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Physiological changes during pregnancy :

During pregnancy a woman experiences a change in her endocrine system. Throughout pregnancy the levels of progesterone and oestrogen increase; the oestrogen being produced by the placenta and the progesterone being produced by the corpus luteum and later by the placenta.

Thyroxin is essential for foetus's neural development, but the foetal thyroid gland is not functional until the second trimester of gestation. Hence, increasing T3 and T4 levels in the mother ensures that there is a constant supply of thryoxin to the foetus early in pregnancy. During pregnancy, mainly during there second trimester, there is an increase of human placental lactogen, prolactin, cortisol levels along with the increase in progesterone and oestrogen levels. These are anti-insulin hormones therefore, they increase insulin resistance in the mother and reduce peripheral uptake of glucose. This ensures that there is a continuous supply of glucose for the foetus.

Progesterone acts to decrease systemic vascular resistance in pregnancy which leads to a decrease in diastolic blood pressure during the first and second trimester of pregnancy. In response to this the cardiac output increases by about thirty per cent . An increase in blood pressure in pregnancy could be an indication of pre-eclapmsia.

Pregnancy results in the activation of the renin-angiotensin system. This leads to an increase in sodium levels and water retention. This means that the total blood volume increases.
the growth of the foetus during pregnancy causes upward **displacement** of the diaphragm. This however, does not decrease the total lung capacity significantly since there is also an increase in the transverse and anterior-posterior diameters of the thorax.

In pregnancy a woman faces an increase in their metabolic rate which leads to an increased demand for oxygen. The tidal volume and the minute ventilation rate increases to help the mother meet the oxygen demands.

Many women experience hyperventilation during pregnancy. It is thought that the reason for this is the increased carbon dioxide production and the increased respiratory drive caused by progesterone. This hyperventilation results in a respiratory alkalosis with a compensated increase in renal bicarbonate excretion.

The growth of the uterus causes a number of anatomical changes related to the gastrointestinal tract. One of these would be the upward displacement of the stomach as the uterus grows. This would lead to an increase in the intra-gastric pressure which would predispose the mother to getting symptoms of reflux, along with symptoms such as nausea and vomitng. The appendix may also move to the right upper quadrant of the abdomen as the uterus enlarges.

The increase in progesterone during pregnancy results **in** smooth muscle relaxation. This would decrease gut motility. Although this allows for more time for nutrient absorption, it can **l**ead to constipation. Increased progesterone also causes relaxation of the gallbladder so biliary tract stasis may occur. This predisposes the mother to getting gallstone.