

# Histology Mnemonics

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Compiled by→ Ussama Maqbool

**Vascular endothelium: simplified cross-section LIMA:**

Lumen

Intima

Media

Adventitia

**Organ of corti: location** The organ of COrti  
is inside the COchlea.

**Extracellular matrix components "HELP Form**

Collagen":

Hyaluronic acid

Elastin

Laminin

Proteoglycan

Fibronectin

Collagen

**Epiphyseal plate: zones "Real People Have**

Career Opportunities":

Resting zone

Proliferative zone

Hypertrophic zone

Calcified cartilage zone

Ossification zone

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**Collagen: location of types** Type One: **bONE**

Type Two: Car**Two**lage

Type Four: "**Four** on the **Floor**" [automotive transmission term]  
basement membrane (the "floor") is mostly Type IV collagen

**From cartilage to bone "Real People Have**

**Calcified Osses":**

**Resting zone** (reserves)

**Proliferation**

**Hypertrophy**

**Calcification**

**Ossification**

**Epipheseal plates "Rosa Parks Helped**

**Coloured Out":**

**Resting zone**

**Proliferative zonene**

**Hypertrophic zone**

**Calcificied cartilage**

**Osstification zone**

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**Autonomic Nervous System: Hypothalamic Control APPS:**

Anterior hypothalamic area controls **Parasympathetic** nervous system

Posterior hypothalamic area controls the **Sympathetic**.

**White blood cell relative concentrations "Never Let**

**Monkeys Eat Bananas":**

From greatest to least:

**Neutrophils** (65%)

**Lymphocytes** (25%)

**Monocytes** (6%)

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**Eosinophils (3%)**

**Basophils (1%)**

- Alternatively: "**N**ine **L**ittle **M**onkeys **E**ating **B**ananas".
- Alternatively: "**N**oone **L**ikes **M**y **E**ducational **B**ackground".
- Alternatively: "**N**ever **L**et **M**amma **E**at **B**eans".
- Can remember that **E**osinophils is **3%**, by the mirror image of **E** is **3**.

**Epidermis layers "Come, Let's Get Sun Burned":**

- From superficial to deep:

**Corneum**

**Lucidum**

**Granulosum**

**Spinosum**

**Basale [Germinativum]**

- Alternatively: "**C**an **L**ori **G**et **S**ome **G**as?"
- Alternatively: "**C**an **L**ittle **G**irls **S**peak **G**erman?"
- Alternatively: "**C**an **L**arry **G**et **S**ome **B**eer?"

**Adrenal cortex layers [for Florida Gator fans] "Gator Football Rocks!":**

- From outside inwards:

**Glomerulosa**

**Fasciculata**

**Reticularis**

By: Ussama Maqbool(N61)

**Epidermis layers "Bad Skin Gets Little Calluses":**

- From deep to superficial:

**Basale**

**Spinosum**

**Granulosum**

**Lucidum**

**Corneum**

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**Leukocytes: granulated and agranulated "BEN Loves**

**Money":**

· Granulocytes:

**Basophil**

**Eosinophil**

**Neutrophil**

· Agranulocytes:

**Lymphocytes**

**Monocytes**

· Alternatively: **Granpa BEN...** to keep the granulated group straight.

**Schwann cell only myelinates 1 axon** SchWANN = sounds like **ONE**.

A single **Schwann** cell only myelinates **one**PNS axon.

**Pituitary: anterior pituitary products: acidophilic vs basophilic**

· Acidophilic:

**GPA:**

**Growth hormone**

**Prolactin**

**Acidophilic**

· Basophilic:

**B-FLAT**

**Basophilic**

**FSH**

**LH**

**ACTH**

**TSH**

**Erythropoiesis stages "Powerful Businesses**

**Pollute Our Reeling Environment":**

**Proerythroblast**

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Basophilic erythroblast  
Polychromatic erythroblast  
Orthochromatophilic erythroblast  
Reticulocyte  
Erythrocyte

### **Basophil vs. eosinophils: effect for allergic persons**

**Basophils** are "**Bad-o-phils**" because they contribute to our allergic reactions.

**Eosinophils** are "**Easy-on-me-phils**" because they counteract our allergic reactions.

### **Muscle fiber: types · Type 1:**

**"1 slow fat red ox":**

- slow twitch
- lipid accumulation
- red fibers
- oxidative

· Type 2:

**"2 fast skinny white breasts":**

- fast twitch
- low lipid
- white fibers, like chicken breasts

By: Ussama Maqbool(N61)

**Muscle sarcomere: A vs. I as light or dark** There is only one vowel in "dark" and one vowel in "light".

These one vowels match up to their one letter names:

D**A**rk band is the **A** band.

L**I**ght band is the **I**band.

**Cochlea chambers: ones with perilymph vs. endolymph** Per**I**-ones also end with '**I**': vestibul**I** and tympan**I**.

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Therefore, perilymph is in scala vestibuli and scala tympani, and the endolymph is in the scala media.

**Basophil morphology** Basophil has **Big Blue** Balls (granules).

**Muscle sarcomere: H line vs. Z disc location HAZI**  
(Hazy):  
**H** line is in **A**-band.  
**Z** disc is in the **I**band.

**Neutrophil's 2 distinctive physical features** 1: There's up to **5 lobes** of the nucleus joined by thin appendages. Tie this to it being a neutrophil nucleus by arranging the **5 lobes** into a **capital N for Neutrophil**.  
2: the **chicken** leg (Barr Body) sticking out. Say it out loud: **chick-N**. The chick-N leg is for Neutrophil.

**Taste buds: vallate vs. fungiform distribution** Cross sectional shape of the top of the bud tells their distribution.  
**Vallate**: has a shallow '**V**' at the top, so has a '**V**' distribution at the back of the tongue.  
**Fungiform**: top is **round** so it is towards the **round** end of the tongue.  
· See diagram.  
· Note vallate is also sometimes called circumvallate.

**Pancreatic exocrine cells: nuclei A** cells are indented around the capital **A**.  
**B** cells have a round nucleus like a **B** lymphocyte.  
· See diagram.  
**D** cells have **D**ifferent shapes and sizes.

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**Epidermis layers [for Star Trek fans] "Brent Spiner**

**Gained Lieutenant Commander":**

- From deep to superficial:

**Basale**

**Spinosum**

**Granulosum**

**Lucidum**

**Corneum**

**Muscle cells: cardiac vs. skeletal's nuclei location/number**

Nuclei location mirrors where the muscle is located in human body.

Heart muscle is in the **middle** of body, so heart muscle has nucleus in **middle**.

Skeletal muscles are at **periphery** of body, so nuclei are at **periphery**.

Also, you have 1 heart, so usually only 1 nucleus per heart muscle cell, but have many skeletal muscles, so have many nuclei per long fibre.

**Muscle sarcomere bands "Zee Intelligent Animal  
Has Muscle":**

- From the Z disk, working inward, remembering symmetry:

**Z I A H M H A I Z.**

- Alternatively: "Zoe Is A Horny Momma".

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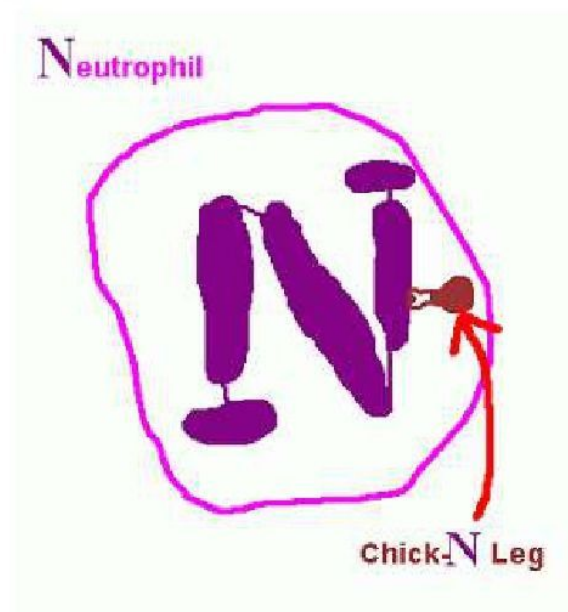


FIG1

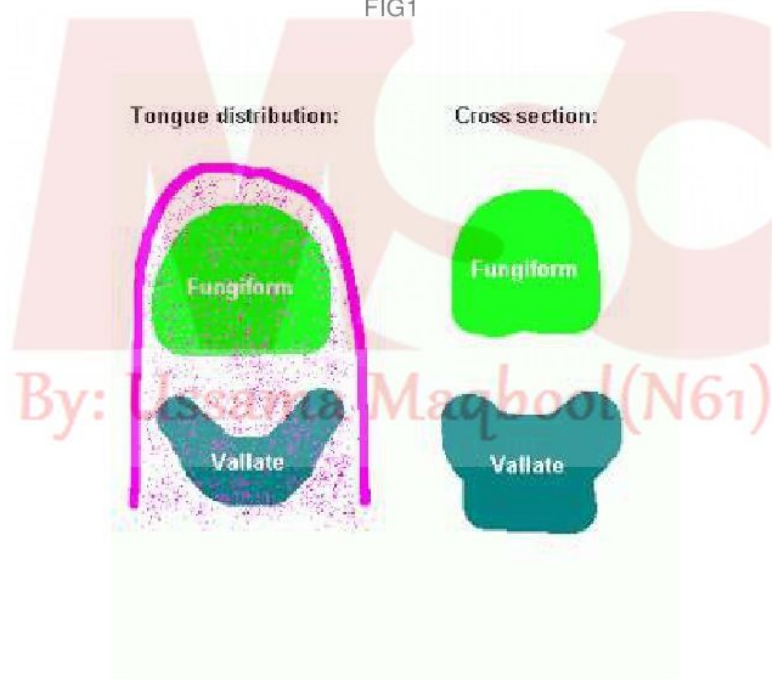


FIG2



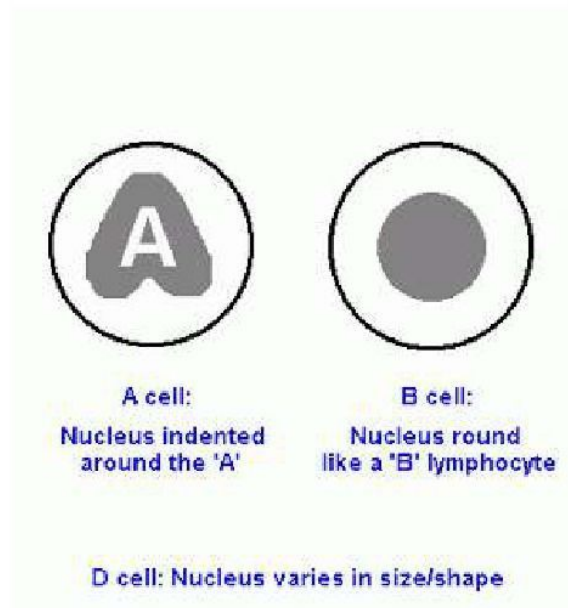


FIG3

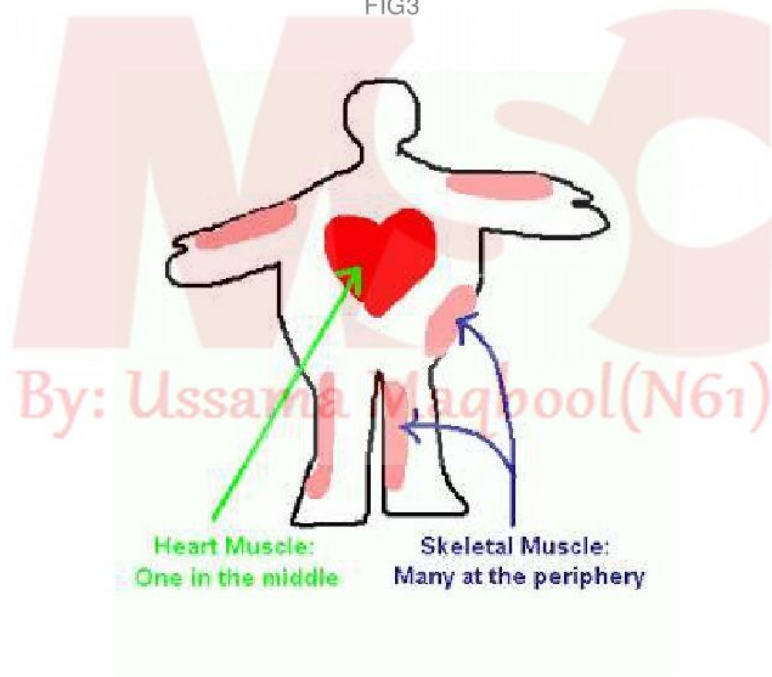


FIG4

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Therefore, perilymph is in scala vestibuli and scala tympani, and the endolymph is in the scala media.

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Basophil has **B**ig **B**lue **B**alls (granules).

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1: There's up to **5 lobes** of the nucleus joined by thin appendages. Tie this to it being a neutrophil nucleus by arranging the **5 lobes** into a capital **N** for **Neutrophil**.

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SEE FIG1

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- See diagram.
- Note vallate is also sometimes called circumvallate.

SEE FIG2

### Pancreatic exocrine cells: nuclei

**A** cells are indented around the capitol **A**.

**B** cells have a round nucleus like a **B** lymphocyte.

- See diagram.

**D** cells have **D**ifferent shapes and sizes.

SEE FIG3

### Epidermis layers [for Star Trek fans]

"**B**rent **S**piner **G**ained **L**ieutenant **C**ommander":

- From deep to superficial:

**B**asale

**S**pinosum

**G**ranulosum

**L**ucidum

**C**orneum

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- See diagram. FIG4

### Muscle sarcomere bands

"**Z**ee **I**ntelligent **A**nimal **H**as **M**uscle":

- From the Z disk, working inward, remembering symmetry:

**Z I A H M H A I Z**.

- Alternatively: "**Z**oe **I**s **A** **H**orny **M**omma".

### White blood cell relative concentrations

"**N**ever **L**et **M**onkeys **E**at **B**ananas":

From greatest to least:

**N**eutrophils (65%)

**L**ymphocytes (25%)

**M**onocytes (6%)

**E**osinophils (3%)

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- Alternatively: "**N**ine **L**ittle **M**onkeys **E**ating **B**ananas".
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- Can remember that **E**osinophils is **3**%, by the mirror image of **E** is **3**.

### Epidermis layers

"**C**ome, **L**et's **G**et **S**un **B**urned":

- From superficial to deep:

**C**orneum

**L**ucidum

**G**ranulosum

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**Spinosum**

**Basale [Germinativum]**

- Alternatively: "**Can Lori Get Some Gas?**"
- Alternatively: "**Can Little Girls Speak German?**"
- Alternatively: "**Can Larry Get Some Beer?**"

### **Adrenal cortex layers [for Florida Gator fans]**

**"Gator Football Rocks!":**

- From outside inwards:

**Glomerulosa**

**Fasciculata**

**Reticularis**

### **Epidermis layers**

**"Bad Skin Gets Little Calluses":**

- From deep to superficial:

**Basale**

**Spinosum**

**Granulosum**

**Lucidum**

**Corneum**

By: Ussama Maqbool(N61)

### **Leukocytes: granulated and agranulated**

**"BEN Loves Money":**

- Granulocytes:

**Basophil**

**Eosinophil**

**Neutrophil**

- Agranulocytes:

**Lymphocytes**

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**Monocytes**

- Alternatively: **Granpa BEN...** to keep the granulated group straight.

### Schwann cell only myelinates 1 axon

Sch**WANN** = sounds like **ONE**.

A single **Schwann** cell only myelinates **one** PNS axon.

### Pituitary: anterior pituitary products: acidophilic vs basophilic

- Acidophilic:

**GPA:**

**G**rowth hormone

**P**rolactin

**A**cidophilic

- Basophilic:

**B-FLAT**

**B**asophilic

**F**SH

**L**H

**A**CTH

**T**SH

**MS**  
By: Ussama Maqbool(N61)

### Erythropoiesis stages

"**P**owerful **B**usinesses **P**ollute **O**ur **R**eeling **E**nvironment":

**P**roerythroblast

**B**asophilic erythroblast

**P**olychromatic erythroblast

**O**rthochromatophilic erythroblast

**R**eticulocyte

**E**rythrocyte

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### Basophil vs. eosinophils: effect for allergic persons

**Basophils** are "**Bad-o-phils**" because they contribute to our allergic reactions.

**Eosinophils** are "**Easy-on-me-phils**" because they counteract our allergic reactions.

### Muscle fiber: types

· Type 1:

"**1 slow fat red ox**":

-**slow** twitch

-**lipid** accumulation

-**red** fibers

-**oxidative**

· Type 2:

"**2 fast skinny white breasts**":

-**fast** twitch

-**low lipid**

-**white** fibers, like chicken **breasts**

### Vascular endothelium: simplified cross-section

**LIMA:**

**Lumen**

**Intima**

**Media**

**Adventitia**

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### Organ of corti: location

The organ of **Corti**  
is inside the **Cochlea**.

### Extracellular matrix components

"**HELP Form Collagen**":

**Hyaluronic acid**

**Elastin**

**Laminin**

**Proteoglycan**

**Fibronectin**

**Collagen**

### Epiphyseal plate: zones

"Real People Have Career Opportunities":

Resting zone

Proliferative zone

Hypertrophic zone

Calcified cartilage zone

Ossification zone

### Collagen: location of types

Type One: bone

Type Two: Cartilage

Type Four: "Four on the Floor" [automotive transmission term] basement membrane (the "floor") is mostly Type IV collagen

### From cartilage to bone

"Real People Have Calcified Osses":

Resting zone (reserves)

Proliferation

Hypertrophy

Calcification

Ossification

### Epiphyseal plates

"Rosa Parks Helped Coloured Out":

Resting zone

Proliferative zone

Hypertrophic zone

Calcified cartilage

Ossification zone

### Autonomic Nervous System: Hypothalamic Control

APPS:

Anterior hypothalamic area controls Parasympathetic nervous system

Posterior hypothalamic area controls the Sympathetic.

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