Secondary Amenorrhoea

absence of menses for 3 months in a woman with previously regular cycles, or **absence of menses for 6 months** in a woman with previously irregular cycles.

Why does menstruation stop?

Normal menstruation requires:

- intact **hypothalamic GnRH pulsatility**
- normal **pituitary secretion of FSH and LH**
- functioning **ovaries**
- responsive **endometrium**
- patent **outflow tract**

Causes of secondary amenorrhoea

A. Physiological causes

- Pregnancy
- Lactation
- Menopause

B. Pathological causes

1) Hypothalamic causes

- Functional hypothalamic amenorrhoea
- Weight loss
- Eating disorder
- Excessive exercise
- Psychological stress
- Chronic systemic disease

2) Pituitary causes

- Hyperprolactinaemia
- Prolactinoma
- Pituitary adenoma
- Sheehan syndrome
- Pituitary infiltration or surgery

3) Thyroid and other endocrine causes

- Hypothyroidism
- Hyperthyroidism
- Cushing syndrome, rarely

4) Ovarian causes

- Polycystic ovary syndrome
- Premature ovarian insufficiency
- Resistant ovary/uncommon ovarian failure states

5) Uterine/outflow tract causes

- Asherman syndrome
- Cervical stenosis
- Endometrial destruction after curettage, postpartum instrumentation, infection, or surgery

6) Drug-related causes

- Antipsychotics
- Antidepressants
- Opioids
- Chemotherapy
- Hormonal contraception or recent discontinuation
- GnRH analogues

The first rule: always exclude pregnancy

In any reproductive-age woman with secondary amenorrhoea, **pregnancy must be excluded first**, even if the history seems unlikely.

Clinical approach

A. History

A good history often gives the diagnosis.

Ask about:

Menstrual history

- age at menarche
- previous cycle pattern
- onset and duration of amenorrhoea

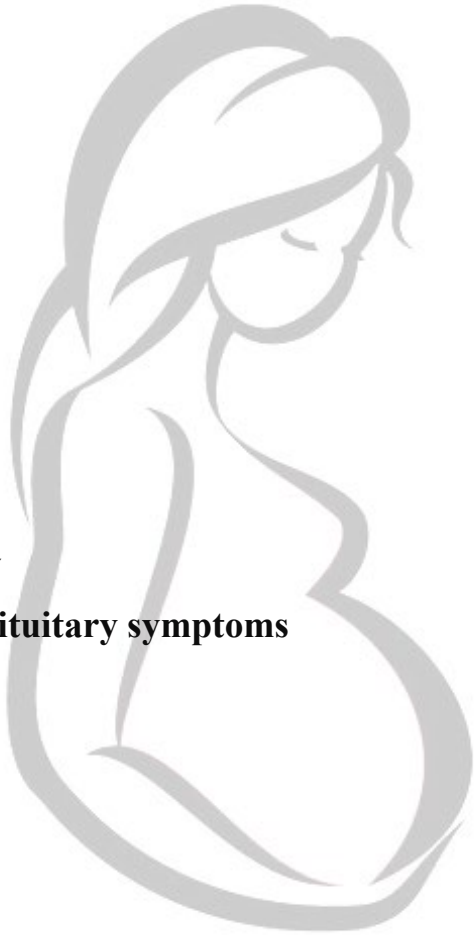
- preceding oligomenorrhoea
- last menstrual period
- dysmenorrhoea or cyclic pain

Pregnancy possibility

- sexual activity
- contraception
- recent unprotected intercourse

Weight / energy balance

- recent weight loss
- low BMI
- excessive exercise
- restrictive eating
- stress



Hyperandrogenism

- hirsutism
- acne
- deepening of voice
- androgenic alopecia

Hyperprolactinaemia / pituitary symptoms

- galactorrhoea
- headache
- visual symptoms

Thyroid symptoms

- cold intolerance
- constipation
- tremor
- heat intolerance

Oestrogen deficiency

- hot flushes
- vaginal dryness
- decreased libido
- sleep disturbance

Uterine/outflow clues

- postpartum curettage
- repeated D&C
- endometrial ablation
- pelvic infection
- tuberculosis risk
- prior hysteroscopic surgery

Obstetric history

- postpartum haemorrhage suggesting Sheehan syndrome

Drug history

- antipsychotics
- metoclopramide
- opioids
- chemotherapy
- hormonal therapy

Chronic illness

- diabetes
- celiac disease
- renal disease
- inflammatory disorders

B. Examination : Examination should include:

- weight, height, **BMI**
- signs of malnutrition
- signs of androgen excess
- thyroid examination
- breast examination for galactorrhoea
- skin: acne, acanthosis nigricans, striae
- pelvic examination when indicated
- visual fields if pituitary lesion suspected

C. Investigations : First-line investigations

After excluding pregnancy, the usual first-line workup is:

- **pregnancy test**
- **TSH**
- **prolactin**
- **FSH**
- usually **estradiol**
- **pelvic ultrasound** if available and clinically useful

Additional tests depending on clinical context

- LH
- total/free testosterone
- DHEAS
- 17-hydroxyprogesterone
- AMH in selected cases
- MRI pituitary
- hysteroscopy or saline sonography for intrauterine adhesions
- karyotype / autoimmune / genetic testing in suspected POI
- bone health assessment in prolonged hypoestrogenism

Interpreting common hormone patterns

1. **Functional hypothalamic amenorrhoea :** Labs:

- low or low-normal FSH/LH
- low estradiol

This is a **diagnosis of exclusion**. excluding pregnancy and other endocrine causes before labeling FHA.

2. **Hyperprolactinaemia**

Labs: raised prolactin : Causes:

- prolactinoma
- antipsychotics
- hypothyroidism
- pituitary stalk effect

3. **Thyroid disease**

Abnormal TSH may explain menstrual dysfunction; treat the thyroid disorder.

4. **Premature ovarian insufficiency**

- age <40
- amenorrhoea/oligomenorrhoea
- hot flushes
- infertility
- low estradiol symptoms

The diagnosis can be made with **oligo/amenorrhoea for at least 4 months plus one elevated FSH >25 IU/L**, with repeat testing or AMH used if uncertainty remains.

5. **PCOS**

- longstanding oligomenorrhoea/amenorrhoea
- hirsutism/acne
- obesity or normal weight
- infertility
- polycystic ovarian morphology may or may not be present

6. **Intrauterine adhesions / Asherman syndrome**

- prior curettage
- postpartum evacuation
- endometrial surgery
- pelvic TB in selected populations
- amenorrhoea with cyclic pain may occur

Cause-specific management

Functional hypothalamic amenorrhoea : Management:

- restore energy balance
- nutritional rehabilitation
- reduce excessive exercise
- treat eating disorder
- psychological support
- assess bone health in prolonged cases

Hyperprolactinaemia : Management:

- stop or change causative drugs if possible
- pituitary MRI if indicated
- dopamine agonist therapy for prolactinoma, usually cabergoline/bromocriptine under specialist care

Thyroid disease

- treat hypothyroidism or hyperthyroidism
- menses often return when euthyroidism is restored

PCOS : Management goals:

- cycle control
- endometrial protection
- treatment of hirsutism/acne
- fertility treatment when desired
- metabolic risk reduction

Common options:

- lifestyle management
- combined oral contraceptive pill for irregular cycles/hyperandrogenic symptoms
- cyclic progestogen if estrogen-containing therapy is unsuitable
- metformin in selected women, especially with metabolic features
- ovulation induction if fertility desired

Premature ovarian insufficiency : Management:

- explain diagnosis carefully
- fertility counseling
- hormone therapy unless contraindicated
- bone and cardiovascular health protection
- consider genetic and autoimmune evaluation where appropriate

Intrauterine adhesions OR asherman syndrome :

Most commonly occurs after trauma to the endometrium, especially:

- **Dilatation and curettage (D&C)** after:
  - miscarriage
  - postpartum hemorrhage
  - retained products of conception
- Pelvic infection (less common)
- Genital tuberculosis (important cause in developing countries)

Management:

- hysteroscopic diagnosis and adhesiolysis by specialist care

Sheehan syndrome :

is a rare condition that occurs when the **pituitary gland** (a small hormone-producing gland in the brain) is damaged due to **severe blood loss or shock during or after childbirth**. Think of it when amenorrhoea follows:

- severe postpartum haemorrhage, lactation failure , fatigue , hypotension , other pituitary hormone deficiencies

Treatment is **lifelong hormone replacement**, depending on deficiencies.