VI. Blood

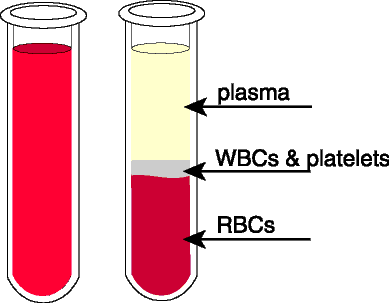
1. The vehicle that the cardiovascular system uses to

transport materials throughout the body:

* Gases
* Nutrients
* Wastes
* Heat

1. Physical characteristics:
2. Scarlet (O2-rich/arteries) to dull red (O2-poor/veins)
3. Heavier and 5x thicker than water
4. Narrow pH range: 7.35-7.45
5. 100.4°F (warmer than body)
6. 5-6 liters (8% of total body weight)
7. Considered to be connective tissue.

living cells surrounded by nonliving extracellular matrix

1.  Plasma (the nonliving extracellular matrix)
2. 90% water
3. 100’s of things dissolved in it
4. Plasma proteins:

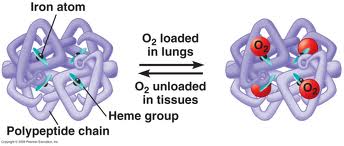
* Albumin – keeps correct amount of water in

the blood

* Antibodies – protection from pathogens
* Clotting proteins – control blood loss

1.  Formed Elements (the living cells in the plasma)
2. Erythrocytes (RBS’s)

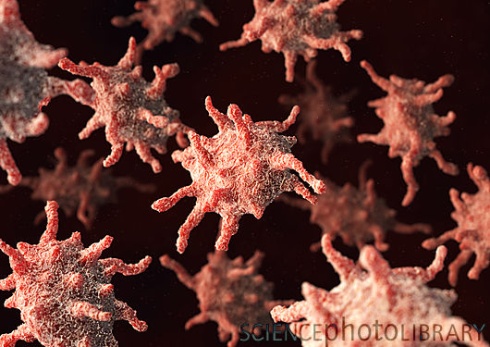
* the most abundant F.E.
* last about 120 days
* no nucleus
* carry O2 on hemoglobin (a protein with iron)



1. Leucocytes (WBC’s)

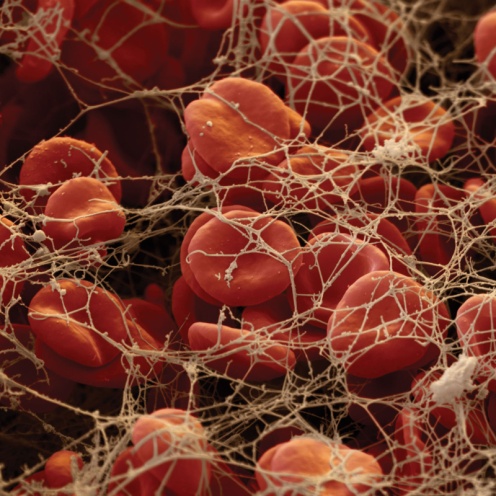
* Fight disease
* Respond to chemicals given off by infected tissue
* Leukocytosis – elevated WBC count which

indicates disease or infection.

1. Platelets

* Irregular-shaped cell

fragments.

* Hemostasis (blood clotting):
  + Cling to ruptured tunica intima of vessel (usually very smooth but rough when injured)
  + Plug causes vessel to spasm and constrict
  + Protein “fibrin” forms which traps RBC’s to make clot
  + [Usually takes 3-6 minutes](http://www.youtube.com/watch?v=8YjmE5UMYvY)