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Maternal physiological changes in pregnancy are the adaptations during pregnancy that a woman's body undergoes to accommodate the growing embryo or fetus. These physiologic changes are entirely normal, and include behavioral (brain), cardiovascular (heart and blood vessel), hematologic (blood), metabolic, renal (kidney), posture, and respiratory (breathing) changes. Increases in blood sugar, breathing, and cardiac output are all expected changes that allow a pregnant woman's body to facilitate the proper growth and development of the embryo or fetus during the pregnancy. The pregnant woman and the placenta also produce many other hormones that have a broad range of effects during the pregnancy.

Pancreatic Insulin

The placenta also produces human placental lactogen (hPL), which stimulates maternal lipolysis and fatty acid metabolism. As a result, this conserves blood glucose for use by the fetus. It can also decrease maternal tissue sensitivity to insulin, resulting in gestational diabetes.

Pituitary gland

The pituitary gland grows by about one-third as a result of hyperplasia of the lactotrophs in response to the high plasma estrogen.[4] Prolactin, which is produced by the lactotrophs increases progressively throughout pregnancy. Prolactin mediates a change in the structure of the breast mammary glands from ductal to lobular-alveolar and stimulates milk production.

Parathyroid

Fetal skeletal formation and then later lactation challenges the maternal body to maintain their calcium levels.[5] The fetal skeleton requires approximately 30 grams of calcium by the end of pregnancy.[4] The mother's body adapts by increasing parathyroid hormone, leading to an increase in calcium uptake within the gut as well as increased calcium reabsorption by the kidneys. Maternal total serum calcium decreases due to maternal hypoalbuminemia, but the ionized calcium levels are maintained.

The heart adapts to the increased cardiac demand that occurs during pregnancy in many ways.

Cardiac output (Lit./Min.): 6.26

Stroke Volume (ML.): 75

Heart Rate (Per min.): 85

Blood Pressure: Unaffected

During pregnancy the plasma volume increases by 40-50% and the red blood cell volume increases only by 20-30%. These changes occur mostly in the second trimester and prior to 32 weeks gestation. Due to dilution, the net result is a decrease in hematocrit or hemoglobin, which are measures of red blood cell concentration.