

# Pelvic Floor Disorders - First Line Evaluation and Management

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## Disclosure

Consultant: GSK; Intuitive Surgical

Educational Honoraria: Axonics

Research Grant: NIH (National Institutes of Health)

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**Pelvic Floor Disorders**

## Learning Objectives

1. Identify types of pelvic floor disorders
2. Demonstrate conservative options for managing prolapse
3. Illustrate minimally invasive options for the surgical management of prolapse
4. Recognize the role of



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## What Are Pelvic Floor Disorders?

### Urinary Control Problems

- Incontinence or leakage of urine

### Prolapse of pelvic organs

- Vagina, bladder, rectum

### Bowel Control Problems

- Fecal Incontinence



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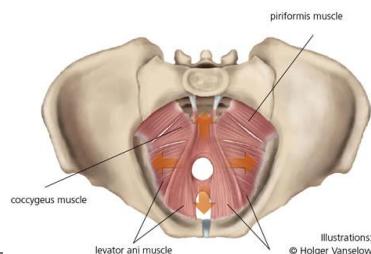
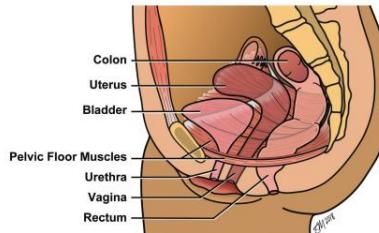
## What Is the Pelvic Floor?

**Muscles, ligaments and connective tissue in the lowest part of the pelvis**

**Supports internal organs:**

- Bladder
- Uterus
- Rectum
- Vagina

**Functions as an aspect of the “core”**

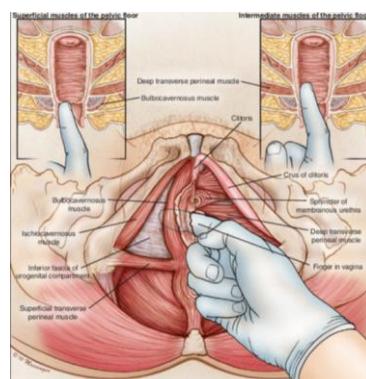


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## What Is *Pelvic Floor Dysfunction*?

### Hypertonic pelvic floor muscles

- Result in
  - Urgency/frequency
  - Pelvic pressure/heaviness
  - Sensation of incomplete emptying
- Exacerbate
  - Incontinence
  - Prolapse
- Extremely responsive to pelvic floor PT



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## Facts

### Very common

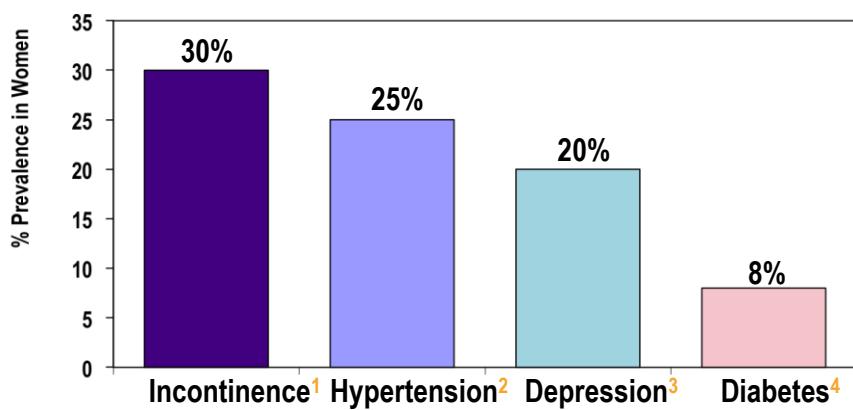
- Urinary control problems affect millions US women
  - >60% of post-menopausal women
  - >30% young women

1 in 3 women will experience a PFD in her lifetime



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## Prevalence of Urinary Incontinence



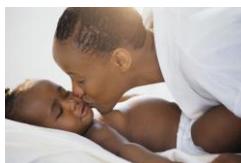
1. AHCPR. Rockville, Md: US Dept of Health and Human Services; 1996. 96-0682.
2. American Heart Association. Electronic citation.
3. American Family Physician. Electronic citation.
4. NIDDK. Electronic citation.



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## 1 in 3 Younger Women



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## Simple Screening Tool

### B<sup>3</sup> (Bulge, Bladder, Bowel)

- Do you have a sensation that there is a bulge in your vagina or that something is falling out of your vagina?
- Do you experience bothersome leakage of urine?
- In the past month, have you experienced accidental bowel leakage (liquid or solid stool)?



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## Examination

- A visual inspection of the genital area
- Evaluation of nerve conduction
- Observation of urethral hypermobility with cough and/or Valsalva stress test
- Urethral palpation for abnormalities
- A standardized vaginal examination using a prolapse grading system
- Evaluation of the levator ani for tone and strength
- A bimanual examination to evaluate the uterus, cervix, and adnexa



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## Facts

**1 in 5 patients with urinary control problem also report bowel control problem**



**Nearly 19% lifetime risk of having surgery for pelvic floor disorder**



***“Don’t ask, don’t tell”***



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## Myths

It is 'normal' ....

- To lose control of bladder or bowel with aging

Surgery is the only option

Surgery doesn't work

Long recovery and lifestyle (lifting restrictions)

**Myth**  
~~BUSTED~~

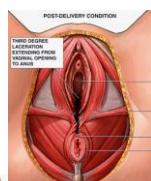


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## Risk Factors for PFD



Aging



Childbirth



Smoking



Obesity



Constipation

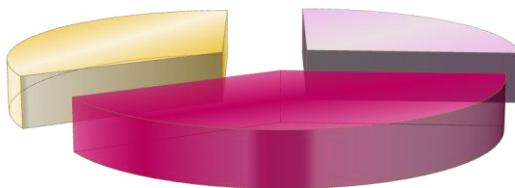


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## When Do Women Seek Help

26% of women wait  
> 5-years

33% wait  
1 to 5 years



41% seek help within 1 year



▪ Norton, P A et al. Distress and Delay Associated With Urinary Incontinence. BMJ, 297(5), November

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## Pelvic Organ Prolapse



Nearly Half of Women Ages 50-79  
Have Pelvic Organ Prolapse!

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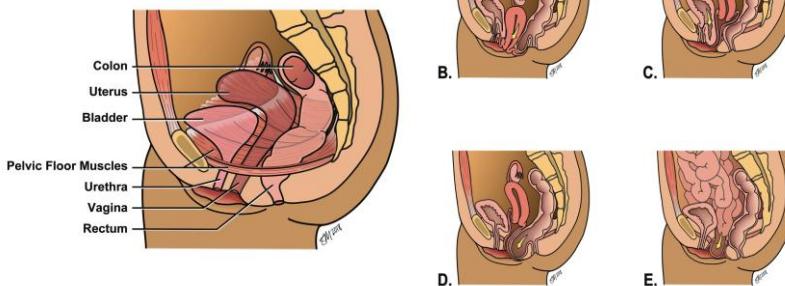
## Case 1

53 yo with a bulge in the vagina. No pain but feels like she is sitting on an egg. Also, with difficulty emptying her bladder.



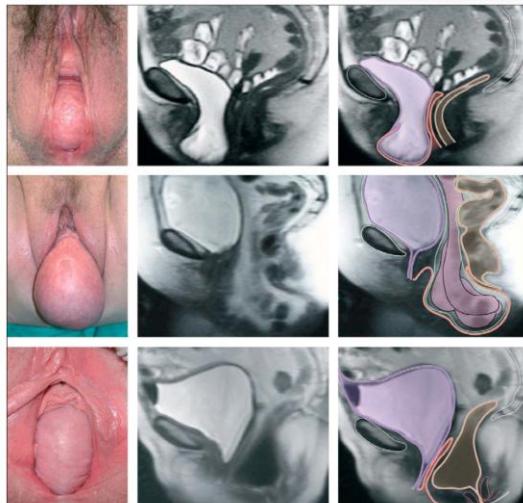
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## Types of Prolapse



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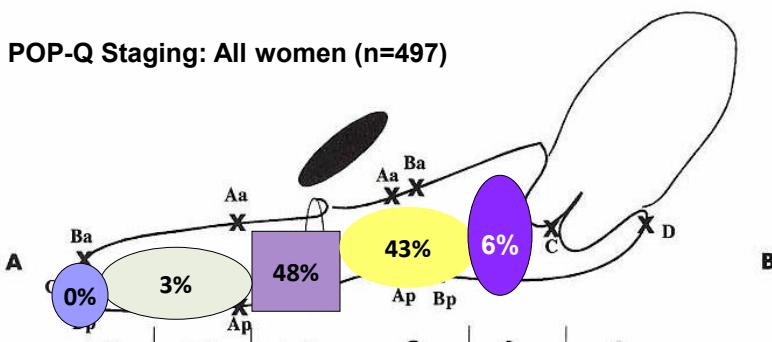
## Types of Prolapse



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## Normal Vaginal Descent

½ of Women Presenting for GYN Care Have POP To or Beyond Hymen

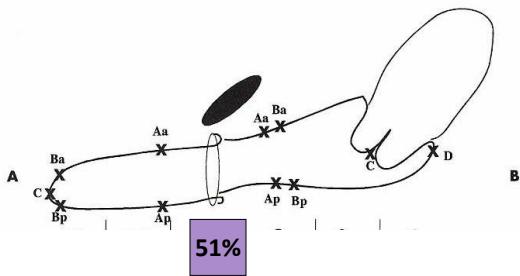


Swift, S., Am J Obstet Gynecol, 2000, 183:2

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Normal?

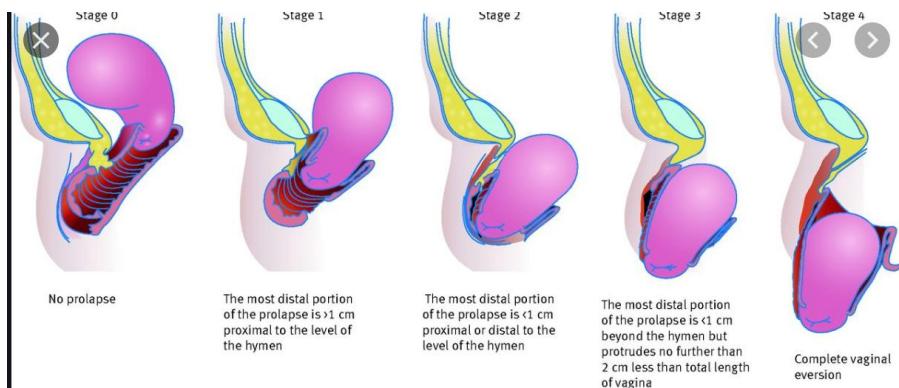


½ of Women Presenting for GYN Care POP To or Beyond Hymen



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## Stages of Prolapse



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## Symptoms of Prolapse

Vaginal bulge

Sensation of incomplete bladder emptying

Need to splint to have a bowel movement



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## How to Evaluate a Woman with Symptoms of Prolapse

### Physical exam (necessary):

- Bimanual exam- palpate uterus and or ovaries if present
- Pelvic exam in dorsal lithotomy or standing if unable to generate Valsalva
- Pelvic floor musculature examination
- Rectal exam
- Assessment of post-void residual

### Imaging (not necessary)

### Cancer screening

- Colorectal cancer screening, gynecologic cancer screening



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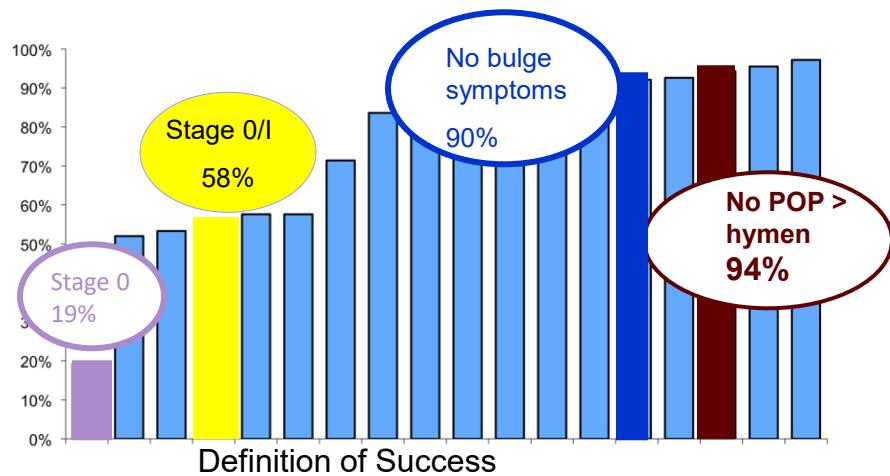


## How to Evaluate Prolapse

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### Success Varied with Definition

322 Women Who Underwent Prolapse Repair (CARE Trial)



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## Patients Want to:

### Optimize

- Satisfaction
- Outcomes
  - Anatomy
  - Functional
- Quality of life

### Minimize

- Complication
- Recovery



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## Bulge Gone ≠ Patient Satisfaction

### No Bulge... Now Has

- Stress incontinence
- Urgency incontinence
- Dyspareunia
- Complication
- Mesh erosion ....



Pham T et al



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## What Matters?

Symptom improvement

Patient goals

Avoidance of complications

Prevention of recurrence

Prevention of other pelvic floor disorders

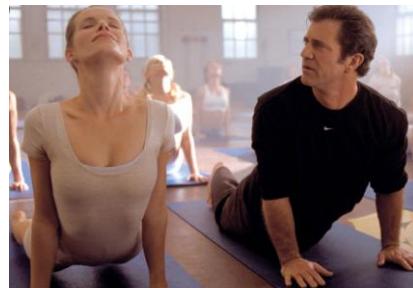
Maintenance of sexual function



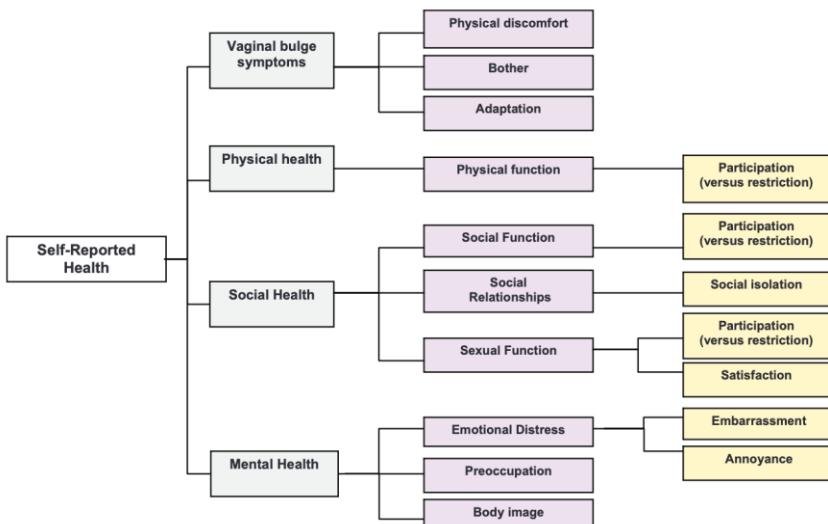
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## Conceptual Framework for Women Presenting for Management of Prolapse Symptoms

1. resolution of vaginal bulge symptoms
2. improvement in physical function
3. improvement in sexual function
4. improvement in body image perception
5. improvement in social function.



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## How Do We Choose?

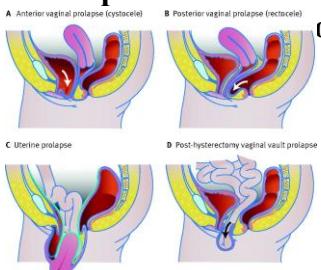
**“Shared decision making is a collaborative process that encourages health care professionals and patients to make health care decisions together, taking into account scientific evidence as well as patients’ needs and preferences.”**



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## How Do We Choose?

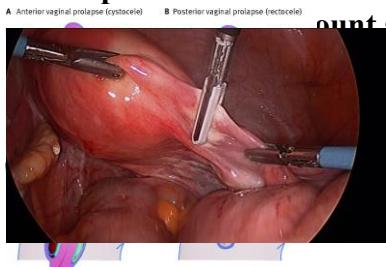
“Shared decision making is a collaborative process that encourages health care professionals and patients to make health care decisions based on scientific evidence, patient needs and preferences.”



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## How Do We Choose?

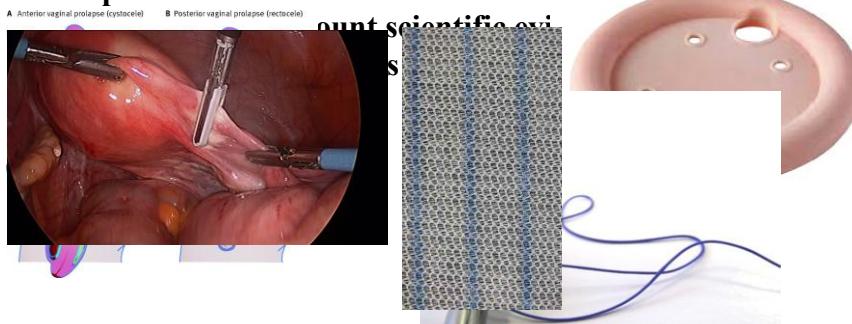
“Shared decision making is a collaborative process that encourages health care professionals and patients to make health care decisions based on scientific evidence, patient needs and preferences.”



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## How Do We Choose?

**“Shared decision making is a collaborative process that encourages health care professionals and patients to make health care decisions based on scientific evidence.”**



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## How Do We Choose?

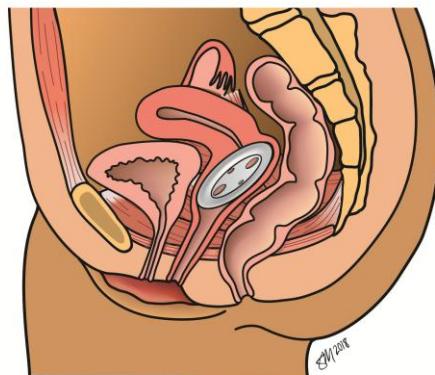
**“Shared decision making is a collaborative process that encourages health care professionals and patients to make health care decisions based on scientific evidence.”**



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## Conservative Management- Pessary

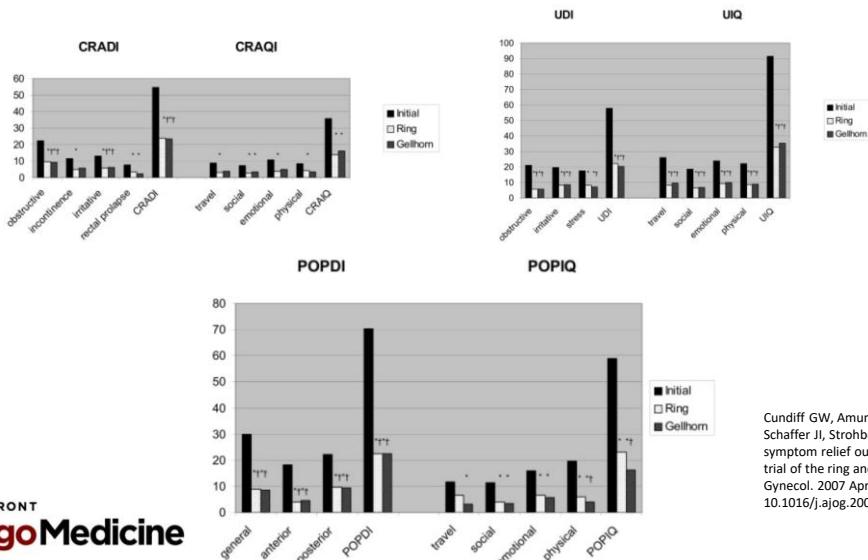
Good option for women not interested in surgery  
 Self-care regimen  
 60% of women will have a successful pessary fitting  
 Discontinuation rate 30-40%  
 Improvement in pelvic floor symptoms, body image and sexual function



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## Pelvic Floor Symptoms in Women Using Pessary

PESSRI Trial, 2007



Cundiff GW, Amundsen CL, Bent AE, Coates KW, Schaffer JI, Strohbehn K, Handa VL. The PESSRI study: symptom relief outcomes of a randomized crossover trial of the ring and Gellhorn pessaries. Am J Obstet Gynecol. 2007 Apr;196(4):405.e1-8. doi: 10.1016/j.ajog.2007.02.018. PMID: 17403437.

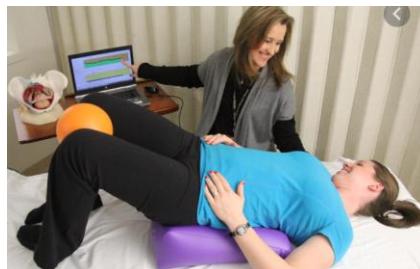


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## What About PT???

### POPPY Trial

- Large, multisite, randomized trial
- Women with stage I, II, III. symptomatic prolapse
- Individualized 1:1 PT vs "lifestyle leaflet"
- Improvement in SUBJECTIVE outcomes, NOT OBJECTIVE outcomes



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## Surgical Management of Prolapse

1 in 5 women will undergo surgery in lifetime

Variety of surgical procedures



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## SDM Framework



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## Wisercare

[Home](#) [Settings](#) [Feedback](#) [Log Out](#)

### You and your surgery for pelvic organ prolapse

You're about to start an online experience that will help you learn more about prolapse and express your values and preferences, which will ultimately help guide your decision about which surgery is best for you.



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## Sacrocolpopexy (ASC)

Open  
Laparoscopic  
Robotic

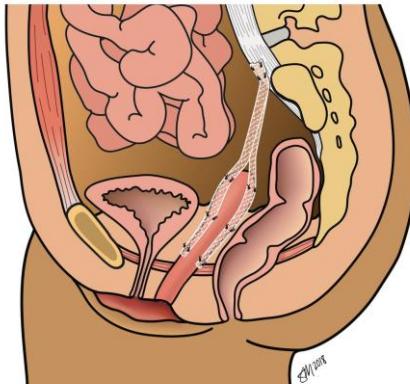
**Mesh**

- Vagina to sacrum

**Level 1 Data**

- Anatomic superiority
- Durability
- Increased complications

When compared to vaginal approach

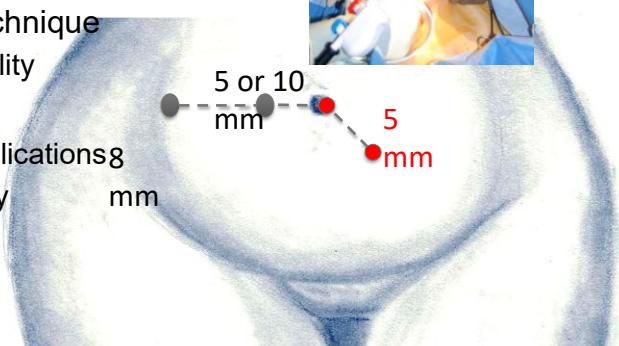


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## Minimally Invasive Prolapse Surgery



- Laparoscopic & Robotic
- “Keyhole surgery”
  - Duplicate open technique
    - Improved durability
  - Advantages
    - Decrease complications
    - Quicker recovery



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## Robotic Surgery



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## FDA on Mesh Use in Urogynecology

### Evidence-based Practice

#### 2008: Public Health Notification (PHN)

- There are serious complications associated with the use of surgical mesh to treat pelvic organ prolapse and stress urinary incontinence
- These complications are **rare**

#### 2011: Regarding the use of transvaginally placed mesh for the treatment of pelvic organ prolapse (POP):

- (1) Serious adverse events are NOT rare, contrary to what was stated in the 2008 PHN
- (2) Transvaginally placed mesh in POP repair does NOT conclusively improve clinical outcomes over traditional non-mesh repair



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## Vaginal Operations for Prolapse

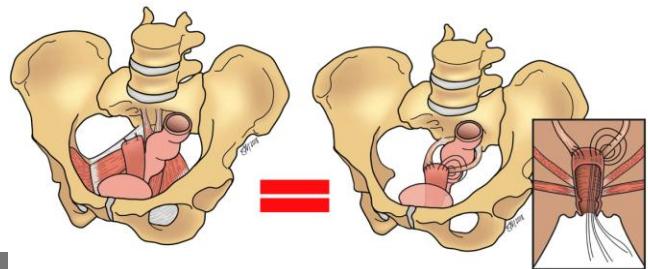
### Uterosacral vs Sacrospinous: Ligament A vs B

Native tissue vaginal repair

No incisions

Slightly less successful in fixing anatomy

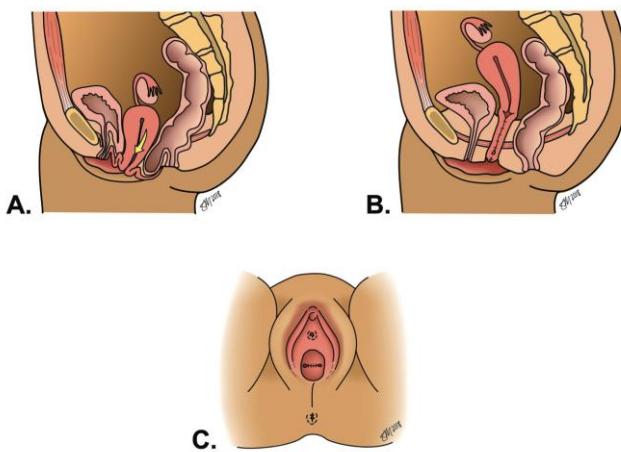
Equal to abdominal in symptom improvement



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## Colpocleisis for Pelvic Organ Prolapse

*Patient Goals, Quality of Life, and Satisfaction*



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## Do Women Achieve Their Goals

### Patient-reported goal attainment and comprehensive functioning outcomes after surgery compared with pessary for pelvic organ prolapse

Vivian W. Sung, MD, MPH; Kyle J. Wohlrab, MD; Annetta Madsen, MD; Christina Raker, ScD

TABLE 3  
Top goal ranked by patient at baseline, by treatment group<sup>a,b</sup>

Goals	Total number	Any symptom goal	Pelvic symptom (bulge) goals	Urinary symptom goals	Bowel symptom goals	Pain/discomfort	Any function goal	Physical function goals	Social function goals	Emotional function goals	Sexual function goals	Other
Surgery	80	58 (72.5)	11 (13.8)	31 (38.8)	6 (7.5)	10 (12.5)	21 (26.3)	15 (18.8)	1 (1.3)	2 (2.5)	3 (3.8)	11 (33)
Pessary, continued	47	32 (68.1)	13 (27.7)	7 (14.9)	1 (2.1)	11 (23.4)	13 (27.7)	12 (25.9)	0	0	1 (2.1)	2 (4.3)
Pessary, crossover or discontinued	31	20 (64.5)	4 (12.9)	10 (32.3)	2 (6.5)	4 (12.9)	8 (25.8)	7 (22.6)	0	0	1 (3.2)	3 (9.7)
PValue		.70	.10	.06	.50	.30	1.0	.70	1.0	.70	1.0	.09

<sup>a</sup> Symptom goals include prolapse, urinary, bowel, or pain/discomfort symptoms. Function goals include physical, social, emotional, and sexual function goals. <sup>b</sup> Two women in the pessary group did not report any baseline goals.

Sung et al. Surgery vs pessary for prolapse. *Am J Obstet Gynecol* 2016.

TABLE 4  
Posttreatment goal attainment by treatment group and goal category<sup>a</sup>

Goals achieved	Total number	All symptom goals	Pelvic goals	Urinary goals	Bowel goals	Pain/discomfort	All function goals	Physical function goals	Social function goals	Emotional function goals	Sexual function goals	Other goals
Surgery	72	43/59 (72.9)	24/25 (96.0)	27/39 (69.2)	5/8 (62.5)	23/25 (92.0)	31/43 (72.1)	26/31 (83.9)	4/6 (66.7)	4/5 (80)	10/16 (62.5)	5/5 (100)
All pessary users	63	42/60 (70.0)	23/29 (79.3)	23/36 (63.9)	5/7 (71.4)	20/25 (80)	27/44 (61.4)	22/35 (62.9)	4/5 (80)	6/7 (85.7)	3/9 (33.0)	3/8 (37.5)
Pessary, continued	42	35/41 (85.4)	19/21 (90.5)	17/21 (81.0)	4/5 (80.0)	17/17 (100)	26/28 (92.9)	21/22 (95.5)	4/4 (100)	6/6 (100)	3/4 (75.0)	3/5 (60.0)
Pessary, crossover or discontinued	21	7/19 (36.8)	4/8 (50.0)	6/15 (40.0)	1/2 (50.0)	3/8 (37.5)	1/16 (6.3)	1/13 (7.7)	0/1 (0)	0/1 (0)	0/5 (0)	0/3 (0)
PValue <sup>b</sup>		.0007	.006	.04	1.0	.0003	< .0001	< .0001	.20	.08	.03	.02

<sup>a</sup> Data represent women who reported having baseline goals in each category that were subsequently achieved after treatment. <sup>b</sup> Pvalue compares surgery, pessary continued, and pessary crossover/discontinued groups.

Sung et al. Surgery vs pessary for prolapse. *Am J Obstet Gynecol* 2016.



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## ERAS

“Multimodal Approach Directed at Optimizing the Patient Experience, Standardizing Perioperative Care, and Improving Surgical Outcomes”

## Key Concepts

- ① **Comprehensive patient education**
  - Patient's goals and expectations
- ② **Diminished fasting (starvation) preoperatively**
  - Oral carbohydrates and electrolyte fluids
- ③ **Multimodal pain control regimen**
  - Nonopioid analgesic agents, regional anesthesia
  - Reduce inflammation
- ④ **Quick resumption of a normal diet and activity**
  - Better outcomes

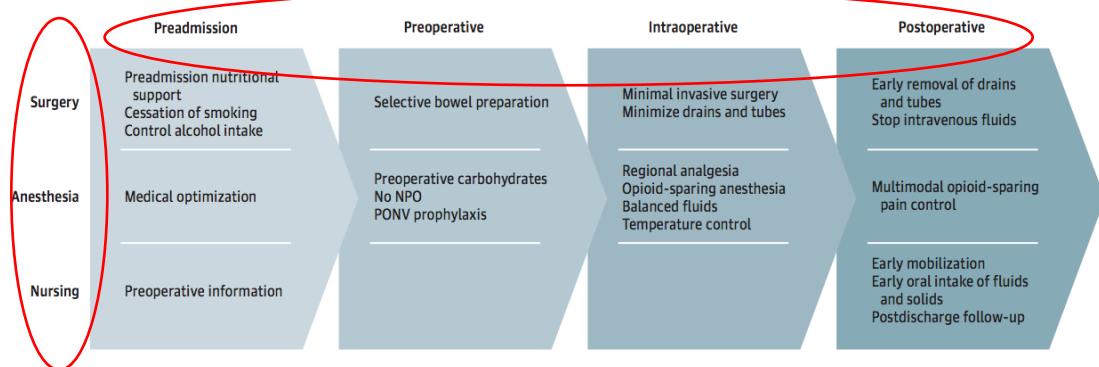


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## ERAS Components

Multidisciplinary: Nurses, Anesthesiologists, Surgeons

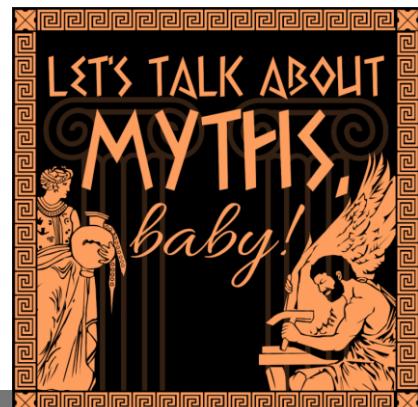
Pre, Intra, and Postoperative Strategy



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## ERAS Myths

New  
Not well studied  
Not safe  
Patient dis-satisfier



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## ERAS History

Fast track in coronary artery bypass surgery      ERAS Society convened      ERAS guidelines developed for major GYN surgery



Kehlet introduces concept of ERAS

Quicker recovery in colorectal patients discharged within 2 days

1<sup>st</sup> ERAS study in GYN Surgery published

NMH implements ERAS for Urogyn and Reconstructive Pelvic Surgery



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## ERAS Studies....

### Enhanced recovery pathways in gynecologic oncology

Gregg Nelson <sup>a</sup>, Eleftheria Kalogera <sup>b</sup>, Sean C. Dowdy <sup>b,\*</sup>

<sup>a</sup> Division of Gynecologic Oncology, Tom Baker Cancer Centre, Calgary, Alberta, Canada

<sup>b</sup> Division of Gynecologic Surgery, Mayo Clinic College of Medicine, Rochester, MN, USA

#### Review of enhanced recovery programs in benign gynecologic surgery

Elisa R. Trowbridge<sup>1</sup> • Caitlin N. Dreibach<sup>2</sup> • Bethany M. Sarosiek<sup>2</sup> •  
Catherine Page Dunbar<sup>2</sup> • Sarah Larkin Evans<sup>2</sup> • Lee Anne Hahn<sup>2</sup> • Kathie L. Hullfish<sup>1</sup>

Received: 16 May 2017 / Accepted: 24 July 2017  
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### Enhanced Recovery in Gynecologic Surgery

Eleftheria Kalogera, MD, Jamie N. Bakkum-Gamez, MD, Christopher J. Jankowski, MD,  
Emanuel Trabuco, MD, Jenna K. Lovely, MD, Sarah Dhanorker, Pamela L. Grubbs, RN, CNS,  
Amy L. Weaver, Lindsey R. Haas, Bijan J. Borah, PhD, April A. Bursiek, RN, Michael T. Walsh, MD,  
William A. Cliby, MD, and Sean C. Dowdy, MD

#### Original Research

## Enhanced Recovery Implementation in Major Gynecologic Surgeries

### Effect of Care Standardization

Susan C. Modesitt, MD, Bethany M. Sarosiek, RN, Elisa R. Trowbridge, MD, Dana L. Redick, MD,  
Puja M. Shah, MD, Robert H. Thiele, MD, Mohamed Tiouririne, MD, and Traci L. Hedrick, MD, MS



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## ERAS Outcomes-COMMON THEMES

**Shorter LOS**

**Improved patient satisfaction**

**Decreased cost**

**No increases in readmission**

**No increases in complications/reoperation**



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## Outpatient Hysterectomy

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## Outpatient Minimally Invasive Hysterectomy

### Same-Day Discharge After Laparoscopic Hysterectomy

Misa Perron-Burdick, MD, Miya Yamamoto, MD, and Eve Zaritsky, MD

**OBJECTIVE:** To estimate readmission rates and emergency care use by patients discharged home the same day after laparoscopic hysterectomy.

**METHODS:** This was a retrospective case series of patients discharged home the same-day after total or supracervical laparoscopic hysterectomy in a managed care setting. Chart reviews were performed for outcomes of interest which included readmission rates, emergency

**CONCLUSION:** Same-day discharge after laparoscopic hysterectomy is associated with low readmission rates and minimal emergency visits in the immediate postoperative period. Same-day discharge may be a safe option for healthy patients undergoing uncomplicated laparoscopic hysterectomy.

(*Obstet Gynecol* 2013;121:1136-41)

DOI: 10.1097/AOG.0b013e31825dd44e

The safety of same-day discharge after laparoscopic hysterectomy for endometrial cancer



Jessica Lee <sup>a</sup>, Yindalon Aphinyanaphongs <sup>b</sup>, John P. Curtin <sup>a</sup>, Jing-Yi Chern <sup>a</sup>, Melissa K. Frey <sup>a</sup>, Leslie R. Boyd <sup>a,\*</sup>

<sup>a</sup> New York University School of Medicine, Division of Gynecologic Oncology, 240 East 38th Street, New York, NY, USA

<sup>b</sup> New York University, Center for Health Informatics and Bioinformatics, 227 East 30th Street, New York, NY, USA

## Outpatient Vaginal Hysterectomy

### Optimizing Perioperative Management for Same-Day Discharge

Mark A. Zakaria, MD, and Barbara S. Levy, MD

**OBJECTIVE:** To present tactics for optimizing outpatient vaginal hysterectomy and describe perioperative outcomes in a large consecutive case series.

**METHODS:** This is a descriptive study and review of clinical outcomes in 1,071 patients selected to undergo vaginal hysterectomy for benign indications from 2000 to

**CONCLUSION:** Vaginal hysterectomy can be successfully adopted as a same-day discharge procedure. In this population, regardless of previous pelvic surgery or nulliparity, good perioperative outcomes have been achieved.

(*Obstet Gynecol* 2012;120:1355-61)

DOI: <http://10.1097/AOG.0b013e3182732ce>



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## Same Day vs POD#1 Discharge Readmission Causes

Table 2

Reason for Readmission Stratified by Day of Discharge

Reason for Readmission	Day 0 Discharge, n (%) (n = 66)	Day 1 Discharge, n (%) (n = 101)	p Value
Wound complication			
Surgical site infection	10 (15.2)	36 (35.6)	.004
Wound dehiscence	2 (3.0)	4 (3.9)	1.0
Vaginal hematoma	1 (1.5)	2 (2.0)	1.0
Vaginal cuff dehiscence	1 (1.5)	2 (2.0)	1.0
Infectious			
Pneumonia	1 (1.5)	0 (0.0)	.15
Sepsis/septic shock	2 (3.0)	1 (1.0)	.56
Urinary tract infection	1 (1.5)	3 (3.0)	1.0
Intra-abdominal abscess	1 (1.5)	0 (0.0)	.15
Fever	11 (16.7)	3 (3.0)	.003
Parametritis/pelvic cellulitis	2 (3.0)	2 (2.0)	.64
Cardiovascular			
Pulmonary embolism	2 (3.0)	6 (5.9)	.48
Dehydration	0 (0.0)	1 (1.0)	1.0
Aortic dissection	0 (0.0)	1 (1.0)	1.0
Gastrointestinal			
Rectal bleeding	1 (1.5)	0 (0.0)	.15
Incisional hernia with obstruction	2 (3.0)	5 (4.9)	.70
Enterocolitis	1 (1.5)	1 (1.0)	1.0
Paralytic ileus	1 (1.5)	3 (3.0)	1.0
Nausea and vomiting	3 (4.5)	2 (2.0)	.38
Genitourinary			
Ureteral injury	1 (1.5)	1 (1.0)	1.0
Vesicovaginal fistula	1 (1.5)	0 (0.0)	.15
Enterovaginal fistula	0 (0.0)	1 (1.0)	1.0
Ovarian torsion	0 (0.0)	1 (1.0)	1.0
Other			
Hemorrhage	3 (4.5)	4 (3.9)	1.0
Peritoneal adhesions	2 (3.0)	0 (0.0)	.15
Postoperative pain	9 (13.6)	1 (1.0)	.01
Unspecified	9 (13.6)	22 (21.8)	.22

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 Zaritsky E. Same-day discharge  
 after laparoscopic hysterectomy.  
*Obstet Gynecol.* 2011  
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 10.1097/AOG.0b013e318215dd4  
 PMID: 21508753



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## Barriers to Implementation

Strongly held biases among health care team  
 Manpower



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# Activity Restriction Recommendations and Outcomes After Reconstructive Pelvic Surgery

A Randomized Controlled Trial

Margaret G. Mueller, MD, Christina Lewicky-Gaupp, MD, Sarah A. Collins, MD, Melinda G. Abernethy, MPH, MD, Alex Alverdy, MS, and Kimberly Kenton, MD, MS

Obstet Gynecol 2017

## 95 Women Undergoing POP/UI Surgery

- Liberal activity
  - High impact
  - Lifting
- Restrict activity x 3 months

Table 4. Anatomic Outcomes and Pelvic Floor Symptoms of the 95 Women Undergoing Reconstructive Pelvic Surgery

	Entire Cohort (N=95)	Liberal Recommendations (n=45)	Restricted Recommendations (n=50)	P
Satisfaction (completely and mostly)*	91 (95.8)	44 (97.8)	47 (94.0)	.619
3-mo PFDI <sup>†</sup>				
Total score	32.9±35.8	23.0±26.3	41.1±40.7	.017
Urinary subscale	12.4±16.4	8.1±11.5	16.1±18.9	.021
Colorectal anal subscale	11.7±14.6	10.4±13.7	12.9±15.3	.402
Prolapse subscale score	8.9±13.1	5.4±8.83	12.1±15.4	.013
3-mo PFGQ <sup>‡</sup>				
Total score	17.4±44.7	9.7±28.7	23.8±53.8	.103
Urinary subscale	7.7±18.7	6.2±15.1	8.9±21.5	.851
Vagina and pelvis subscale	5.0±17.1	4.3±14.6	5.5±19.1	.794
Bowel subscale	85.7±6.4	2.8±9.3	9.3±19.3	.094
3-mo PROMIS <sup>§</sup>				
Physical function	51.0±7.9	50.8±8.2	51.2±7.7	1.00
Anxiety	43.3±8.5	42.1±8.3	44.3±8.7	.179
Depression	43.1±7.2	41.6±6.4	44.4±9.3	.049
Fatigue	44.1±9.1	43.5±8.9	44.6±9.3	.676
Sleep disturbance	46.4±9.2	46.9±9.8	46.1±9.3	.720
Satisfaction with social role	56.2±9.28	57.2±9.9	55.4±8.8	.263
Pain interference	45.3±6.8	44.9±6.8	45.7±6.8	.401
3-mo PFGQ <sup>‡</sup>				
Stage 0 <sup>¶</sup>	67 (70.5)	32 (71.1)	35 (70)	.607
Stage II <sup>¶</sup>	24 (25.3)	10 (22.0)	14 (28.0)	
3-mo point Ba	-2.54±0.7	-2.49±0.7	-2.59±0.6	.764
3-mo point Bp	-2.15±0.9	-2.35±0.9	-1.98±0.9	.043
3-mo point C	-8.49±1.4	-8.41±1.6	-8.57±0.9	.925



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3-mo point Bp	-2.15±0.9	-2.35±0.9	-1.98±0.9	.043
3-mo point C	-8.49±1.4	-8.41±1.6	-8.57±0.9	.925

Fewer Pelvic Floor and UI Symptoms  
No Difference in Anatomy



## Summary

Pelvic floor disorders are common

Easy screening tools can identify women with PFDs

Goal directed therapy can be initiated and produce good results for women

Minimally invasive surgical procedures have revolutionized the care of women with PFDs

