Pelvic Pain? Painful Periods? Maybe It's Endometriosis

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Boulder Community Health

Disclosures

Boulder Community Health

- Consultant for Medtronic.

Boulder Women's Care

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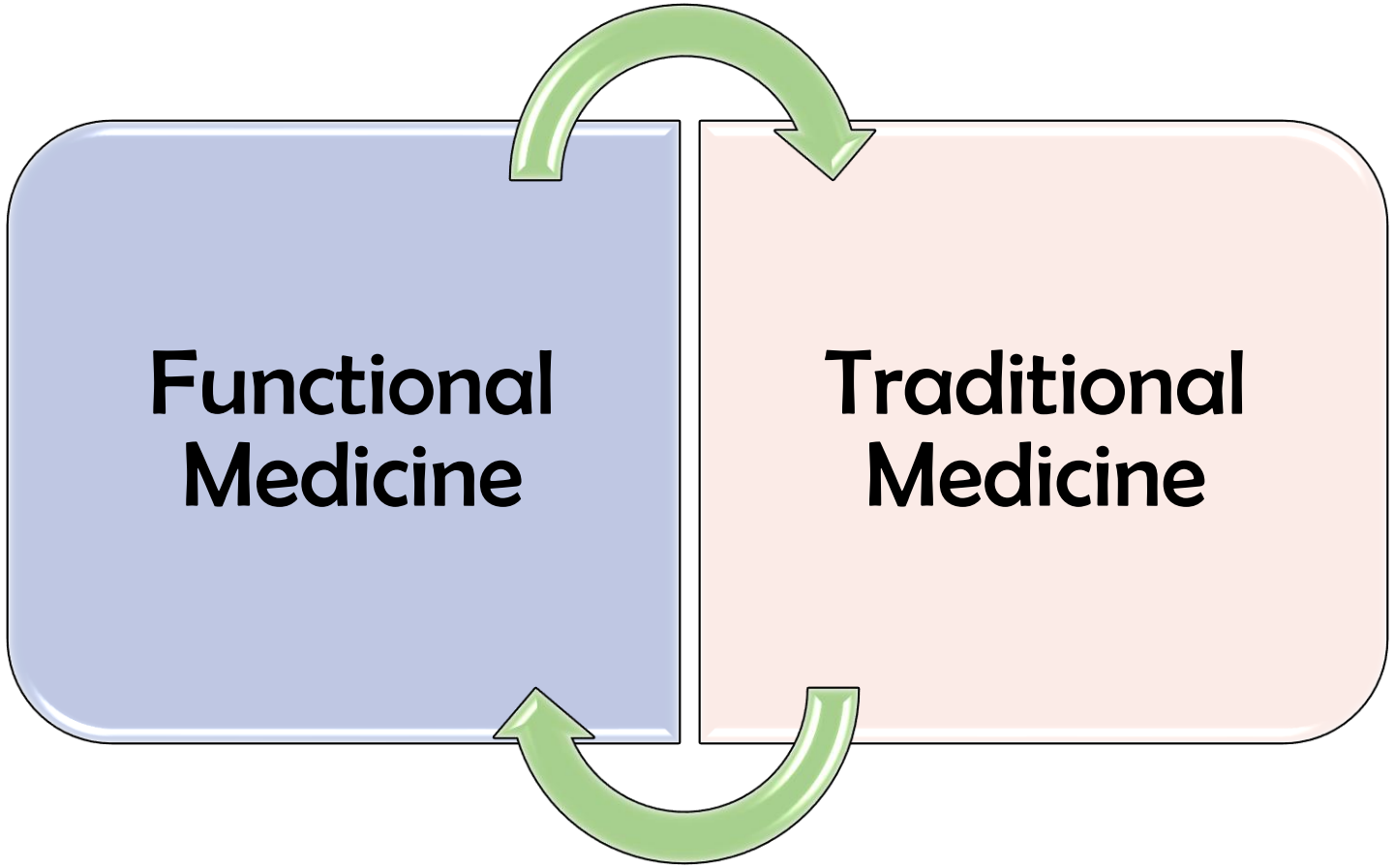
Functional Medicine

Boulder Community Health



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Agenda

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- What is Endometriosis?
- Who does it affect?
- Why does it arise?
- How do we diagnose it?
- What can we do about it?

* In this talk, I will use the terms "woman/en" or "patient(s)" but I acknowledge the experience here for all transgender and gender-diverse individuals as well.

Freud's Couch

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The New York Times

A Debilitating Illness, Often Ignored

Nearly one in 10 women experiences the chronic pain of endometriosis, but for many the symptoms are dismissed. Why is this still happening?

Share full article 727

Kim Ryu

By Dani Blum

July 18, 2022

Well The New York Times

FAMILY

Endometriosis Is Often Ignored in Teenage Girls

BY ABBY ELLIN MARCH 30, 2015 2:07 PM 231

Christopher Silas Neal

Endometriosis: What Is It?

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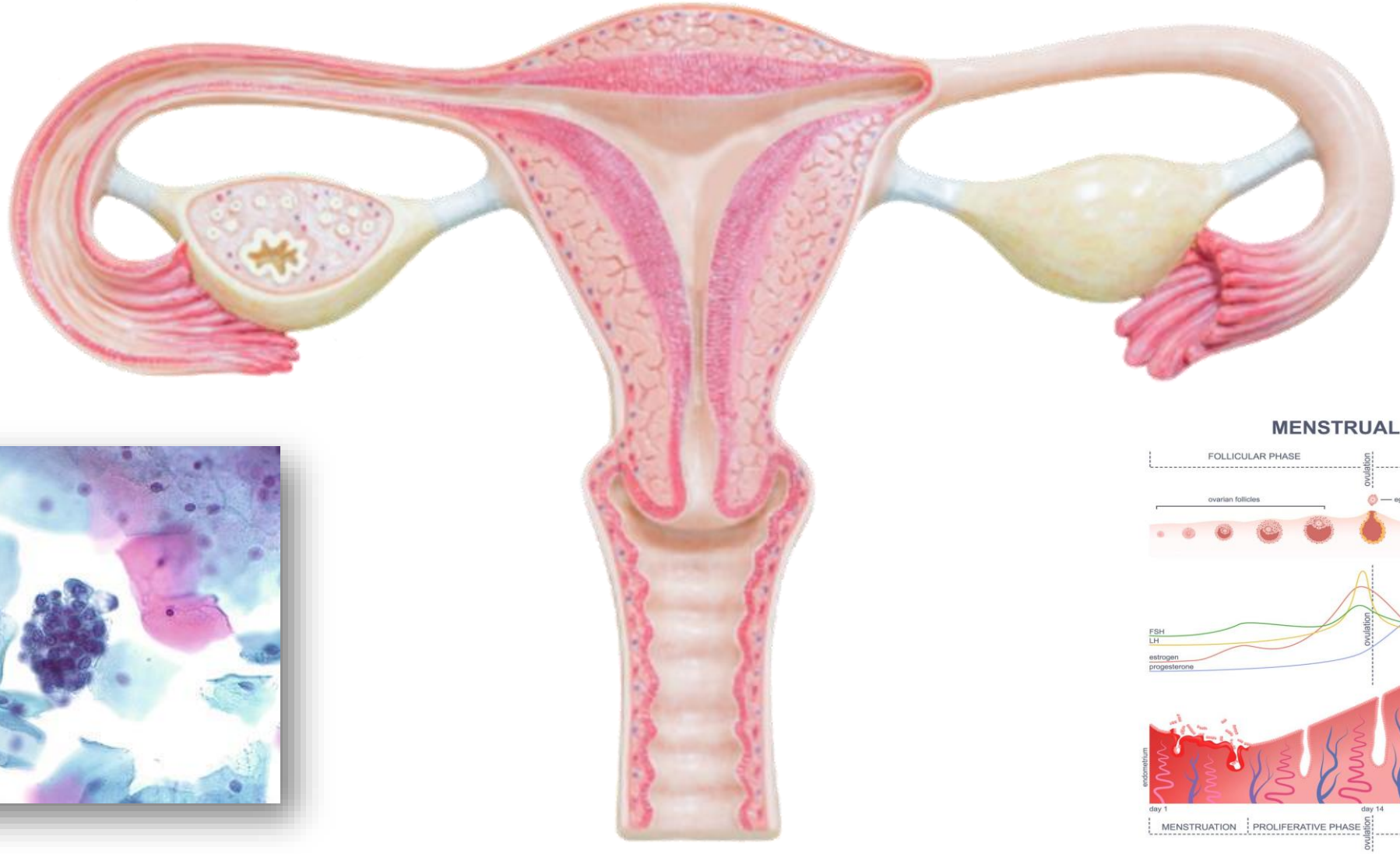

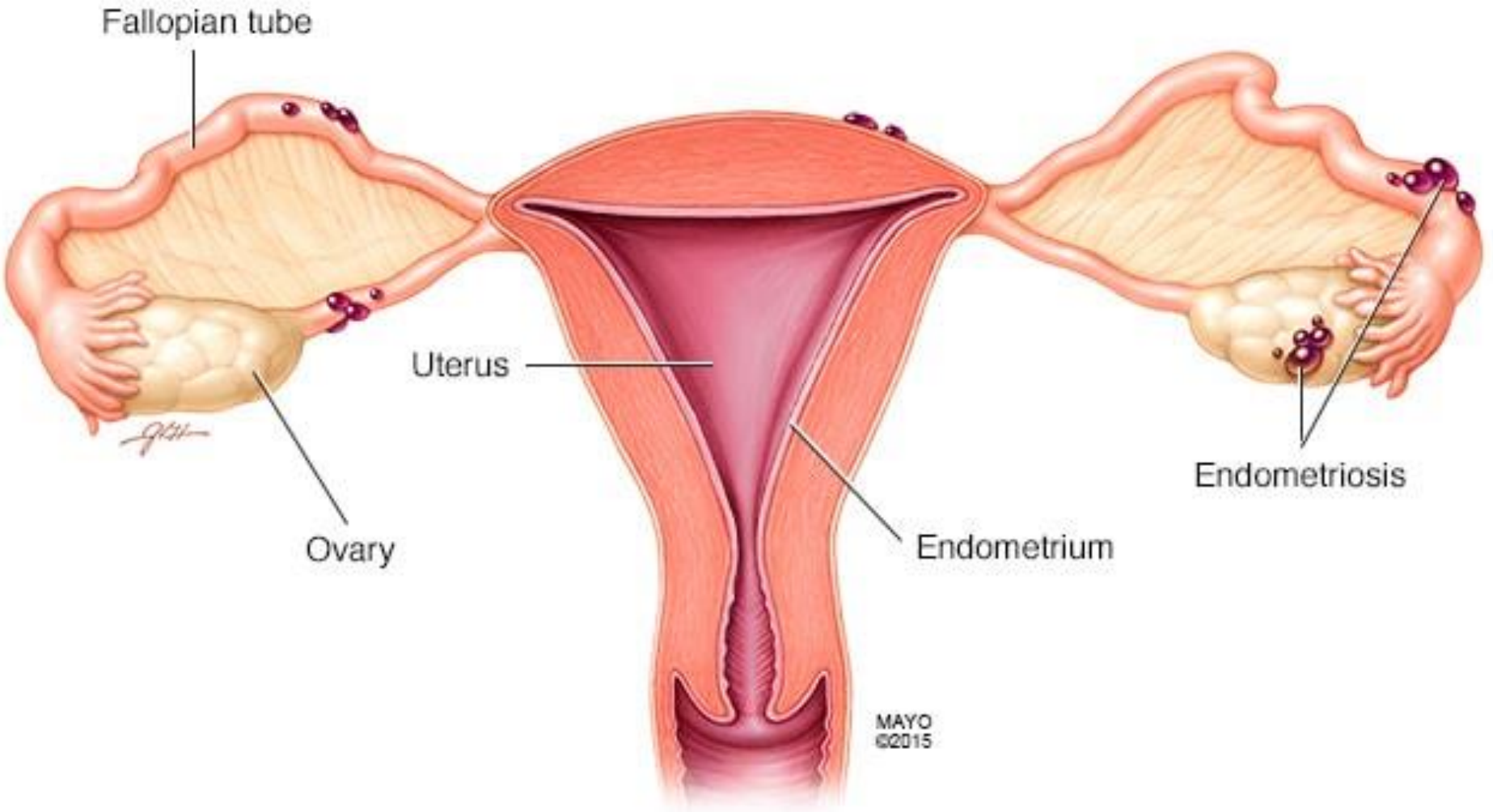

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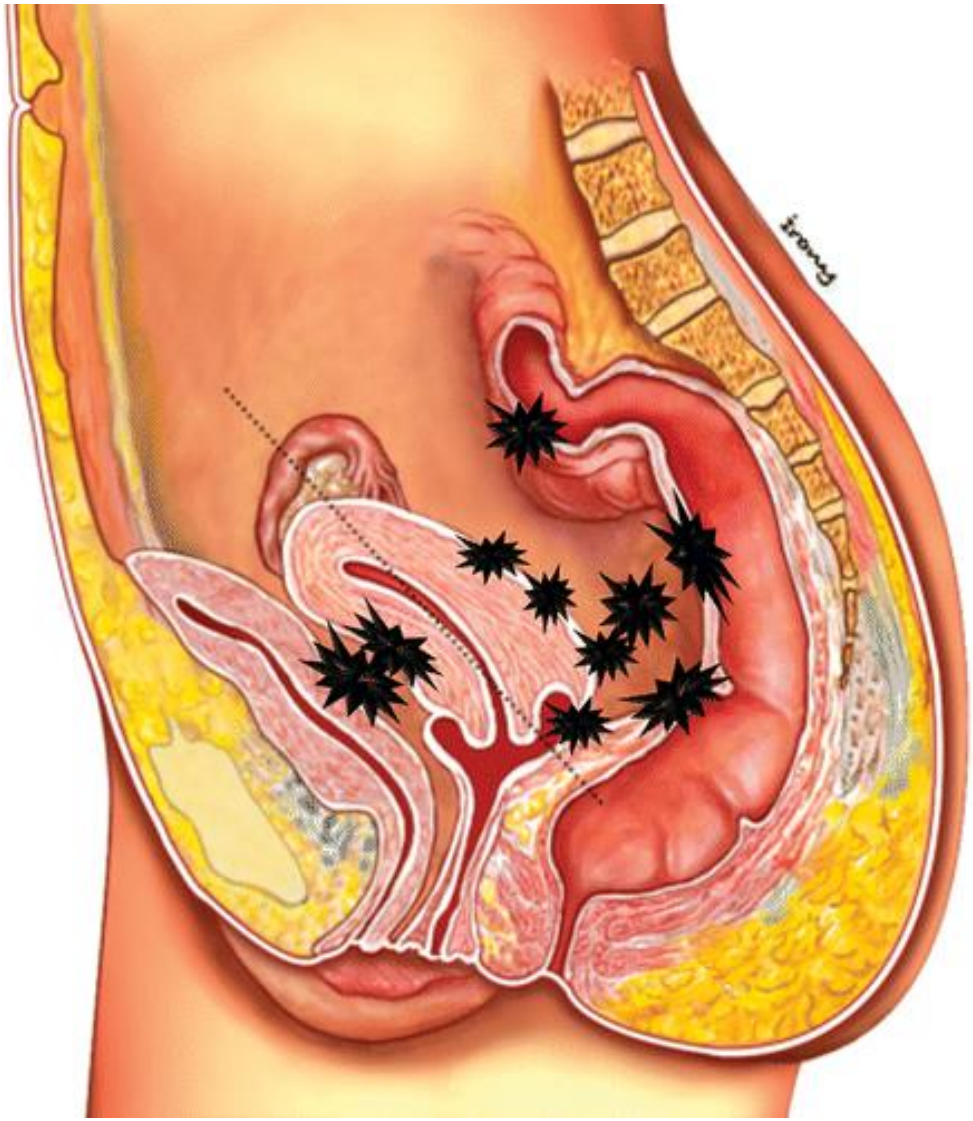

An Ugly Progression

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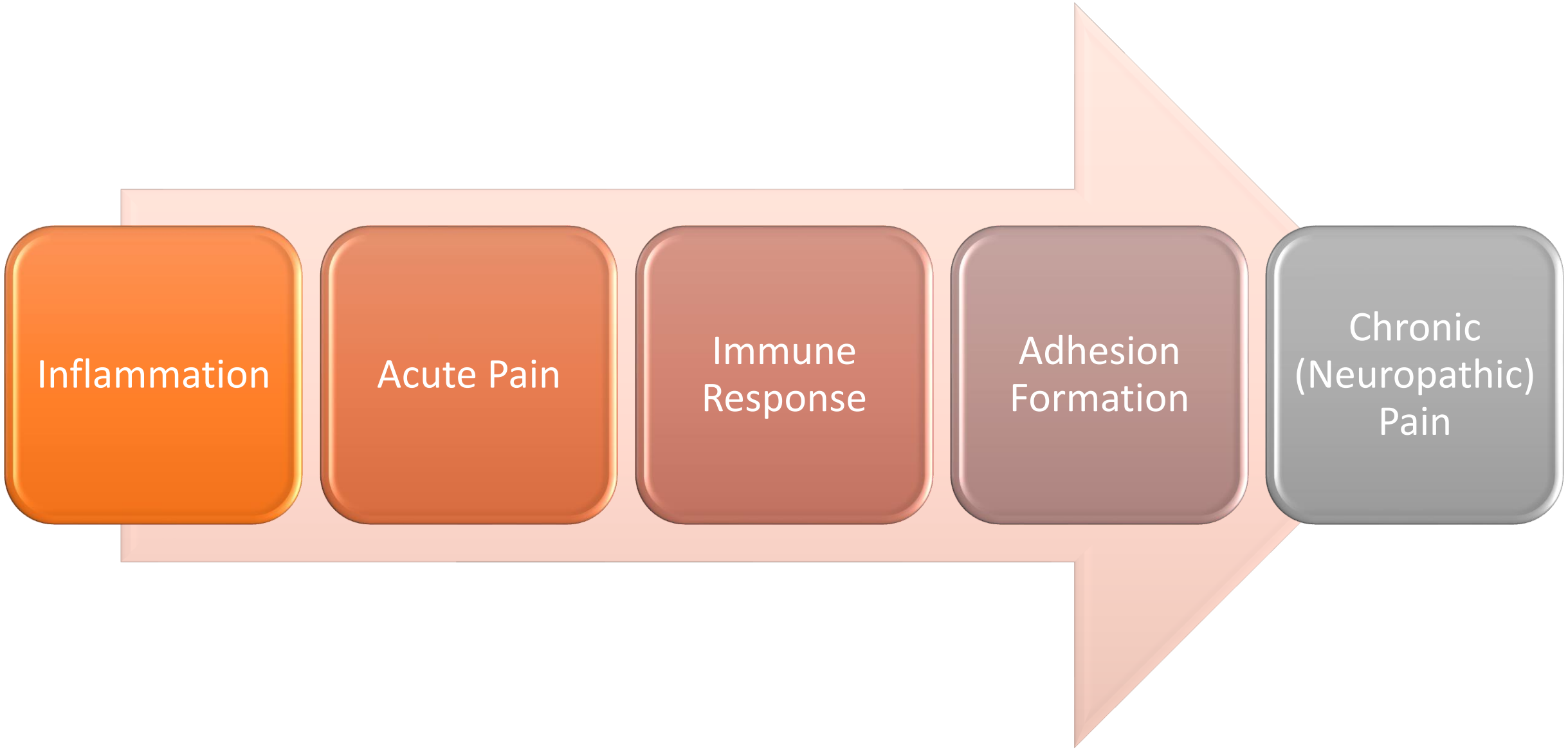

A "Nerve-Centric Disease"

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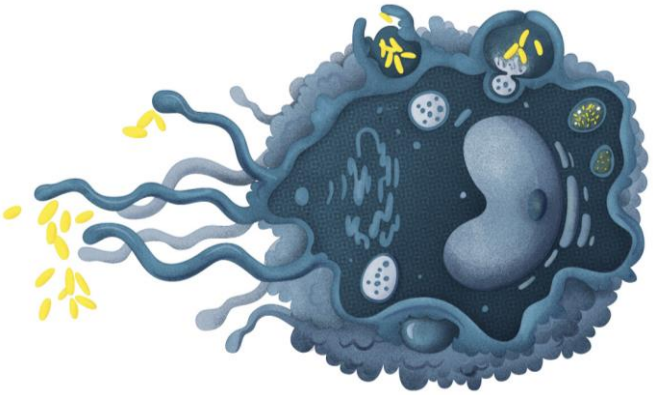
- Recent research, highlighted at the **Endometriosis 2026 Global Congress**, reframes the condition as a **neuroinflammatory, nerve-driven disease**.



  - **Neuro-Immune Crosstalk:** Pathogenesis is increasingly viewed through the lens of nociceptor-immune signaling. Macrophages and neutrophils are now known to engage in a feedback loop that promotes **neuro-angiogenesis** and **perineural fibrosis**.

  - **Mechanistic Detail:** Ectopic lesions don't just "bleed"; they recruit nerve fibers. The density of these fibers correlates more closely with pain scores than the surgical stage of the disease.

Stages

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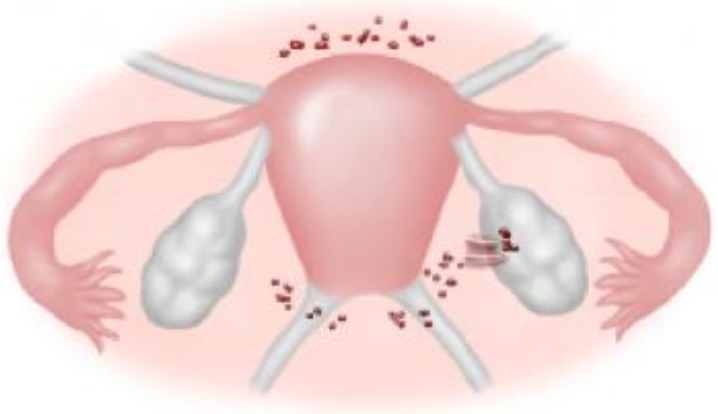
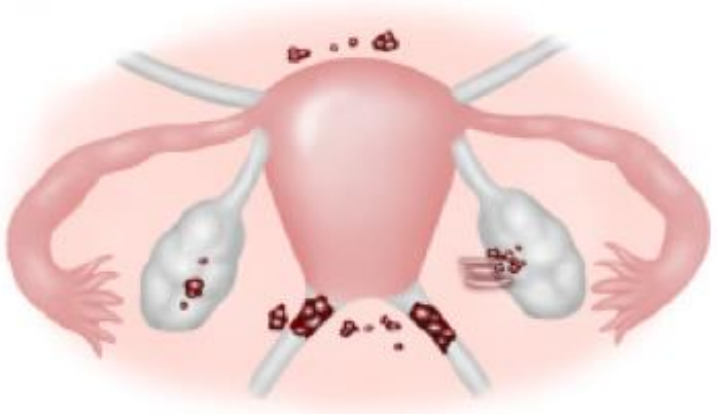
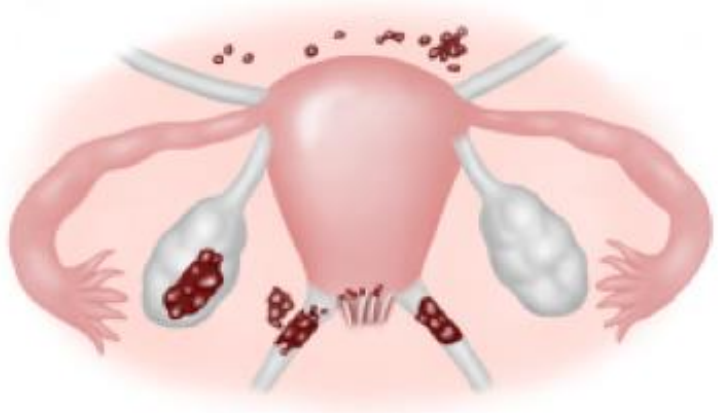
Stage I, minimal



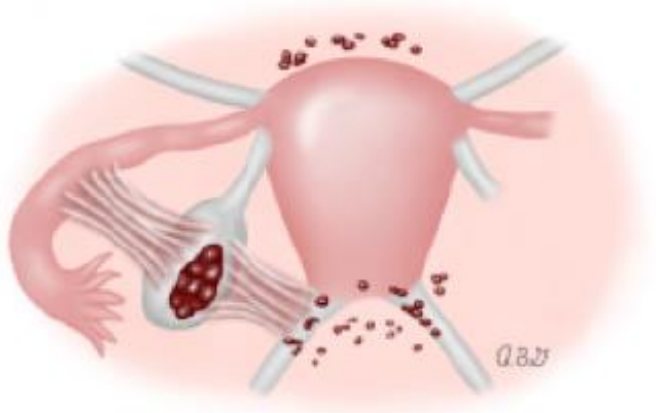
Stage II, mild



Stage III, moderate



Stage IV, severe



Stage I (minimal)	1 to 5
Stage II (mild)	6 to 15
Stage III (moderate)	16 to 40
Stage IV (severe)	>40

Peritoneum	Endometriosis	<1 cm	1 to 3 cm	>3 cm
	Superficial	1	2	4
	Deep	2	4	6
Ovary	R superficial	1	2	4
	Deep	4	16	20
	L superficial	1	2	4
	Deep	4	16	20
	Posterior cul-de-sac obliteration	Partial		Complete
		4		40
Ovary	Adhesions	<1/3 enclosure	1/3 to 2/3 enclosure	>2/3 enclosure
	R filmy	1	2	4
	Dense	4	8	16
	L filmy	1	2	4
	Dense	4	8	16
Tube	R filmy	1	2	4
	Dense	4*	8*	16
	L filmy	1	2	4
	Dense	4*	8*	16

Endometrioma

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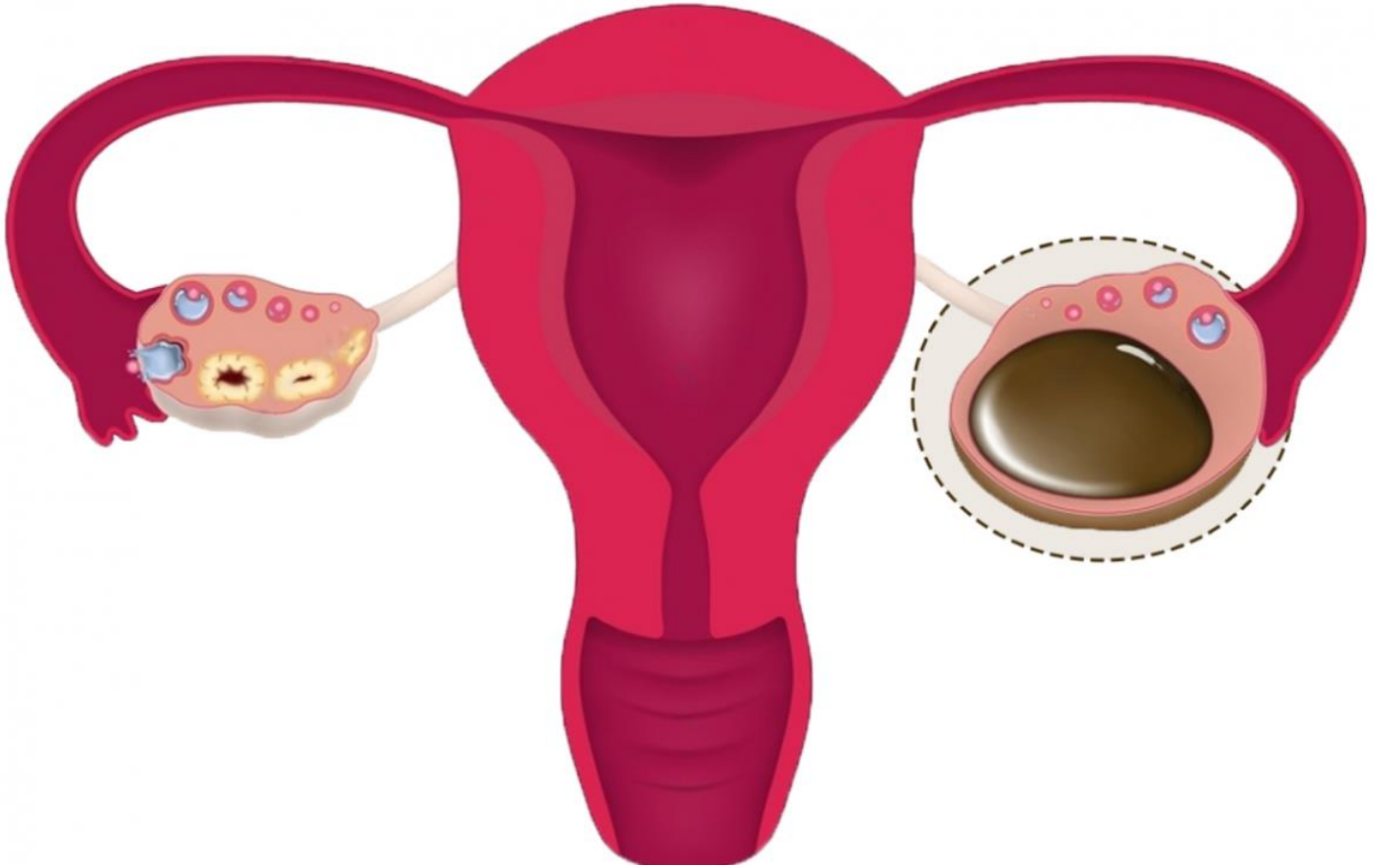
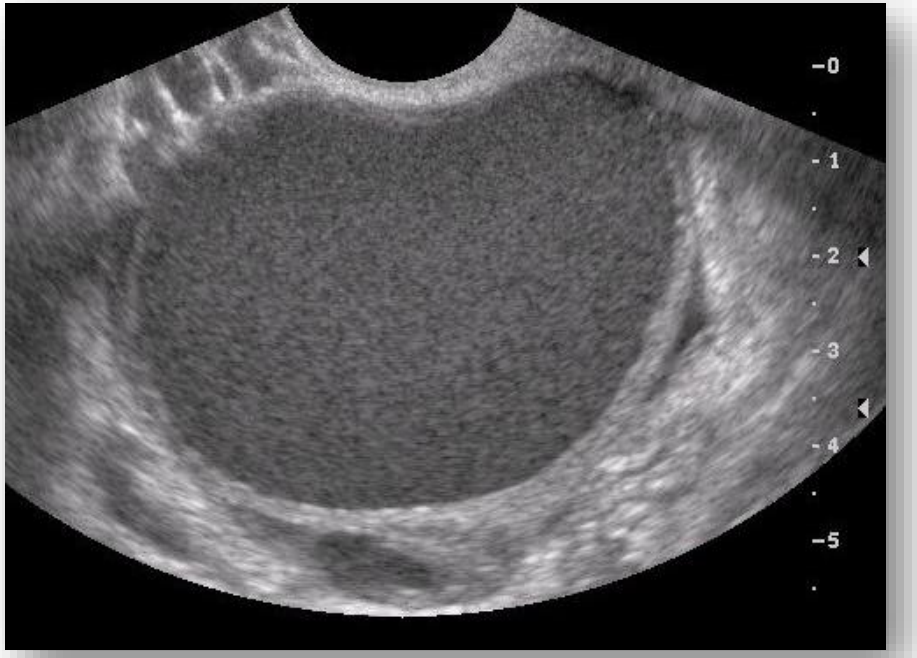


"Chocolate Cysts"



Deep Infiltrating Endometriosis

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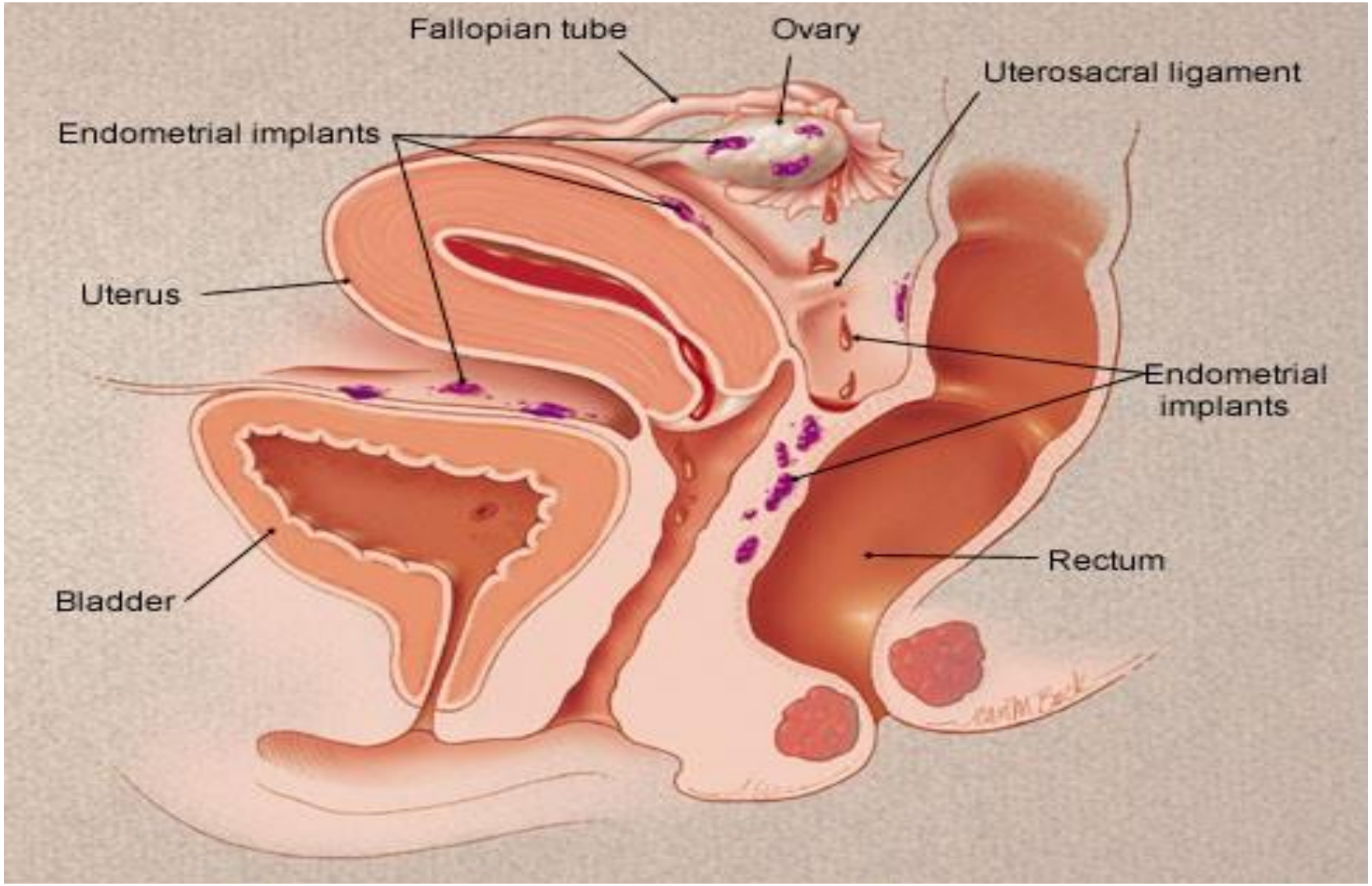

Who Does It Affect?

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- Peak incidence 25-35 years.
- 1 in 10 women and girls in the US have endometriosis.
- 7 in 10 women with chronic pelvic pain have endometriosis.
- Severe pain and cramping is estimated to affect 6.5 million in the United States and Canada. An estimated 89 million women worldwide, according to the Endometriosis Association.
- These numbers are DEFINITELY an underestimation… many are not diagnosed at all, or diagnosed only after years of symptoms.
- On average… 10 YEARS!

Endometriosis Symptoms

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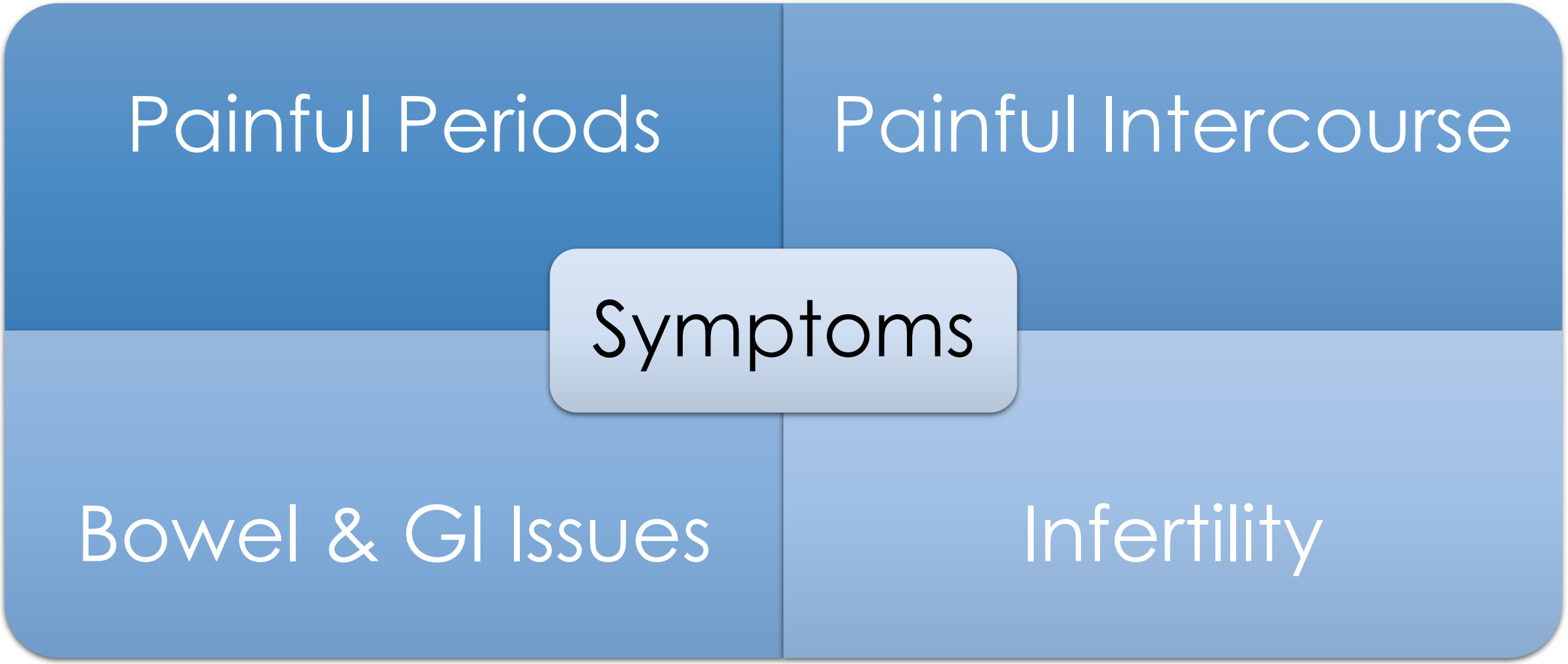

… and there's some interesting (uncommon) outliers.

Presenting Symptoms

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Presenting symptoms for endometriosis diagnosis based on self-reported data from 940 women with surgically diagnosed endometriosis completing the OXEGENE study questionnaire.

Symptoms that led to diagnosis	Group I[a] (N = 423)	Group II[b] (N = 517)	Total (N = 940)	*P* value[c]
Dysmenorrhea	332 (78.5)	408 (78.9)	740 (78.7)	.95
Pelvic pain	302 (71.4)	350 (67.7)	652 (69.4)	.25
Dyspareunia	218 (51.5)	204 (39.5)	422 (44.9)	<.001
Bowel upset (e.g., constipation, diarrhea)	143 (33.8)	199 (38.5)	342 (36.4)	.29
Bowel pain	114 (27.0)	159 (30.8)	273 (29.0)	.23
Infertility	91 (21.5)	155 (30.0)	246 (26.2)	.004
Ovarian mass/tumor	31 (7.3)	152 (29.4)	183 (19.5)	<.001
Dysuria	48 (11.4)	45 (8.7)	93 (9.9)	.21
Other urinary problems	24 (5.7)	34 (96.6)	58 (6.2)	.67

Sinaii N, Plumb K, Cotton L, Lambert A, Kennedy S, Zondervan K, Stratton P. Differences in characteristics among 1,000 women with endometriosis based on extent of disease. Fertil Steril. 2008 Mar;89(3):538-45. doi: 10.1016/j.fertnstert.2007.03.069. Epub 2007 May 11. PMID: 17498711; PMCID: PMC2939902.

Relationship to Infertility

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- Endometriosis = one of the most common causes of infertility → **50% of cases**.
- **30-40% of women** with endometriosis will experience fertility problems.
- Mechanism:
  - **Anatomic distortion:** adhesions or endometriomas
  - **"Hostile Substances"** (prostanoids, cytokines, growth factors) that are "hostile" to normal ovarian function/ovulation, sperm mobility, fertilization, and implantation.

Relationship to GYN Cancers

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CONTENTS: GYNECOLOGIC ONCOLOGY: ORIGINAL RESEARCH

Risk of Gynecologic Cancer According to the Type of Endometriosis

Saavalainen, Liisu MD; Lassus, Heini MD, PhD; But, Anna MSc; Tiitinen, Aila MD, PhD; Härkki, Päivi MD, PhD; Gissler, Mika PhD; Pukkala, Eero PhD; Heikinheimo, Oskari MD, PhD

Author Information

Obstetrics & Gynecology 131(6):p 1095-1102, June 2018. | *DOI:* 10.1097/AOG.0000000000002624

BUY

Metrics

Abstract | In Brief

OBJECTIVE:

To assess the risks of gynecologic cancer according to the type of endometriosis in women with surgically verified endometriosis.

METHODS:

This is a population-based study of women with surgically verified endometriosis retrieved from the Finnish Hospital Discharge Register 1987–2012 (N=49,933); the subtypes of ovarian (n=23,210), peritoneal (n=20,187), and deep infiltrating (n=2,372) endometriosis were analyzed separately. Gynecologic cancers were obtained from the Finnish Cancer Registry. The outcome measure was the standardized incidence ratio (95% CI) calculated as the ratio between the observed to the e
according to the histo
and the Finnish fema

RESULTS:

Endometriosis was a
2.08]), especially with
extent with serous ty
endometriosis and es
occurring 5–10 years
peritoneal and deep
increase in risk of en
standardized incidence ratio for precancerous cervical lesions was 0.81 (0.71–0.92) and for invasive squamous cell carcinoma of the cervical cancer 0.46 (0.20–0.91)

CONCLUSION:

The excess risk of ovarian cancer among women with ovarian endometriosis translates into two excess cases per 1,000 patients followed for 10 years. Acknowledging these risks is important when planning long-term management of women with endometriosis.

Risk Factors

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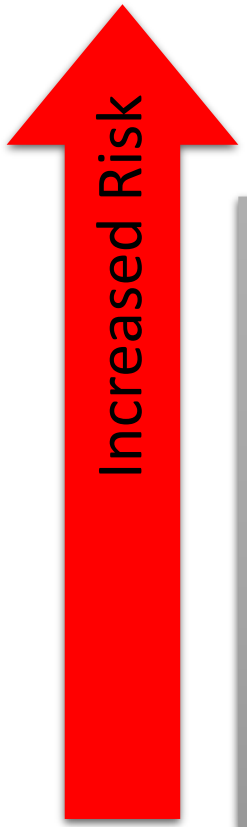
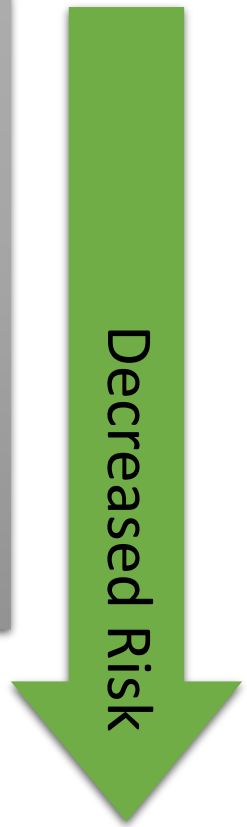


- Positive family history
- Nulliparity
- Early menarche [before age 11 to 13 years] or late menopause)
- Shorter menstrual cycles (defined as ≤27 days)
- Taller height, and lower body mass index.
- Multiple births
- Extended intervals of lactation
- Late menarche (after age 14 years).



Why Does It Arise?

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- **Retrograde Menstruation**
  - Certainly a central mechanism... But not the whole story.

- Genetics (and epigenetics)
  - Correlation with family history, first-degree relatives
  - Epigenetic exposures (pre and post-natal)

- Something about the rest of the internal environment...
  - Estrogen excess/dominance
  - Chronic inflammation
  - Chronic immune system activation
  - Toxic load

Why Does It Arise?

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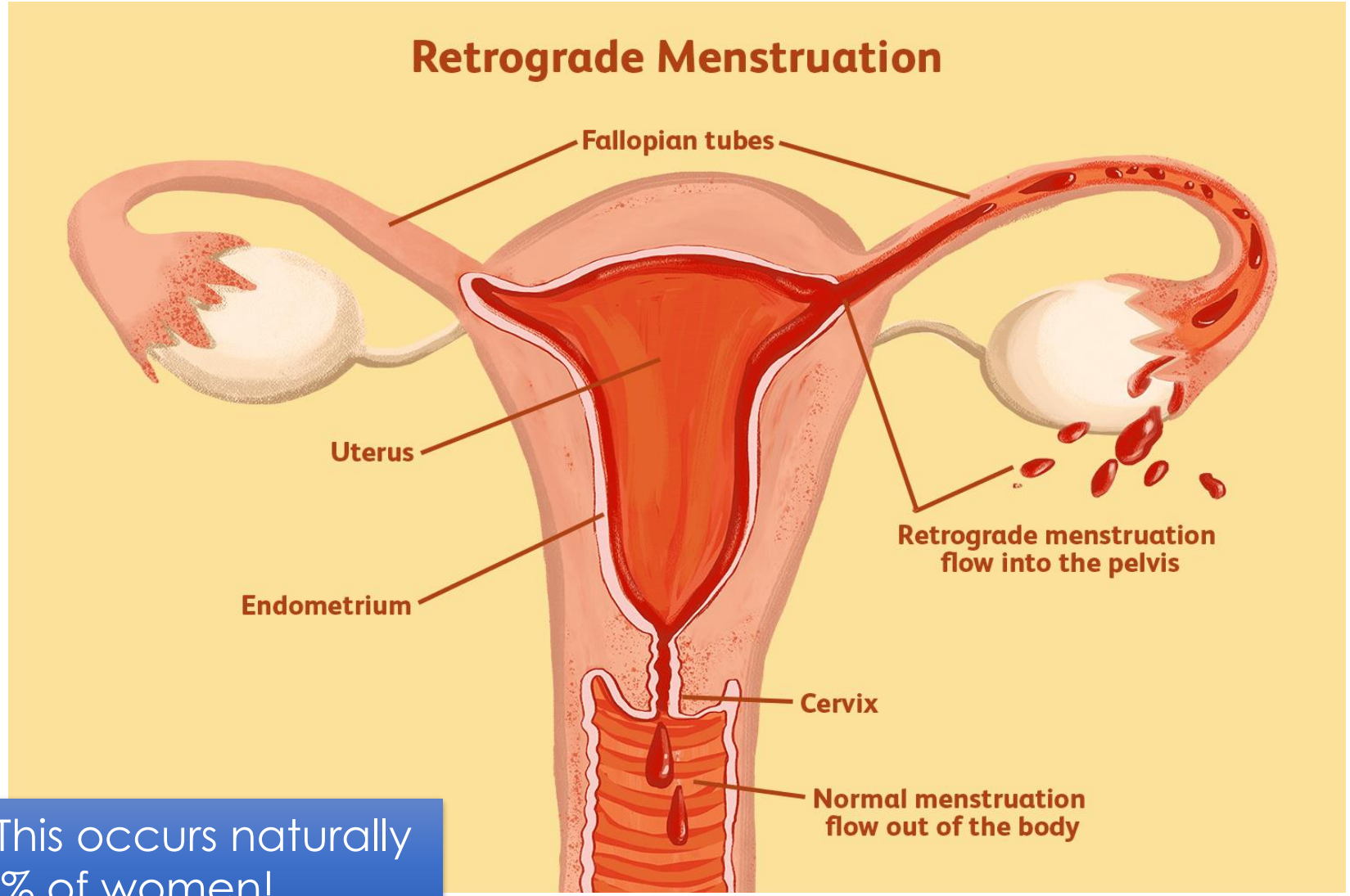

HOWEVER - This occurs naturally in ~90% of women!

Why Does It Arise?

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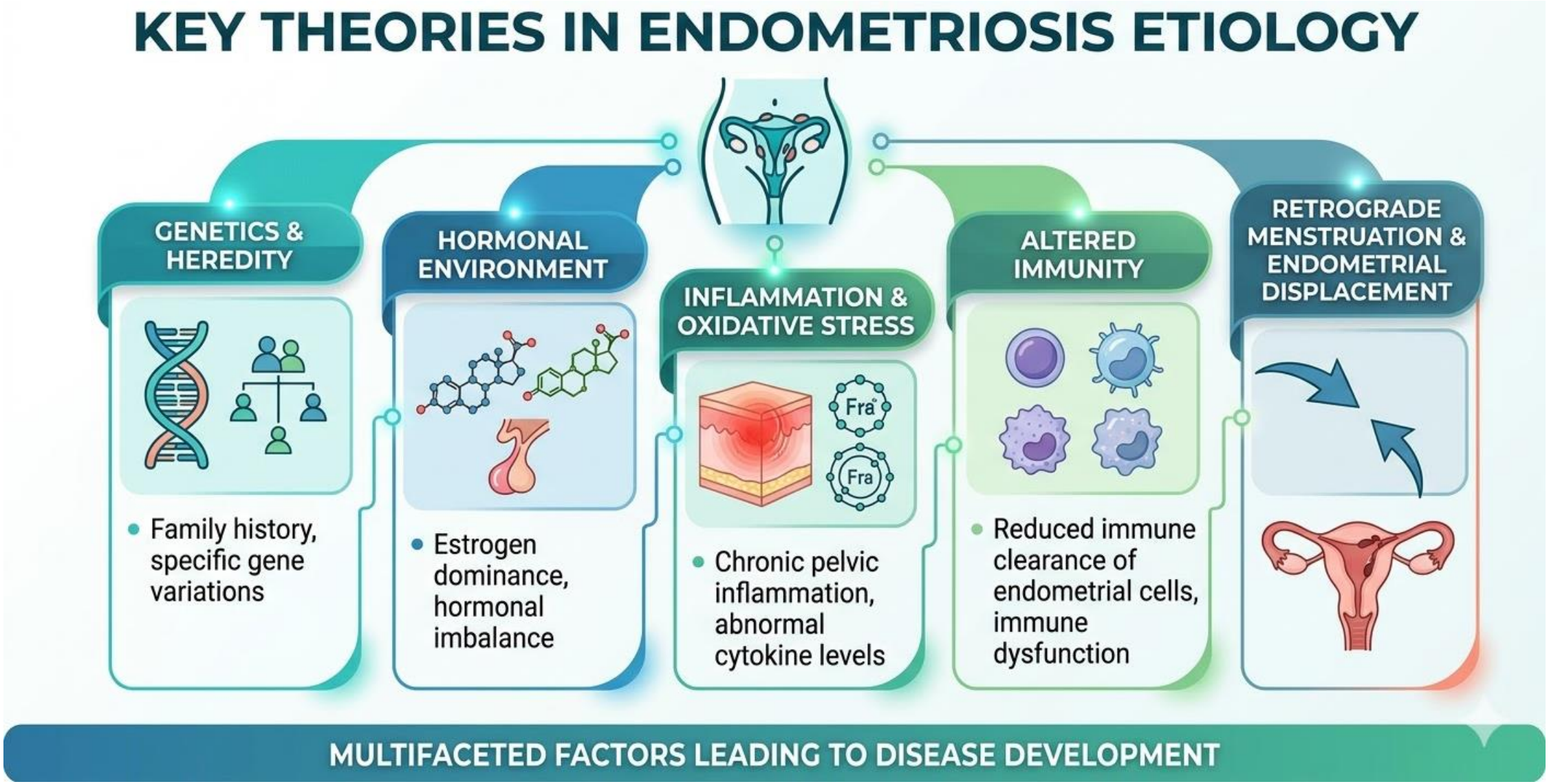

The Functional Medicine Angle

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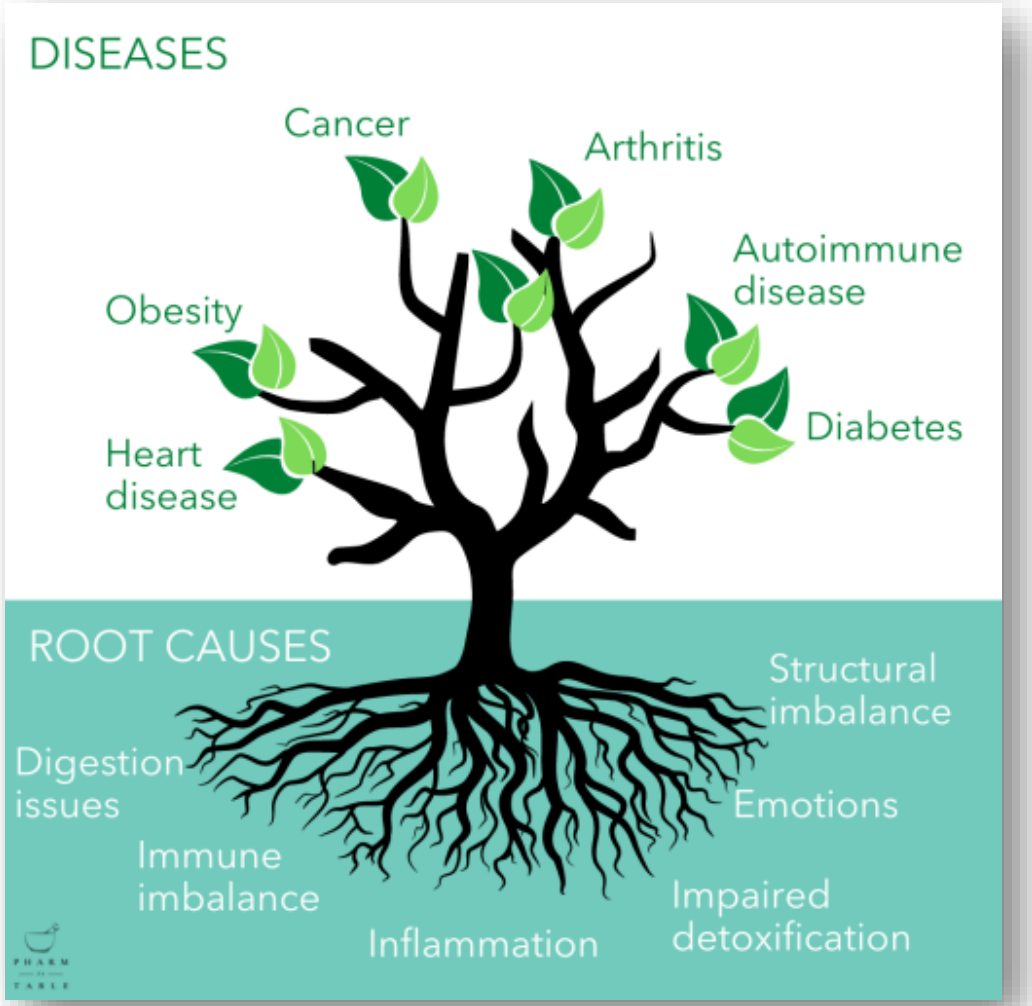
- What are the root causes here?
  - Estrogen excess/dominance
  - Chronic Inflammation
  - Chronic Immune system activation

- Estrogen Dominance
  - Imbalance of Estrogen (↑) and Progesterone (↓)

- Increased Estrogen?
  - Increased production:
    - Alcohol, Sugar/stachy foods, Obesity, PCOS (chronic anovulation)
  - Decreased elimination:
    - Liver dysfunction → Generalized detoxification issues
    - Gut dysfunction → "estrogen recycling"

- Decreased Progesterone?
  - Not ovulating
  - Stress!
    - The "Pregnenolone steal"
    - Direct suppression of HPA axis
    - Insulin Resistance

THERE'S A LOT HAPPENING IN THE GUT!



How Do We Diagnose It?

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- History
- Physical exam
- Imaging
  - US or MRI
- Labs?
  - CA125 and IL-6 (not helpful)
  - Next: MicroRNA
- Empiric medical treatment
  - Success does not confirm diagnosis
- Surgical diagnosis = Gold Standard

- **Must be careful to rule out other causes!**

NOVEL DIAGNOSTICS

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HerResolve™: A New Blood Test for Endo

heranova.com →

A multi-omic, blood-based assay by HerAnova™ Lifesciences that integrates molecular biomarkers with AI to non-invasively detect endometriosis — published in the *Journal of Minimally Invasive Gynecology* (JMIG), March 2026.

Biomarker Panel

3 Serum microRNA biomarkers
miRNA panel

3 Protein biomarkers
Inflammation-linked analytes

1 Steroid hormone
Hormonal signal integration

Patient age & BMI
Clinical covariates

Clinical Performance

- **Sensitivity: 80%**
- **Specificity: 97.5%**
- AUC: 0.944 (95% CI: 0.892–0.996)
- **Identified 61.5% of endo cases missed by ultrasound & MRI**
- Menstrual phase-independent performance
- Validated across 11 clinical sites (US, Europe) in 298 women
- Institutions: Johns Hopkins, Kaiser Permanente
- Available now at select US IVF & reproductive medicine centers

Treatment

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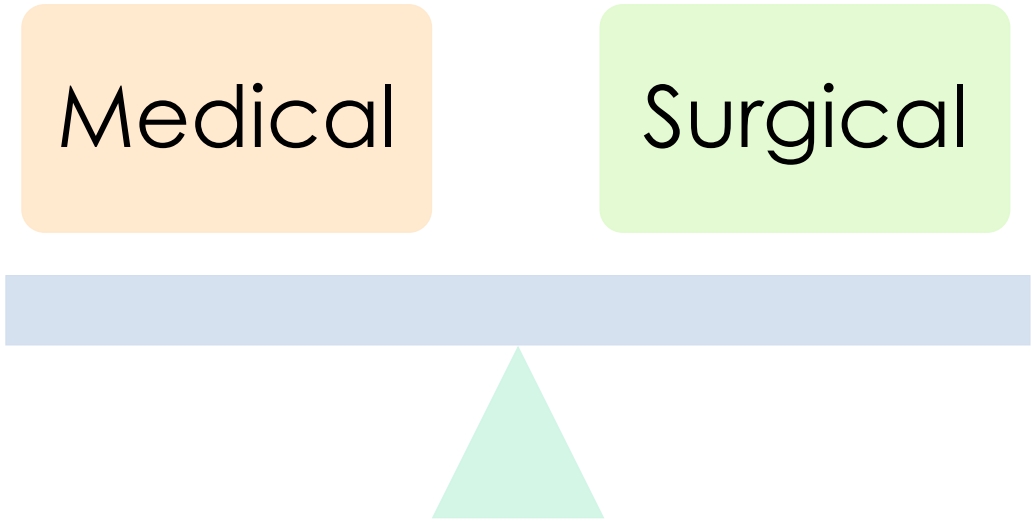
"Endometriosis should be viewed as a chronic disease that requires a lifelong management plan with the goal of maximizing the use of medical treatment and avoiding repeated surgical procedures."

- ASRM Practice Committee



asrm
American Society for Reproductive Medicine

What If We Do Nothing?

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- In studies where second-look laparoscopy was performed 6 to 12 months after a diagnostic laparoscopy confirmed endometriosis (but no treatment was performed), patients' disease…
  - progressed in 29 to 45 percent
  - regressed in 22 to 29 percent,
  - remained stable in 33 to 42 percent

Prospective, randomized, double-blind, controlled trial of laser laparoscopy in the treatment of pelvic pain associated with minimal, mild, and moderate endometriosis. Sutton CJ, Ewen SP, Whitelaw N, Haines P. Fertil Steril. 1994;62(4):696.

Lifestyle / Functional

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- General Approach
  - The problems:
    1. The Endometriosis
    2. The body's response to the Endometriosis… That response is one of chronic inflammation and immune system upregulation.
  - The goals:
    1. Support your body's natural capacity to deal with inflammation.
    2. Don't add fuel to the fire (in terms of estrogen or other sources of inflammation).

1. Support: Better Sleep, Parasympathetic Practices, Excellent gut health, Supplements
2. Avoid: Stress, Inflammatory foods, Toxins/Xenoestrogens, Blood sugar spikes

Inflammation From The Gut

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The Journal of Nutrition
Nutrition and Disease

Glycemic Index, Glycemic Load, Fiber, Gluten Intake and Risk of Laparoscopic Confirmed Endometriosis in Premenopausal Women

Naomi RM Schwartz,[1] Myriam C Afeiche,[2] Kathryn L Terry,[3,4] Leslie V Farland,[5] Jorge E C... Stacey A Missmer,[4,8,9] and Holly R Harris[10,11]

[1]CHOICE Institute, Department of Pharmacy, School of Pharmacy, University of Washington, Seattle, WA, USA; [2]Nestl... Lausanne, Switzerland; [3]Obstetrics and Gynecology Epidemiology Center, Brigham and Women's Hospital, Boston, MA... [4]Department of Epidemiology, Harvard TH Chan School of Public Health, Boston, MA, USA; [5]Department of Epidemi... Biostatistics, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ, USA; [6]Channing D... Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, USA; [7]D... Nutrition, Harvard TH Chan School of Public Health, Boston, MA, USA; [8]Division of Adolescent and Young Adult Med... of Medicine, Boston Children's Hospital and Harvard Medical School, Boston, MA, USA; [9]Department of Obstetrics, Gy... Reproductive Biology, College of Human Medicine, Michigan State University, Grand Rapids, MI, USA; [10]Program in Ep... Division of Public Health Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA, USA; and [11]Department of Epi... School of Public Health, University of Washington, Seattle, WA, USA

ABSTRACT

Background: The etiology of endometriosis is not well understood. Limited evidence suggests that d... influence risk, but prospective data related to carbohydrate, fiber, and gluten consumption are scarce. ... recommendations concerning fiber, gluten intake, and endometriosis are pervasive in the lay literature.

Objectives: We aimed to investigate the associations of carbohydrate quality [glycemic index (GI) a... load (GL)], fiber intake (total, legume, vegetable, cruciferous vegetable, fruit, cereal), and gluten intake w... laparoscopically confirmed endometriosis.

Methods: This was a prospective cohort study using data collected from 81,961 premenopausal women in t... Health Study II (mean age = 36 y in 1991). Diet was assessed with a validated FFQ every 4 y. Cox proportion... models were used to calculate rate ratios (RRs) and 95% CIs.

Results: A total of 3810 incident cases of laparoscopically confirmed endometriosis were reported over 24 y... up. Women in the highest quintile of GI had 12% (95% CI: 1.01, 1.23; $P_{trend} = 0.03$) higher risk of endometriosis ... than those in the lowest quintile. Total vegetable and cruciferous vegetable fiber intakes were also associated w... risk (highest compared with lowest quintile RR: 1.13; 95% CI: 1.02, 1.24; $P_{trend} = 0.004$ and RR: 1.17; 95% ... 1.29; $P_{trend} = 0.02$, respectively). Higher intake of fruit fiber was associated with lower risk of endometriosis... association was not significant after adjusting for the Alternative Healthy Eating Index. Gluten intake was also ass... with lower risk (highest compared with lowest quintile RR: 0.91; 95% CI: 0.80, 1.02; $P_{trend} = 0.01$), but these ... were not consistent in direction nor statistical significance across sensitivity analyses. No association was obser... GL or total, legume, or cereal fiber intake.

Conclusions: Our findings suggest that carbohydrate quality and specific types of fiber—total vegetabl... cruciferous vegetable fiber—are associated with endometriosis diagnosis in premenopausal women. These result... indicate it is unlikely that gluten intake is a strong factor in the etiology or symptomatology of endometriosis. J... 2022;152:2088–2096.

Keywords: endometriosis, diet, fiber, gluten, nutrition

> Minerva Chir. 2012 Dec;67(6):499-504.

Gluten-free diet: a new strategy for management of painful endometriosis related symptoms?

M Marziali [1], M Venza, S Lazzaro, A Lazzaro, C Micossi, V M Stolfi

Affiliations + expand

PMID: 23334113

Abstract

Aim: Pelvic pain affects 4% to 39% of women and accounts for 10-40% of all outpatient gynecologic visits. The etiology of painful endometriosis-related has not been fully delineated. No studies have been published concerning gluten-free diet administered to achieved relief of painful symptoms endometriosis-related. The aim of this retrospective study was to evaluate the effectiveness for the outcomes of endometriosis-related pain and quality of life of gluten-free diet in a follow-up of 12 months in patients with chronic pelvic pain endometriosis-related.

Methods: Two hundred seven patients with severe painful endometriosis-related symptoms entered the study. At enrolment time, the baseline values of painful symptoms were assessed by Visual Analogue Scale (VAS) for dysmenorrhoea, non-menstrual pelvic pain, and dyspareunia. According to VAS, pain severity was scored from 0-10; 0 indicating the absence of pain, and 1-4, 5-7 and 8-10 mild, moderate and severe respectively. A gluten-free diet was submitted to all patients and a new evaluation was performed after 12 months of diet. Student t test was used for statistical analysis.

Results: At 12 month follow-up, 156 patients (75%) reported statistically significant change in painful symptoms (P<0.005), 51 patients (25%) reported not improvement of symptoms. No patients reported worsening of pain. A considerable increase of scores for all domains of physical functioning, general health perception, vitality, social functioning, and mental health was observed in all patients (P<0.005).

Conclusion: In our experience, painful symptoms of endometriosis decrease after 12 months of gluten free diet.

> J Altern Complement Med. 2021 Sep;27(9):771-777. doi: 10.1089/acm.2021.0068. Epub 2021 Jun 23.

Dietary Practices of Women with Endometriosis: A Cross-Sectional Survey

Mike Armour [1 2], Alexandra Middleton [3], Siew Lim [4], Justin Sinclair [1], David Varjabedian [1], Caroline A Smith [1 2]

Affiliations + expand

PMID: 34161144 DOI: 10.1089/acm.2021.0068

Abstract

ckground: Endometriosis causes deleterious effects on the lives of sufferers across multiple ...mains impacting quality of life. Commonly utilized pharmaceutical interventions offer suboptimal ...icacy in addition to potentially intolerable side effects for many women. There is some evidence ...dietary therapies reducing endometriosis symptoms, but little data on dietary ...ferences/strategies used, and their impact, in a community setting. ***Methods:*** A cross-sectional ...e survey was conducted between October and December 2017 to investigate the self-...agement strategies employed by women with endometriosis. Participants were aged 18-45 ...s, living in Australia, and had a surgically confirmed diagnosis of endometriosis. ***Results:*** Four ...red eighty-four responses were included for analysis, with 76% of women reporting the use of ...al self-management strategies within the last 6 months. Of these, 44% of respondents ...ed using dietary strategies for symptom management. Reducing or eliminating gluten, ...ng or eliminating dairy, and the low-fermentable oligosaccharides, disaccharides, ...accharides and polyols (FODMAP) diet were the most commonly reported dietary strategies ...l. Respondents reported a 6.4/10 effectiveness score for reduction in pelvic pain with dietary ...s, with no difference in pain reduction between the various diets used. Furthermore, women ...orted significant improvements in comorbidities such as gastrointestinal (GI) disturbance ...nausea and vomiting (15%), and fatigue (15%). ***Conclusions:*** Dietary modifications are a ...mmon self-management strategy employed by people with endometriosis, with the greatest ...eported on GI symptoms. Reducing or eliminating gluten, dairy, or FODMAPs or a ...tion of these was the most common strategy. No single diet appeared to provide greater ...rted benefits than others.

...s: diet; endometriosis; pelvic pain; self-management.

Gut Health & Estrogen Dominance

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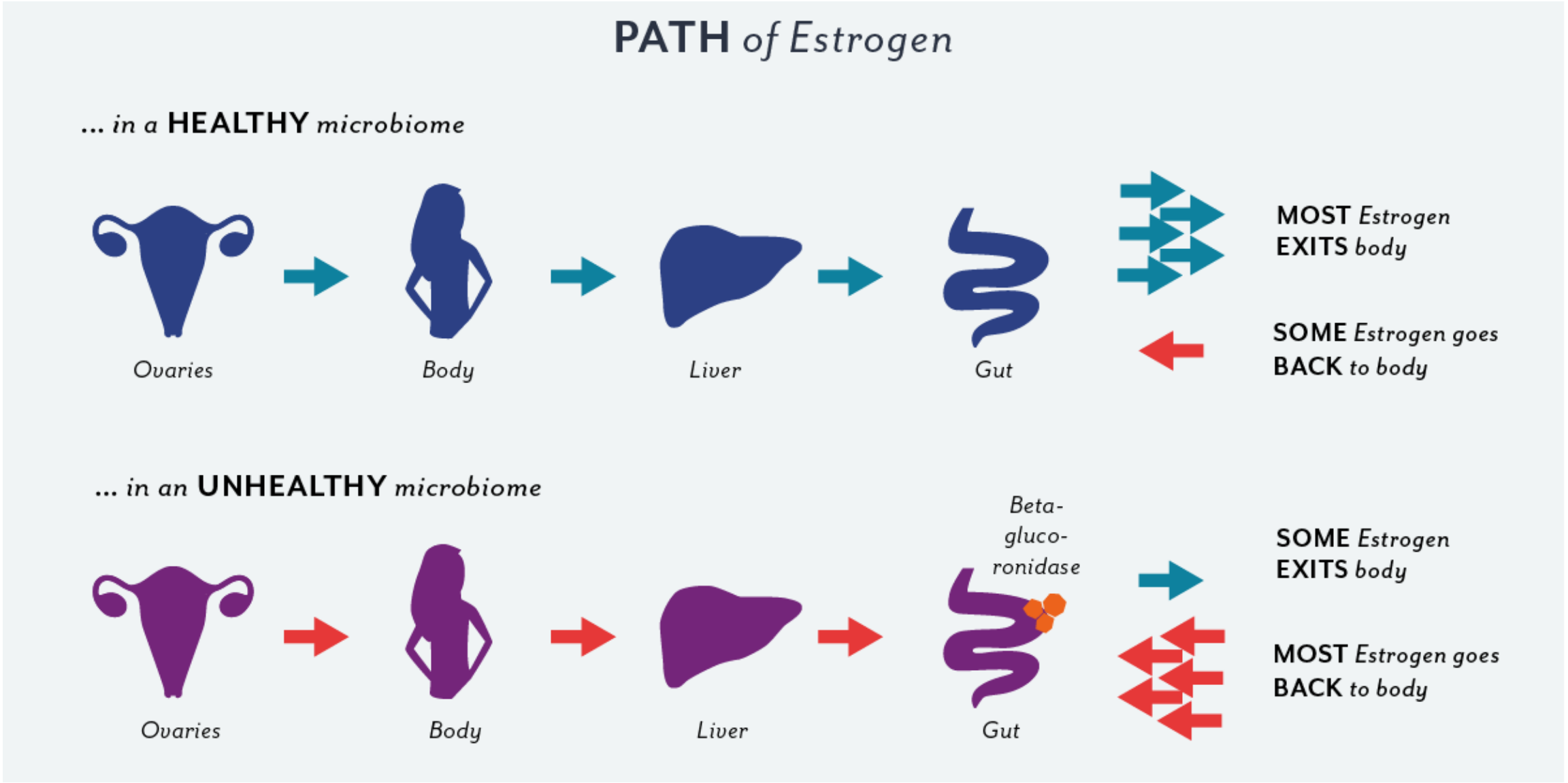

Medical Management

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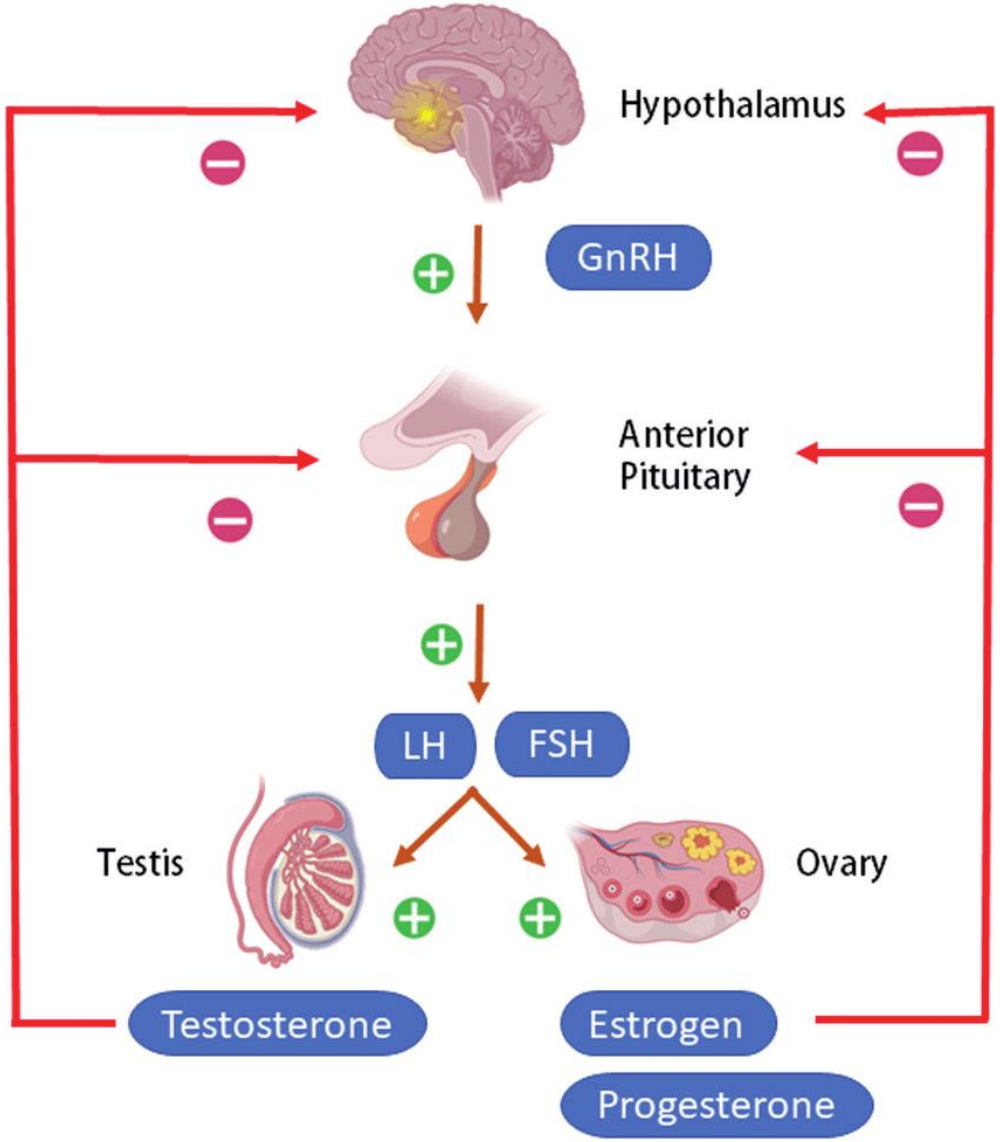
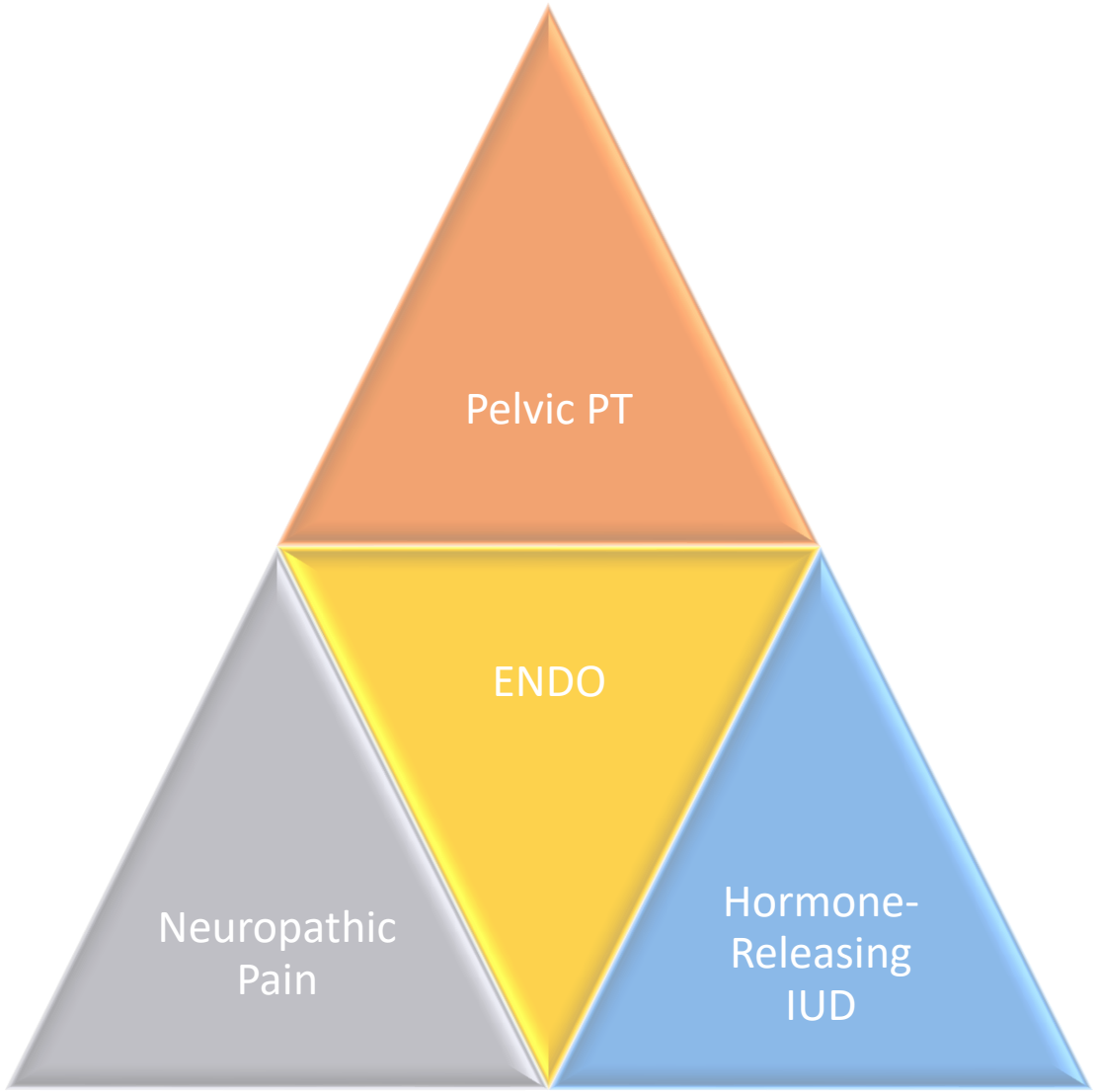
- First Line ("regulate" estrogen)
  - Combined oral contraceptive pills (OCPs)
  - Progesterone-only options (pills, IM shot)
- Next Line ("suppress" estrogen)
  - GNRH Analogs
    - Agonists (Lupron)
    - Antagonists (Orilissa)
- Last Line
  - Danazol, Aromatase inhibitors



Adjuncts to Medical Management

Boulder Community Health



Surgical Management

Boulder Community Health

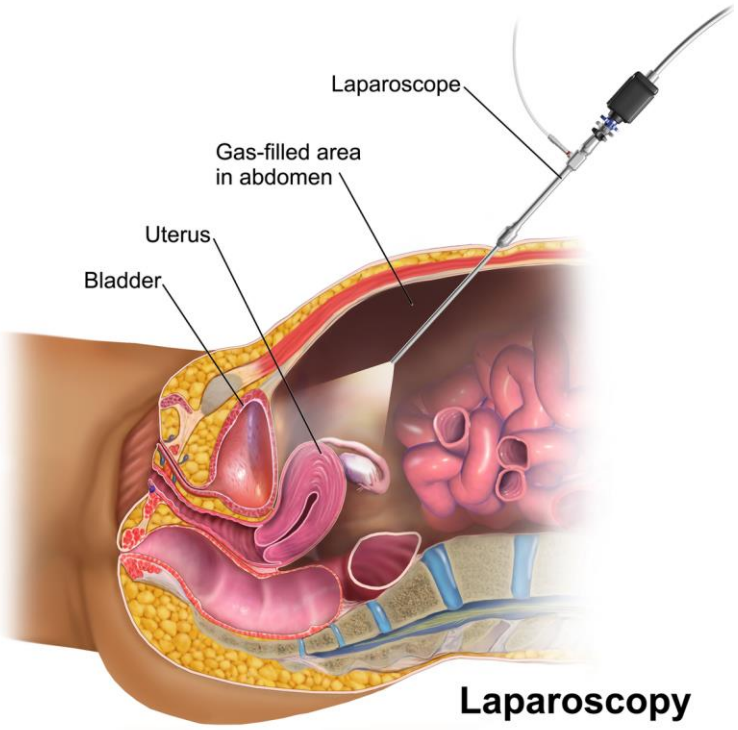
- How do we decide when to do surgery?
- What is the surgery and what is done during it?
- How successful is it at improving symptoms?
- How often do patients need repeat operations?

How do we decide when to do surgery?

What is the surgery and what is done during it?

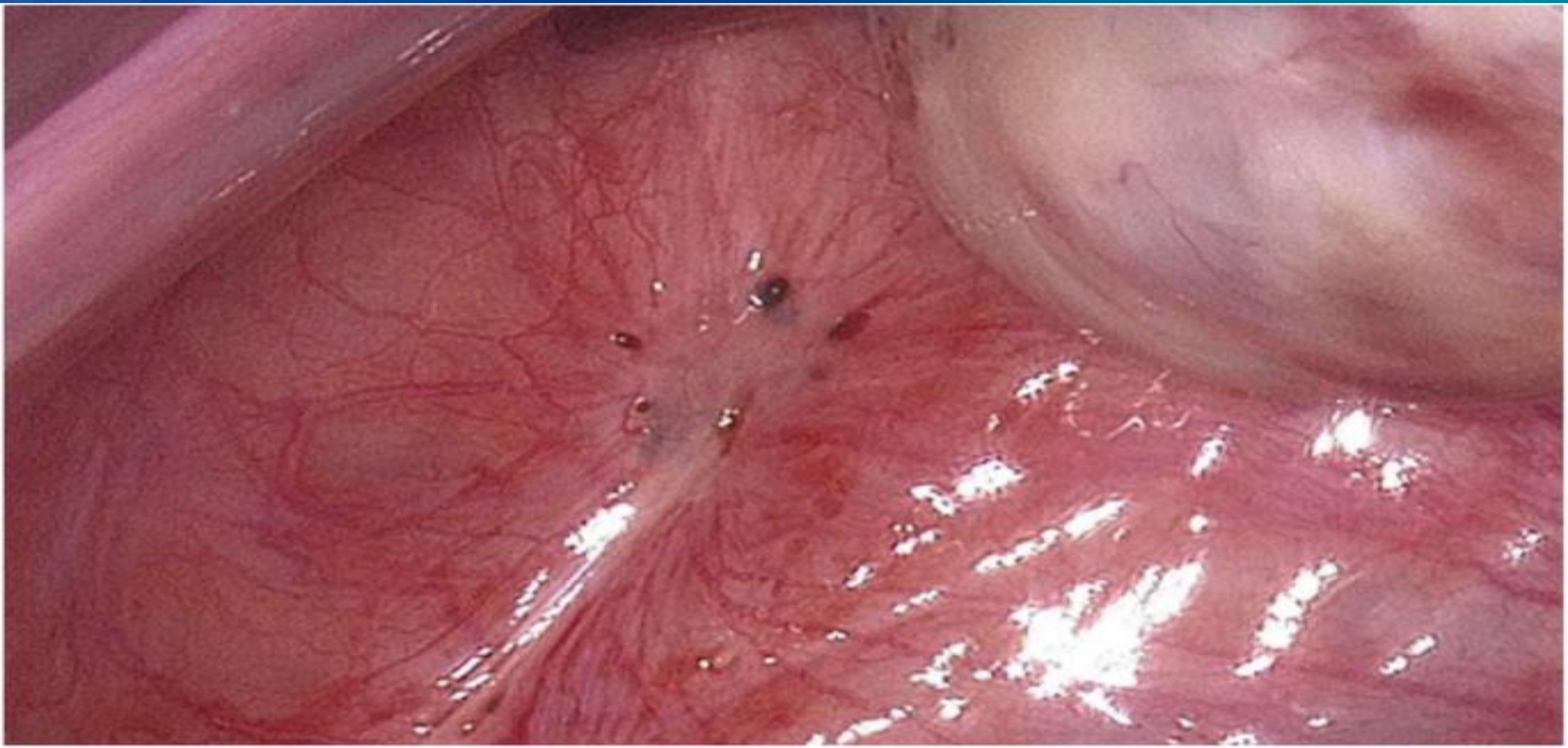
Diagnostic Laparoscopy

Boulder Community Health



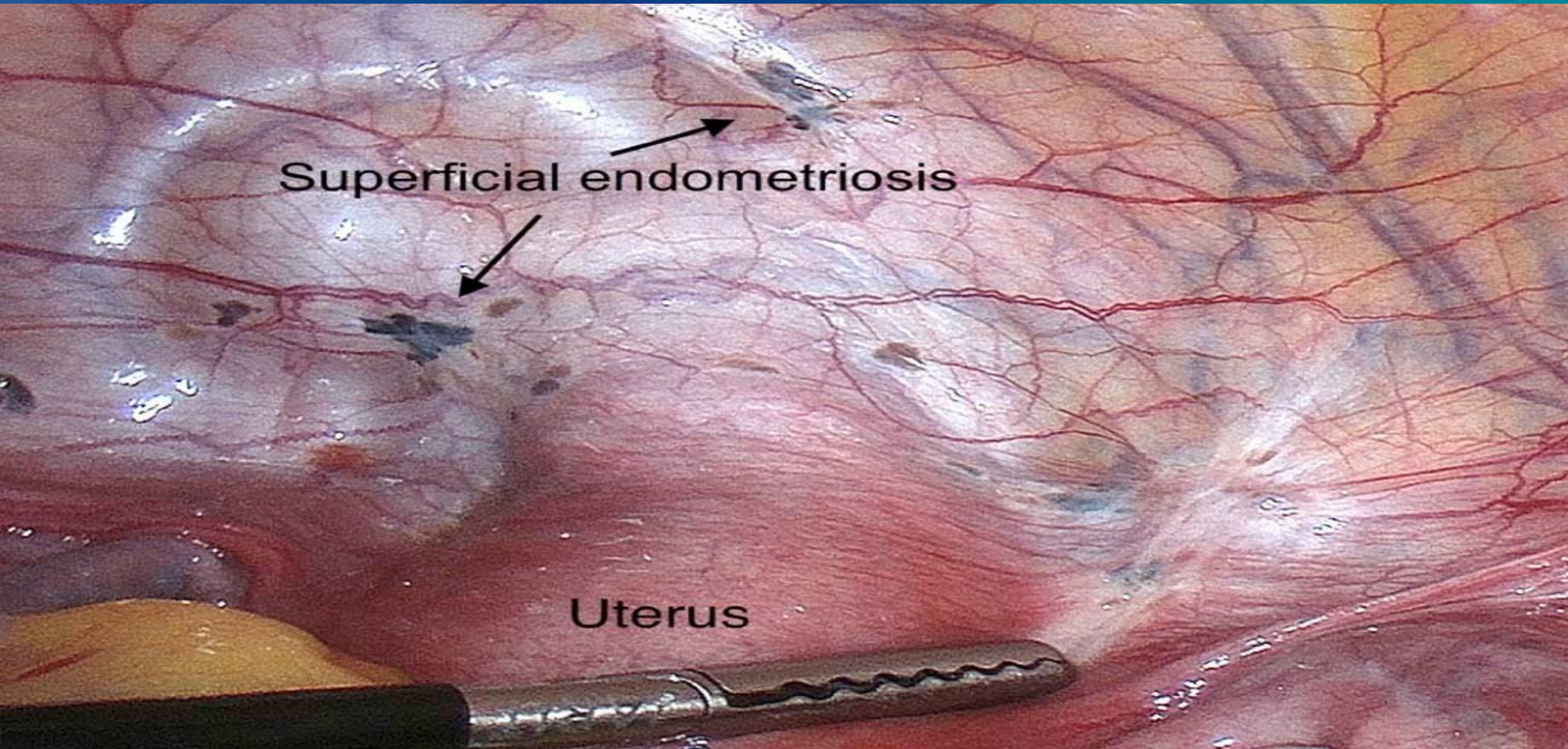
Identifying & Treating Lesions

Boulder Community Health



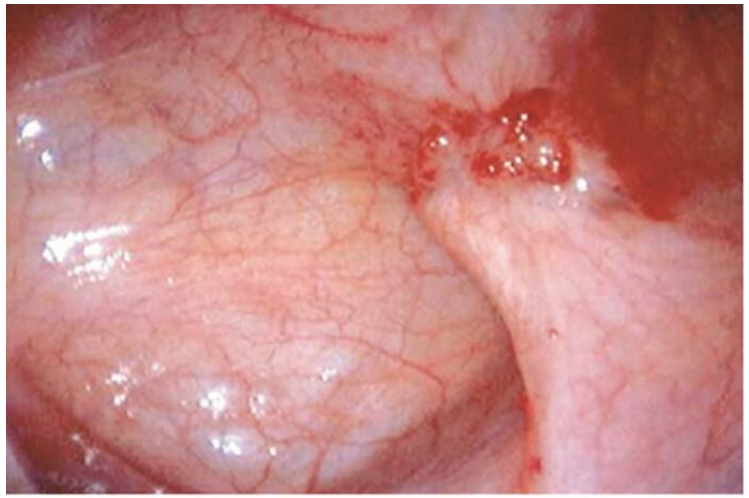
Identifying & Treating Lesions

Boulder Community Health

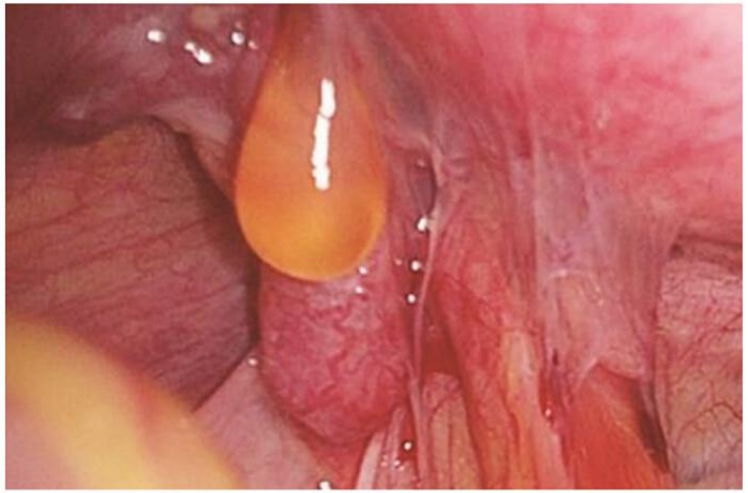


Identifying & Treating Lesions

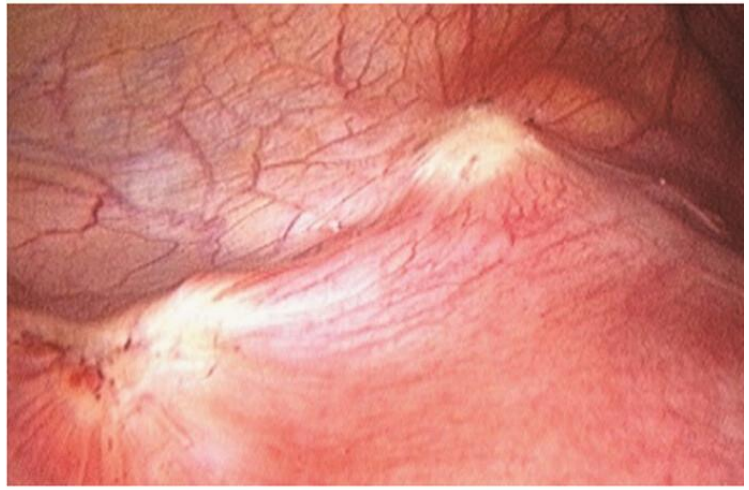
Boulder Community Health



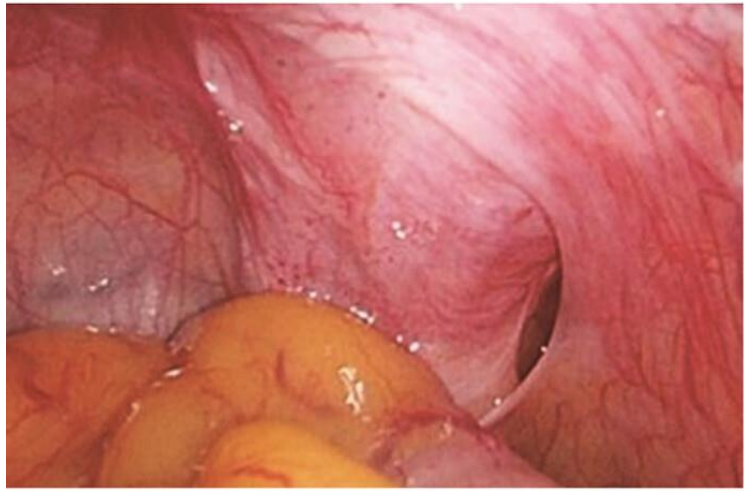
red



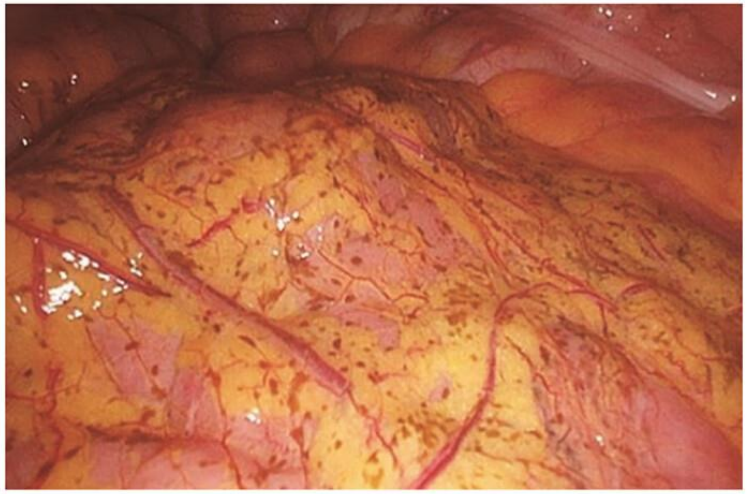
clear



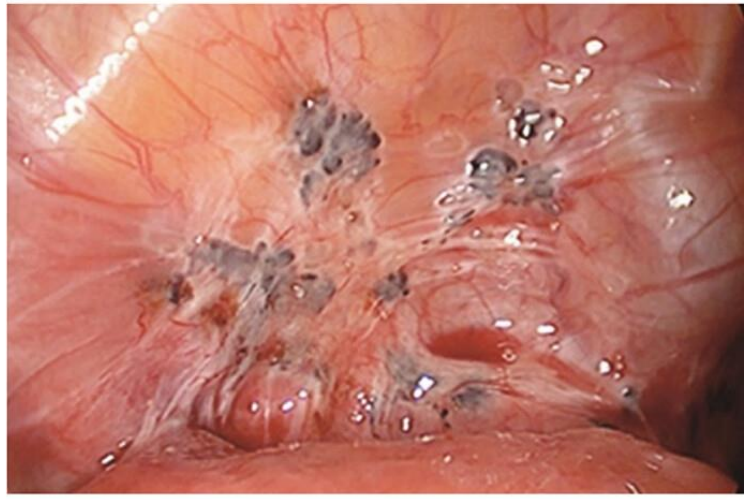
white



peritoneal defect



yellow-brown

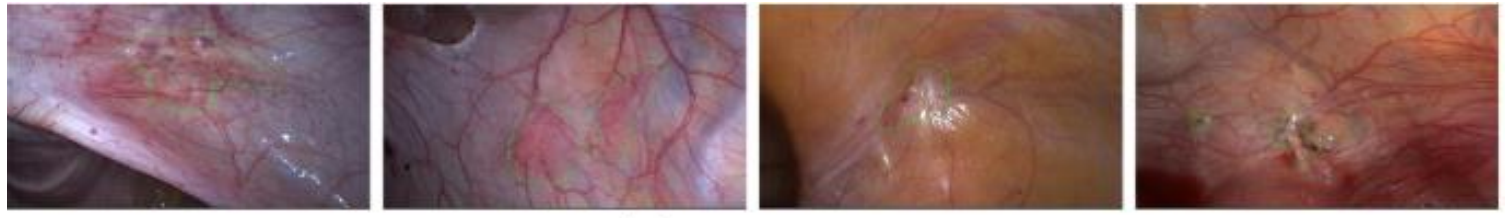


black

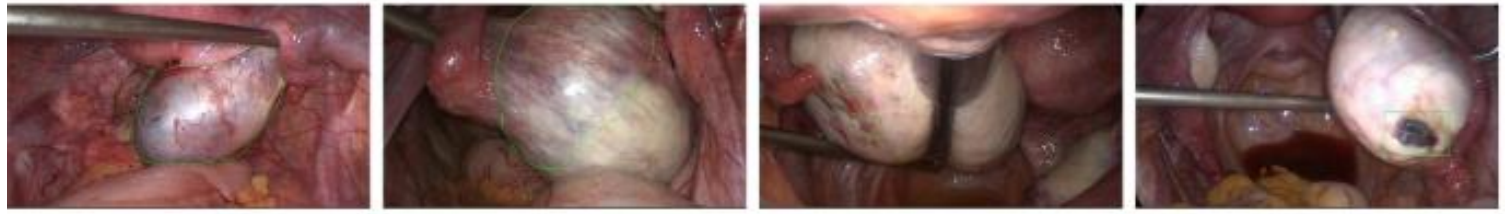
Endometriosis Surgery

Boulder Community Health

Disease
≠
Symptoms

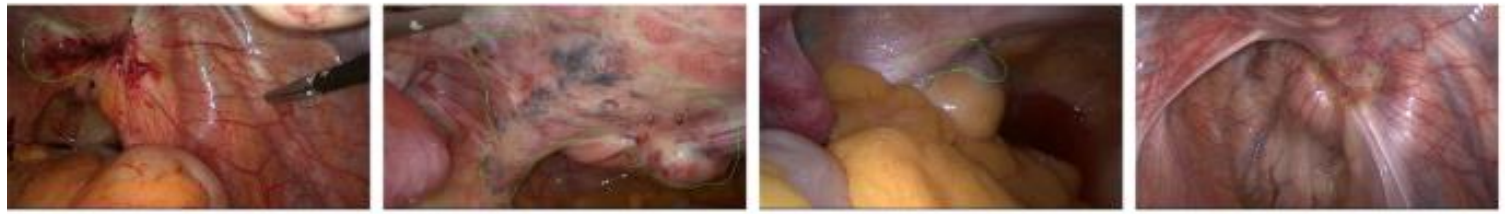


(a) Peritoneum



(b) Ovary

(c) Uterus



(d) Deep Infiltrating Endometriosis (DIE)

Excision
Vs.
Ablation

Conservative
Vs.
Aggressive

Hysterectomy?
Oophorectomy?

Hysterectomy & Oophorectomy

Boulder Community Health

Conservative versus definitive surgery for endometriosis

Surgery	n	Rate of reoperation (%)	
		Two years	Seven years
Laparoscopy, both ovaries preserved	96	21	59
Hysterectomy, both ovaries preserved	28	8	22
Hysterectomy, one ovary removed	19	0	24
Hysterectomy, both ovaries removed	50	4	8

Data from: Shakiba K, Bena JF, McGill KM, et al. Surgical treatment of endometriosis: a 7-year follow-up on the requirement for further surgery. Obstet Gynecol 2008; 111:1285.

*** If ovaries are removed, HRT is an option. This doesn't seem to stimulate endo, but unclear if it fully mitigates the other health risks of early oophorectomy.**

Outcomes from Laparoscopies

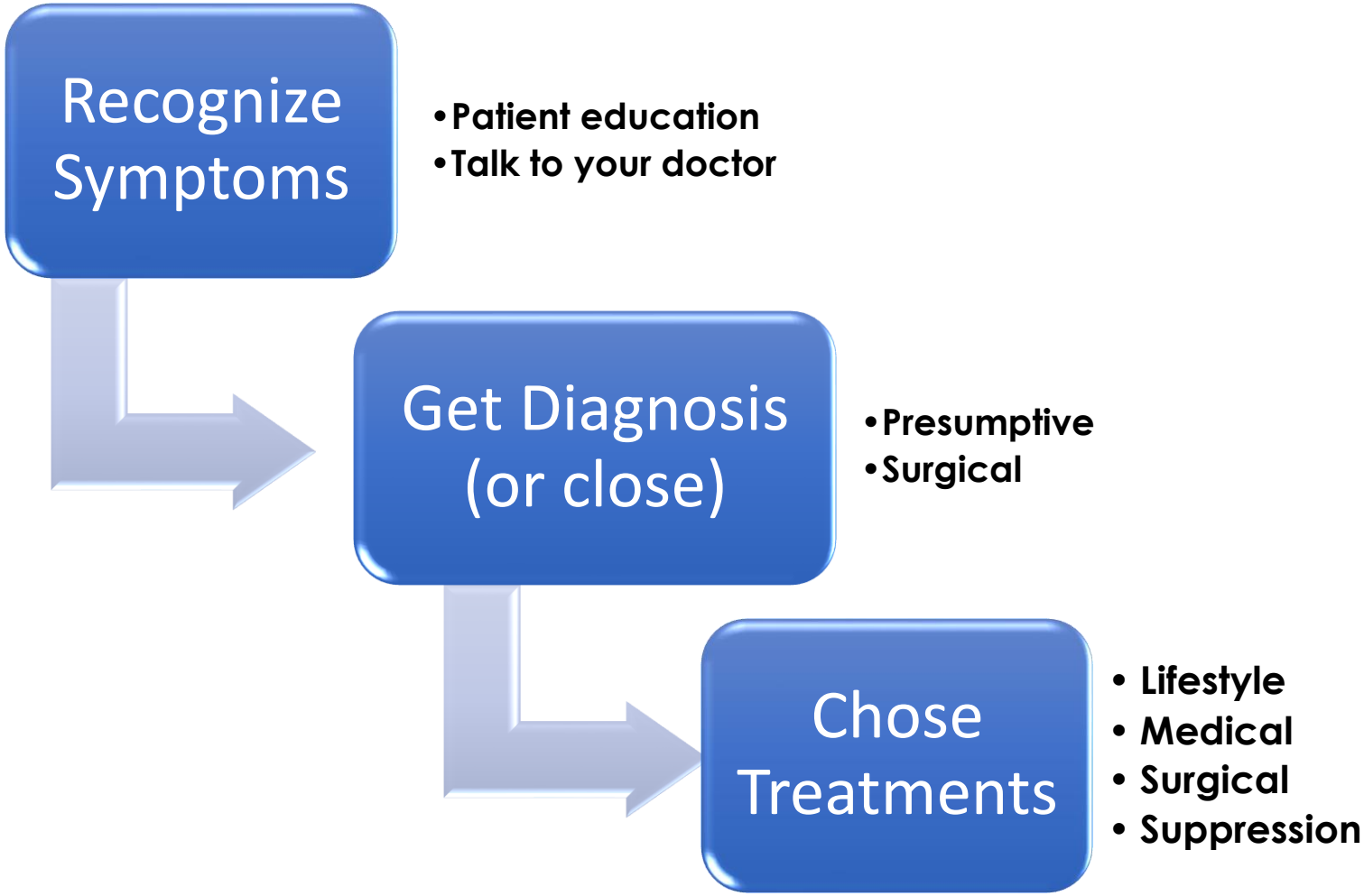
Boulder Community Health

- Pain relief is achieved in approximately 75 percent of patients who undergo laparoscopic ablation or excision of endometriosis. However, the risk of recurrence is estimated to be as high as 40 percent at 10 years follow-up, and approximately 20 percent of patients will undergo additional surgery within two years.

- A survey study of 154 patients who underwent surgery for endometriosis or chronic pelvic pain reported that 90 percent agreed or strongly agreed that choosing excisional surgery was the right decision, and 87 percent stated they would choose surgery again.

Conclusion:

Surgery does work. It should not be the only thing we rely upon. Suppression needs to be considered to prevent recurrence.


Recognize Symptoms
•Patient education
•Talk to your doctor
Get Diagnosis (or close)
•Presumptive
•Surgical
Chose Treatments
• Lifestyle
• Medical
• Surgical
• Suppression

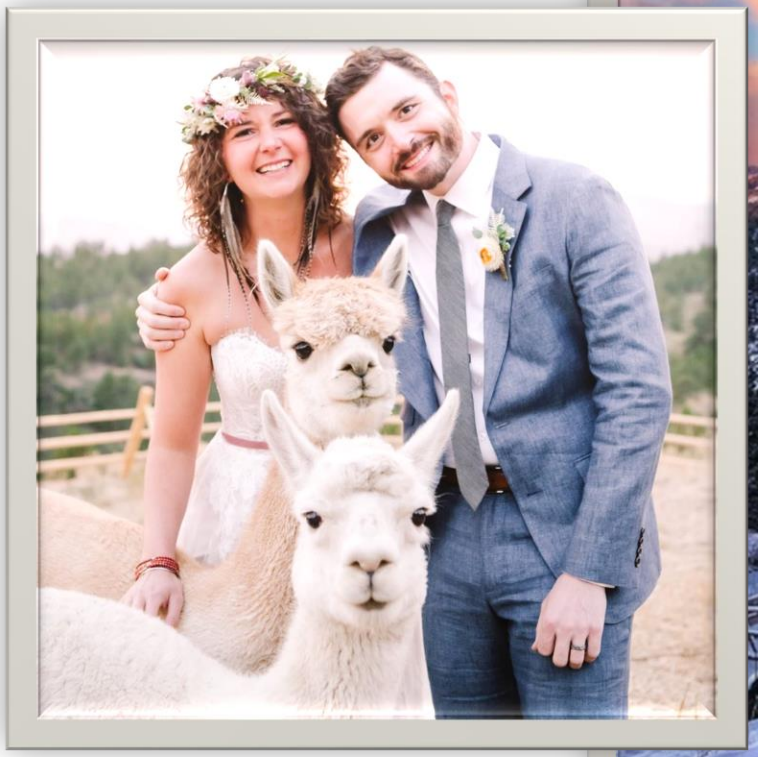
Conclusion

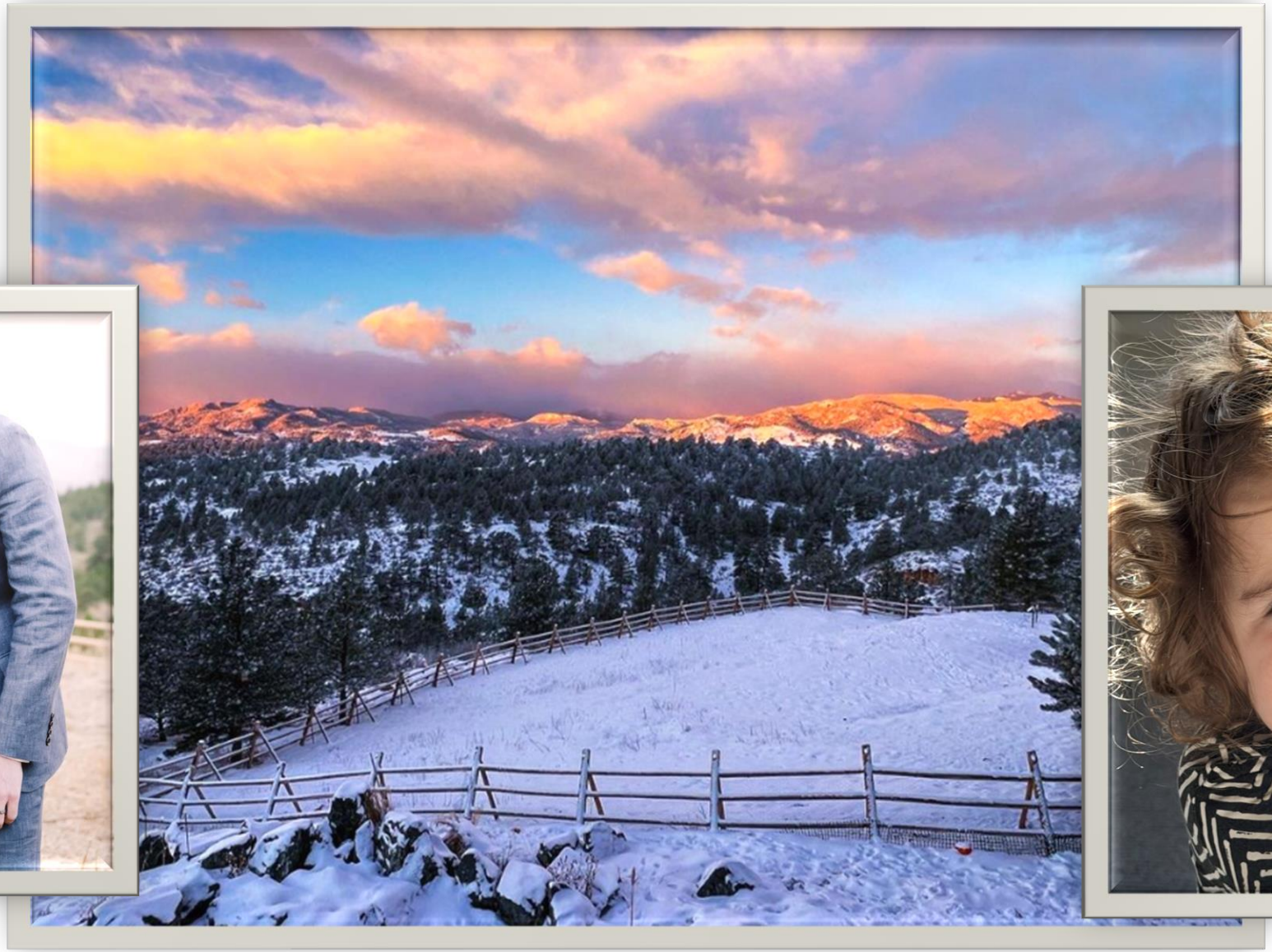
Boulder Community Health

- This can be a devastating, chronic disease.
- It is tragically under-diagnosed and under-treated.
- There are conservative, safe, lifestyle interventions which can help.
- There are medical and surgical options which can put this into remission so that you can have the normal, pain-free life you deserve!

Thank You!

Boulder Community Health





Resources

Boulder Community Health

- Endometriosis Association
  - www.endometriosisassn.org
- Endo Warriors
  - endowarriorssupport.com
- Aviva Romm, MD
  - avivaromm.com
- UpToDate
  - www.uptodate.com
- Institute for Functional Medicine
  - ifm.org

Endo Warriors
Support for Women with Endometriosis

UpToDate®

THE INSTITUTE FOR FUNCTIONAL MEDICINE®

ENDOMETRIOSIS ASSOCIATION
Education • Support • Research
Together We Make A Difference

aviva romm MD

Pelvic Pain? Painful Periods? Maybe It's Endometriosis

Jeremiah McNamara, MD
Boulder Women's Care
720-538-0624

Boulder Community Health