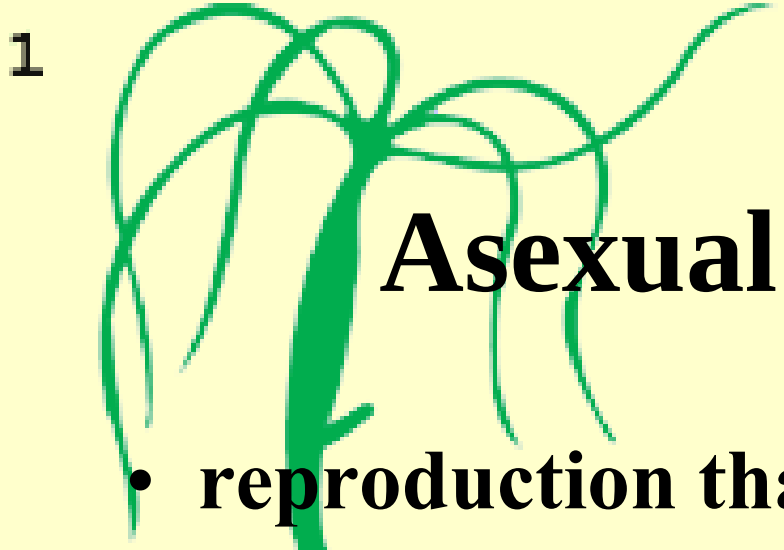
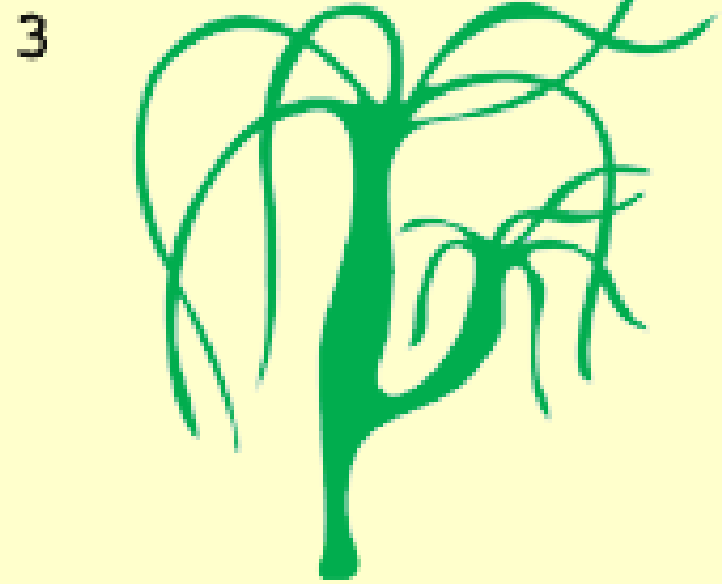
Reproduction



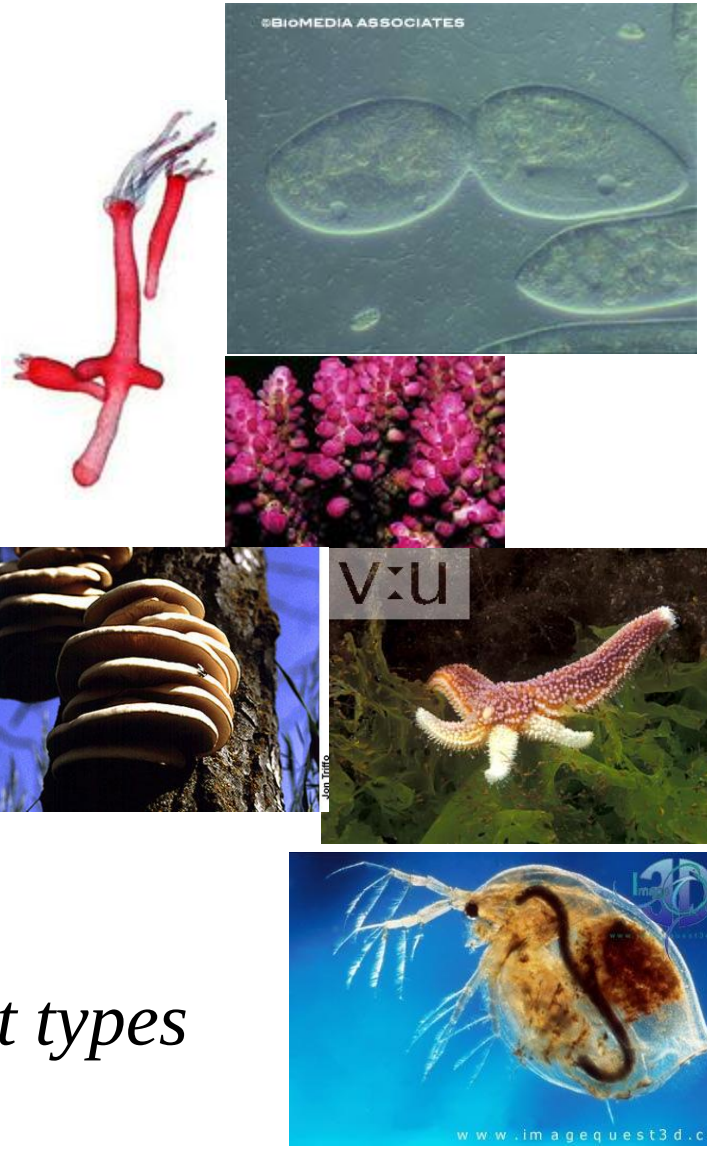
Asexual reproduction

- **reproduction that doesn't use sexual (without sexual)**
- **No egg or sperm**



Types of asexual reproduction

- Fission
- Budding
- Fragmentation
- Regeneration
- Spores
- Parthenogenisis



*Name and explain the different types of asexual reproduction.**

Reproduction by splitting (Fission)

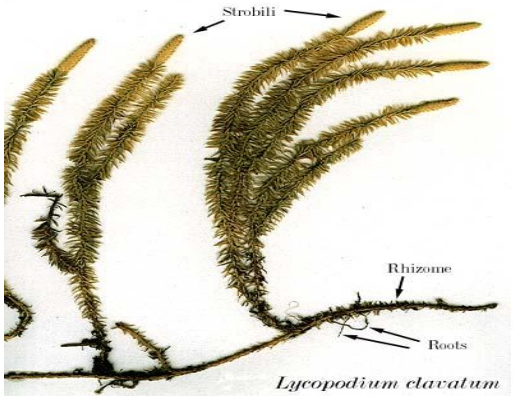
Reproduction by budding

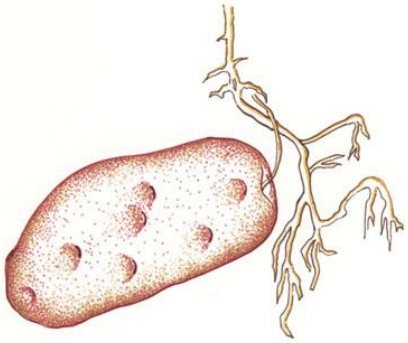
- **when a bud grows out from the organism and drops off and grows into a new organism**

Vegetative reproduction

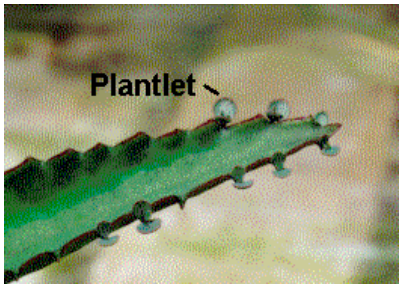
Types

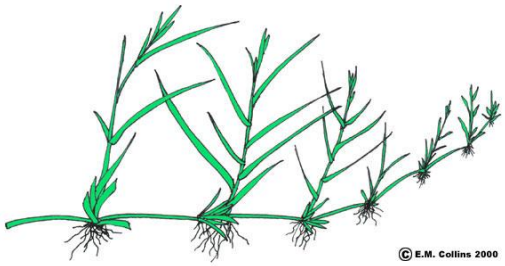
- Suckers
- Rhizome
- Tuber
- Bulb
- Corm
- Stolon
- Plantlet





Tuber





Corm

Bulb

Fragmentation

- **when an organism is broken into pieces by something else and all the pieces can develop into a complete organism**

Regeneration

- **is the ability of an organism to re-grow broken off parts**

Spores

- **When an organism reproduces by that each spore can develop into an adult organism**

Parthenogenesis

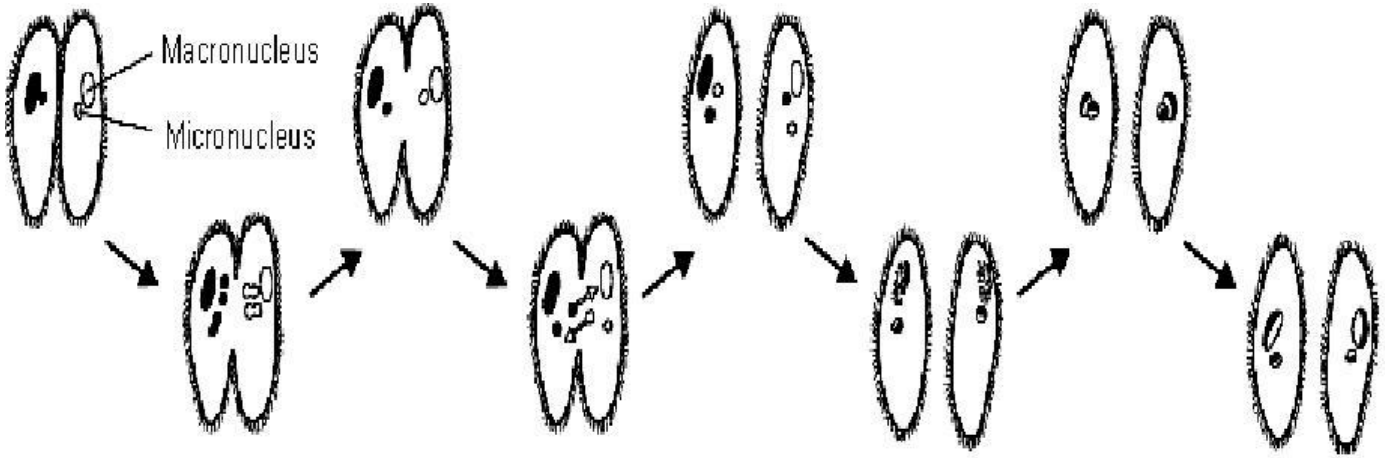
- **When an unfertilized egg can develop into an adult organism**

Sexual reproduction –

- **when two haploid cells unite to form a zygote**

Conjugation –

- **process by which genetic material is transferred from one cell to another by cell-to-cell contact**



Sexual reproduction in animals

- **In almost all animals sexual reproduction involves**
- **Gonads – the sex cell producing organs**
  - **Females have ovaries that produce eggs**
  - **Males have testes that produce sperm**
- **Organisms that have both testes and ovaries are call hermaphrodites**
- **Fertilization is when the sperm unites with the egg to form a zygote**
- **Fertilization is necessary for more organisms of variety to be produced**

There are four conditions necessary for fertilization to take place

- **1. Egg & sperm must be present at the same time (*timing)***
- **2. Egg & sperm must be *protected***
- **3. *Path* must be present for the sperm to reach the egg**
- **4. Must be a *liquid medium* for the sperm to reach the egg**
-

*What are the four conditions necessary for fertilization to take place?**

Two types of fertilization

- Internal
- External

What are the two types of fertilization and what is the difference between them?

External Fertilization

- **External that takes place outside the females body (Fish, frogs)**
- **When the egg and the sperm are united outside the females body**
- **Timing is extremely important (courtship behavior in fish frogs and other organisms that fertilize externally is extremely important so that proper timing is insured)**
- **There must be water to protect, provide the pathway and the liquid medium so the sperm can swim to the egg**

Internal that takes place inside the females body

- **All four conditions necessary for fertilization are required for fertilization to take place**

Courtship behaviors provides the proper timing

What is the purpose of courtship patterns in animals?*

Quiz

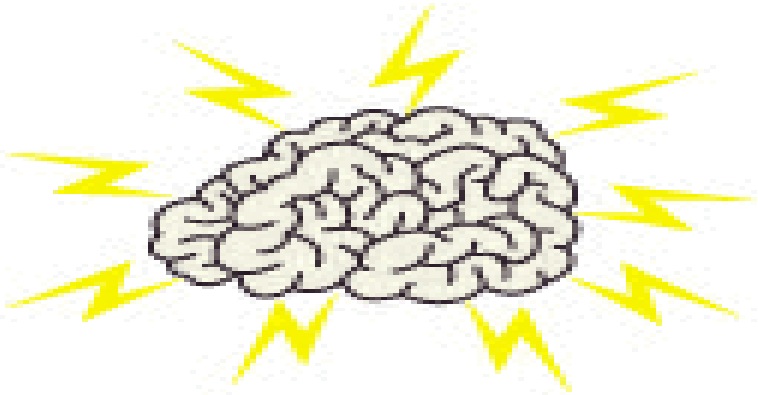
- 1. Name and describe four different types of asexual reproduction.
- 2. What are the four conditions necessary for fertilization to take place?
- 3. What are the two different types of fertilization?

Estrous Cycles

- **The period of time when the female animal will accept the male in mating**
- **In many animal the females are only receptive to mating a few times each year**
- **These receptive time are known as estrous or heat**
- **Hormones are chemicals that cause the ovaries to produce the eggs and testes to produce the sperm**
- **The hormones cause the female to be receptive to mating at certain times**
- **When the female is receptive to the mating is also when the egg or eggs are released**
- **The females release pheromones (scents) that attract the male along with other behaviors that attract the male for mating**

*What is the estrous cycle in animals?**

Human Reproduction



THE BRAIN IS THE LARGEST SEX ORGAN OF ALL!!

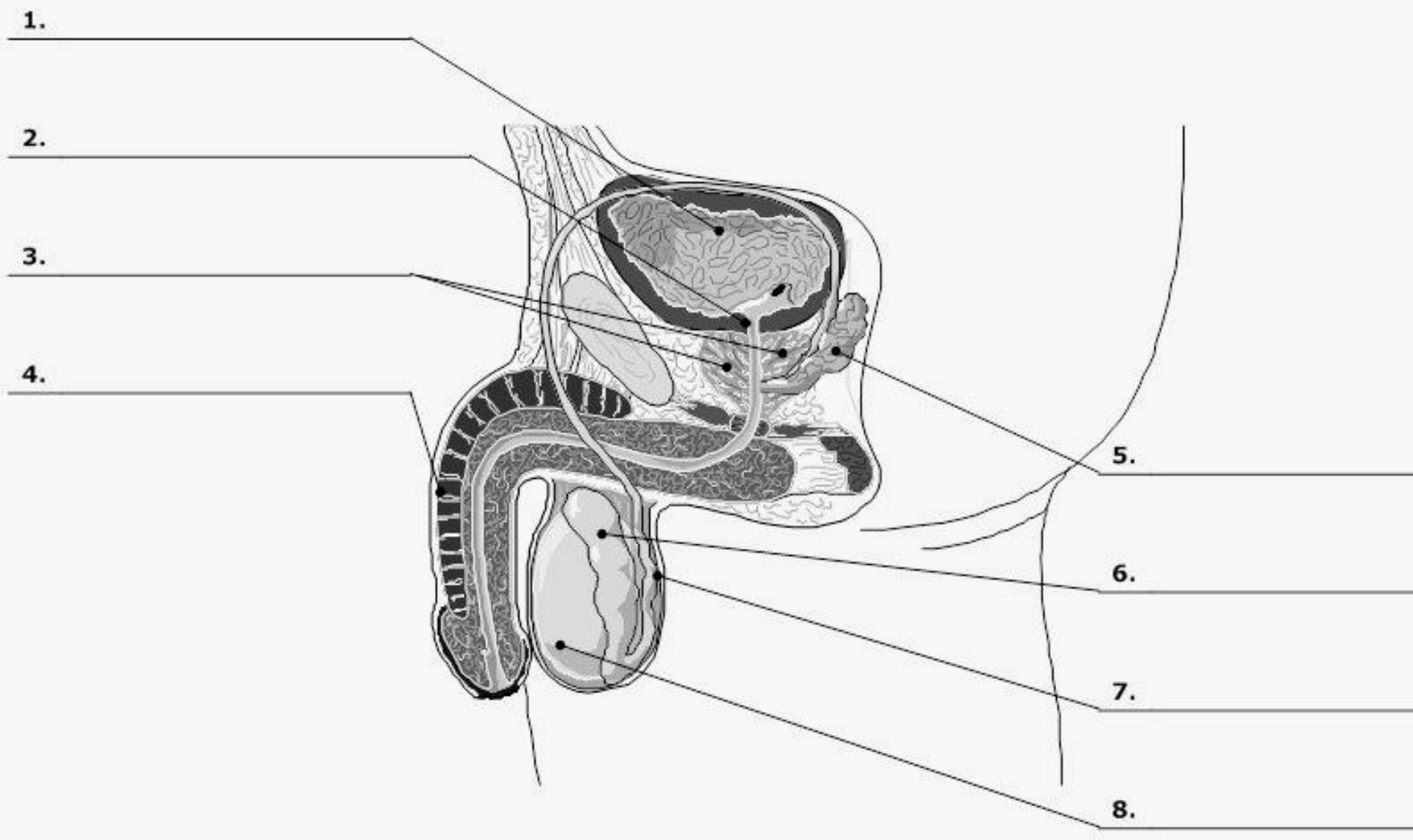
"Dating with no intent to marry is like going to the grocery store with no money. You either leave unhappy or take something that isn't yours."

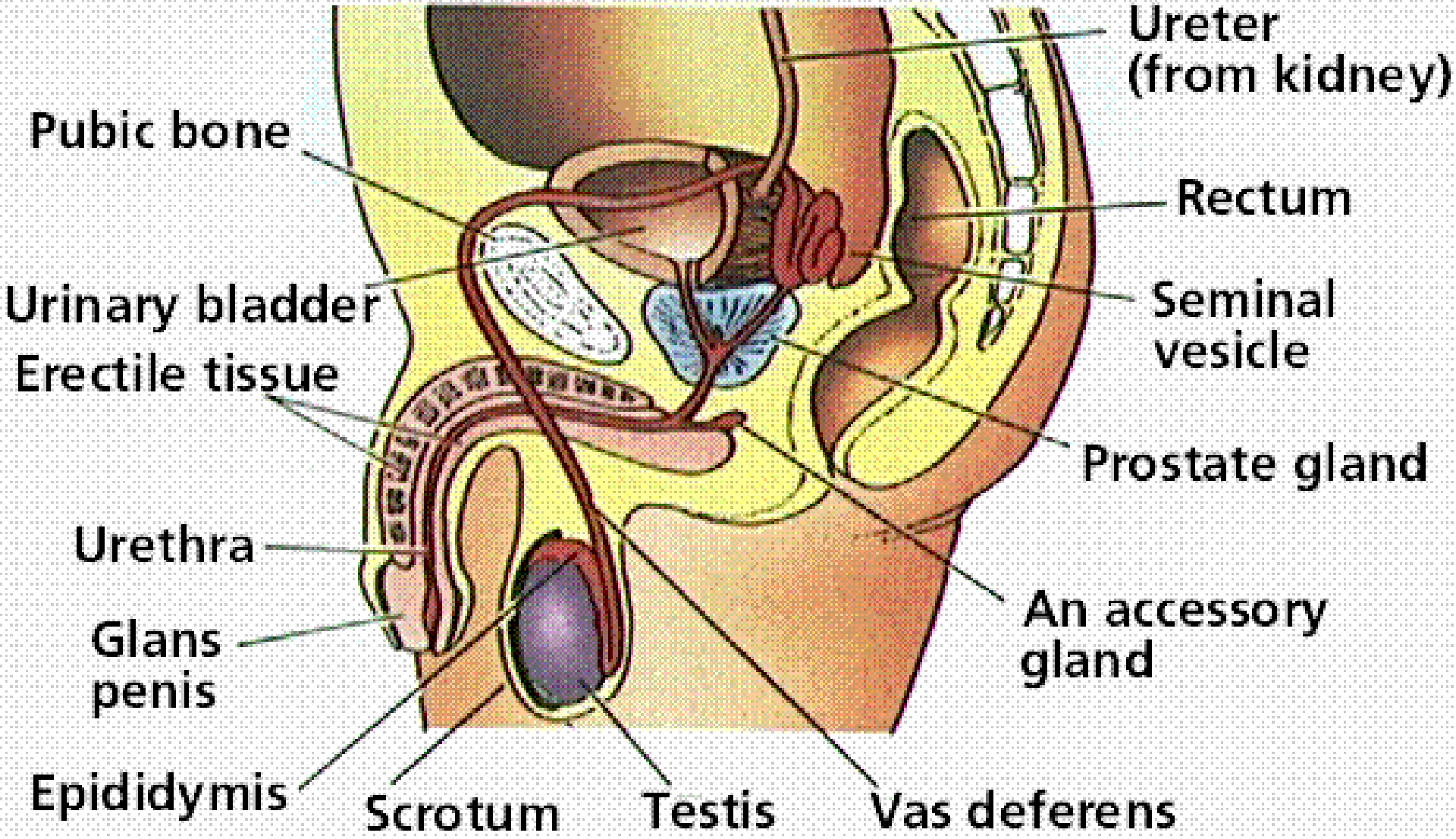
—Jefferson Bethke

Male reproductive system

- **Testes – produce the sperm**
- **Scrotum – muscular sac that protects the testes and keeps them at the proper temperature for sperm production and virility (slightly lower than the body temperature)**
- **Epididymis – is on the side of testes for sperm storage**
- **Vas deferens – tubes from the testes to the urethra**
- **Seminal vesicle – adds semen to the sperm.**
- **Prostate gland – helps regulate the release of urine or sperm**
- **Cowpers gland – adds fluids**
- **Urethra – serves as a tube for both urine and semen**
- **Penis – serves as a depositor of sperm and gets sperm to the cervix of the female**

Male Reproductive System and Organs





*Know the parts and functions of the male reproductive system.**

Male Reproductive System

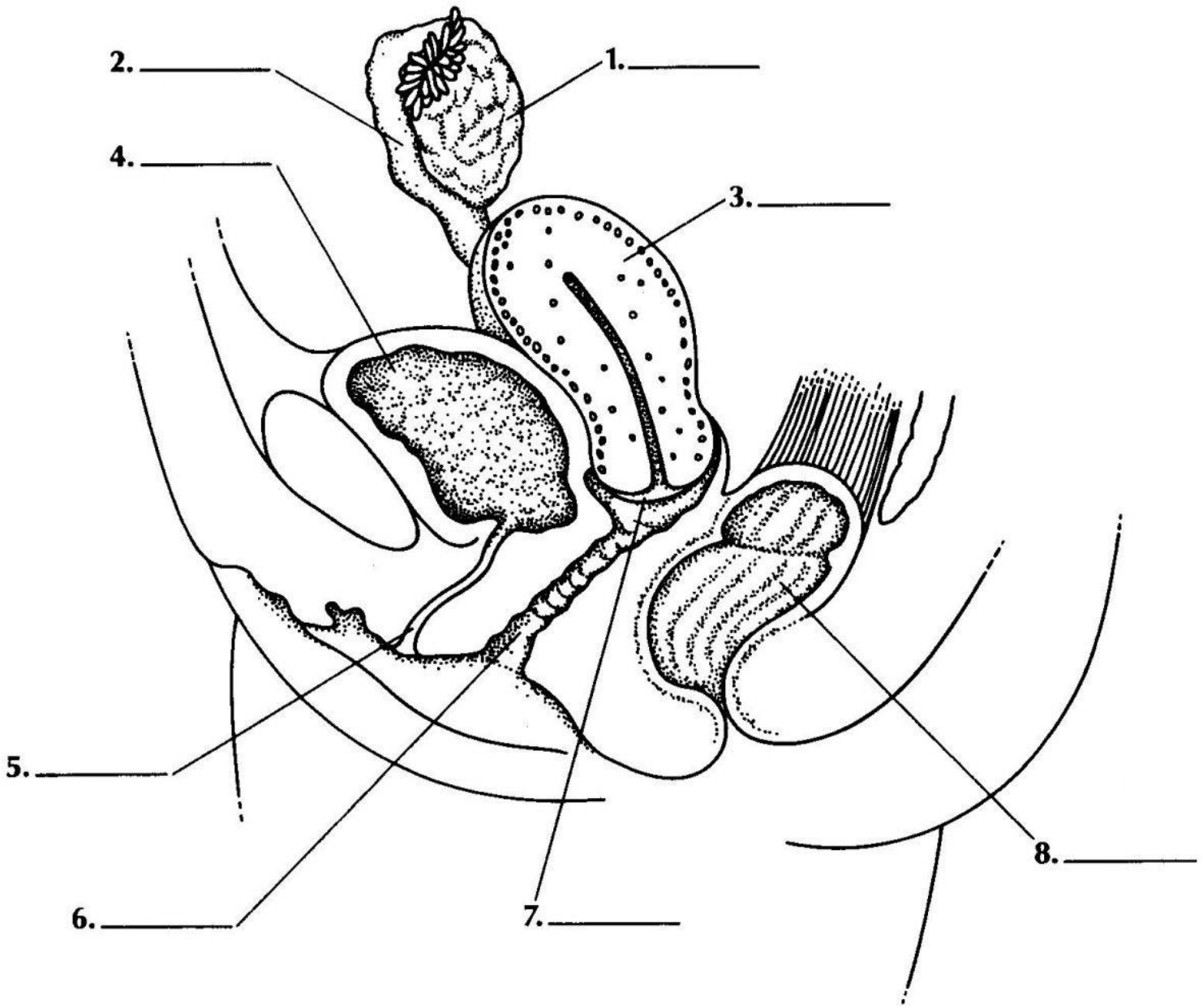
- Hormonal control of male reproduction
  - FSH stimulates sperm development.
  - LH stimulates cells to secrete testosterone.

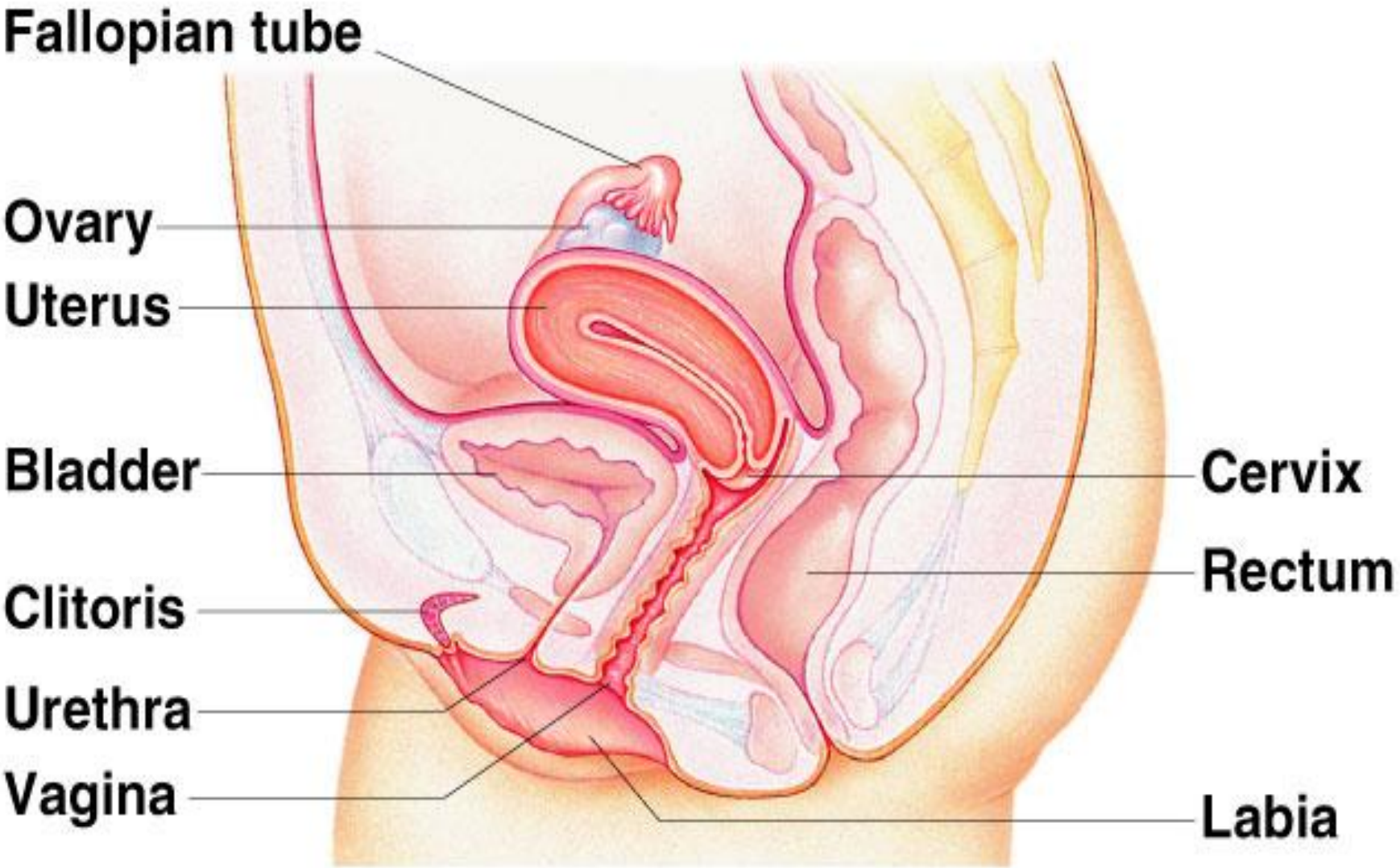
What is the purpose of the prostate gland in men?*

Female reproductive system

- **Ovaries – produce and release eggs**
- **Fallopian tubes (oviducts) – are the tubes for the egg to get from the ovary to the uterus**
- **Uterus – area for nourishment and development of the embryo**
- **Cervix – a muscular opening between the uterus and vagina that opens to let the baby out during the birthing process**
- **Vagina – receives the penis during sexual intercourse and is the birth canal for the baby**
- **Urethra – serves only for release of urine**
- **Endometrium – the lining of the uterus that breaks down and builds up during the menstrual cycle.**

Reproductive System of Human Female





*Know the parts and functions of the female reproductive system.**

The Human menstrual cycle

- **The monthly cycle that the uterus goes through to prepare for a possible implanting of the zygote**

Know the stages and the hormones of the human menstrual cycle.*

The Follicle Stage (7-10 days)

- **The pituitary gland produces the hormone FSH (Follicle Stimulating Hormone)**
- **FSH causes the egg to develop in the ovary causing a follicle to form and the ovaries to produce estrogen**
- **The estrogen causes the lining of the uterus to thicken**

What gland produces FSH and LH?*

Ovulation Stage

- **The increase in estrogen causes a decrease in FSH and an increase in Luteinizing Hormone (LH)**
- **LH causes ovulation (The follicle ruptures and releases the egg)**

The Corpus Luteum stage

- **Where ovulation takes place on the ovary is a ruptured follicle which changes into the Corpus luteum due to the LH**
- **The corpus luteum produces estrogen and progesterone which causes the uterus lining to continue to thicken and FSH and LH to stop**

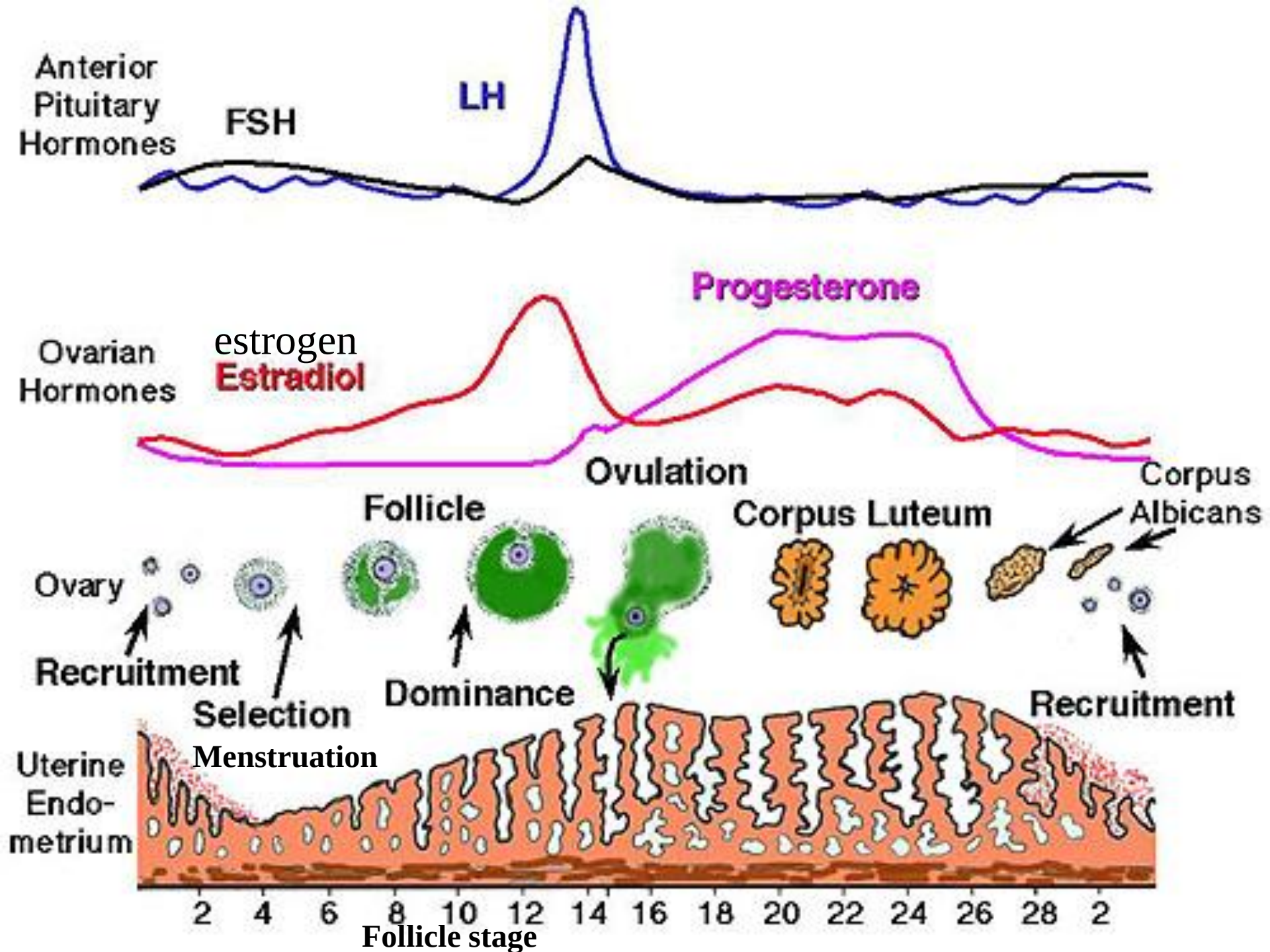
At what point in the menstrual cycle is the uterine lining thickest?*

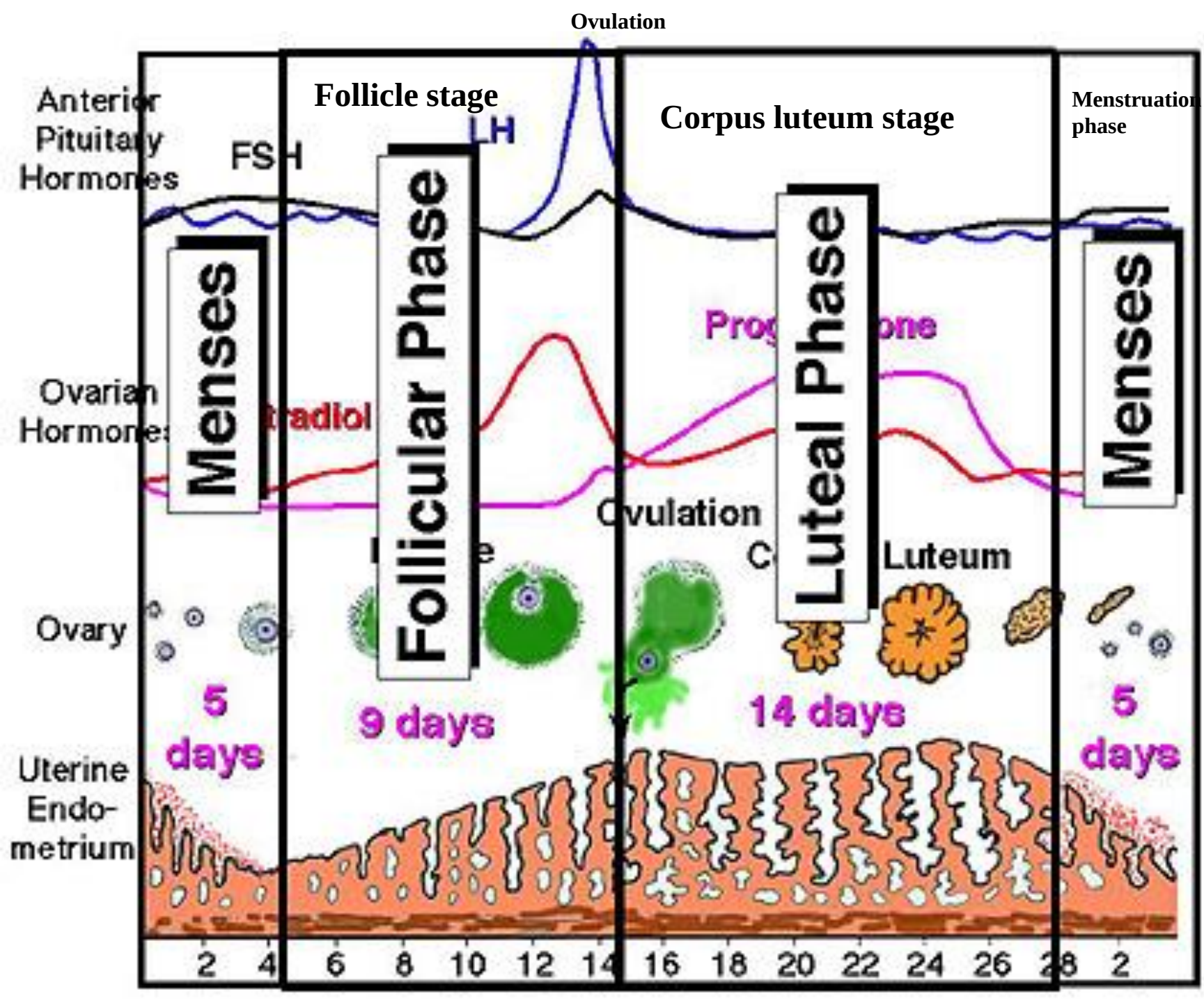
The menstruation stage

- **If the egg is not fertilized the Corpus Luteum heals over and progesterone decreases drastically.**
- **The uterine lining breaks down and bleeding results**
- **The egg and the uterine lining are released from the body through the cervix and the vagina**

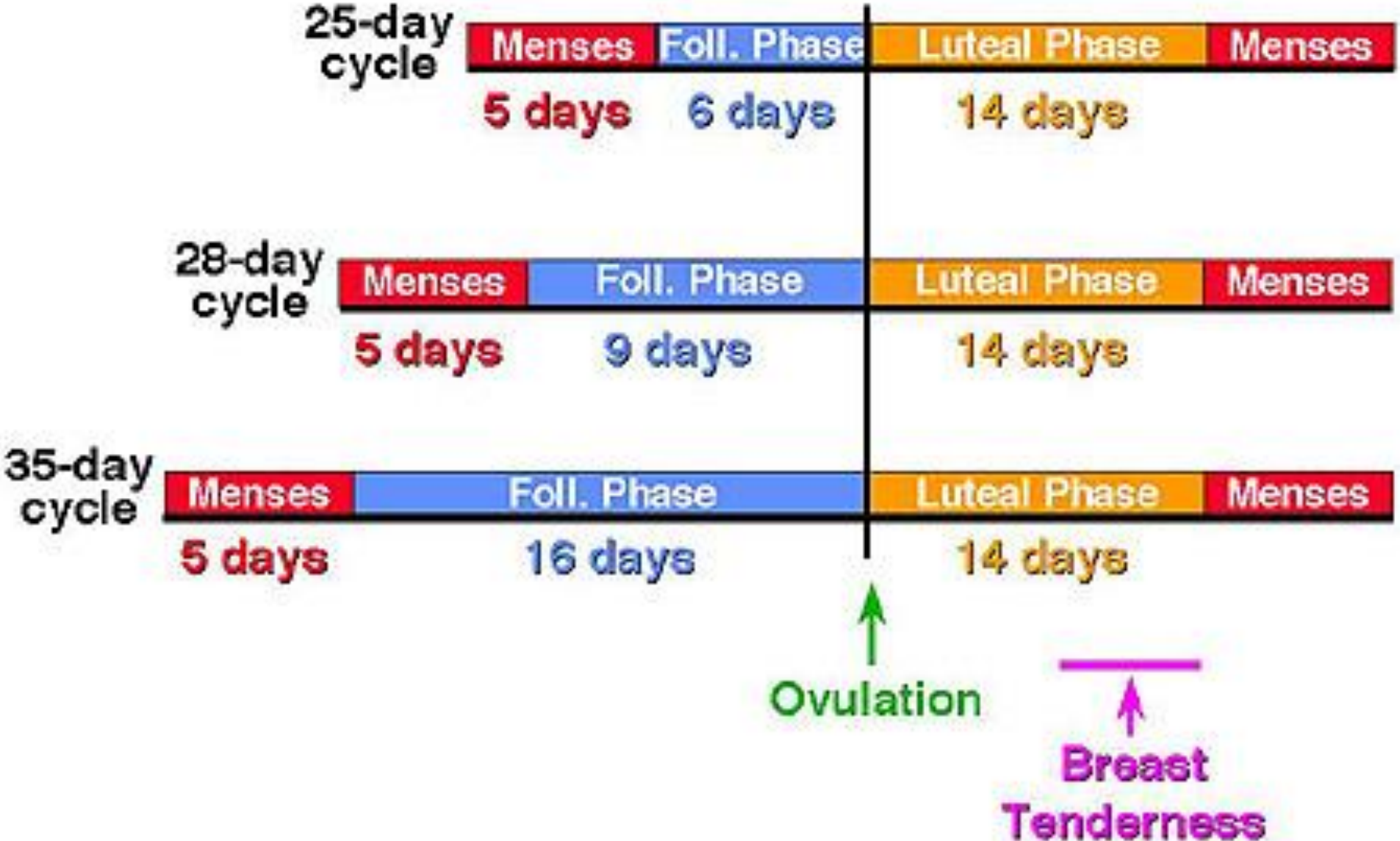
What is the purpose of the menstrual cycle in humans?*

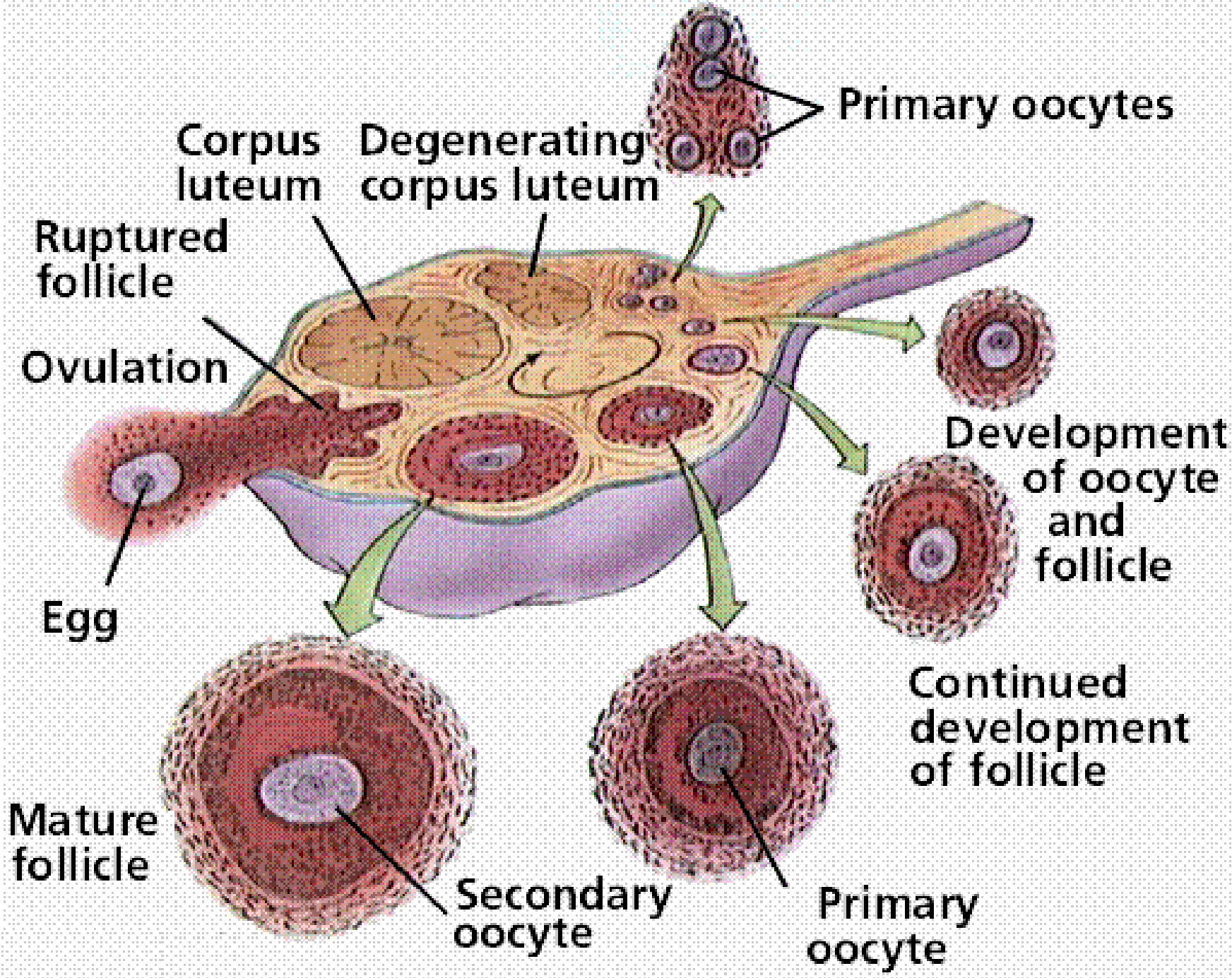
Know the stages of the menstrual cycle.*


Anterior Pituitary Hormones
FSH
LH
Progesterone
Ovarian Hormones
estrogen
Estradiol
Ovulation
Follicle
Corpus Luteum
Corpus Albicans
Ovary
Recruitment
Selection
Dominance
Recruitment
Menstruation
Uterine Endo-metrium
2 4 6 8 10 12 14 16 18 20 22 24 26 28 2
Follicle stage


Ovulation
Follicle stage
Corpus luteum stage
Menstruation phase
Anterior Pituitary Hormones
FSH
LH
Menses
Follicular Phase
Luteal Phase
Menses
Ovarian Hormones
Ovulation
Luteum
Ovary
5 days
9 days
14 days
5 days
Uterine Endo-metrium
2 4 6 8 10 12 14 16 18 20 22 24 26 28 2

Variation in Menstrual Cycle Length




Primary oocytes
Corpus luteum
Degenerating corpus luteum
Ruptured follicle
Ovulation
Egg
Development of oocyte and follicle
Continued development of follicle
Mature follicle
Secondary oocyte
Primary oocyte

Menstrual cycle and the hormones

	Follicle Stage	Ovulation Stage	Corpus Luteum Stage	Menstruation Stage
Hormone Produced by Pituitary Gland				
Hormone Produced by Ovary				
What happens to the Uterine Lining				

Pregnancy stage

- **If the egg is fertilized the zygote embeds in the uterine lining and produces a hormone that causes the corpus luteum to continue to produce progesterone**
- **Progesterone inhibits ovulation from taking place**
- **This stage last**
  a) 9 months, or 38 week, or 280 days

What hormone inhibits menstruation from taking place?*

What happens to the corpus luteum if the egg is fertilized?*

Fertilization & Early Pregnancy

Conception

- **During sexual intercourse**
- **Sperm is ejected (ejaculated) into the vagina**
- **The sperm enter the cervix**
- **Sperm go through the uterus**
- **Fertilization takes place in the oviduct**
- **The zygote then implants in the uterus wall**
- **Contraceptive – is a device or chemical that keeps conception form taking place**

*What is the pathway that human sperm follow from the testes of the male to the fertilization in the female?**

*Where does fertilization usually take place in the human female?**

BIRTH CONTROL METHODS

- HORMONAL METHODS:-

PILL–PATCH– NORPLANT – DEPO-PROVERA

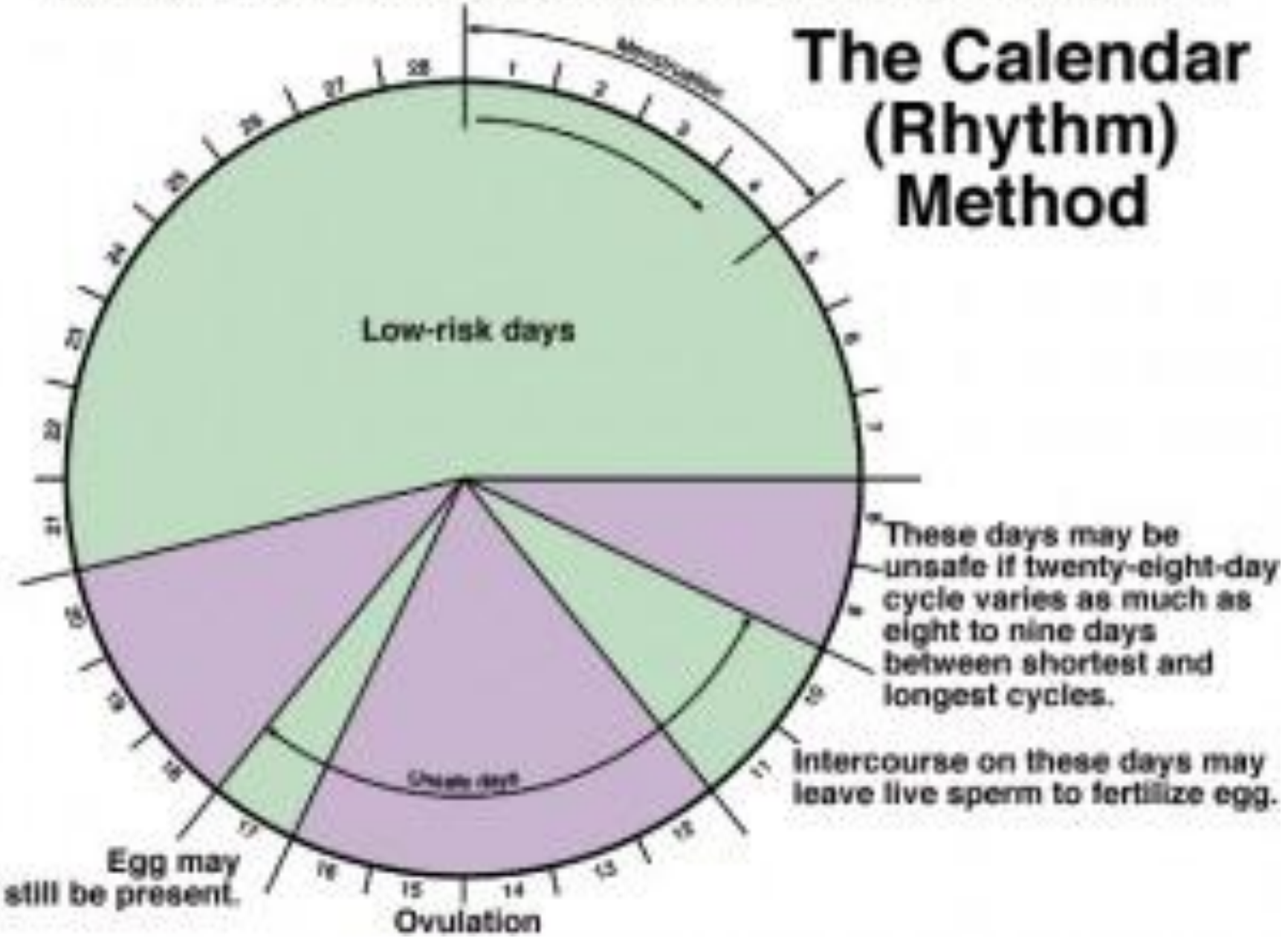
- BARRIERS:-

CONDOM - DIAPHRAM - CERVICAL CAP

- OTHERS:-

SPERMICIDES – RHYTHM -TUBAL LIGATION – VASECTOMY – INTRAUTERINE DEVICE

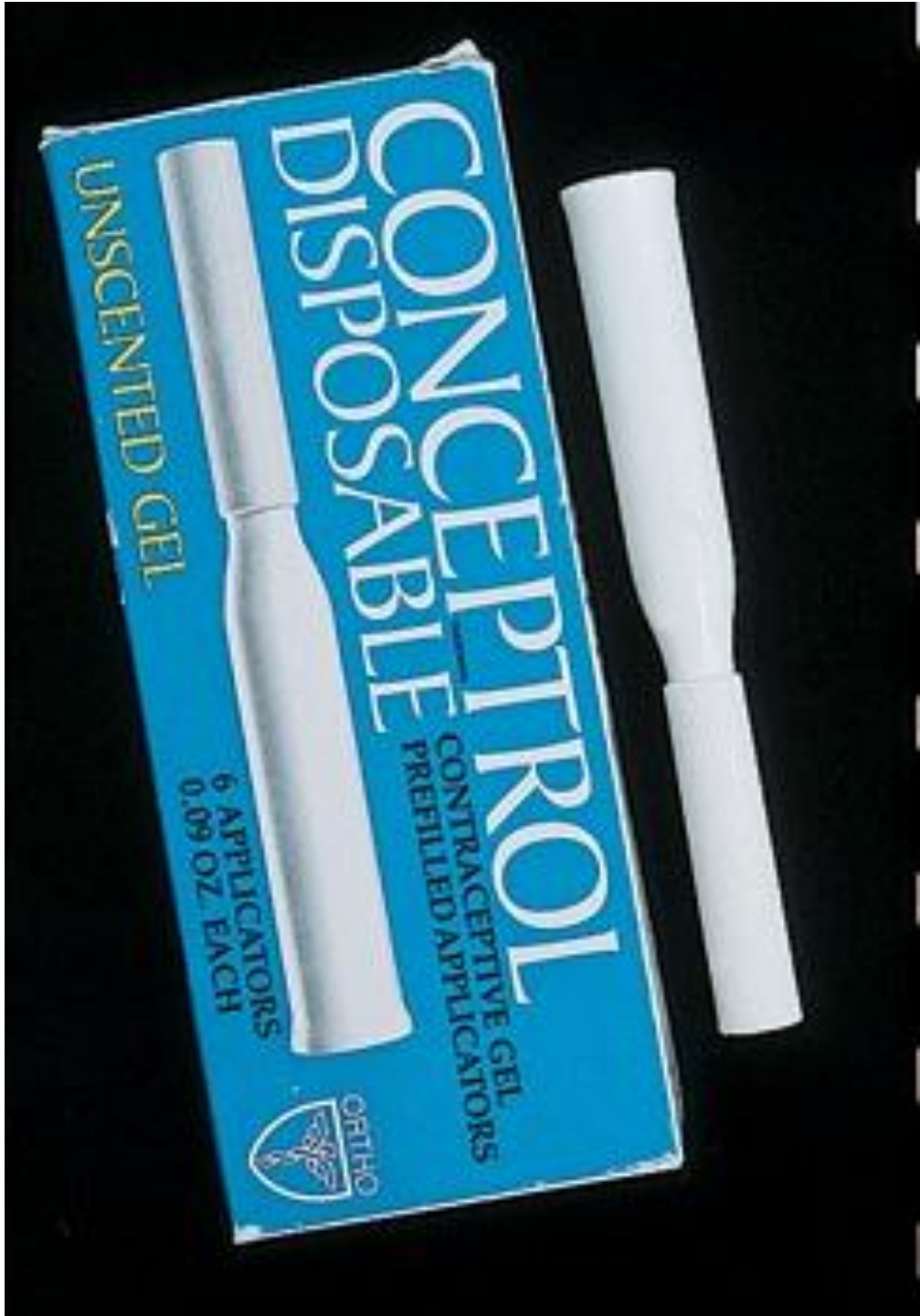
The Calendar (Rhythm) Method



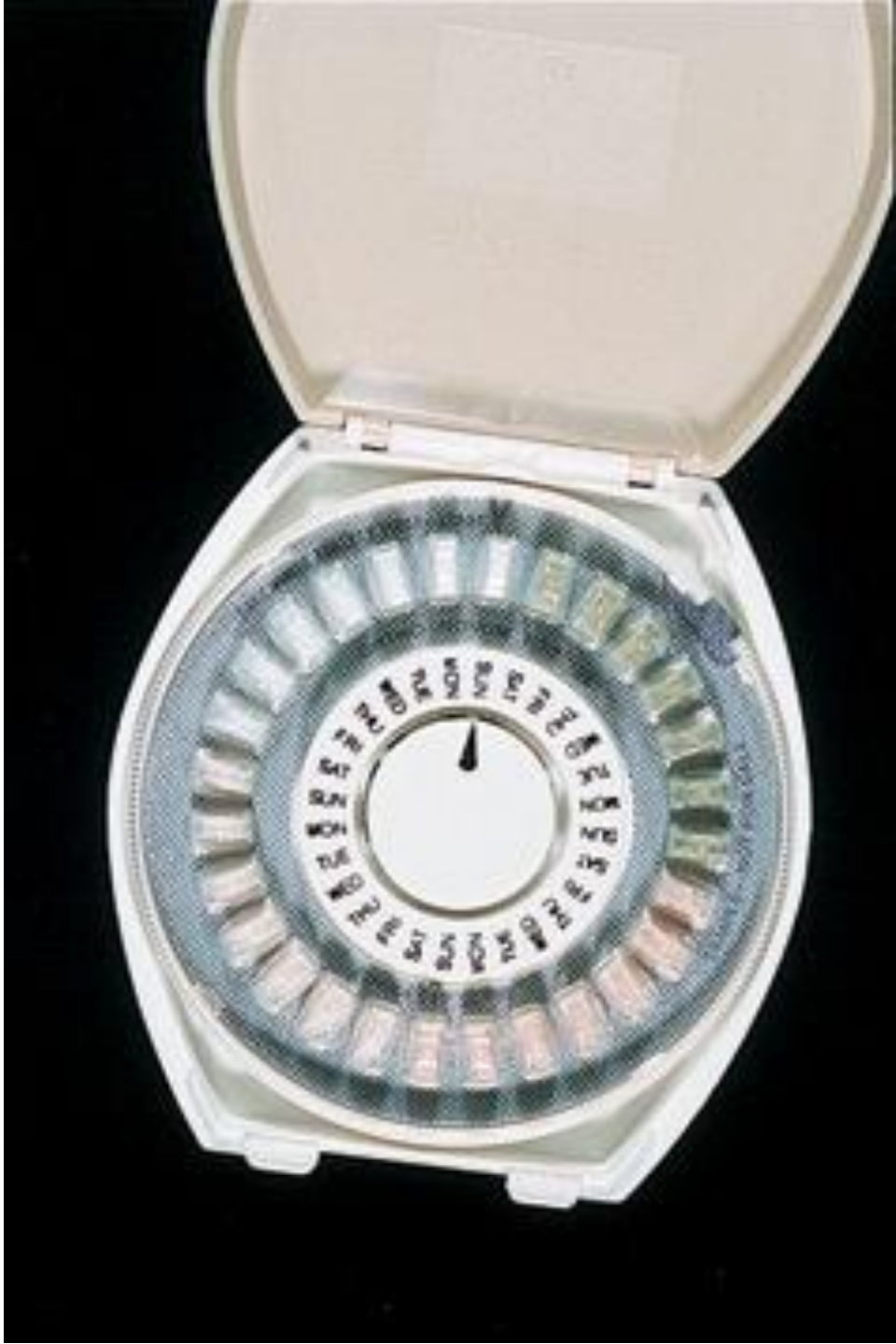
CONDOM

A DIAPHRAM & SPERMICIDE JELLY

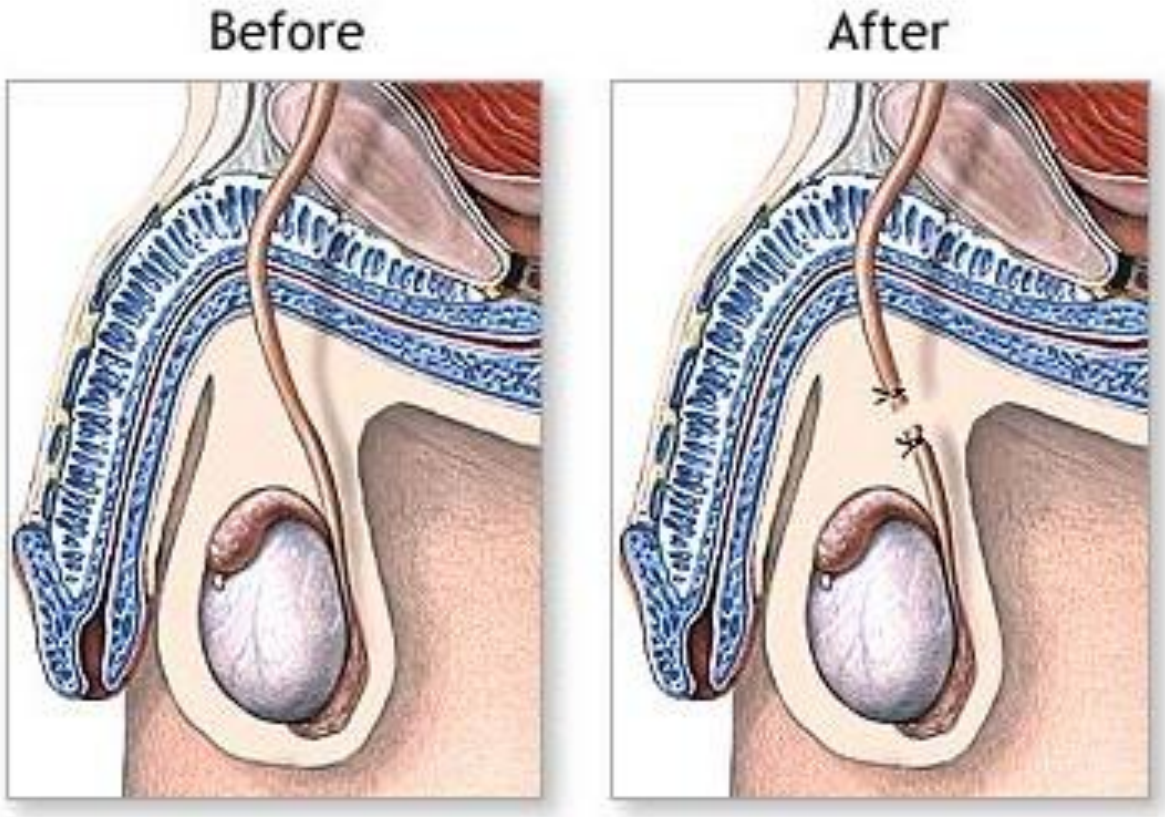
SPERMICIDE GEL



THE PILLS

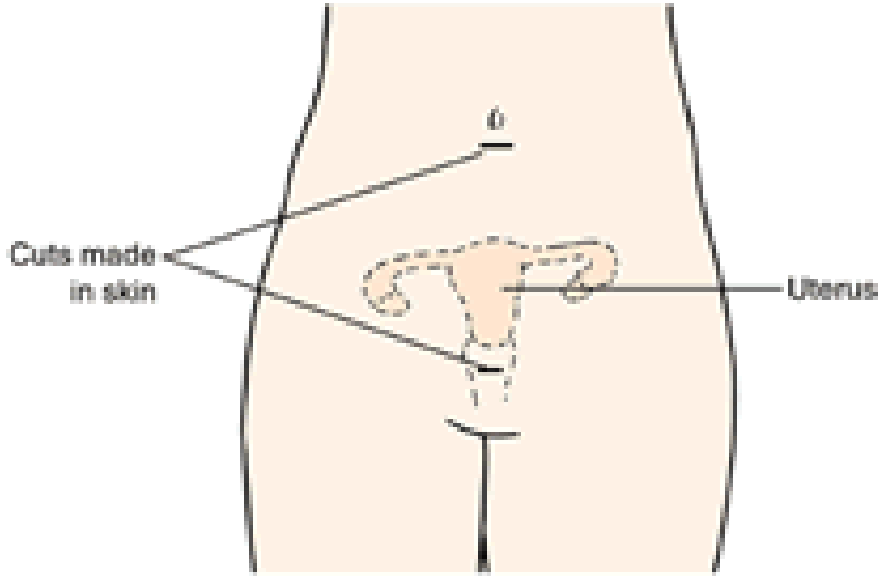


Vasectomy

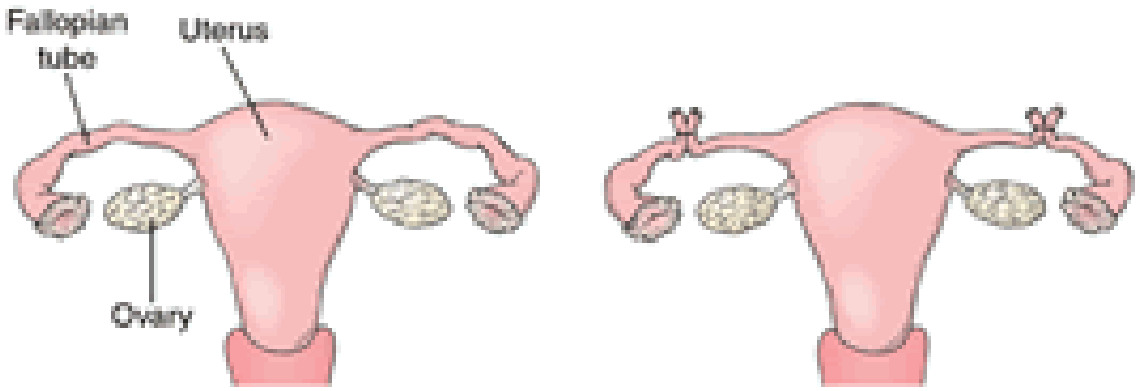


A.D.A.M.

Tubal Ligation



Two small cuts are made. A scope for seeing inside the abdomen is put into one of the cuts. A tool for working on the tubes is put through the other cut.



The fallopian tubes are cut and tied. The cut ends can also be burned or clamped shut.

INTRAUTERINE DEVICE {IUD}