Female Reproductive System

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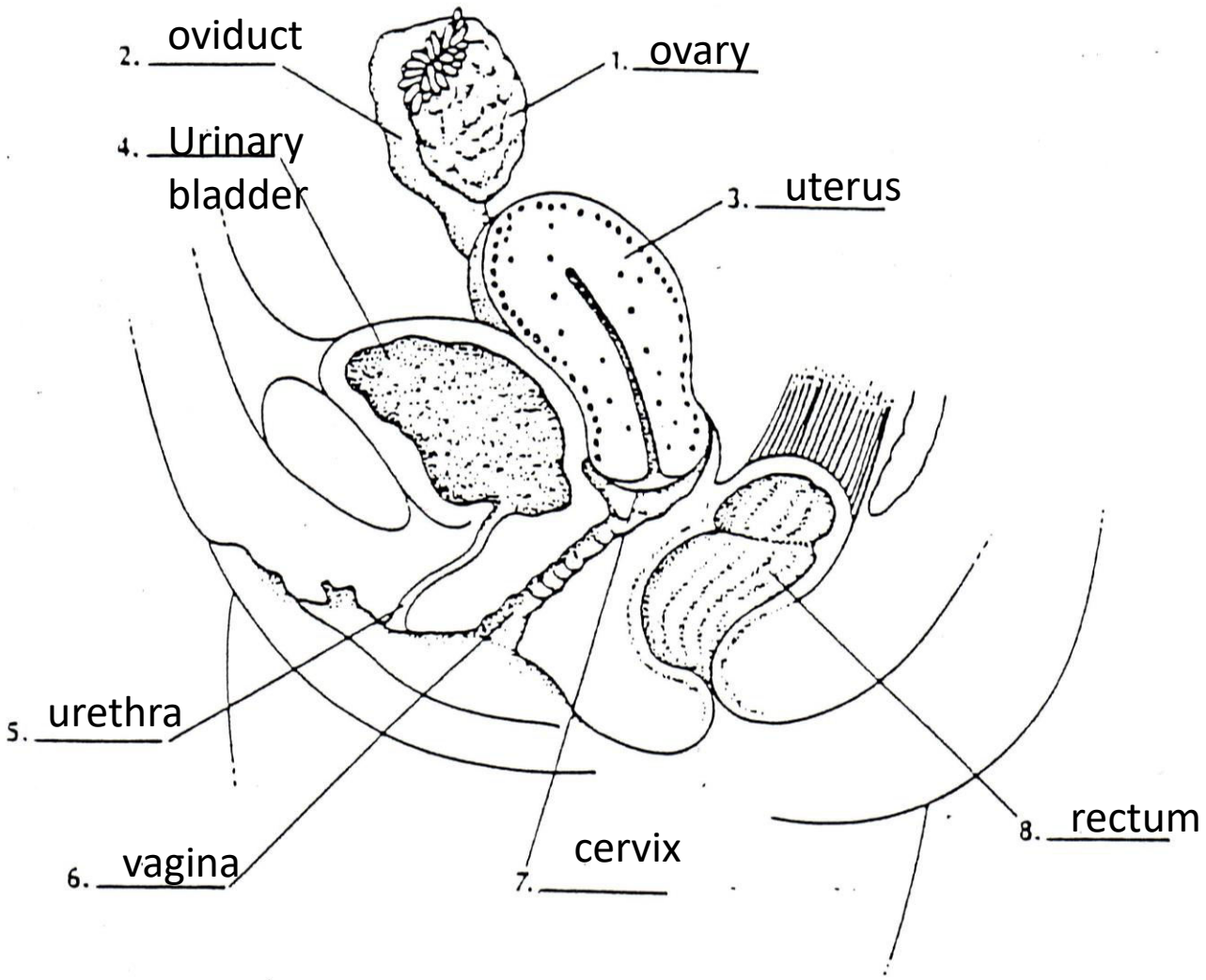
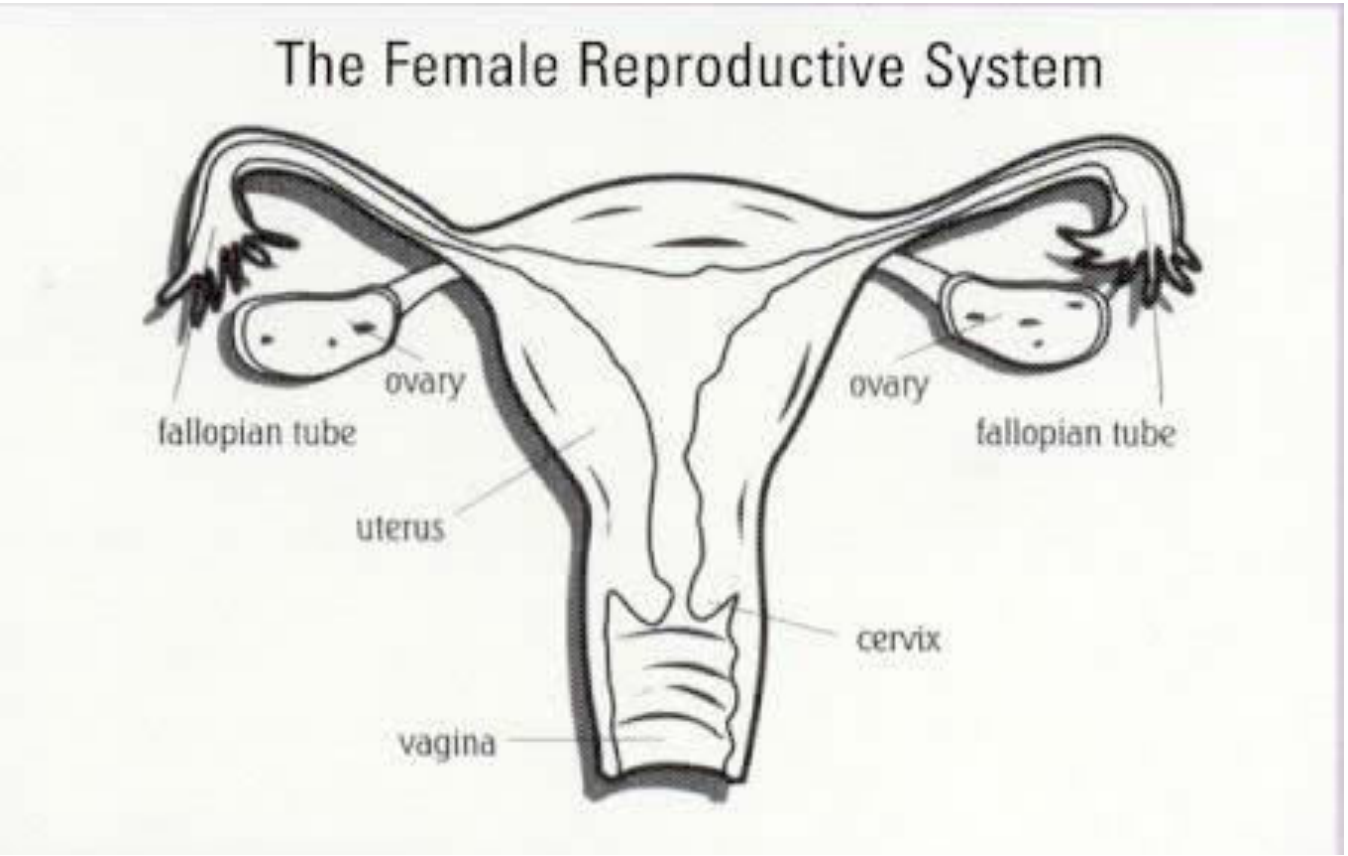
Female Reproductive System



Female Reproductive System (frontal view)



See p. 61 in Review book

Female Reproductive System

1. Ovary – female gonads. Secrete estrogen – produces secondary characteristics, menstrual cycle

   Produces eggs – 2 ovaries 4cms long, 2 cms wide

Follicles – each ovary contains 200,000 egg sacs called follicles. In each follicle is an immature egg.

All the eggs are present at birth. During the woman's lifetime 500 eggs mature

When an egg matures, follicle moves to surface of ovary.

Follicle breaks & releases the egg – ovulation

Egg can be fertilized for about 24 hours after ovulation

Female Reproductive System

2. Oviduct (fallopian tube) – Each ovary is near but not connected to oviduct. Tube with funnel-like opening. Cilia line it to create a current that draws the egg into the tube. Egg is fertilized in the oviduct
3. Uterus – thick, muscular, pear-shaped organ. Once egg is fertilized it finishes its development in uterus attached to uterine wall

Female Reproductive System

4. Urinary bladder – storage of urine
5. Urethra – passage of urine to outside of body
6. Vagina (birth canal) – leads to outside of body
7. Cervix – narrow neck of uterus
8. Rectum – passage for wastes

The Menstrual Cycle

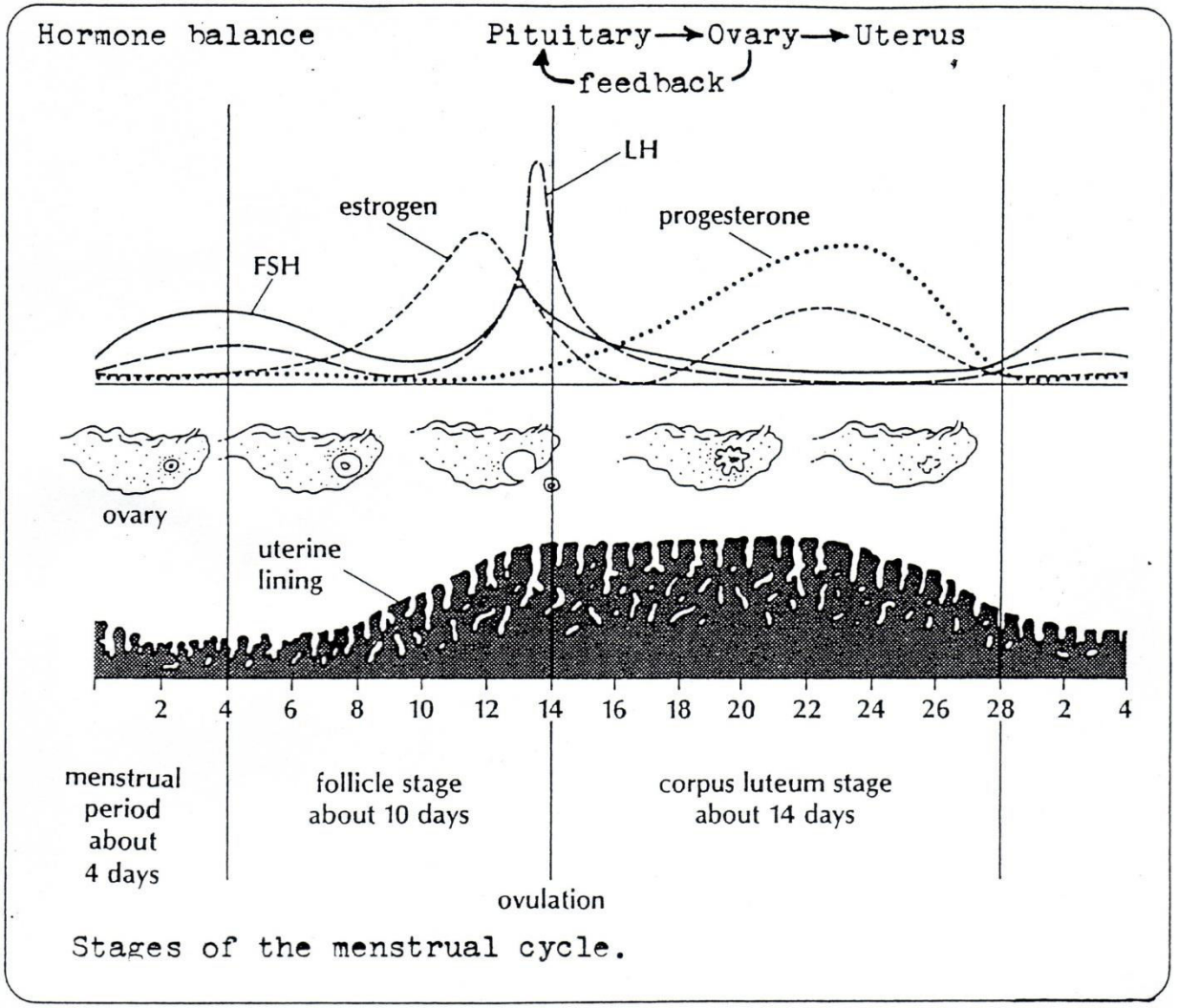
What is the menstrual cycle?

Cycle during which an egg develops and is released from the ovary and the uterus is prepared to receive a fertilized egg

Menarche: first menstrual period – usually occurs between 11 and 12

Menopause: time when a woman stops menstruating, usually between 45 & 55 and is no longer able to conceive.

The Menstrual Cycle



Stages of the menstrual cycle.

The Menstrual Cycle

1. Menstruation: Loss of egg and uterine tissue via vagina if fertilization does not occur

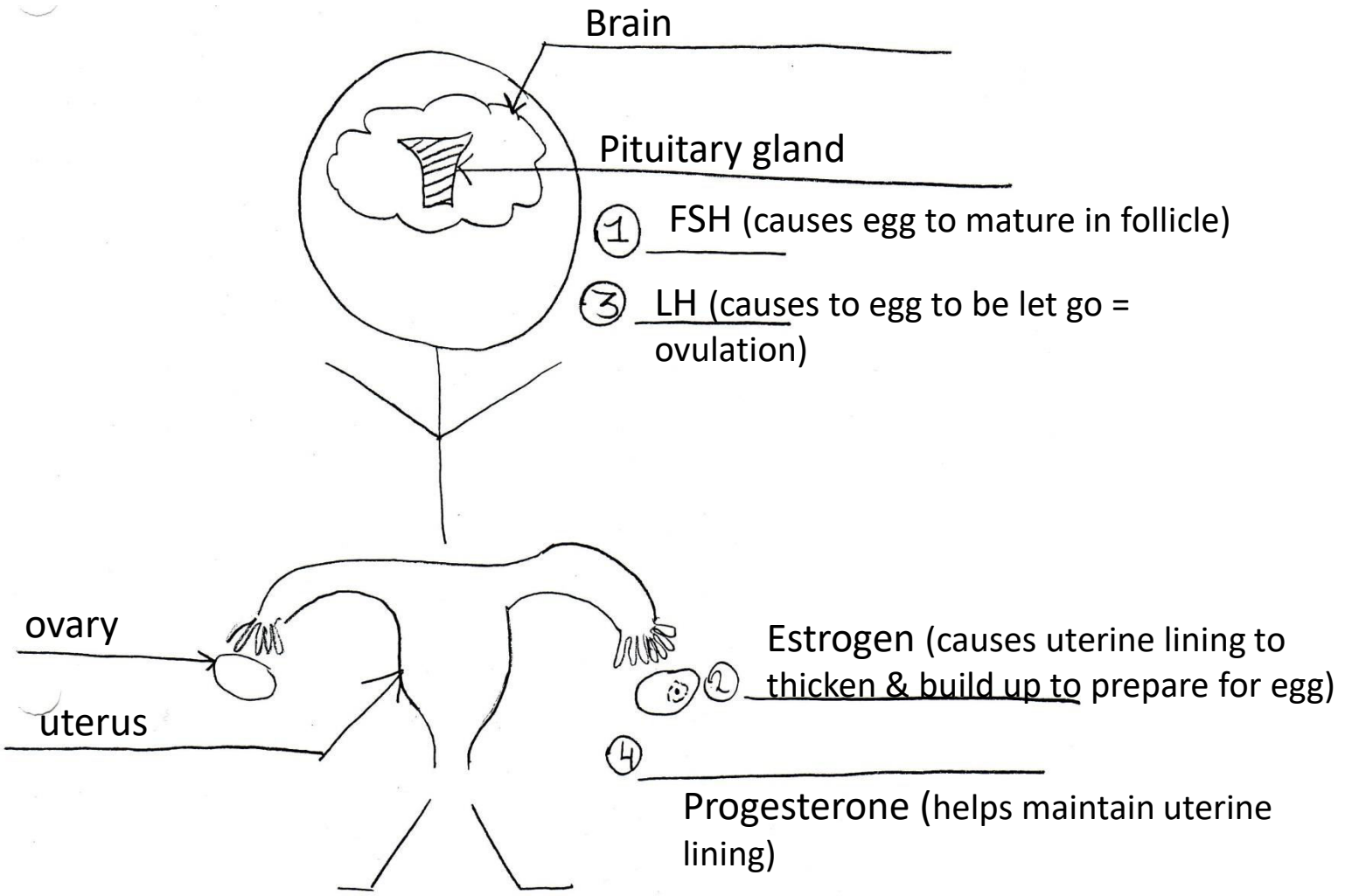
2. Follicle Stage (follicular stage): lasts 10 days, FSH & LH levels increase, egg matures, follicle secretes estrogen to prepare uterus

The Menstrual Cycle

3. Ovulation: High level of estrogen detected by hypothalamus, increased LH, decreased FSH, follicle bursts – egg released

4. Corpus Luteum Stage (Luteal Phase): LH converts follicle to corpus luteum – secretes estrogen & progesterone. Progesterone prepares uterus. Increased progesterone keeps LH & FSH low

Another Way of Looking at Negative Feedback in the Female Reproductive System (Hormones of the Menstrual Cycle)



Hormones of Menstrual Cycle

What happens if fertilization occurs?

Corpus luteum keeps producing progesterone to maintain pregnancy. After 5 weeks the embryo produces progesterone – this inhibits LH & FSH so no menstrual cycle

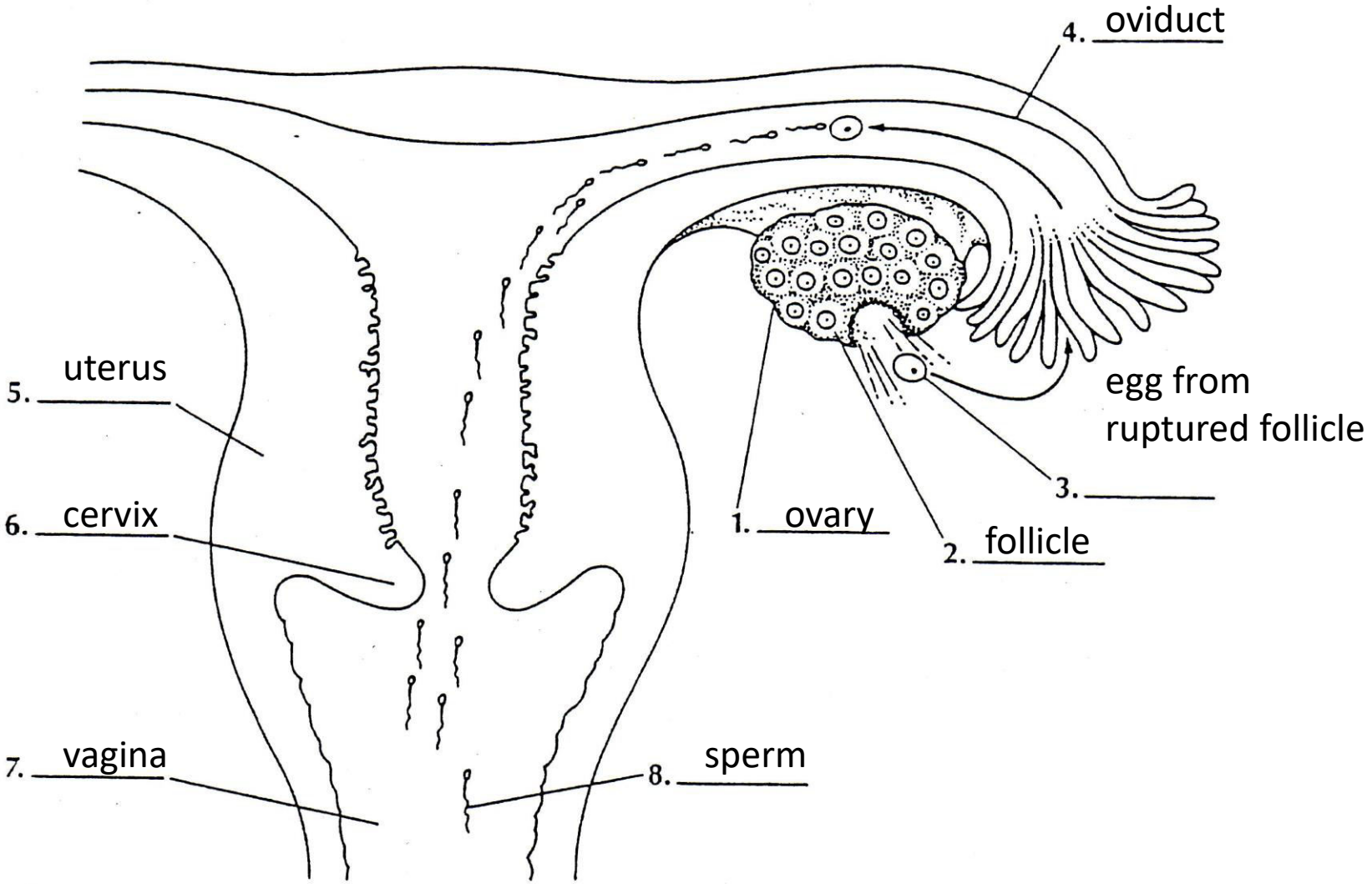
What happens if fertilization does not occur?

There is no implantation – the corpus luteum breaks down. Progesterone level drops, uterine lining breaks down – menstruation.

FSH & LH are produced again – new cycle

<u>Average</u> Menstrual Cycle is 28 days long

Ovulation to Implantation



Ovulation to Implantation

1. Ovary – produces estrogen & progesterone – meiosis occurs & egg develops
2. Egg matures in **follicle** of ovary
3. Ovulation – egg released from follicle – may live for 24 hours

   - egg moves into fallopian tube by cilia

Ovulation to Implantation

4. Events in fallopian tube
    a. Fertilization occurs here. Sperm lives 4-5 days (egg lives 1 day)
    b. Zygote undergoes mitosis & travels down fallopian tube within 6-10 days. Zygote is ready to implant into uterus.

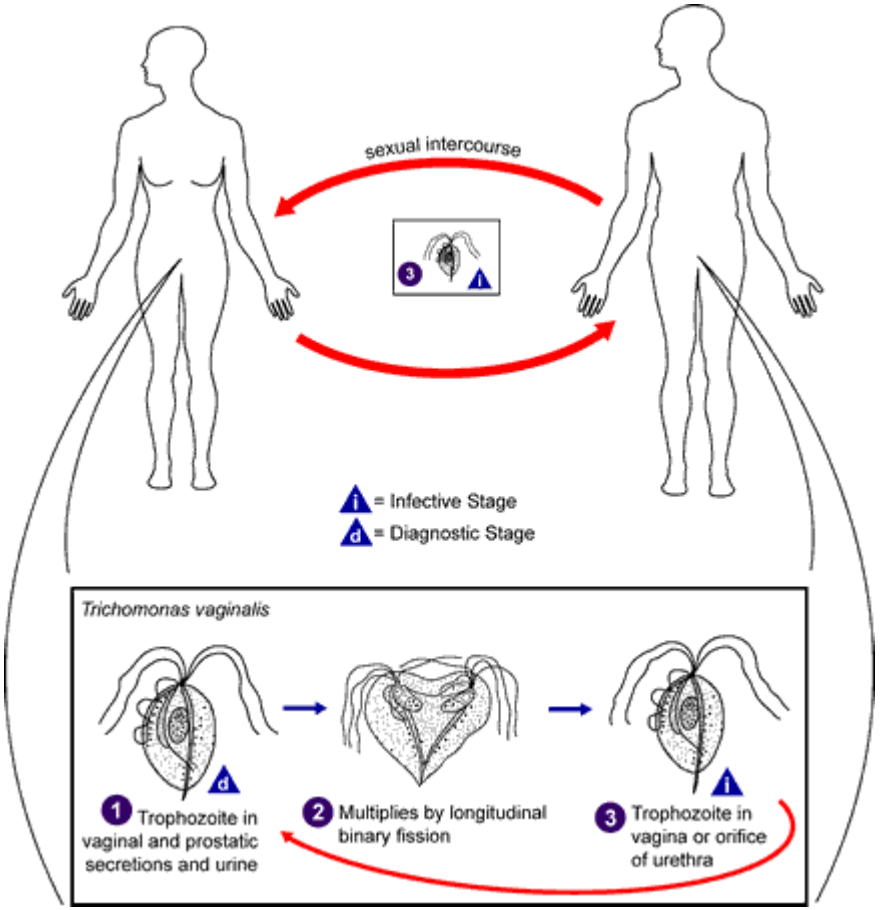
Ovulation to Implantation

5. Events in uterus
    a. Implantation – embryo implants/embeds into uterine lining & secretes hormone HCG to signal its arrival
    b. Cell Differentiation – cells divide by mitosis & become different due to gene expression. Different embryo parts will form.

Sexually Transmitted Diseases (STDs)

1. Definition: Disease spread from one person to another during sexual contact
2. Types of STDs: gonorrhea, chlamydia, syphilis, genital herpes, HIV, trichomonas
3. Reducing Risky Behavior
   a. Avoid sexual contact
   b. Avoid intravenous drug use

Genital herpes



Trichomonas Life Cycle

Birth control

Method of Birth Control	How does it Work?
Abstinence	Refrain from intercourse to prevent sperm from joining egg
Sterilization	Females – tubal ligation-fallopian tubes are cut & tied so egg can't be fertilized & reach uterus Males - vasectomy – cut & seal off vas deferens so semen never has sperm in it (Permanent)
Withdrawal	Removal of penis from vagina before ejaculation occurs
Condoms	Sheath covering penis to prevent sperm from vaginal contact

Birth Control

Diaphragm/Cervical Cap	Fitted cup or cap that covers the cervix to prevent sperm from reaching egg
Birth Control Pill	Contain hormones estrogen & progestin to prevent ovulation Protects against pelvic inflammatory disease (PID), ovarian & endometrial cancer (1 pill daily for 28 day cycle)
Patch (Ortho Evra)	Skin patch worn on lower abdomen, butt, or upper body. Releases progestin & estrogen into bloodstream to prevent ovulation (wear for 3 weeks, not on 4th – menstruation)
Depo-Provera	Shot of progestin to prevent ovulation

Birth Control

IUD	Small plastic device placed in uterus containing copper or progesterone. Prevents sperm from entering uterus & prevents a fertilized egg from implanting (Can be worn for 1-10 years)
Family Planning	Charting of menstrual cycle & detection of physical symptoms to determine “safe” time to have sexual intercourse
Morning-after Pill	Not a regular method of birth control Take 2 doses of hormone pills 12 hours apart & started within 3 days after having unprotected sex. Prevents implantation