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*Why UTIs Keep Coming  
Back: Genitourinary  
Syndrome of Menopause  
and Recurrent Infections  
in Women*

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- Medtronic consulting
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## Why This Matters

- rUTI definition:  $\geq 2$  culture-confirmed UTIs in 6 months (or  $\geq 3$ /year)
- ~50–60% of women experience UTI in lifetime
- Between Jan 2016 and Dec 2020
  - 10.5 million office visits
  - 3 million ED encounters
  - 400,000 hospitalizations
  - Annual cost >4.8 billion
- Postmenopausal women have higher recurrence rates
- Antibiotic overuse and resistance concerns

Ackerson BK., J Infect Dis. 2024

## What Is a UTI?

### Classic symptoms

- Dysuria
- Urgency
- Frequency
- Suprapubic pain
- Hematuria

### NOT sufficient alone:

- Cloudy urine
- Odor
- Falls
- Altered mental status (without urinary symptoms)

Ackerman AL., J Urol. 2025

## Urologic/Anatomic rUTI Risk Factors

- Urinary incontinence
- Presence of cystocele
- Elevated post void residual
- Vulvovaginal atrophy → genitourinary syndrome of menopause (GSM)

Raz R, Clin Infect Dis. 2000  
Lazarus JE, Infect Dis Clin North Am. 2024

## What is GSM?

- Spectrum of symptoms from hypoestrogenism affecting GU tract
- Includes:
  - Vaginal dryness
  - Dyspareunia
  - Urinary urgency/dysuria
  - Recurrent UTIs
- Highly prevalent (27–84% of postmenopausal women)

Kaufman MR, Urogynecology 2025

## GSM Guidelines (NEW in 2025)

- GSM is diagnosed primarily based on symptoms
- Symptoms may be genital, urinary, and/or sexual
- No required number or combination of symptoms
- Physical exam findings are supportive but not required
- Diagnosis includes:
  - Symptoms and bother
  - Exclusion of other causes (e.g., infection, dermatoses, OAB, etc.)

Kaufman MR, Urogynecology 2025

## The Overlooked Driver: GSM

Genitourinary Syndrome of Menopause (GSM) includes:

- Vaginal dryness
- Dyspareunia
- Urinary urgency
- Dysuria
- Recurrent UTIs

Ackerman AL, J Urol. 2025.

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## Pathophysiology: Estrogen Loss

Key mechanisms:

- Thinning of vaginal and urethral epithelium
- Loss of glycogen
- Decreased Lactobacillus
- Increased vaginal pH
- Increased colonization with uropathogens

Ackerman AL, J Urol. 2025.

## Common HPI in Clinic

- 65 yo female with “Recurrent UTIs”
- Dysuria with many negative cultures
- Urgency/frequency
- Vaginal dryness
- Dyspareunia
- Burning after intercourse

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## Evidence: Vaginal Estrogen Works

- NEJM, 1993
  - Estriol ↓ UTIs dramatically (0.5 vs 5.9/year)
  - Restored Lactobacillus, normalized pH
- Female Pelvic Medicine & Reconstructive Surgery, 2021
  - Significant reduction in rUTI vs placebo
- Consistent benefit across decades

Raz R, N Engl J Med. 1993

Ferrante KL, Female Pelvic Med Reconstr Surg. 2021

## Recurrent Uncomplicated Urinary Tract Infections in Women: AUA/CUA/SUFU Guideline (2025)

“In updating the 2025 guideline update for Recurrent Uncomplicated Urinary Tract Infections in Women, we hope to take a more patient-centered, risk-based, and microbiome-aware approach to rUTI management”

-Guideline amendment chair A. Lenore Ackerman, MD, PhD.

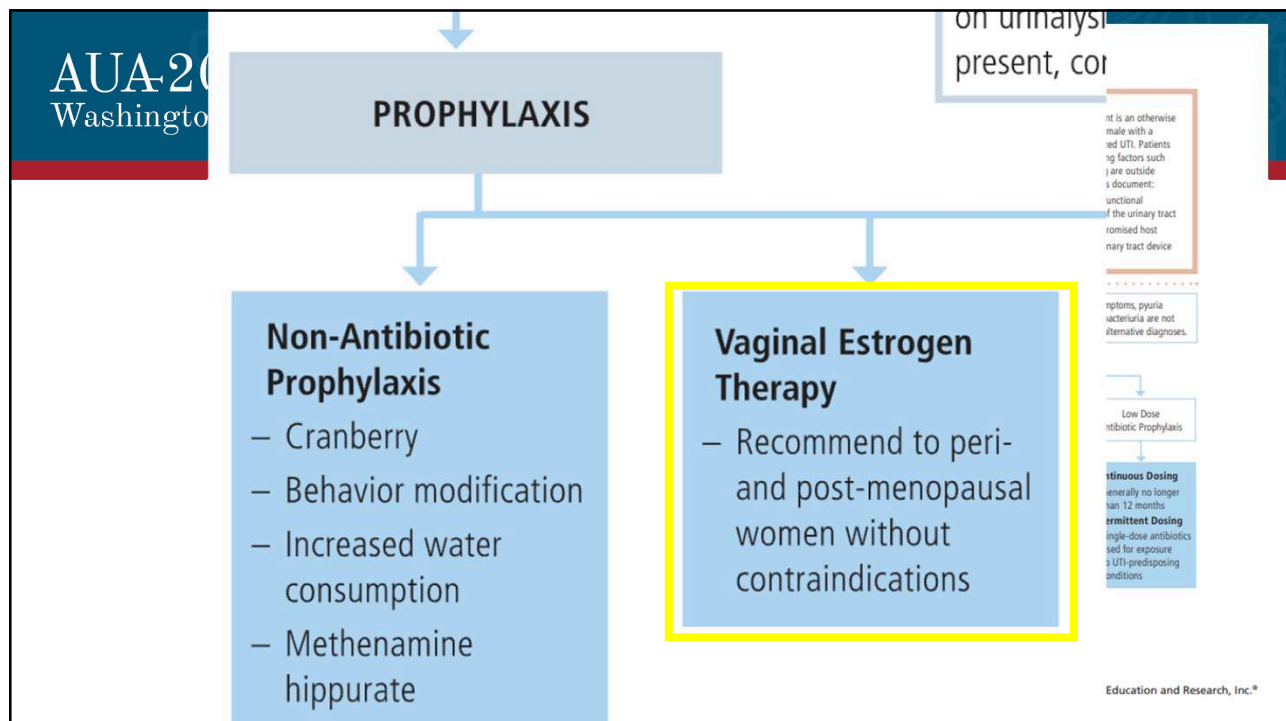
<https://www.urologytimes.com/view/aua-releases-amendment-to-recurrent-uncomplicated-utis-in-women-guideline>

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## AUA 2025 GSM / rUTI Guideline Update

- GSM formally recognized as a key contributor to rUTIs
- Emphasizes risk-based, patient-centered management
- Recommends vaginal estrogen as first-line prevention in postmenopausal rUTIs (if no contraindication)
- Encourages reduced antibiotic reliance and targeted prevention strategies



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## rUTI GUIDELINE STATEMENTS

- Evaluation
- Asymptomatic Bacteriuria
- Antibiotic Treatment
- Antibiotic Prophylaxis
- Non-Antibiotic Prophylaxis
- Follow-up Evaluation
- Estrogen

## Asymptomatic Bacteriuria / ASB

- Clinicians should omit surveillance urine testing, including urine culture, in asymptomatic patients with rUTIs
  - (*Moderate Recommendation; Evidence Level: Grade C*)
- Clinicians should not treat asymptomatic bacteriuria (ASB) in patients
  - (*Strong Recommendation; Evidence Level: Grade B*)
- Bacteria in the urine alone does *not* equal infection
- Treating ASB does not prevent future UTIs—in fact, it can increase antibiotic resistance and disrupt the normal microbiome.

## Non-Antibiotic Prophylaxis

- Clinicians should offer cranberry
  - (Moderate Recommendation; Evidence Level: Grade B)
- Clinicians should inform patients with rUTIs that D-mannose alone for prophylaxis may not be effective in UTI prevention
  - (Moderate Recommendation; Evidence Level: Grade B)
- Clinicians may offer methenamine hippurate
  - (Conditional Recommendation; Evidence Level: Grade C)
- Clinicians may offer increased water intake for prophylaxis (>50 oz)
  - (Conditional Recommendation; Evidence Level: Grade C)

## Estrogen

### Estrogen

- In perimenopausal and postmenopausal women with rUTIs, clinicians should recommend vaginal estrogen therapy to reduce the risk of future UTIs if there is no contraindication to vaginal estrogen therapy.
  - (Moderate Recommendation; Evidence Level: Grade B)

## What Does Vaginal Estrogen Actually Do?

- Effects:
  - Restores vaginal epithelium
  - Decreases vaginal pH
  - Promotes Lactobacillus growth
  - Reduces uropathogen colonization
  - **Changing the environment that allows infections to occur in the first place.**
- Clinical outcomes:
  - Fewer UTIs
  - Improved urinary symptoms
  - Improved sexual health

## FDA Update + AUA Response (2025)

- FDA removed black boxed warning for low-dose vaginal estrogen
- AUA supports this change
- Confirms minimal systemic absorption
- Reinforces distinction: local  $\neq$  systemic estrogen
- Improves prescribing confidence
- Reduces barriers to care

## Safety & Breast Cancer Survivor Data

- No increase in breast cancer mortality
- No increased recurrence in large cohorts
- OR recurrence ~0.48 (no increased risk signal)
- OR mortality ~0.60 (no increased risk signal)
- Data from >50,000–60,000 patients
- Safe in many breast cancer survivors with shared decision-making

Beste ME, AJOG. 2025

## Evidence gaps remain for:

- Vaginal moisturizers in preventing UTIs
- Laser therapy for GSM/UTI prevention
- Over-the-counter supplements

## Approach to rUTI in Postmenopausal Women:

1. Review hx / confirm UTI with culture
2. Evaluate for GSM symptoms
3. PVR and pelvic exam
4. Start vaginal estrogen
5. Behavioral interventions
6. Consider other rUTI strategies if needed

### Recurrent Uncomplicated UTI (rUTI) AUA/CUA/SUFU

#### HISTORY AND PHYSICAL EXAMINATION

- Confirm prior UTI diagnosis
- Obtain urinalysis, urine culture
- Perform pelvic exam

#### CONFIRMED DIAGNOSIS OF UTI

Prior to the determination of management, patients should engage in a shared decision-making process.

#### MANAGEMENT OF ACUTE SYMPTOMS

##### Evaluation

1. Assess acute-onset symptoms
2. Microscopic urinalysis
3. Microbial testing (reflex urine culture)

##### Episodic Management

##### Self-Start Therapy

- May offer to compliant and reliable patients
- Review treatment plan following availability of culture results; modify treatment if necessary

##### Antibiotic Selection

- Use first-line TMP-SMX on the basis of local resistance patterns
- Duration: Treat for 5 days
- Oral Analgesics: May be used for pain relief

The Index Patient is an otherwise healthy adult female with a recurrent localized UTI. Patients with complicating factors such as the following are outside the scope of this document:

- Anatomic or functional abnormality of the urinary tract
- Immunocompromised host
- Indwelling urinary tract device

**Indication:**

You have been prescribed vaginal estrogen therapy for one or more of the following evidence-based indications:

1. **Treatment of genitourinary syndrome of menopause (GSM)**, including symptoms such as:
  - Vaginal dryness, irritation, or burning
  - Pain with intercourse (dyspareunia)
  - Urinary urgency, frequency, or dysuria
2. **Prevention of recurrent UTIs** in postmenopausal or low-estrogen individuals
3. **Improvement of vaginal, urethral and bladder tissue health**, including increased elasticity, thickness, and lubrication of the genitourinary epithelium
4. **Adjunctive therapy to support pelvic floor treatments**, including pelvic floor physical therapy
5. **Optimization of the vaginal environment for pessary use**, including reduction of tissue irritation, friction, and risk of skin breakdown

**Use:**

We recommend what we call "Fingertip Application" meaning you do not use the provided applicator (it is often messy and wasteful). Instead, squeeze a blueberry-sized amount (about 1 gram) of vaginal estrogen cream onto your index finger. With your other hand, separate the labia, or lips of your vagina. Insert the finger with the cream on it into your vagina to your second knuckle and smear the cream onto the vaginal tissue.



Please do this before bed so the cream can be absorbed while lying down.

**Frequency:**

Please use the cream 2-3 night / week. For the first two weeks, use every night.

## Summary

- GSM is a major driver of rUTI in postmenopausal women
- Hypoestrogenism disrupts the urogenital microbiome
- Vaginal estrogen reduces recurrence and antibiotic use
- Recommended by AUA guidelines
- Treat the underlying biology, not just infections

**“Thus, despite a growing desire for more accurate diagnostics for UTI in patients with suggestive symptoms, the answer to improved antimicrobial stewardship lies not in better testing, but in better clinical judgement.”**

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Thank You!



Every life deserves world class care.

