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Anatomy and Physiology of Female Reproductive System

Midwifery & Obstetrical Nursing

Female reproductive organs, menstrual cycle, ovulation, fertilisation, implantation, hormonal regulation and reproductive functions.

For educational purposes only.

CHAPTER 03 / MIDWIFERY AND OBSTETRICAL NURSING 03. Anatomy and Physiology of Female Reproductive System

1. External genitalia and internal organs

The vulva includes mons pubis, labia majora/minora, clitoris, vestibule, urethral and vaginal openings and associated glands. Vagina is a fibromuscular canal for menstrual outflow, intercourse and birth. Uterus is a muscular pelvic organ: fundus, body, isthmus/lower segment and cervix; wall layers perimetrium, myometrium and endometrium. Cervix opens through internal and external os. Fallopian tubes include interstitial/intramural part, isthmus, ampulla (common site of fertilization) and infundibulum/fimbriae. Ovaries produce oocytes and hormones. Ligaments and pelvic floor support reproductive organs.

2. Menstrual cycle and ovarian cycle

Typical educational cycle 28 days; actual cycles vary. Day 1 is first day of menstrual bleeding. Hypothalamic GnRH stimulates pituitary FSH/LH, ovarian follicular development and steroid production.

Ovarian phase	Hormones / uterine changes
Follicular	FSH supports follicles; rising oestrogen promotes proliferative endometrium.
Ovulation	Sustained oestrogen feedback triggers LH surge; follicle releases oocyte. Often about 14 days before next menses, not always day 14.

Ovarian phase	Hormones / uterine changes
Luteal	Corpus luteum secretes progesterone/oestrogen; secretory endometrium supports implantation.
No pregnancy	Corpus luteum regresses, steroids fall and functional endometrium sheds (menses).

3. Fertilization and implantation

Sperm may survive several days in reproductive tract; oocyte viability is limited after ovulation. Fertilization generally occurs in ampulla, forming zygote; cleavage -> morula -> blastocyst. Implantation begins roughly 6-7 days after fertilization. Trophoblast produces hCG which maintains early corpus luteum progesterone, later

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placenta produces hormones. Fertile window varies; ovulation prediction is not infallible.

4. Hormonal regulation and reproductive functions

Oestrogen supports reproductive tissue and endometrial proliferation; progesterone supports secretory endometrium and pregnancy; FSH follicle development, LH ovulation/corpus luteum; prolactin milk synthesis and oxytocin uterine contraction/milk ejection. Menopause results from declining ovarian follicular function with cessation of menses (diagnosed retrospectively after 12 months without other cause). Assess abnormal bleeding, pelvic pain, discharge or infertility respectfully and refer appropriately.

5. Important Examination Questions

Long Answer Questions

1. 1. Describe female reproductive organs, menstrual cycle and hormonal regulation with suitable diagram.

Short Answer Questions

1. 1. Write functions of ovary, uterus and tubes
2. 2. explain ovulation and implantation.

Very Short Answer Questions (with answers)

1. 1. Common site of fertilization? - Ampulla of fallopian tube.
2. 2. Main hormone supporting luteal phase? - Progesterone.

6. Quick Revision

- Cycle lengths vary.
- LH surge triggers ovulation.
- Endometrium changes with ovarian hormones.

7. Conclusion

Cycle lengths vary. LH surge triggers ovulation. Endometrium changes with ovarian hormones.

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B.SC. NURSING / CHAPTER-WISE STUDY NOTES

Practice questions

Choose one best answer. The answer key and explanations follow the questions.

1. Where does fertilization usually occur?

A. Cervical canal
B. Ampulla of the fallopian tube
C. Endometrial cavity
D. Vaginal vestibule

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2. Which hormonal event triggers ovulation?

A. Fall in prolactin

B. Oxytocin release

C. LH surge

D. Abrupt decline in hCG

3. Which structure produces progesterone during the luteal phase?

A. Developing ovarian follicle

B. Endometrium

C. Anterior pituitary

D. Corpus luteum

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Answer key and explanations

1. B - Ampulla of the fallopian tube

The ampulla is the common site of fertilization.

2. C - LH surge

Sustained oestrogen feedback triggers the LH surge associated with ovulation.

3. D - Corpus luteum

The corpus luteum secretes progesterone and oestrogen to support the secretory endometrium.

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