

Task 1: Academic Poster

Female Reproductive System

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Lecture Name: Girdhar Katti

Structure and function of the internal female

VAGINA: Where the sex hormones oestrogen, progesterone, and androgens are produced.

FALLOPIAN TUBES: The passageway for the eggs, where fertilization takes place.

CERVIX: Where a fertilized egg develops into a foetus.

OVARIES: The lower part of the uterus where it joins the vagina.

UTERUS: The muscular tube that leads from the external genitals to the cervix, (rhntc.org,2020).

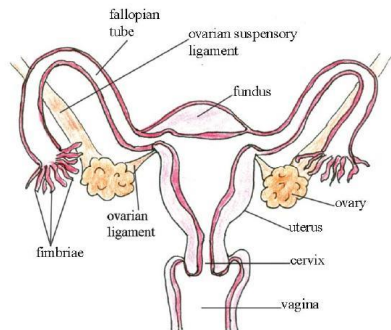
The female reproductive anatomy includes both external and internal structures.

The main function of the female reproductive system is to produce eggs (ova) to be fertilised, and to provide the space and conditions to allow a baby to develop. In order for this to happen, the female reproductive system also has the structures necessary to allow sperm from a man to meet the ova of a woman. Rehfeld, Nylander and Karnov, (2017) discussed that female reproductive organs change progressively throughout life, with the first menstrual, sexual maturity, indicating the onset of the fertile years and the end of menstruation, menopause, signifying its termination. The fertile phase is when the ovaries develop oocytes and produce sex hormones (oestrogen and progesterone), which monitor and control the endometrium's menstrual cycle.

A woman's Fallopian tubes join her ovaries to her uterus.

They fertilise oocytes by transferring them (Han and Sadiq, 2021). High-grade serous ovarian carcinoma (HGSOC) is the most frequently reported type of ovarian cancer and has a poor prognosis, according to Eddy and Pauerstein, (1980).

The vulva links between the cervix and uterus. It is how a foetus and menstrual blood exit the body. The uterine is a muscular pear-shaped organ, also known as the womb. It is where the foetus forms during pregnancy suggested by plannedparenthood.org, (2021).



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FEMALE REPRODUCTIVE SYSTEM

Structure and function of the external female reproductive system

The external female genital area is made up of many parts, which together are called the vulva, these parts include:

- Labia majora
- Minora
- Pudendum
- Breasts

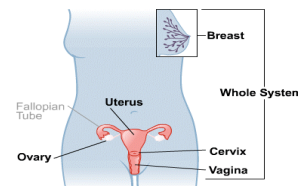
The function of the external female reproductive structures (the genital) is twofold: To enable sperm to enter the body and to protect the internal genital organs from infectious organism. The vaginal opening connects the female external and internal reproductive parts. It is the middle of three openings, between the urethral opening and anus. The urethra is the pathway urine travels through to exit the body. The anus is the opening through which faeces leave the body. Technically, the anus is not part of the reproductive system. However, you should be prepared to discuss it with your clients, especially with reference to anal sex and sexually transmitted diseases (STDs). The vaginal opening is completely separate from the urethral opening and anus reported by rhntc.org, (n.d).

There are two types of pudenda: exterior and internal. Regardless of gender, the term "pudendum" refers to the external genitalia. The labia majora, labia minora, clitoris, and other elements of the human pudenda are all part of the human anatomy. The female pudendum, often known as the vulva, is part of the female anatomy (Zdilla, 2021).

The combination of urine and reproductive organs in the female external genitalia makes it unique. It stands for "labia majora". During sexual desire, it engorges with blood and expands. In the clitoris there are two little cutaneous folds called labia minora (plannedparenthood.org ,2021).

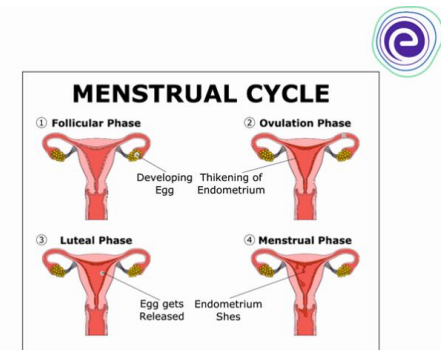
There are around 6 million to 7 million eggs produced throughout foetal life. No new eggs are released beyond this point. At birth, around 1 million eggs are present; by adolescence, only approximately 300,000 remain. Only 300–400 of them will ovulate over a woman's reproductive age. As a woman matures, her fertility may decrease due to a reduction in the proportion and quality of existing eggs reported clevelandclinic.org, (2021).

The function of the breast is lactation. Sucking movement patterns of an infant encourage the anterior pituitary to release prolactin, and the posterior pituitary to secrete oxytocin to promote milk ejection (SlideToDoc, n.d).



medlineplus.gov, (2018)

The menarche, puberty and the menopause



embibe.com, (2017)

Menstrual cycle

Menarche begins at the age of 12-15 years when the hypothalamus inside the nervous system grows hypersensitive and begins releasing the GnRH hormone. Women sex hormones oestrogen and progesterone are responsible for developing secondary sexual characteristics around the age of teen menarche. These include the development of breasts, broadening of high waist, activation of sweat glands and sebaceous glands (oil glands in the skin) and the growth of pubic and armpit hair.

The menstrual cycle is complicated and is completely controlled by the several follicles and hormones. The hypothalamus triggers the pituitary gland to release substances that trigger the ovaries to release oestrogen and progesterone. When a woman's menstrual cycle is at its most fertile, she has a better chance of conceiving this is known as ovulation period, (A and Mln,2019).

The phases of a menstrual cycle occur on average every 28 days. The stages are as follows:

- Follicular phase (development of the egg)
- Ovulation period (release of the egg)
- Luteal stage (hormone levels decrease if the egg does not implant)

Menopause

Menopause is the stage in a woman's reproductive cycle when her menstrual cycle ceases and she is no longer able to get pregnant. In most cases, women due to hormonal changes will experience hot flashes, nocturnal sweating and sexual dysfunction as well as issues falling asleep, low mood or anxiety, and decreased desire for sex (libido), suggest by NHS, (2021).

Reproductive Disorders

What is PCOS?

Polycystic ovarian syndrome (PCOS) is a reproductive disorder occurring in females. Menstrual cycle dysfunction is common in PCOS due to disorder folliculogenesis and anovulation and may present oligomenorrhea, amenorrhea or dysfunctional bleeding. The degree of menstrual dysfunction is highly variable between patients and is generally more marked in association with higher androgen, insulin levels and higher BMI. It is also attributed to multiple factors such as neuroendocrine abnormalities, ovarian dysregulation, steroidogenesis and ovulation. Intervention at various levels been shown to improve and provide appropriate follicle development and improvements in fertility.

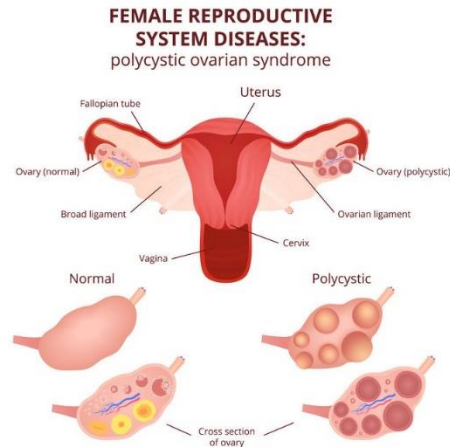
Diagnosis

PCOS is investigated by a physician for a diagnosis based on an individual's symptoms, weight, and body mass index (BMI).

Androgen levels are measured in the blood. The best way to diagnose hyperandrogenism is using testosterone and free androgen index (FAI) blood testing (high androgen levels). Blood tests may also be conducted to determine the levels of other reproductive hormones in the body, as these may potentially disrupt your periods. These may involve reviewing your levels of:

- Oestradiol (oestrogen, the main female sex hormone)
- Follicle-stimulating hormone (FSH)
- Luteinising hormone (LH).
- Transabdominal and transvaginal ultrasounds.

Diagnosis and Treatments of PCOS



researchgate.net, (2021)

Treatment

Doctors treat many women with traditional medications and a variety of birth control tablets, but they may not be effective. Scientists and doctors are progressively realising that a balanced diet may help some disorders, notably hormonal ones, and that it can help regulate symptoms of numerous conditions, including PCOS

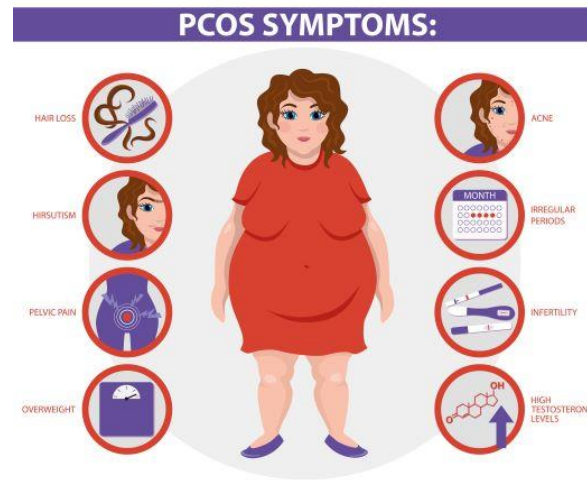
Common medication often prescribed for women with PCOS who are not trying to get pregnant, a drug called co-cyprinoid is licensed in the UK to treat severe acne that has not improved after the long-term use of oral antibiotics and excessive hair growth.

Metformin has a license in the UK for treating type 2 diabetes, particularly for people who are overweight. However, it does not have a license for use in PCOS, so use in this way is described as 'off-label'. Notably, metformin is not a contraceptive. Women with PCOS who had not conceived before using metformin have sometimes conceived after beginning it. In fact, NICE recommends metformin as a therapy choice for PCOS women who desire to become pregnant.

PCOS sufferers should avoid high-glycaemic foods, such as white rice and bread, in favour of alternatives like brown rice and whole grain bread and restrict their consumption of these foods and include a variety of vegetables and protein (Cruz, 2016).

Long term health consequences of PCOS

Impaired glucose tolerance and diabetes, cardiovascular disease and hypertension, endometrial cancer, ovarian cancer and breast cancer are long term health conditions linked to PCOS (Daniilidis and Dinas, 2009). According to Pierpoint *et al.*, (1998) In spite of the link between polycystic ovarian syndrome and diabetes, lipid abnormalities, and other cardiovascular risk factors, it does not cause a significantly higher death rate from circulatory sickness in women. It is possible that women with polycystic ovarian syndrome have a specific hormonal property that provides protection from cardiovascular disease.



(shutterstock.com, 2021)

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