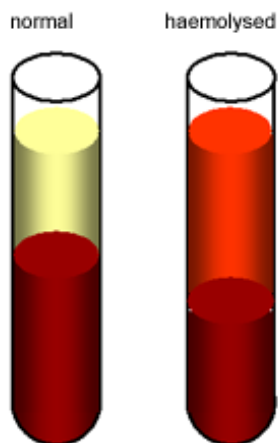


**Hemolysis :**

means that the red blood cells in the specimen have been damaged and broken.

**Hemolysis** in vitro may be a result of :

- 1- traumatic venipuncture in which the cells were damaged as they entered the needle.
- 2- mishandling the tube after the blood draw.

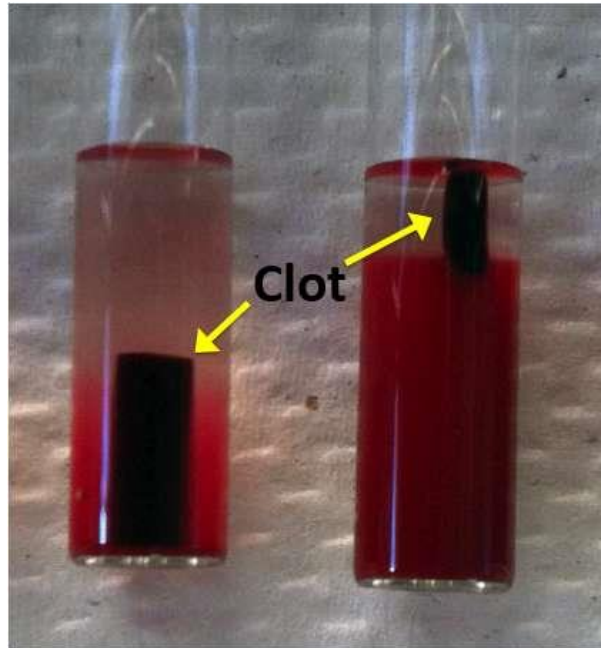


To avoid **hemolysis**:

- 1- tubes used for the blood draw are kept at room temperature.
- 2- use the appropriate sized needle for the draw
- 3- when using a syringe, do not pull back on the plunger with a great deal of force, as this may damage the cells.
- 4- gently invert all tubes when mixing.

### Coagulation:

also known as clotting, is the process by which blood changes from a liquid to a gel, forming a blood clot.



### Anticoagulants :

keep the blood from clotting in the tube so that the cells remain suspended in the plasma.

Without the addition of anticoagulants, the blood will begin to clot in the tube immediately, and a visible solid clot will form within an hour.

1. **Lavender-Top Tube ; EDTA:** is the anticoagulant used for most hematology procedures. Its use in Complete Blood Count (CBC).



2. **Blue-Top Tube; Sodium Citrate :** used for coagulation studies (PT and PTT). Complete filling of this tube is essential to obtain accurate results.



**3. Green-Top Tube** ; contain Heparin , These tubes are preferred for chemistry tests in which plasma is suitable for testing and the results must be obtained quickly



**4. Grey-Top Tube** ; Potassium Oxalate. This tube is used primarily for glucose tolerance testing.



**Another types of tubes used in blood collection:**

**1. Red-Top Tube** ; This tube has no anticoagulant and is used for many chemistry tests, drug levels, and blood bank procedures.



**2. Serum Separator Tube (SST)** ; This tube contains a clot activator and serum gel separator. It has no anticoagulant and is used for many chemistry tests.

