

Terminology: Lectures 5

General Roots

by

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Introduction

Normal range: acceptable limit

Pathologic: A condition involving a disease process.

Diagnosis: naming a disease or condition based on scientific evaluation.

Prognosis: anticipated outcome of a disease

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I- Common roots pertaining to the different body organs

1. **Nephro-**: Kidneys;
 - e.g., **Nephropathy**: Disease of the kidneys.
2. **Hepato-**: liver
 - e.g., **Hepatotoxic**: agents that cause liver toxicity.
3. **Pulmo-** : Lung
 - e.g., **Pulmonary** edema: is fluid accumulation in the air spaces and parenchyma of the lungs.
4. **Cardio-**: Heart
 - e.g., **Microcardia**: small sized heart.
5. **Cyto-**: cell
 - **Thrombocytopenia**: decrease in platelet cells.
6. **Rhino-**: Nose
 - **Rhinorrhea**: the free discharge of a thin nasal mucus.
7. **Naso-**: Nose
 - **Nasal sinusitis**: Inflammation of the sinus of the nose
 - **Nasoplasty**: surgical repair of the nose.

- **Common roots pertaining to the different body organs Cont.**

8) **Derm**: skin

- e.g., **Dermatologist**: a specialist in the skin and its diseases.
- e.g., **Dermoscope**: an instrument use a light from a led bulbs used to examine suspicious skin lesions.

9) **Costo**: rib

- **Costovertebral (adj)**: relating the ribs to thoracic vertebrae.

10) **Carp**: wrist

- **Carpal tunnel syndrome**: pain, numbness, weakness and other problems in hand because of pressure on the median nerve of the wrist.

11) **Cerv**: neck

- **Cervix**: The neck of the womb (uterus).

12) **Arthro**: Joint

- 4 – **Arthropathy**: disease of the joint

Common roots pertaining to the different body organs Cont

13) **Vena:** Veins

- e.g., **Superior vena cava:** a large vein carrying deoxygenated blood into the heart.

14) **Gastro:** Stomach

- e.g., **Gastroenteritis:** Inflammation in the stomach and intestine

15) **Oste:** Bone

- e.g., **Osteosarcoma:** Cancer of the bone

16) **Neur:** Neuro or nerves.

- e.g., **Neurologist:** a specialist in neurological diseases.

17) **My:** Muscle

- e.g., **Cardio/myopathy:** Disease of cardiac muscles

18) **Cholecyst:** relating Gallbladder

- e.g., **Cholecystitis:** Inflammation of gallbladder.

Common roots pertaining to the different body organs Cont.

19- **Aden:** Gland

- e.g., **adenoma:** tumor of the gland

20- **Cerebr:** Brain

- **Cerebrospinal fluid (CSF):** Fluid around brain and spinal cord

21- **Chondr:** Cartilage

- **Chondrolysis:** Destruction of the cartilage

22- **Cyst:** bladder or sac

- e.g., **Cystitis:** Inflammation of gall bladder

- **Ovarian cyst:** sac around ovary

- **Cholecyst:** gall bladder.

23- **Lip:** fat

- **Lipoma:** lipid tumor

24- **Ophthalm/o/occul:** eye

- **Ophthalmologist:** specialist in eye disease.

25- **Thromb:** Blood clot

- e.g., **Thrombolytics:** agents that dissolve blood clot.

II- Roots pertaining to chemistry

Roots	Meaning	Example	Definition
a) Azot/o	Nitrogen	Azoturia Azotemia	Increase N ₂ in urine. Increase N ₂ in blood
b) Kal/i	Potassium	Hypokalemia	Decreased potassium level in the blood
c) Natr/i	Sodium	Hyponatremia	- Decreased sodium in the blood
d) Calc/i	Calcium	Hypercalcemia	- increased Ca in the blood
e) Hydr/o	Water	Dehydration	- Loss of water

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III- Roots pertaining to physical factors

1. Aer/o
2. Bar/o
3. Chrom/o
4. Electr/o
5. Kine/kinesi
6. Phot/o
7. Rad/o
8. Son/o
9. Therm/o

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1. Aer/o: combining form related to air or gas.
e.g., **Aerobe:** an organism lives and grows in oxygen or air.
e.g., **Aerosol:** a liquid solution dispersed in air under pressure.

2. bar/o: combining form related to pressure.
e.g., **Hyperbaric oxygen:** oxygen under pressure higher than normal atmospheric pressure.
e.g., **Hyperbaric solution:** solution more dense than a solvent or diluent or medium e.g., in spinal anesthesia, hyperbaric solution with a specific gravity more than CSF.

3. Chrom/o: color or stain
e.g., **Chromocyte:** any pigmented cell.
e.g., **Chromatic:** pertaining to the color.

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V- **Electr/o: Electric or electricity**

- **Electrocardiogram (ECG or EKG):** the graphic record of electricity of the heart.
- **Electrocardiograph:** An instrument used for recording the electricity of the heart.
- **Electroconvulsive therapy (ECT):** therapy of some disease by inducing convulsion via electric shock.
- **Electroencephalograph:** instrument used for recording electric potential of the brain derived from electrodes attached to the scalp.

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VI- Phot/o: combining form related to the light.

- **Photalgia** (syn. photodyn ia): pain caused by light.
- **Photoallergy** (syn. photosensitization): sensitization of the skin to the light, usually due to the action of certain drugs.
- **Phototherapy** (lucotherapy): treatment of disease by means of light rays.

VII- Sone/: sound (a unit of loudness)

- **Sonic**: pertaining to sound.
- **Sonication**: the process of mixing biologic materials or solutes by the use of sound wave energy.
- **Ultrasonography**: an instrument used to view an image of internal tissues using ultrasound as fetus.

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VIII- Therm/o: Roots pertaining to the heat.

- **Thermocautery**: the use of heat produced by cautery.
- **Thermometer**: an instrument used to measure the temperature of any substance including human beings.
- **Thermotherapy** (heat therapy): treatment of disease by the application of heat in any way.
- **Diathermy**: Electrically-induced heat used in surgical procedures or physiotherapy.

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IX) Roots pertaining to disease.

Roots	Meaning	Example	Definition
a) Carcino	Cancer or malignancy	Carcinogen	Substance that produces cancer
b) Lith	Calculus/ Stone	Lithiases Cholecystolithiases Urolithiases	Stone formation
c) Onc/o	Tumor	Oncolysis	Destruction of the tumour
d) Path/o	Disease	- Pathogenic - Pathology	- Producing disease - Science of diseases
e) Py	Pus	- Pyuria	-The presence of pus in the urine.

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Important Rules In Abnormal Pronunciations

1. **ae or oe only e is pronounced:**
 - Oedema: pronounced **aedema** (a silent)
 - Aerobic: pronounced **aerobic** (a silent)
 - Algae: pronounced **algae** (a silent)
2. **Ch is pronounced K sometimes:**

- Chromosomes	- Cholesterol	- Cholera	- Bronchial asthma
- Stoach	- Mitochondria	- Mercurochrome	- Bronchi
3. **Pn at the beginning of the term, only N is pronounced and P silent:**
 - Pneumonia (only N is pronounced)
 - Pneumococci (Only N is pronounced)
4. **Ps at the beginning of the term, only s is pronounced:**

- Psoriasis	(P silent)
- Psychosis	(P silent)
- Pseudomonas	(P silent)
5. **If -pn- in the middle of the word, both p and n are pronounced:**
 - Apnea (both p and n are pronounced)
 - Hyperpnea (both p and n are pronounced)

Important Rules In Abnormal plural & Pronunciations

6. The terms end by **-us**, in pleural it is converted into **i**:

<u>Single</u>	<u>Pleural</u>
• Bronchus	Bronchi
• Fungus	Fungi
• Nucleus	Nuclei
• Alveolus	Alveoli
• Focus	Foci
• Calculus	Calculi
• Canalculus	Canaliculi
• Stimulus	Stimuli
• Villus	Villi

7. Some terms its pleural is achieved by adding **e** to the end:

<u>Single</u>	<u>pleural</u>
Vertebra	vertebrae
Papilla	Papillae
Trabecula	Trabeculae

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ABBREVIATIONS

- CNS: central nervous system
- CVS: cardiovascular system
- GIT: gastrointestinal tract
- ATP: adenosine triphosphate
- NSAID: non-steroidal anti-inflammatory drugs

Collective Roots & Uses

Combining Form	Meaning	Medical Specialty	Medical Specialist
cardi/o	heart	cardiology	cardiologist
dermat/o	skin	dermatology	dermatologist
esthesia/o	feeling or sensation	anesthesiology	anesthesiologist
gynec/o	female	gynecology	gynecologist
immune/o	immune	immunology	immunologist
ne/o, nat/o	new, birth	neonatology	neonatologist
ophthalm/o	eye	ophthalmology	ophthalmologist
path/o	disease	pathology	pathologist
radi/o	radiation or radius	radiology	radiologist
ur/o	urinary tract or urine	urology	urologist

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MCQ EXercises

1. Visceral or involuntary muscle is termed:

- a) Cardiac muscle
- b) Smooth muscle.
- c) Skeletal muscle
- d) Attached to the bones

2. The root card is referred to:

- a) Heart. b) Lung c) Diaphragm d) Intestine

3. Inflammation of more than one joint is called

- a. arthritis
- b. hemiplegia
- c. polyarthritis.
- d. quadriplegia

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Cont. Exercise

4. Surgical repair of the skull is called:

- a. cephaloplasty.
- b. cephalotomy.
- c. *cranioplasty*.
- d. craniotomy.

5. Visualization of the interior of a joint is called

- a. *arthroscope*.
- b. arthroscopy.
- c. chondroscopy.
- d. endoscope.

6. Inflammation of a joint is

- a. arthritis.
- b. chondritis.
- c. osteoarthritis.
- d. osteochondritis.

7. Osteoid means _____ bone.

- a. growth of
- b. inflammation of
- c. *resembling*
- d. softening of