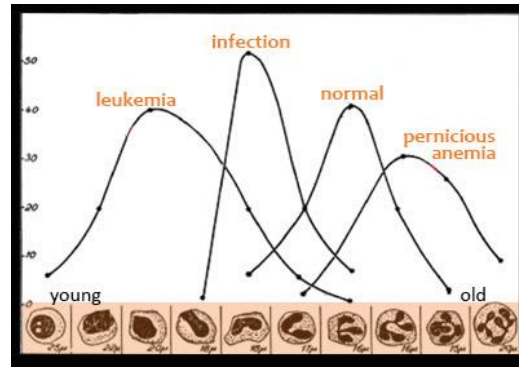


# Anatomy of a



# CBC



Left shift = Bandemia

**HI-Polycythemia >16**

- Dehydration
- Hypoxemia (ex. COPD, OSA, CHD, high altitude)
- Polycythemia vera

**LO- Anemia**  
transfuse @ hg=7

MCV<80  
- Iron deficiency

MCV>100  
- Folate or B12 deficiency

MCV=normal  
- Hemorrhage

- CBC
- WBC
- RBC
- Hg
- Hct
- MCH
- MCV
- RDW
- Plt
- MPV

WBC represent 5 different cell types found in the differential.

**HI- Leukocytosis >12**

- Demargination
- Infection
- Steroids
- Leukemia

**LO – Leukopenia <3**

- Chemo/radiation
- Nutrient def
- Sulfas
- Aplastic anemia



Platelets pieces of megakaryocytes responsible for clotting.  
No surgery <50 transfusion <20 Spontaneous Bleed <10

**LO – Thrombocytopenia<50**

- Liver Dz (ETOH)
- HELLP or DIC or HIT
- TTP or ITP

**HI- Thrombocytosis>450**

- Reactive Platelets
- Leukemia

No transfusion if TTP- will make worse!

Differential	
	<b>Neutrophils</b> Bacteria & fungi & acute phase inflam
	<b>Lymphocytes</b> Virus & autoimmune & tumor cells
	<b>Monocytes</b> Chronic inflam & long term
	<b>Eosinophils</b> Parasites & allergies
	<b>Basophils</b> Allergies & macroparasite & t cell regulation

## Morphology of RBC

	<b>Schistocyte</b> RBC fragments hemolytic process		<b>Codocyte/Target</b> liver dz, Fe def, no spleen		<b>Echinocyte/Burr</b> renal dz or artifact evenly spaced projections
	<b>Howell-Jolly Body</b> nucleus remnant no spleen fxn		<b>Dacrococytes/Teardrop</b> bone marrow infiltration		<b>Acanthocyte/Spur</b> liver dz irreg projections