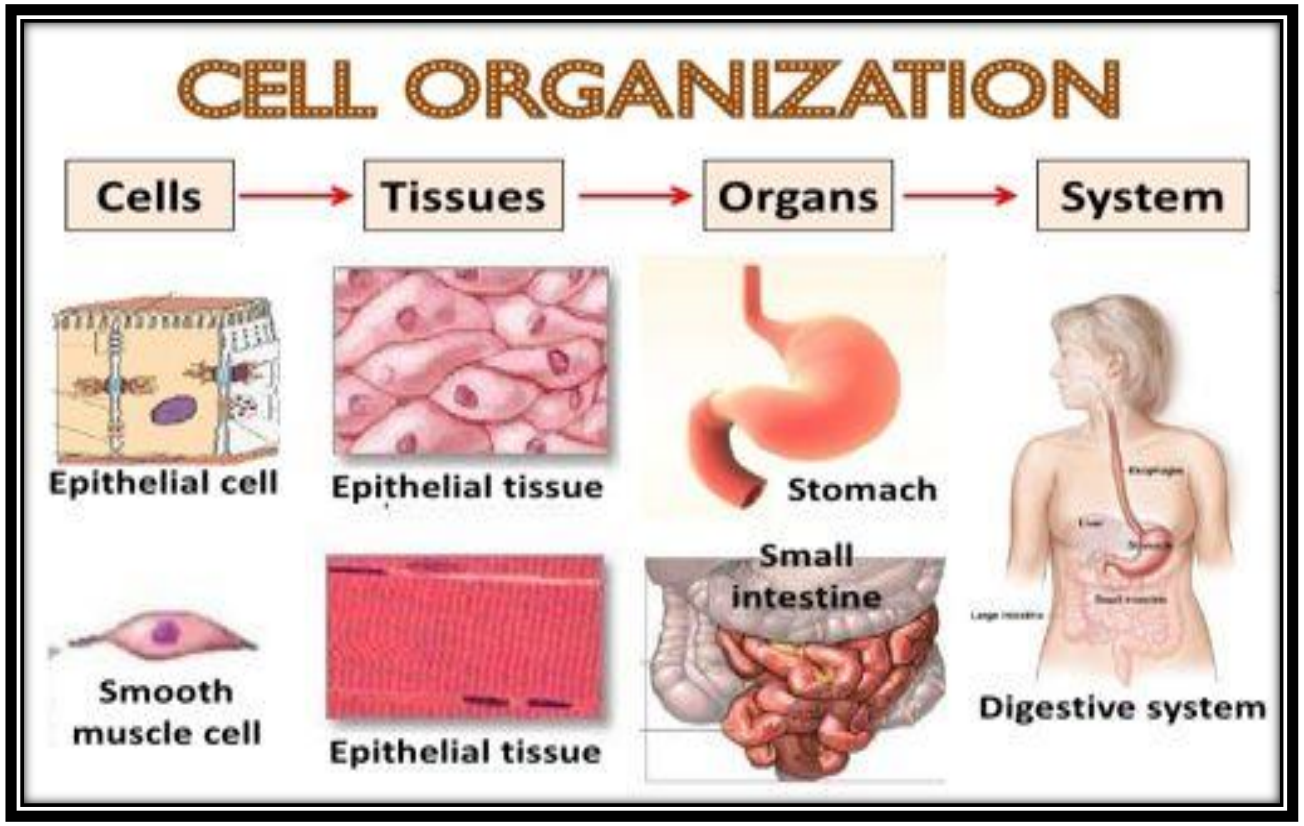
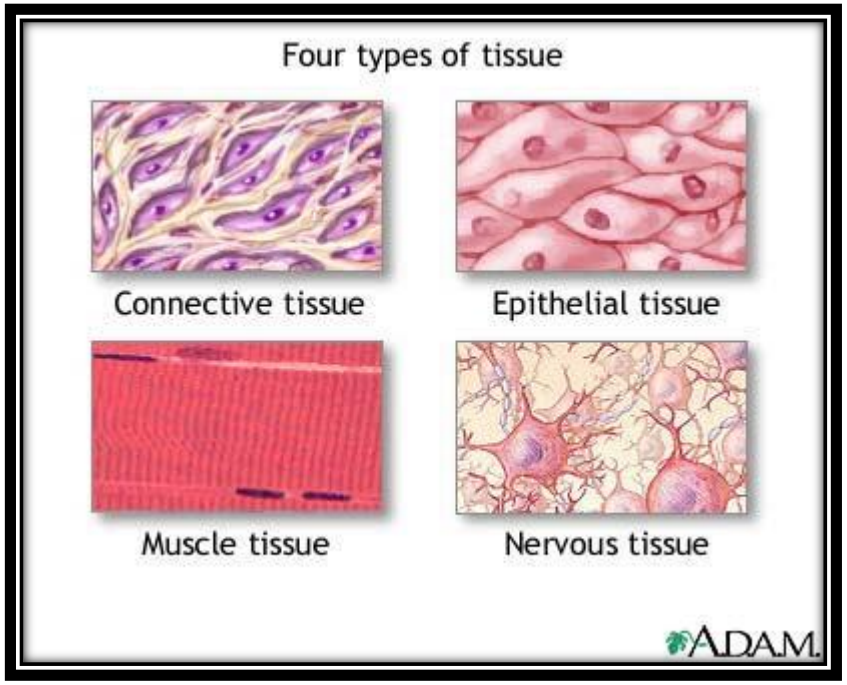
# MEDICAL TERMINOLOGY

## TERMS RELATED TO CELLS AND TISSUES

DR ZAID O IBRAHEEM, PHD

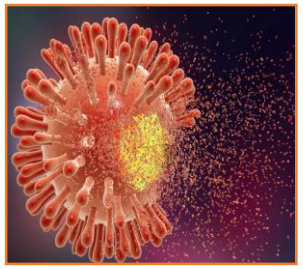


# Word root words related to cells and tissues

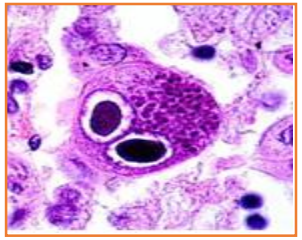
Cyt/ o = A word root that comes before a suffix or another word root and refer to cells

Cyto-toxic (cyto-lysis) = lysis of cells by toxic comp.

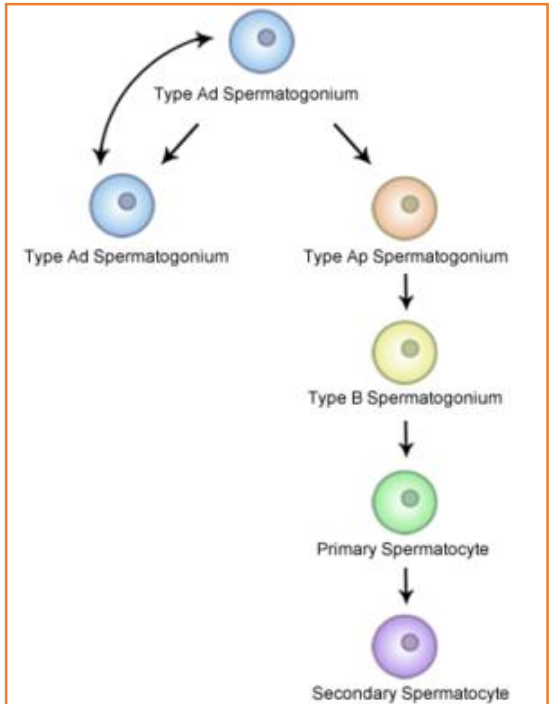


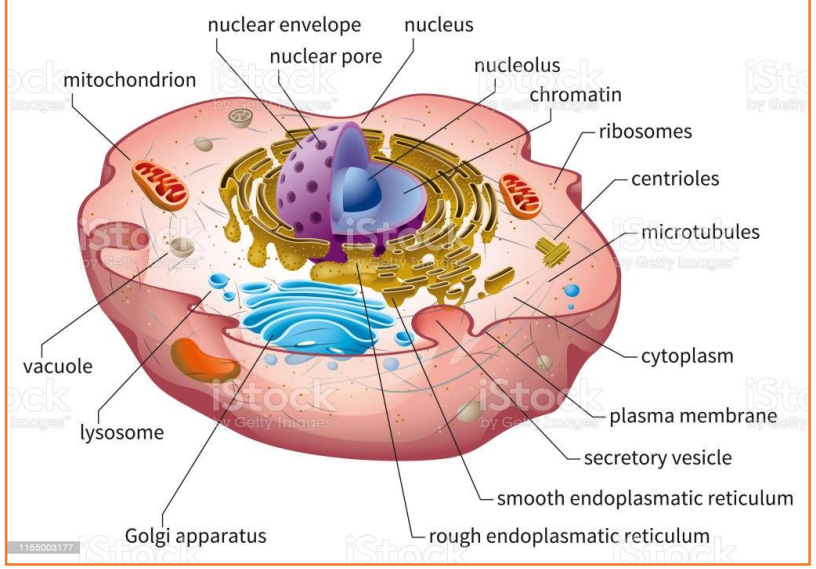
Cyt-o-metry = A lab technique to count the number of cells

Cyt-o-genesis = formation or genesis of cells ( Genesis = formation )

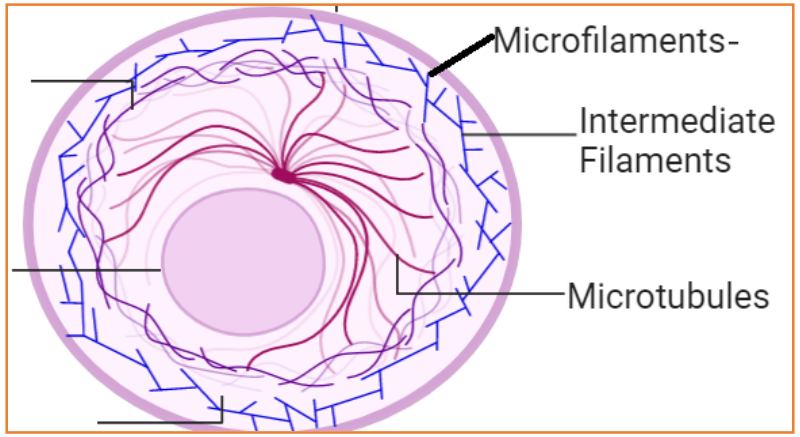


Cyto-megali = Increase of size of cells




Cyto-skeleton= Group of filaments that give structural support for cells



# NUCLEATED ( KARYO-CYTES) AND NON-NUCLEATED CELLS (AKARYOCYTES)

Karyo = a prefix refers to nuclei

- KARYO-CYTES

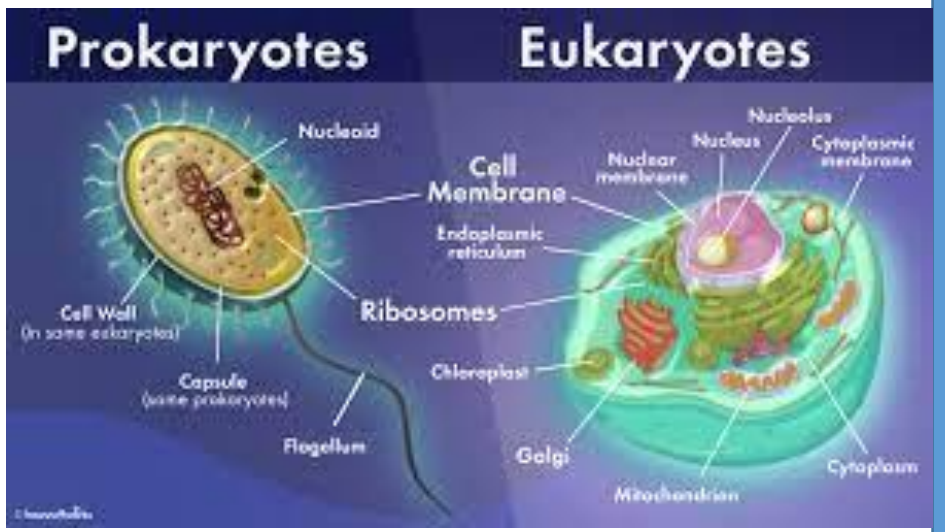
Cells got nuclei

Nucleated cells are divided into **eu-Karyocytes** ( with true nucleus) and **pro-karyocytes** ( those got only nuclear materials without nuclear membrane envelope

**Eucaryocytes** =Cells got true nucleus ( nuclear materials as chromatin fibers surrounded by nuclear envelope ). e.g most of mammalian cells

**Pro-karyocytes** =Cells devoid of true nucleus ( free nuclear materials exist as circular DNA and are not by a nuclear envelope ).

e.g Bacteria




A KARYOCYTES

Cells without nuclei

Akaryocytes = cells with short life span due to the absence of nuclei

e.g RBCs and platelets



Erythrocyte



Thrombocytes
Platelets

# Word root words related to cells blood cells

– cyte which comes after a suitable prefix

Most of blood cells got a prefix before word root cyte

**Erythro-cytes** = red blood cells

**Thrombocytes** = cells that produce thrombus.

**Leuco-cytes** = White blood cells

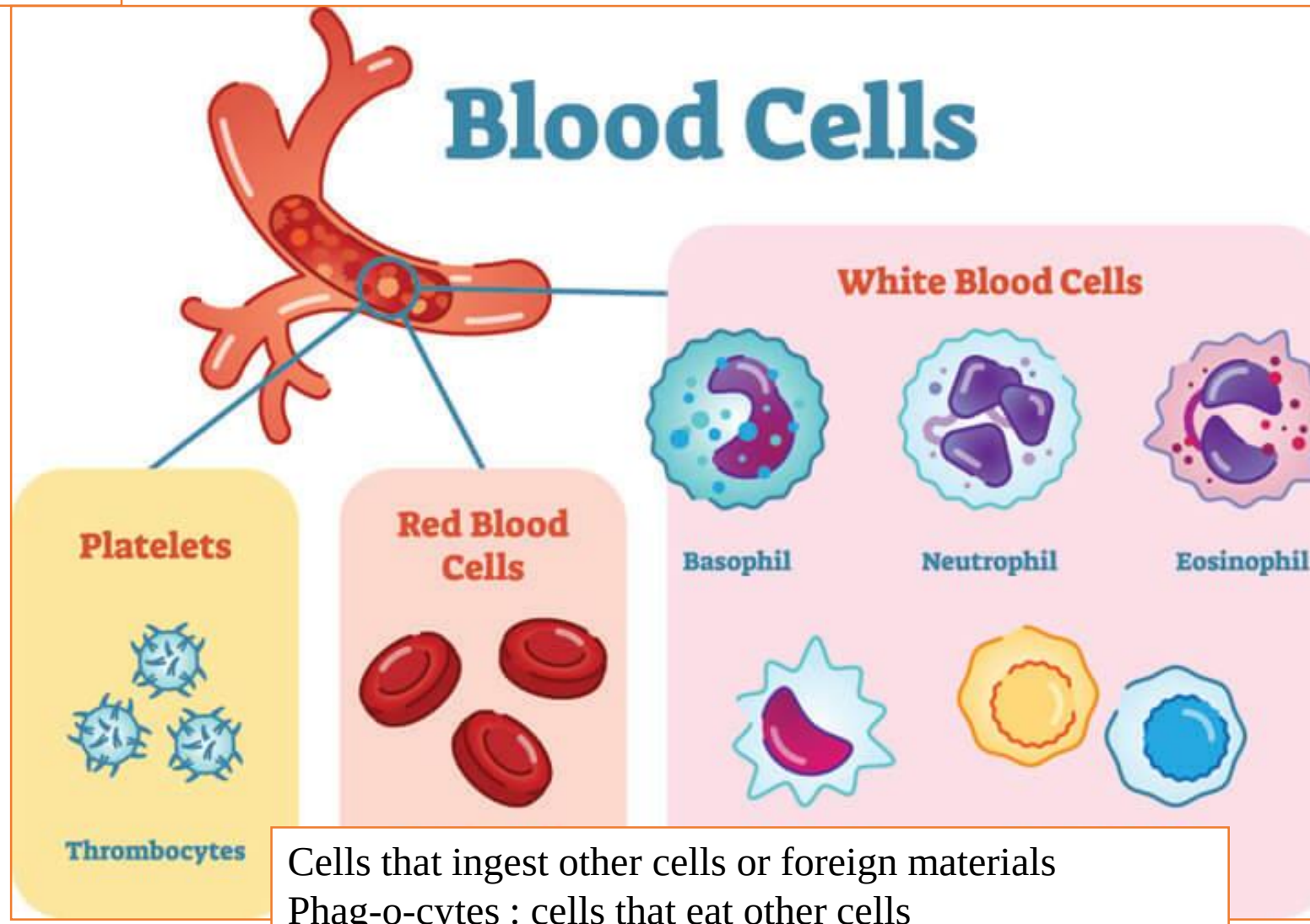
**Ganulo-cytes** = White blood cells with granules

**Agranulo-cytes** = White blood cells without

**Lympho-cytes** = White blood cells that produce antibodies.

**Mono-cytes** = White blood cells with a single nucleus

**Phago-cyte**s (macrophage) = White blood cells that can engulf bacteria

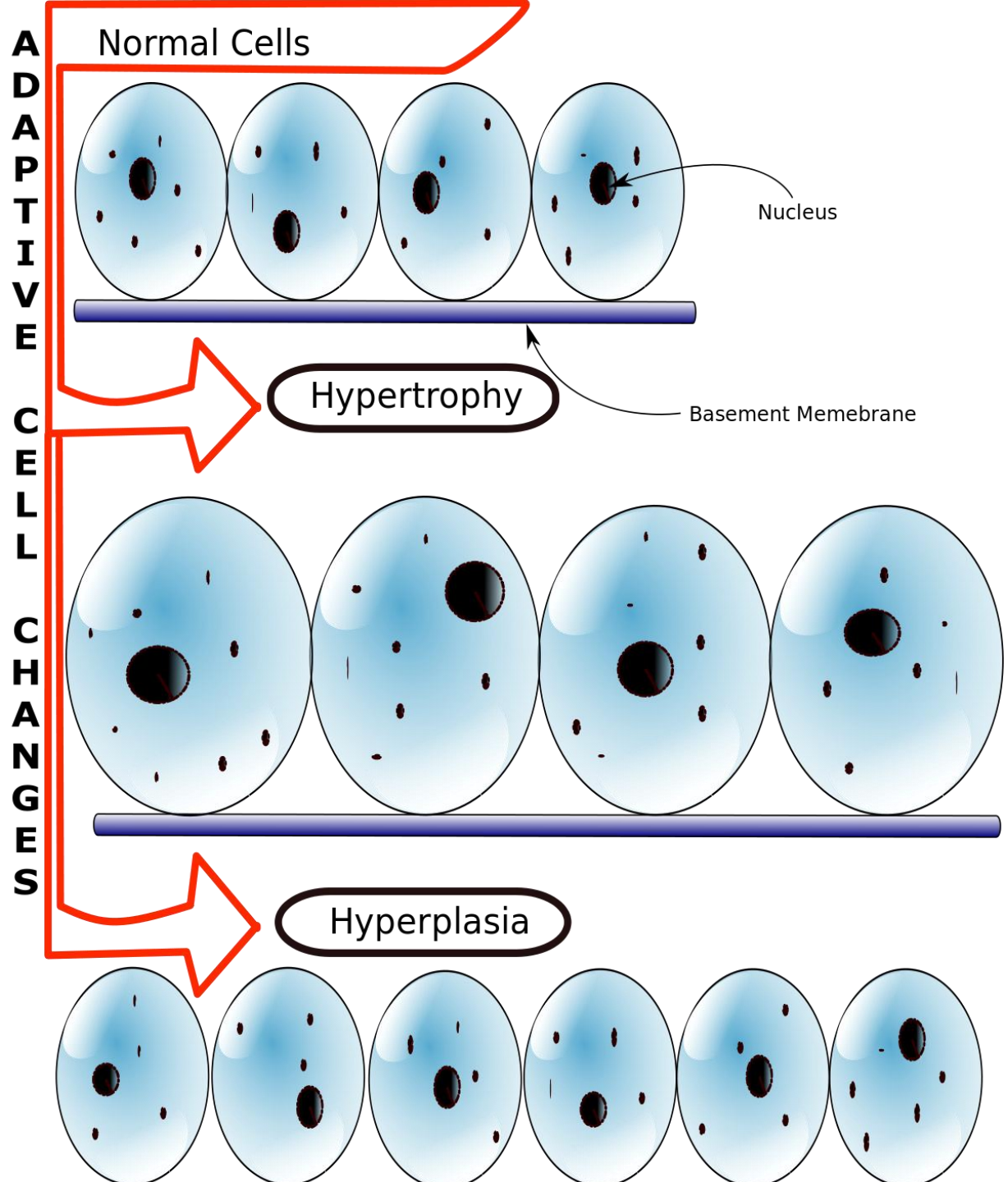



**Phag/O** → Eat/ingest

Cells that ingest other cells or foreign materials
Phag-o-cytes : cells that eat other cells
Phagocytosis :-Process of cells eating

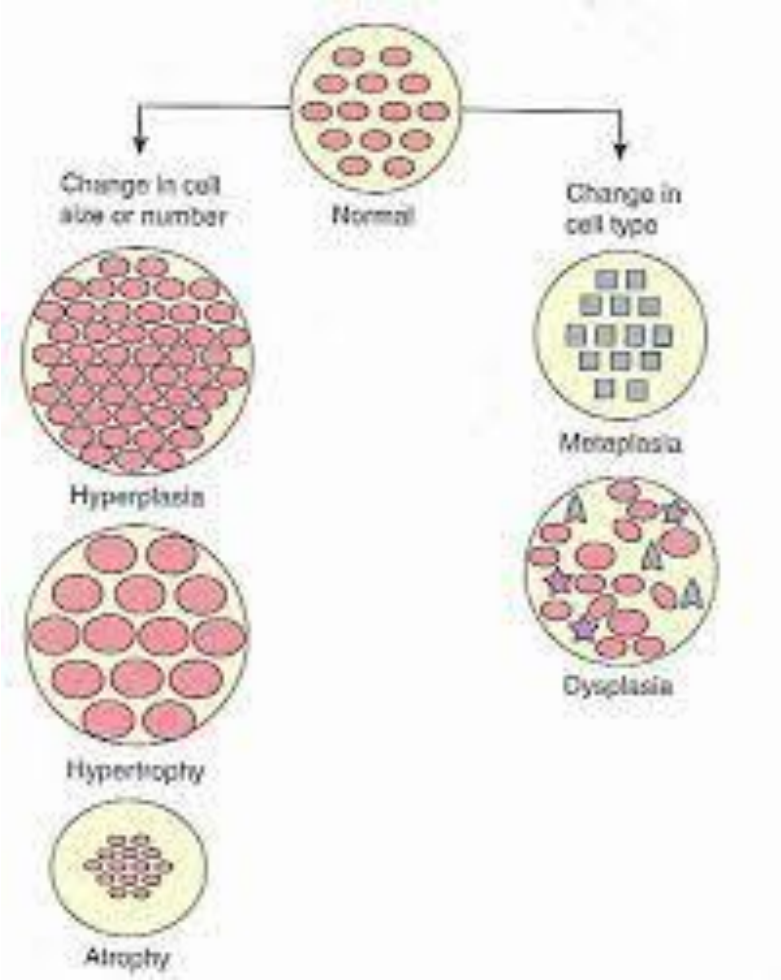
# Thank you






# CHANGES IN CELL NUMBER AND SIZE

Dr Zaid O Ibraheem



# SUFFIXES AND PREFIXES THAT REFER TO CHANGE IN NUMBER

The suffix –"osis" is added after the name of the cell to refer to the increase in number

the suffix –penia after the linking vowel O is added to refer to reduction in number of cells

| | | |
|---|---|---|
| Erthrocytes | Erythrocyt-osis | Erythrocyto-penia =anemia |
| Leucocytes | Leucocytosis | Leucocytopenia ( reduced WBCs) |
| Melanocytes | Melanocytosis | Melanocyto-penia |

The words hyperplasia and hypoplasia can be added to refer to increase or decrease in number respectively

**Plasia-** → Forming, molding, development →

Hyperplasia = Increase in number of cells
Hypoplasia = Decrease in number of cells

Hyperplasia is used to refer to changes in number of cells due to cancer. Meanwhile, Hypoplasia is used to refer to reduction of cells numbers due to cells death

# SUFFIXES AND PREFIXES THAT REFER TO CHANGE IN SIZE

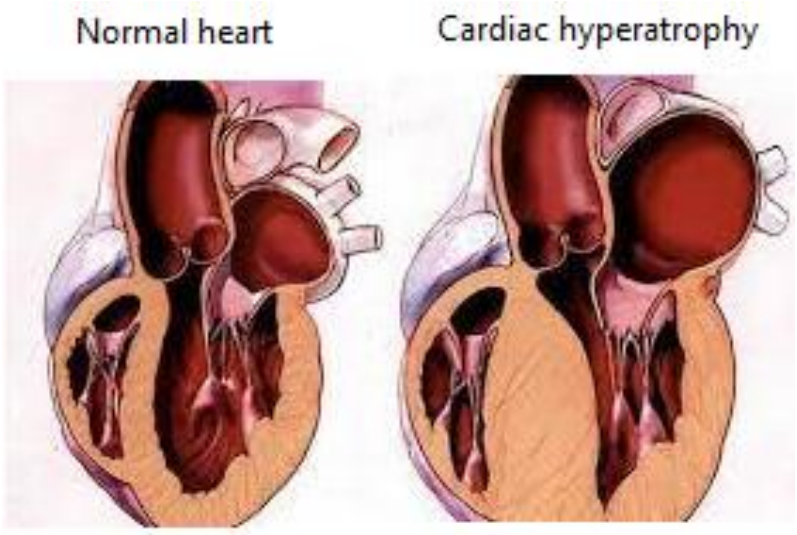
The prefix micro is added before –cyte to refer to shrinkage in size while macro- is used to refer to increase in size

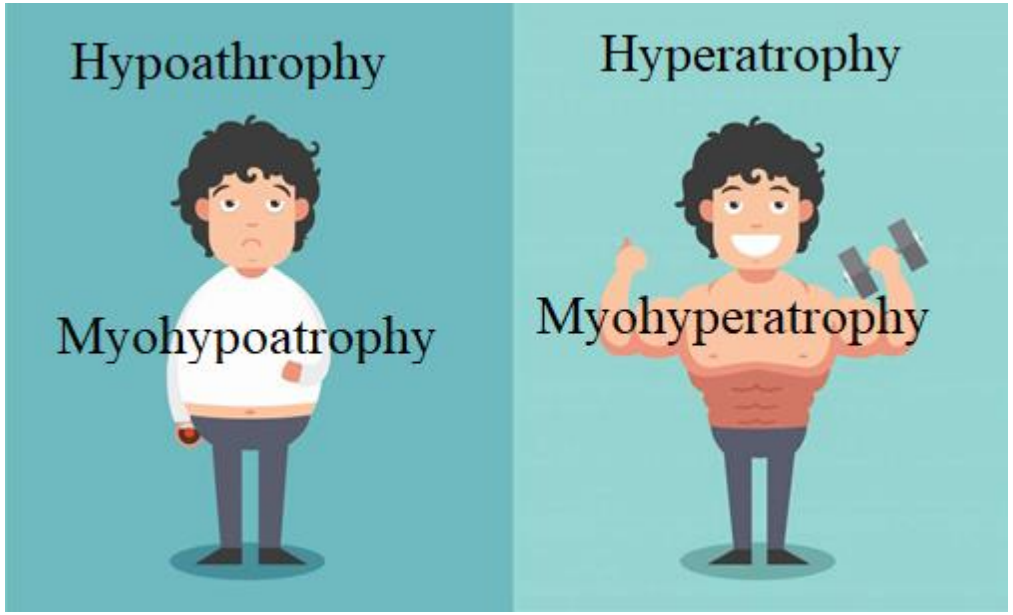
Erthrocytes → Microcytic RBCs → Macrocytic RBCs

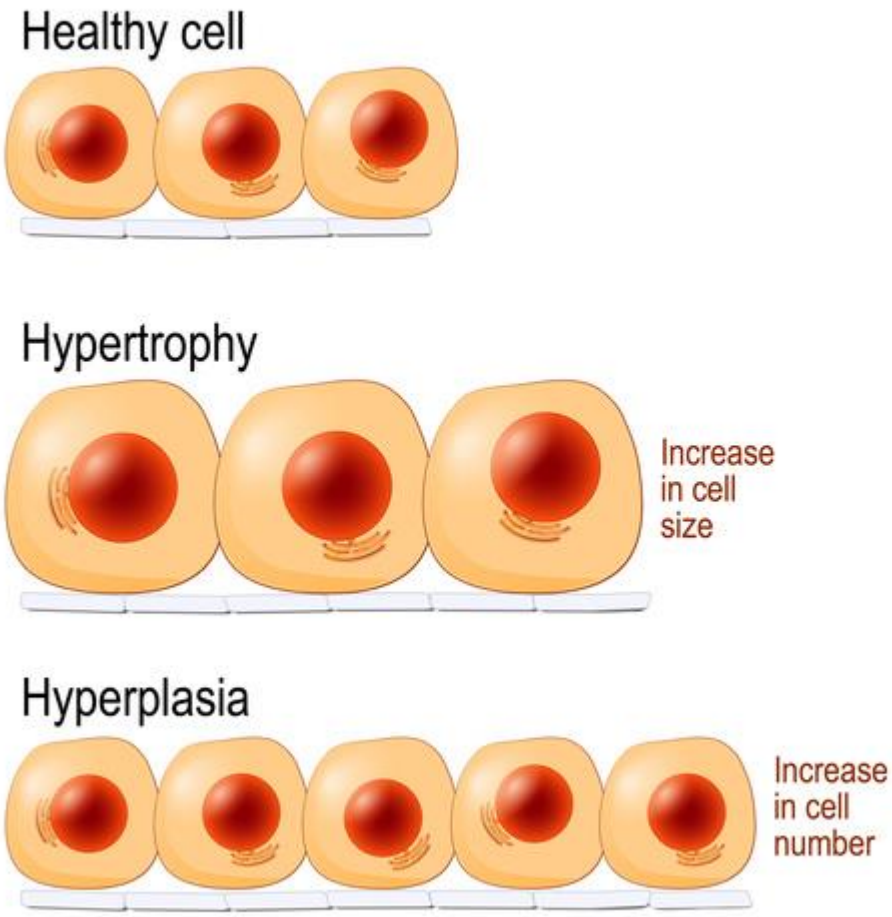
The word root hyperatrophy or suffix megali are used to refer to increase of size while hypoatrophy refers to size shrinkage for cells or organs

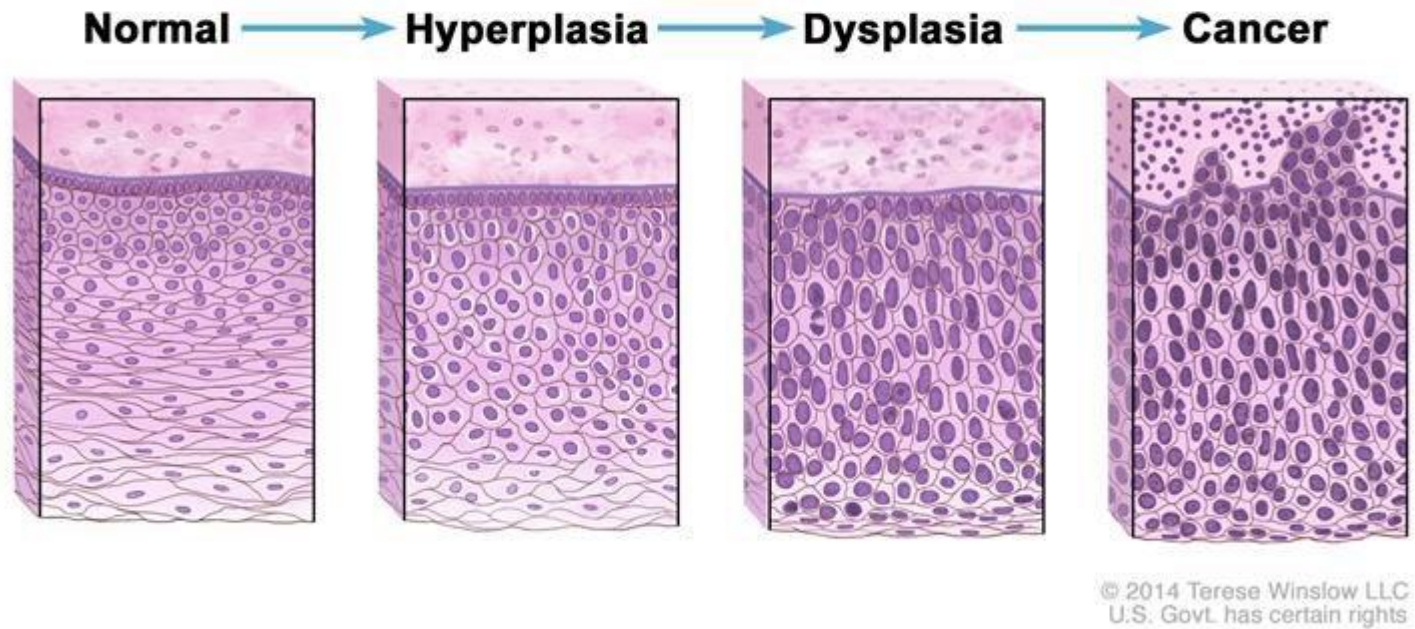
Cell → Cell hyperatrophy → Cell hypoatrophy

Hepat → Hepatic hyperatrophy or Hepatomegaly → Hepatic hypoatrophy






Hyperplasia = Increase in number of cells

Dysplasia = Change in cell shape

In cancer, both hyperplasia and dysplasia occur

# Thank you

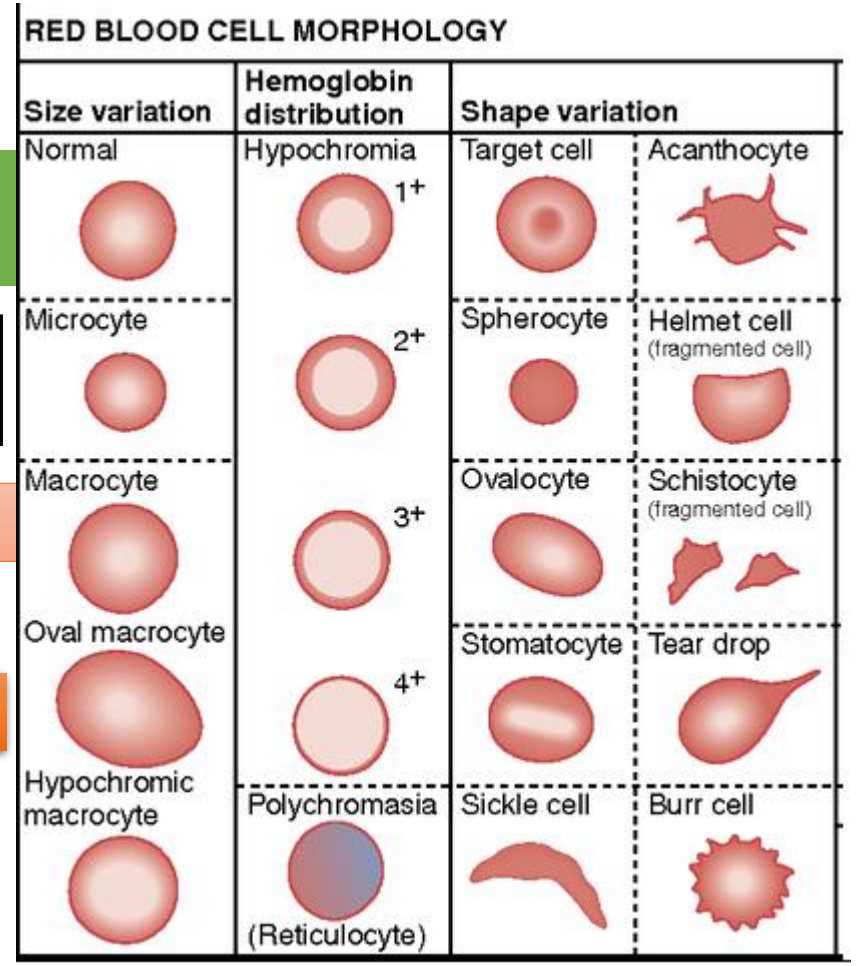


# Cell morphology

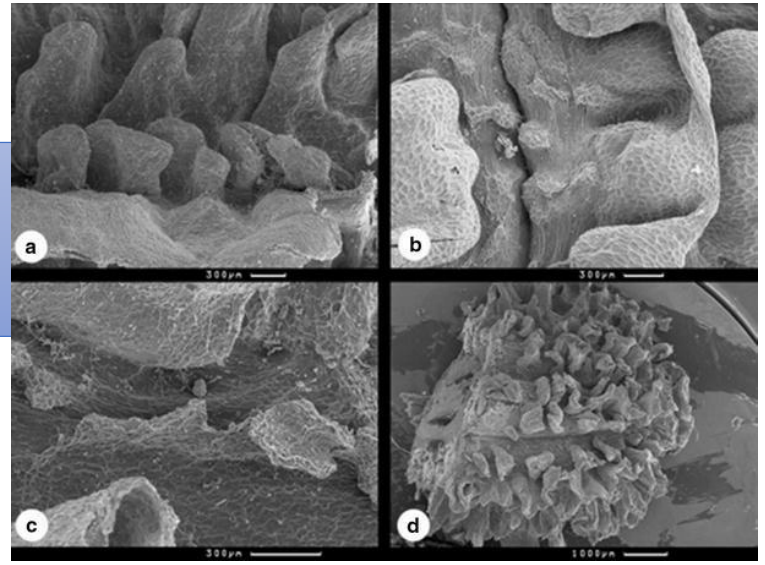
Dr Zaid O Ibraheem

# ROOTS FOR SHAPE OF CELLS

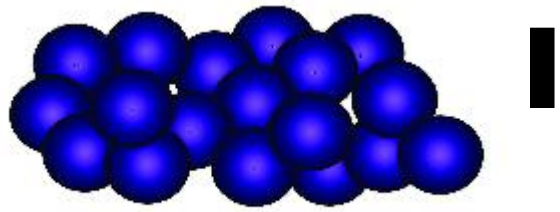
| | | |
|---|---|---|
| -Morph | Form or shape | Polymorphic = cells having many forms |
| Oval-/O<br>Ellipt/O | Oval shaped | Oval-o-cytes / Elliptocytes |
| Sphere-<br>or cocci | Ball-like shaped | Spherocytes |
| Schisto | Fragmented | Schistocytes |
| Stomat-/O | Mouth like shape | Stomatocytes= cells with mouth-like slits |
| Acanth-/O | Got spikes (spurs) | Acanthocytes = RBCs with spiky surface<br>Acanthus = sort of plants with spiky leaves |
| Echino-/O | Got small numerous spikes (burrs) | Echinocytes = RBCs with small and numerous spikes. |



Papill-/O → Nipple → Papilliform = resembling nipples
Papilla = folds of the skin or roots of hair




Cocci → Spherical cells → Cocci bacteria



baccili → Rod like shape → Bacilli bacteria



# Thank you

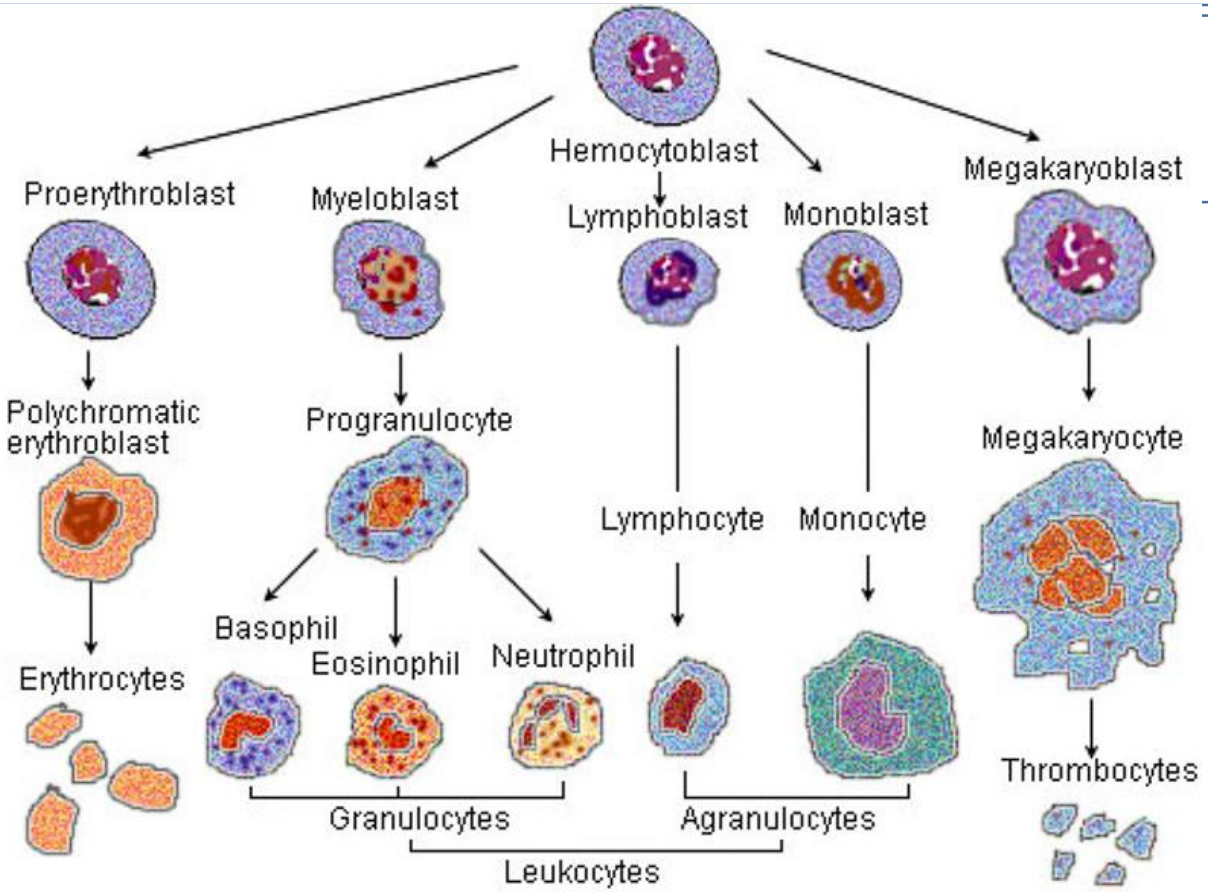


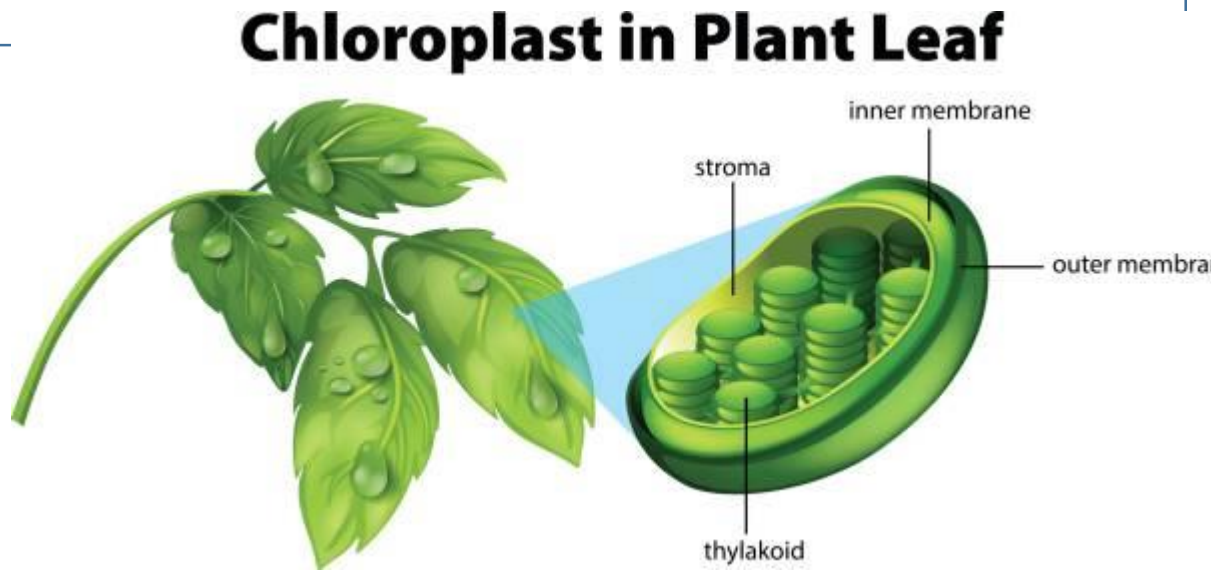
# Use of term blast

Dr Zaid O Ibraheem

# ROOTS FOR CELL ACTIVITY

-Blast → Forming cells → Cells that generate more developed cells like Erythroblast that generate erythrocytes. Leucoblasts that generate Leucocyte




-Plast → A word root refer to the organelle or cell that form a compound → Chloroplast = The organelle that form chlorophyll in plants

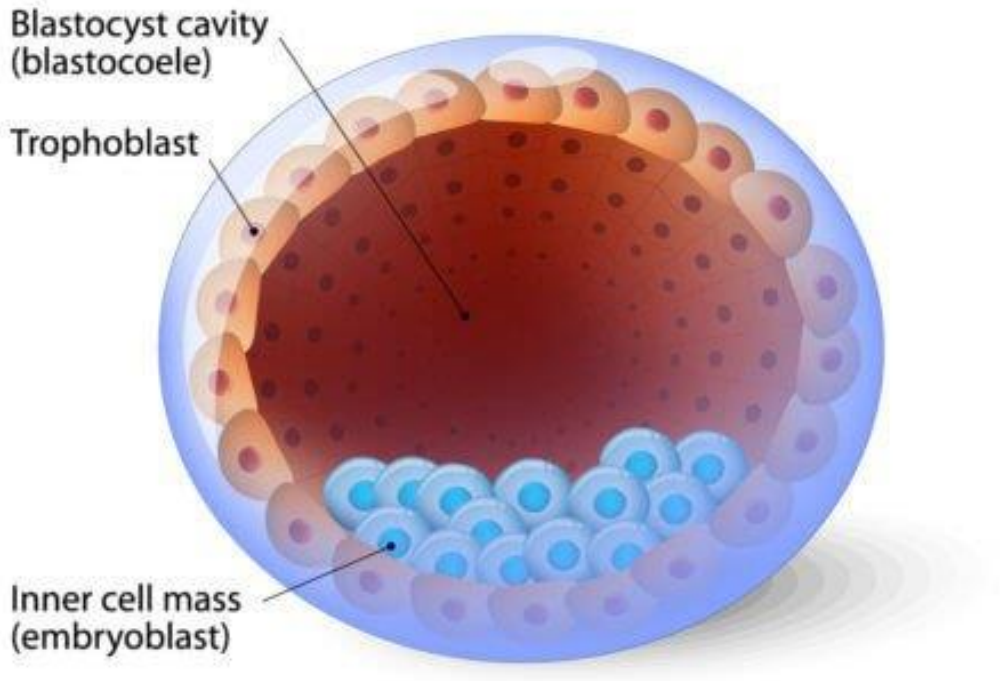
# ROOTS FOR CELL ACTIVITY

Blast/O- → Immature embryonic → Blastocytes:- early cells of blastula stage that develops to embryo once its is planted in uterus

Tropho- → Nourishing or feeding → Cells that feed other cells

Trophoblasts = Cells that feed the blastocysts during the blastula phase

Tropho-zoites= Active nourishing stage of the protozoa




Blasto-cyst = A structure that got embryoblast and trophoblasts within a cavity of blastocoel

Blasto-coel = internal cavity of blastocyst
trophoblasts = cells that nourish the blastocytes or embryoblasts.

# ROOTS FOR CELLS AND TISSUES

| | | |
|---|---|---|
| **Fibr-/O** | Related to fibers | Fibrosis = a condition of abnormal fibers formation<br>Fibro-cytes or fibroblasts = cells that generate fibers.<br>Fiber-like = Fibr-oid |
| **Reticul-/O** | Network or reticulum | Reticul-o-cytes = Cells that generate reticular fibers<br>Endoplasmic reticulum = Network of endoplasmic tubules |
| **Somat-/O** | Related to body | Somato-cytes = cells of the body |
| **Myxo-/O**<br>**Muco-/O** | Related to mucous | Myxoedema = edema of mucous<br>Mexo-adenitis = inflammation of glands that secret mucous<br>Mucorrhea= Increase release of mucous |
| Adipo | Related to fats | Adipocytes= Cells that store fats<br>Adipoma = Tumor of adipocytes |
| Aden-/O | Related to glands | Adenocytes = glandular cells<br>Adenoma or adenocarcinoma= Tumor of glandular cells ( adenocytes) |

# ROOTS FOR BODY CHEMISTRY

Addition of water

Hydro- → Fluid or hydration

Gluc-/O → Rlated to glucose

Gluco-genesis = generation of glucose
Glyco-genesis =generation of glycogen
Gluco-lysis = breakdown of glucose
Glycogen-o-lysis = Break down of glycogen
Gluco-meter = device that measures glucose level

Amyl- → Related to starch

Amylogenesis =synthesis of starch
Amylase = enzyme that breaks down starch
Amyl-oid = things resembling starch

Steat-/O
Lipo-?O → Related to fats

Steato-rrhea = discharge of fats with stool
Lipo-lysis = breakdown of lipids X lipogenesis = lipids building

Prot-/O → Related to proteins

Proteo-lysis = breakdown of proteins
Proteogenesis = generation of proteins