

## 2012 Oncofertility Saturday Academy Pre- and Post-Test

### What is Oncofertility?

- a. The study of new ways to prevent cancer of the reproductive organs.
- b. The treatment of people with genetically based infertility.
- c. Comprehensive medical approaches to preserve fertility for cancer patients.
- d. Entirely new ways to treat cancer, without using harmful radiation.

### *In Vitro* Fertilization (IVF) refers to:

- a. The hormone that stimulates follicle growth.
- b. The period of menstrual cycle during which a woman can become pregnant.
- c. The hormone that stimulates ovulation prior to implantation.
- d. The process of producing embryos outside the body.

### If a woman is diagnosed with cancer and wants to preserve her fertility before cancer treatment, what fertility preservation options does she potentially have? Select all that apply.

- a. Embryo banking.
- b. Egg banking.
- c. Ovarian Cryopreservation.
- d. Adoption.

### A woman:

- a. Is born with all the eggs/oocytes she will ever have
- b. Has no eggs/oocytes at birth, but begins to grow eggs/oocytes as soon as she becomes sexually mature
- c. Has the same number of eggs/oocytes in her body from birth to menopause
- d. Has all eggs/oocytes ready for fertilization by the time she begins menstruation, usually in her teens

### Cancer is best defined as:

- a. An inherited disease.
- b. Widespread cell death.
- c. An infection that destroys tissue in organs.
- d. Uncontrolled cell growth.

### Which of the choices below are known to contribute to cancer? Select all that apply.

- a. Certain genes.
- b. Environmental toxins.
- c. Certain viruses.
- d. Solar radiation.

### The pituitary:

- a. Produces hormones that regulate skeletal growth but does not affect the ovaries.
- b. Is the primary target of FSH.
- c. Produces hormones that regulate follicular development.
- d. Is located in the corpus luteum.

### Which statement about the ovary is correct?

- a. An egg from the ovary implants in a follicle after fertilization.
- b. Follicles contain eggs and are located in the ovary.
- c. Ovaries are hormone-secreting glands located inside the uterus.
- d. The uterus causes the ovary to release the egg.



**A 22 year old woman is going to be treated for lung cancer. Would any of the following therapies be likely to affect her ability to become pregnant? Select all that apply.**

- a. Chemotherapy
- b. Radiation
- c. Surgery

**What is the function of the testes:**

- a. They produce only sperm.
- b. They produce only the hormone testosterone.
- c. They produce sperm and hormones (testosterone).
- d. They produce semen.

**Which statement about an egg that has just been fertilized is correct?**

- a. The fertilized egg is ready for implantation immediately after sperm penetration.
- b. The fertilized egg must grow to the blastocyst stage before implantation.
- c. The fertilized egg must pass through the cervix prior to implantation.
- d. The fertilized egg is formed in the uterus after the follicle implants.

**Follicle development refers to**

- a. Growth of the structure in the ovary that contains the maturing oocyte.
- b. Early embryonic growth in the uterus.
- c. Growth of the embryo prior to implantation.
- d. Development of the thickened uterine lining in preparation for implantation.

**Before ovulation, what hormone does the follicle produce?**

- a. Estrogen.
- b. Progesterone.
- c. FSH.
- d. Prolactin.

**What is the difference between the follicular phase and the luteal phase of reproduction?**

- a. Follicular phase = first trimester of pregnancy; Luteal phase = third trimester of pregnancy.
- b. Follicular phase = time prior to implantation; Luteal phase = between implantation and birth.
- c. Follicular phase = growth of follicles before ovulation; Luteal phase = events after ovulation.
- d. Follicular phase = dormant phase of reproduction before puberty; Luteal phase = fertile years prior to menopause.

**Menstrual bleeding:**

- a. Is the release of tissue from ovaries in response to estrogen.
- b. Is the shedding of the uterine lining as progesterone declines.
- c. Occurs just before ovulation.

**What does radiation do? Select all that apply.**

- a. Radiation causes damage to cells that may cause them to grow uncontrollably into cancer.
- b. Radiation kills cancer cells.
- c. Radiation kills non-cancer (normal) cells.

**What happens to a woman's fertility over time?**

- a. Fertility stays the same until menopause.
- b. Fertility increases as a result of cancer treatment.
- c. Fertility increases constantly from puberty until menopause.
- d. Fertility decreases gradually after age 35.

**Regarding male fertility (the ability to father children), when does sperm production begin and end?**

- a. Sperm production begins before birth; declines around age 45
- b. Sperm production begins before birth; declines around age 80
- c. Sperm production begins around puberty; declines around age 45
- d. Sperm production begins around puberty; declines around age 80

These cancer patients are about to undergo **radiation therapy**. For each patient described, please circle YES or NO for whether they qualify for fertility preservation, and briefly explain WHY this patient qualifies for fertility preservation:

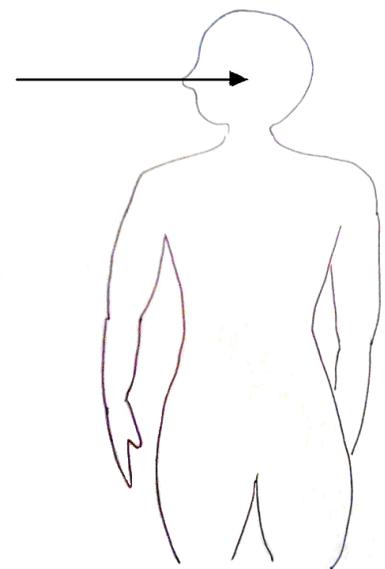
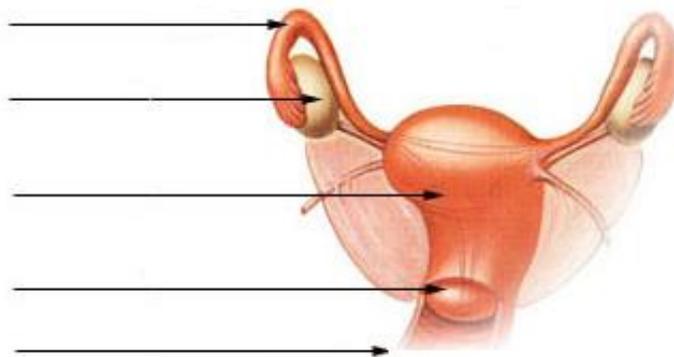
Patient Characteristics:	Does this patient qualify for fertility preservation?	Explain <b>WHY</b> this patient qualifies for fertility preservation:
22 year old female with ovarian cancer	YES      NO	
30 year old female with stomach cancer	YES      NO	
7 year old female with leukemia (blood cancer)	YES      NO	
65 year old female with uterine cancer	YES      NO	
24 year old male with testicular cancer	YES      NO	

Use the terms below to label the structures of the female reproductive system.

**Uterus**  
**Pituitary**

**Fallopian tube**  
**Cervix**

**Vagina**  
**Ovary**



In which part of the system does fertilization occur? \_\_\_\_\_

Describe the key events for an egg from the beginning of menstrual cycle and following it to the start of pregnancy. (If you know, include timing, triggers, and where key events take place.)

Follicular phase (from day 1 to ovulation):

Ovulation (around day14):

Fertilization:

When Linda was 16 years old, she was diagnosed with **lung cancer**. In order to preserve her fertility, one of her ovaries was removed and frozen for later use. Unfortunately, she died of her cancer a year later. Linda was an only child and her parents want to use her eggs to have a grandchild. **List** what you consider to be the **ethical issues** surrounding this decision. List as many as you can think of.



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