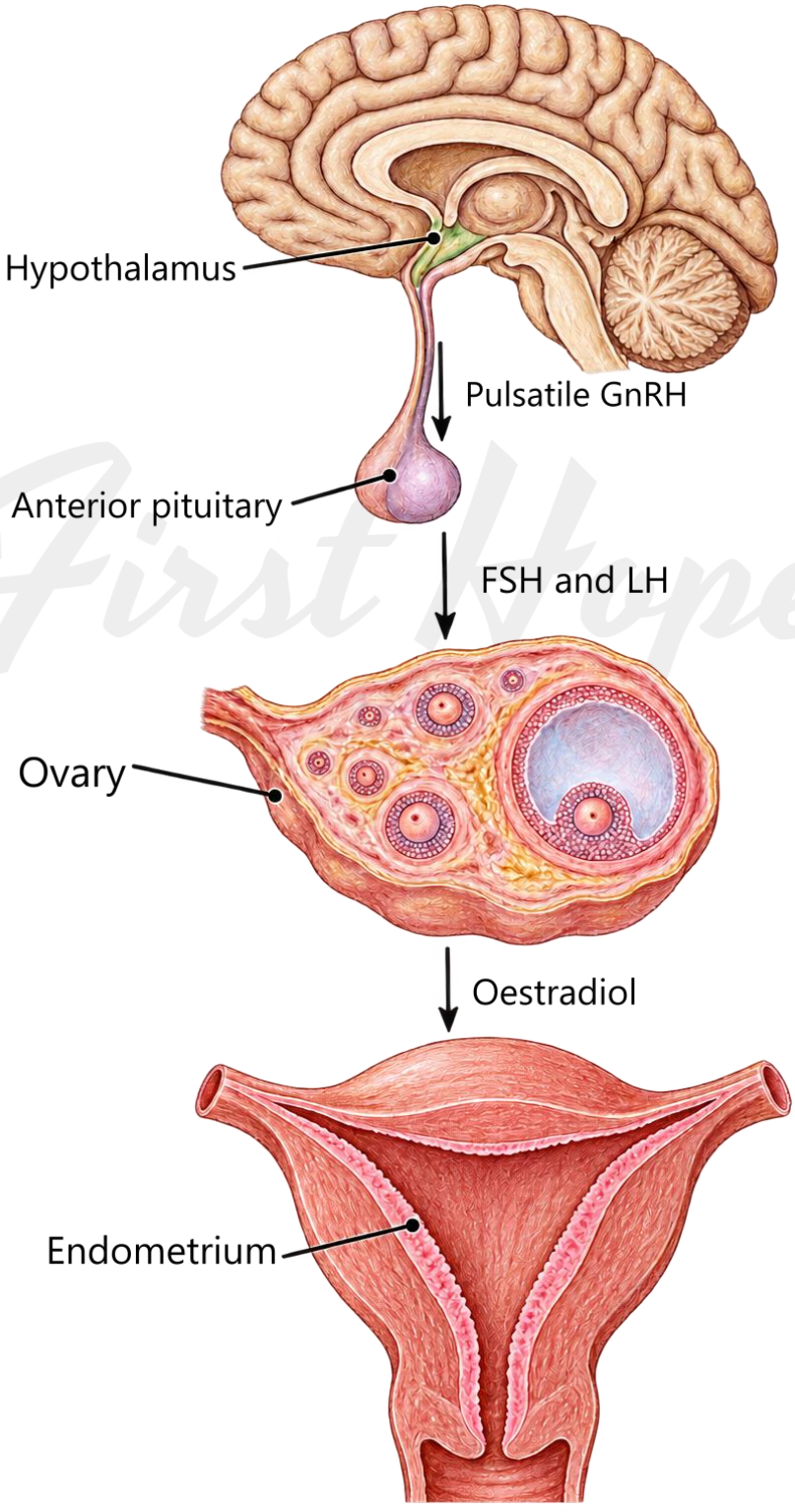
YouTube@FirstHope Medical | Instagram@firsthope.medical | Download Firsthope App

# Obstetrics & Gynaecology - Topic 25 - Amenorrhea

## Understanding Amenorrhoea

### Definition

- Amenorrhoea means absence of menstrual bleeding, either before periods have ever started or after they were previously established.




*The hypothalamus, pituitary and ovaries must coordinate hormonal signals for normal menstrual function*

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

## When to Investigate

### 1. Primary Amenorrhoea and Delayed Puberty

- **Primary amenorrhoea** requires evaluation when menarche has not occurred by fifteen years or more than three years after breast development begins.
- Absent breast development by thirteen years needs a delayed-puberty assessment rather than waiting until fifteen.

### 2. Secondary Amenorrhoea and Earlier Assessment

- **Secondary amenorrhoea** usually means no periods for more than three months after previously regular cycles or six months after previously irregular cycles.
- Investigation starts earlier when pregnancy is possible or when pain, severe weight loss, virilisation, headache or visual symptoms are present.

## Physiological Absence of Menstruation

- Pregnancy, breastfeeding and menopause are physiological settings in which periods may be absent, but the clinical situation must still be checked.

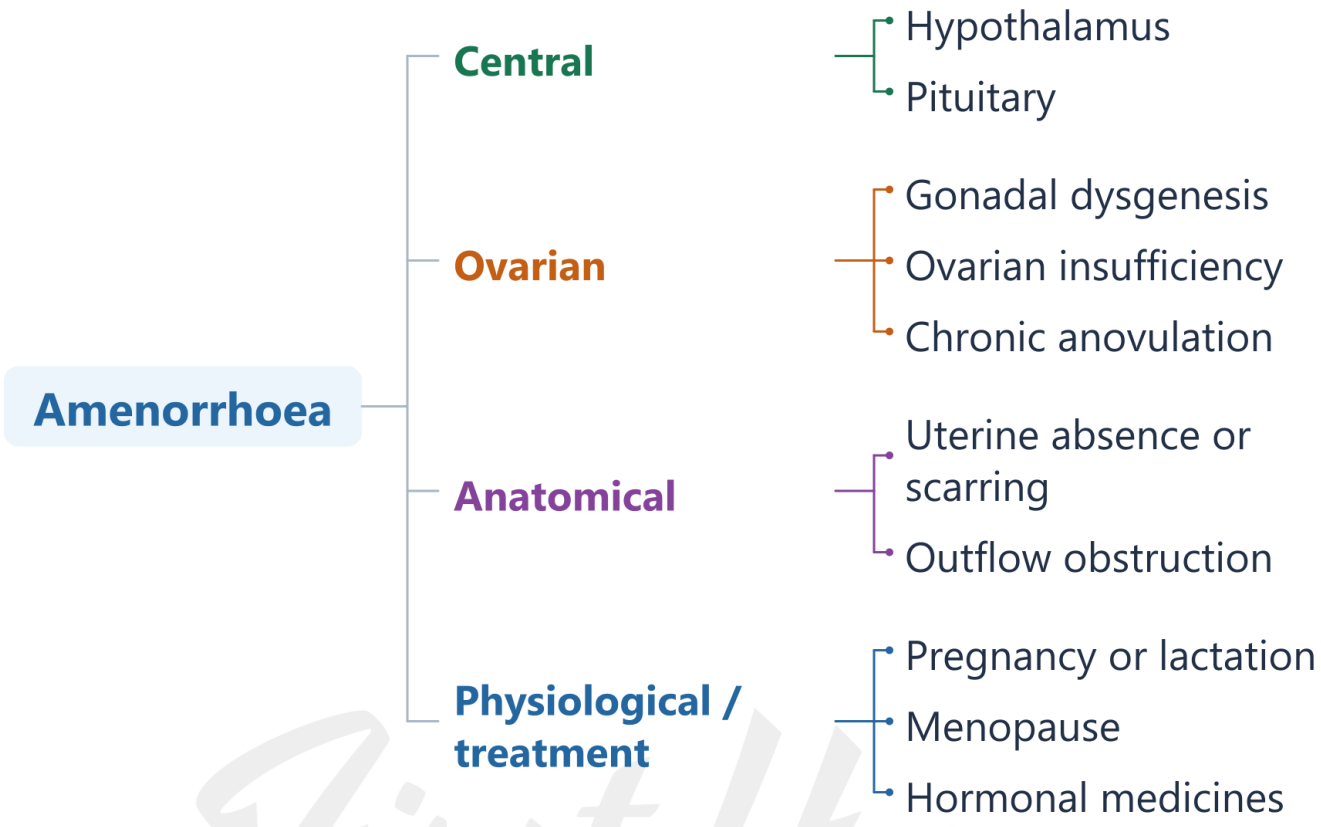
## What Is Needed for Menstruation?

- The hypothalamus must release appropriate pulses of gonadotropin-releasing hormone, which stimulate the pituitary to release FSH and LH.
- The ovaries respond by developing follicles and producing hormones that act on the endometrium.
- An adequately responsive endometrium and an open outflow tract are needed for menstrual blood to leave the uterus.
- Amenorrhoea can therefore arise at the hypothalamus, pituitary, ovary, uterus or outflow tract.

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

# Causes and Mechanisms

## Sites and Mechanisms of Amenorrhoea




### 1. Hypothalamic Causes

- Low energy availability from restricted food intake, weight loss or excessive exercise can suppress normal GnRH pulsation.
- Psychological stress and chronic systemic disease may contribute to functional hypothalamic amenorrhoea.
- Congenital GnRH deficiency may cause absent puberty; an impaired sense of smell is a clue in some affected people.
- Brain lesions, previous irradiation or other hypothalamic damage are less common organic causes.

### 2. Pituitary Causes

- High prolactin suppresses reproductive hormone signalling and may produce amenorrhoea with or without milk discharge from the breast.
- A prolactinoma, hypothyroidism and medicines that block dopamine action are important causes of raised prolactin.
- Pituitary injury after severe postpartum haemorrhage can cause Sheehan syndrome, with failure to lactate and later amenorrhoea.
- Other pituitary tumours, surgery, irradiation or inflammation may cause deficiency of several pituitary hormones.

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

### 3. Ovarian Causes

- Gonadal dysgenesis, including Turner syndrome, can cause primary amenorrhoea with inadequate oestrogen production.
- Premature ovarian insufficiency causes loss of ovarian activity before forty years and may follow genetic, autoimmune or treatment-related injury.
- Polycystic ovary syndrome causes chronic ovulatory dysfunction and often presents with infrequent periods, amenorrhoea or androgen excess.
- Some ovarian tumours produce hormones and cause rapid changes in menstrual pattern or virilisation.

### 4. Uterine and Outflow Causes

- Müllerian agenesis causes absent or underdeveloped uterine and upper vaginal structures despite functioning ovaries in the usual form.
- An imperforate hymen or transverse vaginal septum may obstruct menstrual flow while blood accumulates above the obstruction.
- Intrauterine adhesions may follow endometrial injury, especially after pregnancy-related uterine instrumentation or infection.
- Cervical stenosis can obstruct flow after cervical treatment or other injury.

### 5. Other Endocrine and Treatment-Related Causes

- Thyroid disease, Cushing syndrome and severe chronic illness may disturb menstrual function.
- Hormonal contraception can intentionally suppress bleeding and should be considered in the history.
- Chemotherapy, pelvic radiotherapy and some medicines can affect the ovaries or reproductive hormone pathways.

## Clinical Assessment

### Menstrual and Pubertal History

- Establish whether periods have ever occurred and record their previous regularity, the last normal period and the timing of breast development.
- Ask about pregnancy possibility, contraception, breastfeeding and any recent pregnancy or uterine procedure.
- Cyclical lower abdominal pain without visible bleeding suggests an outflow obstruction rather than simple anovulation.

### Associated Clues

- Ask about food intake, exercise, weight change, chronic disease, emotional stress and symptoms of an eating disorder without blame.

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

- Hot flushes and vaginal dryness suggest low oestrogen, although their absence does not exclude it.
- Galactorrhoea, persistent headache or visual change suggests a prolactin or pituitary problem.
- New coarse hair growth, severe acne, deepening of the voice or rapidly progressive virilisation needs evaluation for androgen excess.
- Ask about postpartum haemorrhage, failure to lactate, pelvic infection and previous curettage or surgery.
- Review prescription medicines, supplements, hormone use and a family history of delayed puberty or early menopause.

### Examination

- Assess height, weight, growth pattern, pulse and blood pressure, and look for signs of undernutrition or chronic illness.
- Assess pubertal development respectfully, with explanation, consent and an appropriate chaperone.
- Look for thyroid abnormalities, galactorrhoea, androgen excess and features that suggest gonadal dysgenesis.
- A short stature with characteristic physical features may suggest Turner syndrome, but a normal appearance does not exclude a chromosomal cause.
- Pelvic assessment is selected according to age, symptoms and consent; imaging often provides the initial information in adolescents.
- Do not use an invasive examination or so-called virginity testing to infer sexual history.

## Investigations and Interpretation

### First-Line Approach

- Exclude pregnancy first with an appropriate urine or serum test when pregnancy is possible.
- Initial investigations commonly include FSH, oestradiol, prolactin and TSH, with LH and other tests selected from the presentation.
- Pelvic ultrasound establishes whether a uterus is present and assesses the endometrium, ovaries and possible retained menstrual blood.
- The interpretation should combine history, examination, imaging and hormones rather than relying on one isolated result.

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

FREE PREVIEW

Click here to visit our website

MBBS PREMIUM NOTES

# Complete MBBS notes for every subject and year are available only in the FirstHope app.

Scan or click here

Click here to get the app >

Available on Google Play

## Browse MBBS notes by year

firsthope.co.in/mbbs

Click here to explore MBBS >

Scan or click here

### FirstHope Medical on Instagram

@firsthope.medical

Click here to follow

### App and notes help

Find answers about access and downloads

Click here for help

YEAR 1 / YEAR 2 / YEAR 3 / YEAR 4