o, metr/i - “

uter/o - “

mamm/o - breast

mast/o - “

men/o - menstruation (moon)

oophor/o - ovary (= egg-bearer)

perine/o - perineum

(= around place of worship)

salping/o - Fallopian tube (= trumpet)

trivia:

penis à pendare = to hang down

also… clava = club, gladius = sword, ramus = branch, vomer = plow

condom à condere = to hide

ejaculate - throw out

herpes - creeping

gonorrhea - seed - discharge

syphilis - swine - loving

orgasm à orgasmos = softening through kneeding

orgao = swell with lust

**9) Obstetrics / Neonatology**

amni/o - amnion (amnos = lamb)

amnion/o - “

chori/o - chorion (= skin, leather)

embry/o - embryo (within – bud)

fet/o - fetus (feo = bring forth)

gravid/o - pregnant (gravis = heavy)

cyes/i -            “

lact/o - milk

nat/o - birth

par/o - to bear (parturio = bring forth)

part/o -     “

puerper/o - childbirth

omphal/o - umbilicus, navel

~~cephal/o - head~~

esophag/o - esophagus (carry one’s food)

pelv/i - pelvis (pella = dish)

prim/i - first

pseud/o - false

pylor/o - pyloris (pulore = gatekeeper)

prefixes:

ante- before (also: pre- )

micro- small

multi- many

nulli- none

post- after

suffixes:

-rrhexis - rupture

-tocia - birth, labor

-e - noun ending

-is -     “

-us -      “

-cyesis - pregnancy

-amnios - amnion

-partum - birth, labor

**10) Cardiovascular System**

angi/o - vessel

aort/o - aorta (= great artery)

arteri/o - artery (= windpipe)

atri/o - atrium (= vestibule)

cardi/o - heart

coron/o - “      (= crown)

lymph/o - lymph (= water)

~~phleb/o - vein~~

plasm/o - plasma (= something molded)

splen/o - spleen (also: lien/o)

thym/o - thymus

valv/o - valve

valvul/o - “

ventricul/o - ventricle (= little belly)

related terms:

ather/o - yellowish plaque

(= corn beard)

~~bacteri/o - bacteria~~

ech/o - sound (= reverberation)

electr/o - electricity

isch/o - deficiency, blockage

sphygm/o - pulse

steth/o - chest

therm/o - heat

thromb/o - coagulation, clot

man/o - sparse

prefixes:

brady- slow

tachy- fast

suffixes:

~~-ac - pertaining to~~

-apheresis - removal

-crit - to separate

~~-graph - instrument to record~~

-odynia - pain

-penia - abnormal reduction

-poiesis - formation

-sclerosis - hardening

**11) Digestive System**

mouth:

or/o - mouth

stomat/o - "

cheil/o - lip

gloss/o - tongue

lingu/o - "

gingiv/o - gum

palat/o - palate

uvul/o - uvula (= grape)

sial/o - saliva

dent/o - tooth (also: odont/o)

stomach:

abdomin/o - abdomen (= hide)

celi/o -             "           (=belly)

lapar/o -          "           (= soft)

peritone/o - peritoneum (= stretch upon)

~~esophag/o - esophagus (Ch.9)~~

~~(= carry one's food)~~

gastr/o - stomach (= mouth)

antr/o - antrum (= cave)

pylor/o - pylorus (= gate-keeper) (Ch. 9)

intestines:

enter/o - intestines (= insides)

duoden/o - duodenum (= 12 each)

jejun/o - jejunum (= empty)

ile/o - ileum (= to roll)

col/o - colon (also: colon/o)

cec/o - cecum (= blind)

appendic/o – appendix (= hang from)

sigmoid/o - sigmoid colon (= S-like)

rect/o - rectum (= straight)

proct/o - "

an/o - anus

diverticul/o - diverticulum

(= blind pouch)

herni/o - hernia (= sprout)

polyp/o - polyp (= many feet)

others:

~~hepat/o - liver (Ch. 1)~~

chol/e - bile, gall

cholecyst/o - gall bladder

cholangi/o - bile duct

choledoch/o - common bile duct

pancreat/o - pancreas (= all flesh)

peritone/o - peritoneum

(=stretch around)

suffix: -pepsia - digestion

~~prefix: hemi- half~~

**12) Eye** & **13) Ear**

Eye:

blephar/o – eyelid

conjunctiv/o – conjunctiva

cor/o & core/o – pupil (cor=heart)

pupill/o – pupil (pupa=doll)

corne/o – cornea (corneus=horny)

kerat/o –    “     (keras=horn)

dacry/o – tear, tear duct

lacrim/o –    “

irid/o & iri/o – iris

(Greek goddess of rainbow)

ocul/o – eye

ophthalm/o – “

opt/o – vision (optikos=sight)

retin/o – retina (fine net)

scler/o – sclera (=hard)

cry/o – cold

dipl/o – double, two

phot/o – light

ton/o – tension, pressure

(teino=stretch)

prefix:

bi- bin- two

suffixes:

-ician - one who

-opia – vision (condition)

-phobia – abnormal fear of

-philia - love of

-plegia – paralysis

Ear:

acou/o – hearing

audi/o - “

aur/i & aur/o – ear

ot/o -     “

labyrinth/o – labyrinth (=maze)

mastoid/o – mastoid (breast-like)

myring/o – tympanic membrane,

eardrum (meninx=membrane)

tympan/o – “ (tympanon=drum)

staped/o – stapes (= stirrup)

auricle = little ear

pinna = feather, wing

cerumen = ear wax (cera=wax)

ossicles = little bones

incus = in-strike (cudere)

vertigo = dizziness (verto=to turn)

tinnitus = ringing (tinnio=to ring)

**14) Musculoskeletal System**

carp/o – carpals (karphos = bits of wood)

clavic/o – clavicle (claviculi = little key)

clavicul/o –       “

cost/o – rib

crani/o – skull

femor/o – femur

(feo = fertile à fero = to bear)

fibul/o – fibula (figo = to fasten à

fibula = brooch)

humer/o – humerus (omos = shoulder)

ili/o – ilium (ilia = flank)

ischi/o – ischium (ischion = hip)

lumb/o - loin

mandibul/o – mandible

maxill/o – maxilla (macerare = to chew)

patell/o – patella (= small shallow dish)

pelv/i – pelvis (Ch. 9) (also: pelv/o)

phalang/o – digits

(= Greek battle formation)

pub/o – pubis (puber = coming of hairs)

~~rachi/o – spine, vertebral column~~

radi/o – radius (= spoke)

sacr/o - sacrum

scapul/o – scapulus (scapter = digger)

stern/o – sternum (sternon = chest)

tars/o – tarsus

(tarsos = flat wicker basket)

tibi/o – tibia

uln/o – ulna (olene = elbow)

vertebr/o – vertebral column

(verto = turn à vertebra = joint)

rachi/o –           “

(rachos = thorn à rachis = spine)

spondyl/o –      “           (= vertebra)

Joints:

aponeur/o – aponeurosis (upon tendon)

~~arthr/o – joint~~

burs/o – bursa (pouch)

chondr/o – cartilage

(chondron = cooked porridge)

disk/o – intervertebral disk

menisc/o – meniscus (little moon)

synovi/o – synovial membrane

(with an egg)

ten/o – tendon (teino = to stretch)

tend/o – “

tendin/o – “

Others:

ankyl/o – crooked, stiff (ankyl à bent)

kinesi/o – movement (also kin/e)

kyph/o – humped, hunched

(kyphos = curved, bent)

lamin/o – thin flat layers

lord/o – bent (lordos = bent back)

myel/o – bone marrow

myelon/o – “

my/o – muscle

myos/o – “

oste/o – bone

petr/o – stone

scoli/o – crooked, curved

Prefixes:

inter – between

~~supra – above~~

sym – together

syn –    “

Suffixes:

-asthenia – weakness

-clasis – break

-clast – “

-clasia – “

-desis – surgical fixation, fusion

-physis – growth

-schisis – split, fissure

**15) Nervous System**

cerebr/o – cerebrum (brain)

cerebell/o – cerebellum (little brain)

dur/o – dura mater (hard)

encephal/o – brain (in head)

gangli/o – ganglion (knot)

ganglion/o – “

mening/o – meninges (menigx = membrane)

myel/o – spinal cord (= marrow)

neur/o – nerve

radic/o – nerve root

radicul/o –       “

rhiz/o –             “

Others:

esthesi/o – sensation, feeling

mon/o – one

phas/o – speech

poli/o – gray matter

psych/o – mind (soul)

ment/o –           “

phren/o –          “

quadr/i – four

Prefixes:

~~pre- before~~

tetra- four

Suffixes:

-iatry – treatment

-iatrist – specialist, physician

-ictal – seizure, attack

-paresis – slight paralysis

**16) Endocrine System**

acr/o – extremities, height

~~aden/o – gland (Ch. 2)~~

calc/i – calcium

dips/o – thirst

kal/i – potassium

natr/o – sodium

toxic/o – poison

adren/o – adrenal gland (= to kidney)

adrenal/o -        “

cortic/o – cortex (bark)

endocrin/o – endocrine (within separate)

parathyroid/o – parathyroid gland (beside thyroid)

thyroid/o – thyroid gland (shield resembling)

thyr/o –            “

Others:

hypophys/o – pituitary (below grow)

trop/o – turn

hormon/o – endocrine secretion (hormaien = begin action)

metabol/o – chemical processes (metabole = to change)

Suffix:

-drome – running