

# Pelvic Pain? Painful Periods? Maybe It's Endometriosis

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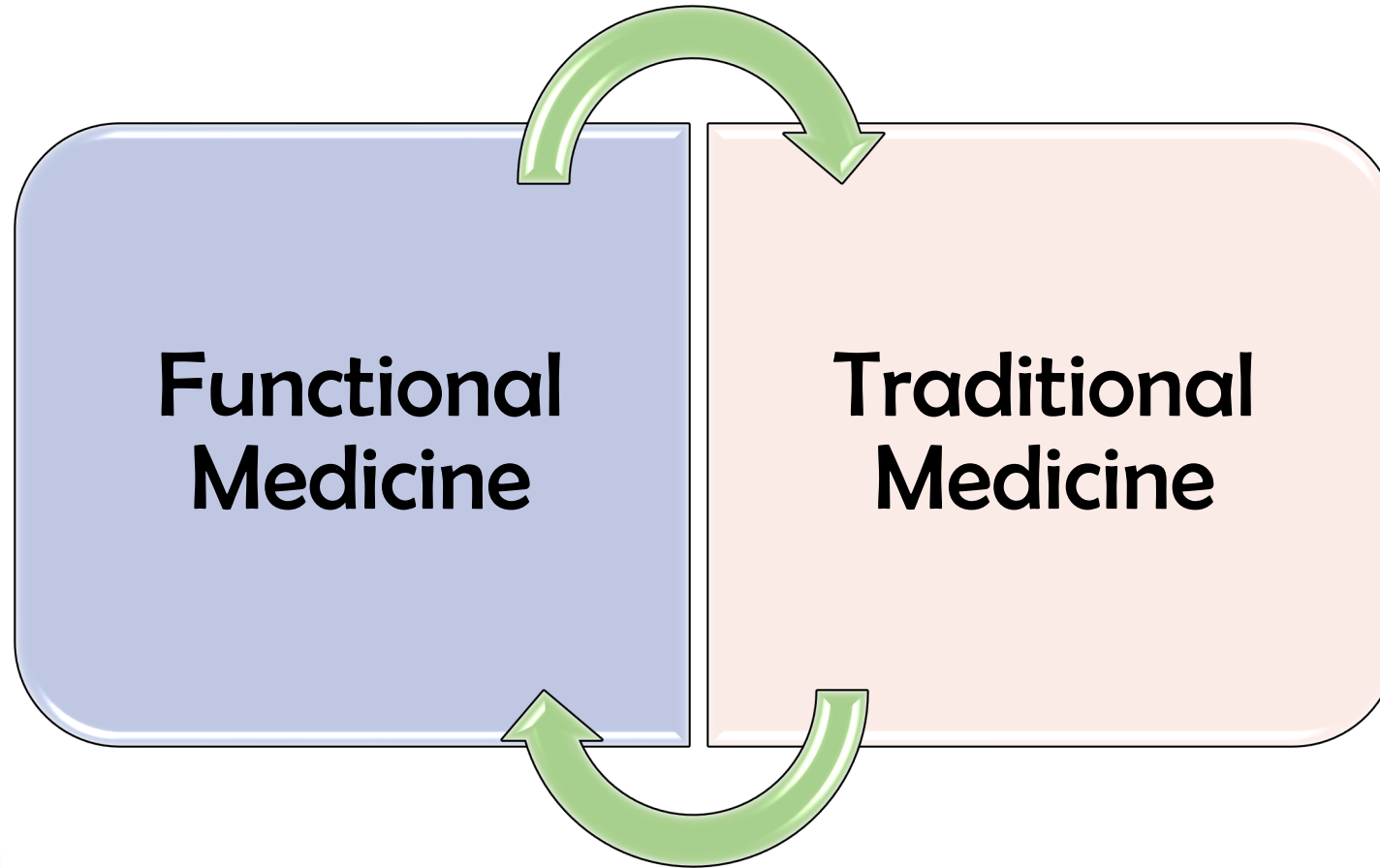
# Boulder Women's Care




OBSTETRICS




GYNECOLOGY



- 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




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?

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Kim Ryu

 **By Dani Blum**

July 18, 2022

 Well The New York Times

FAMILY

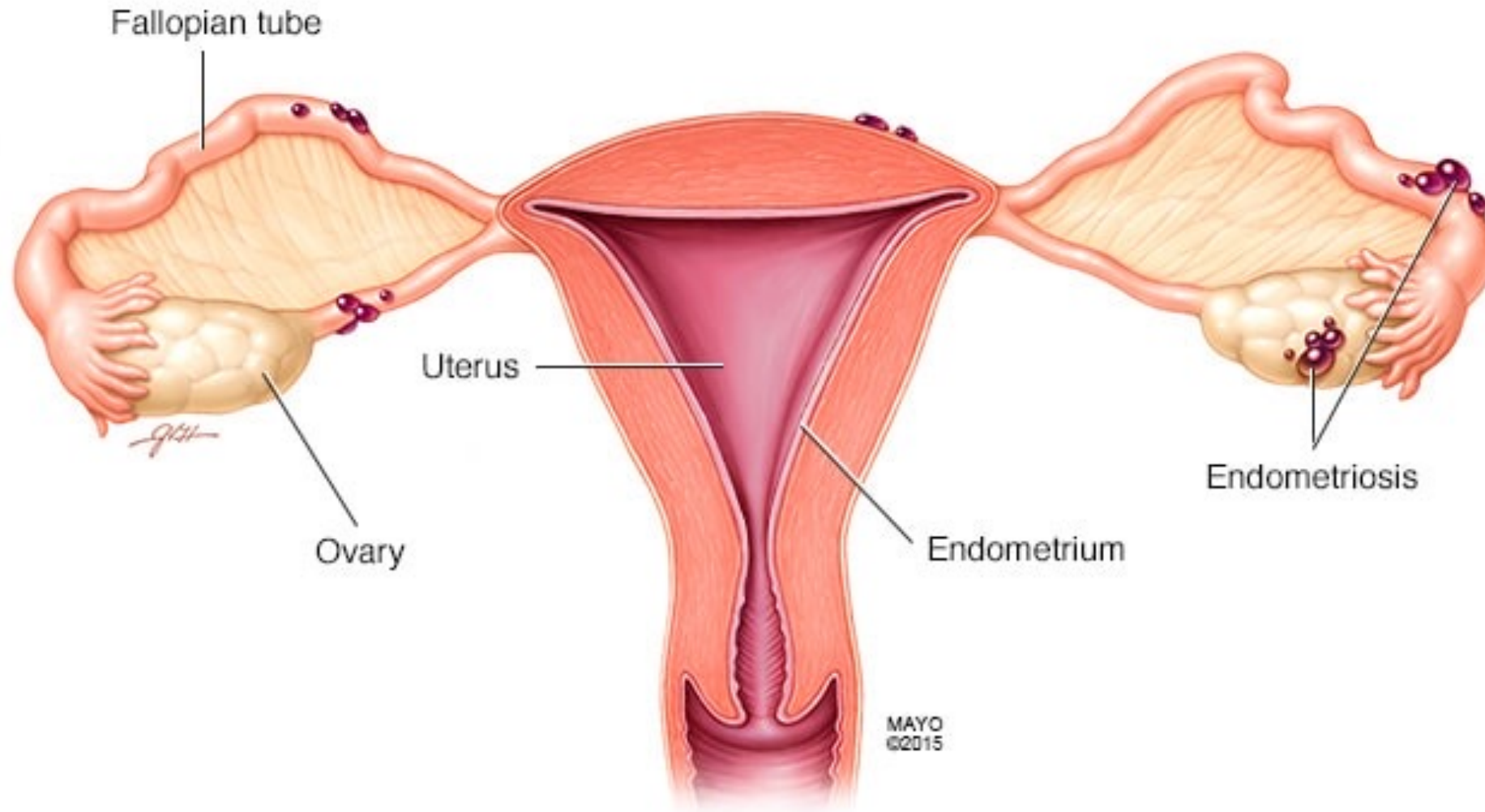
## Endometriosis Is Often Ignored in Teenage Girls

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



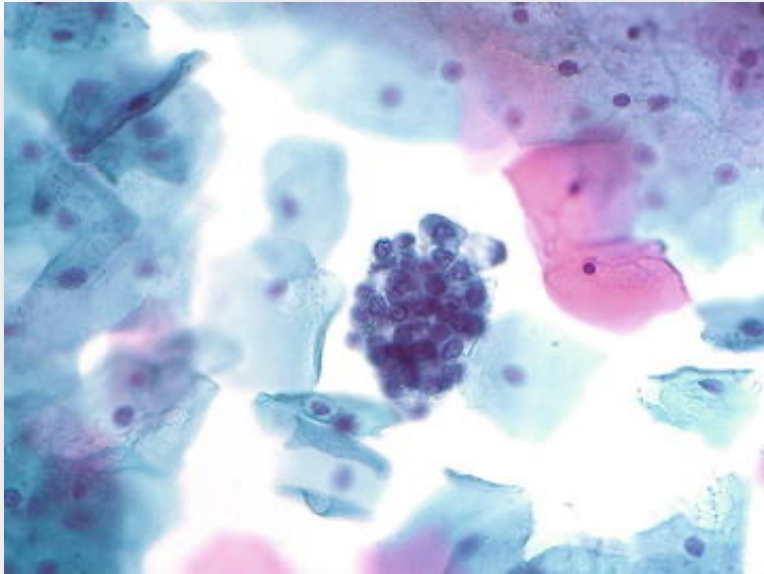
Christopher Silas Neal

# Endometriosis: What Is It?

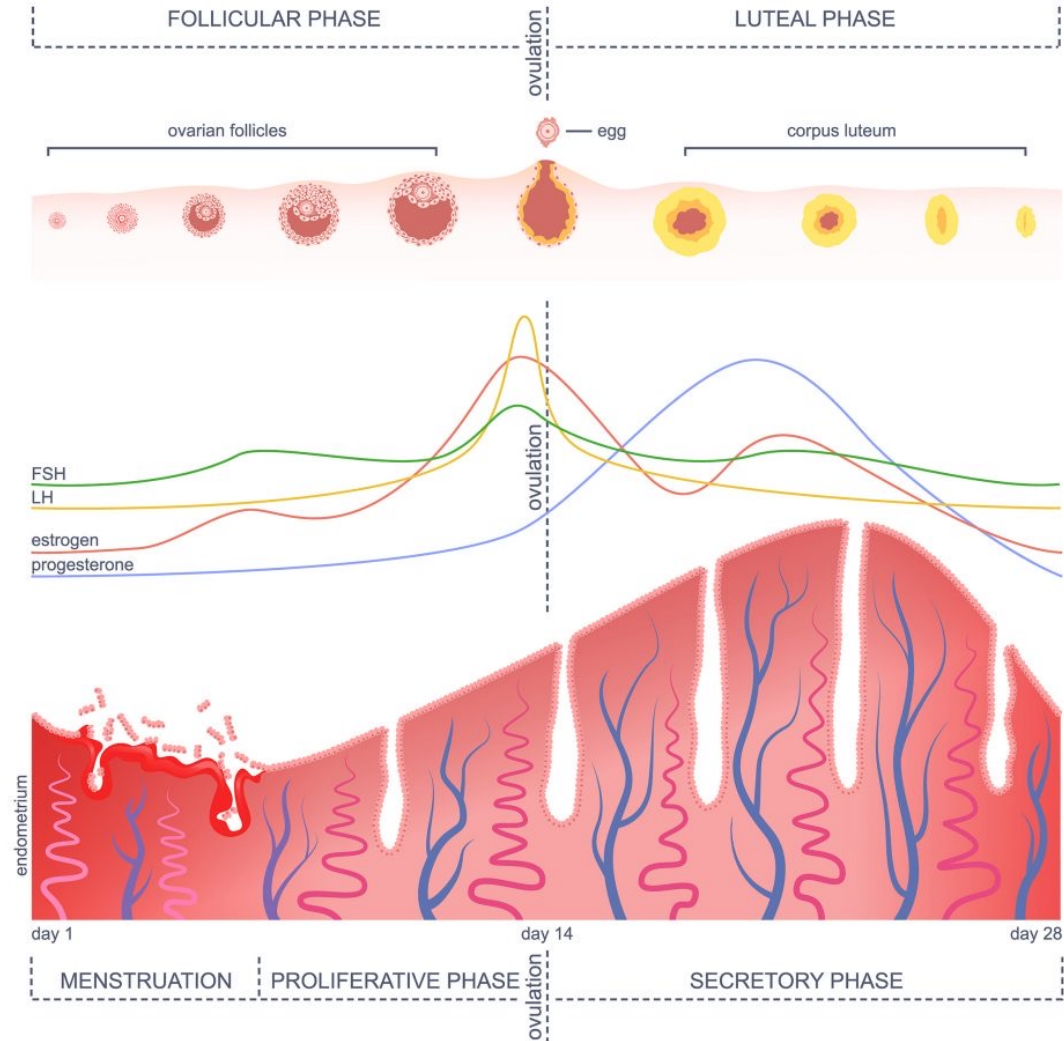


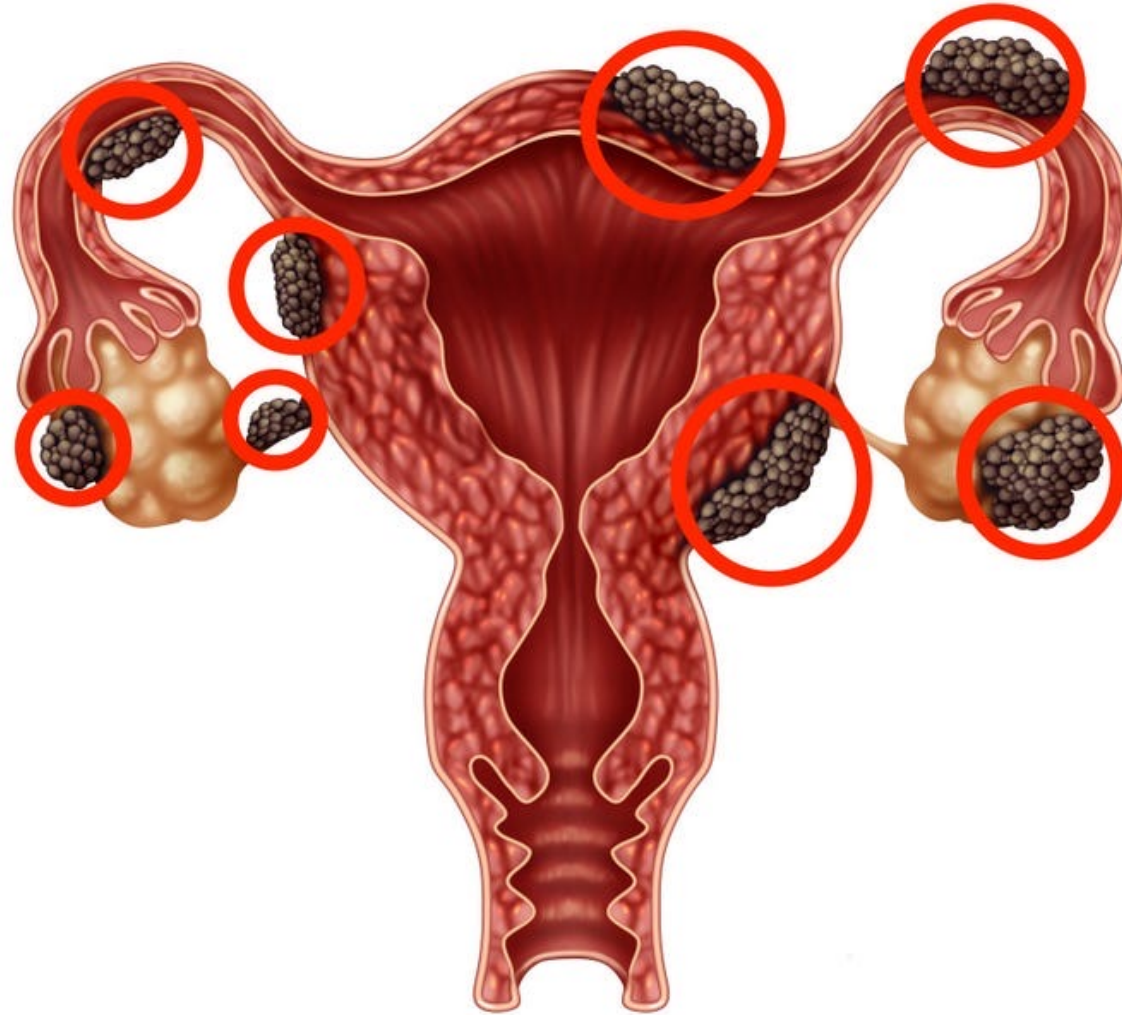


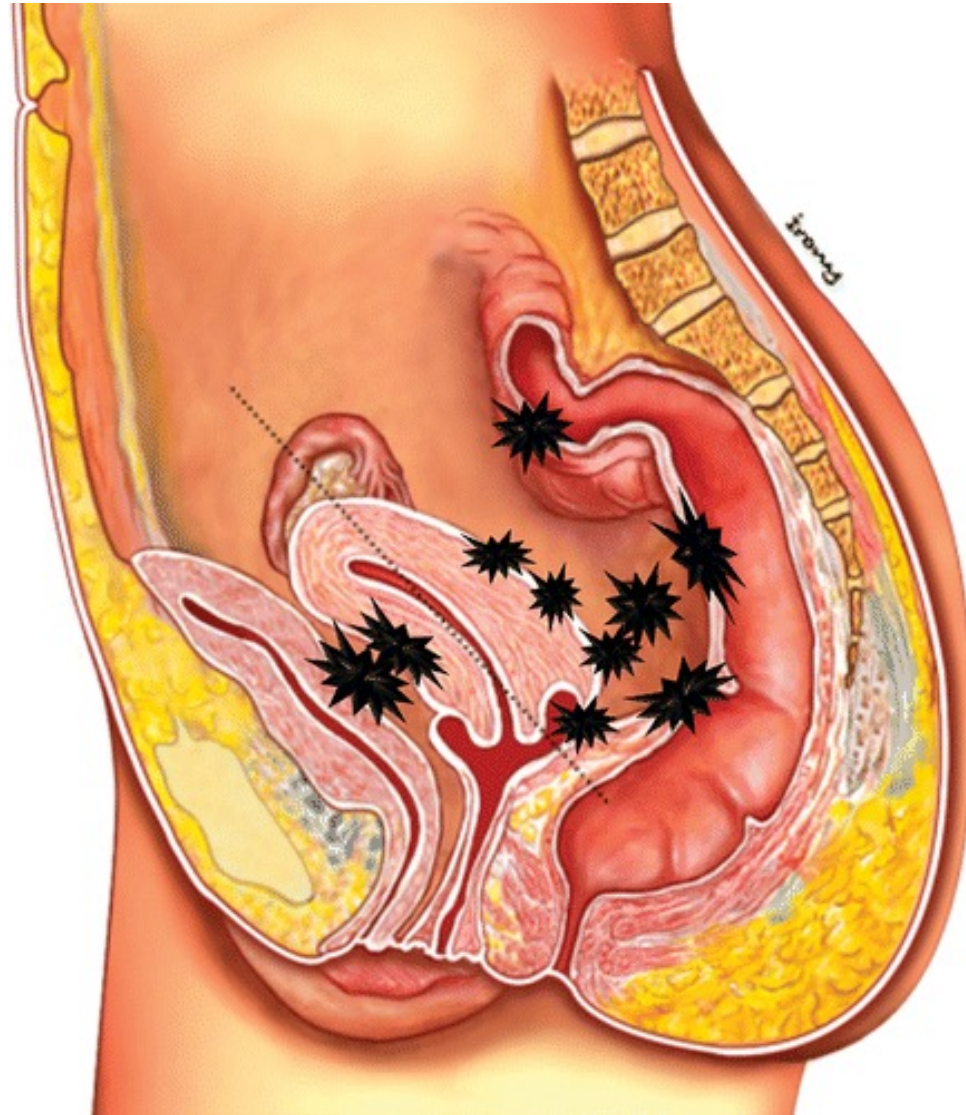
# Endometrial Cells



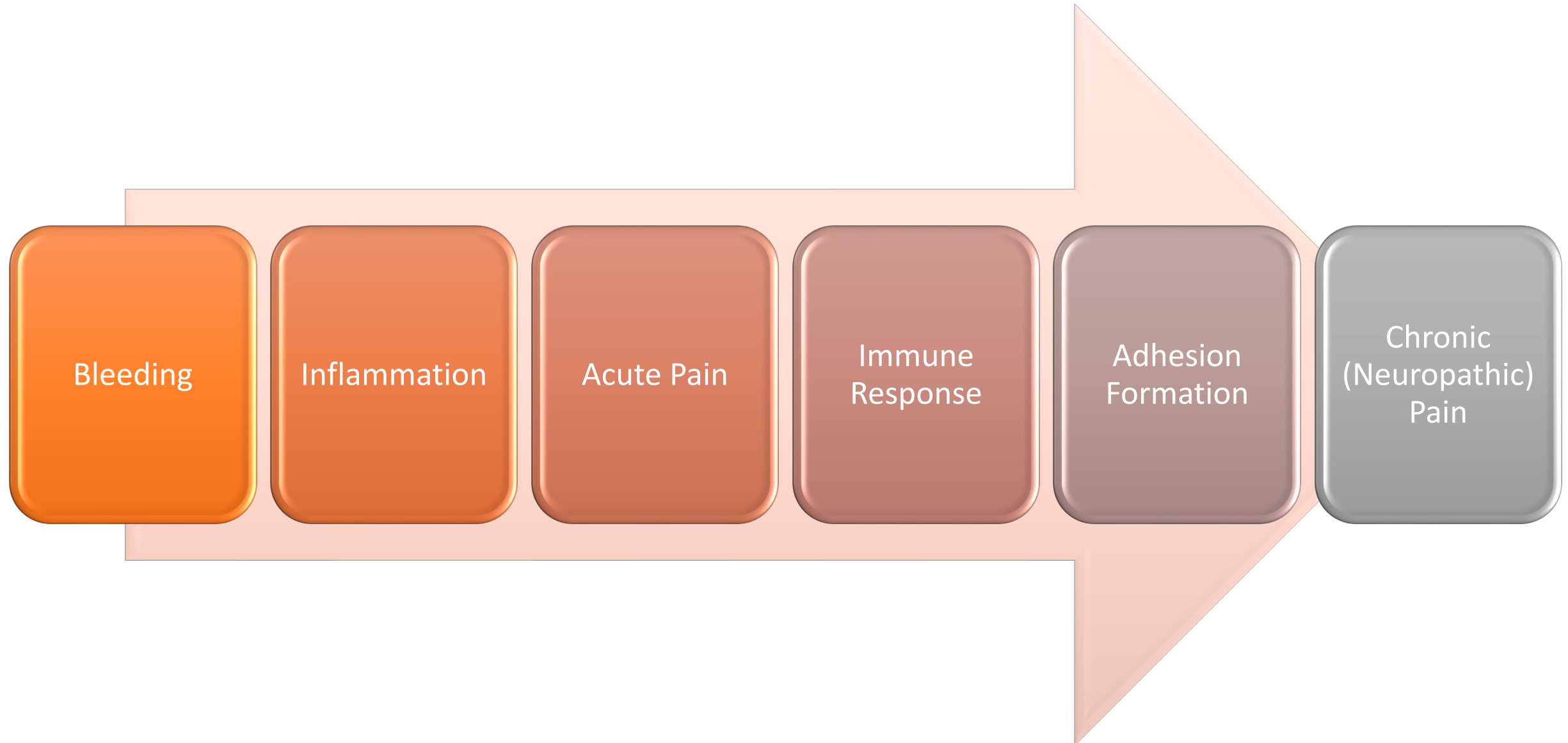
## MENSTRUAL CYCLE







# An Ugly Progression



- Defined as endometrial glands that occur outside the uterine cavity.
- It is an estrogen-dependent, benign, inflammatory disease with a significant component of immune-system activation.
- It is a chronic condition: one that can require life-long management.
- It can affect many spheres of a patient's life.

# Stages

Stage I, minimal

Stage II, mild

Stage III, moderate

Stage IV, severe

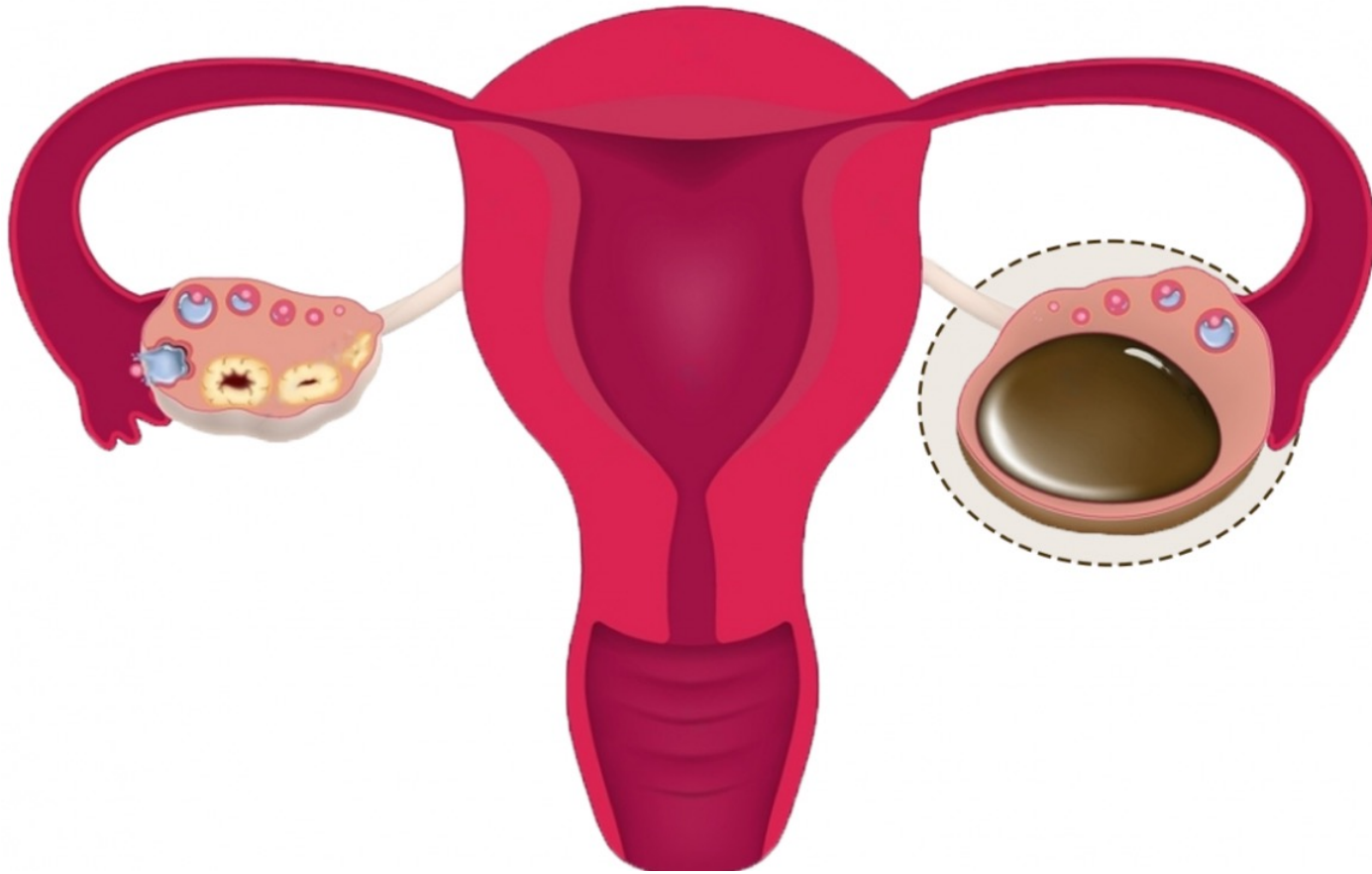
Stage I (minimal) \_\_\_\_\_ 1 to 5

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
Dense	4*	8*	16	
L filmy	1	2	4	
Dense	4*	8*	16	

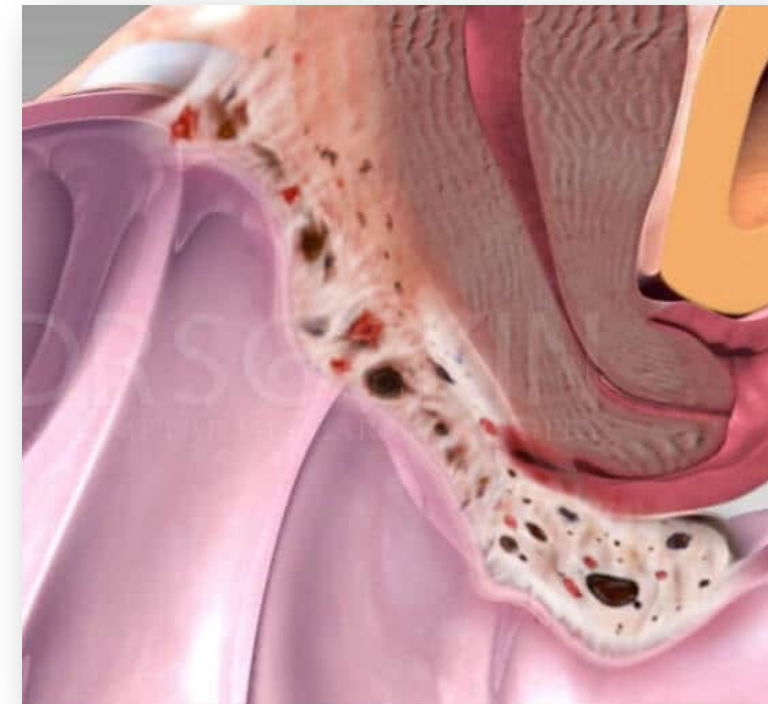
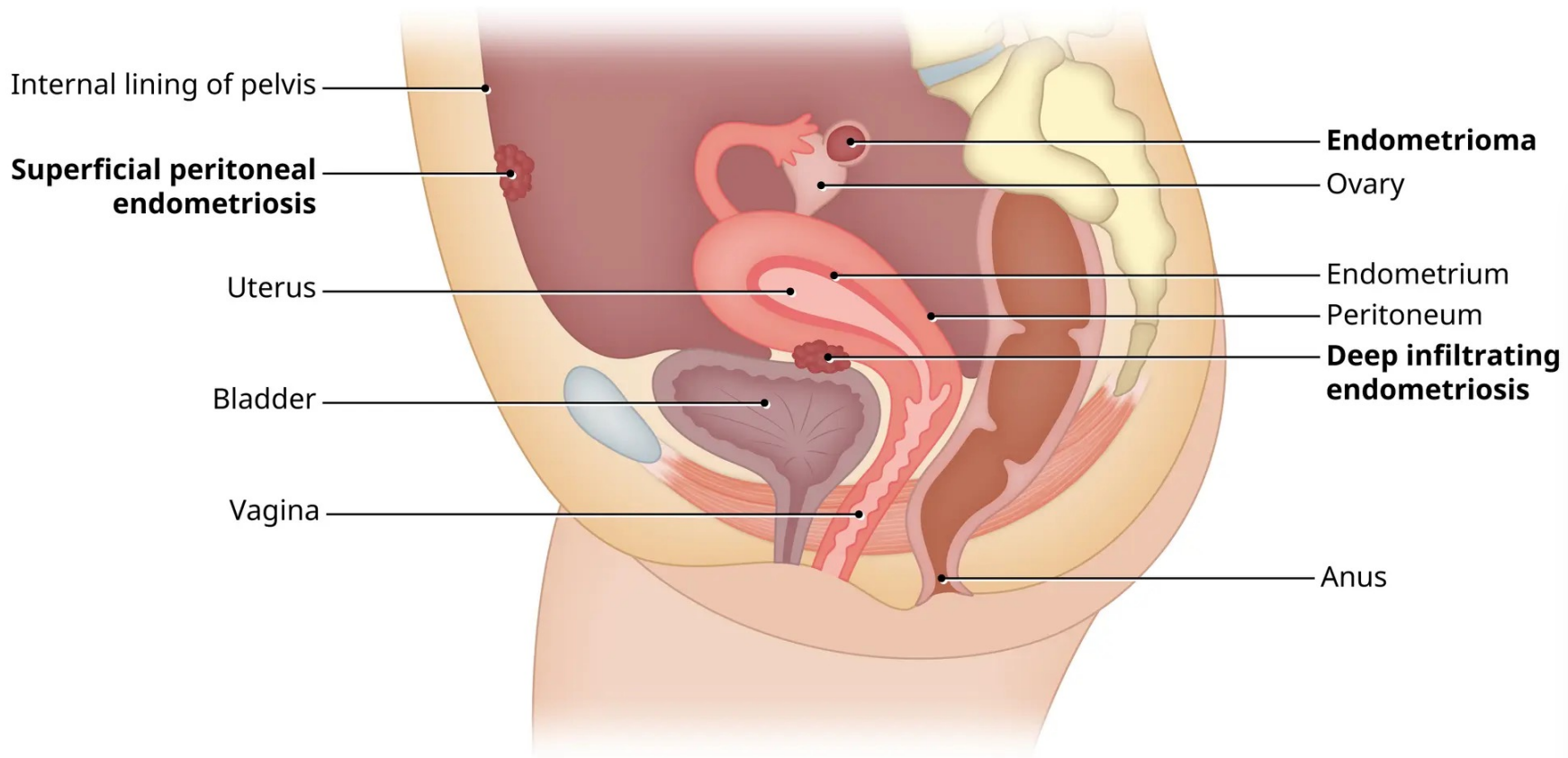


“Chocolate Cysts”



# Deep Infiltrating Endometriosis

## Types of Endometriosis





Painful Periods

Painful Intercourse

Symptoms

Bowel & GI Issues

Infertility

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

# Presenting Symptoms

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 <sup>a</sup> (N = 423)	Group II <sup>b</sup> (N = 517)	Total (N = 940)	P value <sup>c</sup>
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 (6.6)	58 (6.2)	.67

- Endometriosis is one of the most common causes of infertility, leading to as many as 50% of cases.
- As many as 30-40% of women with endometriosis will experience fertility problems.
- The mechanism for subfertility appears to involve anatomic distortion from pelvic adhesions and endometriomas and/or production of substances (e.g., prostanooids, cytokines, growth factors) that are "hostile" to normal ovarian function/ovulation, sperm mobility, fertilization, and implantation.



JOURNALS: GYNECOLOGIC ONCOLOGY: ORIGINAL RESEARCH

## Risk of Gynecologic Cancer According to the Type of Endometriosis

Jaavalainen, 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 expected incidence according to the historical incidence rates in the Finnish female population.

### RESULTS:

Endometriosis was associated with an increased risk of gynecologic cancer (OR 2.08), especially with ovarian cancer (OR 2.08), especially with serous type endometriosis and especially with endometriosis occurring 5–10 years after diagnosis. The standardized incidence ratio for peritoneal and deep infiltrating endometriosis was 1.16 (95% CI 0.99–1.35) and 1.16 (95% CI 0.99–1.35), respectively. The standardized incidence ratio for precancerous cervical lesions was 0.81 (0.71–0.92) and for invasive squamous cell carcinoma of the cervix was 0.46 (0.20–0.91).

### CONCLUSION:

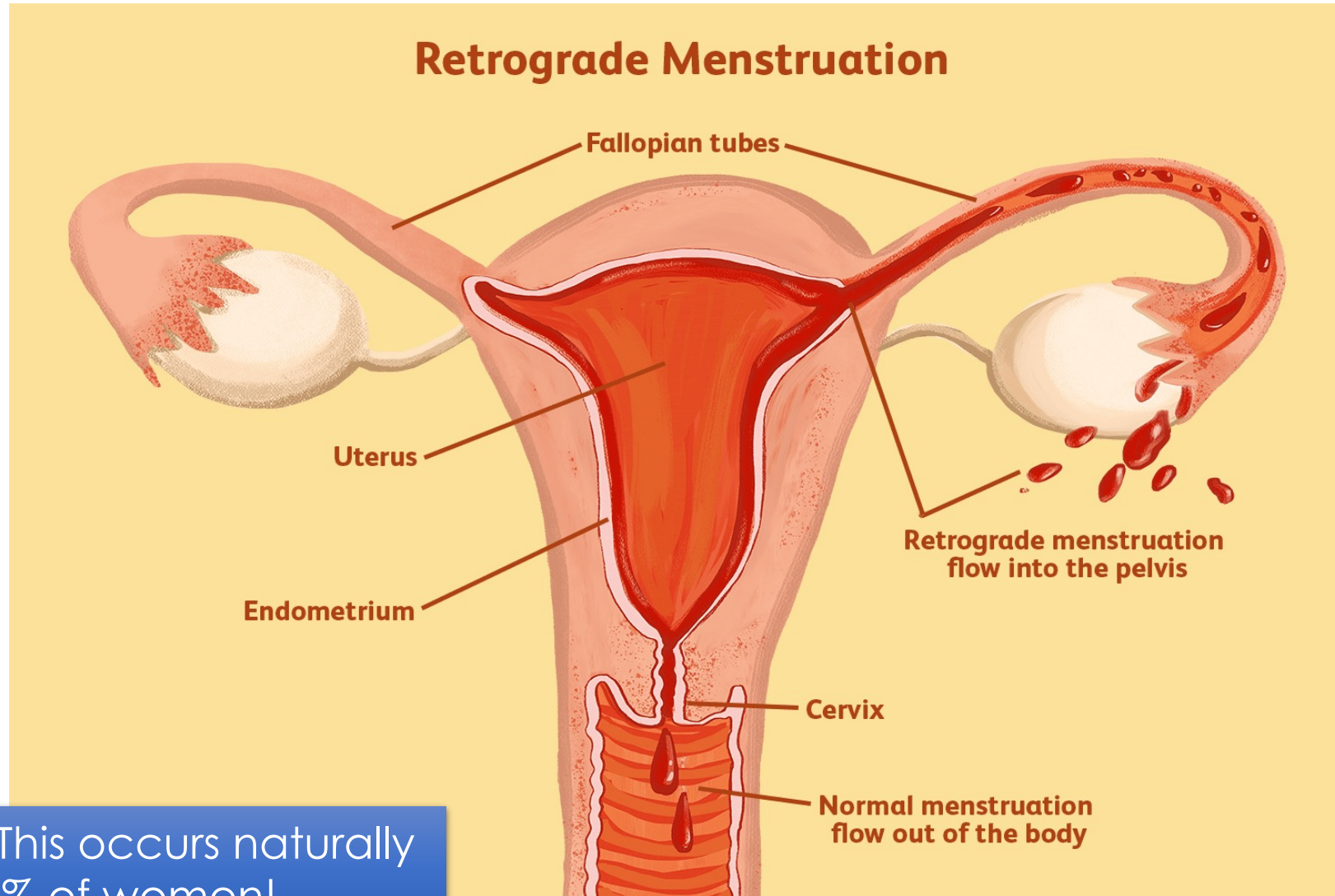
The excess risk of ovarian cancer among women with ovarian endometriosis translates into two excess cases per 1,000 patients followed for 10 years. Acknowledging these risks is important when planning long-term management of women with endometriosis.

# Who Does It Affect?

- Peak incidence 25-35 years.
- About 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!

- Increased Risk
  - Positive family history, nulliparity, prolonged exposure to endogenous estrogen (e.g., early menarche [before age 11 to 13 years] or late menopause), shorter menstrual cycles (defined as  $\leq 27$  days), heavy menstrual bleeding, obstruction of menstrual outflow (e.g., cervical stenosis, müllerian anomalies), exposure to diethylstilbestrol in utero, taller height, and lower body mass index.
- Reduced Risk
  - Multiple births, extended intervals of lactation, and late menarche (after age 14 years).

# Why Does It Arise?



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

“The pathogenesis of endometriosis appears to be **multifactorial**... Including altered immunity, imbalanced cell proliferation and apoptosis, aberrant endocrine signaling, and genetic factors.

Genetic studies, including genome-wide association studies and exome sequencing, have identified genomic regions and abnormalities in cancer driver genes (PIK3CA, KRAS, ARID1A) associated with endometriosis.”

**!!! These cells have the ability to generate their OWN estrogen and self-stimulate.**



# Why Does It Arise?

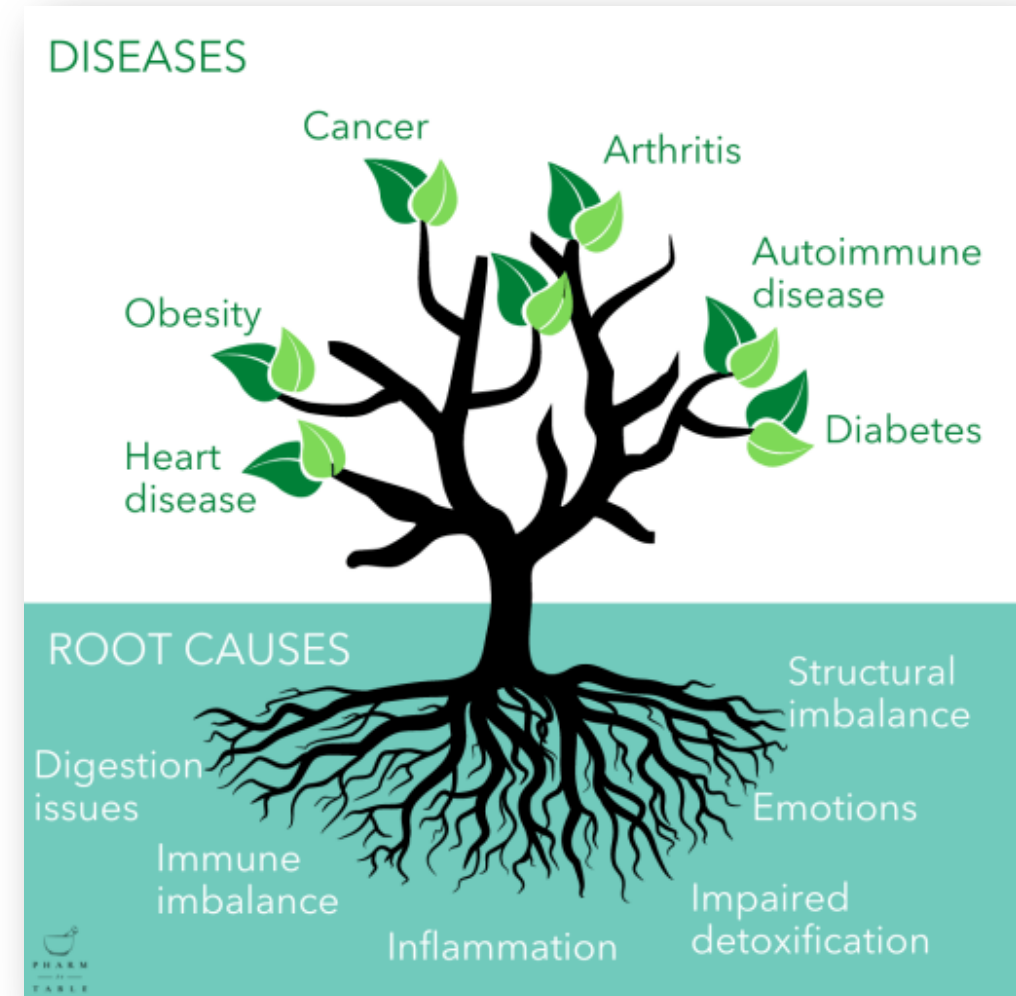
- Retrograde Menstruation
  - Certainly a central mechanism... But not the whole story.
- Genetics (and epigenetics)
  - Correlation with family history, first-degree relatives
  - Epigenetic exposures (pre and post-natal)
- Something about the rest of the internal environment
  - Estrogen excess/dominance
  - Chronic inflammation
  - Chronic immune system activation
  - Toxic load



# The Functional Medicine Angle

- 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/starchy 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?

- 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

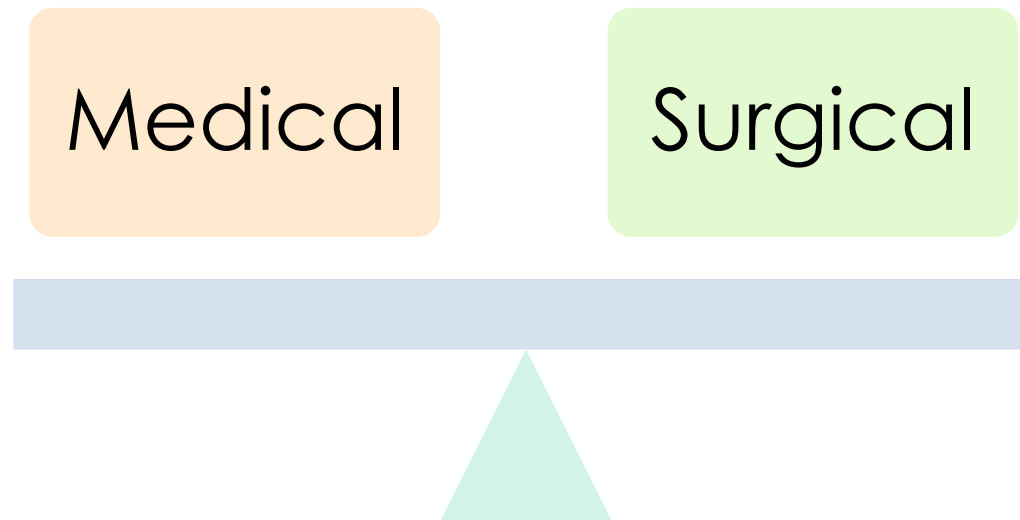


- **Must be careful to rule out other causes!**

# Treatment: What Can We Do About It?

“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



# What If We Do Nothing?

- 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.

- 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:

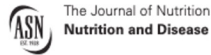
1. Support your body's natural capacity to deal with inflammation.

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



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

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

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

### ABSTRACT

**Background:** The etiology of endometriosis is not well understood. Limited evidence suggests that diet influences 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] and glycemic load [GL]), fiber intake (total, legume, vegetable, cruciferous vegetable, fruit, cereal), and gluten intake with laparoscopically confirmed endometriosis.

**Methods:** This was a prospective cohort study using data collected from 81,961 premenopausal women in the Nurses' Health Study II (mean age = 36 y in 1991). Diet was assessed with a validated FFOQ every 4 y. Cox proportional hazards 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 of follow-up. Women in the highest quintile of GI had 12% (95% CI: 1.01, 1.23;  $P_{\text{trend}} = 0.03$ ) higher risk of endometriosis than those in the lowest quintile. Total vegetable and cruciferous vegetable fiber intakes were also associated with higher risk (highest compared with lowest quintile RR: 1.13; 95% CI: 1.02, 1.24;  $P_{\text{trend}} = 0.004$  and RR: 1.17; 95% CI: 1.09, 1.29;  $P_{\text{trend}} = 0.02$ , respectively). Higher intake of fruit fiber was associated with lower risk of endometriosis (RR: 0.91; 95% CI: 0.80, 1.02;  $P_{\text{trend}} = 0.01$ ), but these associations were not consistent in direction nor statistically significant across sensitivity analyses. No association was observed between gluten intake and endometriosis after adjusting for the Alternative Healthy Eating Index. Gluten intake was also associated with lower risk (highest compared with lowest quintile RR: 0.91; 95% CI: 0.80, 1.02;  $P_{\text{trend}} = 0.01$ ), but these associations were not consistent in direction nor statistically significant across sensitivity analyses. No association was observed between total, legume, or cereal fiber intake.

**Conclusions:** Our findings suggest that carbohydrate quality and specific types of fiber—total vegetable and cruciferous vegetable fiber—are associated with endometriosis diagnosis in premenopausal women. These results indicate it is unlikely that gluten intake is a strong factor in the etiology or symptomatology of endometriosis. *J Nutr* 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<sup>1</sup>, 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 achieve 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<sup>1,2</sup>, Alexandra Middleton<sup>3</sup>, Siew Lim<sup>4</sup>, Justin Sinclair<sup>1</sup>, David Varjabedian<sup>1</sup>, Caroline A Smith<sup>1,2</sup>

Affiliations + expand

PMID: 34161144 DOI: 10.1089/acm.2021.0068

### Abstract

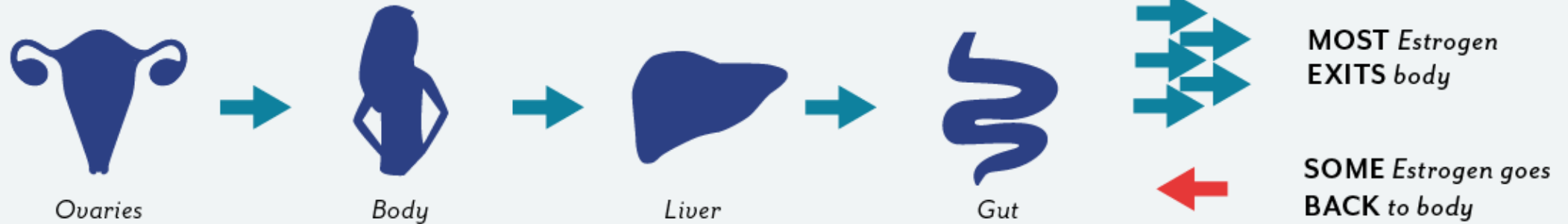
**Background:** Endometriosis causes deleterious effects on the lives of sufferers across multiple domains impacting quality of life. Commonly utilized pharmaceutical interventions offer suboptimal efficacy in addition to potentially intolerable side effects for many women. There is some evidence that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

**Keywords:** diet; endometriosis; pelvic pain; self-management.

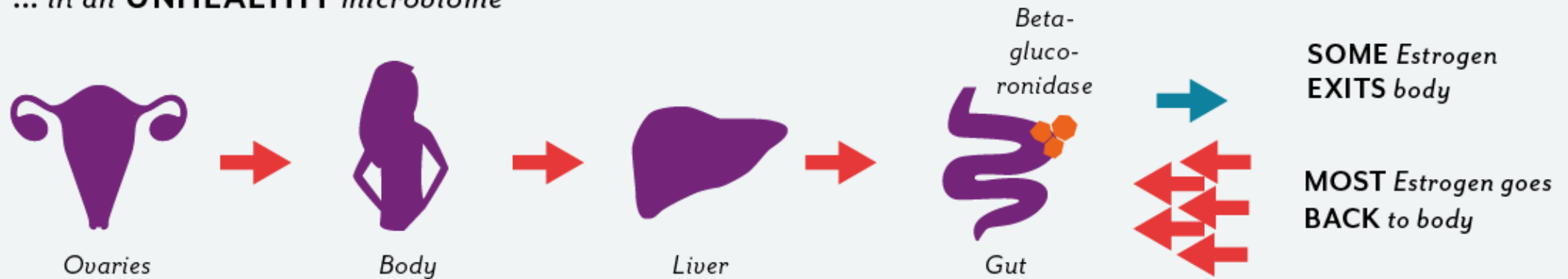
# Gut Health & Estrogen Dominance

## PATH of Estrogen

... in a **HEALTHY** microbiome



... in an **UNHEALTHY** microbiome

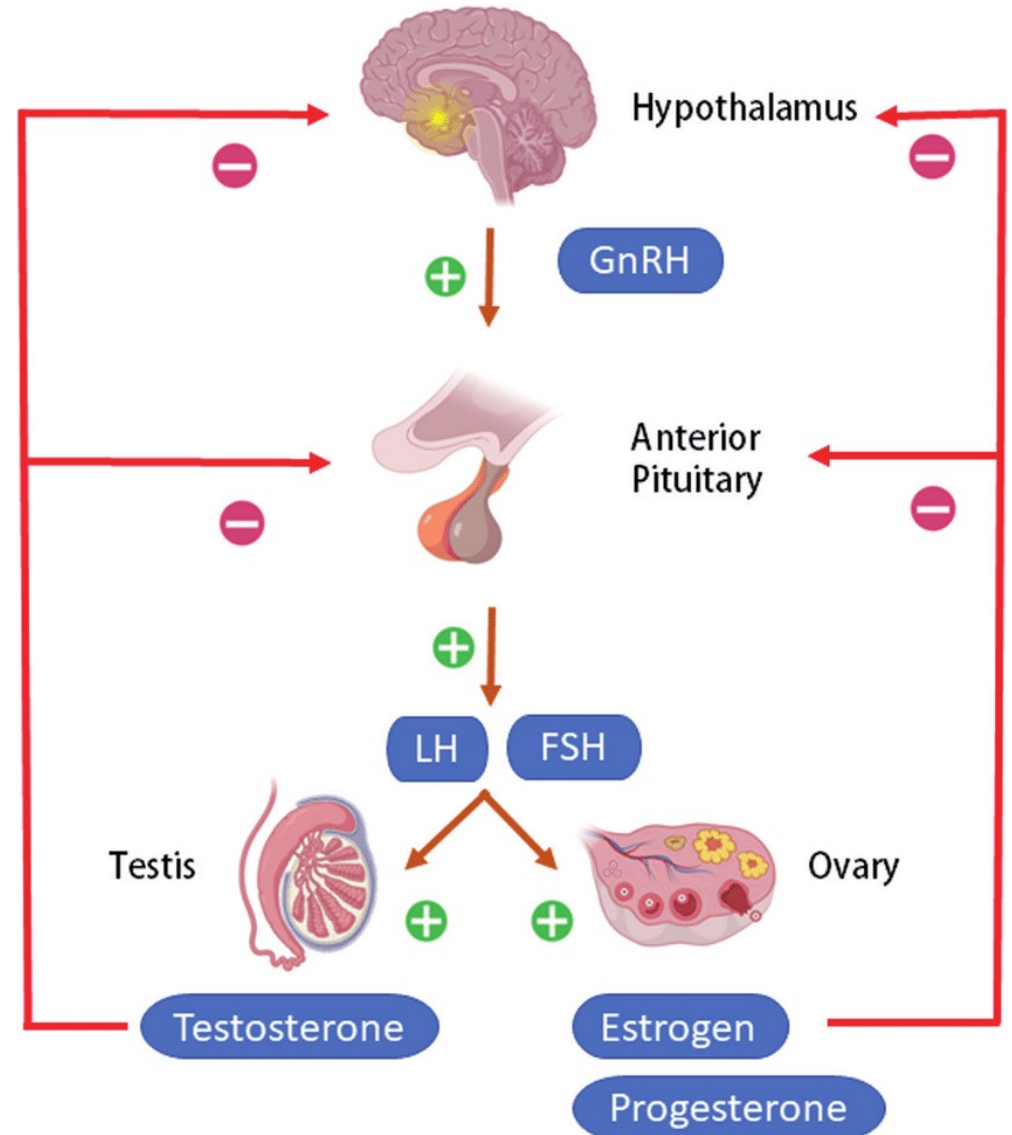




- Low-Inflammation Diet
  - A TON of fresh vegetables, especially leafy greens (kale, collards, broccoli, Brussels's sprouts) and fresh fruits (especially berries) each day. **Organic can help avoid toxins.**
  - Get curious about which foods you don't react well to (if any). If there are some, or it's unknown – work with someone to find out. Most common: **Gluten, Dairy, Sugars, Corn.**
- Supplements
  - Melatonin, 10mg nightly, taper up
  - N-acetyl-cysteine (NAC), 600 mg three times daily
  - Pycnogenol, 30 mg, twice daily for 1 year
  - B-vitamins but B6 specifically, 50 to 100 mg/day
  - Omega-3's, 2 to 3 g of a combined EPA/DHA product daily
  - Curcumin, 500mg twice daily
  - Cannabis...



- First Line (“regulate” estrogen)
  - NSAIDs
  - Combined oral contraceptive pills (OCPs)
  - Progesterone-only options (pills, IM shot)
  - Hormone-Releasing IUD
- Next Line (“suppress” estrogen)
  - GnRH Analogs
    - Agonists (Lupron)
    - Antagonists (Orilissa, Orgovyz)
    - Add-back therapy
- Last Line
  - Danazol, Aromatase inhibitors
- Treating Neuropathic Pain...
  - Gabapentin (Neurontin), pregabalin (Lyrica), duloxetine (Cymbalta)
  - Pelvic floor neuropathy/myalgia
  - Ketamine infusions

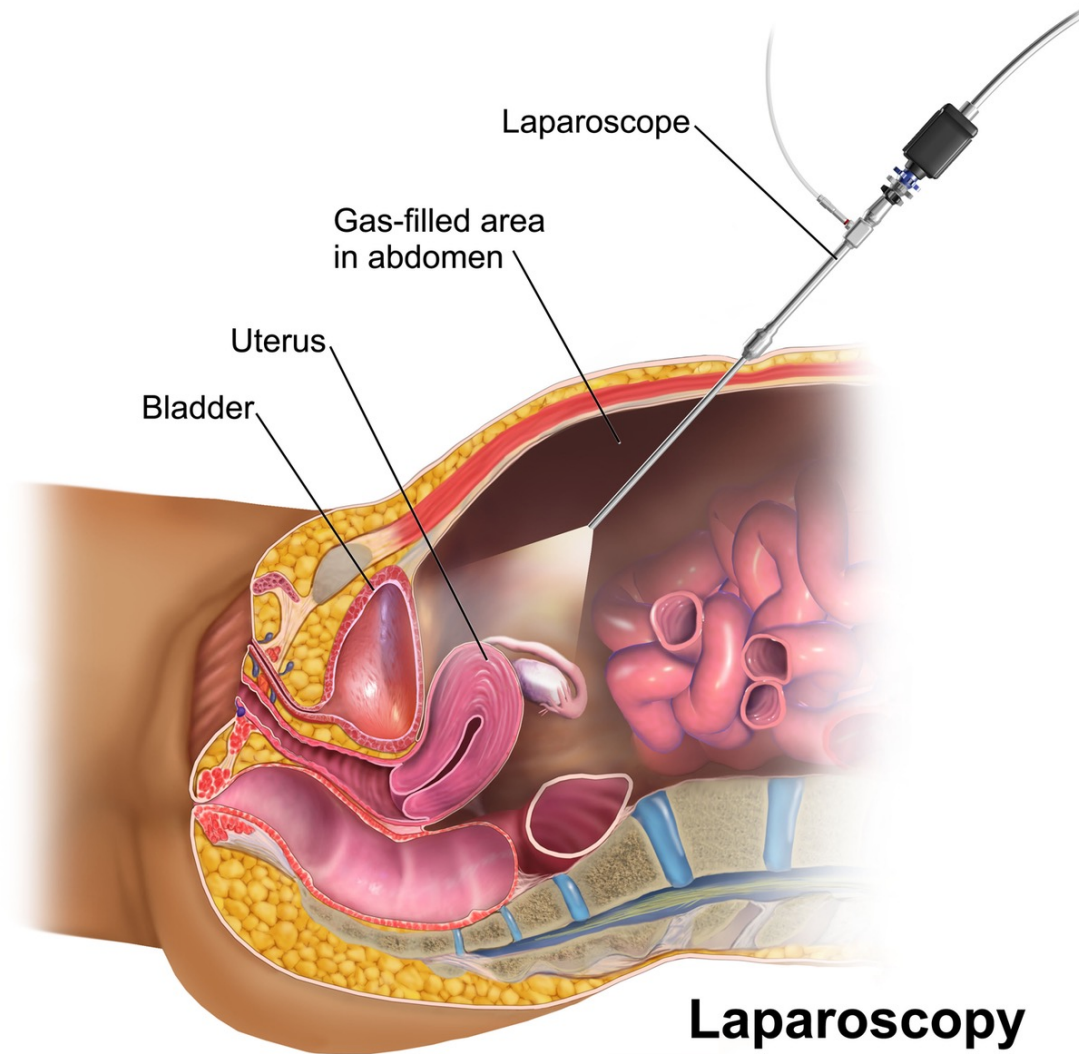


- How do we decide when to do surgery?
- What is the surgery and what is done during it?
- How successful is it at improving symptoms?
- How often do patients need repeat operations?

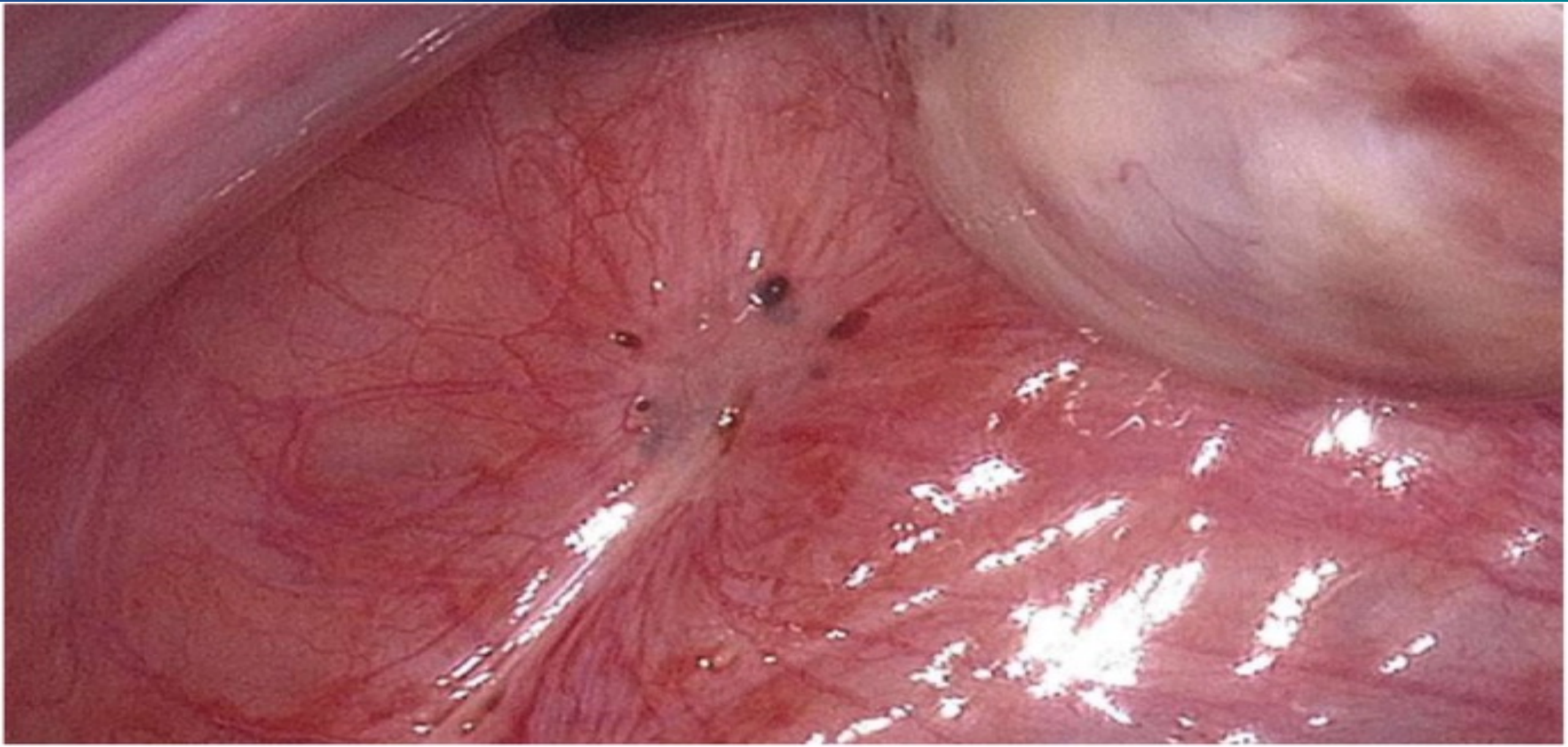
How do we decide  
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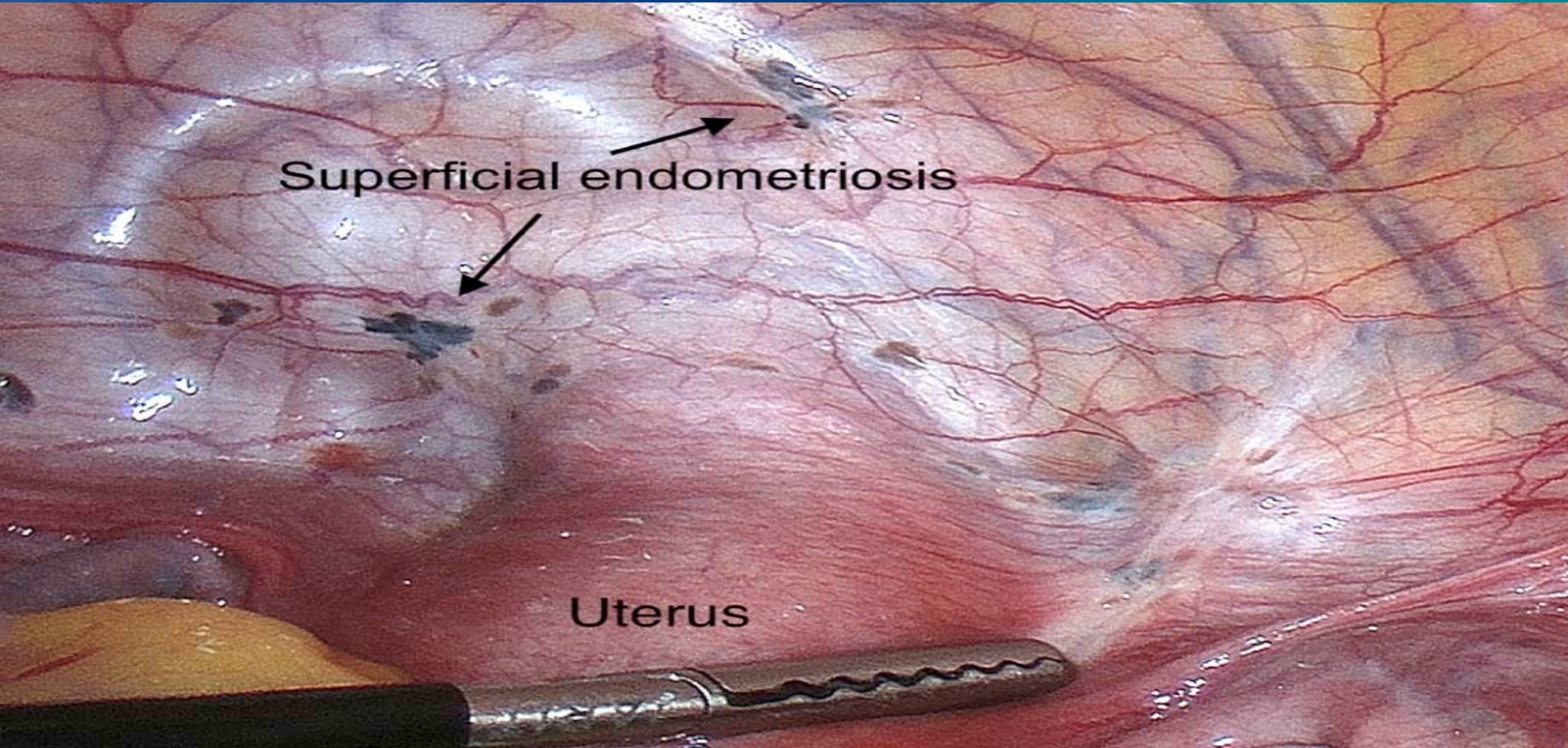
# Diagnostic Laparoscopy



# Identifying & Treating Lesions

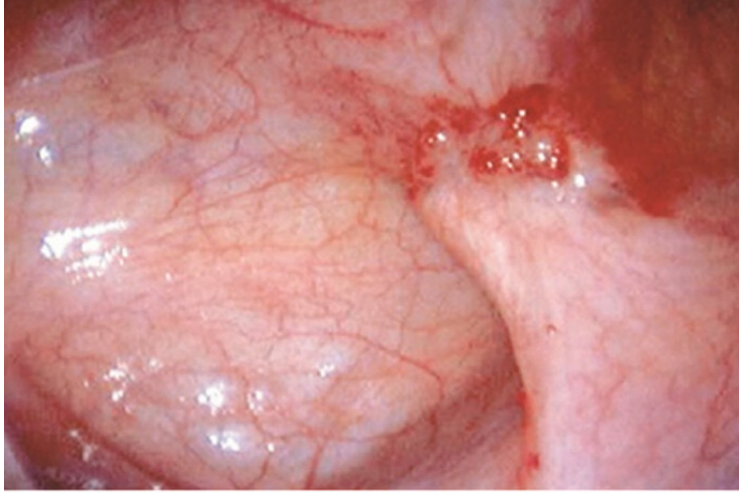


# Identifying & Treating Lesions

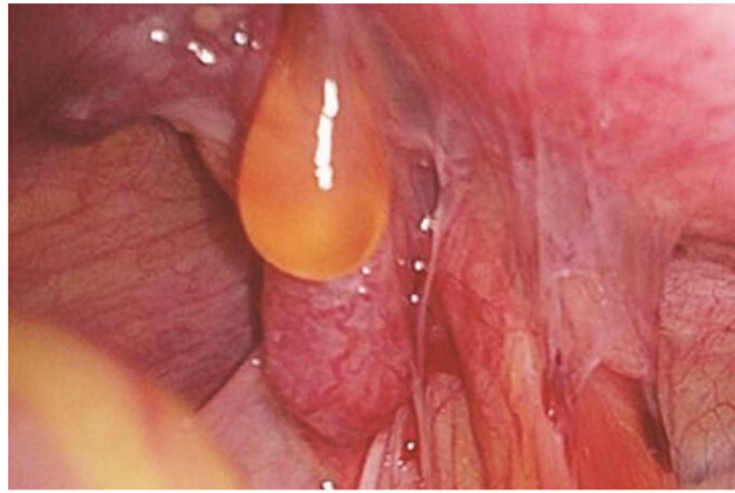




# Identifying & Treating Lesions



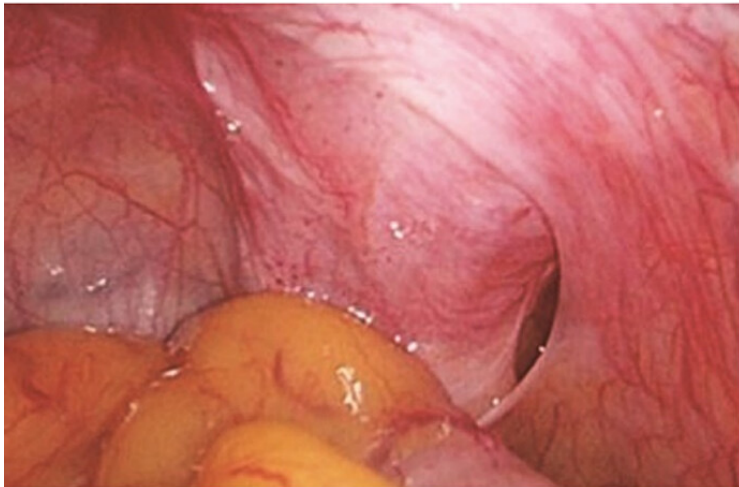
red



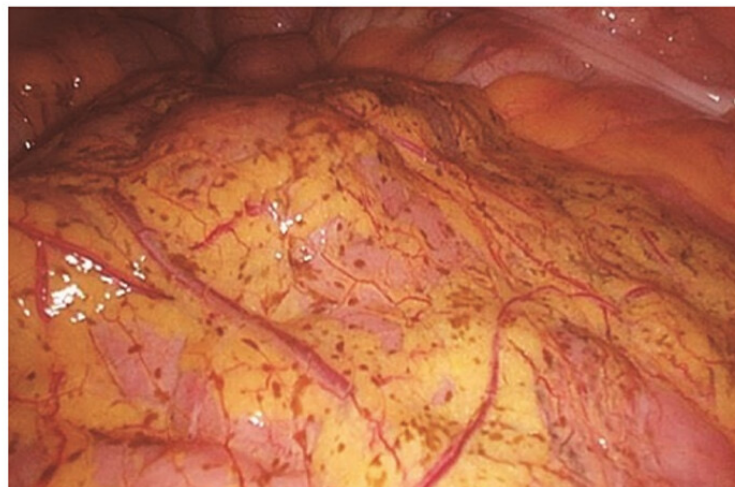
clear



white



peritoneal defect



yellow-brown



black

# Endometriosis Surgery

Disease  
≠  
Symptoms



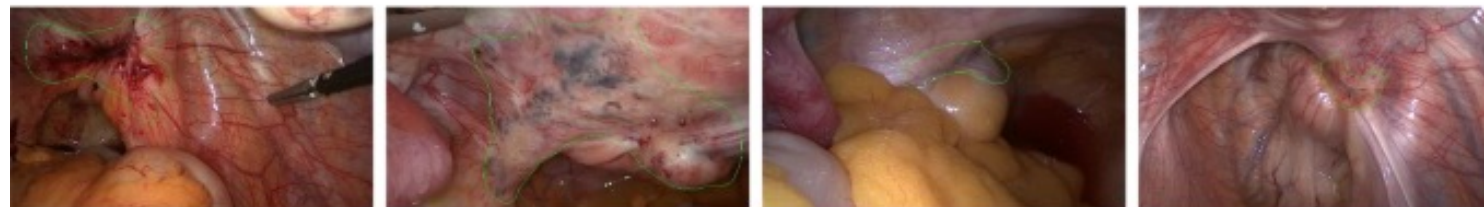
(a) Peritoneum



(b) Ovary



(c) Uterus



(d) Deep Infiltrating Endometriosis (DIE)

Excision  
Vs.  
Ablation

Conservative  
Vs.  
Aggressive

Hysterectomy?  
Oophorectomy?

- 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.

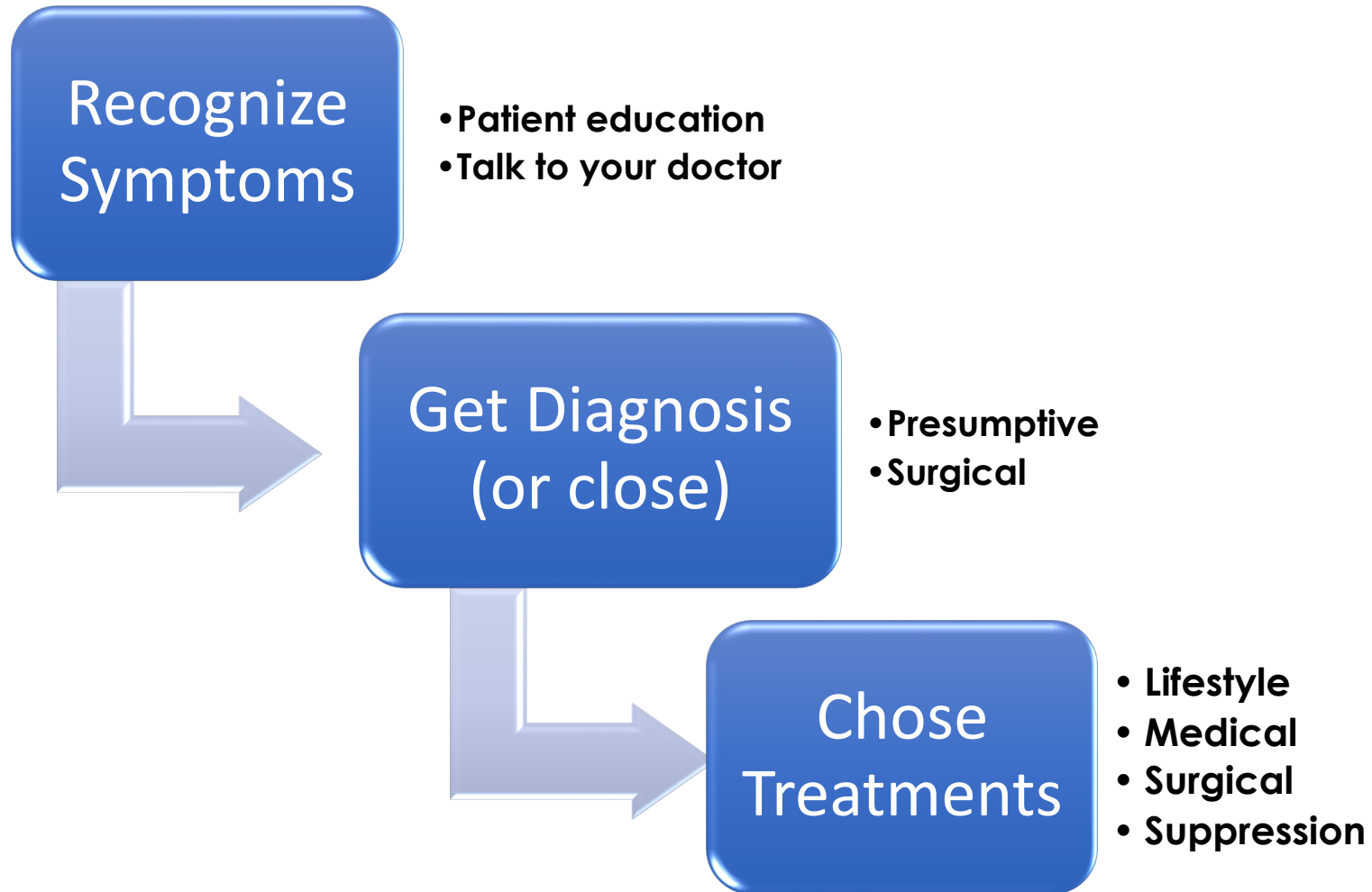
Suppression needs to be considered to prevent recurrence.

## 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.**



- 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!



- Endometriosis Association
  - [www.endometriosisassn.org](http://www.endometriosisassn.org)
- Endo Warriors
  - [endowarriorssupport.com](http://endowarriorssupport.com)
- Aviva Romm, MD
  - [avivaromm.com](http://avivaromm.com)
- UpToDate
  - [www.uptodate.com](http://www.uptodate.com)
- Institute for Functional Medicine
  - [ifm.org](http://ifm.org)



aviva romm<sub>MD</sub>



# Pelvic Pain? Painful Periods? Maybe It's Endometriosis

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