



1. RBC volume increases (~30%), but plasma volume increases more (~55%), leading to a dilutional anemia “physiologic anemia of pregnancy” (normal hemoglobin is 11.6 g/dL, hematocrit 35.5%)
  - (a) Plasma volume increases due to increased renin activity due to higher estrogen levels, which enhances renal sodium and water absorption
2. Lower hematocrit decreases blood viscosity and lowers resistance to blood flow, which is essential to maintain the patency of the uteroplacental vascular bed.
3. Total blood volume increases (~45%), which allows delivery of nutrients to the fetus, protects the mother from hypotension, and decreases the risks associated with hemorrhage at delivery
4. Total plasma protein and albumin concentrations both decrease in pregnancy
5. Globulin levels increase, so albumin/globulin ratio decreases
6. Plasma cholinesterase concentrations decrease in pregnancy
7. Benign leukocytosis is common in pregnancy (WBC can rise to ~13,000/mm<sup>3</sup> during labor)
8. Changes in coagulation and fibrinolytic parameters at term:
  - (a) Increased fibrinogen (a.k.a. factor I), factors VII, VIII, IX, X, and XII
  - (b) Decreased factor XI and XIII
  - (c) Factors II and V are unchanged
  - (d) PT and PTT are shortened
  - (e) Platelet count and function are changed, but bleeding time is unchanged
9. Enhanced platelet turnover, clotting, and fibrinolysis
  - (a) Normal D-dimer in pregnancy can be as high as 500–1700 ng/mL compared to <500 ng/ml in nonpregnant adults