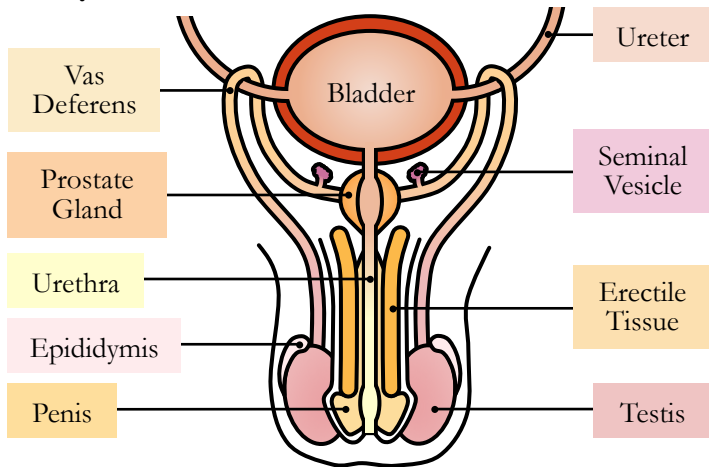


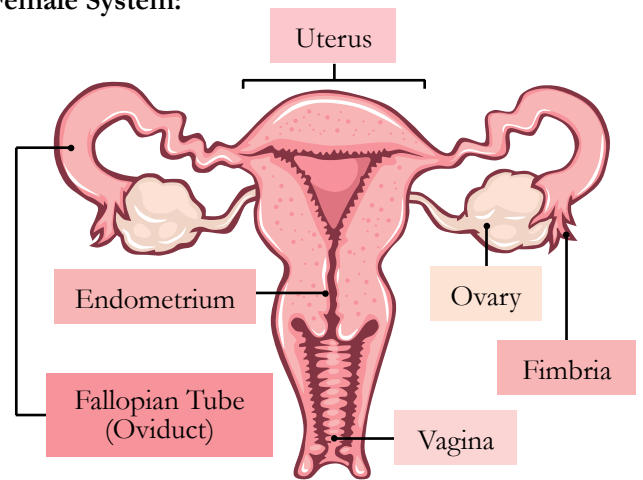
TOPIC 6.6: REPRODUCTIVE SYSTEMS

Human Reproductive Systems

Male System:



Female System:



Menstrual Cycle

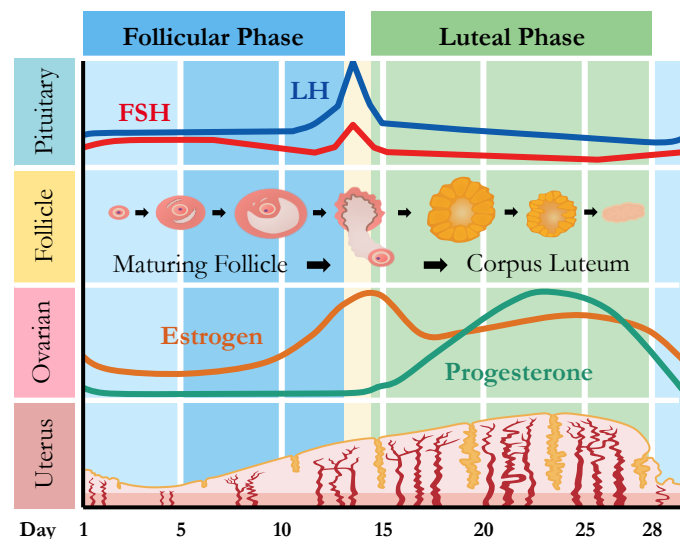
The menstrual cycle involves four key hormones and describes the recurring changes that occur to enable pregnancy

Pituitary Hormones (FSH and LH):

- Stimulate follicular growth within the ovaries
- Stimulate estrogen secretion (from the ovarian follicles)
- Stimulate progesterone secretion (from corpus luteum)
- A mid-cycle surge in LH triggers ovulation (egg release)

Ovarian Hormones (estrogen and progesterone):

- Promote development / thickening of the endometrium
- Promote FSH / LH secretion during the follicular phase
- Inhibit FSH / LH secretion during the luteal phase



Reproductive Theories

One of the earliest theories involving how human reproduction occurs was the 'soil and seed' theory proposed by Aristotle

- Males provide all the information for life in a 'seed', which forms an egg when mixed with menstrual blood (the 'soil')

William Harvey dissected deer after the mating season and was unable to identify embryos until several months after mating

- He concluded that the 'soil and seed' theory was incorrect and that menstrual blood did **not** contribute to fetal growth

Sex Development

Fertilisation requires a combination of male **and** female 'seeds'

Male sex is determined by a gene on the Y chromosome which causes gonads to develop as testes and secrete testosterone

- Testosterone produces sperm and male sex characteristics

Female reproductive organs develop in the absence of this gene

- Estrogen and progesterone develop female sex characteristics

In Vitro Fertilisation

- **S**top normal menstrual cycle with drugs
- **H**ormone treatments to induce ovulation
- **E**xtract multiple eggs from female
- **S**perm sample is collected from male
- **F**ertilisation occurs externally (in vitro)
- **I**mplantation of embryos into surrogate
- **T**est for pregnancy to determine success

