



Female Reproductive System

The female reproductive system in mammals produces eggs, receives the penis and sperm during sexual intercourse, and houses and nourishes the embryo. Female reproductive systems

in mammals are similar in their basic structure (uterus, ovaries etc.) but the shape of the uterus and the form of the placenta can vary quite a lot. The human system is described below.

Oogenesis

Oogenesis is the process by which mature ova (egg cells) are produced by the ovary. Oogonia are formed in the female embryo and undergo repeated mitotic divisions to form the primary oocyte. These remain in prophase of meiosis I throughout childhood. At this stage, all the eggs a female will ever have are present, but they remain in this resting phase until puberty. At puberty, meiosis resumes. Eggs are released, arrested in metaphase of meiosis II. This second division is only completed upon fertilisation.

Completed in the Foetus
Completed in the Adult

Anatomy of the Female Reproductive System

Side view of reproductive organs

Ovulation and Implantation

The unfertilised egg lives only for a day or so. It travels along the fallopian tube, where fertilisation may occur if sperm are present.

Front view of uterus and associated structures

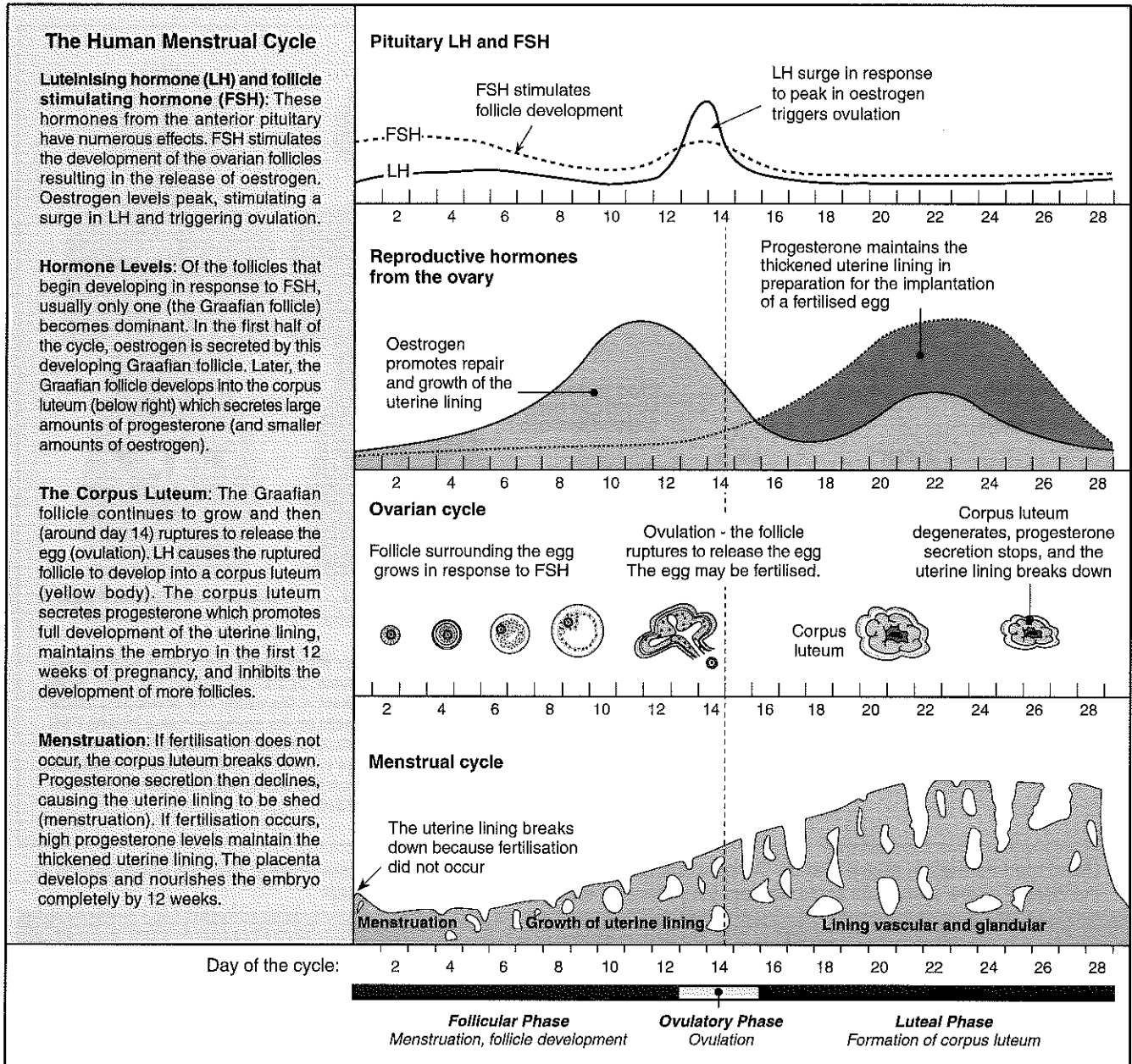
- The female human reproductive system and associated structures are illustrated above. Using the word list, identify the labelled parts. **Word list:** Ovary, Uterus (womb), Vagina, Fallopian tube (oviduct), Cervix, Clitoris.
- In a few words or a short sentence, state the function of each of the structures labelled (a) - (d) in the above diagram:
 - (a) _____
 - (b) _____
 - (c) _____
 - (d) _____
- (a) Name the organ labelled (A) in the diagram "Ovulation and Implantation" above: _____
 (b) Name the event associated with this organ that occurs every month: _____
 (c) Name the process by which mature ova are produced: _____
- (a) Name the stage in meiosis at which the oocyte is released from the ovary: _____
 (b) State when in the reproductive process meiosis II is completed: _____



The Menstrual Cycle

In contrast to other mammals, humans and other primates are sexually receptive throughout the year and may mate at any time. Like all placental mammals, their uterine lining thickens in preparation for pregnancy. However, unlike other mammals, primates shed this lining as a discharge through the vagina if fertilisation does not occur. This event, called **menstruation**,

characterises the human reproductive or **menstrual cycle**. In human females, the menstrual cycle starts from the first day of bleeding and lasts for about 28 days. It involves a predictable series of changes that occur in response to hormones. The cycle is divided into three phases (below), corresponding to the events occurring in each phase.



- Name the hormone responsible for:
 - Follicle growth: _____
 - Ovulation: _____
- Each month, several ovarian follicles begin development, but only one (the graafian follicle) develops fully:
 - Name the hormone secreted by the developing follicle: _____
 - State the role of this hormone during the follicular phase: _____
 - Suggest what happens to the follicles that do not continue developing: _____
- Name the principal hormone secreted by the corpus luteum: _____
 - State the purpose of this hormone: _____
- State the hormonal trigger for menstruation: _____