

Chapter 9

1

ALLERGY

Allergy

TH2

B-cell

IgE antibodies

mast cell/basophil

histamine, prostaglandins, leukotrienes...

AlliA

allergen

negative

positive

2

ANAPHYLAXIS

SIGNS and SYMPTOMS of ANAPHYLAXIS

Breathing
Coughing, shortness of breath, wheezing, chest pain or tightness, tightening of throat, difficulty swallowing

Skin
Hives, swelling, redness, redness, warmth

Brain
Dizziness, confusion, headache, feeling that something is about to happen

Heart
Rapid

Eyes
Itchy, pain in the eyes, itching, redness, swelling

Stomach
Nausea, vomiting, diarrhea, stomach pain or cramps

GIVE EPINEPHRINE & CALL 911

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ANTIBODIES

Antigen

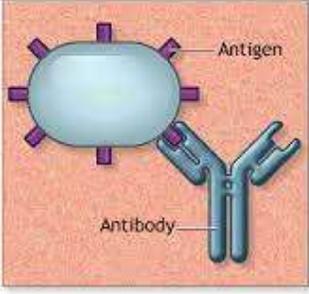
Antibody

An antibody is a protein produced by the immune system in response to the presence of an antigen.

ADAM

4

ANTIGENS

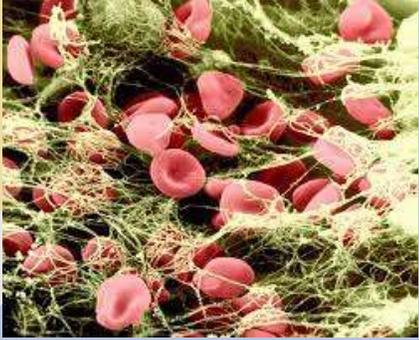


An antibody is a protein produced by the immune system in response to the presence of an antigen.

ADAM

5

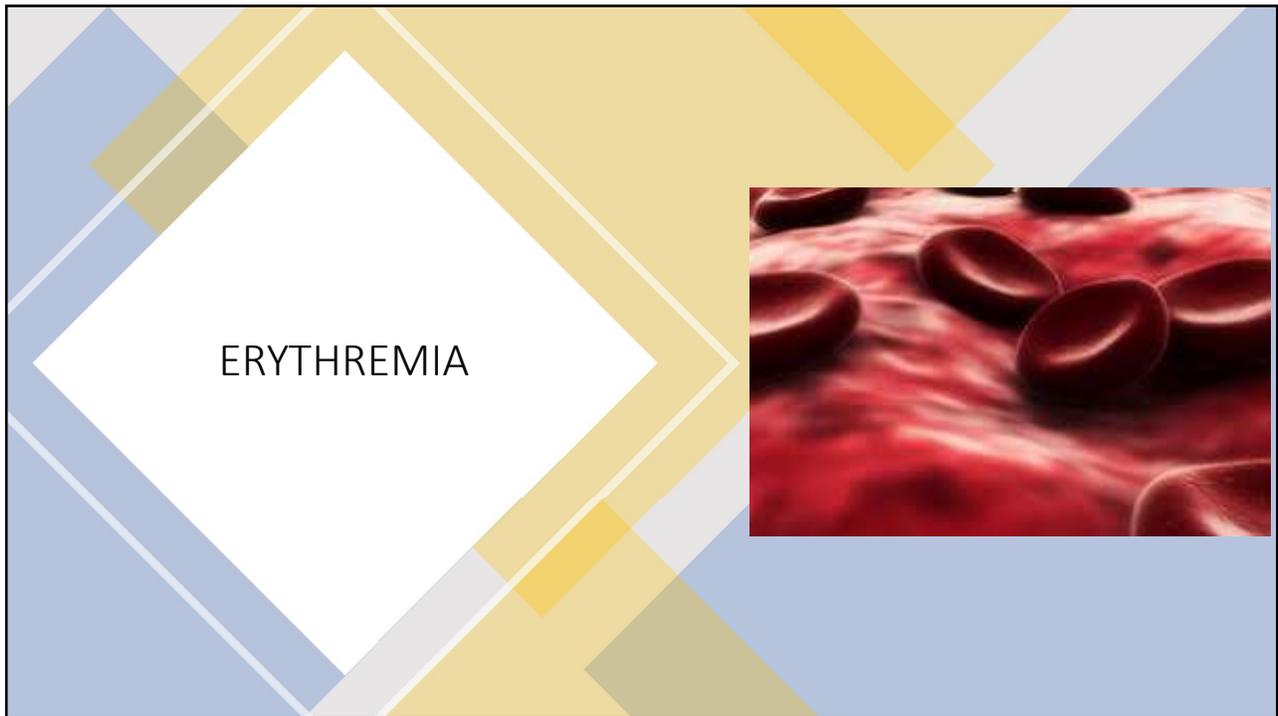
COAGULATION



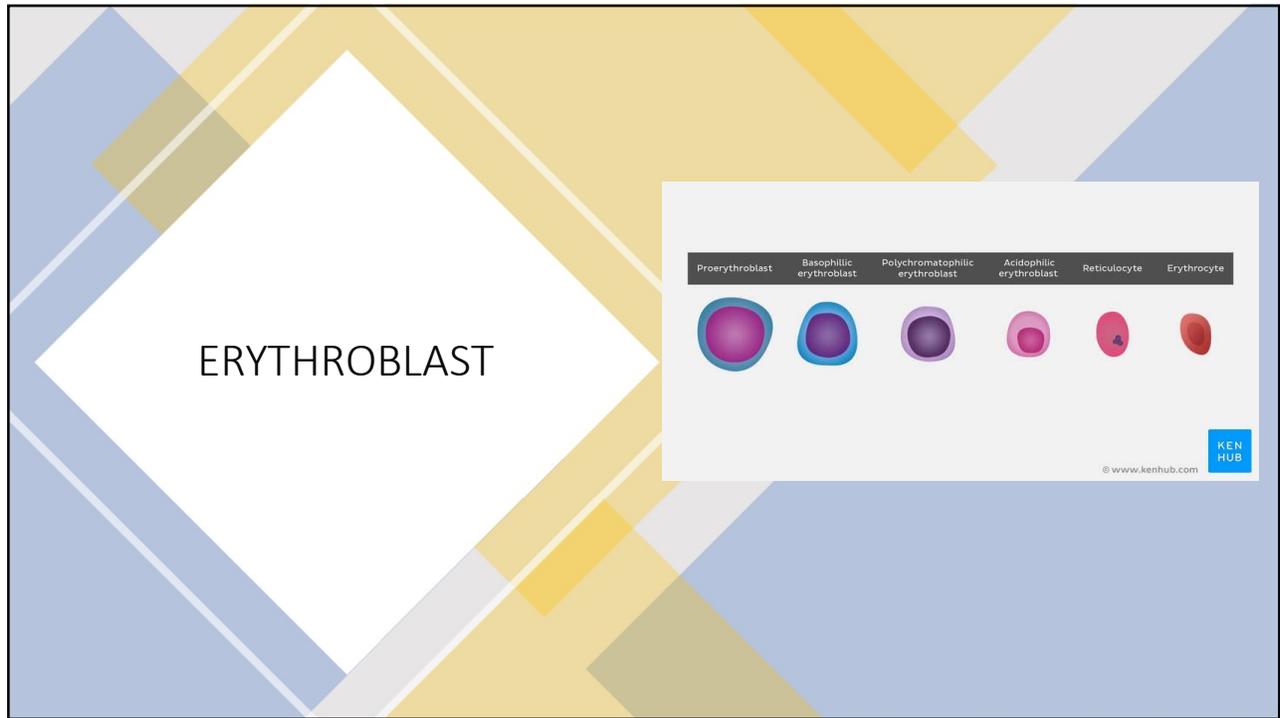
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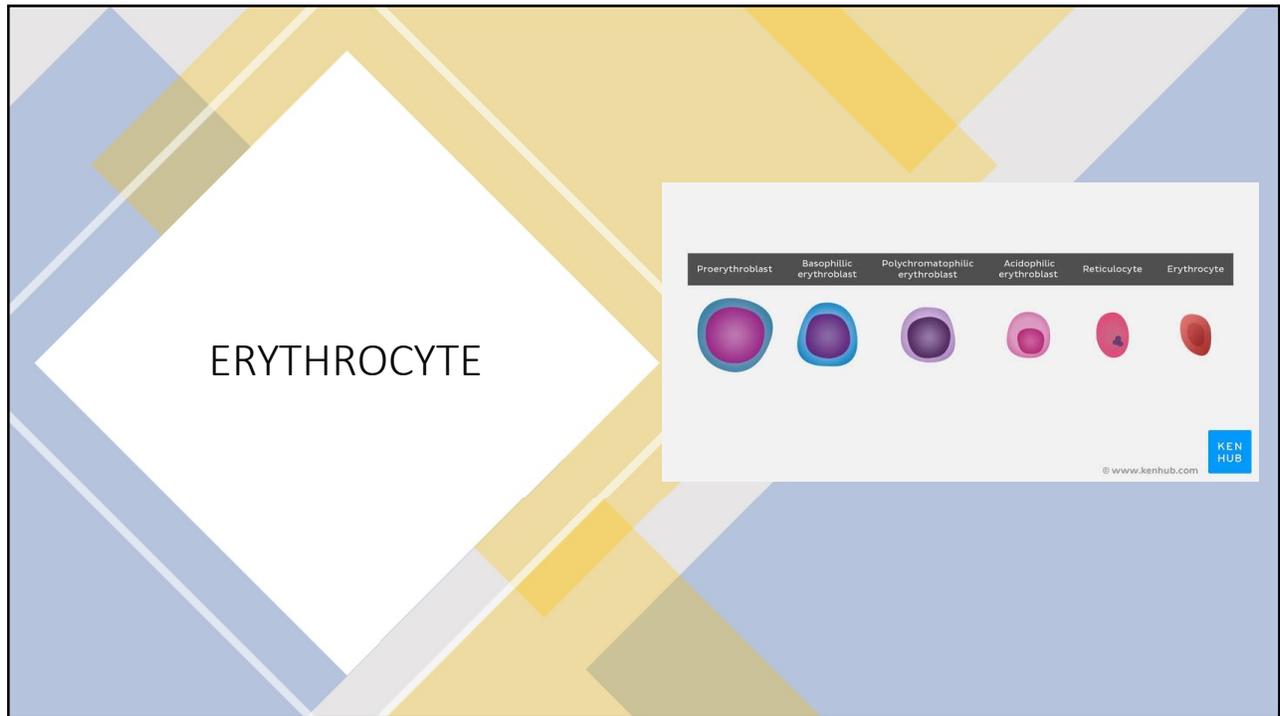
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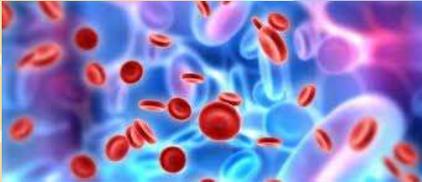
HEMATOLOGIST



A laboratory technician wearing a white lab coat, a face mask, and blue gloves is working in a laboratory. They are holding a test tube and looking at it. In the background, there is a DNA double helix model and various laboratory equipment like beakers and test tubes.

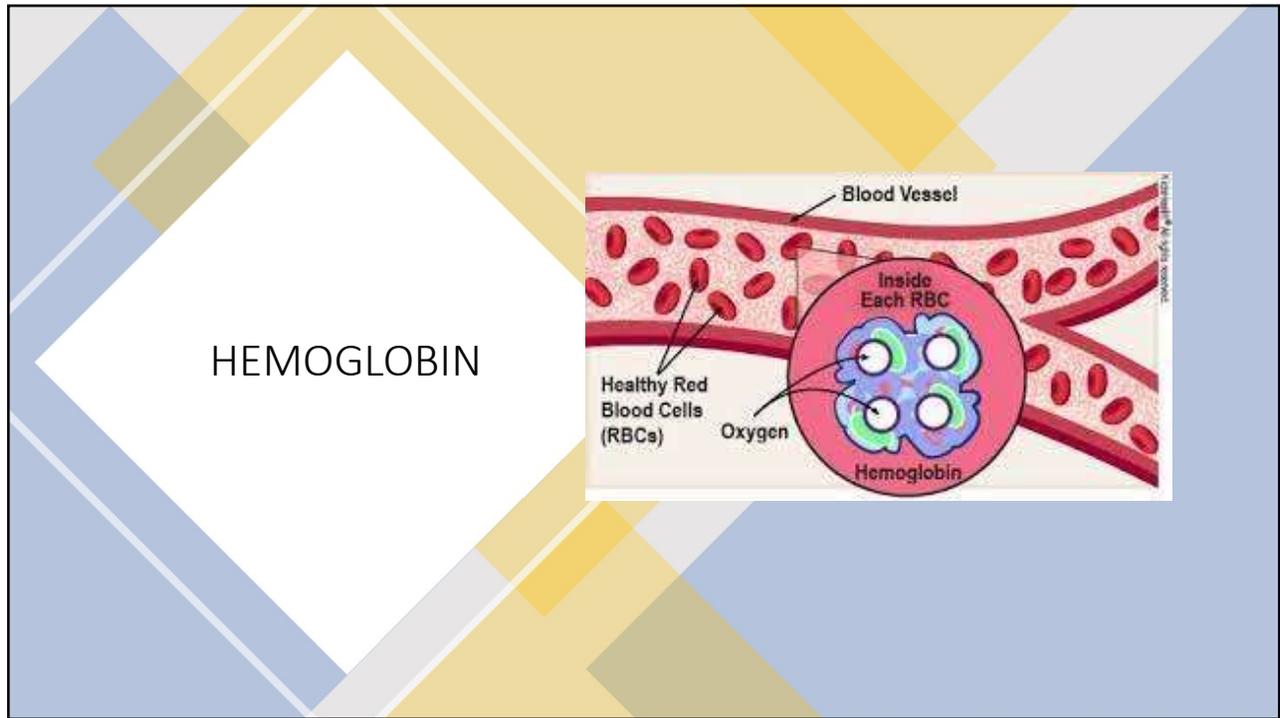
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HEMATOLOGY

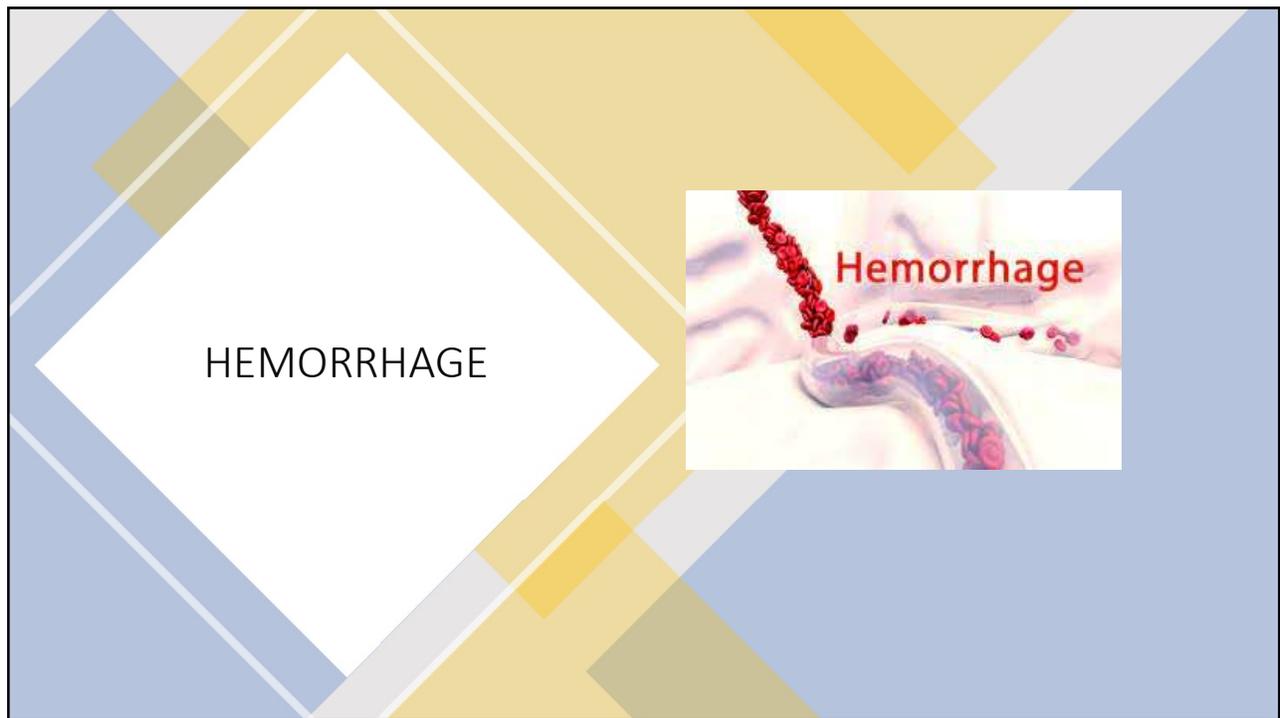


A microscopic view of blood cells. Red blood cells are visible as small, red, biconcave discs. White blood cells are larger and have a prominent nucleus. The background is a mix of blue and purple colors.

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HEMOSTASIS

The diagram illustrates the three stages of hemostasis:

- (a) Vessel injury and vascular spasm:** Shows a cross-section of a blood vessel with an injury. Labels include "Vessel injury", "Platelet", and "Endothelial cells".
- (b) Platelet plug formation:** Shows platelets aggregating at the site of injury. Labels include "Platelet plug" and "Collagen fibers".
- (c) Blood clotting:** Shows the final stage where a mesh of fibrin fibers traps red blood cells to form a solid clot. Labels include "Fibrin" and "Blood clotting".

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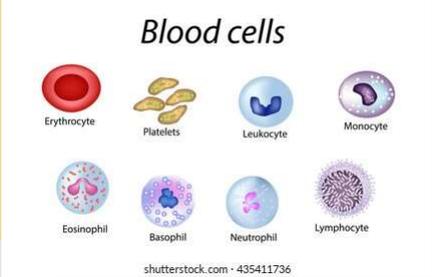
HEPARIN

A photograph of a small glass vial with a yellow cap. The label on the vial reads: "Heparin Sodium Injection, USP 1,000 USP units per mL. NOT FOR ORAL USE. Antithrombotic/ Subcutaneous Use. Ent. Single-Dose Vial".

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LEUKOCYTE

Blood cells



Erythrocyte Platelets Leukocyte Monocyte
Eosinophil Basophil Neutrophil Lymphocyte

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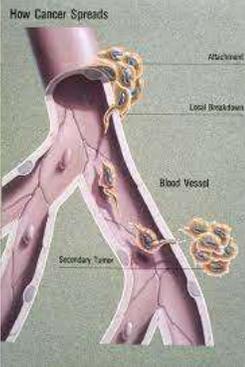
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LYMPHEDEMA



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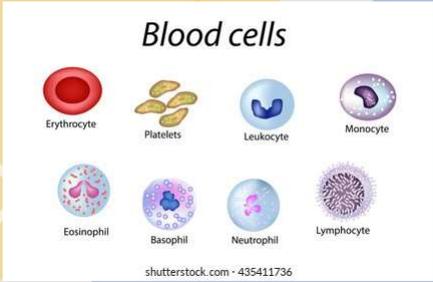
METASTASIZE



The diagram illustrates the process of cancer metastasis. It shows a primary tumor (represented by yellow and orange cells) attaching to a blood vessel. The cancer cells then undergo local breakdown, travel through the blood vessel, and eventually form a secondary tumor at a distant site.

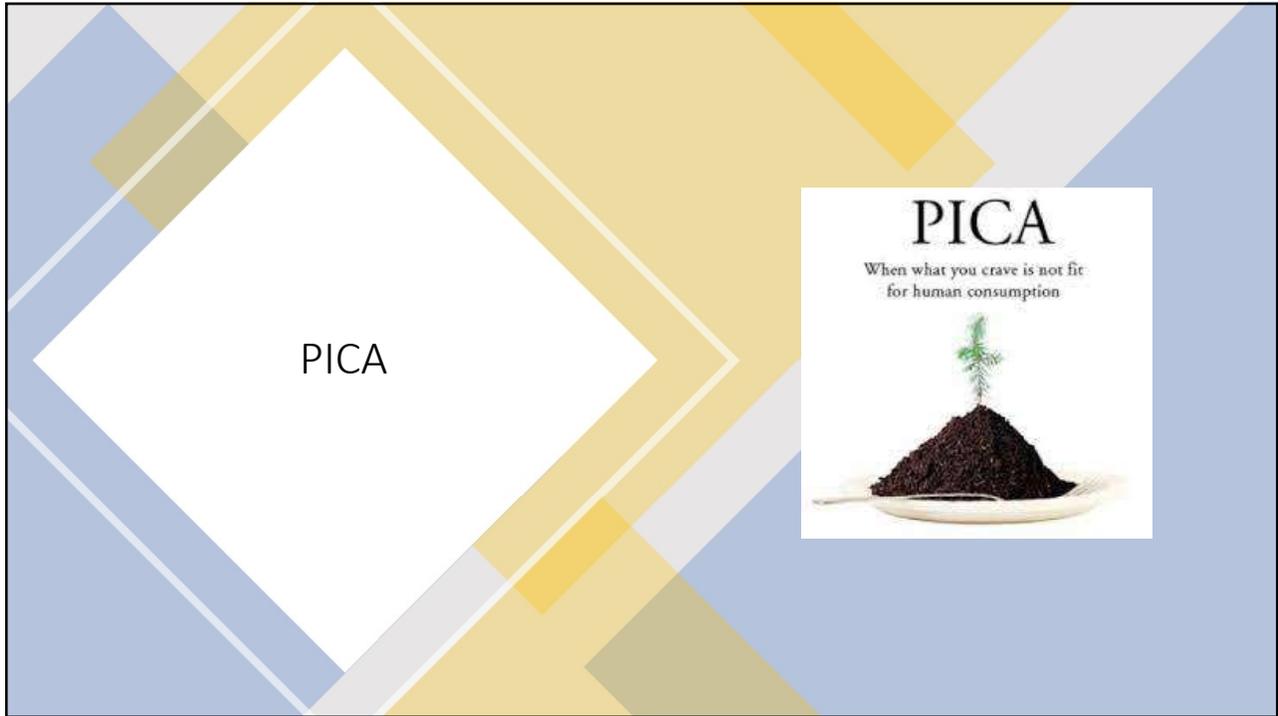
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MONOCYTE



The diagram displays eight types of blood cells: Erythrocyte (red blood cell), Platelets (small, yellowish cells), Leukocyte (white blood cell), Monocyte (large white blood cell with a kidney-shaped nucleus), Eosinophil (granular white blood cell), Basophil (granular white blood cell), Neutrophil (granular white blood cell), and Lymphocyte (small white blood cell). The source is cited as shutterstock.com - 435411736.

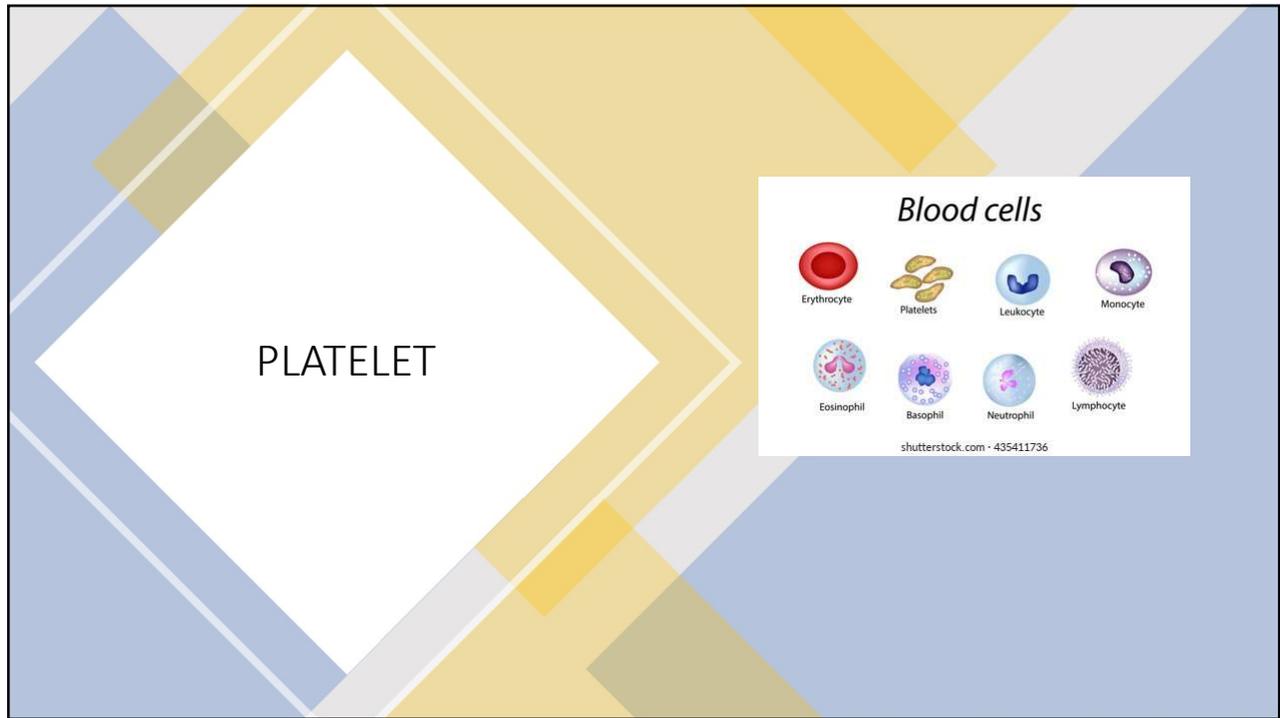
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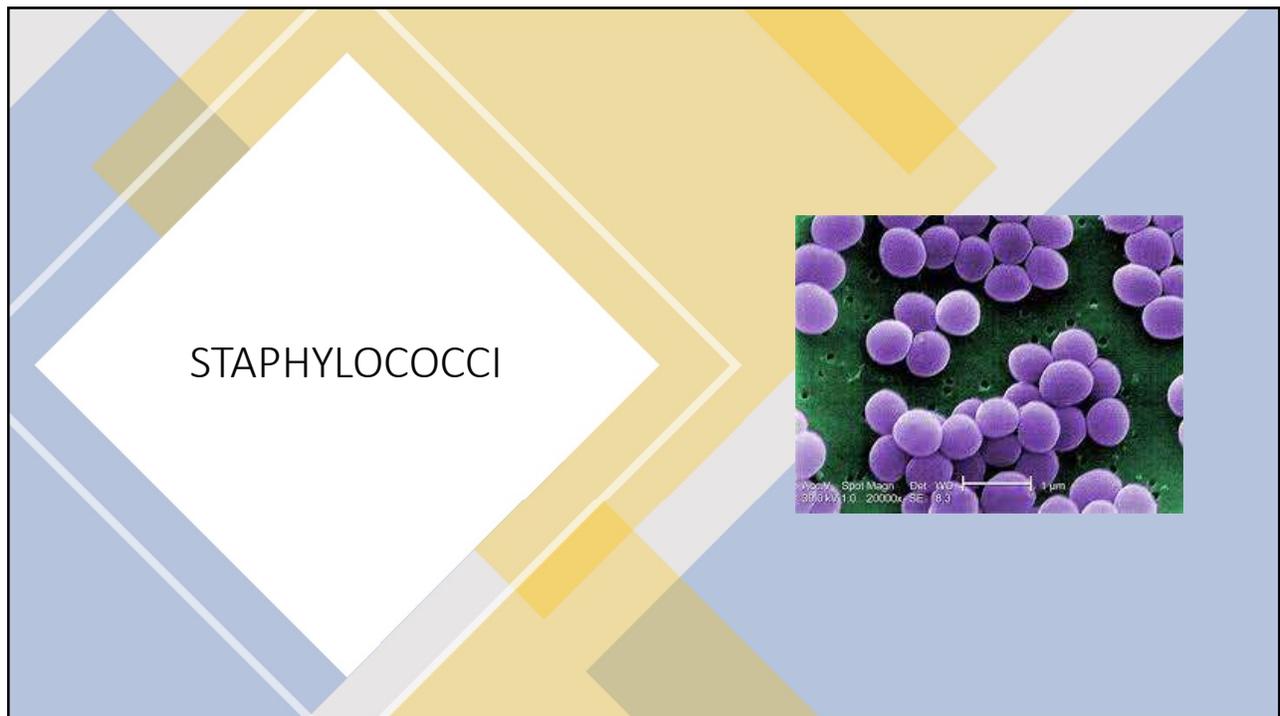
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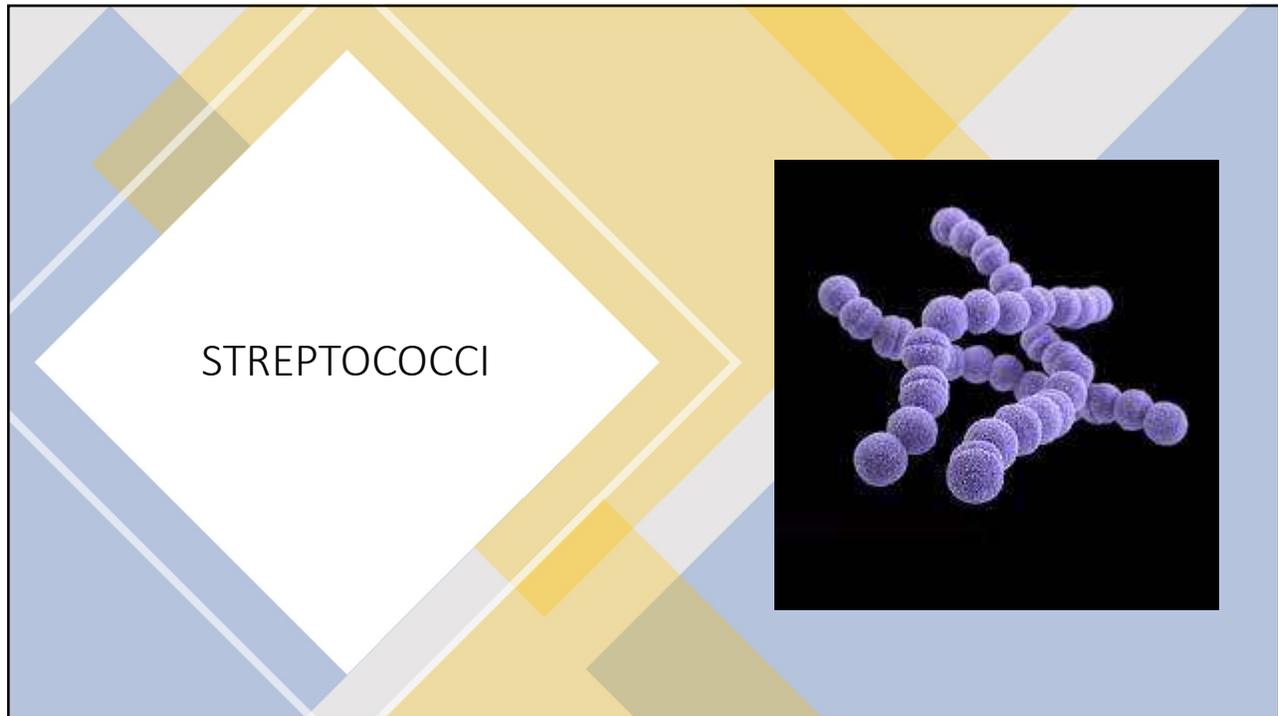
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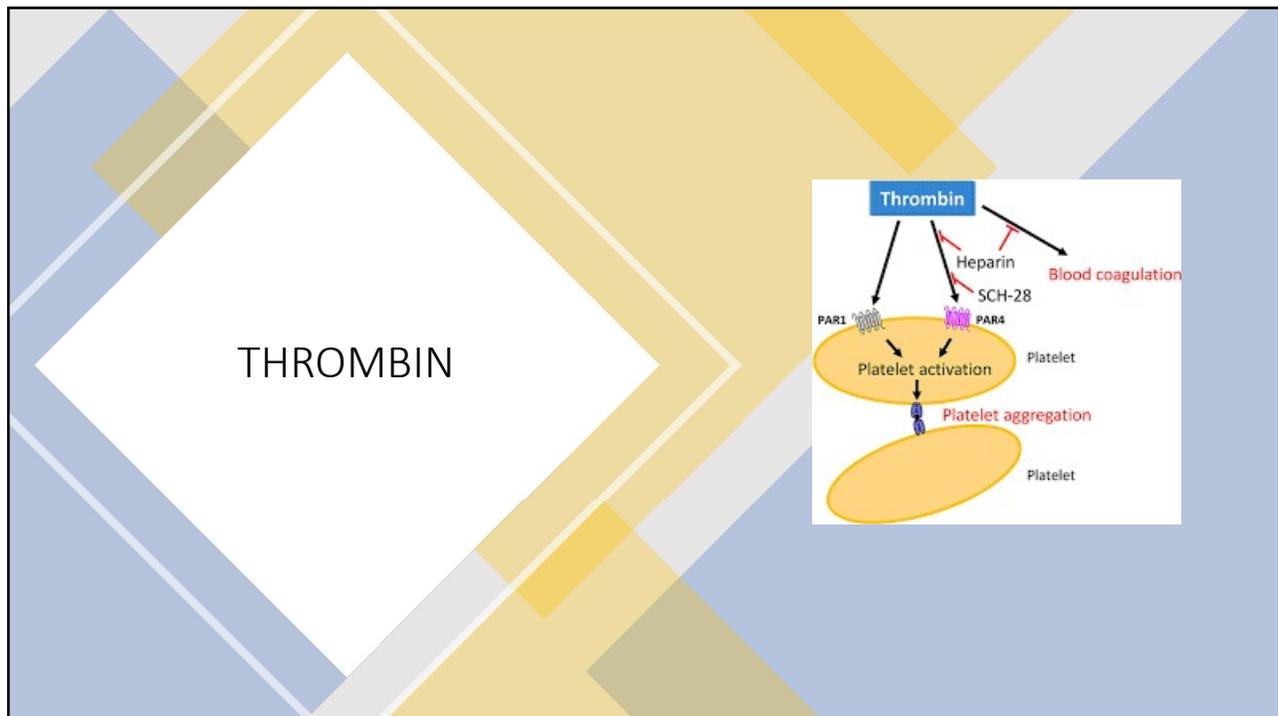
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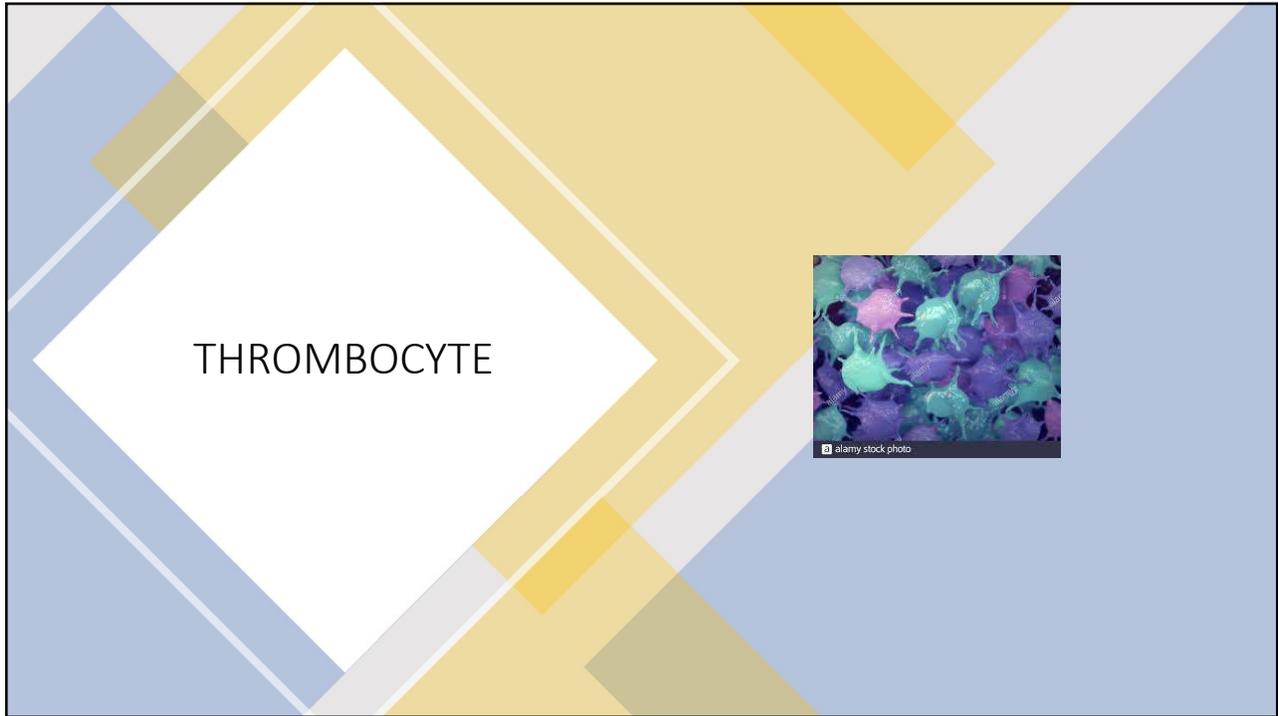
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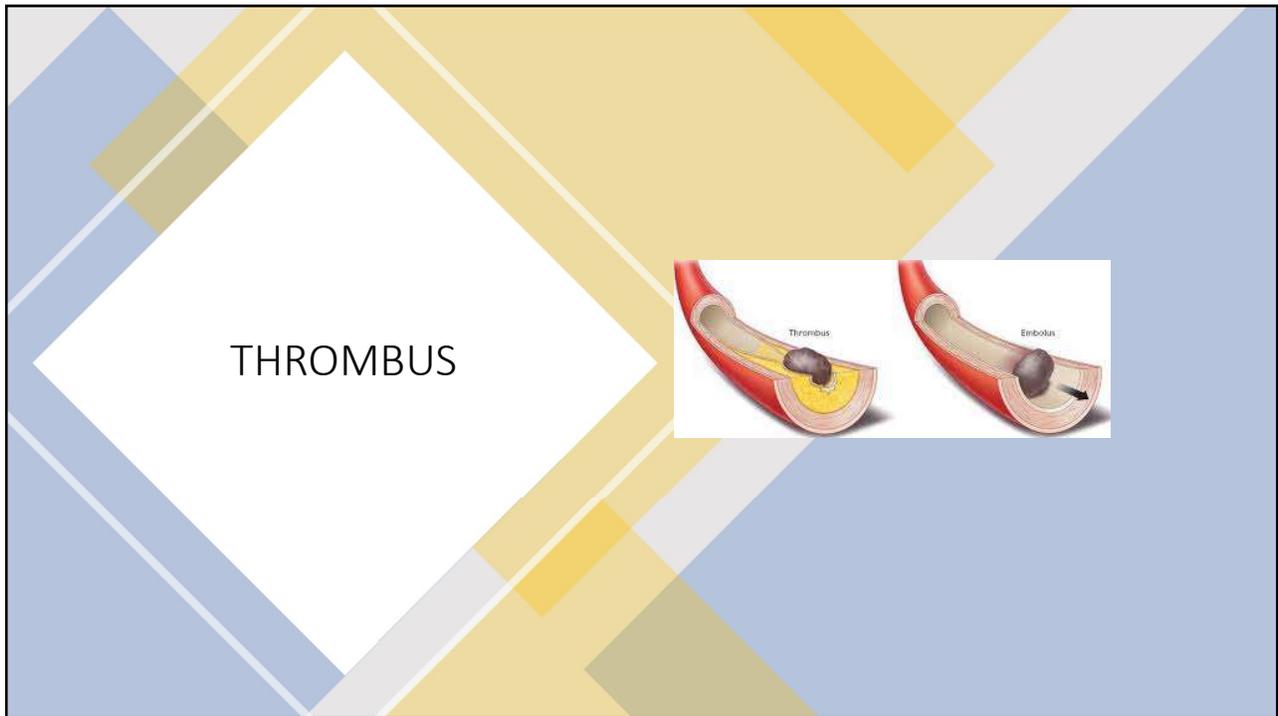
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WORD ELEMENTS

Agglutin/o	Bas/o	Coagul/o	-cocci
Cyt/o	-emia	erythr/o	-globin
hem/o	hemat/o	leuk/o	-lytic
mono-	myel/o	nucle/o	-oid
-penia	-phoresis	-stasis	thromb/o

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ANEMIA

Many red blood cells

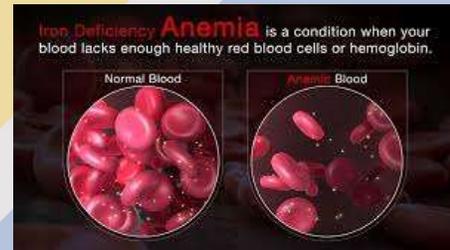
Fewer red blood cells

Normal hemoglobin

Low hemoglobin

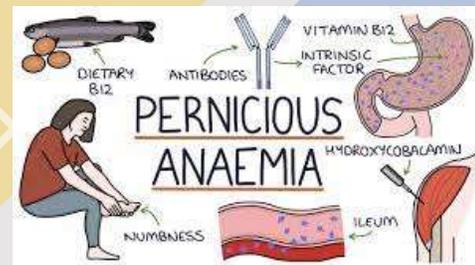
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ANEMIA IRON DEFICIENCY



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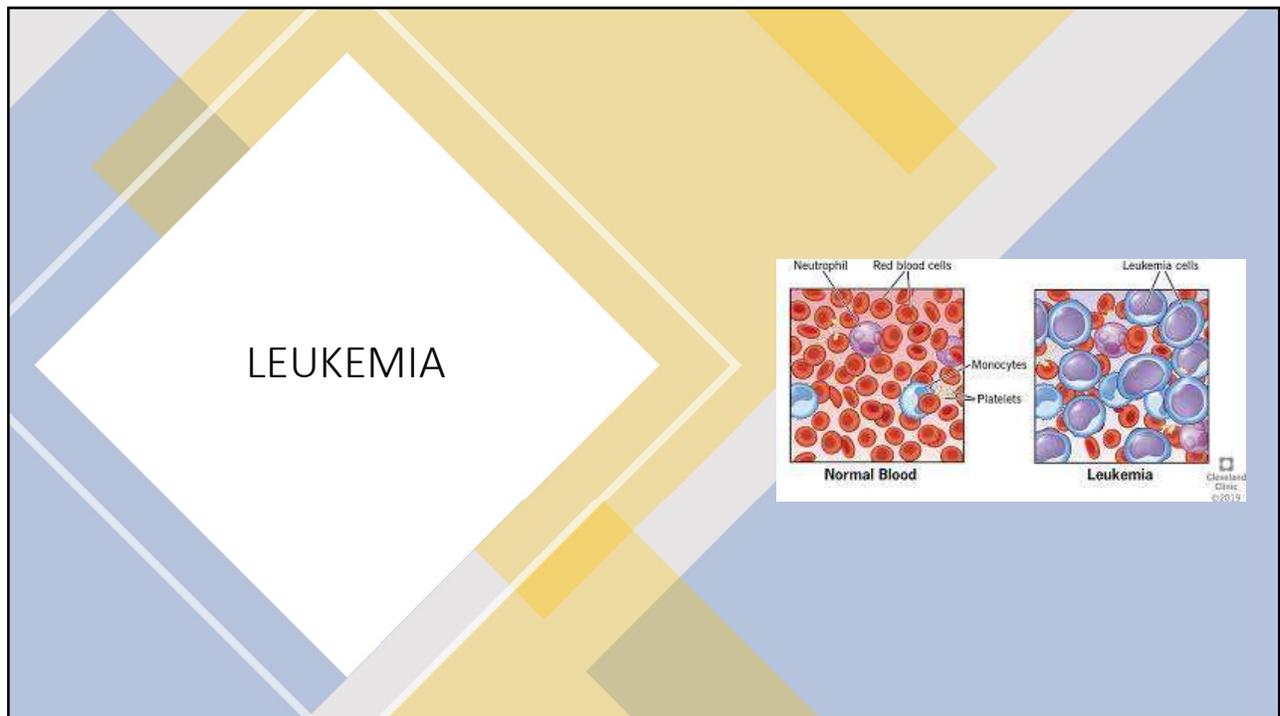
ANEMIA PERNICIOUS



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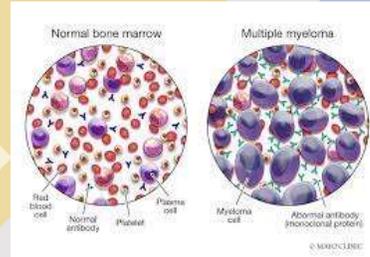


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MULTIPLE MYELOMA



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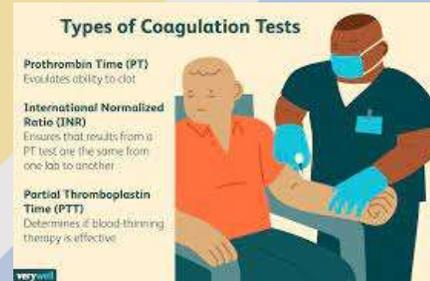
COMPLETE BLOOD CELL COUNT (CBC)

The image shows a hand in a blue glove holding a red blood test tube. Next to it is a printed report for a Complete Blood Count (CBC) and Differential. The report includes the following data:

CBC		
WBC	5.88	[10 ⁹ /L]
RBC	4.45	[10 ¹² /L]
HGB	136	[g/L]
HCT	0.396	[L/L]
MCV	89.0	[fL]
MCH	156.6	[pg]
MCHC	343	[g/dL]
RDW-CV	17.3	[%]
PLT	173	[10 ⁹ /L]
MPV	100	[fL]
Differential		
NEUT	3.47	[10 ⁹ /L]
LYMPH	1.96	[10 ⁹ /L]
MONO	0.31	[10 ⁹ /L]
EO	0.11	[10 ⁹ /L]
BASO	0.02	[10 ⁹ /L]
IG	0.01	[10 ⁹ /L]
NRBC	0.0	[/100WBC]

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PROTHROMBIN TIME (PT)



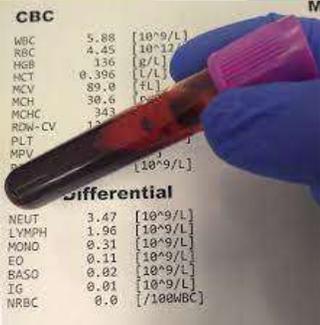
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RED BLOOD CELL COUNT (RBC)

CBC		
WBC	5.88	[10 ⁹ /L]
RBC	4.45	[10 ¹² /L]
HGB	136	[g/L]
HCT	0.396	[L/L]
MCV	89.0	[fL]
MCH	30.6	[pg]
MCHC	343	[g/dL]
RDW-CV	13.7	[%]
PLT		[10 ⁹ /L]
MPV		[fL]
PDW		[fL]
Differential		
NEUT	1.47	[10 ⁹ /L]
LYMPH	1.96	[10 ⁹ /L]
MONO	0.31	[10 ⁹ /L]
EO	0.11	[10 ⁹ /L]
BASO	0.02	[10 ⁹ /L]
IG	0.01	[10 ⁹ /L]
NRBC	0.0	[/100WBC]

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WHITE BLOOD CELL COUNT (WBC)



CBC		
WBC	5.88	[10 ⁹ /L]
RBC	4.45	[10 ¹² /L]
HGB	136	[g/L]
HCT	0.396	[L/L]
MCV	89.0	[fL]
MCH	30.6	[pg]
MCHC	343	[g/dL]
RDW-CV	13.2	[%]
PLT		
MPV		[10 ⁹ /L]
Differential		
NEUT	1.47	[10 ⁹ /L]
LYMPH	1.96	[10 ⁹ /L]
MONO	0.31	[10 ⁹ /L]
EO	0.11	[10 ⁹ /L]
BASO	0.02	[10 ⁹ /L]
IG	0.01	[10 ⁹ /L]
NRBC	0.0	[/100WBC]

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ABBREVIATIONS

CBC

PA

PT

**RBC
WBC**

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ACQUIRED IMMUNITY

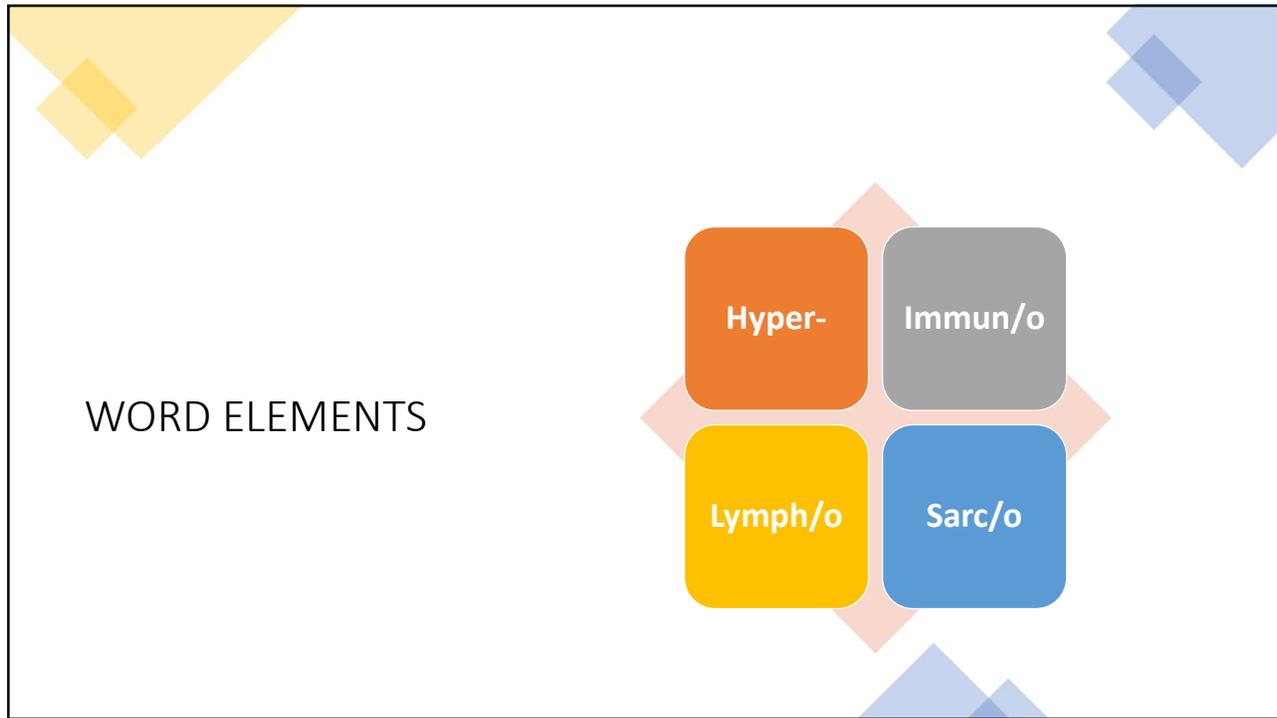
The infographic 'Acquired Immunity' is divided into two main categories: Active Immunity (Produced by Immune system) and Passive Immunity (No role of Immune system). Active Immunity is further split into Natural (Immune response generated against a pathogen) and Artificial (Vaccines). Passive Immunity is split into Natural (Colostrum (IgA), Foetus receiving Ab from mother via placenta (IgG)) and Artificial (ATS (Anti Tetanus serum), ADS (Anti Diphtheria serum)). The word 'HINDI' is written in a yellow box at the bottom right of the infographic.

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ADENOIDS

The anatomical diagram shows a profile of a child's head and neck. Labels include: 'Inside the Nose' pointing to the adenoid area, 'Normal Adenoid' and 'Swollen Adenoid' pointing to the adenoid tissue, 'Tonsil' pointing to the tonsil, 'Throat' pointing to the throat area, and 'Inside the Mouth' pointing to the oral cavity.

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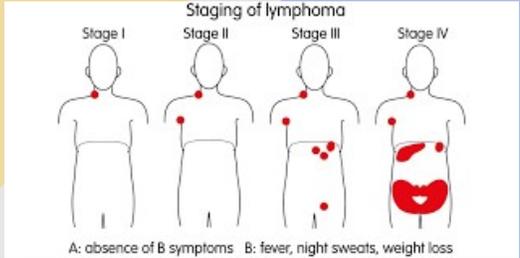
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ACQUIRED
IMMUNODEFICIENCY
SYNDROME (AIDS)

A graphic with a background of overlapping yellow and blue geometric shapes. In the center, the text "ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)" is displayed in black. To the right, there is a small rectangular image showing a red AIDS awareness ribbon on a wooden surface, with the word "AIDS" written in gold capital letters next to it.

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LYMPHOMA



The diagram illustrates the four stages of lymphoma using human silhouettes. Stage I shows a single red dot in the neck. Stage II shows two red dots in the neck. Stage III shows red dots in the neck and upper abdomen. Stage IV shows red dots in the neck, upper abdomen, and lower abdomen. A legend below indicates that 'A' represents the absence of B symptoms and 'B' represents fever, night sweats, and weight loss.

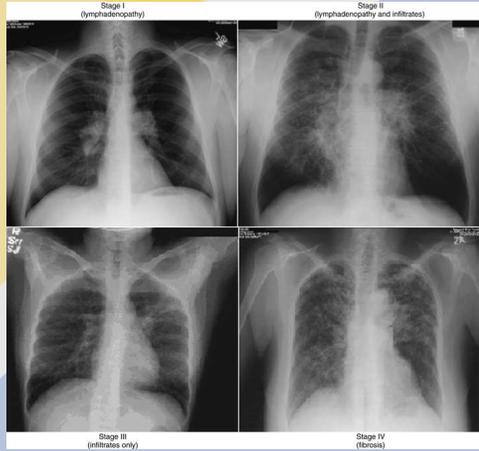
Staging of lymphoma

Stage I Stage II Stage III Stage IV

A: absence of B symptoms B: fever, night sweats, weight loss

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SARCOIDOSIS

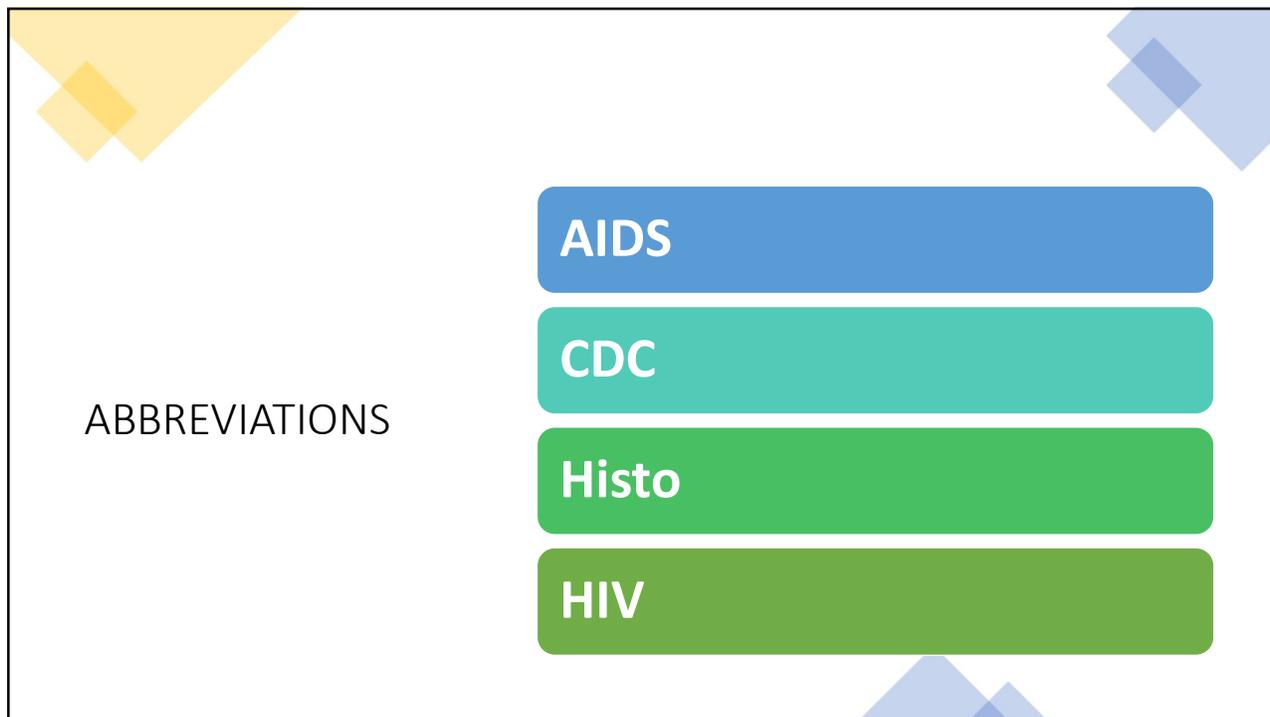


The image displays four chest X-rays illustrating the progression of sarcoidosis. Stage I shows lymphadenopathy. Stage II shows lymphadenopathy and infiltrates. Stage III shows infiltrates only. Stage IV shows fibrosis.

Stage I (lymphadenopathy) Stage II (lymphadenopathy and infiltrates)

Stage III (infiltrates only) Stage IV (fibrosis)

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ABBREVIATIONS

- AIDS
- CDC
- Histo
- HIV