FORMATION FUNCTIONS OF PLACENTA AND LACTATION

PARTURITION

- The usual length of human pregnancy is around 9 months, known as the gestation period.

  Neagle's formula (E.D.D.) = first day of last menstrual cycle + 9 months and 7 days.

- Strong contractions of the uterus towards the end of pregnancy lead to the expulsion or delivery of the fetus.
- This process of delivering the fetus, commonly known as childbirth, is termed parturition.
- Parturition is triggered by a complex neuroendocrine mechanism, involving signals from stretch receptors in the uterine muscle, a fully developed placenta, and the fetus. It also includes increased chorionic corticotropin and changes in the estrogen-to-progesterone ratio.

Foetal Ejection Reflex

- Signals triggering parturition come from the fully developed fetus and the placenta, initiating mild uterine contractions known as the fetal ejection reflex. This prompts the release of oxytocin from the mother's pituitary gland.
- Oxytocin, acting on the uterine myometrium muscle, causes stronger contractions, leading to further oxytocin secretion. This positive feedback loop between uterine contractions and oxytocin continues, resulting in increasingly powerful contractions.
- The intensified contractions eventually lead to the baby being expelled from the uterus through the birth canal, marking the process of parturition. After delivery, the placenta is also expelled.
- Immediately after birth, the infant's lungs expand, initiating breathing and necessitating a significant shift in the circulatory system. Blood flow through the umbilical cord, ductus arteriosus, and foramen ovale stops, transitioning to the adult pattern of blood flow through the heart, aorta, and pulmonary arteries. Some infants may experience an incomplete switchover, with inadequate blood flow through the pulmonary arteries, possibly due to insufficient nitric oxide (NO) synthesis.
- To enhance uterine contractions, doctors often administer oxytocin (or Pitocin) alongside other medical interventions during labor. Oxytocin is also given after childbirth to contract smooth muscles, preventing excessive bleeding.