

Uterine Fibroid Embolization

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Epidemiology

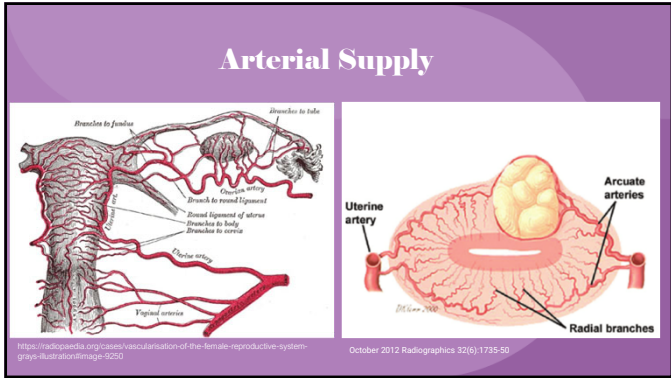
- Common
 - Up to 70% of women by menopause
- Incidence increased
 - with age until menopause
 - Premenopausal status
 - Family history
 - Increasing interval since last birth
 - Obesity
 - Black women 2-3x higher than White women

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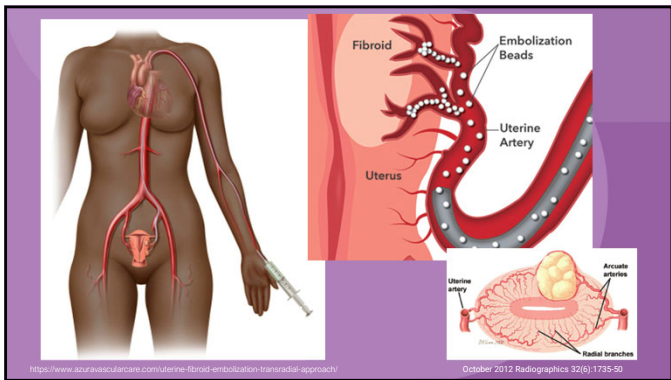
Symptoms

- Bleeding
- Bulk
 - Urinary frequency
 - Constipation
- Infertility
- Pain

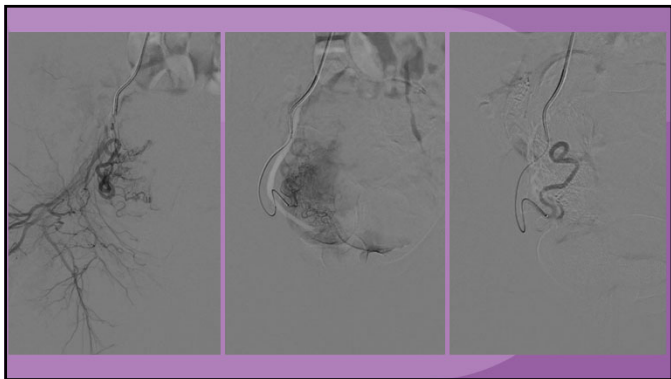
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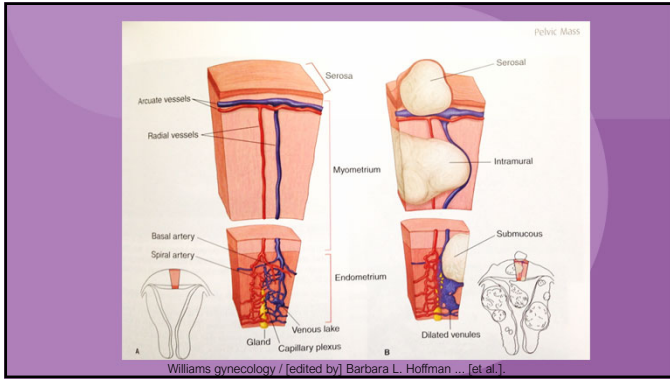
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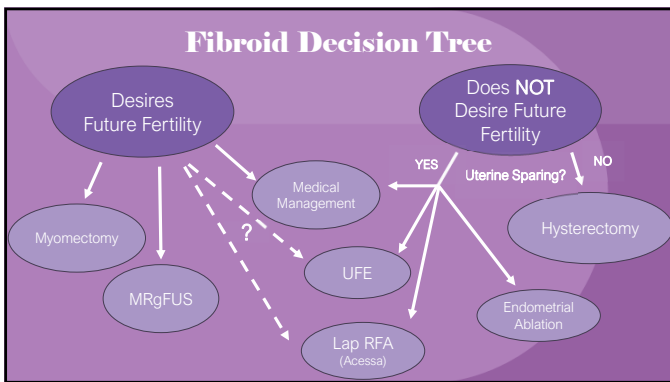
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Patient expresses interest in UFE...

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Gynecologic Exam

- 1-2 months of scheduled procedure
- Recent negative Pap Smear
- Evaluation for infection
 - Screen for STIs
- Endometrial Biopsy
 - At least 2-3 weeks prior to UFE, minimize risk of infection

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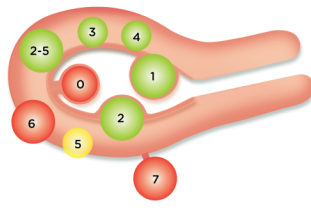
Imaging

- Ultrasound
- CT
- MRI



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Fibroid Subclassification System		
Submucosal	0	Pendunculated intracavity
	1	<50% Intramural
	2	≥50% Intramural
Intramural	3	Contacts endometrium; 100% intramural
	4	Intramural
Subserosal	5	Subserosal ≥50% Intramural
	6	Subserosal <50% Intramural
	7	Subserosal Pendunculated
	8	Other (specify eg. cervical, parasitic)
	2-5	Submucosal and subserosal, each with less than half the diameter in the endometrial and peritoneal cavities respectively.



Two numbers are listed separated by a dash. By convention, the first refers to the relationship with the endometrium while the second refers to the relationship to the serosa. One example is below.

Source: Munro, M et al. Int J Gynaecol Obstet. 2011 Apr; 113(1):3-13

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Medications

- GnRH agonist therapy
 - Hypothesized that the caliber of the uterine arteries are diminished
 - Technical difficulty?
 - Ability to accurately assess response to UFE
- Anticoagulation / Antiplatelet
- NSAIDS

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Contraception and Future Fertility

- Post UFE contraception?
- Insurance and fertility
- What does the data say about fertility after UFE?



<https://www.businessinsider.com/how-to-pick-a-birth-control-2017-11>

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Fertility

- UFE affect on the ovaries and endometrium
- Reports of uncomplicated pregnancies following UAE




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Procedure

- Sedation
- Multimodal pain control

<https://www.azurivascularcare.com/uterine-fibroid-embolization-uterine-arterial-approach/>
<https://www.drugs.com/cg/patient-controlled-analgesia.html>

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Post-Procedure

- Pain
- Post-Embolization Syndrome
- Admission versus no admission
- Post-procedure bleeding and discharge
- Time to symptom improvement

POST EMBOLIZATION SYNDROME

- Pain (pelvic)
- Fever
- Malaise

THREE MONTHS

17

Adverse Effects

- Pain
- Nausea
- Arterial access complications
- Infection
- Expulsion of fibroid tissue
- Non-target embolization
- Pulmonary Embolism
- Death

Comparative Study | Obstet Gynecol. 2006 Dec;106(6):1309-18.
 doi: 10.1097/01.AOG.0000188386.53878.49.
The FIBROID Registry: symptom and quality-of-life status 1 year after therapy
 James B Spies¹, Evan R Myers, Robert Worthington-Kirsch, Jyotna Mulgund, Scott Goodwin, Matthew Mauro. FIBROID Registry Investigators
 Affiliations + expand
 PMID: 16319257 DOI: 10.1097/01.AOG.0000188386.53878.49

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Reintervention

Journal of Women's Health • Vol. 27, No. 10
 Research Article | OPEN ACCESS | Published Online: 12 October 2018

Reintervention Rates After Myomectomy, Endometrial Ablation, and Uterine Artery Embolization for Patients with Uterine Fibroids

Authors: Matthew R. Davis, Ahmed M. Soliman, Jane Castelli-Haley, Michael C. Strabes, and Eric S. Surry

Publication: Journal of Women's Health • <https://doi.org/10.1089/jwh.2017.2732>

- 5-year reintervention rate
 - Myomectomy 19%
 - UFE 24%
 - Endometrial Ablation 33%

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How does UFE stack up against other surgical options?

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Randomized Controlled Trial | Am J Obstet Gynecol. 2005 Nov;193(5):1618-29.
 doi: 10.1016/j.ajog.2005.05.017.

Uterine artery embolization versus hysterectomy in the treatment of symptomatic uterine fibroids (EMMY trial): peri- and postprocedural results from a randomized controlled trial

Wouter J K Hehenkamp¹, Nicole A Volkers, Peter F J Donderwinkel, Sjoerd de Blok, Erwin Birnie, Willem M Ankum, Jim A Reekers

Affiliations + expand
 PMID: 16260201 DOI: 10.1016/j.ajog.2005.05.017

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Original Research ajog.org

GYNECOLOGY

Uterine artery embolization vs hysterectomy in the treatment of symptomatic uterine fibroids: 10-year outcomes from the randomized EMMY trial

Annefeur M. de Bruijn, MD; Willem M. Ankum, MD, PhD; Jim A. Reekers, MD, PhD; Erwin Birnie, PhD; Sanne M. van der Kooij, MD, PhD; Nicole A. Volkers, MD, PhD; Wouter J. K. Hehenkamp, MD, PhD

Authors' Conclusion:

"All women who are candidates for hysterectomy because of symptomatic uterine fibroids should be counseled on the option of UAE."

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DOI: 10.1111/1471-0528.12111.02952.x General gynaecology
www.bjog.org

Randomised comparison of uterine artery embolisation (UAE) with surgical treatment in patients with symptomatic uterine fibroids (REST trial): 5-year results

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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Uterine-Artery Embolization or Myomectomy for Uterine Fibroids

I. Manyonda, A.-M. Belli, M.-A. Lumsden, J. Moss, W. McKinnon, L.J. Middleton, V. Cheed, O. Wu, F. Sirkeci, J.P. Daniels, and K. McPherson, for the FEMME Collaborative Group*

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Patient Selection

Fibroid treatment should be individualized to a patient's **GOALS** and **SYMPTOMS**

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References

Spivey JL, Myers ER, Worthington-Kirch R, Muzumdar J, Goodwin S, Mayo M, FIBROID Registry Investigators. The FIBROID Registry: symptom and quality-of-life status 1 year after therapy. *Obstet Gynecol*. 2003 Dec;102(6):1329-39.

Davis MR, Solomon AM, Castelli-Haley J, Scubaes MC, Surney ES. Reintervention Rates After Myomectomy, Endometrial Ablation, and Uterine Artery Embolization for Patients with Uterine Fibroids. *J Womens Health (Larchmt)*. 2018 Oct;27(10):1204-1214. doi: 10.1093/jwh/abz017. Epub 2018 Aug 7.

Bradley LD. Uterine fibroid embolization: a viable alternative to hysterectomy. *Am J Obstet Gynecol*. 2009 Aug;201(2):127-35.

Walker NJ, McDowell SJ. Pregnancy after uterine artery embolization for leiomyomata: a series of 56 completed pregnancies. *Am J Obstet Gynecol*. 2008 Nov;199(5):595-91.

Manyonda I, Bell AM, Lumsden MA, Moss J, McKinnon W, Middleton LJ, Cherd V, Wu D, Srinivas P, Daniels JP, McPherson K, FEMME Collaborative Group. Uterine Artery Embolization or Myomectomy for Uterine Fibroids. *N Engl J Med*. 2020 Jul 30;383(5):440-451. doi: 10.1056/NEJMoa1914738. PMID: 32720530.

Moore DG, Cooper AB, Kelloff GJ, Wang L-S, Muller HCD, Wu DS, Chang E, Lunniss WA. Randomized comparison of uterine artery embolization (UAE) with surgical treatment in patients with symptomatic uterine fibroids (REST trial): 5-year results. *BJOG*. 2011 Jul;118(8):936-44. doi: 10.1111/j.1471-0528.2011.02902.x. Epub 2011 Apr 12. PMID: 21481151.

de Bruijn MC, Anjum WM, Reekers JA, Birnie E, van der Kooik SM, Volkers NA, Hehenkamp WJ. Uterine artery embolization vs hysterectomy in the treatment of symptomatic uterine fibroids: 10-year outcomes from the randomized EMMY trial. *Am J Obstet Gynecol*. 2016 Dec;215(6):745.e1-745.e12. doi: 10.1016/j.ajog.2016.06.051. Epub 2016 Jul 8. PMID: 27293268.

Hehenkamp WJ, Volkers NA, Dondersweert PF, de Blok S, Birnie E, Anjum WM, Reekers JA. Uterine artery embolization versus hysterectomy in the treatment of symptomatic uterine fibroids: EMMY final pre- and postprocedural results from a randomized controlled trial. *Am J Obstet Gynecol*. 2009 Nov;199(5):1618-26. doi: 10.1016/j.ajog.2009.05.017. PMID: 19202221.

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