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No. 468 (Replaces components of Guideline No 244: Endometriosis: Diagnosis and Management, July 2010, and complements Guideline No 449: Diagnosis and Impact of Endometriosis)

Guideline No. 468: Clinical Management of Endometriosis

(En français : Lignes directrices de pratique clinique n° 468 : Endométriose : Diagnostic et prise en charge)

The English document is the original version; translation may introduce small differences in the French version.

This clinical practice guideline was prepared by the authors, reviewed by the SOGC Clinical Gynaecology Committee (2026) and approved by the SOGC Guideline Management and Oversight Committee (2026).
This Clinical Practice Guideline Update supersedes components of No. 244, published in July 2010.

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This document reflects emerging clinical and scientific advances as of the publication date and is subject to change. The information is not meant to dictate an exclusive course of treatment or procedure. Institutions may adapt the recommendations to their context, but the SOGC recommends that all such changes be clearly documented.

Informed consent: Patients have the right and responsibility to make informed decisions about their care, in partnership with their health care provider. In order to facilitate informed choice, patients should be provided with information and support that is evidence-based, culturally appropriate, and personalized. The values, beliefs, and individual needs of each patient in the context of their personal circumstances should be considered and the final decision about care and treatment options chosen by the patient should be respected.

Language and inclusivity: This clinical practice guidance document uses gendered language but is intended to apply inclusively to all individuals who may benefit from its recommendations. Health care providers are encouraged to engage in respectful, patient-centred discussions and apply this guidance in ways that are responsive to each individual's identity, circumstances, and needs. Terms such as *"women," "pregnant women,"* or *"mothers" are examples of language used.*

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Subject Categories: Gynaecology

Keywords : endometriosis; surgery; medical therapy management; fertility preservation

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KEY MESSAGES

1. Endometriosis is a common, chronic condition that requires an individualized, patient-centred care plan.
2. Medical therapy is an option for the management of endometriosis associated symptomatology. Treatment choice should be guided by patient preferences, disease phenotype, and comorbidities.
3. Surgical treatment indications should be clearly identified including management of refractory pain, infertility, or organ dysfunction. Ideally, surgeries should be performed by surgeons with advanced laparoscopic skills and in dedicated centres of expertise when deep endometriosis is suspected.
4. For those who desire future pregnancy, fertility counselling is a key consideration in the care of endometriosis and may require timely referral to fertility specialists.
5. A multidisciplinary/interdisciplinary model of care is crucial for patients with persistent pain, complex presentations, or overlapping chronic pain conditions, emphasizing the importance of a biopsychosocial approach for optimizing outcomes and quality of life.

ABSTRACT

Objective: To provide health care professionals with an evidence-based approach to the management of endometriosis and its associated symptoms.

Target Population: Women and gender-diverse individuals affected by endometriosis.

Benefits, Harms, and Costs: Timely and effective management of endometriosis has the potential to reduce pain, improve fertility and quality of life, and enhance long-term health outcomes. Early intervention may also help mitigate the financial and health system burdens associated with delayed diagnosis and treatment.

Evidence: Published literature was retrieved through searches of PubMed, Ovid, Medline, Embase, Scopus, and the Cochrane Library from August 2010 through December 2025, using relevant MeSH heading and keywords. Results were restricted to systematic reviews, meta-analyses, randomized controlled trials/controlled clinical trials, observational studies, and clinical practice guidelines. Results were limited to English or French language materials. Evidence was supplemented with references from the 2010 Society of Obstetricians and Gynaecologists of Canada guideline No. 244.

Validation Methods: The authors rated the quality of evidence and strength of recommendations using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach. See online Appendix A (Tables A1 for definitions and A2 for interpretations of strong and conditional recommendations).

Intended Audience: Health care providers involved in the care of individuals with endometriosis.

Social Media Abstract: Early identification and management of endometriosis can significantly improve patient outcomes, reduce long-term health care costs and improve their quality of life.

SUMMARY STATEMENTS:

1. Endometriosis is a chronic condition that requires a patient-centred and individualized approach to long term management which may be multidisciplinary and include medical, surgical, pain and/or fertility interventions. (high)
2. Medical treatment can be an effective option for managing endometriosis pain symptoms, however, each of the various options has unique advantages and side-effects (high).
3. Post operative hormonal therapy may aid in reducing disease and/or symptom recurrence after effective surgical management. (high)
4. In adolescent patients with presumed or diagnosed endometriosis, hormonal therapy is an effective option for managing symptoms, but careful consideration of the impact on bone health is essential. (high)
5. The surgical approach to endometriosis requires an individualized plan of care based on patient goals, symptoms and extent of disease, with indications including, but not limited to, pelvic pain, organ dysfunction, and/or infertility. (high)
6. There is a need to coordinate the care of patients with endometriosis, especially those with severe symptoms and/or disease. This may be facilitated by referral to a centre of expertise when appropriate. (high)

7. Advanced imaging by ultrasound and/or MRI allows for surgical planning and referral to a centre of expertise, or the most appropriate site, when required; although currently not widely available, access to advanced imaging is increasing in Canada. (high)
8. The surgical management of endometriosis requires the appropriate skill set and training based on the level of disease complexity. (high)
9. Excision is superior to ablation of endometriosis lesions. For ovarian endometriomas, cystectomy is superior to cyst ablation for pain, fertility and prevention of recurrence but is associated with a decrease in markers of ovarian reserve (specifically, anti-Mullerian hormone). (high)
10. Performing hysterectomy in addition to endometriosis excision is associated lower risk of recurrence, reoperation and failure compared to uterus-sparing surgery. This should be discussed with patients who do not desire future fertility. (high)
11. Routine bilateral oophorectomy in pre-menopausal endometriosis patients does not improve pain symptoms or satisfaction, nor reduce healthcare visits, while it increases risk of cardiovascular disease, osteoporosis, and sexual dysfunction. (moderate)
12. Endometriosis care should be accessible to all Canadians in need, irrespective of their location, including those in rural and remote communities. (high)
13. Advanced reproductive age, diminished ovarian reserve, tubal disease, male factor, low Endometriosis Fertility Index (EFI) score, and/or failure of other treatments are indications for consideration of fertility consultation among those with endometriosis-associated infertility. (moderate)
14. Medical treatment for hormonal suppression of endometriosis does not improve fertility in infertile patients with endometriosis, though it can improve pain symptoms if present. (high)
15. Randomized trials have shown an increase in viable intrauterine pregnancy rates after surgical management of rASRM Stage I and II endometriosis-associated infertility. (high)
16. Endometriosis Fertility Index (EFI) is a validated, reproducible, and cost-effective tool that should be used for counselling patients undergoing surgery for infertility. (moderate)
17. Endometriosis may be associated with increased risk of pregnancy loss and ectopic pregnancy, as well as other pregnancy complications particularly in those with deep endometriosis. (moderate)
18. Patients with chronic/persistent pain and endometriosis are likely to have better improvement in quality of life using a biopsychosocial approach that addresses concurrent pain contributors and nociplastic pain mechanisms, which are often present in long-standing cases. (moderate)
19. The establishment of publicly funded interdisciplinary centres of expertise for the care of complex endometriosis should be a priority in Canada. (high)
20. Endometriosis is associated with an increased risk of ovarian cancer. Factors potentially associated with reduced risk include optimal surgical removal of disease, hormonal therapy, bilateral salpingectomy, and hysterectomy (+/- oophorectomy). (moderate)
21. There is published evidence on complementary and alternative therapies in endometriosis, however, these studies lack placebo controls. (moderate)
22. Endometriosis patients can present with deep dyspareunia, superficial dyspareunia, or concurrent deep-superficial dyspareunia which can impact other aspects of the sexual response cycle (e.g. pain, desire, arousal, orgasm). (high)

RECOMMENDATIONS:

1. For patients not considering immediate fertility, hormonal therapy should be offered and can be used long-term for symptom control. (high, strong)
2. Providers should adopt a shared-decision making approach in choosing hormonal therapy taking into account disease and pain phenotype, contraceptive needs, side-effect profile, comorbidities, patient age, patient preferences and costs. (high, strong)
3. Before deciding on the success or failure of a particular hormonal therapy, patients should be encouraged to continue the trial for a minimum of three months, provided side-effects are tolerable. (high, strong)
4. Patients on certain long-term hormonal suppression should be advised about the potential decrease in bone mineral density and implement measures to maintain bone health. (low, conditional)
5. Following conservative (ovarian and uterine preservation) endometriosis surgery, patients not desiring immediate pregnancy should be offered long-term hormonal therapy to reduce the risk of symptom recurrence and possibly disease recurrence. (high, strong)
6. Patients with a history of endometriosis who undergo either natural or surgical menopause should be offered menopausal hormone therapy, and if prescribed, it should contain a progestin, irrespective of whether a hysterectomy was performed, to prevent re-activation of endometriosis. (low, conditional)
7. For adolescents, providers may consider therapies similar to those used in adults, with the exception of greater caution with GnRH agonists due to risk of bone loss. Bone health considerations should apply to all therapies in this population. (moderate, conditional)
8. A system wide approach is recommended, at the provincial and federal levels, to help optimize patient evaluation, access to advanced imaging, and care by providers/teams with experience and expertise for each subtype of disease. (moderate, conditional)
9. The indication for surgery should be clearly defined during the preoperative evaluation to aid in shared decision making. Preoperative counselling and informed consent should be individualized, considering each patient's goals and expectations, including impact on pain management and fertility outcomes (with an informed discussion that must be documented when surgical procedures could adversely affect future fertility). (moderate, conditional)
10. When considering surgery for endometriosis, it is important to assess for overlapping chronic pain conditions and other potential comorbidities that may affect the surgical plan and prognosis. (high, strong)
11. Patients with a diagnosis of deep endometriosis who require surgery should be referred to a centre of expertise. Ideally, financial support should be available for travel when necessary. (high, strong)
12. Fertility considerations should be reviewed prior to surgery. Those patients who wish to preserve their fertility may require consultation with a fertility specialist. (moderate, conditional).
13. Routine bilateral oophorectomy should be avoided and considered only under specific conditions in pre-menopausal women after discussing the risks of surgical menopause. (moderate, conditional)
14. Among patients with infertility who do not wish to proceed with Assisted Reproductive Technologies and have suspected/diagnosed superficial endometriosis, laparoscopic treatment could be offered. (moderate, conditional)

15. Laparoscopic ovarian cystectomy may be considered in symptomatic patients with ovarian endometrioma and infertility, to increase natural conception. (moderate, conditional)
16. The Endometriosis Fertility Index (EFI) should be used to counsel patients regarding their probability of non-IVF pregnancy following surgery, with consideration of referral to a fertility clinic for patients with lower probabilities. (moderate, conditional)
17. Fertility preservation options, including oocyte cryopreservation, embryo cryopreservation and ovarian tissue cryopreservation, should be integrated into endometriosis management where appropriate. (moderate, conditional)
18. When treating patients with endometriosis, clinicians can counsel that selected endometriosis treatments may be secondarily associated with ovarian cancer risk reduction. (moderate, conditional)

INTRODUCTION

Endometriosis is a chronic, estrogen-dependent, inflammatory condition characterized by the presence of endometrial-like tissue outside the uterine cavity. It is a leading cause of pelvic pain and infertility in women and gender diverse individuals. The disease can have a profound negative impact on quality of life, physical function, activities of daily living, sexual health, and mental well-being.

The management of endometriosis can be complex and must be tailored to each patient's clinical presentation, life stage, reproductive goals, and preferences. It may involve an array of strategies, including medical therapy, surgical intervention, fertility planning and treatment, lifestyle modification, and multidisciplinary/interdisciplinary care. A patient-centred, evidence-informed approach is paramount to optimizing outcomes and minimizing the long-term burden of disease.

Following the SOGC Clinical Practice Guideline on Diagnosis and Impact of Endometriosis,[1] this Clinical Practice Guideline provides current evidence and expert consensus on the management of endometriosis across the lifespan, integrating advances in pharmacologic and surgical therapy, diagnostic imaging, fertility preservation, chronic pain management principles, and oncologic risk management. In line with contemporary models of care for chronic disease and pain, this guideline emphasizes the need for early intervention, continuity of care, and access to multidisciplinary/interdisciplinary expertise. It also addresses key considerations across the life span and offers guidance on complex scenarios including deep endometriosis and infertility.

MEDICAL MANAGEMENT OF ENDOMETRIOSIS

There are several effective medical treatment options available for the management of endometriosis-related symptoms. Given the chronic, inflammatory, and

ABBREVIATIONS

AAGL	AAGL Elevating Gynecologic Surgery Worldwide
AB	Add-back therapy
AFC	Antral Follicle Count
AMH	Anti-Müllerian Hormone
ART	Assisted Reproductive Technology
ASRM	American Society for Reproductive Medicine
AUC	Area Under the Curve
BID	*bis in die* (twice a day)
BMD	Bone Mineral Density
CDC	Centers for Disease Control and Prevention
CHC	Combined Hormonal Contraceptive
CI	Confidence Interval
CO_2	Carbon Dioxide
COPCs	Chronic Overlapping Pain Conditions
CT	Combination therapy
DE	Deep Endometriosis
DMPA	Depot Medroxyprogesterone Acetate
DNG	Dienogest
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
EFI	Endometriosis Fertility Index
EPI	Endometriosis Pain Index
ENG	Etonogestrel
ENZIAN	ENZIAN Classification System for Deep Endometriosis
FODMAP	Fermentable Oligosaccharides Disaccharides Monosaccharides And Polyols
FSH	Follicle-Stimulating Hormone
GnRH	Gonadotropin-Releasing Hormone
IBS	Irritable Bowel Syndrome
IDEA	International Deep Endometriosis Analysis
IM	Intramuscular
IOTA	International Ovarian Tumor Analysis Group
IUI	Intrauterine Insemination
IVF	In Vitro Fertilization
IUS	Intrauterine System
LBR	Live Birth Rate
LH	Luteinizing Hormone
LNG IUD	Levonorgestrel Intrauterine Device
LNG-IUS	Levonorgestrel Intrauterine System
MHT	Menopausal Hormone Therapy
MRI	Magnetic Resonance Imaging
NSAID	Nonsteroidal Anti-Inflammatory Drug
NETA	Norethindrone Acetate
OR	Operating Room
PO	*per os* (by mouth/orally)
POD	Pouch of Douglas
RCT	Randomized Controlled Trial
rASRM	Revised Classification of endometriosis of the American Society for Reproductive Medicine
SC	Subcutaneous
SOGC	The Society of Obstetricians and Gynaecologists of Canada
VTE	Venous Thromboembolism

estrogen-dependent nature of the condition, medical management is often the foundational treatment strategy for patients with endometriosis for the treatment of pain symptoms. Although analgesics such as acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDS) can be effective, they should be used episodically rather than longer term. Medical therapies for hormonal suppression that aim to decrease circulating estrogen and also directly target endometriosis lesions should be considered the mainstay of medical management. Each of these therapies, outlined in Table 1, has unique mechanisms of action and consequently different effects and side-effect profiles.

Previous guidelines proposed a stepwise approach in the medical management of endometriosis-associated pain. There is a lack of evidence to uniformly support one medical treatment option over the other. Hence, we recommend an individualized patient-centred approach where all medical options are considered, based on individual needs and taking into account patient factors and treatment goals. Overall, 80-90% of patients with endometriosis will experience some improvement in pain with the use of medical therapy[2]. Before deciding on the success or failure of a particular hormonal therapy, patients should be encouraged to continue the trial for at least 3 months, provided side-effects are tolerable. Discontinuation rates due to adverse events or lack of efficacy are 5-15%[2]. As such, it is important to counsel patients about the possible side effects and adverse events prior to initiating therapy. Several of the more common side effects/adverse events are reviewed in Table 1 and suggested "troubleshooting tips" are provided to aid in clinical management. Those who do not respond to existing therapies may benefit from new therapies with different mechanisms of action or consideration for surgical management. Evaluation of other etiologies of pain must also be considered.

All therapies in Table 1 have RCT data that shows reduction in pelvic pain compared to placebo[3–5]. Data for CHC primarily shows benefit for dysmenorrhea, with limited evidence for dyspareunia, dyschezia and non-menstrual pelvic pain. Both dienogest (DNG) and the 52 mg levonorgestrel intrauterine system (LNG-IUS) have RCT data showing equivalent pain relief to GnRH agonists, supporting their use as effective long-term options. Low-dose progestin-only contraceptive pills lack evidence for effectiveness in treating endometriosis. However, emerging retrospective data suggest potential benefit with drospirenone 4 mg daily, though further studies are needed[6]. Similarly, other IUS with lower progestin doses have not been evaluated for endometriosis-related pain.

All medications listed in Table 1 are Health Canada approved; however, not all are explicitly indicated for endometriosis. Despite this, all therapies have robust evidence supporting their use in the treatment of endometriosis-associated pain. Regulatory restrictions on the duration of use for certain medications are based on original RCT data submissions and often vary by country. Clinicians should recognize endometriosis as a chronic condition that may require extended use of therapy beyond regulatory time limits. Long-term observational studies have been reassuring for safety and effectiveness.[7,8] Clinical decisions should incorporate emerging evidence and individual patient needs should take precedence, over formal updates to regulatory product monographs in clinical decision making.

Combined Hormonal Contraceptives

- No formulation is superior to another. If pain initially improves with combined oral contraceptives (CHC) but later recurs, switching to a different therapeutic class rather than another CHC formulation is recommended[9,10].
- CHC is less effective in patients with deep endometriosis; consider alternative classes in these cases[11].

Progestins

- Norethindrone acetate (NETA) has similar efficacy and side-effect profile to dienogest (DNG).
- Irregular bleeding is common with progestin initiation. Starting progestins at the onset of menses or using a short course of a GnRH agonist prior to long-term progestin therapy may reduce breakthrough bleeding[12].

Levonorgestrel Intrauterine System

- Levonorgestrel Intrauterine System (LNG-IUS), inserted in the operating room concurrently with endometriosis surgery, is an effective choice for post-operative treatment to prevent recurrence[13].
- Although LNG-IUS is approved for contraception for up to 8 years, progestin levels decline over time, which may impact pain relief. Earlier replacement and/or addition of superimposed ovulatory suppression may be warranted in patients with symptom recurrence.

Table 1. Summary of Medical Management

Medical Therapy	CHC	Oral Progestin	LNG-IUS	GnRH antagonist	GnRH antagonist with add-back	GnRH agonist
Dose	Continuous > Cyclic Estrogen/Progestin (any formulation)	Dienogest (DNG) 2mg once daily Norethindrone acetate 2.5 - 5mg once daily, increase by 2.5mg to max of 15mg Drospirenone 4mg once daily	52mg Levonorgestrel IUS	Elagolix 150mg once daily or 200mg twice a day	Relugolix 40 mg, estradiol 1 mg, norethisterone acetate 0·5 mg once daily	Buserelin 0.2mg SC once daily or 1.2mg intra-nasal once daily Goserelin 3.6mg SC q4 weeks or 10.8mg SC q12weeks Leuprolide 3.75mg IM q4 weeks or 11.25mg IM q12 weeks Nafarelin 400-800mcg intra-nasal once daily Tritorelin 3.7mg mg IM q4 weeks
Key Contraindications*	Smoking >35 years, VTE history, migraine with aura, breast cancer history	Breast cancer	Breast cancer, uterine anomaly	Known osteoporosis	VTE, breast cancer	Breastfeeding, undiagnosed AUB
Notable Side-effects	Menstrual irregularities, nausea	~20% will experience irregular bleeding x 3 months, headache, depressed mood	Irregular bleeding, risks of insertion, NO increased risk of VTE	Hot flushes, mood changes (<5%), decreased BMD	Hot flashes, headache, BMD	Headache, mood changes/depression, hot flushes, decreased libido, BMD loss
Amenorrhea rates	Low to Moderate (depending on regimen)	Moderate	Moderate	Low for 150 mg once daily dosing Moderate for 200 mg BID dosing	High	High[15]
Long-term data	>5 years	>5 years	>5 years	1-5 years 200 mg BID with AB[16]	1-5 years[17]	>5years
Reliable Contraception	Yes	Yes (Drosperinone) (see discussion for others)	Yes	No	Nuanced (see discussion)	Yes (see discussion)
Cost (may depend on provincial contraceptive coverage)	$	$	$$ (upfront); $ long-term	$$$	$$$	$$$

*See product monographs for comprehensive contraindications. Long-term data for amenorrhea: high >75%, Moderate 30-70% and Low <30%.

Gonadotropin-releasing Hormone (GnRH) Agonist

- Add-back (AB) therapy may be initiated at the start of GnRH agonist treatment to mitigate hypoestrogenic side effects.
- To minimize flare-related symptoms with GnRH agonists, initiate treatment in the luteal phase or consider adding an aromatase inhibitor during the first week of therapy[14].

GnRH Antagonists

- Available as a single agent product at partial suppression dose or almost full suppression dose, or in combination with hormone add back therapy.
- GnRH antagonist in combination with AB (relugolix CT) is a good option to consider for patients with concurrent symptomatic uterine fibroids as the product is indicated for both diagnoses.

Other Medical Options

Injectable Progestin

Depot Medroxyprogesterone acetate (DMPA) 150mg IM every 3 months is the formulation available in Canada. Most of the efficacy data on injectable progestin has been done with subcutaneous dosing (104 mg every 3 months) and has shown improvements in endometriosis-related pain equivalent to both GnRH agonist and antagonist.[18–20] DMPA can be effective in patients with endometriosis-related pain requiring effective contraception. Considerations in selecting this therapy include a delay in return to fertility, the impact on bone density for long-term use, and initial irregular bleeding. These can be reviewed in the SOGC Contraception Consensus Guideline[21,22].

Subdermal Progestin

Etonogestrel (ENG) implant (68mg) is available in Canada and is effective for contraception for 3 years. Only a few studies on a limited number of patients have shown that progestin subdermal implants might improve pain symptoms and quality of life in endometriosis. Although subdermal progestin provides excellent contraception, bleeding irregularities are common and may be exacerbated in endometriosis patients with concurrent adenomyosis[23–26] (See SOGC Guideline No. 437: Diagnosis and Management of Adenomyosis[27]).

Danazol

Danazol either orally (200-800mg daily in divided doses) or vaginally (100-200 mg daily) has been found to be effective for dysmenorrhea, dyspareunia, dyschezia and pelvic pain[28]. Older studies have shown equivalence to GnRH-agonists[29]. The side effect profile (weight gain, acne, hirsutism, deepening of voice, decrease in breast size) and risk of adverse events (venous thromboembolism, liver damage) have limited its uptake[30]. Vaginal administration may reduce systemic drug levels and side effects[30]. Danazol can cause virilizing effects in the developing female fetus, and thus pregnancy must be avoided and the drug must be stopped immediately with a positive pregnancy test (see reference[30] for fertility issues specific to vaginal Danazol).

Aromatase Inhibitor

Small, mostly non-randomized studies have shown that aromatase inhibitors (letrozole, anastrozole, exemestane) used in combination with other hormonal therapies (e.g., Norethisterone Acetate (NETA) 2.5 mg daily, CHC, or GnRH agonists) may be effective for managing pelvic pain, particularly in refractory endometriosis[31]. Additional uses of aromatase inhibitors include: (a) prevention of GnRH agonist–associated flare symptoms (e.g., letrozole 2.5 mg daily for the first 5 days of GnRH agonist therapy); and (b) limited case reports of use in postmenopausal endometriosis, where estrogen production is primarily from extra-ovarian sources (typically adipose tissue). Endometriosis in postmenopausal patients is uncommon, and surgical evaluation should be considered to rule out malignancy[31].

Practical Tips for Medical Management (pain persistence on hormonal therapy)

In patients with inadequate pain relief from medical therapy, assess whether menstrual and ovulatory suppression has been achieved (e.g. amenorrhea, suppressed FSH/LH/estradiol, and lack of ovulatory activity on ultrasound). If suppression is confirmed and pain persists, assess for alternative pain etiologies and/or consider surgical options.

Summary Statements 1 and 2 and Recommendations 1, 2, and 3

Special Topics

Contraception

A number of therapeutic agents (CHC, LNG-IUS, etonogestrel (ENG) implant, DMPA) used in the medical management of endometriosis are approved as contraceptive agents. Patients should be counselled regarding their contraceptive efficacy as well as appropriate use and what to do in case of missed doses. Other hormonal

therapies, although designed for menstrual suppression, have not been studied for contraception reliability and the discussion with patients is more nuanced.

Dienogest: A pharmacologic dose finding study identified that dienogest ≥2 mg daily provides moderate estradiol suppression and reliable ovulation inhibition, which rapidly reverses after stopping treatment. The current product monograph states, "although ovulation is inhibited in the majority of patients during treatment with dienogest, it is not intended for use as a contraceptive"[32].

Relugolix combination therapy (CT): Although most patients did not ovulate in the preliminary studies, the product monograph advises use of non-hormonal contraception while using Relugolix CT and for one week after discontinuation. The addition of LNG-IUS can provide effective contraception and menstrual suppression.

Elagolix: Ovulation rates for elagolix 150 mg PO daily and 200 mg BID doses were 47% and 32% respectively. It is advised to avoid estrogen containing contraceptive options when using elagolix, as this may impact its therapeutic efficacy, however progestin only or non-hormonal options may be used[33].

GnRH agonist: Although ovulation is suppressed with compliant use of GnRH agonists, product monographs of Leuprolide and Goserelin instructs use of non-hormonal contraceptives.

Venous Thromboembolism Risk

Some studies suggest a potential association between endometriosis and increased baseline venous thromboembolism (VTE) risk, though this has not been definitively established[34,35]. Estrogen-containing therapies, such as CHC and Relugolix CT, should be avoided in patients with active VTE or elevated VTE risk. Progestin-only methods, GnRH agonists/antagonists alone, and aromatase inhibitors have not been shown to increase VTE risk and are appropriate alternatives in this population. While certain product monographs (e.g., dienogest, etonogestrel) include warnings about VTE, these are not supported by robust evidence. Both the SOGC and the Centers for Disease Control and Prevention (CDC) guidelines endorse the use of progestin-only contraception in individuals at risk for VTE[21,22,36–38].

Mood

Patients with endometriosis may be at higher risk of experiencing mental health disorders, particularly in the years following their diagnosis[39]. Many hormonal therapies for endometriosis carry a low risk (≤5%) of mood changes or depression, often comparable to placebo in clinical trials. It should be noted that in clinical trials, patients with an underlying history of significant mood disorders are often excluded. As a result, patients should be informed of the potential mood side effects, and treatment should be individualized based on a risk-benefit discussion, including possible exacerbation of underlying psychiatric conditions. Pain improvement may positively impact mood. Negative experiences with one class should not rule out trials of other agents. Mental health support is recommended for patients with significant mood symptoms.

Bone Mineral Density

All estrogen-suppressing hormonal therapies are associated with small reductions in bone mineral density (BMD), typically 1–2% over 6–12 months. Partial recovery of BMD has been observed within 6 months after treatment cessation. The clinical significance of these changes remains unclear, in part due to the limitations of BMD as a surrogate for bone strength, as it measures quantity rather than quality[40]. According to the U.S. Preventive Services Task Force, a minimum interval of 2 years may be needed to detect meaningful BMD changes due to methodological precision limits[40], suggesting trial screening intervals may be too short to capture true bone loss.

Patients should be counselled on BMD risks, particularly if they have risk factors for osteoporosis (e.g., chronic steroid use, fragility fractures, smoking, caffeine intake, malabsorption). Preventive strategies should include calcium and vitamin D supplementation, weight-bearing exercise, smoking cessation, and limiting alcohol intake.

Perioperative Medical Management

Current evidence does not support the use of preoperative hormonal therapy as more effective than surgery alone for improving pelvic pain, dysmenorrhea, or dyspareunia at 12 months post-surgery[41]. Similarly, there is insufficient evidence that hormonal suppression facilitates surgical excision by reducing inflammation or vascularization of endometriotic lesions. However, preoperative medical therapy may still be beneficial to manage pain and enhance quality of life as a bridge to surgery and may also be considered in selected cases for disease volume reduction (e.g. endometriomas or concurrent adenomyosis). Hormonal suppression can aid in the correction of preoperative iron-deficiency anemia. Postoperatively, long term hormonal therapies,

particularly CHC, progestins, LNG-IUS, and GnRH agonists, have demonstrated effectiveness in reducing recurrence of both pain and endometriomas following conservative surgery[13,42].

Endometriomas

Several hormonal therapies, including CHC, oral progestins, GnRH antagonists, GnRH agonists, and progestin-aromatase inhibitor combinations, have demonstrated significant reduction in endometrioma volume at 6 months (average 55% volume reduction). This shrinkage is often associated with pain improvement. When counselling patients about treatment expectations, it's important to clarify the difference between volume reduction and diameter. For example, a 5 cm endometrioma may shrink to ~4 cm with a 50% volume reduction. The response varies by factors such as baseline cyst size, compliance, combination therapy use, symptom profile, follow-up duration, and measurement variability[39,43].

Medical Management Considerations for Adolescents

In adolescents, NSAIDs are the preferred initial treatment for at least three months[44,45]. If NSAIDs alone are insufficient, hormonal therapy, such as CHC, oral progestins, or the LNG IUD, can be initiated alongside NSAID use. More caution is needed with GnRH agonists due to higher risk of bone loss. All hormonal therapies and GnRH agonist treatments have shown efficacy in improving pelvic pain and dysmenorrhea in the adolescent.

A similar approach to medication initiation used in adults can also be applied to adolescents; however, careful consideration of the impact on bone health is essential. All CHCs, regardless of the ethinyl estradiol dose, can negatively affect bone density.[46] In adolescents on GnRH agonists, add-back therapy that also contains estrogen should be considered to mitigate adverse effects on bone health[47]. Dienogest is also associated with a reduction in BMD among adolescents[48]. Preventative strategies, including adequate intake of calcium and vitamin D, are especially important in this population given the BMD risk.

Menopause

Endometriosis is an estrogen-dependent condition that typically improves after menopause. However, small studies report a 2–5% prevalence of endometriosis-related symptoms in postmenopausal women, with recurrence observed even in those not on hormone therapy[49–52]. Estrogen-only menopausal hormone therapy (MHT) appears to carry a higher risk of disease reactivation and should be avoided among patients with known endometriosis, including those who have had a hysterectomy. Women with a history of endometriosis who enter menopause (spontaneous or surgical menopause) or experience significant perimenopausal symptoms, especially before age 45, may be offered MHT, but in a combined estrogen-progestin formulation. If there is evidence of endometriosis recurrence, especially growth of an endometrioma, malignancy must be ruled out. Aromatase inhibitors may be considered for treatment of post-menopausal endometriosis, as peripheral estrogen production from adipose and other tissues may contribute to disease activity[53,54].

Summary Statements 3 and 4 and Recommendations 4, 5, 6 and 7

SURGICAL MANAGEMENT OF ENDOMETRIOSIS

The management of endometriosis requires an individual care plan based on many considerations It is essential that health care providers discuss patient goals, review symptoms and utilize imaging to help guide individuals through their own unique journey. Surgery has an important role in the management of endometriosis that requires thoughtful evaluation, clear indications, preoperative planning and identification of the necessary expertise for the subtypes of disease. In this section, we will outline the indications for surgery for those with endometriosis, review the basics of preoperative planning, highlight the components of informed consent and provide guidance on surgical approaches for the general gynaecologist. New to the Canadian guidance is the importance of advanced imaging, as outlined in our Diagnosis and Impact Guideline[1], to help triage patients to appropriate care providers and teams. Furthermore, there is a need to establish centres of expertise in Canada for complex endometriosis surgery and better coordinate care at the provincial and federal level. When management is provided in an integrated manner and especially through multidisciplinary/interdisciplinary centres for endometriosis, patients' lives are improved[55].

Summary Statements 5 and 6 and Recommendation 8

Indication for Surgery

While medication and fertility treatment may help women suffering from endometriosis, surgery may become

Box 1. Components of a centre of expertise for deep and complex* endometriosis[a]

- Gynaecologist with expertise in diagnosing and managing endometriosis including advanced laparoscopic surgical skills.
- Access to consultant urologist, general/colorectal surgeon, thoracic surgeon with experience/expertise in endometriosis
- Availability of advanced imaging for endometriosis
- Sufficient volume of patients for maintaining expertise
- Education and counselling about fertility in endometriosis
- Access to team multimodal care (examples include nursing, pelvic physiotherapy, mental health support, and others)
  - These components can be present at different sites (multidisciplinary) or under one roof (interdisciplinary)

[a]For comparison see https://www.bsge.org.uk/requirements-to-be-a-bsge-accredited-centre/
*Complex: e.g. large endometriomas, young patients, concomitant pain comorbidities, history of poor response to prior treatment

Box 2. Key elements to discuss preoperatively with endometriosis patients

- Inform the patient of the diagnosis (suspected/clinical, imaging and or prior surgical confirmation) of endometriosis and its relationship to the presenting symptoms
- Provide an overview of the investigations (ultrasound or MRI imaging) and procedures to be performed (laparoscopy and procedures associated)
- Share the expected outcomes of the surgery (e.g., pain relief, impact on fertility) and limitations including the complexity of predicting pain outcomes
- Outline material and special risks related to surgical intervention including infection, injury to bowel, bladder and vasculature and possible permanent sterilzation. Special risks related to bowel or bladder/ureteric surgery in cases with deep endometriosis should be discussed including risk of bowel diversion and ureteric injury.
- For patients with ovarian cysts, share the additional risk of impact on ovarian function and the important consideration of how this may impact their future fertility
- Share alternative treatment options (e.g., medical management) and alternative surgical interventions (e.g., ovarian preservation versus oophorectomy).
- Discuss the risk of not treating the patient with surgery such as progression of pain symptoms, impact on fertility and disease progression (e.g., further compression of a ureteric nodule)
- Clearly document all discussions about risks and consent.
- Offering print material for assisting patient education is often helpful but does not replace the discussion. Providing material and consent in the patients' primary language is also preferable but may not always be available in which case a translation service may be required.
- Materials from The Endometriosis Network Canada may assist with counseling.[b]

[b]Surgery: A Guide for People With Endometriosis | The Endometriosis Network Canada

necessary during the care journey. The most common indication for endometriosis related surgery is pelvic pain, often due to therapeutic failure and/or side effects with medical therapies. Other indications include contraindications and preference to avoid medical therapies. Acute events (i.e. endometrioma rupture), organ obstruction or dysfunction refractory to conservative measures, and concomitant conditions (i.e., infertility or fibroids) may require surgical intervention. In all cases, the indication and goals of the procedure must be clearly established, which can combine pain relief and fertility support. Timing must take into consideration reproductive plans, and a shared decision between providers and the patient is essential.

Asymptomatic ovarian endometrioma might be conservatively managed like most benign ovarian cysts[56]. Surgery may be indicated in case of pain, suspicious features on imaging or when required to help manage infertility. In patients wanting to preserve their fertility, careful consideration of the potential impact on the ovarian reserve and fertility prognosis is required prior to deciding on surgery. Pre-operative consultation with a fertility specialist may allow for a thorough evaluation of risks and benefits of the available options.

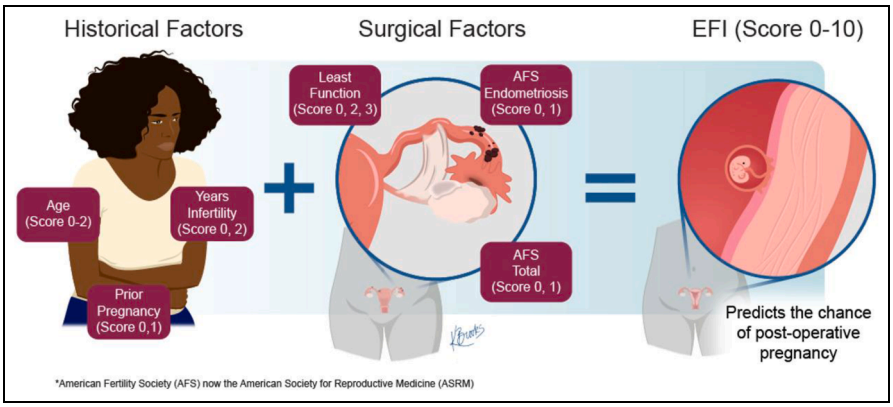
Overall, with an improved understanding of clinical evaluation and access to advanced imaging, the role of diagnostic laparoscopy (without a plan for concomitant treatment for disease) becomes limited. However, there may be circumstances where laparoscopy may be indicated for cases of suspected endometriosis since clinical evaluation and imaging may not detect superficial lesions. In experienced surgical hands, a "negative" laparoscopy with meticulous evaluation and documentation may help the patient care plan to focus on other chronic pain generators and conditions. Laparoscopy must be performed by gynaecologists who are able to recognize endometriosis lesions and excise them in the same surgical procedure to allow for histologic confirmation, appropriate treatment and to avoid repeat surgery. In cases where the diagnosis remains uncertain, histologic confirmation is recommended.

Recommendation 9

Preoperative Planning

Preoperative preparation is of primary importance to plan the appropriate surgery with the right team and set up. Symptoms, lesions, comorbidities, previous surgeries and associated conditions such as nociplastic pain and chronic overlapping pain conditions must be evaluated as they may influence surgical plan, outcomes and eligibility.

Figure 1. Endometriosis Fertility Index[82] (image courtesy of Dr. S. Singh).



Preoperative Imaging

In recent years, advances in imaging have improved diagnostic capacities and preoperative documentation of lesions. The 2024 SOGC Guideline No. 449: Diagnosis and Impact of Endometriosis - A Canadian Guideline[1] presents recommendations regarding advanced imaging for endometriosis, which should assess for deep endometriosis, rule out hydroureter and hydronephrosis, and reveal other pelvic pathology relevant to the care plan such as adenomyosis, leiomyomas, hydrosalpinx and caesarean scar defect[1]. Proper preoperative imaging reduces unexpected intra-operative findings, risk of incomplete surgical resection and repeated surgery, and helps predict surgical time and the surgical plan[57]. Access to advanced imaging is limited across Canada. There is a need to provide a system-wide approach (provincial and federal) for patients, especially those at risk of deep endometriosis, to navigate their care and to direct appropriate resources to support these patients[58].

Preoperative Referral and Centre of Expertise

As medical treatment becomes more common, the patients who ultimately require surgery will likely present with more complex and deep disease[59]. Managing complex cases and excision of deep endometriosis requires a unique set of skills most often acquired through fellowship training. Pre-operative planning should help determine which patients require referral to centres of expertise for endometriosis. Patients who undergo surgery with more experienced surgeons (high volume compared to low volume) are less likely to have complications and undergo repeat surgery and are more likely to achieve a live birth postoperatively[60]. Additional preoperative preparation (depending on nature and location of lesions) may require consultations with specialists, such as a fertility specialist, general/colorectal surgeon, urologist and/or a thoracic surgeon. Centres of expertise for endometriosis should aim to unite the full set of resources and expertise for optimal management, which is presented in Box 1. Ideally, over time, Canada should aim to have centres of expertise across the country to serve the population needs.

Consent Process and Surgical Expectations

When providing surgical care for endometriosis, it is essential to establish expectations for the outcomes and potential benefits and risks. In addition to the common risks of surgery, which are proportional to the complexity of resection planned[61], risks of recurrence, persistence and worsening of pain and infertility are areas of concern in the endometriosis population[58]. It is also important to note that these risks are increased in the absence of preoperative advanced imaging or postoperative medical therapy, and that surgery may not replace the need for long term hormonal suppressive treatment[13,62]. Key elements to discuss preoperatively with endometriosis patients are presented in Box 2.

Summary Statements 7 and 8 and Recommendations 10, 11 and 12

Surgical Technique

Endometriosis is best managed by laparoscopy by appropriately trained gynaecologists[63]. Surgery should start by a systematic examination of the pelvis and abdomen and best practice for documentation of lesions as described in the previous guideline on diagnosis (see table 4)[1]. Several classification systems have been proposed to describe the extent of disease at surgery, such as the American Society for Reproductive Medicine

(ASRM), AAGL, and ENZIAN systems. There is no consensus on which is most useful, although the ASRM system is incorporated into the Endometriosis Fertility Index (EFI) (see Figure 1)[64,65]. The use of these systems, as well as clinical photographs assist with documentation and interprofessional communication between specialists, however they poorly correlate with pain outcomes[64,65].

In a RCT of mostly Stage I-II disease, there was no difference between laparoscopic excision (cystectomy) and ablation at 12 months,[66] consistent with a meta-analysis with the same finding,[67] although excision was reported to be more effective than ablation at 5 year follow-up of a RCT of mostly Stage I-II disease[68]. Excision is required to remove the full extent of deep lesions as well as for histopathologic confirmation. Surgery should aim for complete excision, when possible, to avoid repeat surgery and improve fertility and pain outcomes. Even though laparoscopy permits a magnified view of lesions, about a quarter of endometriosis lesions are missed by white light laparoscopy[69]. This finding supports the use of wide excision of lesions. Enhanced imaging tools (Narrow Band Imaging, 5-Aminolevulinic Acid, Autofluorescence Imaging, Indocyanine Green) could increase detection of lesions and improve identification of structures such as ureters, but there is no evidence that they improve outcomes of surgery[69]. Finally, there are a variety of approaches to excise endometriosis (ex: scissors, electrosurgery, laser, robot) with no consistent benefit of one option over the others in the literature[70].

Patients Who Want to Preserve Their Fertility

In infertile patients undergoing surgery, who might desire to conceive in the future, surgical techniques that optimize their chance for an eventual pregnancy should be employed. In case of endometriomas or other ovarian cysts, cystectomy was found superior to ablation for pain, prevention of recurrence, and fertility outcome[71]. However, cystectomy is associated with a reduction in markers of ovarian reserve (e.g. anti-Mullerian hormone)[72,73]. The impact seems to be particularly important in women with low preoperative ovarian reserve and large or bilateral cysts and can lead to irreversible consequence on the capacity of the patient to conceive[72,73].

When ovarian cystectomy is required, strategies may help minimize the damage to the ovarian cortex. The use of suture compared to electrosurgery to achieve haemostasis has been associated with lower impact on ovarian reserve[74]. Similarly, the use of hemostatic agents and vasopressors may reduce the need for energy-based devices and help preserve ovarian reserve[75,76]. Ablation, sclerotherapy or punction and aspiration have also been proposed, to minimize the impact of ovarian reserve with variable risk of recurrence and chances of conception in the literature[77].

In cases of hydrosalpinx or hematosalpinx, performing salpingectomy or proximal tubal occlusion can approximately double the chances of conception through in vitro fertilization (IVF)[78,79] and is therefore recommended prior to initiating IVF. Salpingostomy can be performed in a patient who wishes to attempt spontaneous conception, however, its success is highly dependent on the extent of tubal damage, with an overall live birth rate of around 25%. This technique is associated with high risk of recurrence of tubal blockage (up to 70%) and a roughly 10% risk of ectopic pregnancy, which should be thoroughly discussed with the patient[80]. If bilateral salpingectomy is planned, the patient should be fully informed that this procedure eliminates the possibility of spontaneous conception. Preoperative consultation with a fertility specialist is advised to allow for a thorough discussion of the risks and benefits of surgical options and to consider preoperative embryo or oocyte cryopreservation.

Finally, the Endometriosis Fertility Index (Figure 1) is an effective tool to predict chances of spontaneous pregnancy following surgery and helps shared decision making regarding whether to resort to ART[81,82] (See more details in the section on infertility care).

Summary Statement 9

Patients Who Do Not Wish to Conceive

When the patient does not wish to conceive, hysterectomy is associated with lower risk of reoperation[83]. Hysterectomy could allow for a more complete excision of endometriosis, for example when there is involvement of the uterine serosa, uterosacral ligaments and parametria. It also complements the excision of endometriosis by managing dysmenorrhea and heavy menstrual bleeding, especially if the source is concomitant adenomyosis. When patients are involved in a shared decision with clear indications for hysterectomy the experience of regret is low based on Canadian experience[84].

Bilateral oophorectomy in pre-menopausal women should be avoided when possible. In fact, surgical menopause does not improve pain symptoms, quality of life or satisfaction, nor reduce healthcare visits for pain compared to

Table 2. Specific interventions for extensive acute presentations and extensive organ involvement in endometriosis

System	Identification	Imaging	Stabilization (Medical suppression is a cornerstone for management)	Referral
Ovarian Endometrioma Rupture	Acute and severe pain Peritonitis	Ruptured ovarian endometrioma with hemoperitoneum	Resuscitation and pain control Observation or laparoscopy for diagnosis	Manage acute episode and then assess the extent of endometriosis to guide further care planning
Urinary tract	Hydronephrosis and hydroureter Flank pain, hypertension, hematuria	Renal and bladder ultrasound and/or other imaging (e.g. MRI) CT Urogram Renal lasix scan for functional assessment	Ureteric stent placement Nephrostomy Assess renal function with renal lasix scan	Urology service with experience with endometriosis
Gastrointestinal tract	Bowel obstruction or subocclusion Hematochezia	Bowel specific ultrasound and/or other imaging (e.g. MRI) CT scan/ colonography Colonoscopy	Conservative measures for bowel obstruction	Colorectal surgery or general surgery service with experience with endometriosis.
Diaphragm/thorax	Catamenial pneumothorax and/or hemothorax	CT Chest MRI Chest	Chest tube	Thoracic surgery service with experience with endometriosis

conservation of at least one ovary[85,85–87]. Early menopause is also associated with increased risk of cardiovascular disease, osteoporosis,[88] and sexual dysfunction[89]. Bilateral oophorectomy can be considered in some situations, for example in patients satisfied with GnRH agonist or high dose GnRH antagonist with addback therapy, those at high risk of ovarian or breast cancer, and/or those with recurrent severe disease. Surgical menopause should not be justified by the increased risk of ovarian malignancy in women with endometriosis as the absolute risk remains low (2.5% versus 1.3% in the general population) and may be overestimated due to publication bias[90].

If bilateral oophorectomy is chosen, see the medical management section of this guideline for a discussion of menopausal hormone therapy. Progestins should be combined with estrogen MHT due to the risk of endometriosis recurrence[91].

Summary Statements 10 and 11 and Recommendation 13

Special Considerations for Extensive Organ Involvement

Deep endometriosis can affect the ureters, bladder, kidneys, and bowel, potentially leading to obstruction and potential permanent organ damage. Silent renal death is a known consequence, making early identification of deep endometriosis and efforts to identify the risk of this consequence, important for both individual patients and the community at large. As previously noted, advanced imaging plays a key role in evaluating kidney function, identifying ureteric obstruction, and assessing bowel involvement. Timely identification and prevention of ongoing damage, along with referral to centres of expertise, are essential. Once organ involvement is confirmed, a combination of medical suppression and targeted organ-specific interventions, as outlined in Table 2, can help manage symptoms, allow time for comprehensive evaluation, and facilitate referral to a centre of expertise. Optimal surgical technique for bowel, ureter, and bladder involvement is complex and exceeds the scope of this guideline.

Clinical Tips

Endometriosis can compromise organ function and cause organ failure (bowel and ureter obstruction). In case of organ failure, identify, stabilize and refer. Alleviate obstruction, start medical suppressive therapy.

Box 3. Indications for referral to a fertility specialist after the initial consultation

- Advanced reproductive age
- Prolonged duration of infertility
- Prior failed attempts of fertility treatment
- Tubal dysfunction
- Abnormal ovarian reserve
  - Low-for-age AMH
  - Low-for-age AFC
- Male factor infertility
- Endometriosis-specific features
  - Prior cystectomy for ovarian endometrioma
  - Low EFI
  - Bilateral endometrioma
- Concurrent adenomyosis

Additional Surgical Approaches

Endometriosis surgery may require additional procedures, particularly when disease extends beyond the reproductive organs. These interventions are most commonly performed by surgeons with specialized expertise and may include:

- Appendectomy
- Excision of abdominal wall and incisional scar endometriosis lesions
- Cystoscopy (used to evaluate and assist in the management of bladder endometriosis)
- Rigid sigmoidoscopy (performed to assess the rectum and lower gastrointestinal tract when bowel procedures are required)
- Resection of diaphragmatic endometriosis lesions
- Excision of invasive endometriosis lesions involving nerve structures

Endometriosis can be found in a normal appearing appendix[92], and appendectomy may lead to improvement of pain[92] and avoid repeated imaging to exclude appendicitis at emergency room visits[93].

Extent of Surgery

The terms "conservative" and "definitive" do not fully capture the range of surgical options available for endometriosis, particularly regarding uterine and ovarian interventions. Respecting patient autonomy is essential; some individuals may choose to preserve the uterus and/or ovaries regardless of their fertility goals. Conversely, patients who do not wish to conceive in the future may opt for hysterectomy alongside endometriosis excision to achieve better relief from dysmenorrhea. These decisions are often influenced by deep personal and social beliefs, making the surgical approach highly individualized. However, bilateral oophorectomy in younger patients should be approached with caution, as it induces premature menopause and carries significant long-term health risks.

Special Considerations for Surgery in Adolescents

Medical therapy remains the initial treatment for adolescents with suspected endometriosis. However, surgical intervention, similar to approaches used in adults, may be necessary for those who do not respond to conventional therapy or who present with findings suggestive organ damage (e.g., ureteric obstruction). When surgery is indicated, the goal is complete excision, where possible, of disease. A review of the literature found a 62% prevalence of visually confirmed endometriosis in adolescents with dysmenorrhea or chronic pelvic pain, with higher rates in those with treatment-resistant pelvic pain[94]. In a selected population, up to one-third of patients had moderate to severe disease, showing that adolescent endometriosis may be more prevalent than previously assumed[11].

Given the younger age of this population, postoperative menstrual suppression may be essential to reduce the risk of recurrence of symptoms and possibly disease recurrence. Additionally, it is critical to recognize and address endometriosis-related pain early, as timely intervention can have a significant impact on long-term outcomes, including daily functioning, quality of life, and the prevention of chronic pain.

Rural and remote settings

It is recognized that expertise and resources for endometriosis management may vary across geographic regions, including in rural and remote settings. Thus, local models of care can be developed for endometriosis, utilizing existing resources that are available. Centres of expertise should be accessible for virtual consultation with clinicians in rural and remote settings. The long-term impact on women's quality of life is so significant that we must find ways to make cutting-edge treatments more accessible to women who live far from major medical centers.

Summary Statement 12

INFERTILITY CARE FOR PATIENTS WITH ENDOMETRIOSIS

Improving Infertility Awareness in Endometriosis Patients as Early as Possible

Endometriosis patients are more likely to encounter infertility due to various mechanisms[81,95]. Systematic

transvaginal ultrasound examination of women undergoing ART (as per the International Deep Endometriosis Analysis (IDEA) group) showed that endometriotic lesions at ultrasonographic examination were found in 21.8% women[96]. Starting a discussion with endometriosis patients regarding their future reproductive plans as early as possible is justifiable. Patients should have early access to the necessary testing and treatment options.

Patients with endometriosis-associated infertility may present to care providers with other reproductive comorbidities or other disease-specific features that may necessitate urgent referral to a fertility specialist (Box 3). While the effect of ovarian endometriomas on ovarian reserve is milder than originally envisioned[97], there is increasing recognition of the association between ovarian cystectomy and reduced Anti-Müllerian Hormone[86]. Moreover, surgery increases spontaneous rates of intrauterine pregnancy but does not improve ART outcomes[97].

Summary Statement 13

Medical Treatment

For Infertile Couples

In a Cochrane review of 12 trials, Hughes concluded that there is no evidence for the benefit of ovarian suppression on clinical pregnancy rates, after the use of any ovulation suppression agent versus placebo or no treatment, in subfertile patients trying to conceive[98].

Peri-operative

In a Cochrane review, pre-surgical (hormonal suppression) medical therapy, versus surgery alone, was uncertain for increase in pregnancy rate[41]. In another meta-analysis, post-operative medical treatment did not increase pregnancy or live births[62], though it showed a possible modest increase in pregnancy with post-operative gonadotropin-releasing hormone (GnRH) agonist therapy[62].

Summary Statement 14

Surgical Treatment

For Infertile Couples

Data were limited because:

1 No RCTs collected or reported live birth.

2 Studies were not stratified according to the Endometriosis Fertility Index (EFI).

Superficial endometriosis

Two RCTs compared laparoscopic ablation or excision with diagnostic laparoscopy in endometriosis associated infertility (mainly Stage I and II)[99,100] (moderate quality). A Cochrane review[101] evaluated the evidence from 3 RCTs and showed that laparoscopic surgery was associated with higher intrauterine pregnancy rates (viable on ultrasound) versus diagnostic laparoscopy (OR=1.89; 95% CI=1.25-2.86). The findings were substantiated by a network meta-analysis[102].

Summary Statement 15 and Recommendation 14

Ovarian endometrioma. Regarding endometrioma, pregnancy rates were similar after laparoscopic cystectomy or cyst vaporisation with CO_2 laser although the spontaneous pregnancy rate was better with cystectomy (55.5% vs 35.9%)[103].

Surgery improved natural conception in 12 months after surgery, irrespective of stage. However, the pregnancy rate for Stage IV was relatively lower (20%), in comparison to Stages I-III (35-53%) (not statistically significant)[104].

Endometrioma sclerotherapy using 96% ethanol has been proposed as an alternative treatment for ovarian endometriomas; however, there is no data on subsequent reproductive outcomes[105].

Recommendation 15

Deep endometriosis. Regarding deep endometriosis (DE), in the absence of bowel involvement, pregnancy rates postoperatively were 50.5% compared to 28.6% with bowel involvement[106,107]. It is also established that colorectal surgery does not hamper the fertility benefits of endometriosis surgery[108].

Given the complexities of DE and limited data, a multidisciplinary/interdisciplinary individualized care path should be developed between fertility and endometriosis specialists and patients[104].

Before Assisted Reproduction. There is no evidence to support routine surgical treatment prior to ART to

improve live birth rates in women with rASRM Stage I/II endometriosis[97], ovarian endometrioma[97,109–111], and deep endometriosis[112–114].

Surgical excision prior to ART can be considered based on pain or patient desires, to improve accessibility of follicles to facilitate oocyte retrieval or with evidence of end-organ damage. Additionally, surgery should be performed before ART to remove/clip the fallopian tubes in patients with hydro/hematosalpinx[115].

Endometriosis Fertility Index. The Endometriosis Fertility Index (EFI)[82] is an externally validated post-operative scoring system that predicts non-ART pregnancy rates (natural conception or IUI) after surgery[116]. A score between 0 and 10 is generated by incorporating patient-related factors (age, length of subfertility and history of prior pregnancy) and surgical factors (least function score of the ovaries/tubes and rASRM endometriosis lesion and total score). As such, the EFI could also identify patients (low score) that may benefit from ART after surgery. A preoperative sonographic abnormal uterine sliding sign predicts Pouch of Douglas (POD) obliteration with sensitivity of 73.2% and specificity of 93.9%[117]. As such, logistic regression involving historical factors scores and abnormal sliding sign was shown to predict EFI<7 with sensitivity of 87.9%, specificity of 81.1%, and AUC of 0.93 (95% CI: 0.85-0.99)[118]. Consequently, advanced imaging could be used to preoperatively identify patients with low EFI who may benefit from ART without the need for surgical intervention, although this preoperative use of the EFI requires additional study. Subsequently, it has been shown that the EFI can be estimated accurately based on a range of clinical/ultrasound information, with some improvement after adding data from laparoscopy[119].

Summary Statement 16 and Recommendation 16

Fertility Preservation

Patients with advanced endometriosis, bilateral endometriomas, and low-for-age AMH levels are candidates for fertility preservation particularly before planned surgical treatment. The fertility preservation outcome is oocyte dependent. In addition, oocyte quality is not affected by endometriosis. As such, oocyte cryopreservation is an option that could be discussed with endometriosis patients. In <35 yo group, women will need about 20 oocytes to have one child (LBR is 6 − 7% per frozen oocyte). There was no difference between elective egg freezing or egg freezing in the context of endometriosis including no difference in oocyte quality[120]. A history of surgery for ovarian endometriosis has been associated with reduced oocyte yield. Fertility preservation should be integrated into endometriosis management, ideally before surgery[121].

An alternative is preservation of ovarian tissue, if oocyte/embryo cryopreservation is not possible. However, data in women with endometriosis are limited[122].

Recommendation 17

Impact on Pregnancy and Obstetric Outcomes

Early Pregnancy Loss

Saraswat et al. found that women with endometriosis presented a significantly higher risk of early pregnancy loss compared to controls with adjusted OR of 1.76.[123]

Risk of Ectopic Pregnancy

A possible association between endometriosis and ectopic pregnancy was found in a meta-analysis (OR range 2.16-2.66, depending on study type)[124].

Risk of Obstetrical Complications

Women with superficial peritoneal and ovarian endometriosis do not appear to be at considerably increased risk of major obstetric and neonatal complications. However, women with severe endometriosis, whether surgically managed or not, may be at higher risk for several pregnancy complications as recently reviewed[125,126].

Summary Statement 17

SPECIAL TOPICS

Multidisciplinary/Interdisciplinary Care for Endometriosis

Endometriosis and Chronic Pain

Endometriosis can be associated with systemic manifestations such as fatigue, inadequate sleep, and poor mental health. Endometriosis is one of a group of Chronic Overlapping Pain Conditions (COPCs), which are conditions that occur in combination, likely have some shared endocrine, neural or immune mechanisms and are much more common in females. These include vulvodynia, irritable bowel syndrome, painful bladder syndrome, chronic headaches/migraines, chronic fatigue,

fibromyalgia, chronic low back pain, and temporomandibular joint disorder/pain. The presence of COPCs in addition to endometriosis likely reflect a centralized or nociplastic process at play[127].

Principles of chronic disease management should be followed in endometriosis care to improve outcomes. These include establishing a good therapeutic relationship, providing evidence-based information (including pain education) and engaging in shared decision making. Even with optimal surgical and medical care targeting endometriosis, 20-30%[58] of patients will not respond to treatment and up to 50% will have recurrence of symptoms after initial response to surgery[128]. These patients often have developed a more complex pain problem that is beyond an "issue in the tissue" and likely a reflection of a nociplastic pain process. A thorough review of systems and physical examination can help identify nociplastic features and COPCs. This assessment is described in the SOGC's Chronic Pelvic Pain Guideline[129].

Recognizing the complexity of processes that perpetuate pain, the recommended best practice for chronic/persistent pain management is to follow a biopsychosocial model of care[130]. Delivering this type of care requires collaboration among various health care providers. At the core of this model there should be a gynaecologist who can perform a thorough assessment, access required imaging and offer evidence-based medical and surgical therapies. Multimodal care could include any of the following professionals: specialized nurse, pain medicine specialist, pelvic health physiotherapist, psychologist/counsellor, sex therapist, registered dietician, complementary and alternative medicine practitioners, and social worker. This care can be delivered in a *multidisciplinary* fashion, where each provider does individual consultations and plan of care, often at different physical sites, or in an *interdisciplinary* approach where providers are located in one clinic and develop a comprehensive and coordinated care plan.

There is robust evidence supporting *interdisciplinary* approaches for managing other chronic pain conditions, such as chronic low back pain and generalized chronic pain[131–133]. Prospective data from a centre of expertise in British Columbia, Canada, offering interdisciplinary care for endometriosis and chronic pelvic pain, have demonstrated excellent outcomes[55,134]. While additional centres have been established across the country, data remain limited, and there remain limitations in access for patients[135,136]. To improve outcomes, the development and expansion of interdisciplinary centres of expertise dedicated to complex endometriosis management care are needed in Canada (see Box1).

Several European countries, including Denmark, the United Kingdom, Austria, and Germany, have adopted centres of expertise. In some cases, these centres are formally credentialed through rigorous certification processes[137]. A certification process for centres of expertise should be explored for the Canadian context which adapts to the unique aspects of its health care system.

Endometriosis Pain Index

Pain comorbidities related to nociplastic pain, as well as the Central Sensitization Inventory, have been shown to be associated with poorer outcomes after endometriosis surgery[138,139]. An Endometriosis Pain Index (EPI) has just been published from a Canadian centre, which is a clinical prediction model that incorporates these pain comorbidities and predicts pain-related quality of life after endometriosis surgery[140]. Future research is needed to validate the EPI in other settings[141].

Summary Statement 18 and 19

SPECIAL TOPICS

Endometriosis and Ovarian Cancer

Epidemiological and molecular evidence

Endometriosis has been shown to be associated with an approximate 2-fold increased risk for ovarian cancer (especially the endometrioid and clear cell histotypes)[142–144]. Risk has been reported to be even higher with surgically diagnosed endometriosis versus self-reported history[145] and in a recent cohort study from Utah[146], where a slightly higher risk was also seen of serous histotypes[145,146] although this could be related to histotype misclassification.

There is molecular evidence that endometriosis cells can undergo somatic genetic changes and become true precursor lesions for malignant transformation[147–152]. Specifically, it is ovarian endometriomas that seem to be at highest risk for future ovarian cancer[153], although the Utah cohort also reported higher risk in patients with deep endometriosis[146]. The risk is particularly notable for recurrent ovarian endometrioma[154], and is present in endometriosis patients with or without family history of ovarian cancer[155]. However, the absolute risk of ovarian cancer histotypes in endometriosis may still be small, with

a lifetime risk of ~1.8%[156] or ~2 excess cases amongst 1000 people with endometriosis[153], although this was estimated prior to the Utah study.

Risk Factors and Prevention of Endometriosis-associated Ovarian Cancers

There are known risk factors for ovarian cancer that present as potential opportunities for prevention in those with endometriosis[157–159]. For example, hormonal suppressive therapy, parity, and tubal ligation were associated with reduced ovarian cancer risk in endometriosis[160], and bilateral salpingectomy[161] would be expected to reduce risk at least as much as tubal ligation although there is no study specific to the endometriosis population. Hysterectomy may be associated with reduced risk of ovarian cancer in endometriosis patients after adjusting for menopausal hormone therapy[162]. One study found that complete surgical removal of endometriosis lesions, as well as unilateral oophorectomy, was associated with reduced risk of ovarian cancer[163]. As expected, bilateral salpingoophorectomy was associated with reduced ovarian cancer in endometriosis[164].

All these interventions require future study as preventative interventions on the population level, and there is insufficient evidence to indicate that clinicians should treat them based solely on cancer prevention. Instead, clinicians should treat based on endometriosis indications (e.g. pelvic pain) but can inform the patient as part of the counselling that these interventions may secondarily reduce risk of ovarian cancer. This conversation is likely most important in patients with ovarian endometriomas. One exception may be opportunistic salpingectomy as a population wide measure to prevent ovarian cancer[165,166], which could be employed with the primary indication of reducing ovarian cancer risk in endometriosis patients who do not desire future fertility and who are otherwise undergoing surgery, although there are no studies specific to endometriosis as a population strategy.

Summary Statement 20 and Recommendation 18

Special Circumstances

Imaging characteristics of ovarian endometriomas that increase risk of malignancy. For imaging features that may raise concern of malignant transformation of an ovarian endometrioma, please see SOGC Guideline 403: Initial investigation and management of adnexal masses[56]. These features include pattern recognition or International Ovarian Tumor Analysis (IOTA) risk prediction, with referral to gynaecologic oncology with any of the following sonographic features: solid component with strong or central colour flow, ≥4 papillary projections, thick multiple irregular septations, or ascites and peritoneal nodularity[56].

Incidental finding of histological atypical endometriosis. It has been reported that histological atypical endometriosis can be incidentally found in approximately 1 in 200 benign ovarian endometriomas (~0.5%)[167], with one study finding architectural atypia in 2.5% (4/159)[168]. However, this incidence may depend on whether non-malignant histological atypia in endometriosis is noted in reports (and how it is defined)[169]. Currently, there is no research on how to manage cases of incidental histologically atypical endometriosis to prevent potential future malignant transformation. If this situation arises, clinicians can consult with gynecologic oncology or endometriosis specialist colleagues.

Asymptomatic ovarian endometriomas near menopause. The management of asymptomatic ovarian endometriomas in perimenopausal patients is unclear[167,170]. Without surveillance, it is possible that a proportion of these endometriomas may not be resolved after menopause and may be at risk for malignant transformation. One option would be ultrasound surveillance to ensure resolution of the cyst after menopause. However, although an endometrioma can "resolve" sonographically, this does not rule out the presence of persistent microscopic endometriosis in the ovary that could still be at risk for transformation. Moreover, the management of endometriomas that may decrease in size but still persist in menopause is unclear. At this point, there is no clear evidence to guide management of asymptomatic ovarian endometriomas in perimenopausal patients.

Complementary, Alternative, and Emerging Treatments

Complementary and Alternative Treatments

Complementary and alternative treatments for pelvic pain, particularly acupuncture, were part of the SOGC's Chronic Pelvic Pain Guideline (2024)[129].

Multiple meta-analyses on acupuncture and Chinese medicine for endometriosis have been published since 2023, which have suggested a possible benefit for the symptoms of endometriosis[171,172]. However, there are methodologic limitations to some of these studies, and it is unclear whether these are primarily treatments of pain or of the endometriosis itself. Some studies have

evaluated these treatments for impact on endometriosis-specific biomarkers, with variable outcomes[173–176].

Although interest in the use of cannabis for managing symptoms related to endometriosis is increasing, there is still insufficient high-quality evidence on this topic. Randomized trials are currently underway, but placebo-controlled trials remain essential to generate robust evidence.[177,178].

Summary Statement 21

Diet and Supplements

Patients want to be empowered to manage their symptoms using non-medical therapies and often ask about dietary modification. While there are many studies that have looked at diet and its impact on endometriosis symptoms, most of these have limitations due to being underpowered, having short follow-up periods, unconfirmed diagnosis, questionable compliance rates, and lack of control groups. Systematic reviews of dietary/supplement interventions have varied, with some showing promise (e.g., for Vitamin C and E)[179], while others indicate methodologic concerns and a need for more large placebo-controlled studies in endometriosis[180,181].

Some studies have reported improvement using the low FODMAP diet[182] which has been validated with more robust studies in the management of Irritable Bowel Syndrome (IBS) and is one of the recommended management options for this condition[129]. Many patients with endometriosis have symptoms of bowel irritability and in tertiary care centre cohorts, up to 50% will meet criteria for IBS[183]. It is reasonable to recommend a trial of the low FODMAP diet for patients with endometriosis who have bowel symptoms (bloating, diarrhea, constipation, etc.). As this diet can be difficult to follow, it is more likely to be successful by using the support of a registered dietitian. It is also quite restrictive at first and should therefore be used with caution in patients with a history of eating disorders.

Endometriosis, Dyspareunia, and Sexual Function

Endometriosis is classically associated with deep dyspareunia. An anatomic model has been presented for deep dyspareunia, where anatomic structures at the vaginal apex can become sensitized and tender upon contact: posterior vaginal fornix, uterus-cervix, deep pelvic floor musculature, and the bladder.[184] Endometriosis lesions of the posterior pelvis, especially deep lesions, correspond to the posterior vaginal fornix and are associated with deep dyspareunia[185]. The uterus-cervix could become tender due to concurrent adenomyosis[186]. Bladder and pelvic floor tenderness can arise from concurrent painful bladder syndrome and myofascial pelvic pain syndrome/pelvic floor myalgia[186].

Although deep dyspareunia is present in about half of patients with endometriosis, superficial dyspareunia can also be present, e.g. due to concomitant provoked vestibulodynia[187,188]. It should also be emphasized that other aspects of the sexual response cycle can be affected in patients with endometriosis, such as desire, arousal, and orgasm[189]. Pain with orgasm has also been reported in endometriosis and associated with pelvic floor myalgia[190].

A framework for deep dyspareunia in endometriosis has been proposed[186]. Type 1 is directly due to endometriosis (e.g. deep endometriosis of the posterior pelvis). Type 2 is indirectly due to endometriosis (e.g. endometriosis coexisting with painful bladder syndrome or pelvic floor myalgia, perhaps secondary to spinal cord cross-sensitization). Type 3 arises with suspected nociplastic pain with multiple sites tender on pelvic examination (resulting in concurrent deep-superficial dyspareunia), which could be part of DSM-5 genito-pelvic pain/penetration disorder[191]. Type 4 corresponds to a mixed presentation, encompassing features of types 1, 2, and/or 3.

This framework can guide management. Type 1 deep dyspareunia would present with a tender posterior vaginal fornix, +/- nodularity, in the absence of other pain generators, and would be treated with surgery or hormonal therapy. Type 2 deep dyspareunia would require targeting of the concomitant pain condition, e.g. painful bladder syndrome or pelvic floor myalgia. Type 3 deep dyspareunia would likely require a multidisciplinary/interdisciplinary approach that addresses underlying nociplastic pain. Type 4 deep dyspareunia would require a mixed approach, such as a combination of surgery for posterior pelvis endometriosis combined with multidisciplinary /interdisciplinary approach.

For Type 1 deep dyspareunia, although observational studies show improvement in deep dyspareunia with surgery or hormonal therapy[192,193], other sexual dysfunction (affecting desire, arousal, orgasm) may or may not improve and its persistence may require specific management[26,194–198]. It is also possible that hormonal suppressive therapies can affect superficial dyspareunia in some cases[199], and so this should be monitored although the underlying mechanisms still require study[200].

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CONCLUSION

Endometriosis is a multifaceted, chronic condition with significant implications for pain, fertility, quality of life, and long-term health. Effective management requires a nuanced, patient-centred approach that incorporates both evidence-based medical and surgical strategies, tailored to the individual's symptoms, goals, and reproductive life stage.

Key factors in providing timely, high quality patient care include offering early initiation of appropriate hormonal therapy, judicious use of surgery by experienced providers, proactive fertility planning, and an emphasis on multidisciplinary/interdisciplinary collaboration, particularly for those with chronic pain and complex disease. Clinicians should engage in shared decision-making and respect patient autonomy when applying clinical recommendations. Importantly, this guideline recognizes the need for improved access to advanced diagnostics, coordinated care pathways, and specialized centres of expertise across Canada.

SUPPLEMENTARY DATA

Supplementary data related to this article can be found at https://doi.org/10.1016/j.jogc.2026.103382.

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