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 **PHYSIOLOGICAL ADAPTATIONS TO PREGNANCY**

During pregnancy, the pregnant mother undergoes significant anatomical and physiological changes in order to nurture and accommodate the developing foetus. These changes begin after conception and affect every organ system in the body. For most women experiencing an uncomplicated pregnancy, these changes resolve after pregnancy with minimal residual effects it is important to understand the normal physiological changes occurring in pregnancy as this will help differentiate from adaptations that are abnormal.

**HAEMATOLOGICAL CHANGES**

Plasma volume increases progressively throughout normal pregnancy. Most of this 50% increase occurs by 34 weeks gestation and is proportional to the birth weight of the baby. Because the expansion in plasma volume is greater than the increase in red blood cell mass, there is a fall in haemoglobin concentration, haematrocit and red blood cell count. Despite this haemodiliution there is usually no change in mean corpuscular volume or mean corpuscular haemoglobin concentration.

**CARDIAC CHANGES**

Changes in the cardiovascular system in pregnancy are profound and begin early in pregnancy such that by eight weeks gestation, the cardiac output has already increased by 20%. The primary event is probably peripheral vasodilatation.

**RESPIRATORY CHANGES**

Changes in respiratory system in pregnancy start as early as the 4th week of gestation. There is slight increase in respiratory rate. Minute ventilation is increased which is mainly due to increased tidal volume. Dead volume of lungs increases due to relaxation of muscles in conducting passageways.

**RENAL CHANGES**

Renal pelvis and uterus are dilated which lead to increase in urinary stasis and increase the chance of infection. During pregnancy, the glomerular filtration rate is increased due to increased renal plasma flow. Due to increased filtration rate, there is decreased plasma blood urea nitrogen and creatinine concentration.

**GASTROINTESTINAL CHANGES**

During pregnancy there is increased nutritional requirements, increased maternal appetite and morning sickness. Gastrointestinal motility, lower esophageal pressure and food absorption are decreased during pregnancy due to an increased level of plasma progesterone. On the other hand, intragastic pressure is increased during the third trimester of pregnancy.

**ENDOCRINE CHANGES**

-thyroid function

-pituitary function

**METABOLIC CHANGES**

-fluid balance

-Carbohydrate metabolism

-protein metabolism

-lipid metabolism