Table 2. Normal Physiologic Changes of Pregnancy

ORGAN SYSTEMS	SPECIFIC PHYSIOLOGIC CHANGES
Cardiovascular	
Cardiac	• Cardiac output increases about 30-50% (from 4.5 to 6.0 L/min). • Stroke volume increases about 10% to 15%. • Systolic ejection murmur and S_3 gallop are common (90% of pregnant women).
Blood pressure	• Peripheral vascular resistance falls.
Respiratory	• Unchanged: respiratory rate, vital capacity, inspiratory reserve volume • Decreased: functional residual capacity (by 20%), expiratory reserve volume (by 20%), residual volume (by 20%), total lung capacity (by 5%) • Increased: inspiratory capacity (by 5%), tidal volume (by 30-40%) • Arterial blood gasses: pH = 7.44, pCO_2 = 30, bicarbonate = 20-25, pO_2 => 100 *Relevance: A normal pregnant woman has a compensated respiratory alkalosis and a diminished pulmonary reserve.*
Renal	• Anatomic: increase in kidney size and weight, ureteral dilation (right > left), bladder becomes an intra-abdominal organ • GFR increases 50%, renal plasma flow increases by 75%. • Creatinine clearance increases to 150-200 mL/min. • BUN and serum creatinine decreases by about 25%. • Glucose excretion increases. *Relevance: Pregnant women are more prone to pyelonephritis and bladder rupture during abdominal trauma.*
Hematologic	• Plasma volume and RBC mass — Plasma volume increases by about 50%. — RBC volume increases by about 30%. — The result: the 'dilutional anemia of pregnancy', such that the mean hemoglobin during pregnancy is about 11.5 g/dL. • WBC and platelets — WBC count increases during pregnancy. — Platelet count decreases, but stays within normal limits. • Coagulation system: pregnancy as a 'hypercoagulable state' — Increased levels of fibrinogen, factor VII-X — The placenta produces a plasminogen activator inhibitor. *Relevance: Blood loss is well tolerated during labor, but maternal vital signs do not change for blood loss of 1500 mL, so vital signs cannot be trusted as an indicator of blood loss. Also, serious thromboembolic disease is more common during pregnancy.*
Gastrointestinal	• Decreased motility, probably due to influence of progesterone • Reduced gastric acid secretion *Relevance: A pregnant woman is considered to have a full stomach even if she has had nothing to eat or drink for several hours. Peptic ulceration is rare during pregnancy.*
Reproductive	• Uterus — Weight: increases from 70 gm to 1100 gm — Blood flow: increases to about 750 mL/min, or about 10-15% of cardiac output *Relevance: Laceration of the uterine arteries can result in rapid and massive hemorrhage.* • Cervix — Increase in water content and vascularity (Hegar's sign) — Increase in cervical mucous secretions