ACOG
American College of Obstetricians & Gynecologists

CLINICAL PRACTICE GUIDELINE

NUMBER 11

MARCH 2026

(REPLACES PRACTICE BULLETIN NUMBER 114, JULY 2010; AND COMMITTEE OPINION NUMBER 760, DECEMBER 2018)

Diagnosis of Endometriosis

Committee on Clinical Practice Guidelines–Gynecology. This Clinical Practice Guideline was developed by the American College of Obstetricians & Gynecologists' Committee on Clinical Practice Guidelines–Gynecology in collaboration with Bliss Kaneshiro, MD, MPH, Amanda N. Kallen, MD, and Catherine T. Witkop, MD, PhD, MPH.

PURPOSE: To provide evidence-based recommendations for the evaluation and diagnosis of endometriosis.

TARGET POPULATION: Reproductive-aged adults and adolescents with symptoms suggestive of endometriosis.

METHODS: This guideline was developed using an a priori protocol in conjunction with a writing team consisting of two specialists in obstetrics and gynecology and one specialist in reproductive endocrinology and infertility appointed by the American College of Obstetricians & Gynecologists' (ACOG) Committee on Clinical Practice Guidelines–Gynecology. ACOG medical librarians completed a comprehensive literature search for primary literature within Cochrane Library, Cochrane Collaboration Registry of Controlled Trials, EMBASE, PubMed, and MEDLINE. The National Institute for Health and Care Excellence (NICE) evidence review on endometriosis diagnosis and management served as the evidence base for many of the clinical considerations. Studies that moved forward to the full-text screening stage were assessed by two authors from the writing team based on standardized inclusion and exclusion criteria. Included studies underwent quality assessment, and a modified GRADE (Grading of Recommendations Assessment, Development and Evaluation) evidence-to-decision framework was applied to interpret and translate the evidence into recommendation statements.

RECOMMENDATIONS: This Clinical Practice Guideline includes recommendations on the clinical, imaging, and surgical evaluation and diagnosis of endometriosis. Recommendations are classified by strength and evidence quality. Ungraded Good Practice Points are included to provide guidance when a formal recommendation cannot be made because of inadequate or nonexistent evidence. The recommendations included in this guideline also apply to adolescents unless otherwise specified and are based on review of the limited available evidence, extrapolated data from adult populations, and expert consensus.

INTRODUCTION

Endometriosis is a chronic, inflammatory, estrogen-dependent disorder defined by the presence of lesions of endometrial-like tissue outside the uterus (1, 2). The condition can affect multiple systems in the body, causing pain; infertility; and decreased health-related quality of life, sexual

satisfaction, and work productivity (3–7). Endometriosis occurs primarily in women of reproductive age, although it has been reported in premenarchal and postmenopausal patients (8–10). The reported prevalence rate of endometriosis ranges from 0.7% to 8.6% among women in the general population, whereas endometriosis has been observed in 9.0–68.0% of women with subfertility and 15.4–71.4% of women with chronic pelvic pain (11). The true prevalence of endometriosis among adolescents in the general population is unknown; however, endometriosis has been identified in 64% of adolescents undergoing laparoscopy for pelvic pain (12). The purpose of this Clinical Practice Guideline is to provide evidence-based recommendations for the evaluation and diagnosis of endometriosis in symptomatic adult and adolescent patients.

SUMMARY OF RECOMMENDATIONS

ACOG recommends that a clinical diagnosis of endometriosis (made through a symptom-based assessment, physical examination, or both) is sufficient to initiate empiric medical treatment **(STRONG RECOMMENDATION, LOW-QUALITY EVIDENCE).**

Clinicians should suspect a diagnosis of endometriosis in patients who present with one or more of the following cyclic or noncyclic signs and symptoms: chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, dyschezia, or infertility associated with one or more of these symptoms **(GOOD PRACTICE POINT).**

ACOG recommends transvaginal ultrasonography as the initial imaging modality for the evaluation of clinically suspected endometriosis **(STRONG RECOMMENDATION, MODERATE-QUALITY EVIDENCE).**

If transvaginal ultrasonography is not acceptable or appropriate, a transabdominal ultrasound examination should be offered as an alternative option for the imaging evaluation of clinically suspected endometriosis **(GOOD PRACTICE POINT).**

ACOG suggests the use of pelvic magnetic resonance imaging (MRI) if further disease characterization of deep endometriosis is needed to guide treatment planning **(CONDITIONAL RECOMMENDATION, MODERATE-QUALITY EVIDENCE).**

ACOG recommends against the use of blood, urine, endometrial, or other biomarkers to diagnose endometriosis **(STRONG RECOMMENDATION, LOW-QUALITY EVIDENCE).**

For patients with suspected endometriosis, the decision to proceed with diagnostic laparoscopy or empiric

STRENGTH OF RECOMMENDATION

STRONG

ACOG recommends:
Benefits clearly outweigh harms and burdens. Most patients should receive the intervention.

ACOG recommends against:
Harms and burdens clearly outweigh the benefits. Most patients should not receive the intervention.

CONDITIONAL

ACOG suggests:
The balance of benefits and risks will vary depending on patient characteristics and their values and preferences. Individualized, shared decision making is recommended to help patients decide on the best course of action for them.

QUALITY OF EVIDENCE

HIGH

Randomized controlled trials, systematic reviews, and meta-analyses without serious methodologic flaws or limitations (eg, inconsistency, imprecision, confounding variables)

Very strong evidence from observational studies without serious methodologic flaws or limitations

There is high confidence in the accuracy of the findings and further research is unlikely to change this.

MODERATE

Randomized controlled trials with some limitations

Strong evidence from observational studies without serious methodologic flaws or limitation

LOW

Randomized controlled trials with serious flaws Some evidence from observational studies

VERY LOW

Unsystematic clinical observations

Very indirect evidence from observational studies

GOOD PRACTICE POINTS

Ungraded Good Practice Points are incorporated when clinical guidance is deemed necessary in the case of extremely limited or nonexistent evidence. They are based on expert opinion as well as review of the available evidence.

medical treatment should be individualized based on a shared decision-making discussion of the benefits and risks of each approach (GOOD PRACTICE POINT).

Diagnostic laparoscopy can be considered in patients with suspected endometriosis to confirm the diagnosis even if the results of physical examination and imaging are negative. However, diagnostic laparoscopy is not required to initiate empiric medical treatment (GOOD PRACTICE POINT).

During diagnostic laparoscopy, a biopsy of suspected endometriotic lesions should be considered to provide histologic confirmation of visual findings; however, a negative histopathologic result does not exclude the possibility of endometriosis (GOOD PRACTICE POINT).

Suspected endometriotic lesions should be treated at the time of initial laparoscopy, when possible, to help avoid the need for additional surgery (GOOD PRACTICE POINT).

METHODS

ACOG Clinical Practice Guidelines provide clinical recommendations for the diagnosis and management of a condition by assessing the benefits and harms of care options through a systematic review of the evidence. This guideline was developed using an a priori protocol in conjunction with a writing team consisting of two specialists in obstetrics and gynecology and one specialist in reproductive endocrinology and infertility appointed by the ACOG Committee on Clinical Practice Guidelines–Gynecology. A full description of the Clinical Practice Guideline methodology is published separately (13). The following description is specific to this Clinical Practice Guideline.

Literature Search

ACOG medical librarians completed a comprehensive literature search for primary literature within Cochrane Library, Cochrane Collaboration Registry of Controlled Trials, EMBASE, PubMed, and MEDLINE. Parameters for the search included human-only studies published in English. The National Institute for Health and Care Excellence (NICE) evidence review on endometriosis diagnosis and management served as the evidence base for many of the clinical considerations (14). For these topics, the literature search was restricted to studies published after January 2016, which was the completion date of the NICE review. For clinical issues not addressed in the NICE evidence review, the search period was restricted to studies that were published after 2007. Updated literature searches were completed in March 2025 and October 2025 to ensure any newly published high-level sources were addressed in the final manuscript. The MeSH terms and keywords used to guide the literature search can be found in Appendix A (available online at http://links.lww.com/AOG/E504).

Study Selection

A title and abstract screen of all studies was completed by ACOG research staff. Studies that moved forward to the full-text screening stage were assessed by two authors from the writing team based on standardized inclusion and exclusion criteria. To be considered for inclusion, studies had to be conducted in countries ranked very high on the United Nations Human Development Index (15); published in English; and include reproductive-aged adult or adolescent participants with symptomatic endometriosis. Although systematic reviews, randomized controlled trials, and prospective cohort studies were prioritized, case–control studies were considered for topics with limited evidence, particularly for rare outcomes. A PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram of the included and excluded studies can be found in Appendix B, available online at http://links.lww.com/AOG/E505. Included studies underwent quality assessment and had key details extracted (study design, sample size, details of interventions, outcomes) and were organized into summary evidence tables (Appendix C, available online at http://links.lww.com/AOG/E506).

Recommendation and Manuscript Development

A modified GRADE (Grading of Recommendations Assessment, Development and Evaluation) evidence-to-decision framework was applied to interpret and translate the evidence into draft recommendation statements, which were classified by strength and evidence quality (16, 17). The recommendations included in this guideline also apply to adolescents unless otherwise specified and are based on review of the limited available evidence, extrapolated data from adult populations, and expert consensus. Ungraded Good Practice Points were incorporated to provide clinical guidance in the case of extremely limited or nonexistent evidence. They are based on expert opinion as well as review of the available evidence (18).

The recommendations and supporting evidence tables then were reviewed, revised as appropriate, and affirmed by the Committee on Clinical Practice Guidelines–Gynecology at a meeting. The guideline manuscript then was written and subsequently reviewed and approved by the Committee on Clinical Practice Guidelines and other internal review bodies before continuing to publication.

CLINICAL OVERVIEW

Subtypes, Classification, and Staging

Three main subtypes of endometriosis are recognized based on the appearance and location of the associated

endometrial lesions: 1) superficial peritoneal; 2) endometrioma or ovarian endometriotic cyst; and 3) deep endometriosis, in which lesions are found in or outside of the abdomen (eg, in the bowel or bladder) beneath the peritoneal surface (19). The various subtypes often occur together (3) and may represent either distinct phenotypes or different presentations along one disease continuum (20).

Currently, there is no single universally accepted classification system for endometriosis (21). The revised American Society for Reproductive Medicine classification system is widely used and ranges from stage I to stage IV, with stages corresponding to minimal, mild, moderate, and severe disease, respectively (21, 22). However, this classification system does not correlate with pain severity or fertility outcomes and excludes deep endometriosis (23). Several other proposed classification systems serve varying purposes. For example, the Enzian system is intended for the staging of deep endometriosis (24), whereas the #Enzian system, an updated version of the Enzian system, can be used for the preoperative assessment of peritoneal, ovarian, and deep endometriosis as well as adenomyosis (25). The Endometrial Fertility Index helps predict the postoperative likelihood of pregnancy without the use of in vitro fertilization (26), and the American Association of Gynecologic Laparoscopists' anatomic system is for intraoperative surgical staging (27). Each of these systems has benefits and limitations. A 2021 World Endometriosis Society consensus statement that included a review of 22 published endometriosis classification systems concluded that there continues to be a need for a universal validated system that can be used for disease description, staging, and reporting; that correlates with pain symptoms, quality of life, fertility, and other important patient outcomes; and that can be easily implemented in research and clinical settings (21).

Pathophysiology

Although the pathophysiology of endometriosis is not completely understood, it is believed to involve a complex interplay of steroid hormones; immunologic, inflammatory, and angiogenic mechanisms; and genetic and environmental factors (3, 28). Various theories have been proposed; however, no single theory to date can explain all endometriosis subtypes or pathologic aspects of the condition (20, 29). Leading theories on the origin of endometriosis include retrograde menstruation of endometrial cells through the fallopian tubes, circulating endometrial stem cells, coelomic metaplasia, vascular or lymphatic spread of endometrial cells, and genetic and epigenetic changes that give rise to the different disease subtypes and may underlie the cellular changes that initiate and promote lesion growth (20, 28, 29). Endometriotic lesions contain elevated levels of estrogen and proinflammatory mediators that work synergistically in a feedback loop to promote lesion growth and initiate and sustain an inflammatory response while simultaneously disrupting immune and anti-inflammatory pathways, leading to a chronic inflammatory state (20, 29). Endometriosis-related pain is thought to be the result of various mechanisms, including inflammation in and around endometrial lesions, peripheral nerve growth and sensitization, and central nervous system remodeling that alters the body's response to stimuli and pain perception (30, 31).

Risk Factors

Early menarche (age younger than 10 years), short menstrual cycle length (less than 26 days), nulliparity, and low body mass index (BMI, calculated as weight in kilograms divided by height in meters squared) are associated with an increased likelihood of endometriosis (28, 32, 33). Müllerian anomalies and in utero exposure to diethylstilbestrol also have been reported as potential risk factors (20, 28, 33). Twin studies and whole-genome linkage studies support the heritability of endometriosis (28). A family history of an affected first-degree relative is associated with a threefold to ninefold increased risk of developing endometriosis (34).

Effects on Quality of Life

Endometriosis-associated pain can be debilitating, affecting all aspects of patients' lives including physical, emotional, and sexual health; family, social, and romantic relationships; educational attainment; career choice; and work productivity (3–7, 35–39). In addition to the symptomatic burden, many patients with endometriosis report significant frustration and dissatisfaction with the quality of their endometriosis care (2, 40–43); these negative encounters with the health care system can exacerbate emotional and psychological distress, further deteriorating quality of life (35).

Barriers to Timely Diagnosis

Diagnostic delay is a significant issue in endometriosis care, with patients waiting an average of 4–11 years from the onset of symptoms to receipt of a diagnosis (40, 44, 45). During this time, patients can experience disease progression and onset of new symptoms, further decline in quality of life, and increasing health care costs (35, 45–47).

Qualitative studies of patient and clinician perspectives on endometriosis care have identified a range of factors that contribute to these diagnostic delays. Some of the barriers can be attributed to the disease itself, such as the variability in symptoms, the broad differential diagnosis for abdominopelvic pain, and the lack of a noninvasive method of diagnosis (40). At the clinician level, inadequate training in the recognition of endometriosis can manifest as dismissal, normalization, or misattribution of patients' symptoms, resulting in

underdiagnosis, misdiagnosis, and delayed referral for specialist care (40–43). Dismissal and invalidation of symptoms by clinicians not only delays diagnosis and prolongs patients' physical suffering but also can have significant adverse effects on patients' psychological and emotional well-being and health-related quality of life (40–43, 48–50). Societal-level barriers to endometriosis diagnosis also have been identified, including the stigmatization of menstruation and the normalization of menstrual pain, both of which may delay patients from seeking care (40).

Individuals from minoritized and marginalized communities may experience additional barriers to diagnosis of endometriosis. A meta-analysis of 18 studies found that Black women were significantly less likely to be diagnosed with endometriosis compared with White women (odds ratio [OR] 0.49, 95% CI, 0.28–0.83), but it is unclear whether this also means that there is a lower prevalence of endometriosis among Black women (51). This is because racially biased, erroneous beliefs about biological differences between Black and White individuals that have been, and continue to be, perpetuated in medical education, clinical practice, and medical research are believed to be a significant contributor to the racial inequities in endometriosis diagnosis (52–54). Perceptions that endometriosis is a disease of White women and that Black women experience pain differently and have a higher threshold for pain may limit consideration of endometriosis in the differential diagnosis or cause clinicians to dismiss or underestimate the significance of pelvic pain as a presenting symptom, leading to missed or delayed diagnosis and treatment (52–54).

People assigned female sex at birth who identify as transgender men or gender-diverse may face additional, unique barriers when presenting for endometriosis care (48, 55). The misperception that endometriosis affects only cisgender women and inadequate research and clinical training on the management of endometriosis in transgender men and gender-diverse individuals can lead to misdiagnosis, diagnostic delays, and dismissal of symptoms (55). In addition, characteristic endometriosis symptoms, such as menstrual changes and pelvic pain, may be masked or altered by gender-affirming treatment, which increases diagnostic complexity (55). Transgender men and gender-diverse individuals with endometriosis who present for care also report encountering discrimination, denial of care, misgendering, invalidation of gender and symptoms, and misattribution of symptoms to gender dysphoria (48). These negative health care interactions can cause significant psychological distress and trauma and may discourage patients from seeking care from other clinicians, further delaying care and prolonging symptom burden (48).

Once patients do receive a diagnosis of endometriosis, they often express significant relief to receive validation that their symptoms are legitimate (49, 56). A formal diagnosis of endometriosis also provides patients with the confirmation needed to formulate a management plan, access treatment, and seek out patient-education resources and support groups (49).

Strategies to Facilitate Earlier Diagnosis

A multifaceted approach is needed to address the various contributors to delays in endometriosis diagnosis (40). This includes strategies aimed at clinicians, patients and the public, and researchers.

Enhance medical education and training. Studies of patient and physician perspectives on endometriosis care support that clinicians need more training to recognize the hallmark symptoms of endometriosis and understand the disease's varied presentations to facilitate earlier diagnostic evaluation and management and referral for multidisciplinary specialist care (40, 57–59). Recommended physician training includes initial coursework in medical school, continuing education activities, and the use of current evidence-based clinical guidelines on endometriosis diagnosis and management (40, 57–60).

Use a patient-centered care approach. Physicians can facilitate earlier diagnosis of endometriosis and improve patient satisfaction with their care by applying a patient-centered approach that includes validating patients' symptoms and experiences; demonstrating sensitivity, respect, and compassion; treating patients as partners and experts about their own bodies; communicating clear, accurate information about the condition; and providing prompt referral to specialist care (41, 61–63). Patient-centered care prioritizes the patient–clinician therapeutic alliance and acknowledges the importance of clinicians' attitudes in shaping how patients experience and cope with the often-chronic symptoms of endometriosis (41, 61, 62).

Shift to symptom-based clinical diagnosis. The traditional reliance on surgical findings to diagnose endometriosis significantly delays care and is inconsistent with the current understanding that endometriosis is a chronic, systemic condition that manifests in a multitude of symptoms (45). Although there is still a role for laparoscopy in the evaluation of endometriosis, ACOG and other major medical societies recommend that clinicians rely on patient history, symptoms, and physical examination findings to establish a presumptive clinical diagnosis that can enable earlier access to treatment (see "Clinical Evaluation and Diagnosis" later in this document) (14, 47, 64).

Raise public awareness. Efforts to raise public awareness of endometriosis can facilitate earlier recognition of symptoms; help to mitigate menstrual stigma; encourage patients to seek care sooner; and empower patients with information, resources, and community support about the condition. Strategies to promote public

awareness include the inclusion of endometriosis in school menstrual health–education programs (65, 66), public health campaigns, and patient support and advocacy groups that provide patient education information and resources.

Further research. Additional research is needed to understand the pathogenesis and pathophysiology of endometriosis (67) and to develop and validate noninvasive methods that can accurately diagnose endometriosis without the need for surgery. The application of artificial intelligence is an active area in endometriosis research, and this technology may help to identify endometriosis-specific biomarkers (eg, blood, urine, saliva, miRNA); train and aid clinicians in the interpretation of imaging tests; and create predictive clinical algorithms based on presenting symptoms, patient history, and physical examination findings (68–70).

CLINICAL RECOMMENDATIONS AND EVIDENCE SUMMARY

Clinical Evaluation and Diagnosis

ACOG recommends that a clinical diagnosis of endometriosis (made through a symptom-based assessment, physical examination, or both) is sufficient to initiate empiric medical treatment **(STRONG RECOMMENDATION, LOW-QUALITY EVIDENCE).**

Limited data from observational studies support that endometriosis can be identified with moderate accuracy based on a clinical evaluation that includes a symptom-based assessment, physical examination, or both (71–77). Although clinical diagnosis of endometriosis is not as accurate as diagnostic laparoscopy, this noninvasive approach has the potential to reduce diagnostic delays (see "Barriers to Timely Diagnosis" earlier in this document) and provide earlier access to treatment (47). For these reasons, ACOG and other expert medical societies recommend the use of a clinical diagnostic approach for the initial evaluation of suspected endometriosis (14, 47, 64).

Patient History and Symptoms

Clinicians should suspect a diagnosis of endometriosis in patients who present with one or more of the following cyclic or noncyclic signs and symptoms: chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, dyschezia, or infertility associated with one or more of these symptoms **(GOOD PRACTICE POINT).**

An initial evaluation for endometriosis should include a detailed medical, gynecologic, menstrual, and family history; review of symptoms, including questions about location (pelvic and extrapelvic sites), intensity, frequency, and duration; and effects on quality of life (Box 1) (47, 64, 78). Although pelvic pain and other symptoms commonly associated with endometriosis can be due to a variety of other gynecologic and nongynecologic conditions (Table 1) (2), the presence of certain symptoms (Box 1), particularly multiple symptoms, is associated with an increased likelihood of endometriosis and should prompt further evaluation (14, 47, 64, 71–73, 79). Pain intensity can be assessed using a visual analog scale (VAS) or a numerical rating scale (80). Various validated endometriosis symptom questionnaires are available (81) and may be useful adjuncts to standard history-taking to help patients communicate their symptoms and the effects of symptoms on their health-related quality of life (14, 47, 64).

In a large case–control retrospective analysis of medical records, adolescents and women aged 15–55 years with a diagnosis of endometriosis (n=5,540) were significantly more likely than those in an age-matched control group (n=21,239) to report infertility or subfertility (OR 8.2, 95% CI, 6.9–9.9), dysmenorrhea (OR 8.1, 95% CI, 7.2–9.3), dyspareunia or postcoital bleeding (OR 6.8, 95% CI, 5.7–8.2), abdominopelvic pain (OR 5.2, 95% CI, 4.7–5.7), and heavy menstrual bleeding (OR 4.0, 95% CI, 3.5–4.4) (71). Notably, the likelihood of endometriosis rose significantly as the number of symptoms increased from one (unadjusted OR 5.0, 95% CI, 4.4–5.7) to seven or more (unadjusted OR 84.7, 95% CI, 58.8–121.8) (71). Similarly, the results of an online cross-sectional survey of 48,020 women aged 18–49 years showed that participants with self-reported endometriosis (n=2,922) were twice as likely as respondents without endometriosis to report severe symptoms (dysmenorrhea, nonmenstrual pelvic pain, dyspareunia) and to experience extrapelvic and systemic symptoms such as diarrhea, constipation, and bloating (OR 1.9, 95% CI, 1.7–2.2) and fatigue, weariness, and anemia (OR 2.2, 95% CI, 2.0–2.5) (79).

Studies on the use of symptom-based predictive algorithms for endometriosis show promising results and provide further support for the use of a clinical diagnostic approach. A prospective observational study that evaluated the accuracy of a symptom-based model to predict endometriosis among 1,396 symptomatic women scheduled to undergo laparoscopy reported that the presence of certain factors, particularly dyschezia and a history of benign ovarian cysts, was able to preoperatively predict rASRM stage III and IV endometriosis with good accuracy (area under the curve [AUC] 83.3, 95% CI, 79.6–86.6) (72). However, the model demonstrated limited ability to predict the presence of endometriosis at any stage (AUC 68.3, 95% CI, 63.9–72.4) (72). A more recent case–-control study that included 800 women with histologically confirmed endometriosis and 885 women in a matched control group reported that a clinical scoring

Box 1. Signs and Symptoms Suggestive of Endometriosis

Patient History

- Infertility in association with 1 or more of the symptoms listed below
- Family history of diagnosed endometriosis (particularly in a 1st-degree relative)
- Adolescents: school absenteeism during menstruation, dysmenorrhea refractory to treatment with nonsteroidal anti-inflammatory drugs or oral contraceptive pills or both

Common Symptoms (1 or more of the following, which may be cyclic or noncyclic):

- Chronic pelvic pain (ie, pain lasting 6 months or longer)
- Dysmenorrhea
- Dyspareunia
- Dysuria or other urinary symptoms (eg, hematuria)
- Dyschezia or postcoital bleeding

Extrapelvic Symptoms (which may have cyclic exacerbation):

- Gastrointestinal (bowel): bloating, diarrhea, constipation, nausea with pelvic pain or dysmenorrhea (adolescents), rectal bleeding
- Thoracic: shoulder or subcostal pain, pneumothorax, hemothorax
- Sciatic nerve pain
- Skin: surgical scar swelling or mass
- Fatigue or malaise

system based on a combination of patient history, characteristics, and symptoms (ie, family history of endometriosis, BMI lower than 22, menstrual cycle length less than 28 days, infertility, dysmenorrhea [VAS score 6 or higher], deep dyspareunia [VAS score 3 or higher], gastrointestinal symptoms [VAS score 5 or higher], and urinary symptoms [VAS score 1 or higher]) was able to predict endometriosis with moderate accuracy (AUC 0.81, 95% CI, 0.79−0.83) (73).

Physical Examination

A targeted bimanual abdominopelvic examination can help to identify physical findings suggestive of endometriosis (Box 2), exclude other potential diagnoses

Table 1. Differential Diagnosis of Endometriosis

Symptom	Conditions With Similar Clinical Presentation*
Nonmenstrual pelvic–abdominal pain	Irritable bowel syndrome, neuropathic pain, adhesions, abdominal wall nerve entrapment syndromes, pelvic inflammatory disease, adnexal mass, ovarian cyst
Dysmenorrhea	Primary dysmenorrhea (ie, dysmenorrhea in the absence of pelvic pathology), adenomyosis, reproductive tract anomalies in adolescents (eg, obstructive müllerian anomalies), leiomyomas
Dyspareunia	Sexual dysfunction, pelvic floor disorders, history of trauma or sexual abuse, psychosocial issues (eg anxiety, depression)
Dyschezia or gastrointestinal symptoms (diarrhea, cramping, constipation)	Hemorrhoids, constipation, irritable bowel syndrome, inflammatory bowel disease, anal fissures, pelvic floor disorders
Dysuria	Interstitial cystitis, painful bladder syndrome, pelvic floor disorders
Infertility	Unexplained subfertility

Modified with permission from Falcone T, Flyckt R. Clinical management of endometriosis. Obstet Gynecol 2018;131:557–71. doi: 10.1097/AOG.0000000000002469.

*This is not an all-inclusive list of conditions.

Box 2. Physical Examination for Evaluation of Endometriosis*

- Inspection of vaginal mucosa, looking for posterior vaginal fornix lesions.
- Palpation of superficial, deep, and low abdominal wall, including scars. Evaluate tone, tenderness, allodynia, or hyperalgesia.
- Assessment of neurological patterns of pain or sensory deficits.
- Bimanual examination† of each compartment for pain, stiffness, and nodularity:
  - Central: uterine position, mobility, size, texture, and sensitivity
  - Anterior: posterior wall of the bladder, vesicouterine space
  - Lateral: adnexa and pelvic sidewall
  - Posterolateral: uterosacral ligaments
  - Posterior: pouch of Douglas, anterior wall of the rectum, vagina; if the posterior compartment is abnormal, consider a rectovaginal examination

*Physical examination in its entirety may not always be necessary or feasible (eg, in adolescents) in the evaluation of suspected endometriosis.

†Bimanual examination should be performed after abdominal palpation and should involve the use of the vaginal digit to palpate genital structures (before the abdominal hand depresses the abdominal wall for bimanual palpation).

Modified with permission from Singh SS, Allaire C, Al-Nourhji O, Bougie O, Bridge-Cook P, Duigenan S, et al. Guideline No. 449: diagnosis and impact of endometriosis - a Canadian guideline. J Obstet Gynaecol Can 2024;46:102450. doi: 10.1016/j.jogc.2024.102450

(Table 1), and guide decisions regarding further evaluation (47, 64). An additional rectovaginal examination should be considered if abnormalities are detected in the posterior compartment (47). Patients with physical signs suggestive of deep endometriosis involving the bowel, bladder, or ureter (such as thickening of the posterior vaginal fornix or nodularity of the uterosacral ligaments) should be referred to a clinician with expertise in the surgical management of endometriosis (14). However, negative physical examination findings do not confirm the absence of endometriosis (14, 47, 64).

In a 2011 prospective study of 129 women who underwent diagnostic laparoscopy for suspected endometriosis, preoperative pelvic (internal vaginal) examination was associated with variable sensitivity (25–78%) and specificity (80–100%) depending on anatomic site (74). Pelvic examination performed comparably to transvaginal ultrasonography for the detection of deep endometriosis in the vagina and rectovaginal space, but transvaginal ultrasonography was more accurate for the identification of endometriosis of the ovaries, uterosacral ligament, and rectosigmoid (74). A 2020 meta-analysis of five studies reported that physical examination had a pooled sensitivity of 71% (95% CI, 60–80%) and a specificity of 69% (95% CI, 54–82%) for the detection of deep endometriosis, with an AUC of 0.76 (95% CI, 0.66–0.83) (75).

Adolescent Considerations

Dysmenorrhea and pelvic pain are the most commonly reported symptoms among adolescents with endometriosis (77). In a systematic review that included 23 studies with a total of 1,426 adolescents (aged 8–25 years) diagnosed with endometriosis, dysmenorrhea was the most frequently reported symptom (82.9%), followed by chronic, acute, or acyclic pelvic pain (43%); gastrointestinal symptoms (19%); abnormal uterine bleeding (18%); and dyspareunia (14%) (77). Other signs and symptoms suggestive of endometriosis in adolescents include nausea with pelvic pain (82); persistent dysmenorrhea despite the use of nonsteroidal anti-inflammatory drugs, oral contraceptives, or both (76, 77); and recurrent school absenteeism during menstruation (76). As with adults, bimanual abdominopelvic examination findings may indicate signs of endometriosis and help to rule out other potential etiologies (Box 1), such as a reproductive tract anomaly (64, 83–85), but normal examination results do not eliminate the possibility of endometriosis. Shared decision making is recommended when considering bimanual pelvic examination for suspected endometriosis in adolescent patients, taking into consideration the diagnostic limitations of physical examination; the patient's age and history of pelvic examinations, sexual intercourse, and tampon use; and cultural attitudes about menstruation (47, 64, 86). For adolescent patients with suspected endometriosis in whom a bimanual examination is not performed, an abdominal examination alone should be considered to evaluate for the presence of abdominal masses (14).

Imaging

Transvaginal ultrasonography and MRI are the main imaging modalities used in the evaluation of suspected endometriosis (14, 47, 64). Imaging is recommended as part of the initial evaluation of suspected endometriosis even when physical examination findings are normal to help detect endometriomas and pelvic deep endometriosis, identify other pathologic etiologies of pain symptoms, guide decisions about further management and the need for

referral, and inform preoperative planning (14, 47). Empiric medical treatment should be offered in parallel with imaging evaluation to avoid treatment delays and alleviate symptoms while awaiting imaging results (14).

Although transvaginal ultrasonography and MRI can identify endometriomas and deep endometriosis, they cannot reliably detect superficial peritoneal endometriosis (87). The accuracy of imaging tests is also influenced by the training and knowledge of the individuals performing the tests and interpreting the results (14, 47, 88). Finally, even imaging experts may miss endometriosis because of the wide variation in endometriotic lesion appearance and location (14, 47). Therefore, negative imaging findings do not eliminate the possibility of endometriosis (14, 47, 64), and treatment should be considered for symptomatic patients regardless of imaging results.

Transvaginal Ultrasonography

ACOG recommends transvaginal ultrasonography as the initial imaging modality for the evaluation of clinically suspected endometriosis **(STRONG RECOMMENDATION, MODERATE-QUALITY EVIDENCE).**

If transvaginal ultrasonography is not acceptable or appropriate, a transabdominal ultrasound examination should be offered as an alternative option for the imaging evaluation of clinically suspected endometriosis **(GOOD PRACTICE POINT).**

Transvaginal ultrasonography is the recommended initial imaging modality for the evaluation of a patient with suspected endometriosis because it has comparable accuracy to MRI but is less expensive and more readily accessible (14, 47, 64, 88, 89). Although transvaginal ultrasonography is recommended as the first-line imaging modality for the evaluation of suspected endometriosis, it may not be appropriate or tolerated in adolescent patients, particularly those who have not had vaginal sexual intercourse, or in some adult patients (eg, survivors of sexual trauma). If transvaginal ultrasonography is not appropriate, a transabdominal pelvic ultrasound examination should be offered (14, 64).

Ultrasound examination for suspected endometriosis includes the following: 1) evaluation of the uterus, ovaries, fallopian tubes, anterior compartment (bladder, ureters), and posterior compartment (bowel, uterosacral ligaments, parametria, vagina, rectovaginal septum, peritoneum of the pouch of Douglas); 2) performance of the uterine sliding maneuver (loss of the "sliding sign," suggests deep endometriosis in the pouch of Douglas); and 3) assessment of ultrasonographic markers that are suggestive of deep endometriosis (eg, fixed uterine retroversion, abnormal ovarian location or mobility, bowel tethering to posterior uterus, site-specific tenderness, adenomyosis, hydrosalpinx, and hematosalpinx) (89, 90). Assessment also should include inspection of the peritoneum of the pouch of Douglas for the presence of superficial lesions (91).

Transvaginal ultrasonography has high specificity for endometriosis, although sensitivity rates vary by endometriosis subtype and anatomic location (Tables 2 and 3) (87, 92–94). Transvaginal ultrasonography is most reliable for the identification of endometriomas (87) (Table 2). For the detection of deep endometriosis, transvaginal ultrasonography has overall moderate sensitivity (Table 2), with varying accuracy depending on anatomic site (Table 3) (87, 92–94). However, transvaginal ultrasonography has limited

Table 2. Diagnostic Accuracy of Imaging by Endometriosis Subtype

Endometriosis Subtype	Imaging Modality	Studies (n)	Participants (n)	Sensitivity (95% CI)	Specificity (95% CI)
Endometriomas	TVUS*	8	765	0.93 (0.87–0.99)	0.96 (0.92–0.99)
	MRI*	3	179	0.95 (0.90–1.00)	0.91 (0.86–0.97)
	TVUS†	12	400	0.89 (0.86–0.92)	0.95 (0.92–0.97)
	MRI†	6	139	0.94 (0.74–0.99)	0.94 (0.89–0.97)
Deep	TVUS*	9	934	0.79 (0.69–0.89)	0.94 (0.88–1.00)
	MRI*	6	266	0.94 (0.90–0.97)	0.77 (0.44–1.00)
Superficial peritoneal	TVUS*	5	1,222	0.65 (0.27–1.00)	0.95 (0.89–1.00)
	MRI*	7	303	0.79 (0.70–0.88)	0.72 (0.51–0.90)

MRI, magnetic resonance imaging; TVS, transvaginal ultrasonography.

*Data from Nisenblat V, Bossuyt PM, Farquhar C, Johnson N, Hull ML. Imaging modalities for the non-invasive diagnosis of endometriosis. The Cochrane Database of Systematic Reviews 2016, Issue 2. Art. No.: CD009591. doi: 10.1002/14651858.CD009591.pub2.

†Data from Kanti FS, Gorak Savard R, Bergeron F, Zomahoun HT, Netter A, Maheux-Lacroix S. Transvaginal ultrasound and magnetic resonance imaging in the diagnosis of endometrioma: a systematic review and meta-analysis of diagnostic test accuracy studies. J Obstet Gynaecol 2024;44:2311664. doi: 10.1080/01443615.2024.2311664.

Table 3. Diagnostic Accuracy of Imaging for Pelvic Deep Endometriosis by Anatomic Site

Meta-Analysis	Imaging Modality	Studies (N)	Participants (N)	Sensitivity (95% CI)	Specificity (95% CI)
Rectosigmoid					
Nisenblat et al 2016*	TVUS	14	1,616	0.90 (0.82−0.97)	0.96 (0.94−0.99)
	MRI	6	612	0.92 (0.86−0.99)	0.96 (0.93−0.98)
Gerges et al 2021†	TVUS	21	2,857	0.89 (0.83−0.92)	0.97 (0.95−0.98)
	MRI	7	852	0.86 (0.79−0.91)	0.96 (0.94−0.97)
Rectovaginal septum					
Nisenblat et al 2016*	TVUS	10	983	0.88 (0.82−0.94)	1.00 (0.98−1.00)
	MRI	3	288	0.81 (0.70−0.93)	0.86 (0.78−0.95)
Gerges et al 2021‡	TVUS	7	1,005	0.57 (0.30−0.80)	1.00 (0.92−1.00)
	MRI§	—	—	—	—
Uterosacral ligament					
Nisenblat et al 2016*	TVUS	7	751	0.64 (0.50−0.79)	0.97 (0.93−1.00)
	MRI	4	199	0.86 (0.80−0.92)	0.84 (0.68−1.00)
Gerges 2021‡	TVUS	7	1,085	0.60 (0.32−0.82)	0.95 (0.90−0.98)
	MRI	4	440	0.81 (0.66−0.90)	0.83 (0.62−0.94)
Vagina or vaginal wall					
Nisenblat et al 2016*	TVUS	6	679	0.57 (0.21−0.94)	0.99 (0.96−1.00)
	MRI	4	248	0.77 (0.67−0.88)	0.97 (0.92−1.00)
Gerges et al 2021‡	TVUS	4	451	0.52 (0.29−0.74)	0.98 (0.95−0.99)
	MRI	3	137	0.64 (0.40−0.83)	0.98 (0.83−0.99)
Bladder					
Gerges et al 2021§	TVUS	8	1,052	0.55 (0.28–0.79)	0.99 (0.98–1.00)
	MRI	2	476	0.50–1.00‖	0.97–1.00‖

TVUS, transvaginal ultrasonography; MRI, magnetic resonance imaging.

*Nisenblat V, Bossuyt PM, Farquhar C, Johnson N, Hull ML. Imaging modalities for the non-invasive diagnosis of endometriosis. The Cochrane Database of Systematic Reviews 2016, Issue 2. Art. No.: CD009591. doi: 10.1002/14651858.CD009591.pub2.

†Gerges B, Li W, Leonardi M, Mol BW, Condous G. Optimal imaging modality for detection of rectosigmoid deep endometriosis: systematic review and meta-analysis. Ultrasound Obstet Gynecol 2021;58:190–200. doi: 10.1002/uog.23148.

‡Gerges B, Li W, Leonardi M, Mol BW, Condous G. Meta-analysis and systematic review to determine the optimal imaging modality for the detection of uterosacral ligaments/torus uterinus, rectovaginal septum and vaginal deep endometriosis. Hum Reprod Open 2021;2021:hoab041. doi: 10.1093/hropen/hoab041.

§Gerges B, Li W, Leonardi M, Mol BW, Condous G. Meta-analysis and systematic review to determine the optimal imaging modality for the detection of bladder deep endometriosis. Eur J Obstet Gynecol Reprod Biol 2021;261:124–33. doi: 10.1016/j.ejogrb.2021.04.030.

‖Meta-analysis was not performed. Data presented as range.

accuracy to identify superficial peritoneal endometriotic lesions (Table 2) (87).

Ultrasonography also may be useful to guide preoperative planning. In a retrospective multicenter study of patients (N=878) who underwent transvaginal and transabdominal ultrasound examination and subsequent diagnostic laparoscopy for suspected endometriosis, preoperative ultrasound staging was concordant with surgical staging (according to the 2021 American Association of Gynecologic Laparoscopists Endometriosis Classification system) in 586 cases (66.7%) (95). Preoperative ultrasound staging was most reliable for the identification of patients without endometriosis and those with stage 1 or stage 4 disease (95).

Magnetic Resonance Imaging

ACOG suggests the use of pelvic MRI if further disease characterization of deep endometriosis is needed to guide treatment planning **(CONDITIONAL RECOMMENDATION, MODERATE-QUALITY EVIDENCE).**

Although transvaginal ultrasonography is the preferred imaging modality for the initial evaluation of suspected endometriosis, MRI may be helpful if secondary imaging is needed to determine the extent of deep endometriosis (eg, for preoperative planning) (14, 47, 96). As with transvaginal ultrasonography, the diagnostic accuracy of pelvic MRI varies by endometriosis subtype and lesion location (87, 92–94, 97) (Tables 2 and 3). Magnetic resonance imaging is more sensitive than transvaginal ultrasonography for the identification of deep endometriosis of the pelvis (Table 2), particularly in the uterosacral ligament and vagina or vaginal wall (87, 93) (Table 3). As with transvaginal ultrasonography, MRI has limited ability to detect superficial peritoneal endometriosis but exhibits high accuracy for the detection of endometriomas (Table 2) (87, 97).

Biomarkers for Diagnosis of Endometriosis

ACOG recommends against the use of blood, urine, endometrial, or other biomarkers to diagnose endometriosis (STRONG RECOMMENDATION, LOW-QUALITY EVIDENCE).

Considerable interest exists in the identification of biomarkers for endometriosis, which could allow for noninvasive evaluation and diagnosis. More than 1,000 different candidate endometriosis biomarkers have been studied and encompass a broad range of subtypes (eg, cytokines, metabolites, hormones and growth factors and microRNAs) across biological compartments and tissues, including blood, saliva, endometrium, and urine (98). However, none of the biomarkers studied to date, used alone or in combination, have been shown to be as accurate as diagnostic laparoscopy for the detection of endometriosis, nor have they been shown to add benefit over history, physical examination, and pelvic ultrasonography in the presumptive diagnosis of endometriosis (99–103). For these reasons, the use of biomarkers for the diagnosis of endometriosis is not recommended in international expert guidelines (14, 47, 64).

The most well-studied endometriosis biomarker is CA 125, an antigenic glycoprotein expressed by epithelial ovarian tumors that also can be elevated in nonmalignant gynecologic conditions such as endometriosis (104). A Cochrane review of 27 observational studies (N=3,447) reported that a CA 125 cutoff level of greater than 35–36 units/mL was associated with a pooled sensitivity of 0.40 (95% CI, 0.32–0.49) and a specificity of 0.91 (95% CI, 0.88–0.94) for the detection of endometriosis (99). Another systematic review of 22 observational studies reported similar findings (100). This suggests that, although an elevated serum CA 125 level may indicate the presence of endometriosis, a normal serum CA 125 level (less than 35 units/mL) does not exclude the possibility of disease (14). Furthermore, the high heterogeneity in methodology, cutoff levels, and included populations across studies limits confidence in the findings (99).

As with CA 125, much of the available evidence on other endometriosis biomarker candidates is based on studies that are underpowered or have significant methodologic heterogeneity that limits reproducibility and meta-analysis (98, 105). In addition, few studies integrate findings across tissues or adjust for confounders such as menstrual cycle phase, disease phenotype, treatment exposure, and symptom severity (98, 105). These limitations have hampered efforts to identify clinically useful, noninvasive biomarkers and emphasize the need for well-powered, harmonized, multi-tissue studies that incorporate rigorous clinical characterization and standardized protocols.

Diagnostic Laparoscopy

For patients with suspected endometriosis, the decision to proceed with diagnostic laparoscopy or empiric medical treatment should be individualized based on a shared decision-making discussion of the benefits and risks of each approach (GOOD PRACTICE POINT).

Diagnostic laparoscopy can be considered in patients with suspected endometriosis to confirm the diagnosis even if the results of physical examination and imaging are negative. However, diagnostic laparoscopy is not required to initiate empiric medical treatment (GOOD PRACTICE POINT).

Advances in imaging technology, an evolving understanding of the pathophysiology of endometriosis, and concern about significant diagnostic delays have prompted a movement away from the routine use of diagnostic laparoscopy in the evaluation of endometriosis (45, 47). Many experts now recommend offering empiric medical therapy after initial clinical diagnosis of endometriosis as an alternative to diagnostic laparoscopy (14, 47, 64). Patients with suspected endometriosis should be counseled about the benefits and risks of each approach to help them make an informed decision.

Diagnostic laparoscopy can be appropriate to rule out other conditions when the clinical diagnosis is unclear, for patients who desire a definitive diagnosis before treatment, or as part of a stepwise approach if empiric medical therapy fails. Diagnostic laparoscopy also may lead to the identification of other etiologies of pain symptoms and provides the opportunity for concurrent treatment of endometriosis or other identified pathologies. However, patients need to weigh these potential benefits of diagnostic laparoscopy against the low but

potential risk of surgical complications (eg, infection, hemorrhage or excessive blood loss, venous thromboembolism, injury to surrounding tissue or organs) (106–108), the possibility of negative or inconclusive results, and the potential need for additional surgery if extensive disease is identified (14, 47).

Diagnostic laparoscopy should be performed by a clinician with training and skills in laparoscopic surgery for endometriosis and should include a systematic inspection of the pelvis and abdomen and documentation of intraoperative findings, including the appearance, location, stage, and extent of disease (14, 47). The visual appearance and location of lesions identified during laparoscopy is highly variable (109) and can differ between adults and adolescents. In adults, endometriotic lesions on the peritoneum or ovaries often appear red, clear, white, black, or blue (110), whereas endometriotic lesions in adolescents are more likely to be red, white, or clear (86, 111). Clinicians who perform laparoscopic evaluation of suspected endometriosis in adolescent patients should familiarize themselves with the sometimes different or variable presentation compared with adult patients (64, 86, 111).

During diagnostic laparoscopy, a biopsy of suspected endometriotic lesions should be considered to provide histologic confirmation of visual findings; however, a negative histopathologic result does not exclude the possibility of endometriosis **(GOOD PRACTICE POINT).**

Although a visual diagnosis can be made during diagnostic laparoscopy, the definitive diagnosis of endometriosis requires histopathologic evaluation of tissue samples or lesions removed during surgery. The reliability and accuracy of visual diagnosis alone can be limited by a number of factors, including the wide variation in lesion appearance, location, and disease stage as well as surgeon expertise (109, 110, 112). Thus, expert guidelines generally advise performance of a biopsy of suspicious lesions to help confirm visual findings while acknowledging that a negative histopathologic result does not exclude the possibility of endometriosis (14, 47, 64). False-negative histopathologic findings can occur for a variety of reasons, including missed lesions (eg, in the ovarian fossa); use of preoperative hormonal suppressive therapy; insufficient tissue specimens; and the limitations in histopathologic diagnostic criteria, which do not reflect the wide variation in histologic presentation of endometriotic lesions, particularly superficial peritoneal lesions (47, 113). Occasionally, biopsy of a suspicious lesion may not confirm endometriosis, and visual diagnosis may suffice so that treatment can be initiated.

Endometriosis is associated with an increased risk of ovarian cancer, and biopsy with histopathologic evaluation is recommended when there is suspicion for malignancy based on preoperative or intraoperative findings (114, 115). A systematic review and meta-analysis of 49 studies found an association between endometriosis and ovarian cancer risk (summary relative risk [SRR] 1.93; 95% CI, 1.68–2.22; n=24 studies), particularly clear cell (SRR 3.44; 95% CI, 2.82–4.42; n=five studies) and endometrioid (SRR 2.33; 95% CI, 1.82–2.98; n=five studies) ovarian cancer (114). However, the authors cautioned that many of the included studies had significant methodologic limitations and strong evidence of publication bias, which limited confidence in the findings (114). A more recent retrospective cohort study (N=78,893) of electronic health records reported that individuals diagnosed with endometriosis were more than four times more likely to develop ovarian cancer compared with individuals without endometriosis (adjusted hazard ratio 4.20; 95% CI, 3.59–4.91) (115), with an even greater risk of ovarian cancer among individuals with endometrioma or deep endometriosis or both (adjusted hazard ratio 9.66; 95% CI, 7.77–12.00) (115).

Suspected endometriotic lesions should be treated at the time of initial laparoscopy, when possible, to help avoid the need for additional surgery **(GOOD PRACTICE POINT).**

Expert guidelines in endometriosis management generally recommend that diagnostic laparoscopy for endometriosis should include concurrent treatment when feasible (14, 47). Before diagnostic laparoscopy, clinicians should discuss the potential for concomitant treatment with patients and obtain informed consent for surgical management for patients who elect this option (14). The use of preoperative imaging can assist surgical planning and help decrease the possibility of encountering unexpected intraoperative findings that are beyond the surgeon's expertise (47, 95).

USE OF LANGUAGE

ACOG recognizes and supports the gender diversity of all patients who seek obstetric and gynecologic care. In original portions of this document, the authors seek to use gender-inclusive language or gender-neutral language. When describing research findings, this document uses gender terminology reported by the investigators. ACOG's policy on inclusive language can be reviewed at https://www.acog.org/clinical-information/policy-and-position-statements/statements-of-policy/2022/inclusive-language.

REFERENCES

1. Bulun SE. Endometriosis. N Engl J Med 2009;360:268–79. doi: 10.1056/NEJMra0804690
2. Falcone T, Flyckt R. Clinical management of endometriosis. Obstet Gynecol 2018;131:557–71. doi: 10.1097/AOG.0000000000002469

3. Horne AW, Missmer SA. Pathophysiology, diagnosis, and management of endometriosis. BMJ 2022;379:e070750. doi: 10.1136/bmj-2022-070750

4. As-Sanie S, Shafrir AL, Halvorson L, Chawla R, Hughes R, Merz M. The burden of pelvic pain associated with endometriosis among women in selected European countries and the United States: a restricted systematic review. J Minim Invasive Gynecol 2024;31:653–66.e5. doi: 10.1016/j.jmig.2024.05.002

5. Gete DG, Doust J, Mortlock S, Montgomery G, Mishra GD. Impact of endometriosis on women's health-related quality of life: a national prospective cohort study. Maturitas 2023;174: 1–7. doi: 10.1016/j.maturitas.2023.04.272

6. Della Corte L, Di Filippo C, Gabrielli O, Reppuccia S, La Rosa VL, Ragusa R, et al. The burden of endometriosis on women's lifespan: a narrative overview on quality of life and psychosocial wellbeing. Int J Environ Res Public Health 2020;17:4683. doi: 10.3390/ijerph17134683

7. Schneider MP, Vitonis AF, Fadayomi AB, Charlton BM, Missmer SA, DiVasta AD. Quality of life in adolescent and young adult women with dyspareunia and endometriosis. J Adolesc Health 2020;67:557–61. doi: 10.1016/j.jadohealth.2020.02.024

8. Marsh EE, Laufer MR. Endometriosis in premenarcheal girls who do not have an associated obstructive anomaly. Fertil Steril 2005;83:758–60. doi: 10.1016/j.fertnstert.2004.08.025

9. Rosa-e-Silva JC, Carvalho BR, Barbosa HdF, Poli-Neto OB, Rosa-e-Silva AC, Candido-dos-Reis FJ, et al. Endometriosis in postmenopausal women without previous hormonal therapy: report of three cases. Climacteric 2008;11:525–8. doi: 10.1080/13697130802490256

10. Brosens I, Gordts S, Benagiano G. Endometriosis in adolescents is a hidden, progressive and severe disease that deserves attention, not just compassion. Hum Reprod 2013; 28:2026–31. doi: 10.1093/humrep/det243

11. Ghiasi M, Kulkarni MT, Missmer SA. Is endometriosis more common and more severe than it was 30 years ago? J Minim Invasive Gynecol 2020;27:452–61. doi: 10.1016/j.jmig.2019.11.018

12. Hirsch M, Dhillon-Smith R, Cutner AS, Yap M, Creighton SM. The prevalence of endometriosis in adolescents with pelvic pain: a systematic review. J Pediatr Adolesc Gynecol 2020;33: 623–30. doi: 10.1016/j.jpag.2020.07.011

13. Clinical practice guidelines methodology. American College of Obstetricians and Gynecologists. Obstet Gynecol 2021;138: 518–22. doi: 10.1097/AOG.0000000000004519

14. National Institute for Health and Care Excellence. Endometriosis: diagnosis and management. Accessed November 18, 2025. https://www.nice.org.uk/guidance/ng73

15. United Nations Development Programme. Human Development Index (HDI). Human Development Reports. Accessed November 25, 2025. https://hdr.undp.org/data-center/human-development-index#/indicies/HDI

16. Guyatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, Alonso-Coello P, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. GRADE Working Group. BMJ 2008;336:924–6. doi: 10.1136/bmj.39489.470347

17. Guyatt G, Oxman AD, Akl EA, Kunz R, Vist G, Brozek J, et al. GRADE guidelines: 1. Introduction-GRADE evidence profiles and summary of findings tables. J Clin Epidemiol 2011;64: 383–94. doi: 10.1016/j.jclinepi.2010.04.026

18. Guyatt GH, Schünemann HJ, Djulbegovic B, Akl EA. Guideline panels should not GRADE good practice statements. J Clin Epidemiol 2015;68:597–600. doi: 10.1016/j.jclinepi.2014.12.011

19. International Working Group of AAGL, ESGE, ESHRE and WES, Tomassetti C, Johnson NP, Petrozza J, Abrao MS, Einarsson JI, et al. An international terminology for endometriosis, 2021. Facts Views Vis Obgyn 2021;13:295–304. doi: 10.52054/FVVO.13.4.036

20. Carey ET, Wong JM, Khan Z. Comprehensive review of endometriosis care. Obstet Gynecol 2025;146:323–40. doi: 10.1097/AOG.0000000000006004

21. Vermeulen N, Abrao MS, Einarsson JI, Horne AW, Johnson NP, Lee TT, et al. Endometriosis classification, staging and reporting systems: a review on the road to a universally accepted endometriosis classification. International working group of AAGL, ESGE, ESHRE and WES. Hum Reprod Open 2021; 2021:hoab025. doi: 10.1093/hropen/hoab025

22. Revised American Society for Reproductive Medicine classification of endometriosis: 1996. Fertil Steril 1997;67:817–21. doi: 10.1016/s0015-0282(97)81391-x

23. Haas D, Shebl O, Shamiyeh A, Oppelt P. The rASRM score and the Enzian classification for endometriosis: their strengths and weaknesses. Acta Obstet Gynecol Scand 2013;92:3–7. doi: 10.1111/aogs.12026

24. Tuttlies F, Keckstein J, Ulrich U, Possover M, Schweppe KW, Wustlich M, et al. ENZIAN-score, a classification of deep infiltrating endometriosis [in German]. Zentralbl Gynakol 2005; 127:275–81. doi: 10.1055/s-2005-836904

25. Keckstein J, Saridogan E, Ulrich UA, Sillem M, Oppelt P, Schweppe KW, et al. The #Enzian classification: a comprehensive non-invasive and surgical description system for endometriosis. Acta Obstet Gynecol Scand 2021;100: 1165–75. doi: 10.1111/aogs.14099

26. Adamson GD, Pasta DJ. Endometriosis fertility index: the new, validated endometriosis staging system. Fertil Steril 2010;94: 1609–15. doi: 10.1016/j.fertnstert.2009.09.035

27. Abrao MS, Andres MP, Miller CE, Gingold JA, Rius M, Neto JS, et al. AAGL 2021 endometriosis classification: an anatomy-based surgical complexity score. J Minim Invasive Gynecol 2021;28:1941–50.e1. doi: 10.1016/j.jmig.2021.09.709

28. Zondervan KT, Becker CM, Missmer SA. Endometriosis. N Engl J Med 2020;382:1244–56. doi: 10.1056/NEJMra1810764

29. Wang Y, Nicholes K, Shih I. The origin and pathogenesis of endometriosis. Annu Rev Pathol 2020;15:71–95. doi: 10.1146/annurev-pathmechdis-012419-032654

30. Maddern J, Grundy L, Castro J, Brierley SM. Pain in endometriosis. Front Cell Neurosci 2020;14:590823. doi: 10.3389/fncel.2020.590823

31. McNamara HC, Frawley HC, Donoghue JF, Readman E, Healey M, Ellett L, et al. Peripheral, central, and cross sensitization in endometriosis-associated pain and comorbid pain syndromes. Front Reprod Health 2021;3:729642. doi: 10.3389/frph.2021.729642

32. Missmer SA, Hankinson SE, Spiegelman D, Barbieri RL, Malspeis S, Willett WC, et al. Reproductive history and endometriosis among premenopausal women. Obstet Gynecol 2004; 104:965–74. doi: 10.1097/01.AOG.0000142714.54857.f8

33. Shafrir AL, Farland LV, Shah DK, Harris HR, Kvaskoff M, Zondervan K, et al. Risk for and consequences of endometriosis: a critical epidemiologic review. Best Pract Res Clin Obstet Gynaecol 2018;51:1–15. doi: 10.1016/j.bpobgyn.2018.06.001

34. Kim HJ, Lee H, Kazmi SZ, Hann HJ, Kang T, Cha J, et al. Familial risk for endometriosis and its interaction with smoking, age at menarche and body mass index: a population-based cohort study among siblings. BJOG 2021;128:1938–48. doi: 10.1111/1471-0528.16769

35. Maulenkul T, Kuandyk A, Makhadiyeva D, Dautova A, Terzic M, Oshibayeva A, et al. Understanding the impact of endometriosis on women's life: an integrative review of systematic reviews. BMC Womens Health 2024;24:524–5. doi: 10.1186/s12905-024-03369-5

36. Pontoppidan K, Olovsson M, Grundström H. Clinical factors associated with quality of life among women with endometriosis: a cross-sectional study. BMC Womens Health 2023;23:551–5. doi: 10.1186/s12905-023-02694-5

37. Soliman AM, Coyne KS, Zaiser E, Castelli-Haley J, Fuldeore MJ. The burden of endometriosis symptoms on health-related quality of life in women in the United States: a cross-sectional study. J Psychosom Obstet Gynaecol 2017;38:238–48. doi: 10.1080/0167482X.2017.1289512

38. De Graaff AA, D'Hooghe TM, Dunselman GA, Dirksen CD, Hummelshoj L, Simoens S. The significant effect of endometriosis on physical, mental and social wellbeing: results from an international cross-sectional survey. WERF EndoCost Consortium. Hum Reprod 2013;28:2677–85. doi: 10.1093/humrep/det284

39. Nnoaham KE, Hummelshoj L, Webster P, d'Hooghe T, de Cicco Nardone F, de Cicco Nardone C, et al. Impact of endometriosis on quality of life and work productivity: a multicenter study across ten countries. World Endometriosis Research Foundation Global Study of Women's Health consortium. Fertil Steril 2011;96:366–73.e8. doi: 10.1016/j.fertnstert.2011.05.090

40. Davenport S, Smith D, Green DJ. Barriers to a timely diagnosis of endometriosis: a qualitative systematic review. Obstet Gynecol 2023;142:571–83. doi: 10.1097/AOG.0000000000005255

41. Rowe HJ, Hammarberg K, Dwyer S, Camilleri R, Fisher JR. Improving clinical care for women with endometriosis: qualitative analysis of women's and health professionals' views. J Psychosom Obstet Gynaecol 2021;42:174–80. doi: 10.1080/0167482X.2019.1678022

42. Gouesbet S, Kvaskoff M, Riveros C, Diard É, Pane I, Gouss - Breton Z, et al. Patients' perspectives on how to improve endometriosis care: a large qualitative study within the ComPaRe-Endometriosis e-cohort. J Womens Health (Larchmt) 2023;32:463–70. doi: 10.1089/jwh.2022.0323

43. Pettersson A, Berterö CM. How women with endometriosis experience health care encounters. Womens Health Rep (New Rochelle) 2020;1:529–42. doi: 10.1089/whr.2020.0099

44. Brandes I, Kleine-Budde K, Heinze N, Binder S, Klug C, Schippert C, et al. Cross-sectional study for derivation of a cut-off value for identification of an early versus delayed diagnosis of endometriosis based on analytical and descriptive research methods. BMC Womens Health 2022;22:521. doi: 10.1186/s12905-022-02044-x

45. Agarwal SK, Chapron C, Giudice LC, Laufer MR, Leyland N, Missmer SA, et al. Clinical diagnosis of endometriosis: a call to action. Am J Obstet Gynecol 2019;220:354.e1–12. doi: 10.1016/j.ajog.2018.12.039

46. Surrey E, Soliman AM, Trenz H, Blauer-Peterson C, Sluis A. Impact of endometriosis diagnostic delays on healthcare resource utilization and costs. Adv Ther 2020;37:1087–99. doi: 10.1007/s12325-019-01215-x

47. Singh SS, Allaire C, Al-Nourhji O, Bougie O, Bridge-Cook P, Duigenan S, et al. Guideline No. 449: diagnosis and impact of endometriosis—a Canadian guideline. J Obstet Gynaecol Can 2024;46:102450. doi: 10.1016/j.jogc.2024.102450

48. Eder C, Roomaney R. Transgender and non-binary people's perception of their healthcare in relation to endometriosis. Int J Transgend Health 2023;25:911–25. doi: 10.1080/26895269.2023.2286268

49. Mosterd D, Evans S, Van Niekerk L, Skvarc D, Leonardi M, Stanley K, et al. "A name to the pain": a mixed methods analysis of diagnostic delay and perceptions of diagnosis importance in Australians with endometriosis. J Psychosom Res 2025;193:112143. doi: 10.1016/j.jpsychores.2025.112143

50. Grundström H, Engman L, Rimhagen E, Söderstierna C, Flink I. Experiences of communication in women with endometriosis: perceived validation and invalidation in different contexts, and associations with health-related quality of life. J Psychosom Obstet Gynaecol 2023;44:2264483. doi: 10.1080/0167482X.2023.2264483

51. Bougie O, Yap MI, Sikora L, Flaxman T, Singh S. Influence of race/ethnicity on prevalence and presentation of endometriosis: a systematic review and meta-analysis. BJOG 2019;126:1104–15. doi: 10.1111/1471-0528.15692

52. Bougie O, Nwosu I, Warshafsky C. Revisiting the impact of race/ethnicity in endometriosis. Reprod Fertil 2022;3:R34–41. doi: 10.1530/RAF-21-0106

53. Katon JG, Plowden TC, Marsh EE. Racial disparities in uterine fibroids and endometriosis: a systematic review and application of social, structural, and political context. Fertil Steril 2023;119:355–63. doi: 10.1016/j.fertnstert.2023.01.022

54. Hoffman KM, Trawalter S, Axt JR, Oliver MN. Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between Blacks and Whites. Proc Natl Acad Sci U S A 2016;113:4296–301. doi: 10.1073/pnas.1516047113

55. Vall e A, Feki A, Ayoubi J. Endometriosis in transgender men: recognizing the missing pieces. Front Med (Lausanne) 2023;10:1266131. doi: 10.3389/fmed.2023.1266131

56. Ellis K, Munro D, Wood R. The experiences of endometriosis patients with diagnosis and treatment in New Zealand. Front Glob Womens Health 2022;3:991045. doi: 10.3389/fgwh.2022.991045

57. van der Zanden M, Teunissen DA, van der Woord IW, Braat DD, Nelen WL, Nap AW. Barriers and facilitators to the timely diagnosis of endometriosis in primary care in the Netherlands. Fam Pract 2020;37:131–6. doi: 10.1093/fampra/cmz041

58. Roullier C, Sanguin S, Parent C, Lombart M, Sergent F, Foulon A. General practitioners and endometriosis: level of knowledge and the impact of training. J Gynecol Obstet Hum Reprod 2021;50:102227. doi: 10.1016/j.jogoh.2021.102227

59. Sullender RT, Jacobs MB, Sandhu MS, Lacoursiere DY, Diaz Luevano C, Pickett CM, et al. Perception and comfort with endometriosis management among OB/GYN residents. Int J Womens Health 2023;15:1801–9. doi: 10.2147/IJWH.S424554

60. de Kok L, Schers H, Boersen Z, Braat D, Teunissen D, Nap A. Towards reducing diagnostic delay in endometriosis in primary care: a qualitative study. BJGP Open 2024;8:BJGPO.2024.0019. doi: 10.3399/BJGPO.2024.0019

61. Dancet EA, Apers S, Kremer JA, Nelen WL, Sermeus W, D'Hooghe TM. The patient-centeredness of endometriosis

care and targets for improvement: a systematic review. Gynecol Obstet Invest 2014;78:69–80. doi: 10.1159/000358392

62. Schreurs AM, van Hoefen Wijsard M, Dancet EA, Apers S, Kuchenbecker WK, van de Ven PM, et al. Towards more patient-centred endometriosis care: a cross-sectional survey using the ENDOCARE questionnaire. Hum Reprod Open 2020;2020:hoaa029. doi: 10.1093/hropen/hoaa029

63. Brauer L, de Crupp W, Geraedts M. "Take me seriously": a qualitative interview study exploring healthcare experiences of endometriosis patients. PLoS One 2025;20:e0323883. doi: 10.1371/journal.pone.0323883

64. Becker CM, Bokor A, Heikinheimo O, Horne A, Jansen F, Kiesel L, et al. ESHRE guideline: endometriosis. ESHRE Endometriosis Guideline Group. Hum Reprod Open 2022;2022:hoac009. doi: 10.1093/hropen/hoac009

65. Bush D, Brick E, East MC, Johnson N. Endometriosis education in schools: a New Zealand model examining the impact of an education program in schools on early recognition of symptoms suggesting endometriosis. Aust N Z J Obstet Gynaecol 2017;57:452–7. doi: 10.1111/ajo.12614

66. Thong HP, Mardon AK, Evans S. Pelvic pain education—a short review on pelvic pain and endometriosis educational programs for adolescents. Aust N Z J Obstet Gynaecol 2025;65:25–9. doi: 10.1111/ajo.13856

67. Endometriosis Initiative Group. A call for new theories on the pathogenesis and pathophysiology of endometriosis. J Minim Invasive Gynecol 2024;31:371–7. doi: 10.1016/j.jmig.2024.02.004

68. Avery JC, Deslandes A, Freger SM, Leonardi M, Lo G, Carneiro G, et al. Noninvasive diagnostic imaging for endometriosis part 1: a systematic review of recent developments in ultrasound, combination imaging, and artificial intelligence. Fertil Steril 2024;121:164–88. doi: 10.1016/j.fertnstert.2023.12.008

69. Dungate B, Tucker DR, Goodwin E, Yong PJ. Assessing the utility of artificial intelligence in endometriosis: promises and pitfalls. Womens Health (Lond) 2024;20:17455057241248121. doi: 10.1177/17455057241248121

70. Snyder DL, Sidhom S, Chatham CE, Tillotson SG, Zapata RD, Modave F, et al. Utilizing artificial intelligence: machine learning algorithms to develop a preoperative endometriosis prediction model. J Minim Invasive Gynecol 2025;32:784–92.e12. doi: 10.1016/j.jmig.2025.05.003

71. Ballard KD, Seaman HE, de Vries CS, Wright JT. Can symptomatology help in the diagnosis of endometriosis? Findings from a national case-control study—part 1. BJOG 2008;115:1382–91. doi: 10.1111/j.1471-0528.2008.01878.x

72. Nnoaham KE, Hummelshoj L, Kennedy SH, Jenkinson C, Zondervan KT, World Endometriosis Research Foundation Women's Health Symptom Survey Consortium. Developing symptom-based predictive models of endometriosis as a clinical screening tool: results from a multicenter study. Fertil Steril 2012;98:692–701.e5. doi: 10.1016/j.fertnstert.2012.04.022

73. Chapron C, Lafay-Pillet M, Santulli P, Bourdon M, Maignien C, Gaudet-Chardonnet A, et al. A new validated screening method for endometriosis diagnosis based on patient questionnaires. EClinicalMedicine 2022;44:101263. doi: 10.1016/j.eclinm.2021.101263

74. Hudelist G, Ballard K, English J, Wright J, Banerjee S, Mastoroudes H, et al. Transvaginal sonography vs. clinical examination in the preoperative diagnosis of deep infiltrating endometriosis. Ultrasound Obstet Gynecol 2011;37:480–7. doi: 10.1002/uog.8935

75. Zhang X, He T, Shen W. Comparison of physical examination, ultrasound techniques and magnetic resonance imaging for the diagnosis of deep infiltrating endometriosis: a systematic review and meta-analysis of diagnostic accuracy studies. Exp Ther Med 2020;20:3208–20. doi: 10.3892/etm.2020.9043

76. Chapron C, Marcellin L, Maitrot-Mantelet L, Bourdon M, Maignien C, Parpex G, et al. Questionnaire-based screening of adolescents and young adult women can identify markers associated with endometriosis. Hum Reprod 2024;39:1664–72. doi: 10.1093/humrep/deae125

77. Oliveira IJ, Pinto PV, Bernardes J. Noninvasive diagnosis of endometriosis in adolescents and young female adults: a systematic review. J Pediatr Adolesc Gynecol 2025;38:124–38. doi: 10.1016/j.jpag.2024.07.005

78. Andres MP, Arcoverde FV, Souza CC, Fernandes LF, Abr o MS, Kho RM. Extrapelvic endometriosis: a systematic review. J Minim Invasive Gynecol 2020;27:373–89. doi: 10.1016/j.jmig.2019.10.004

79. Fuldeore MJ, Soliman AM. Prevalence and symptomatic burden of diagnosed endometriosis in the United States: national estimates from a cross-sectional survey of 59,411 women. Gynecol Obstet Invest 2017;82:453–61. doi: 10.1159/000452660

80. Bourdel N, Alves J, Pickering G, Ramilo I, Roman H, Canis M. Systematic review of endometriosis pain assessment: how to choose a scale? Hum Reprod Update 2015;21:136–52. doi: 10.1093/humupd/dmu046

81. Nicolas-Boluda A, Oppenheimer A, Bouaziz J, Fauconnier A. Patient-reported outcome measures in endometriosis. J Clin Med 2021;10:5106. doi: 10.3390/jcm10215106

82. DiVasta AD, Vitonis AF, Laufer MR, Missmer SA. Spectrum of symptoms in women diagnosed with endometriosis during adolescence vs adulthood. Am J Obstet Gynecol 2018;218:324.e1–11. doi: 10.1016/j.ajog.2017.12.007

83. Müllerian agenesis: diagnosis, management, and treatment. ACOG Committee Opinion No. 728. American College of Obstetricians and Gynecologists. Obstet Gynecol 2018;131:e35–42. doi: 10.1097/AOG.0000000000002458

84. Management of acute obstructive uterovaginal anomalies. ACOG Committee Opinion No. 779. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019;133:e363–71. doi: 10.1097/AOG.0000000000003281

85. Diagnosis and management of hymenal variants. ACOG Committee Opinion No. 780. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019;133:e372–6. doi: 10.1097/AOG.0000000000003283

86. Shim JY, Laufer MR, King CR, Lee TT, Einarsson JI, Tyson N. Evaluation and management of endometriosis in the adolescent. Obstet Gynecol 2024;143:44–51. doi: 10.1097/AOG.0000000000005448

87. Nisenblat V, Bossuyt PM, Farquhar C, Johnson N, Hull ML. Imaging modalities for the non-invasive diagnosis of endometriosis. The Cochrane Database of Systematic Reviews 2016, Issue 2. Art. No.: CD009591. doi: 10.1002/14651858.CD009591.pub2

88. Condous G, Gerges B, Thomassin-Naggara I, Becker C, Tomassetti C, Krentel H, et al. Non-invasive imaging techniques for diagnosis of pelvic deep endometriosis and endometriosis classification systems: an international consensus statement.

Ultrasound Obstet Gynecol 2024;64:129–44. doi: 10.1002/uog.27560

89. Young SW, Jha P, Chami L, Rodgers S, Kho RM, Horrow MM, et al. Society of Radiologists in Ultrasound consensus on routine pelvic US for endometriosis. Radiology 2024;311:e232191. doi: 10.1148/radiol.232191

90. Guerriero S, Condous G, van den Bosch T, Valentin L, Leone FPG, Van Schoubroeck D, et al. Systematic approach to sonographic evaluation of the pelvis in women with suspected endometriosis, including terms, definitions and measurements: a consensus opinion from the International Deep Endometriosis Analysis (IDEA) group. Ultrasound Obstet Gynecol 2016;48:318–32. doi: 10.1002/uog.15955

91. Guerriero S, Condous G, Rolla M, Pedrassani M, Leonardi M, Hudelist G, et al. Addendum to consensus opinion from the International Deep Endometriosis Analysis (IDEA) group: sonographic evaluation of superficial endometriosis. Ultrasound Obstet Gynecol 2025;66:541–7. doi: 10.1002/uog.29288

92. Gerges B, Li W, Leonardi M, Mol BW, Condous G. Optimal imaging modality for detection of rectosigmoid deep endometriosis: systematic review and meta-analysis. Ultrasound Obstet Gynecol 2021;58:190–200. doi: 10.1002/uog.23148

93. Gerges B, Li W, Leonardi M, Mol BW, Condous G. Meta-analysis and systematic review to determine the optimal imaging modality for the detection of uterosacral ligaments/torus uterinus, rectovaginal septum and vaginal deep endometriosis. Hum Reprod Open 2021;2021:hoab041. doi: 10.1093/hropen/hoab041

94. Gerges B, Li W, Leonardi M, Mol BW, Condous G. Meta-analysis and systematic review to determine the optimal imaging modality for the detection of bladder deep endometriosis. Eur J Obstet Gynecol Reprod Biol 2021;261:124–33. doi: 10.1016/j.ejogrb.2021.04.030

95. Abrao MS, Andres MP, Gingold JA, Rius M, Neto JS, Goncalves MO, et al. Preoperative ultrasound scoring of endometriosis by AAGL 2021 endometriosis classification is concordant with laparoscopic surgical findings and distinguishes early from advanced stages. J Minim Invasive Gynecol 2023;30:363–73. doi: 10.1016/j.jmig.2022.11.003

96. Feldman MK, Wasnik AP, Adamson M, Dawkins AA, Dibble EH, Jones LP, et al. ACR Appropriateness Criteria® endometriosis. Expert Panel on GYN and OB Imaging. J Am Coll Radiol 2024;21:S384–95. doi: 10.1016/j.jacr.2024.08.017

97. Kanti FS, Gorak Savard R, Bergeron F, Zomahoun HT, Netter A, Maheux-Lacroix S. Transvaginal ultrasound and magnetic resonance imaging in the diagnosis of endometrioma: a systematic review and meta-analysis of diagnostic test accuracy studies. J Obstet Gynaecol 2024;44:2311664. doi: 10.1080/01443615.2024.2311664

98. Brulport A, Bourdon M, Vaiman D, Drouet C, Pocate-Cheriet K, Bouzid K, et al. An integrated multi-tissue approach for endometriosis candidate biomarkers: a systematic review. Reprod Biol Endocrinol 2024;22:21–8. doi: 10.1186/s12958-023-01181-8

99. Nisenblat V, Bossuyt PM, Shaikh R, Farquhar C, Jordan V, Scheffers CS, et al. Blood biomarkers for the non-invasive diagnosis of endometriosis. The Cochrane Database of Systematic Reviews 2016, Issue 5. Art. No.: CD012179. doi: 10.1002/14651858.CD012179

100. Hirsch M, Duffy J, Davis CJ, Nieves Plana M, Khan KS, et al. Diagnostic accuracy of cancer antigen 125 for endometriosis: a systematic review and meta-analysis. BJOG 2016;123:1761–8. doi: 10.1111/1471-0528.14055

101. Gupta D, Hull ML, Fraser I, Miller L, Bossuyt PM, Johnson N, Nisenblat V. Endometrial biomarkers for the non-invasive diagnosis of endometriosis. The Cochrane Database of Systematic Reviews 2016, Issue 4. Art. No.: CD012165. doi: 10.1002/14651858.CD012165

102. Liu E, Nisenblat V, Farquhar C, Fraser I, Bossuyt PM, Johnson N, Hull ML. Urinary biomarkers for the non-invasive diagnosis of endometriosis. The Cochrane Database of Systematic Reviews 2015, Issue 12. Art. No.: CD012019. doi: 10.1002/14651858.CD012019

103. Agrawal S, Tapmeier T, Rahmioglu N, Kirtley S, Zondervan K, Becker C. The miRNA mirage: how close are we to finding a non-invasive diagnostic biomarker in endometriosis? A systematic review. Int J Mol Sci 2018;19:599. doi: 10.3390/ijms19020599

104. Gandhi T, Zubair M, Bhatt H. Cancer antigen 125. In: StatPearls [Internet]. Accessed November 7, 2025. https://www.ncbi.nlm.nih.gov/books/NBK562245/

105. Vanhie A, Caron E, Vermeersch E, O D, Tomassetti C, Meuleman C, et al. Circulating microRNAs as non-invasive biomarkers in endometriosis diagnosis-a systematic review. Biomedicines 2024;12:888. doi: 10.3390/biomedicines12040888

106. Meyer R, Siedhoff M, Truong M, Hamilton K, Fan S, Levin G, et al. Risk factors for major complications following minimally invasive surgeries for endometriosis in the United States. J Minim Invasive Gynecol 2023;30:820–6. doi: 10.1016/j.jmig.2023.06.002

107. Bougie O, McClintock C, Pudwell J, Brogly SB, Velez MP. Short-term outcomes of endometriosis surgery in Ontario: a population-based cohort study. Acta Obstet Gynecol Scand 2021;100:1140–7. doi: 10.1111/aogs.14071

108. Clark NV, Dmello M, Griffith KC, Gu X, Ajao MO, Cohen SL, et al. Laparoscopic treatment of endometriosis and predictors of major complications: a retrospective cohort study. Acta Obstet Gynecol Scand 2020;99:317–23. doi: 10.1111/aogs.13762

109. Pascoal E, Wessels JM, Aas-Eng MK, Abrao MS, Condous G, Jurkovic D, et al. Strengths and limitations of diagnostic tools for endometriosis and relevance in diagnostic test accuracy research. Ultrasound Obstet Gynecol 2022;60:309–27. doi: 10.1002/uog.24892

110. Fernando S, Soh PQ, Cooper M, Evans S, Reid G, Tsaltas J, et al. Reliability of visual diagnosis of endometriosis. J Minim Invasive Gynecol 2013;20:783–9. doi: 10.1016/j.jmig.2013.04.017

111. Dun EC, Kho KA, Morozov VV, Kearney S, Zurawin JL, Nezhat CH. Endometriosis in adolescents. JSLS 2015;19:e2015.00019. doi: 10.4293/JSLS.2015.00019

112. Gratton S, Choudhry AJ, Vilos GA, Vilos A, Baier K, Holubeshen S, et al. Diagnosis of endometriosis at laparoscopy: a validation study comparing surgeon visualization with histologic findings. J Obstet Gynaecol Can 2022;44:135–41. doi: 10.1016/j.jogc.2021.08.013

113. Watkins JC, DiVasta AD, Vitonis AF, Crum CP, Laufer MR, Terry KL, et al. A clinical and pathologic exploration of suspected peritoneal endometriotic lesions. Int J Gynecol Pathol 2021;40:602–10. doi: 10.1097/PGP.0000000000000743

114. Kvaskoff M, Mahamat-Saleh Y, Farland LV, Shigesi N, Terry KL, Harris HR, et al. Endometriosis and cancer: a systematic review and meta-analysis. Hum Reprod Update 2021;27:393–420. doi: 10.1093/humupd/dmaa045

115. Barnard ME, Farland LV, Yan B, Wang J, Trabert B, Doherty JA, et al. Endometriosis typology and ovarian cancer risk. JAMA 2024;332:482–9. doi: 10.1001/jama.2024.9210

APPENDICES

Supplemental Digital Content

A. Literature search strategy: available online at http://links.lww.com/AOG/E504
B. PRISMA diagram: http://links.lww.com/AOG/E505
C. Evidence tables: http://links.lww.com/AOG/E506

CONFLICT OF INTEREST STATEMENT

All ACOG committee members and authors have submitted a conflict of interest disclosure statement related to this published product. Any potential conflicts have been considered and managed in accordance with ACOG's Conflict of Interest Disclosure Policy. The ACOG policies can be found on acog.org. For products jointly developed with other organizations, conflict of interest disclosures by representatives of the other organizations are addressed by those organizations. The American College of Obstetricians & Gynecologists has neither solicited nor accepted any commercial involvement in the development of the content of this published product.

American College of Obstetricians & Gynecologists
409 12th Street SW, Washington, DC 20024-2188

Diagnosis of endometriosis. Clinical Practice Guideline No. 11. American College of Obstetricians & Gynecologists. Obstet Gynecol 2026;147:432–48.