

VISWASS SCHOOL & COLLEGE OF NURSING

GNM 1ST YEAR

ANATOMY AND PHYSIOLOGY

UNIT-10

THE REPRODUCTIVE SYSTEM

SHORT QUESTIONS AND ANSWERS

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1) Explain in detail about menopause & its physiological importance.(5)

Menopause:

- The menopause usually takes place between the age of 45 & 55 years, marking the end of the child bearing period.
- It may occur suddenly or over a period of years, some time as long as 10 years, and is caused by a progressive reduction in oestrogen level as the number of functional follicles in the ovaries declines with age.
- The ovaries gradually become less responsive to FSH & LH, and ovulation and the menstrual cycle become irregular, eventually ceasing.
- Several other phenomena may occur at the same time, including:
 - Short term unpredictable vasodilation with flushing, sweating and palpitations, causing discomfort and disturbance of the normal sleep pattern.
 - Shrinkage of the breasts
 - Sparseness of axially and pubic hair
 - Atrophy of the sex organs
 - Episodes of uncharacteristic behavior, e.g. irritability, mood changes
 - Gradual thinning of the skin
 - Loss of bone mass, predisposing to osteoporosis
 - Slow increase in blood cholesterol levels, which raises the risk of cardiovascular diseases in post menopausal woman to that in males of the same age.
- Similar changes after the bilateral irradiation or surgical removal of the ovaries.
- Every woman's menopause experience is unique. Symptoms are usually more severe when menopause occurs suddenly or over a shorter period of time.

- Conditions that impact the health of the ovary, like cancer or hysterectomy, or certain lifestyle choices, like smoking, tend to increase the severity and duration of symptoms.
- Aside from menstruation changes, the symptoms of perimenopause, menopause, and postmenopause are generally the same. The most common early signs of perimenopause are:
 - less frequent menstruation
 - heavier or lighter periods than you normally experience

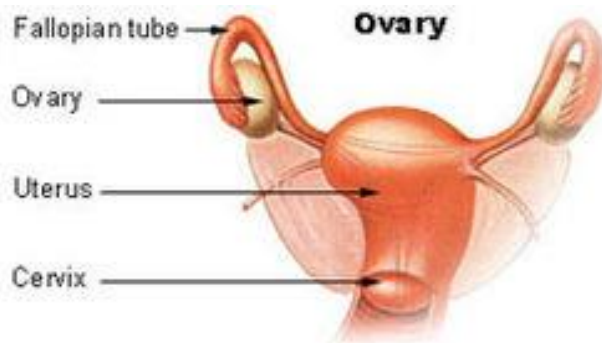
Other common symptoms of menopause include:

- insomnia
- vaginal dryness
- weight gain
- depression
- anxiety
- difficulty concentrating
- memory problems
- reduced libido, or sex drive
- dry skin, mouth, and eyes
- increased urination
- sore or tender breasts
- headaches
- racing heart
- urinary tract infections (UTIs)
- reduced muscle mass
- painful or stiff joints
- reduced bone mass
- less full breasts
- hair thinning or loss
- increased hair growth on other areas of the body, such as the face, neck, chest, and upper back

2) Explain the structure and function of ovary.(5)

Structure & function of Ovary:

- **Ovaries** are the female gonads and they lie in a shallow fossa on the lateral walls of the pelvis.
- The ovaries also secrete hormones that play a role in the menstrual cycle and fertility.
- They are 2.5-3.5 cm long, 2cm wide and 1cm thick.
- Each is attached to the upper part of the uterus by the ovarian ligament and to the back of the broad ligament by a broad band of tissue, the mesovarium.
- Blood vessels and nerves pass to the ovary through the mesovarium.



Structure:

The ovaries have two layers of tissue.

Medulla:

This lies in the centre and consists of fibrous tissue, blood vessels and nerves.

Cortex:

- this surrounds the medulla.
- It has a framework of connective tissue, or stroma, covered by germinal epithelium.
- It contains ovarian follicles in various stages of maturity, each of which contains an ovum.
- Before puberty the ovaries are inactive but the stroma already contains immature follicles, which the female has from birth.

- During the child bearing years, about every 28 days, one or more ovarian follicle matures, ruptures and release its ovum into the peritoneal cavity.
- This is called ovulation and it occurs during most menstrual cycles.

Blood supply, lymph drainage and nerve supply

Arterial supply:

This is by the ovarian arteries, which branch from the abdominal aorta just below the renal arteries.

Venous drainage:

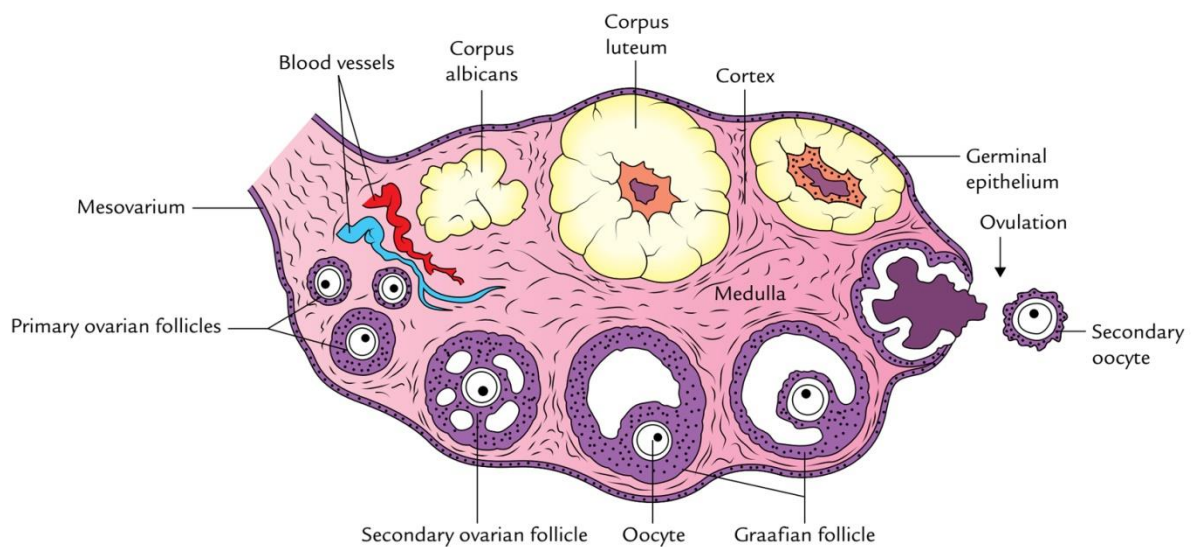
This is into a plexus of veins behind the uterus, from which the ovarian veins arise. The right ovarian veins opens into the inferior vena cava and the left into the left renal vein.

Lymph drainage:

This is to the lateral aortic and preaortic lymph nodes. The lymph vessels follow the same route as the arteries.

Nerve supply:

The nerves are supplied by parasympathetic nerves from the sacral outflow and sympathetic nerves from the lumbar outflow.



Functions:

- At puberty, the ovary begins to secrete increasing levels of hormones. Secondary sex characteristics begin to develop in response to the hormones. The ovary changes structure and function beginning at puberty.
- **Gamete production:** The ovaries are the site of production and periodical release of egg cells, the female gametes. In the ovaries, the developing egg cells (or oocytes) mature in the fluid-filled follicles. Typically, only one oocyte develops at a time, but others can also mature simultaneously.
- **Hormone secretion:** At maturity, ovaries secrete estrogen, testosterone, inhibin, and progesterone. In women, fifty percent of testosterone is produced by the ovaries and adrenal glands and released directly into the blood stream.
- **Ovarian aging:** As women age, they experience a decline in reproductive performance leading to menopause. This decline is tied to a decline in the number of ovarian follicles. Although about 1 million oocytes are present at birth in the human ovary, only about 500 (about 0.05%) of these ovulate, and the rest are wasted.

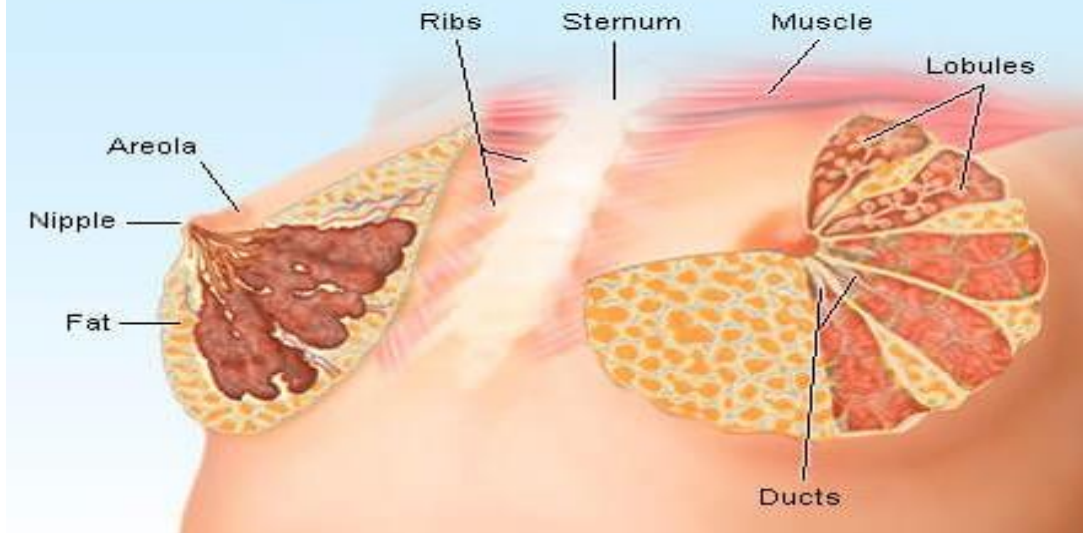
3)Write down the structure and functions of breast?(5)

Structure and function of breasts:

The breasts are mammary glands are accessory glands of the female reproductive system.

They also exist in the male but only in a rudimentary form.

Anatomy of the Breast



Structures:

- The mammary glands or breasts contain varying amounts of glandular tissue, supported by fatty tissue and fibrous connective tissue that anchor the breasts to the chest wall.
- Each breast contains about 20 lobes, each of which contains a number of glandular structures called lobules, where milk is produced.
- Lobules open into tiny lactiferous ducts, which drain milk towards the nipple.
- Supporting fatty and connective tissues run through the breasts, surrounding the lobules, and the breast itself is covered in subcutaneous fat.
- In the lactating breast, glandular tissue proliferates to support milk production, and recedes again after lactation stops.
- Nipple: this is a small conical eminence at the centre of the breast surrounded by a pigmented area, the areola. On the surface of the areola there are numerous sebaceous glands, which lubricate the nipple during lactation.

Blood supply, lymph drainage and nerve supply:

Arterial supply:

The breasts are supplied with blood from the thoracic branches of the axillary arteries and from the internal mammary and intercostal arteries.

Venous drainage;

This is formed by an anastomotic circle round the base of the nipple, from which branches carry the venous blood to the circumference, and end in the axillary and mammary veins.

Lymph drainage:

This is mainly into the superficial axillary lymph vessels and nodes. Lymph may drain through the internal mammary nodes if the superficial route is obstructed.

Nerve supply:

The breasts are supplied by branches from the 4th, 5th and 6th thoracic nerves, which contain sympathetic fibres, there are numerous aromatic sensory nerve endings in the breast, especially around the nipple. When these touch receptors are stimulated by sucking, impulses pass to the hypothalamus and secretion of the hormone oxytocin is increased, promoting the release milk.

Functions

- In the female the breasts are small and immature until puberty.
- There after they grow and develop under the influence of oestrogen and progesterone.
- During pregnancy, these hormones stimulate further growth.
- After the baby is born, the hormone prolactin, from the anterior pituitary, stimulates the production of milk; oxytocin, from the posterior pituitary, stimulates the release of milk in response to the stimulation of the nipple by the sucking baby, by a positive feedback mechanism.