JSC “Astana Medical University”
Department of Internal Diseases № 1

SIW

THEME:

“IRON DEFICIENCY ANEMIA”

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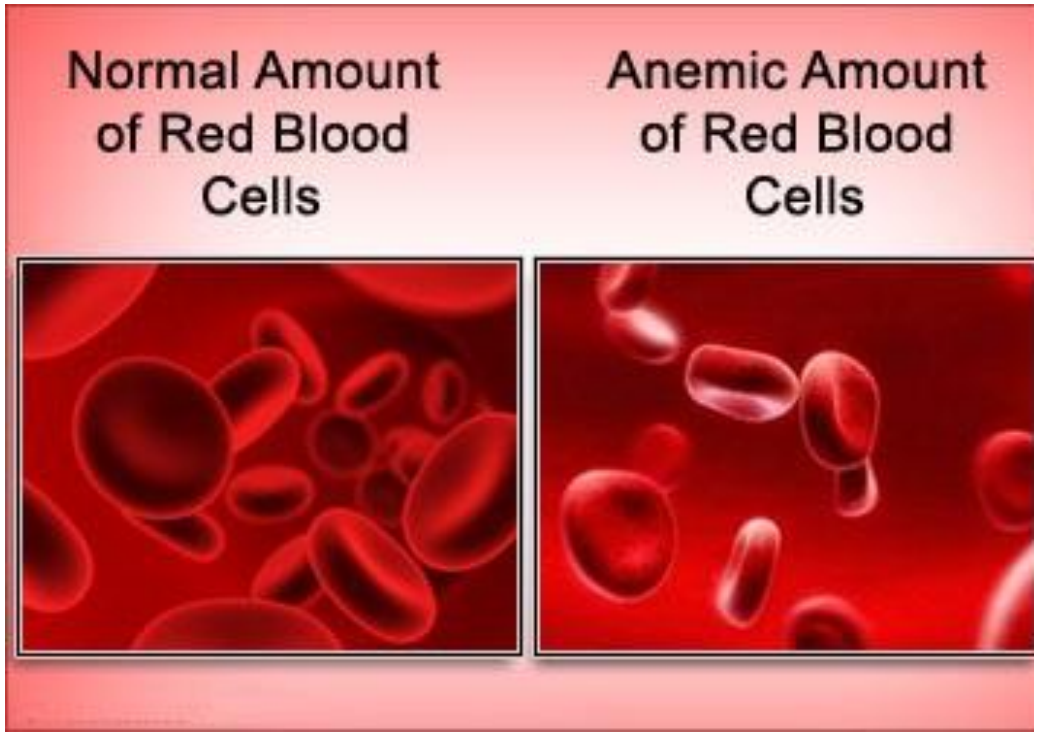
Astana 2018y.

Definition of IDA

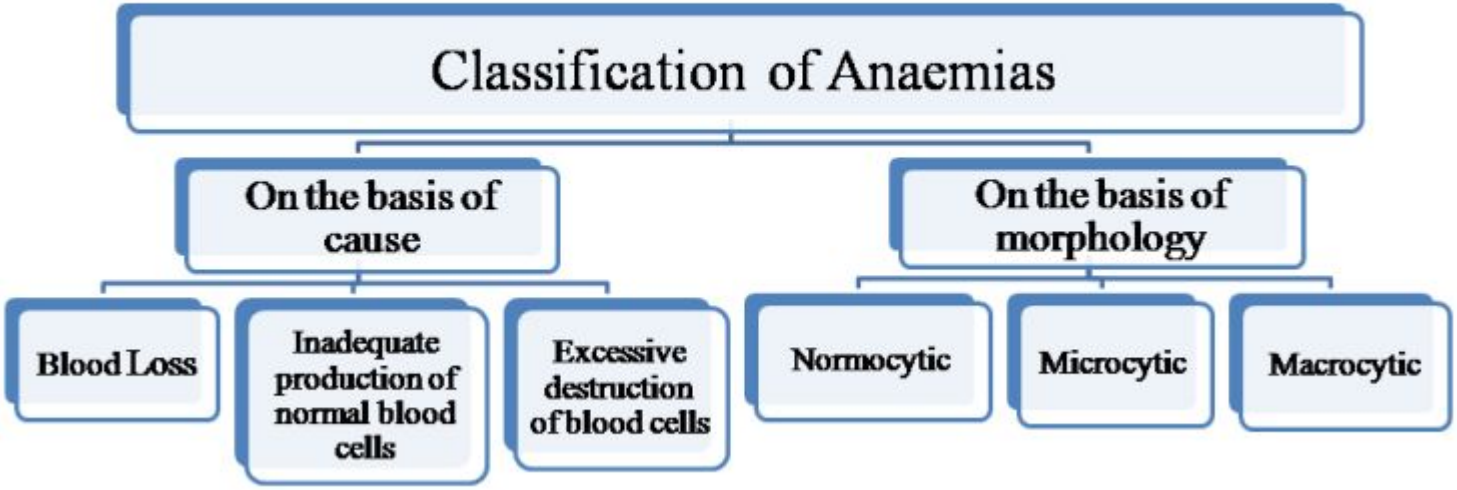
It is a common type of anemia — a condition in which blood lacks adequate healthy red blood cells. It is due to insufficient iron.



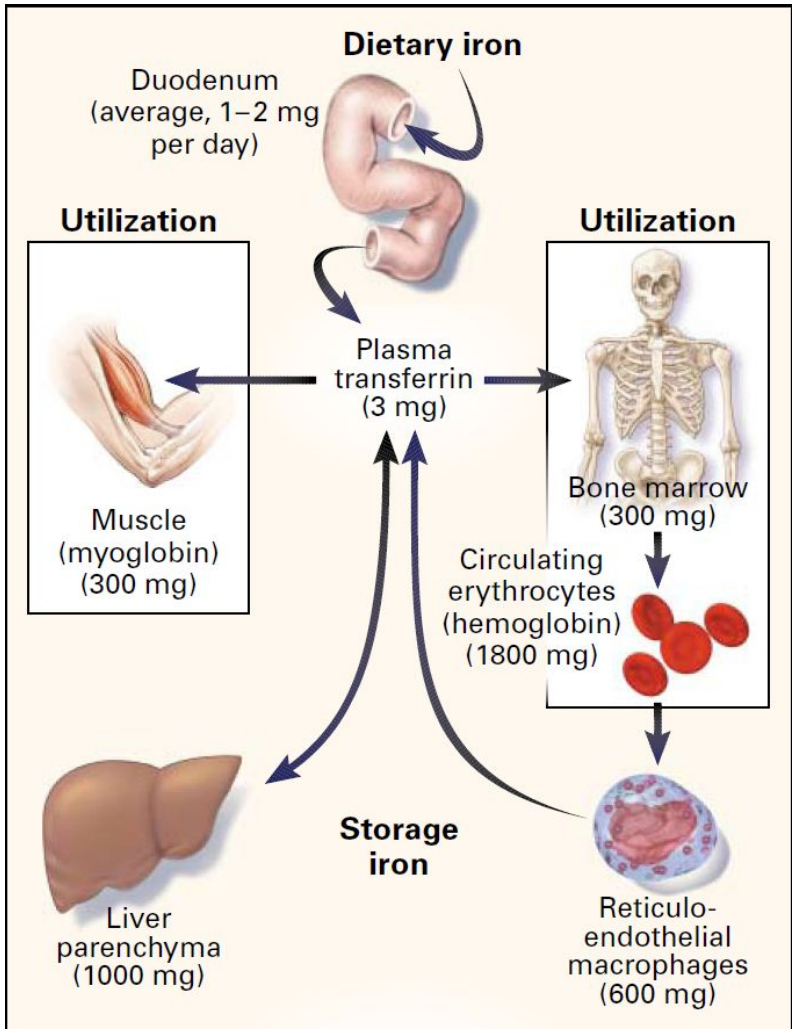
CLASSIFICATION OF ANEMIA

1. Posthemorrhagic
2. Hemolytic
3. Dyserithropoietic

According to pathogenesis

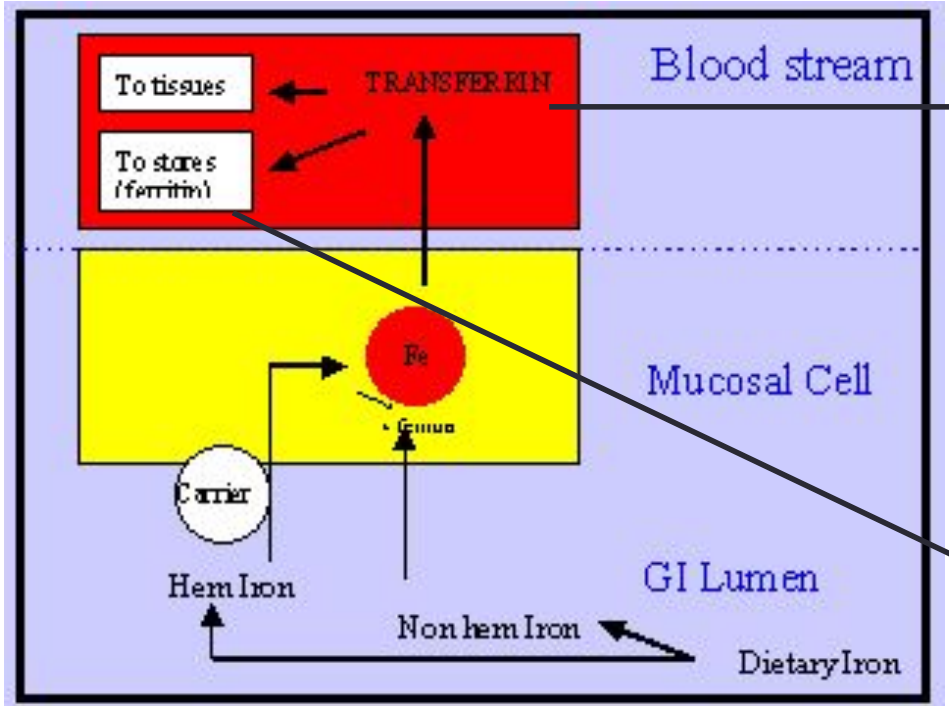


Role of Iron



- Carrier of oxygen from lung to tissues
- Transport of electrons within cells
- Co-factor of essential enzymatic reactions:
  - Neurotransmission
  - Synthesis of steroid hormones
  - Synthesis of bile salts
  - Detoxification processes in the liver

IRON CYCLE



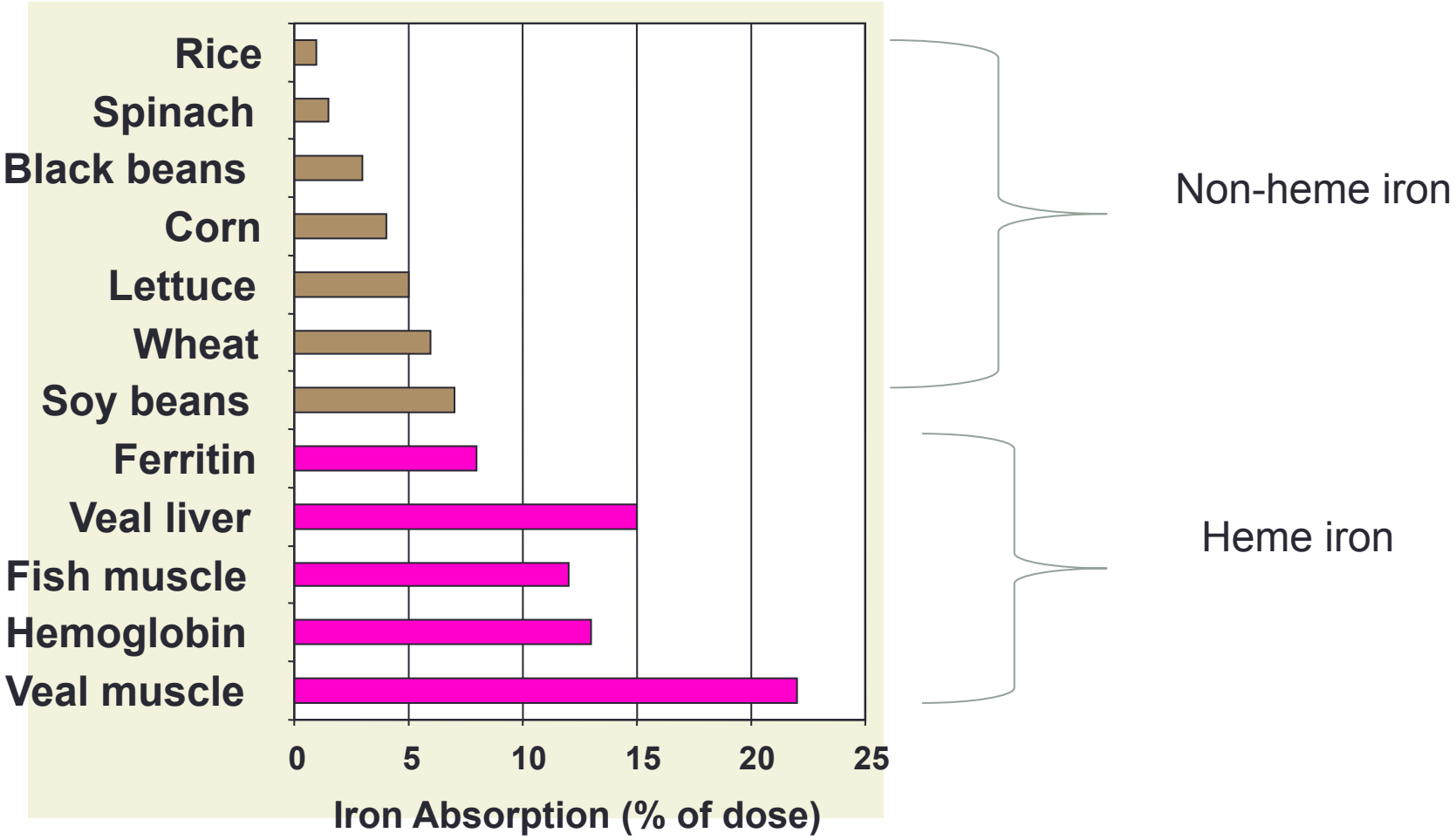
Transferrin -protein responsible for transporting iron in the body.

Tissues with higher requirement for iron (bone marrow, liver & placenta) contain more transferrin receptors.

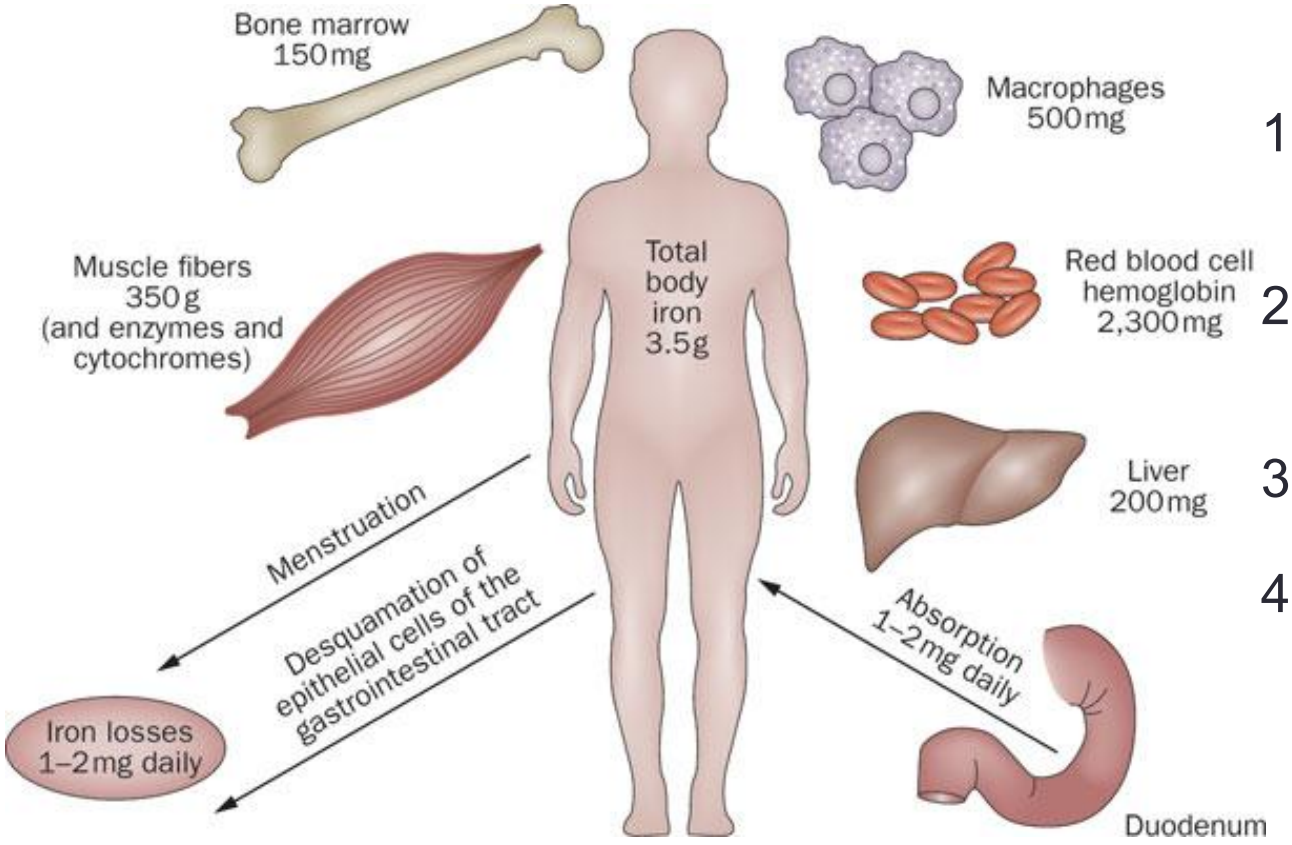
Ferritin – intracellular storage of iron

! Hemosiderin – long term iron storage pool

IRON SOURCES



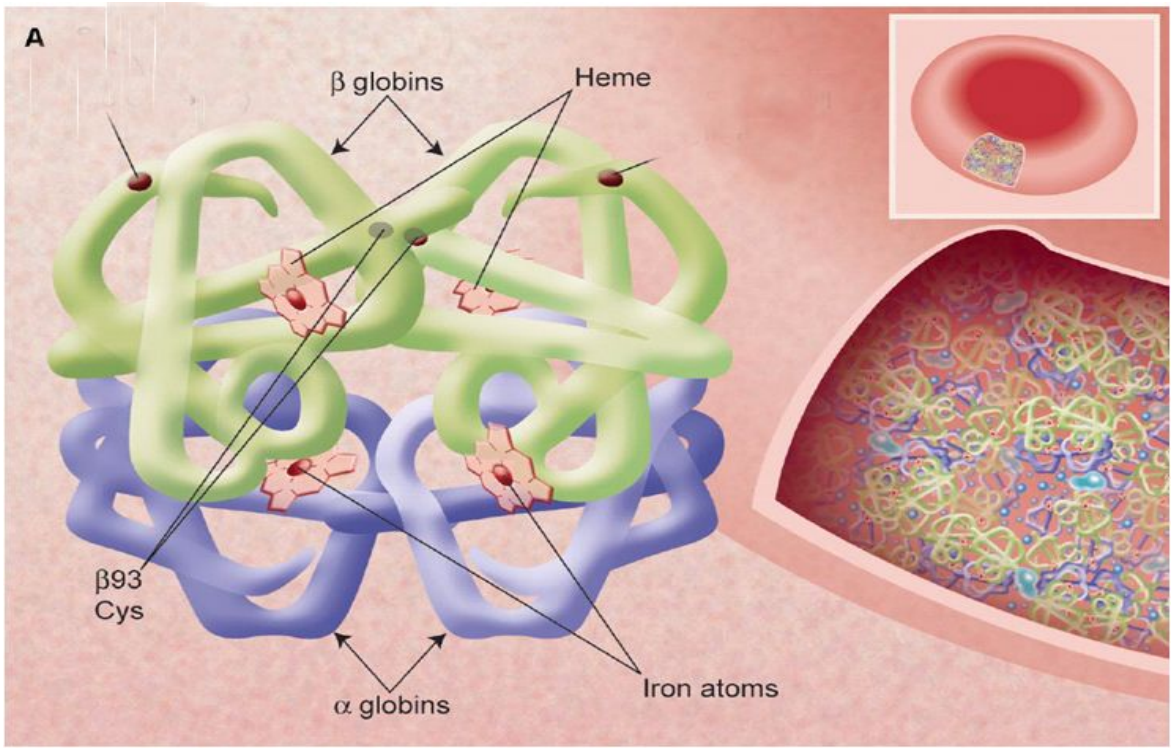
IRON LOSSES NORMALLY



1. Very small amounts in urine, bile and sweat
2. Cells shed from skin, intestinal and urinary tracts
3. Menstrual blood loss
4. Pregnancy and lactation

IDA

Iron ⟹ substance in red blood cells ⟹ can't carry oxygen to body tissue



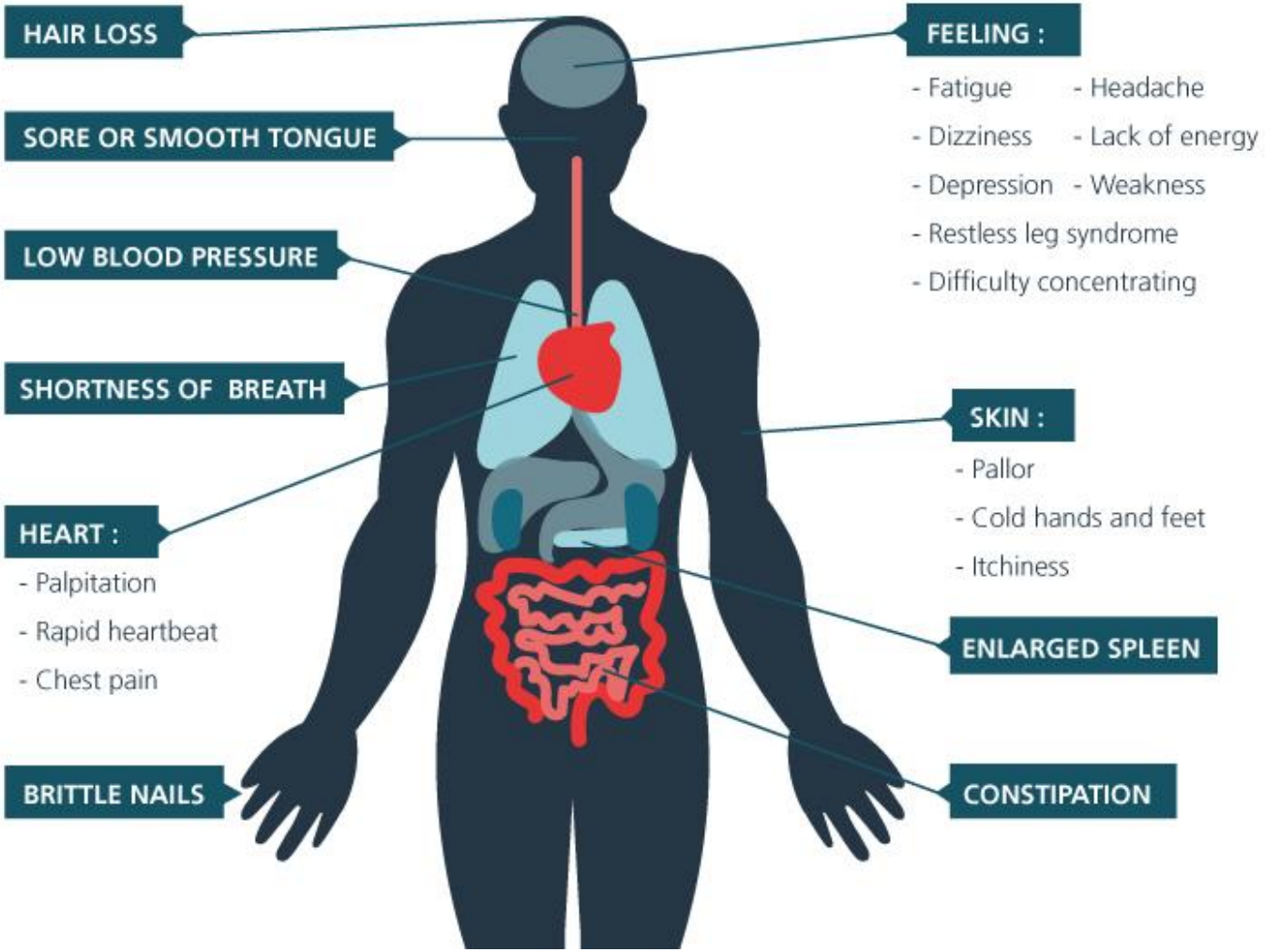
Heme is containing an Fe atom

! Then it leads to pathogenesis of IDA ➡

PATHOGENESIS OF IDA

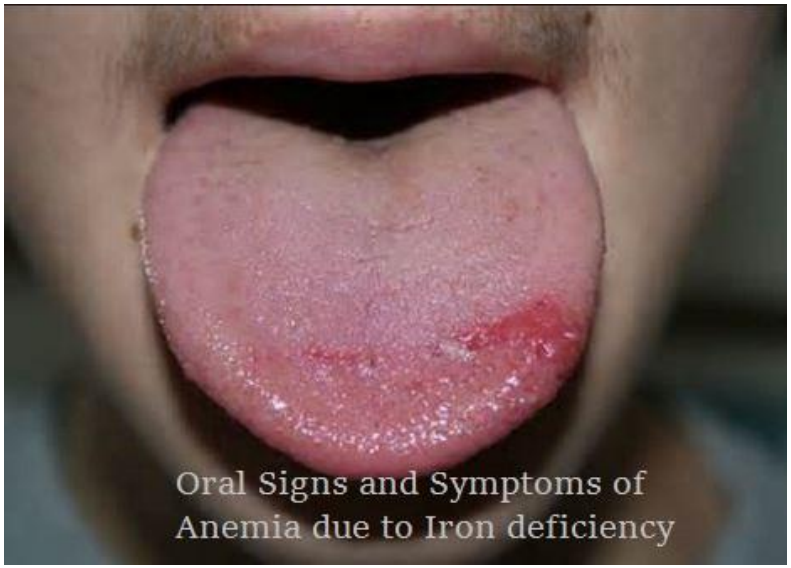
- Blood loss
  - Occult or overt blood losses,
  - traumatic or surgical losses,
  - hemorrhages
- Failure to meet increased requirements
  - Rapid growth in infancy and adolescence
  - Menstruation
  - pregnancy
- Inadequate iron absorption
  - Diet low in heme iron
  - Gastrointestinal disease or surgery

CLINICAL SIGNS OF IDA



SOME OTHER FEATURES

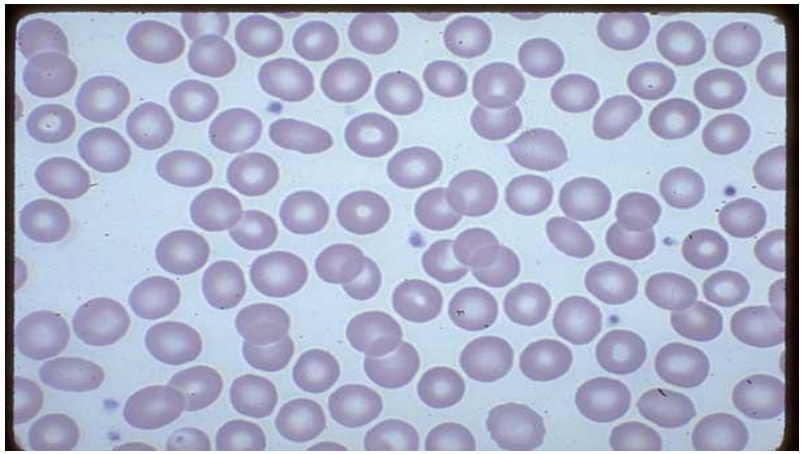
- Pagophagia - craving ice
- Pica - craving of nonfood substances
  - e.g., dirt, clay, laundry starch
- Restless Legs
- angular stomatitis - cracking of corners of mouth
- *Koilonychia - thin, spoon-shaped fingernails*



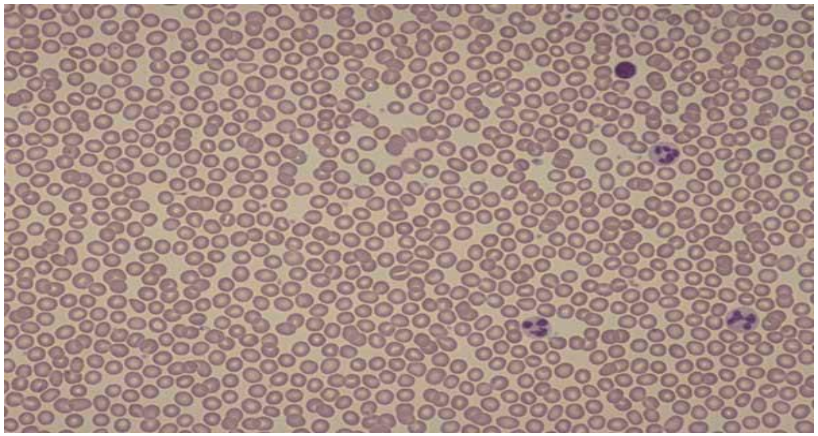
DIAGNOSING (TESTS)

- ✔ *Peripheral blood smear*
- ✔ *Red cell indices (MCV, MCH)*
- ✔ *Serum ferritin*
- ✔ *Serum iron / transferrin = iron saturation*
- ✔ *Bone marrow iron stain (Prussian blue)*

PERIPHERAL BLOOD SMEAR



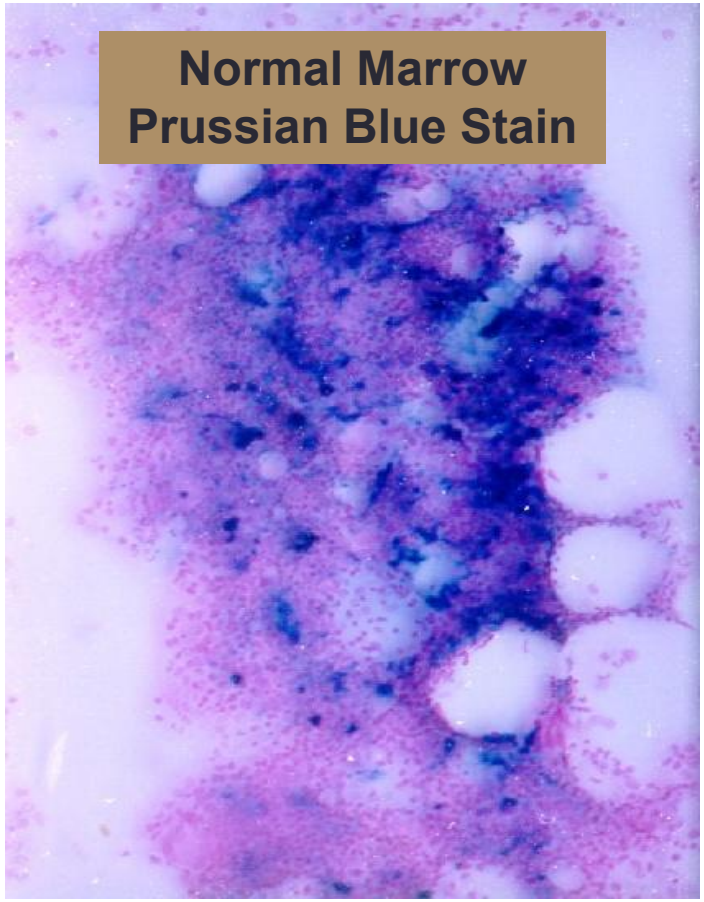
Normal analyses

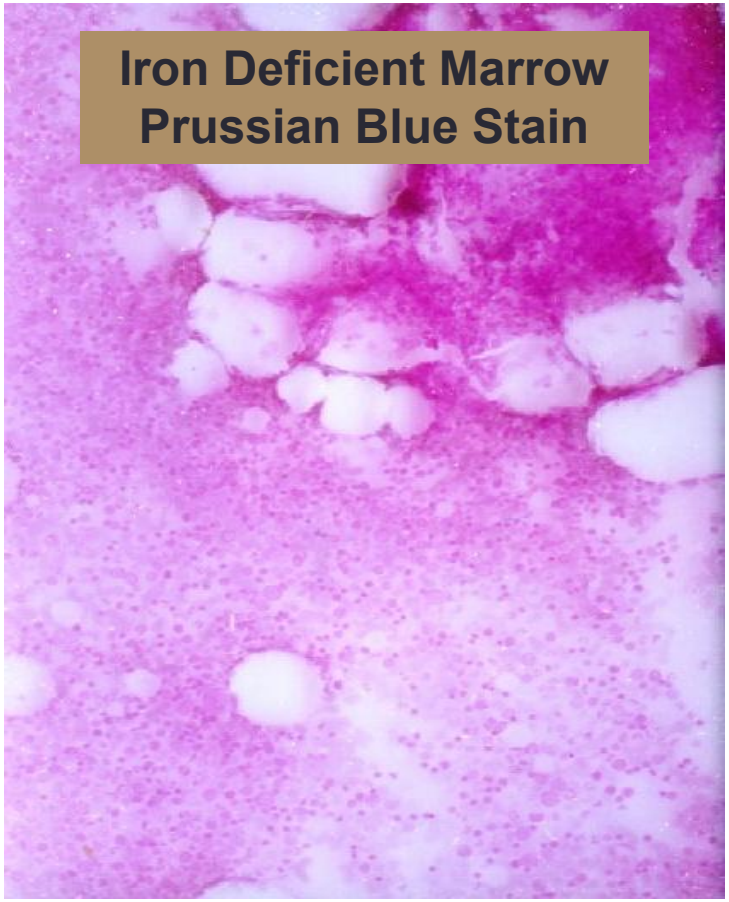


Found microcytes

Hypochromia

BONE MARROW CHANGES





LAB FINDINGS IN IDA

- Microcytic hypochromic anaemia
- Low Hb level (< 11.0 g/dl)
- Low MCV, MCH, MCHC
- Low serum ferritin
- High RWD
- High iron binding capacity
- High erythrocyte protoporphyrin

DIFFERENTIAL DIAGNOSING

- Thalassemia trait (low MCV, normal RDW)
  - Imbalance of globin chain production
- Anemia of inflammation
  - Decreased iron utilization in the face of adequate iron stores
  - Low ferritin / serum transferrin receptor

TREATMENT

- Oral iron unless there is an absorptive problem.
- Dietary sources:
  - Milk less than 0.5l/day
  - More meat with iron

} + FeSo4 BID.

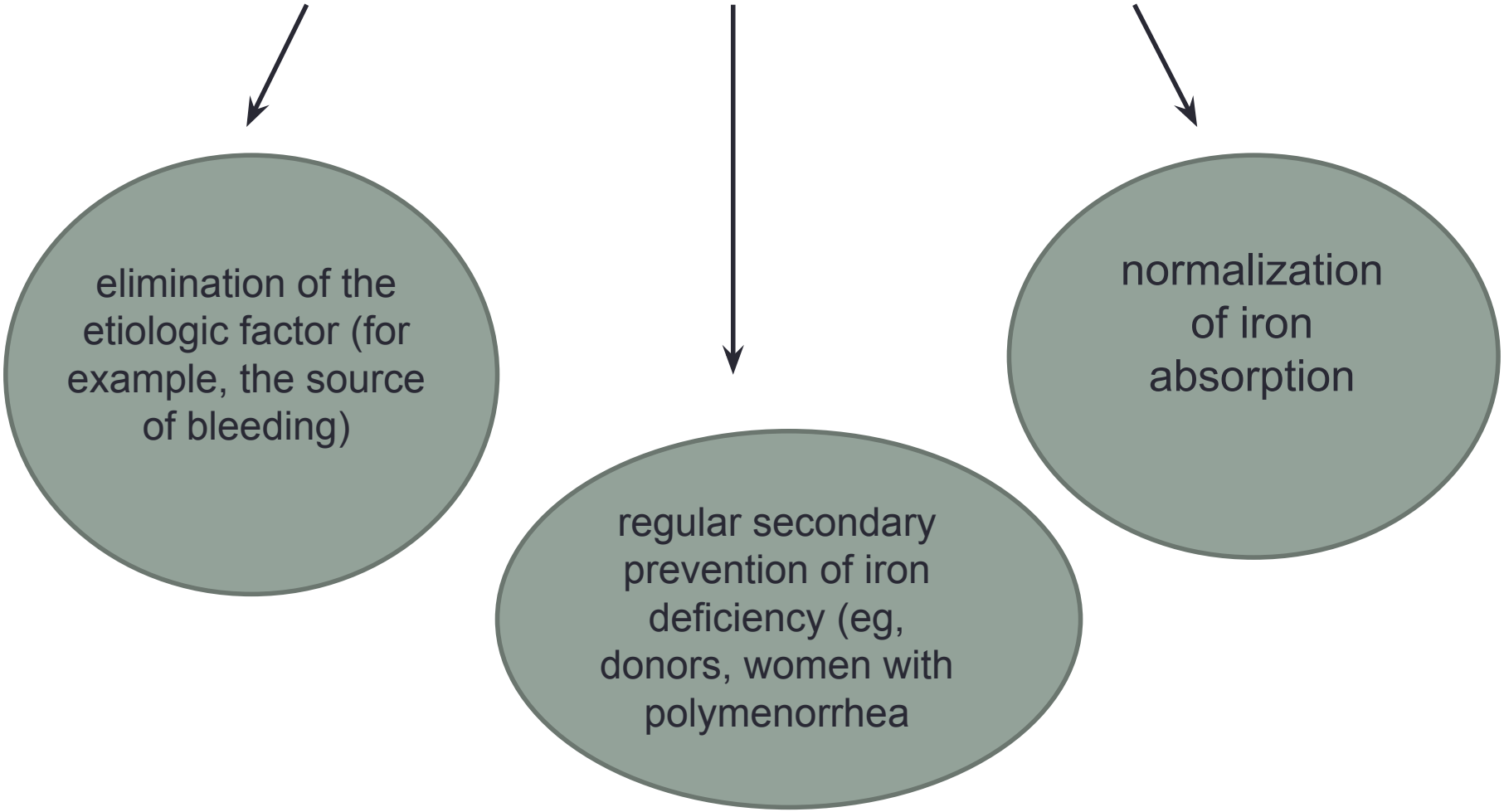
MEDICATION'S CLASSIFICATION

Monocomponent tab:	Contained ascorbic acid:	Contained folic acid:
• iron polyisomaltozate • iron gluconate • iron sulfate • Iron fumarate • Iron chloride	• sorbent durules • pheroplex	• maltofer • foul • gyno-tardyferon

! No less than 20-30 mg Fe(2+)- as minimal diurnal dose.

PROGNOSIS

The course and prognosis of iron deficiency anemia is ***favorable*** with timely diagnosis and adequate therapy



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