

# The Management of Uterine Fibroids in Women With Otherwise Unexplained Infertility

This clinical practice guideline was prepared by the Reproductive Endocrinology and Infertility Committee, reviewed by Family Physician Advisory and Clinical Practice Gynaecology Committees, and approved by the Executive and Board of the Society of Obstetricians and Gynaecologists of Canada.

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## Abstract

**Objective:** To provide recommendations regarding the best management of fibroids in couples who present with infertility. Usual and novel treatment options for fibroids will be reviewed with emphasis on their applicability in women who wish to conceive.

**Options:** Management of fibroids in women wishing to conceive first involves documentation of the presence of the fibroid and determination of likelihood of the fibroid impacting on the ability to conceive. Treatment of fibroids in this instance is primarily surgical, but must be weighed against the evidence of surgical management improving clinical outcomes, and risks specific to surgical management and approach.

**Outcomes:** The outcomes of primary concern are the improvement in pregnancy rates and outcomes with management of fibroids in women with infertility.

**Evidence:** Published literature was retrieved through searches of PubMed, MEDLINE, the Cochrane Library in November 2013 using appropriate controlled vocabulary (e.g., leiomyoma, infertility, uterine artery embolization, fertilization in vitro) and key words (e.g., fibroid, myomectomy). Results were restricted to systematic reviews, randomized control trials/controlled clinical trials, and observational studies published in English and French. There were no date restrictions. Searches were updated on a regular basis and incorporated in the guideline to November 2013. Grey (unpublished literature) was identified through searching the websites of health technology assessment and health technology-related agencies, clinical practice guideline collections, clinical trial registries, and national and international medical specialty societies.

**Values:** The quality of evidence in this document was rated using the criteria described by the Canadian Task Force on Preventive Health Care (Table).

**Benefits, harms, and costs:** These recommendations are expected to allow adequate management of women with fibroids and infertility, maximizing their chances of pregnancy by minimizing risks introduced by unnecessary myomectomies. Reducing complications and eliminating unnecessary interventions are also expected to decrease costs to the health care system.

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**Key to evidence statements and grading of recommendations, using the ranking of the Canadian Task Force on Preventive Health Care**

Quality of evidence assessment*	Classification of recommendations†
I: Evidence obtained from at least one properly randomized controlled trial	A. There is good evidence to recommend the clinical preventive action
II-1: Evidence from well-designed controlled trials without randomization	B. There is fair evidence to recommend the clinical preventive action
II-2: Evidence from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one centre or research group	C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making
II-3: Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category	D. There is fair evidence to recommend against the clinical preventive action
III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees	E. There is good evidence to recommend against the clinical preventive action L. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

\*The quality of evidence reported in here has been adapted from The Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.<sup>52</sup>

†Recommendations included in these guidelines have been adapted from the Classification of Recommendations criteria described in the Canadian Task Force on Preventive Health Care.<sup>52</sup>

**Summary Statements**

1. Subserosal fibroids do not appear to have an impact on fertility; the effect of intramural fibroids remains unclear. If intramural fibroids do have an impact on fertility, it appears to be small and to be even less significant when the endometrium is not involved. (II-3)
2. Because current medical therapy for fibroids is associated with suppression of ovulation, reduction of estrogen production, or disruption of the target action of estrogen or progesterone at the receptor level, and it has the potential to interfere in endometrial development and implantation, there is no role for medical therapy as a stand-alone treatment for fibroids in the infertile population. (III)
3. Preoperative assessment of submucosal fibroids is essential to the decision on the best approach for treatment. (III)
4. There is little evidence on the use of Foley catheters, estrogen, or intrauterine devices for the prevention of intrauterine adhesions following hysteroscopic myomectomy. (II-3)

5. In the infertile population, cumulative pregnancy rates by the laparoscopic and the minilaparotomy approaches are similar, but the laparoscopic approach is associated with a quicker recovery, less postoperative pain, and less febrile morbidity. (II-2)
6. There are lower pregnancy rates, higher miscarriage rates, and more adverse pregnancy outcomes following uterine artery embolization than after myomectomy. (II-3) Studies also suggest that uterine artery embolization is associated with loss of ovarian reserve, especially in older patients. (III)

**Recommendations**

1. In women with infertility, an effort should be made to adequately evaluate and classify fibroids, particularly those impinging on the endometrial cavity, using transvaginal ultrasound, hysteroscopy, hysterosonography, or magnetic resonance imaging. (III-A)
2. Preoperative assessment of submucosal fibroids should include, in addition to an assessment of fibroid size and location within the uterine cavity, evaluation of the degree of invasion of the cavity and thickness of residual myometrium to the serosa. A combination of hysteroscopy and transvaginal ultrasound or hysterosonography are the modalities of choice. (III-B)
3. Submucosal fibroids are managed hysteroscopically. The fibroid size should be < 5 cm, although larger fibroids have been managed hysteroscopically, but repeat procedures are often necessary. (III-B)
4. A hysterosalpingogram is not an appropriate exam to evaluate and classify fibroids. (III-D)
5. In women with otherwise unexplained infertility, submucosal fibroids should be removed in order to improve conception and pregnancy rates. (II-2A)
6. Removal of subserosal fibroids is not recommended. (III-D)
7. There is fair evidence to recommend against myomectomy in women with intramural fibroids (hysteroscopically confirmed intact endometrium) and otherwise unexplained infertility, regardless of their size. (II-2D) If the patient has no other options, the benefits of myomectomy should be weighed against the risks, and management of intramural fibroids should be individualized. (III-C)

**ABBREVIATIONS**

CPR	clinical pregnancy rates
FSH	follicle-stimulating hormone
IR	implantation rates
IVF	in vitro fertilization
LBR	live birth rates
MR	miscarriage rates
MRGfUS	magnetic resonance-guided focused ultrasound surgery
MRI	magnetic resonance imaging
OBR	ongoing pregnancy rates
RCT	randomized control trial
UAE	uterine artery embolization

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