AMENORRHEA

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INTRODUCTION

Amenorrhea can be defined as the absence of or abnormal cessation of periods.^{1,2}

When triaging and assessing patients with complaints of amenorrhea, it is important to distinguish normal patterns of pubertal development from perceived abnormalities.³ These common patterns can be influenced by varying fluent factors such as ethnicity, race, and socioeconomic status.^{3,4} The median age of breast bud development, or thelarche, is reported to be 9.40 years.⁵ Menarche, the start of menstrual periods, typically follows in approximately 2 to 3 years,^{3,6,7} putting the United States median age of menarche at 12.43 years.⁴

Amenorrhea can be divided into two categories: primary amenorrhea and secondary amenorrhea.

Primary amenorrhea is defined as the complete absence of a menstrual period in a female patient if

- She is greater than 15 years of age WITH normal secondary sexual characteristics (breast development, pubertal growth spurt, pubic hair, axillary hair),¹ or
- If breast development started before the age of 10 years and it has been more than 5 years since thelarche,¹ or
- If she is 13 years of age WITHOUT secondary sexual characteristics.¹

Primary amenorrhea can result from chromosomal abnormalities, as in Turner syndrome or androgen insensitivity syndrome (AIS), or anatomic anomalies, as in Mayer–Rokitansky–Kuster–Hauser syndrome (MRKH), imperforate hymen, or transverse vaginal septum.^{1,7–9}

Secondary amenorrhea in a female patient is:

- Amenorrhea for 3 months in a patient who previously had regular periods,^{1,8} or
- Amenorrhea of 6 months in patients with oligomenorrhea.^{1,8}

Common causes of secondary amenorrhea include pregnancy, polycystic ovary syndrome (PCOS), hyperprolactinemia, hypothalamic disorders resulting from excess exercise, weight loss or stress, primary ovarian insufficiency (POI), thyroid disease, and chronic illness.^{1,7-10}

The treatment of amenorrhea depends on the underlying cause, which is determined by patient history, physical exam, laboratory tests, and/or imaging.^{1,8,9} Recommended interventions may include keeping a menstrual calendar, healthy lifestyle changes, medications, counseling, or referral to a surgical specialist.^{1,7-9}

COMMON PATIENT CONCERNS

- Anxiety
- Pain

KEY QUESTIONS TO ASK^{1,3,7-9,11,12}

Primary Amenorrhea:

- Has the patient ever noticed any vaginal bleeding or spotting?
- Does the patient have pain? If so, is the pain constant or cyclic?
- When did the patient first note breast development?
- Is the patient sexually active? If so, is there any chance of pregnancy?
- What medications is the patient currently taking?
- Does the patient have a history of receiving chemotherapy or radiation?
- Has the patient been diagnosed with another medical condition such as kidney disease, malignancy, or a gastrointestinal disorder?
- Is there a family history of delayed puberty or late menarche?
- Does the patient notice breast discharge?
- Has the patient noticed any hair or skin changes, such as extra facial hair or acne?
- Has the patient experienced weight changes?
- Has the patient had recent changes in diet such as a weight loss plan, or new dietary restrictions?
- Has the patient's level of exercise recently increased in duration or intensity?
- Has the patient experienced any new or unusual stress?
- Does the patient experience frequent headaches or visual changes or defects?
- Does the patient experience increased thirst or excessive urination?
- Does the patient have anosmia, a decreased or absent sense of smell?

Secondary Amenorrhea:

- When was the patient's first menstrual period?
- When was the patient's last menstrual period (LMP)?

- Is the patient sexually active? If so, is there any chance of pregnancy?
- What medications is the patient taking?
- Has the patient recently had a baby? If so, is the patient breastfeeding?
- Does the patient notice breast discharge?
- Has the patient noticed any hair or skin changes, such as extra facial hair or acne?
- Has the patient experienced weight changes?
- Has the patient had recent changes in diet such as a weight loss plan, or new dietary restrictions? Has the patient’s level of exercise recently increased in duration or intensity?
- Has the patient experienced any new or unusual stress?

PATIENT ASSESSMENT

TABLE 1.1 Acute Symptoms of Amenorrhea

Acute Symptoms	Intervention/Delegation	Commonly Prescribed Medicine
Anxiety	Refer patient/parents to credible resources for review prior to evaluation. Provide reassurance that not all causes of amenorrhea negatively impact reproductive potential. Once the cause of amenorrhea is identified and treated, referral to a reproductive specialist is an option, if appropriate.	
Pain	Schedule urgent office visit or arrange for evaluation in the ED depending on severity and office practice guidelines. If the patient is sexually active, recommend an at-home UPT.	NSAIDs Acetaminophen Heating pads

NSAIDs, nonsteroidal anti-inflammatory drugs; UPT, urine pregnancy test.

TABLE 1.2 Chronic Symptoms of Amenorrhea

Chronic Symptoms	Intervention/Delegation	Commonly Prescribed Medicine
Pain	Schedule next available or routine office visit depending on severity of pain and office practice guidelines. Inquire on any changes in the patient’s pain such as a worsening, improvement, and/or change in frequency that the pain occurs. Ask provider if updated imaging prior to an appointment is appropriate	NSAIDs Acetaminophen Heating pads

NSAIDs, nonsteroidal anti-inflammatory drugs.

➡ RED FLAGS

Acute pain: This may be an indication of ectopic pregnancy, miscarriage, or menstrual obstruction.⁸ Patients experiencing severe pain associated with amenorrhea or chance of pregnancy should always be referred to the ED for assessment.

Persistent pain: Pain uncontrolled by common medical therapies such as nonsteroidal anti-inflammatory drugs (NSAIDs), heat, distraction, and so on. This may also be an indication of ectopic pregnancy, miscarriage, or menstrual obstruction.⁸ Patients experiencing persistently severe pain associated with amenorrhea or chance of pregnancy should always be referred to the ED for assessment.

Cyclic pain: Cyclic pain occurring monthly at approximately the same time each month, lasting approximately 1 week each episode, may be an indication of an outflow tract obstruction. If the patient is not currently in pain and is stable, then the nurse should consult with a provider to arrange an office visit and potential imaging prior to the visit. If the patient is currently in pain that is severe and/or not responding to over-the-counter medications, then the patient should be referred to the ED for assessment.

SPECIAL POPULATION CONSIDERATIONS

- **Cancer patients:** Schedule fertility preservation counseling as soon as possible before chemotherapy or radiation is initiated.¹³
- **Cancer survivors:** Predicting the extent of reproductive impairment and the window of fertility for family planning has proven challenging.¹³ There is limited data on how to best use ovarian reserve markers such as anti-Müllerian hormone (AMH) in counseling young cancer survivors.¹³

COMMONLY PRESCRIBED MEDICINES

It is important to note that the approach to the evaluation and medical management of an individual with primary or secondary amenorrhea is to first determine the underlying cause for the amenorrhea, then determine the appropriate medical and pharmacologic management.^{7,14} Please refer to the suggested chapters for more information.

- Birth control (Chapters 2 through 7)
- Bleeding concerns (Chapter 8)
- Breast concerns (Chapter 9)
- Dysmenorrhea (Chapter 10)
- Mayer-Rokitansky-Küster-Hauser syndrome (MRKH) (Chapter 11)
- Pelvic pain (Chapters 13 and 14)
- Polycystic ovary syndrome (Chapter 15)

- Positive pregnancy test (Chapter 16)
- Primary ovarian insufficiency (Chapter 18)

SUMMARY

- **If pain is currently present**, schedule urgent office visit or arrange for evaluation in ED depending on severity and office practice.
- **If pain has been cyclic but not currently present**, schedule next available office visit. Ask provider if imaging needs to be obtained prior to visit.
- **If secondary amenorrhea**, recommend home pregnancy test and **if positive** and patient is **without pain**, schedule next available office visit with provider or refer/arrange for follow up with obstetrician per office practice guidelines.
- If symptoms meet criteria for primary or secondary amenorrhea and **pregnancy has been ruled out**, and the patient has **no complaints of pain**, schedule routine office visit. Ask provider if testing needs to be obtained prior to visit.
- If symptoms **do not meet criteria for amenorrhea**, recommend documentation of symptoms (breast tenderness, mood changes, pain/cramping, bleeding) and schedule routine office visit.

RELATED PROTOCOLS

- Birth control (Chapters 2 through 7)
- Bleeding concerns (Chapter 8)
- Breast concerns (Chapter 9)
- Dysmenorrhea (Chapter 10)
- MRKH (Chapter 11)
- Pelvic pain (Chapters 13 and 14)
- Polycystic ovary syndrome (Chapter 15)
- Positive pregnancy test (Chapter 16)
- Primary ovarian insufficiency (Chapter 18)

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