



HEMATOPOIETIC & LYMPHATIC SYSTEM

-HAYAT BATCH-

SUBJECT : H L S - Anatomy Lab

LEC NO. : 1

DONE BY : Ibn AL-Qassam

وَقُلْ رَبِّ زِدْنِي عِلْمًا

Lymph Node

M- Medulla

Cx- Cortex

C- Capsule

S- Subcapsular sinus

F- Lymphatic follicle or nodule

MC- Medullary cords

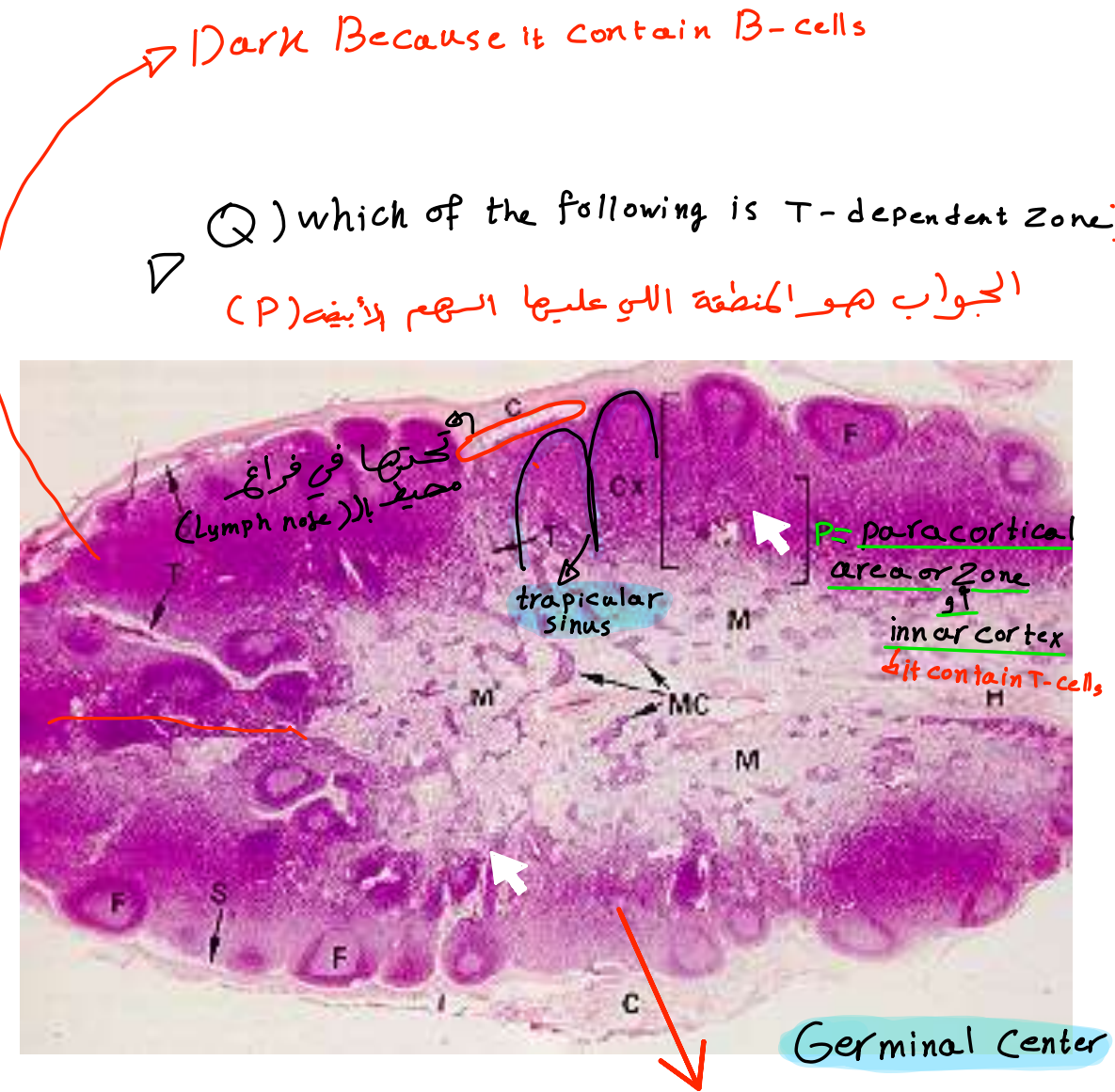
S- Trabecular sinus

P- Paracortical area or zone

H- Hilum : (Artery, Nerve, vein...) فيها يدخل

Q What is the structure in this slide?

Ans: Lymph nodules

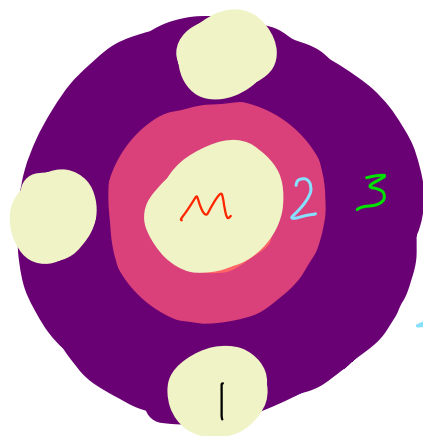


Light Because Antigen plasma cell
صاروا

- ملاحظة: لومات ال (Germinal center) يُعبأ مكانه (B-cells) و يصبع اللون (Dark)

- لها تتحفز ال (Lymph node) بتكبير الحجم ← بصير ال (Nucleos) عالجنب

← بصير اللون أبيض



Lymph node

- 1) Germinal center Cords , has light color Because of plasma cells
- 2) Para cortical area / zone or inner cortex , has T-cells
- 3) marginal zone / has a dark color , because of B-cells

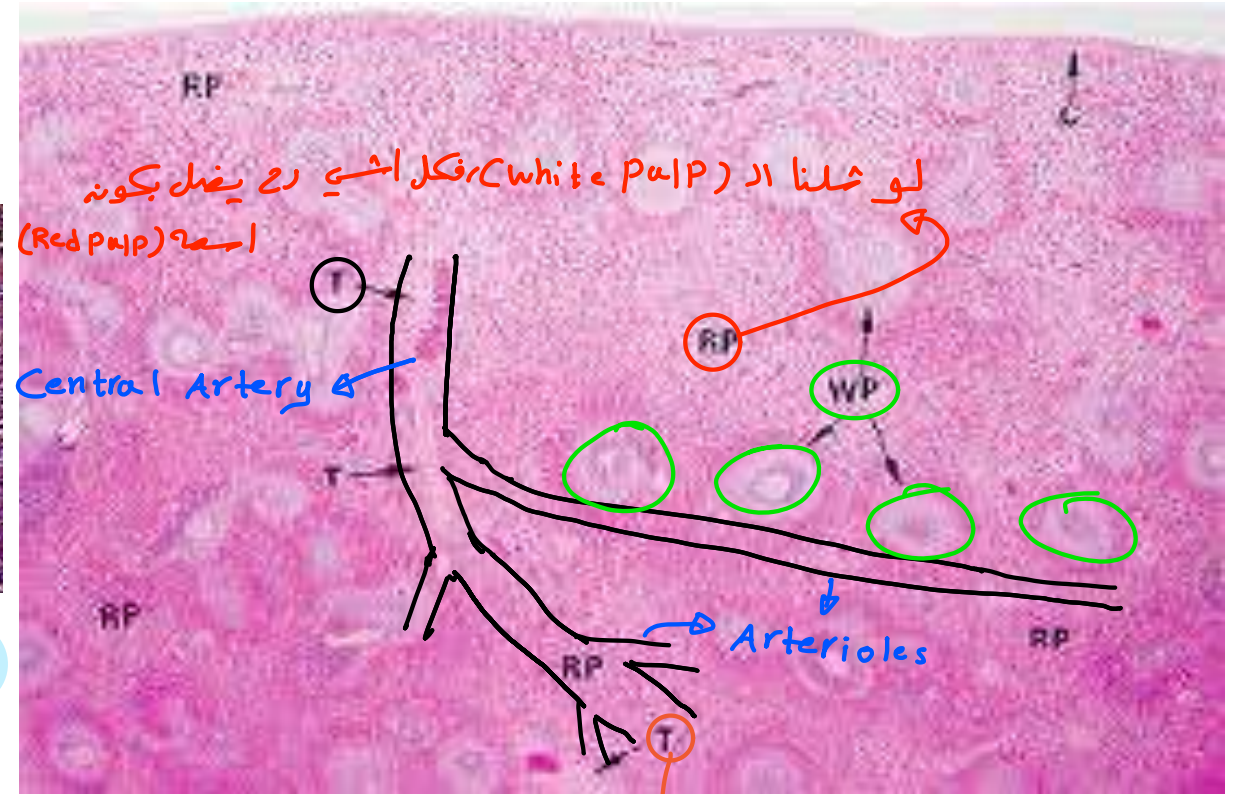
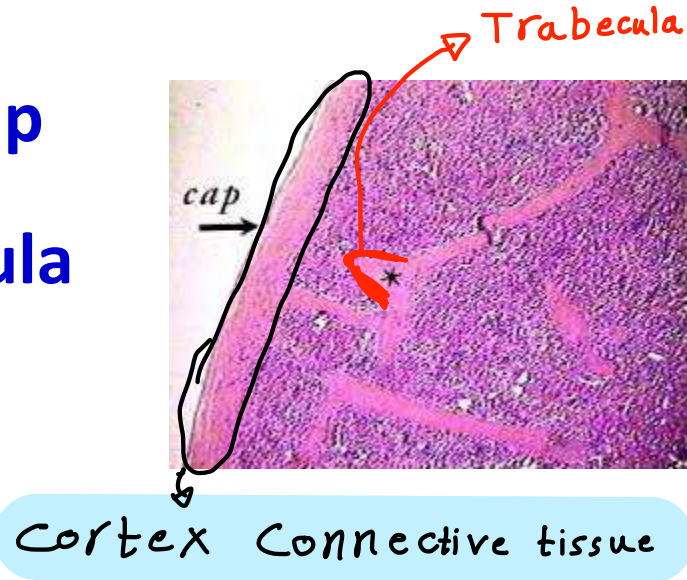
Spleen

C & cap- Capsule

Rp- Red Pulp

WP- White pulp

T & *- Trabecula



موجود حوالينها (trabecular Artery)

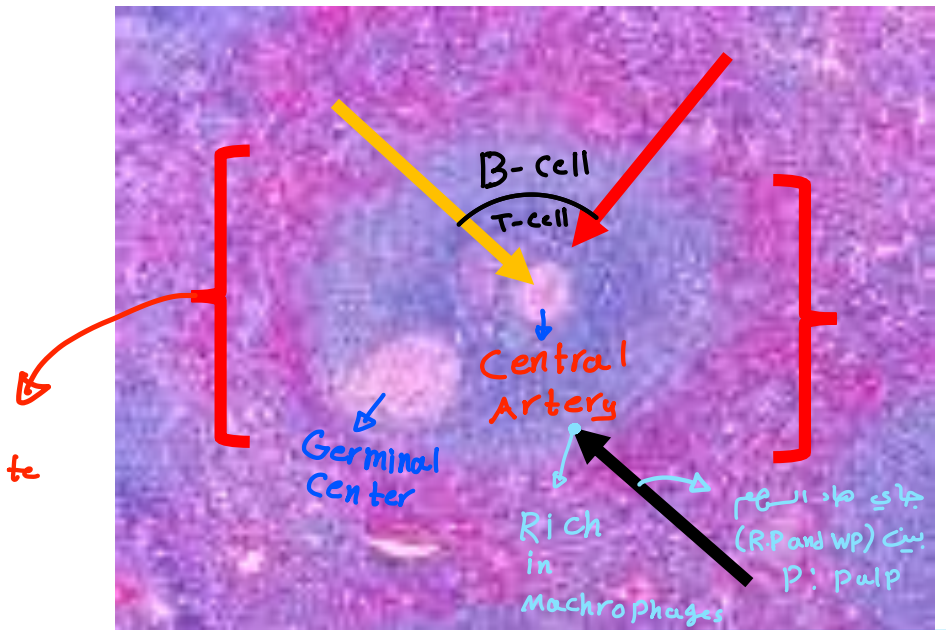
اللهم انصر أهل غزة

Spleen

- Between brackets- Lymphatic Nodule
- Yellow arrow- Central artery
- Red Arrow – Periarterial sheath
- Black Arrow – Marginal Zone

T - dependent zone

Higher Manifestation of Lymph Node



in spleen → Blood filter of Arterials



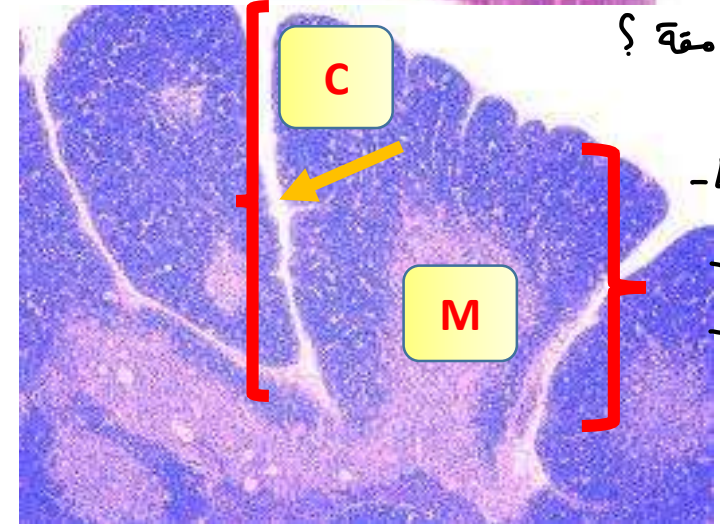
- open circulation: بطلع الدم لبرا على ال (tissue) والدم بتجمع ويدخل على ال (venules)

- closed circulation: دخل ال (arteriol) ← (capillary) ورجع بال (venules)

Q the other name of endothelial cells lining of the splenic sinuses is?
Sava Cells

Thymus

- Part of the thymus between brackets is called **(Incomplete Lobule)**
- **C- Cortex** (connective tissue) مصيط بشكل كامل به
- **M- Medulla**
- **Yellow arrow- Trabecula**



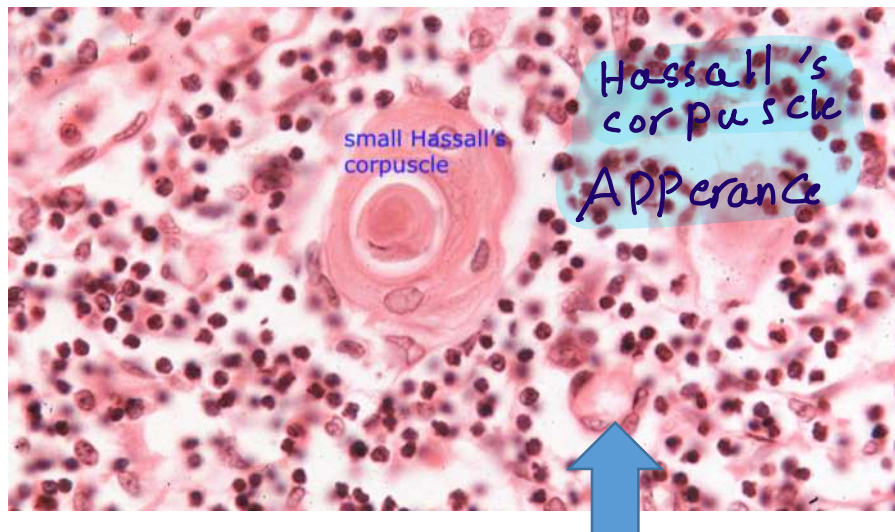
سلي ليش غامقة ؟
لأنها مليانة

- Lymphocytes
- Macrophages
- Reticular fiber

لنا في الله
ظن
لا يخيب

Thymus Cont.,

- This image shows part of the medulla
- Round structure in the middle is (Hassale corpuscle)
- **Blue Arrow**- High Endothelial Capillary
- **T**- T lymphocytes
- **Black arrows**- Epithelial Dendritic Cells

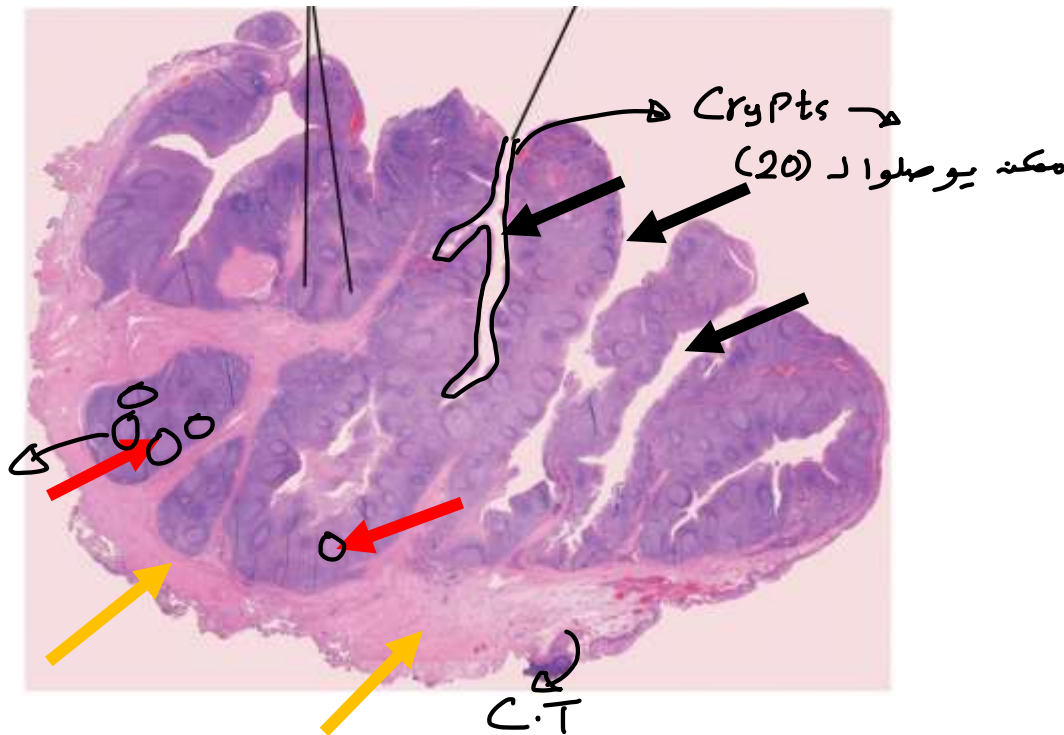
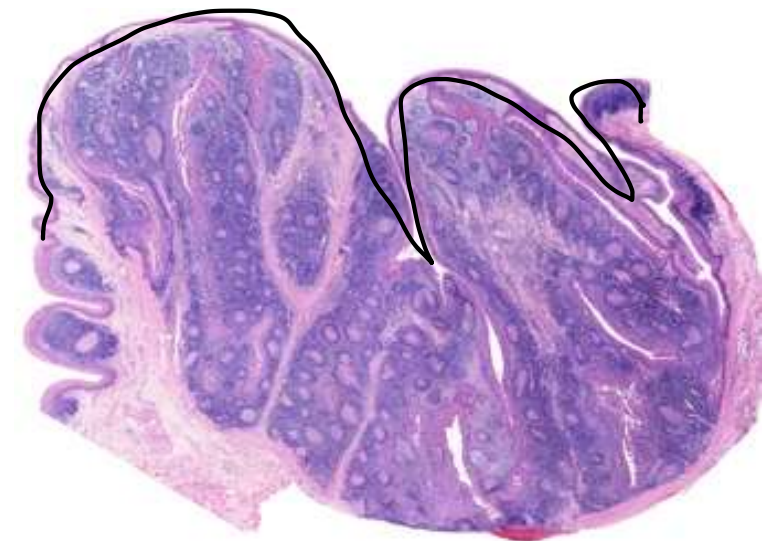


Epithelial Dendritic cells

Palatine Tonsil

- It is surrounded by incomplete connective tissue capsule (**Yellow arrows**)
- It has many crypts (**Black arrows**)
- Notice the distribution of lymphatic nodules (**Red Arrows**)

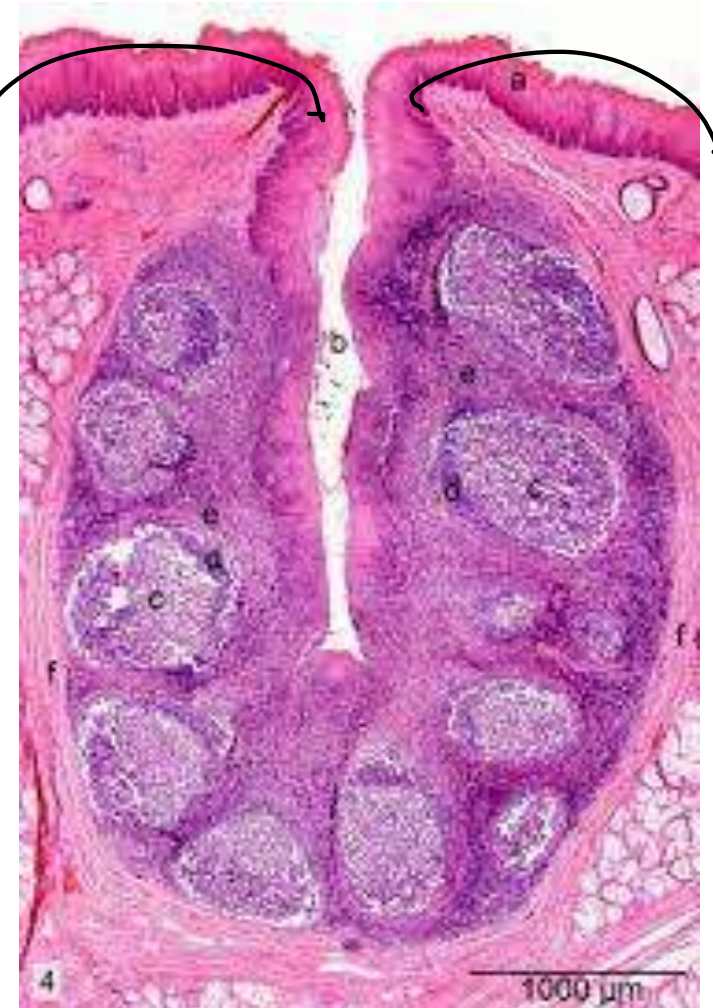
S.S.E



S.S.E

Lingual Tonsil

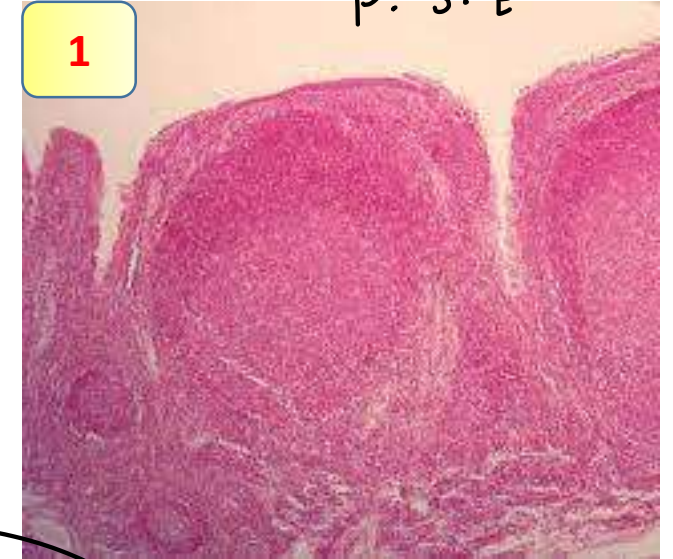
1. Notice the covering of stratified squamous epithelium
2. Notice the presence of one crypt for each tonsil
3. Notice the presence of lymph nodules
4. Sometimes you can see the mucus glands and the skeletal muscle fibers of the tongue



P. S. E

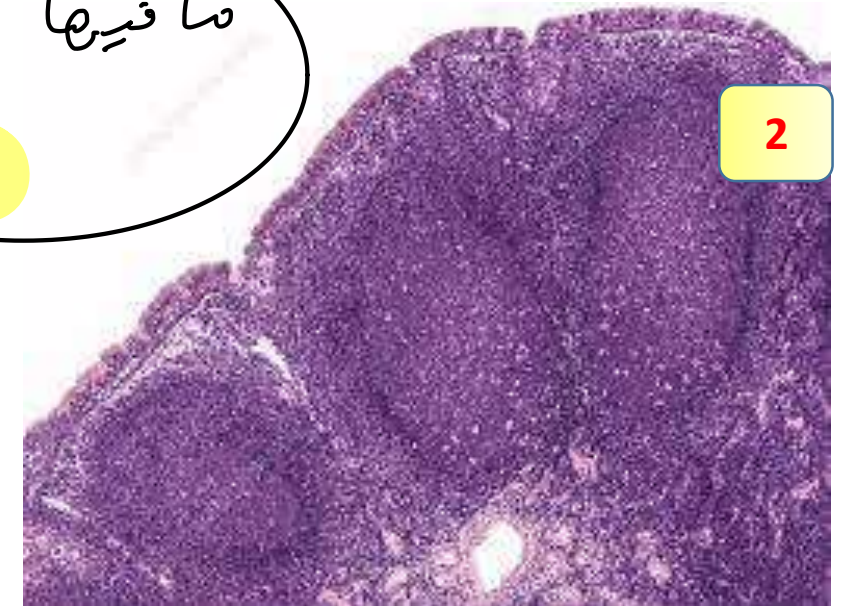
Pharyngeal Tonsil (1 and 2)

1. Notice the pseudostratified columnar epithelium covering the tonsil
2. Notice the presence of lymph nodules (The round structures)
3. Notice that there is no crypts



ما فيها
Crypts

Q



لو سأل عنها بدون متفكر مادام شفت (epithelium)
تاعها حتى لو متفكر بـ (Pharyngeal Tonsil)

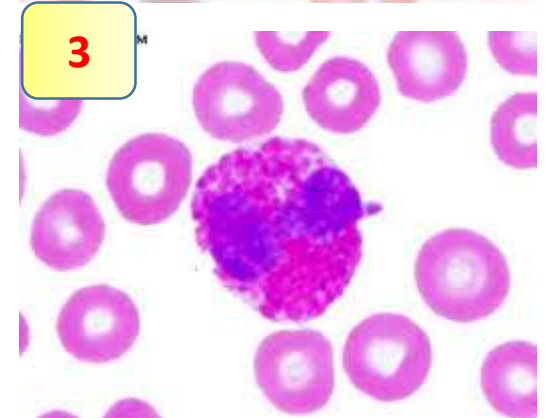
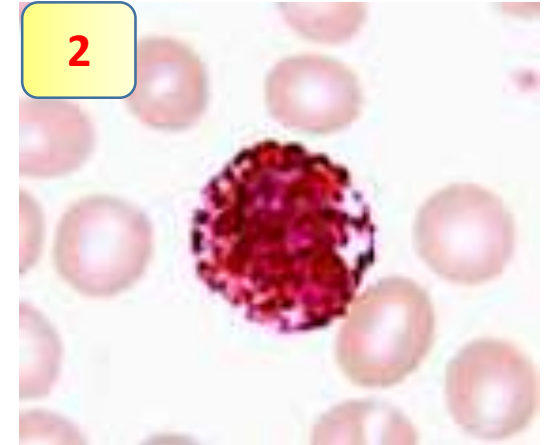
RBCs has (7.5) Diameter

Blood Smear showing granulocytes

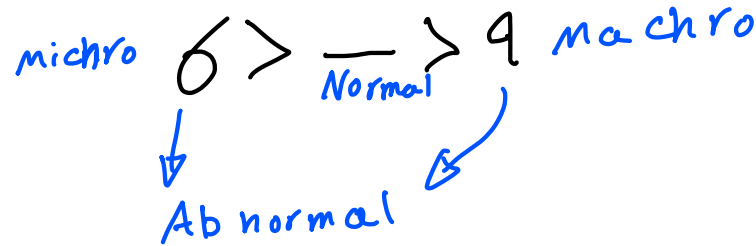
1. Neutrophil → Clear / واضح
2. Basophil → Dark color
3. Eosinophil

has two lobules

Compare the **nucleus** and the **color** of the specific granules of the above cells



Diameter of RBCs



دائما جنبہ ال (WBCs) فی (RBCs)

Granulocytes : (12-14)

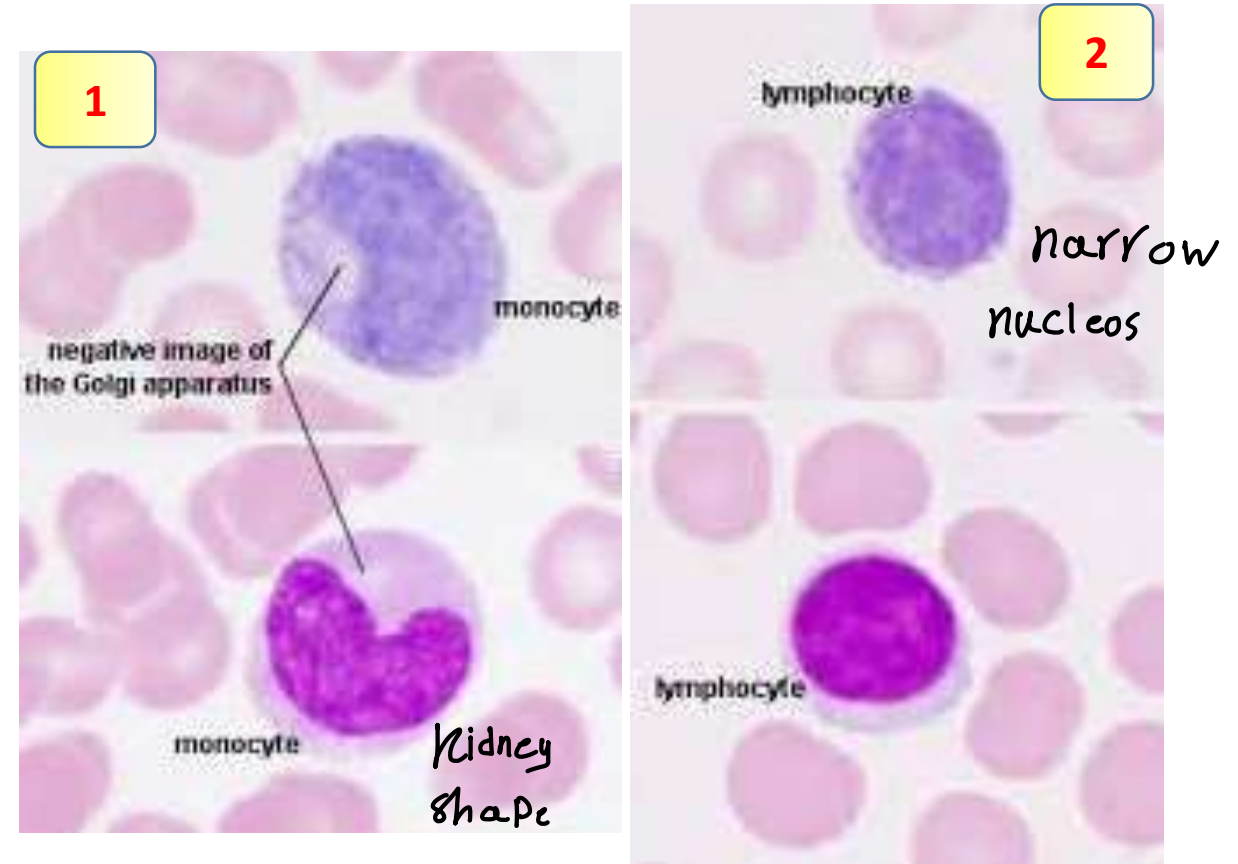
ضعف ال (RBCs)

Agranulocytes → Lymphocyte → small → (6-8)
→ Mono Cyte

Blood Smear

1. Monocyte with kidney-shaped or indented nucleus. Light area represent the location of Golgi Apparatus
2. Lymphocyte with round nucleus almost filling the cytoplasm

Compare the size of the above cells compared to RBC to realize their sizes



* ما في خلية بالجسم فيها (ovale granules) بهذا الشكل غير (1/2) فهل
تميز



Electron micrographs of

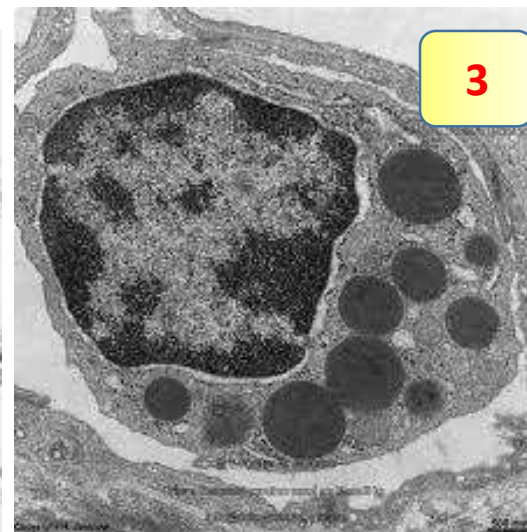
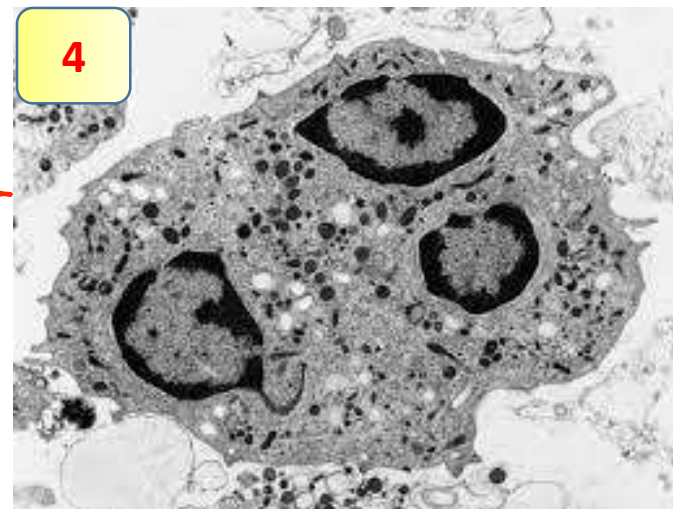
1. Eosinophil

2. Specific granules of eosinophil

3. Basophil ما في خلية غير (3) أشكال وأحجام

4. Neutrophil خلاياها مختلفة فهل التمييز

5. Compare the number and the size of the granules



* ما في خلية غير (4) فيها (Multiple lobule) فهل تميز



يا دفعة حياة اعرفوا انه امتحان الاناتومي لاب رح يبجي حسب كلام
الدكتور زياد من مصادر خارجية يعني صور خلايا من برا سلايداتنا
والدكتور قلنا بس خلصنا اللاب إسم موقعين نعتمدهم لدراسة الخلايا
وقلنا ننشرلكم اياهم
هيهم



①

www.Histology.umich.edu

②

Lucida virtual
microscopy

لا تنسوا الدعاء

لأهلنا في غزة

