

Amenorrhoea

Definition / Supporting Information

Amenorrhoea is the absence of menses.

- Primary amenorrhoea is the failure to start menstruation by age 13 years in the absence of secondary sexual characteristics, or by age 16 years if otherwise normal sexual development is present.
- Secondary amenorrhoea is the cessation of menses for 6 months in an adolescent who has previously menstruated.
- Many diseases and clinical states may cause either primary or secondary amenorrhoea.
 - In adolescents, stress-related conditions are the most common cause of secondary amenorrhoea, followed by pregnancy.

Essential History

Ask about:

- Menstrual history
 - Age at onset of menstruation (if secondary amenorrhoea)
 - Bleeding frequency, duration, regularity, amount (eg, number of pads or tampons and saturation)
 - Dates of previous menses
 - Concurrent symptoms
 - Bloating
 - Cramping
 - Headaches
- Weight gain, acne, or hirsutism
- Weight loss
- Eating patterns
- Menstrual history of mother and first-degree female relatives
- Medical and family history
 - Trauma
 - Endocrine disorders
 - History of meningitis or tumour
 - Irradiation
 - Surgery
 - Growth pattern

- Personal lifestyle factors
 - HEADSS assessment
 - Home
 - Education
 - Activities
 - Drug use and abuse
 - Sexual behaviour and sexuality
 - Suicidality and / or depression
 - Exercise patterns
 - Body image

‘Red Flag’ Symptoms and Signs

Ask about:

- Possibility of pregnancy
 - Consider sexual abuse
 - See Child maltreatment: when to suspect maltreatment in under 18s [[NICE clinical guideline CG89, section 1.2](#)]
 - See Child abuse and neglect [[NICE guideline NG76](#)]
- Symptoms of raised intracranial pressure
 - See Delayed or arrested puberty [Headsmart; be brain tumour aware]
- Pubertal arrest
- Sudden weight loss
- Possibility of an eating disorder
 - See Eating disorders: recognition and treatment [[NICE guideline NG69](#)]

Look for:

- Faltering growth, short stature, and extremes of body mass index
- Lack of development of secondary sexual characteristics
- Signs of androgen insensitivity syndrome
 - Scant pubic hair and axillary hair, with normal breast development
- Signs of androgen excess
 - Hirsutism
 - Acne
- Clitoromegaly
- Imperforate hymen or a transverse vaginal septum
- Dysmorphic features of genetic conditions (eg, Turner’s syndrome) (see Congenital Malformations)
- Features of endocrine disorders
- Galactorrhoea

- Any abnormalities on neurological examination
 - See Delayed or arrested puberty [[Headsmart; be brain tumour aware](#)]
- Evidence of self-inflicted injury

Differential Diagnosis / Conditions

- Pregnancy
- Immature hypothalamic–pituitary–ovarian axis (eg, constitutional / familial delay)
- Suppressed hypothalamic–pituitary–ovarian axis
 - Acute illness or chronic illness
 - Stress
 - Eating disorders eg, anorexia nervosa
 - Excessive exercise
 - Drugs
 - Hormonal contraception
 - Cocaine
 - Phenothiazines
- Ovarian malfunction
 - Polycystic ovary syndrome (PCOS)
 - Gonadal dysgenesis (XX and XY)
 - Ovarian failure
- Endocrine disorders
 - Thyroid disease
 - Addison’s disease
 - Cushing’s syndrome
 - Late-onset congenital adrenal hyperplasia
 - Hypogonadotropic hypogonadism
- Central nervous system (CNS)-related (eg, hypothalamic or pituitary disorders)
 - Developmental defects
 - Kallmann’s syndrome
 - Infiltrative disease
 - Head trauma
 - Changes from prior meningitis, irradiation, or surgery
 - Tumour (see Delayed or arrested puberty [[Headsmart; be brain tumour aware](#)])
 - Prolactinoma
- Genetic conditions
 - Laurence–Moon syndrome
 - Bardet–Biedl syndrome
 - Prader–Willi syndrome
 - Turner’s syndrome

- Outlet obstruction (eg, primary amenorrhoea)
 - Müllerian agenesis
 - Mayer–Rokitansky–Küster–Hauser (MRKH) syndrome
 - Transverse septum

Investigations

To be undertaken by non-specialist practitioners (eg, General Practitioner (GP) Team):

- Urine pregnancy test
- For primary amenorrhoea (with mature breast development):
 - Consider imaging (eg, pelvic ultrasound) before laboratory workup
 - Consider karyotyping and serum testosterone measurement
- If a uterus is present, or when considering secondary amenorrhoea:
 - Follicle-stimulating hormone (FSH), prolactin, oestradiol, and thyroid studies
 - If the FSH level is elevated, consider:
 - Ovarian failure
 - Karyotyping
 - Screening for endocrinopathies
 - If the FSH level is low or normal, consider the following causes:
 - Physiological
 - Hypothalamic
 - Pituitary
 - Chronic illness
- If amenorrhoea is in the context of androgen excess, consider PCOS and late-onset congenital adrenal hyperplasia (CAH)
 - Serum testosterone, dehydroepiandrosterone sulfate (DHEA-S)
 - If the DHEA-S level is elevated, obtain a first morning 17-hydroxyprogesterone level
 - A urinary steroid profile or short synacthen test may be required to identify all cases of late-presenting CAH
 - Isolated elevated testosterone suggests an ovarian origin
 - Elevated DHEA-S suggests an adrenal origin
- Imaging studies may be considered, as clinically indicated
 - Pelvic ultrasound

To be undertaken by specialist practitioners (eg, Paediatric / Paediatric Endocrinology Team(s)):

- Above Investigations if not already performed
- Further investigation as indicated
 - Magnetic resonance imaging (MRI)
 - Karyotype

- Short synacthen test

Treatment Approach

To be undertaken by non-specialist practitioners (eg, GP Team), or specialist practitioners (eg, Paediatric / Paediatric Endocrinology Team(s)):

- Patients with PCOS:
 - If sexually active, treat with combined oral contraceptive pill (COCP)
 - Use a COCP with an anti-androgenic progesterone such as Yasmin
 - If obese with evidence of insulin resistance
 - Metformin hydrochloride and lifestyle improvement are first-line treatment
 - Advice and management of hirsutism or acne
- For secondary amenorrhoea and normal oestrogen levels
 - Medroxyprogesterone acetate, 5–10 mg for 12–14 days
 - Can be used every 1–3 months to stimulate withdrawal bleeding

When to Refer

Refer to specialist practitioners (eg, Emergency Department / Paediatric / Paediatric Endocrinology Team(s)) if:

- A potentially serious acute or chronic disease is suspected to be responsible for the amenorrhoea
- Suspected tumour
 - CNS
 - Adrenal
 - Ovarian tumour
- Suspected complicated endocrine or developmental disorder
- Suspected chromosomal abnormality (see Congenital Malformations)
- Suspected child maltreatment
 - Refer to local safeguarding policy for referral process
 - See Child maltreatment: when to suspect maltreatment in under 18s [[NICE clinical guideline CG89](#)]

Escalate care to Paediatric Endocrinology, Gynaecology, Oncology or other appropriate specialist team(s) if:

- The amenorrhoea seems to be secondary to a chronic illness that the paediatrician cannot manage
- The non-specialist practitioner or paediatrician cannot offer, or feels uncomfortable performing, a thorough gynaecological assessment
- Long-term hormonal therapy is required

- The patient has an eating disorder
- Evidence exists of anatomic or chromosomal abnormality
- Evidence exists of a complicated endocrine or developmental disorder
- Evidence exists of a CNS, adrenal, or ovarian tumour

‘Safety-Netting’ Advice

- Adolescent girls can be reassured that they should anticipate menarche 2–3 years after the initiation of puberty when:
 - Puberty starts late, but progression through puberty appears normal
 - Physical examination is also normal
 - Family history of late menarche
- Provide advice about:
 - Normalising weight
 - Healthy diet
 - Reducing excessive exercise
- See Eating disorders: recognition and treatment [[NICE guideline NG69](#)]

Patient / Carer Information

****Please note: whilst these resources have been developed to a high standard they may not be specific to children.***

- [Absent periods](#) (Web page), the NHS website
- [Headsmart; be brain tumour aware](#) (Website), RCPCH, The Brain Tumour Charity, CBTRC, The University of Nottingham, The Health Foundation

Resources

National Clinical Guidance

[Child maltreatment: when to suspect maltreatment in under 18s](#) (Web page), NICE clinical guideline CG89, National Institute for Health and Care Excellence

[Child abuse and neglect](#) (Web page). NICE guideline NG76, National Institute for Health and Care Excellence

[Eating disorders: recognition and treatment](#) (Web page), NICE guideline NG69, National Institute for Health and Care Excellence

[Headsmart; be brain tumour aware](#) (Website), RCPCH, The Brain Tumour Charity, CBTRC, The University of Nottingham, The Health Foundation

Medical Decision Support

[Child Sexual Abuse](#) (Web page), RCPCH Child Protection Companion

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