Canadian Urological Association
The Voice of Urology in Canada

Association des Urologues du Canada
La voix de l'urologie au Canada

Female Stress Urinary Incontinence

Speaker

Dr. Blayne Welk

Professor, Western University

Speaker Disclosures | Blayne Welk

Relationships with financial sponsors:

- None

Disclosure of Financial Support

Potential for conflict(s) of interest:

- Members of the SPC committee (Alan Bell, Peter Lin, and Arthur Kushner) received honorarium from the Canadian Urological Association.
- Blayne Welk received honorarium from the Canadian Urological Association.

Mitigating Potential Bias

The scientific planning committee of this program have complete control over the content of this program.

There has been no influence from the sponsors on the content.

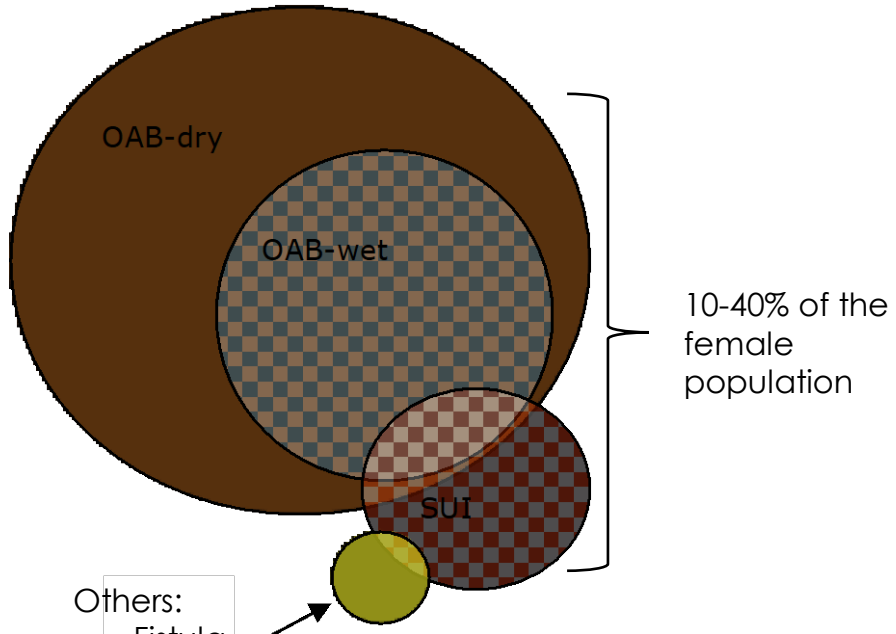
Objectives

- Upon completion of this program, participants will:
  - Known the prevalence and causes of stress incontinence
  - Be able to evaluate a woman with stress incontinence
  - Be familiar with non-surgical options women can use for the management of stress incontinence
  - Be aware of some of the surgical options that are available to treat stress urinary incontinence

Female Stress Incontinence

- A common type of urinary dysfunction in women
- 1/7 women will have stress incontinence surgery during their lifetime
- ~1.5 million women in Canada have urinary incontinence

OAB: Overactive Bladder
SUI: Stress Urinary incontinence



Sadri et al, NAU, 2023

Stress vs urge urinary incontinence

Stress

Urge

"Do you leak when you laugh, cough, sneeze or are physically active?"
"Do you get a strong urge to urinate and then leak when you are on the way to the toilet?"

Etiology of Stress Incontinence

- Genetics
- Aging
- Vaginal delivery
- Others
  - Obesity
  - Smoking
  - Fluid intake
  - Hysterectomy
  - Medications

McKenzie P et al. Curr Opin Urol. 2010 Jul.;20(4):291–295.

Impact of urinary incontinence

- Worse quality of life[1]
  - Grouped with dementia and stroke as the top three chronic conditions with highest impact on QOL
  - Impacts concentration, physical activity, and self-confidence
  - Bother from SUI is proportional to severity
- Associated with depression[2]
- ¼ take time off work due to their incontinence[3]
  - 11.5 million person-days of lost work in Canada per year!
- Average women with incontinence spends $1,400-2,100/year on incontinence products[3]

1. Sinclair AJ et al. The Ob & Gyn 2011;13:143–148.
2. Bogner HR, et al J of Am Ger Soc, 2002
3. Fultz N et al. (2005). Occup Med-c 55:552-557

Impact of urinary incontinence

Physical

Urinary & skin Infections
Ulcers
Falls/Fractures
Sexual dysfunction

Psychological

Stress
Depression
Shame/self confidence

Social

Social isolation
Loss of independence
Financial Impact

Evaluation

- **History**
  - Storage and voiding symptoms
  - The type and severity of incontinence and degree of bother
  - Review of relevant background:
    - Urinary tract infections
    - Pelvic pain
    - Smoking history
    - Hematuria
    - Previous urologic and gynecologic surgery or pelvic radiation
    - Obstetrical history
    - Pelvic organ prolapse
    - Fluid intake
    - Bowel function

Bettez et al. CUAJ, 2012

Evaluation

- Storage symptoms ("FUNI")
  - Frequency
    - Normal: 5-7 voids/day
  - Urgency
  - Nocturia
  - Incontinence
- Voiding symptoms ("WISHED")
  - Weak stream
  - Intermittent stream
  - Straining to void
  - Hesitancy
  - Emptying the bladder incompletely
  - Double voiding

Evaluation

- **Physical exam**
  - General status (mental status, obesity, physical dexterity and mobility)
  - Abdominal examination
  - Focused neurological examination when indicated
  - Pelvic examination
  - Cough stress test

At the time of pelvic exam
Moderately full bladder
Ask the woman to cough and observe for incontinence

Bettez et al. CUAJ, 2012

Evaluation

- **Investigations**
  - Urinalysis (culture if indicated)
  - A voiding diary

DAY 4	Date:				
Time	Amount Voided *(in ccs)*	Leak Volume *(scale of 1-3*)*	Activity during leak	Was there an urge	Fluide intake *(Amount in ounces/type)*

Bettez et al. CUAJ, 2012

Evaluation

- Red Flags
  - Hematuria
  - Large post-void residual
    - Beware the radiologist's post void residual!
  - Other pelvic mass
  - Pelvic pain
  - Neurologic disease/symptoms
  - Acute back pain/lumbar disc disease
  - Recent urologic/gynecologic surgery or prior pelvic radiation

Conservative treatment

- Conservative options
  - Reduce caffeine, fluid intake, or change the times they are taken
  - Review medications (ie diuretics)
  - Treat constipation
  - Quit smoking
  - Weight loss
    - RCT demonstrated that an 8% weight loss translated into a 47% reduction in incontinence
  - Bladder training: more frequent voiding
  - Pelvic floor exercises

Subak et al. N Engl J Med 2009; 360:481-490

Conservative treatment

- Bladder training (scheduled voiding)
  - Schedule based on an interval the patient can manage in daytime
  - Void at scheduled time even if urge not present
  - Increase voiding interval by 30 min each week until continent for 3-4 hr

Conservative treatment

- Pelvic floor muscle therapy
  - Effective for stress incontinence
    - Strengthening
  - Also effective for urgency incontinence
    - Urge suppression (10sec contraction, or 5 rapid contractions)
  - 15-30% of women do Kegel's wrong![1]

  - Easy! Referral to a pelvic floor physiotherapist
    - For example, in Ontario: https://pelvichealthsolutions.ca/
  - Online resources for patients:
    - https://www.urologyhealth.org/educational-materials/bladder-control
    - https://www.uptodate.com/contents/pelvic-floor-muscle-exercises-beyond-the-basics

Henderson JW, et al. FPMRS. 19(1) 8-12, 2013

Conservative treatment

- Extracorporeal magnetic stimulation: a non-invasive therapy for urinary incontinence (induces an electric current with the aid of a magnetic field to stimulate the pelvic floor).
  - Usually provided privately
  - Initial studies suggest benefit in degree and frequency of incontinence
    - Generally better than sham treatment
    - Seems to be similar to active pelvic floor muscle therapy
  - No definitive RCT available yet

Strojek et al, J Clin Med, 2023

Conservative treatment

- Pessaries
  - Incontinence vs prolapse
  - Disposable ones available over the counter

RCT of continence pessary versus disposable device had similar success rates (~80%) in both groups, but limited long-term use.

Nekkanti et al, Int Urogyn J, 2022

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Nekkanti et al, Int Urogyn J, 2022

Conservative treatment

- Vaginal laser therapy
  - Marketed as a private pay treatment for "vaginal rejuvenation"
    - (AKA treatment of genitourinary syndrome of menopause and urinary incontinence)
  - Uses a high-energy CO_2 laser to stimulate collagen production in the vaginal tissues
  - However, results of the initial low quality observational studies which suggested benefit have not been realized in high-quality RCTs…

Welk et al, CMAJ, 2023

Conservative treatment

Key Points

Question Is fractional carbon dioxide laser an effective treatment for vaginal symptoms associated with menopause?

Findings This sham-controlled, double-blinded, randomized clinical trial included 90 women with postmenopausal vaginal symptoms. After 12 months, treatment with fractional carbon dioxide laser compared with sham treatment resulted in a change in visual analog scale score for overall symptom severity of −17.2 vs −26.6 (range, 0-100; lower scores indicate less symptom severity) and Vulvovaginal Symptom Questionnaire score of −3.1 vs −1.6 (range 0-20; lower scores indicate less symptoms). Neither comparison was statistically significant.

Meaning Among women with postmenopausal vaginal symptoms, treatment with fractional carbon dioxide laser vs sham treatment did not improve vaginal symptoms after 12 months.

Li et al, JAMA 2021

AJOG at a Glance

Why was this study conducted?

CO_2 vaginal laser therapy for stress urinary incontinence is in widespread use, but few sham-controlled randomized controlled trials have been performed.

Key findings

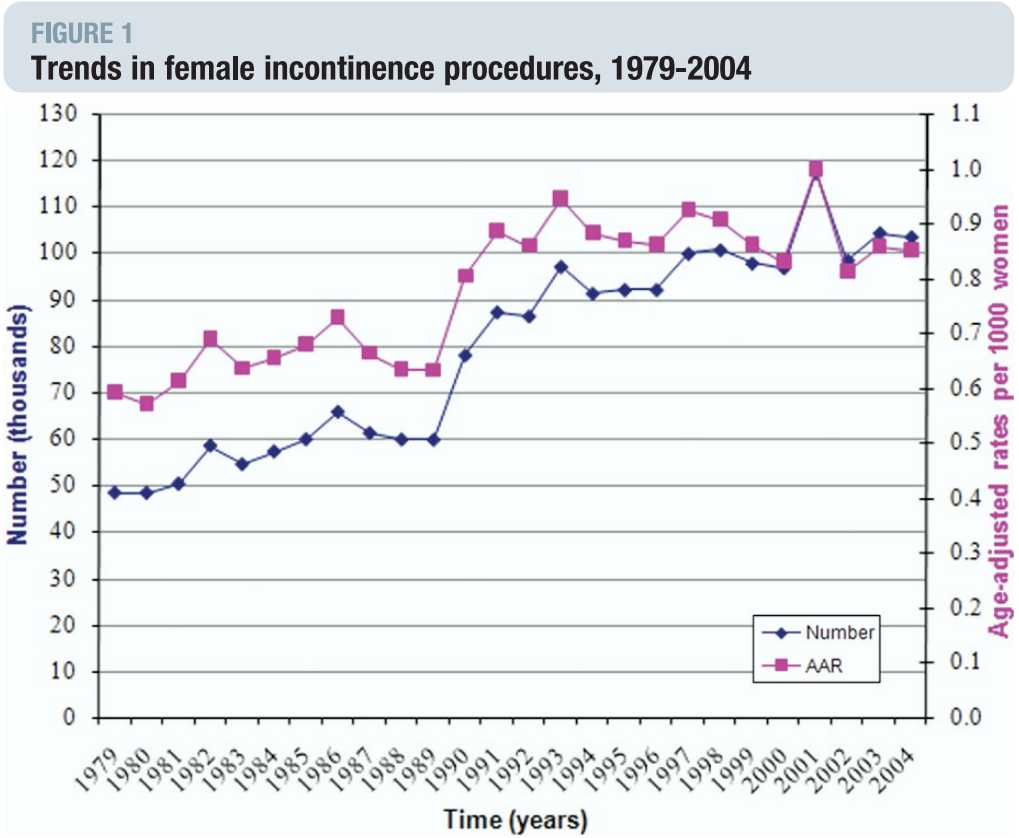
There was no difference between the sham and laser treatment arm in reporting leak with cough, sneeze, or laughter.
There was no difference in objective stress urinary incontinence.
There was no difference in patient-reported outcomes for urinary incontinence.

What does this add to what is known?

Several studies have shown benefit of vaginal laser treatment for stress urinary incontinence. This randomized controlled trial has not shown a difference between sham and active CO_2 laser treatment.

Alexander et al, Am J Obstet Gynecol 2022

Surgical treatment

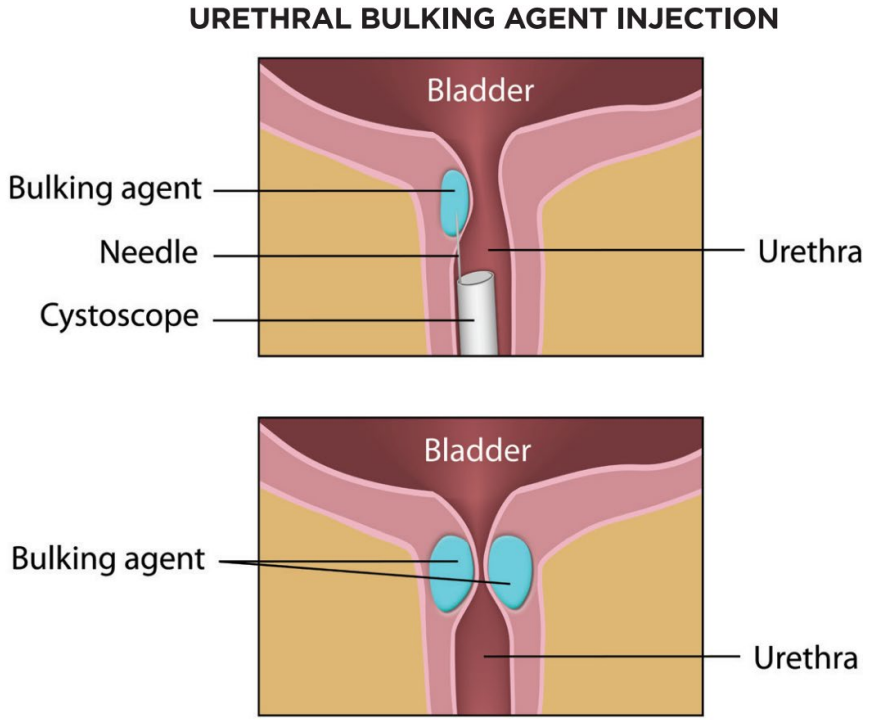


Almost 90% of stress incontinence procedures were mesh-based midurethral slings

Oliphant SS et al.. YMOB. 2009 May 1;200(5):521.e1–521.e6.

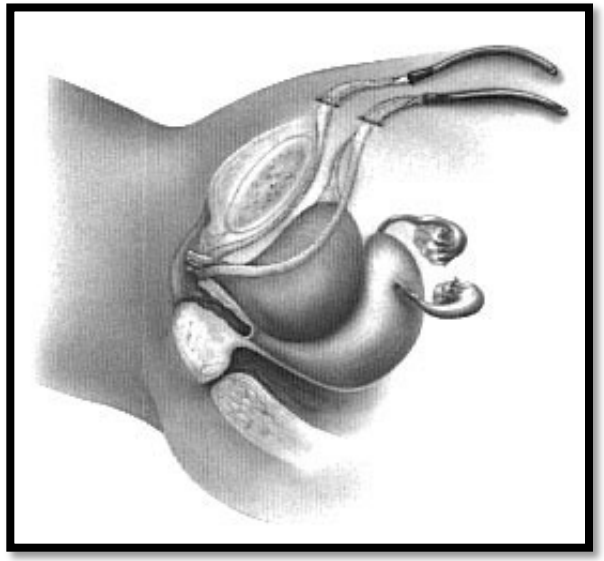
Surgical treatment-Bulking agents

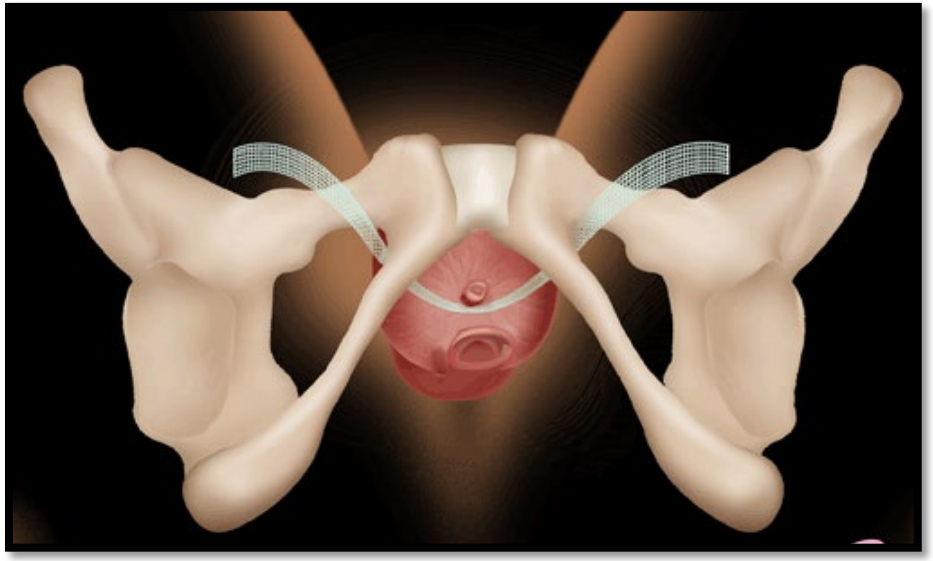
- Urethral bulking agents
  - Minimally invasive outpatient procedures
  - Low risk
  - However, limited effectiveness and durability



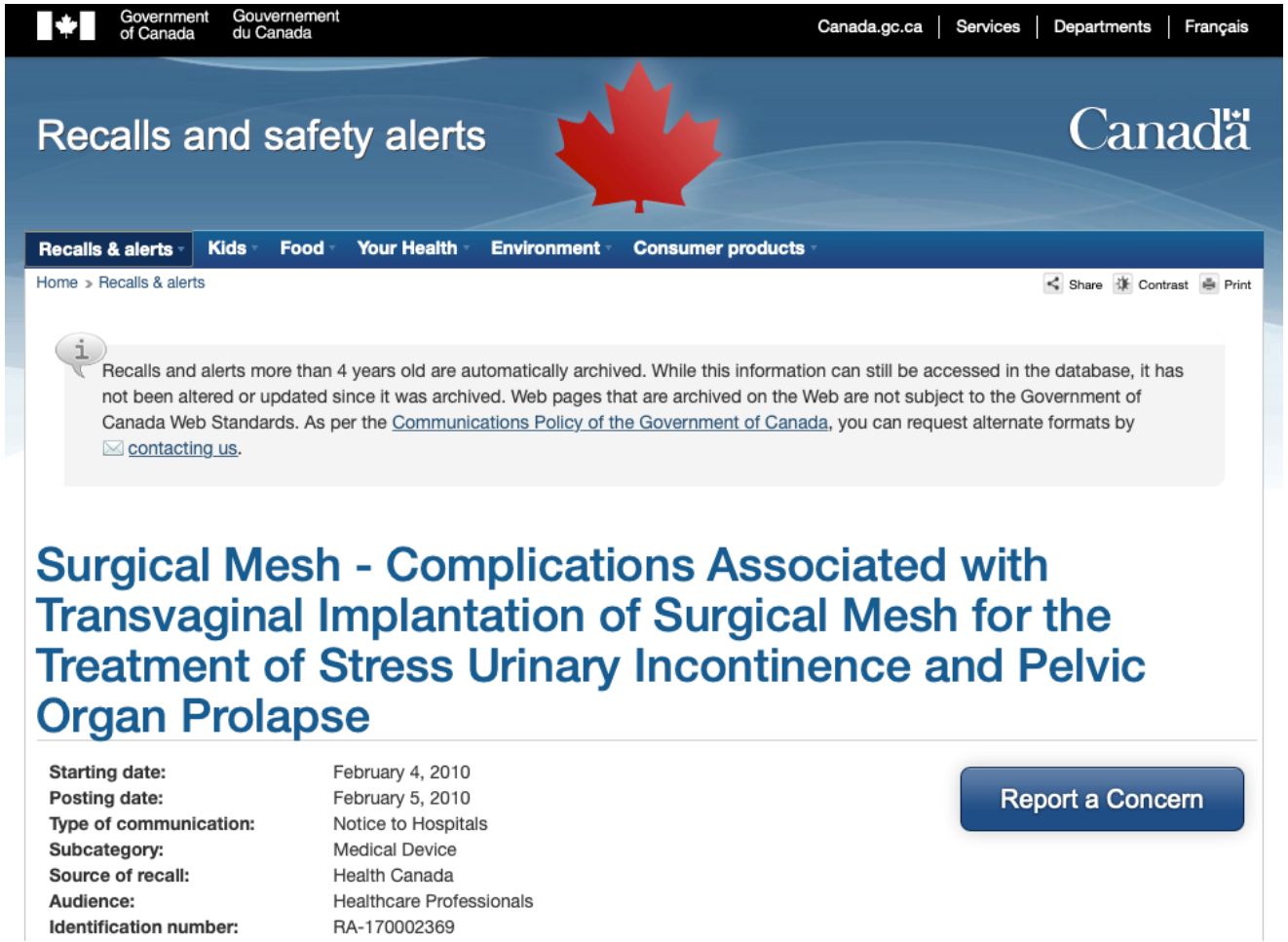
Surgical treatment - Midurethral slings

- Advantages:
  - Shorter operative time
  - Quicker recovery
  - Good results
  - Can be used in almost all patients





Transvaginal mesh controversy



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Surgical Mesh - Complications Associated with Transvaginal Implantation of Surgical Mesh for the Treatment of Stress Urinary Incontinence and Pelvic Organ Prolapse

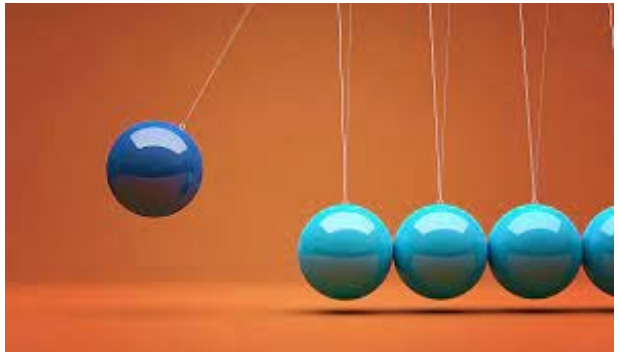
Starting date:	February 4, 2010
Posting date:	February 5, 2010
Type of communication:	Notice to Hospitals
Subcategory:	Medical Device
Source of recall:	Health Canada
Audience:	Healthcare Professionals
Identification number:	RA-170002369

Report a Concern

Transvaginal mesh controversy

- Numerous class action lawsuits
- Rare but serious complications
  - Chronic pelvic pain
  - Voiding dysfunction
  - Dyspareunia/sexual dysfunction
  - Urogenital fistulas
  - Vaginal mesh extrusion
  - Erosion into the lower urinary tract

Transvaginal mesh pendulum



Under-reporting of complications
Failure to address patient concerns

Avoidance of any mesh product for incontinence

2000's → 2020's

Transvaginal mesh controversy

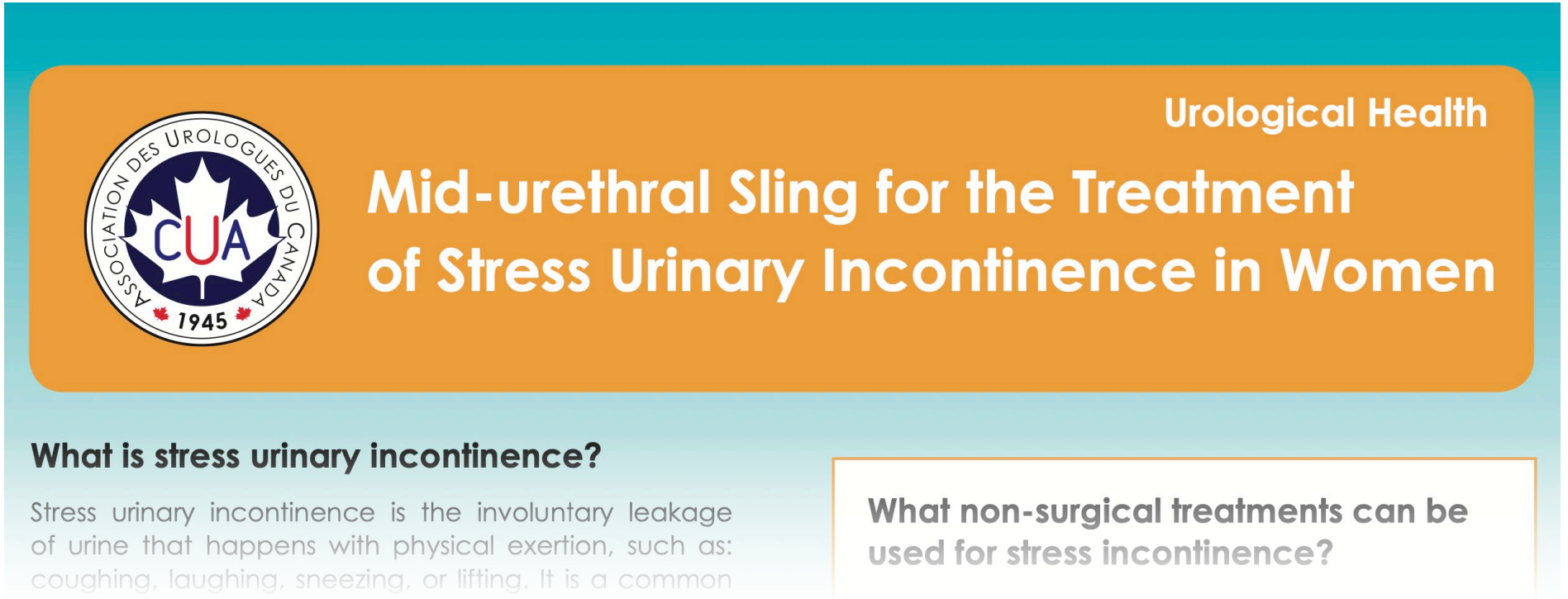
Canadian Urological Association position statement on the use of transvaginal mesh

Blayne Welk, MD[1]; Kevin V. Carlson, MD[2]; Richard J. Baverstock, MD[2,3]; Stephen S. Steele, MD[4]; Gregory G. Bailly, MD[5]; Duane R. Hickling, MD[6]

[1]Department of Surgery, Western University, London, ON; [2]Section of Urology, Department of Surgery, University of Calgary, Calgary, AB; [3]vesia [Alberta Bladder Centre], Calgary, AB; [4]Queen's University, Kingston, ON; [5]Department of Urology, Dalhousie University, Halifax, NS; [6]Division of Urology, Department of Surgery, The Ottawa Hospital, Ottawa, ON; Canada

- When a transvaginal SUI procedure is offered to a patient, they must be informed of potential procedure-specific and mesh-specific complications.
- The 2014 Health Canada Advisory should be disclosed to patients.
- Surgeons performing these procedures should be adequately trained in SUI surgery and specifically trained in the sling technique they use.
- They should be capable of recognizing, diagnosing, and treating potential mesh-related complications associated with their procedure.

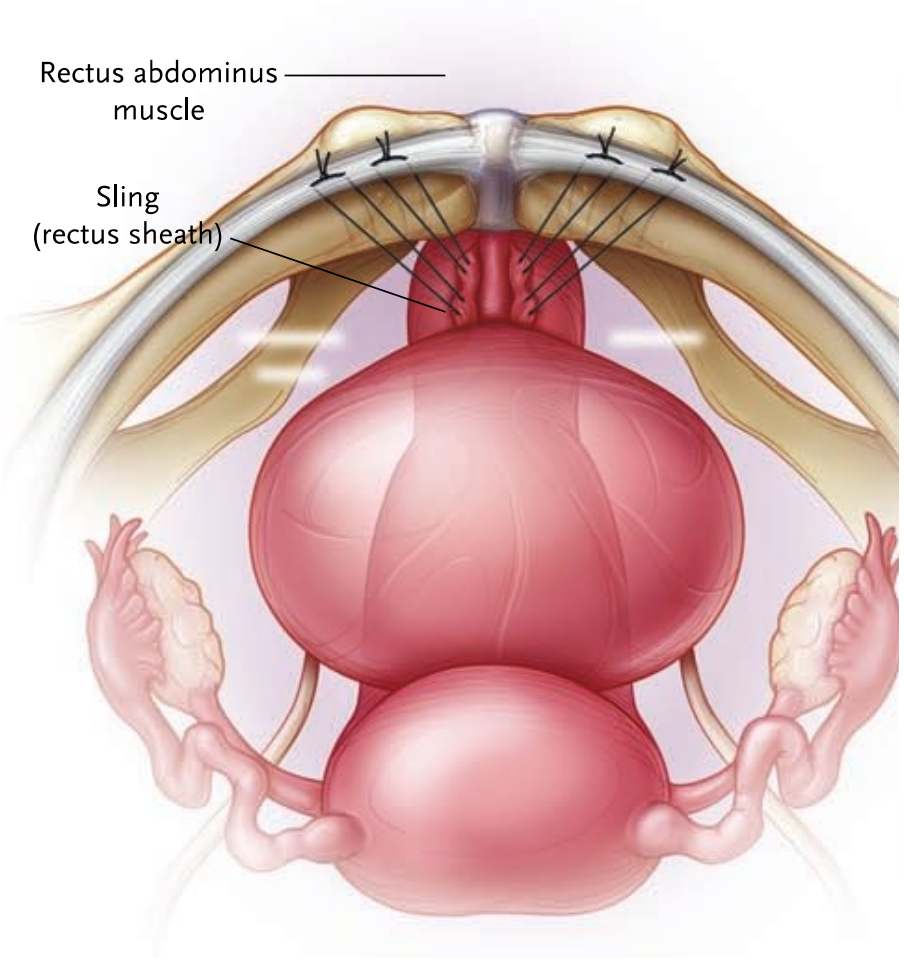
Transvaginal mesh controversy



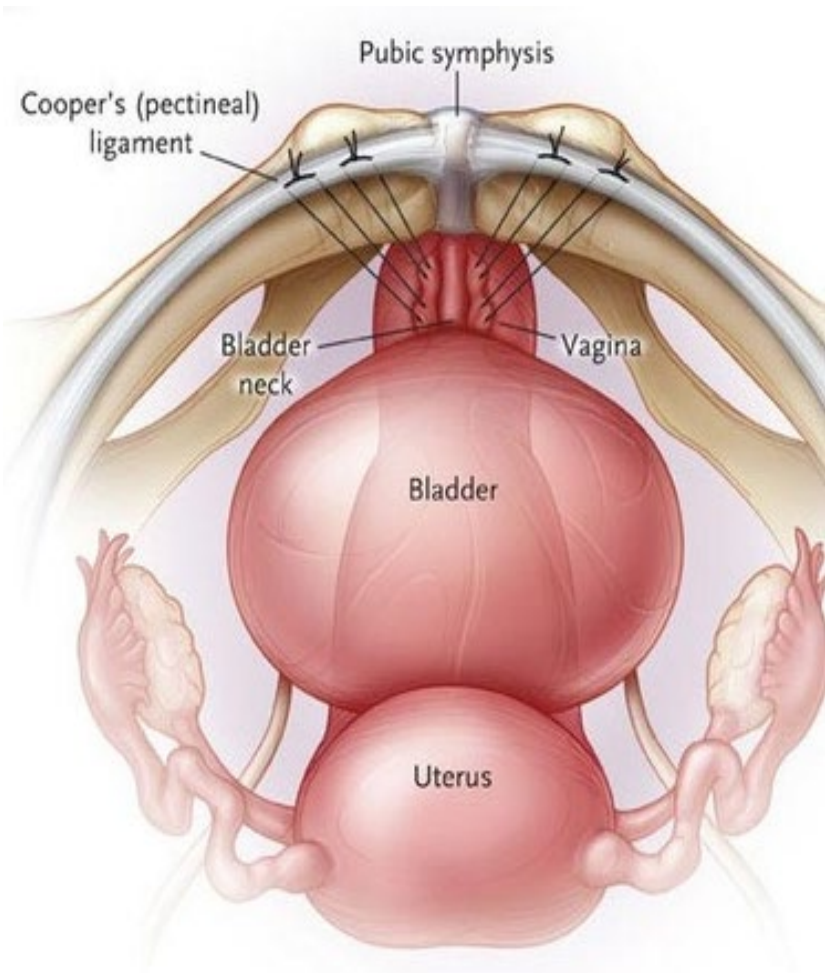
Patient information is available from the CUA online:

https://www.cua.org/system/files/PIB/PIB_31E_2022_web%2004.pdf

Surgical treatment



Pubovaginal Sling



Burch Colposuspension

Albo et al. NEJM, 2007, 356:2143-2155

Surgical treatment

Postoperative complications that a family physician may see from these procedures:

1. Urinary tract infection
2. Wound infection/Seroma
3. Urinary retention/overflow incontinence
4. Vaginal discharge/bleeding

Albo et al. NEJM, 2007, 356:2143-2155

Conclusions

- Stress incontinence is a common problem among women
- When evaluating a patient, consider the 
- Treatments that can be offered by a family physician:
  - Bladder training, weight loss, smoking cessation
  - Advice on fluid intake, treatment of constipation
  - Referral to a pelvic floor physiotherapist
  - Incontinence pessaries
  - Referral to a urologist for further assessment and potential surgical treatment

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