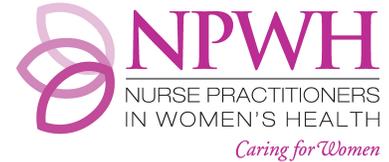




healthywomen



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# Nonsurgical Treatments for Urinary Incontinence in Women

The findings of a recent update of a systematic review,<sup>1</sup> supported by PCORI through a research partnership with the Agency for Healthcare Research and Quality (AHRQ), show that both nonpharmacological and pharmacological treatments are effective for treating urinary incontinence in non-pregnant women.

## Overview

Urinary incontinence (UI) is the uncontrolled or involuntary loss of urine of any amount. Many women refer to it as “leaking” urine. Treatment plans differ in part based on the type of incontinence. Three types of UI are most common in women:

- ▶ **Stress incontinence** is associated with everyday actions such as coughing, sneezing, laughing, or exercise.
- ▶ **Urgency incontinence** is associated with a sudden and strong urge to urinate and inability to get to the bathroom in time.
- ▶ **Mixed incontinence** is when symptoms of both stress and urgency incontinence are present.

UI affects about 17% of women in the United States, and the prevalence increases with age.<sup>2</sup> About 50% of middle-aged and postmenopausal women,<sup>3,4</sup> and 75% of elderly women in nursing homes<sup>5</sup> experience UI. Despite the high prevalence of UI, however, many women hesitate to seek treatment because they are embarrassed or unaware that improvement is possible. A recent update of a systematic review addresses the effectiveness of nonsurgical treatments, concluding that these treatments are effective for non-pregnant adult women with UI.

## UI Is Treatable

Among women with UI, nonsurgical treatments are effective in improving or curing symptoms and achieving patient satisfaction.

## About the Report

The systematic review update (hereafter, “the review”) revises an earlier version published in 2012,<sup>6</sup> adding 109 new studies. The review includes studies that compare the benefits and harms of various nonsurgical approaches on curing<sup>i</sup> or improving<sup>ii</sup> symptoms, achieving patient satisfaction,<sup>iii</sup> or improving quality of life for women with stress UI, urgency UI, or mixed UI. It divides the interventions into first-,<sup>iv</sup> second-,<sup>v</sup> or third-line<sup>vi</sup> treatments.

The review combines data from direct (head-to-head) and indirect comparisons through a common comparator and conducts network meta-analyses of 80 comparisons of 53 nonsurgical interventions in 16 categories drawn from a total of 233 studies. The review excludes women with atypical etiologies such as pelvic organ prolapse or neurogenic bladder, as these conditions are not thought to be amenable to typical nonsurgical treatments for stress or urgency UI.

<sup>i</sup>Cure is defined in the systematic review update as complete resolution of symptoms, even if the “cure” is not permanent or requires continued treatment to be maintained. It does not imply permanent resolution requiring no further treatment.

<sup>ii</sup>Improvement is defined in the systematic review update as partial resolution of symptoms.

<sup>iii</sup>Patient satisfaction is defined in the systematic review update as satisfaction with level of incontinence achieved for each intervention.

<sup>iv</sup>First-line interventions (most conservative) studied: behavioral therapy (bladder training, pelvic floor muscle training (PFMT), cones, pessaries, weight loss, yoga).

<sup>v</sup>Second-line interventions studied: hormones, alpha agonists (stress UI); anticholinergics alone or with behavioral therapy or hormones (urgency UI).

<sup>vi</sup>Third-line interventions studied (for patients who do not improve with first- and second-line treatment): Neuromodulation alone or in combination with behavioral therapy and hormones (stress and urgency UI); intravesical pressure release, pressure bulking (stress UI); onabotulinum toxin A (BTX) for urgency UI.

## Key Findings

This updated review found that all studied treatments except hormones and periurethral bulking agents are more effective than no treatment in improving or curing UI symptoms or in achieving patient satisfaction. The rates of cure (15% to 45%) and improvement (30% to 79%) are lower than the patient satisfaction rate (51% to 76%), indicating that women can feel satisfied with treatment even if symptoms are not improved or cured. The review also describes adverse events associated with some UI treatments, with dry mouth being the most common side effect in women taking alpha agonists or anticholinergics.

The review grades the strength of the body of evidence according to the AHRQ Methods Guide<sup>7</sup> for assessing the strength of evidence.<sup>vii</sup> Table 1

summarizes findings based on high and moderate strength of evidence for stress and urgency UI; to see findings with low strength of evidence, including those for mixed UI, please refer to the full review at [www.pcori.org/reviews-UI](http://www.pcori.org/reviews-UI).

Table 1 shows the comparative effectiveness of

- ▶ Interventions versus no treatment
- ▶ Nonpharmacological versus pharmacological treatments
- ▶ Combination treatment versus no treatment or a single intervention

Table 1 also includes the results from the subgroup analyses among women ages 60 or older; all other subgroup analyses had missing data or low strength of evidence.

**Table 1: Treating Stress and Urgency UI: Findings with High or Moderate Strength of Evidence**

<b>Interventions Compared with No Treatment</b>	
<b>Treating Stress UI</b>	
<b>First-line interventions</b>	▶ Behavioral therapy is more effective than no treatment for curing or improving symptoms and achieving patient satisfaction for stress UI.
<b>Second-line interventions</b>	▶ Alpha agonists do not cure stress UI but are effective in improving symptoms; women taking alpha agonists report dry mouth, nausea, insomnia, fatigue, constipation, dizziness, and headache as adverse events. ▶ Hormones neither cure nor improve symptoms in women with stress UI.
<b>Third-line interventions</b>	▶ Neuromodulation typically used for treating women with urgency UI was evaluated for women with stress UI. It was more effective than no treatment for curing or improving symptoms and achieving patient satisfaction for stress UI. ▶ Intravesical pressure release devices, used to release excess bladder pressure, are more effective in improving symptoms than no treatment.
<b>Treating Urgency UI</b>	
<b>First-line interventions</b>	▶ Behavioral therapy is more effective than no treatment for curing or improving symptoms and achieving patient satisfaction for urgency UI.
<b>Second-line interventions</b>	▶ Anticholinergics are more effective than no treatment in achieving cure, improvement, and patient satisfaction, but are associated with complaints of dry mouth.

<sup>vii</sup>The systematic review update characterized the strength of evidence for the main conclusion statements across all intervention categories. For each strength of evidence assessment, the number of studies, the study designs and limitations, the directness of the evidence to the key questions, the consistency of study results, the precision of estimates of effect, reporting bias, and the overall findings across studies were considered. A strength of evidence rating of high, moderate, low, or insufficient evidence was applied based on these assessments.

<b>Treating Urgency UI</b>	
<b>Third-line interventions</b>	<ul style="list-style-type: none"> <li>▶ Neuromodulation is more effective than no treatment for curing or improving symptoms and achieving patient satisfaction for urgency UI.</li> <li>▶ Onabotulinum toxin A (BTX) is effective in achieving cure or improving symptoms but is associated with adverse events such as urinary tract infections and voiding dysfunction after treatment.</li> </ul>

## **Nonpharmacological and Pharmacological Interventions Compared with Each Other**

<b>Treating Stress UI</b>	
<b>First- and second-line interventions</b>	<ul style="list-style-type: none"> <li>▶ Behavioral therapy is more effective in achieving improvement than alpha agonists or hormones.</li> <li>▶ Alpha agonists are more effective than hormones in achieving improvement.</li> </ul>

<b>Treating Urgency UI</b>	
<b>First- and second-line interventions</b>	<ul style="list-style-type: none"> <li>▶ Behavioral therapy is more likely to achieve cure, improvement, and patient satisfaction than anticholinergics.</li> </ul>

## **Combination Treatment Compared with No Treatment or Pharmacological Interventions**

<b>Treating Stress UI</b>	
<b>First- and second-line interventions</b>	<ul style="list-style-type: none"> <li>▶ Combination of behavioral therapy and hormones is more effective than no treatment or alpha agonists to achieve cure.</li> </ul>
<b>Third-line interventions</b>	<ul style="list-style-type: none"> <li>▶ Triple combination of behavioral therapy, neuromodulation, and hormones is effective in improving symptoms compared with no treatment.</li> </ul>

<b>Treating Urgency UI</b>	
<b>First- and second-line interventions</b>	<ul style="list-style-type: none"> <li>▶ Combination of behavioral therapy and anticholinergics has significantly higher rates of cure, improvement, and patient satisfaction than no treatment.</li> <li>▶ Combination of behavioral therapy and anticholinergics has higher rates of improvement compared with anticholinergics.</li> </ul>

## Subgroup Analysis (Women Aged 60 Years or Older)

### Treating Stress or Urgency UI

<b>First- and second-line interventions</b>	<ul style="list-style-type: none"> <li>▶ Behavioral therapy is more effective in achieving improvement than alpha agonists.</li> <li>▶ Combination of behavioral therapy with hormones is more effective in achieving cure than no treatment, behavioral therapy, or anticholinergics alone</li> </ul>
<b>Third-line interventions</b>	<ul style="list-style-type: none"> <li>▶ Combination of behavioral therapy with neuromodulation is more effective in achieving cure than no treatment, behavioral therapy, or anticholinergics alone.</li> <li>▶ Triple combination of behavioral therapy, neuromodulation, and hormones is more effective in achieving improvement than alpha agonists or hormones.</li> </ul>

## Current Treatment Guidelines

The American College of Physicians (ACP) has clinical practice guidelines for surgical and nonsurgical treatment of UI.<sup>8</sup> Findings from the review are consistent with these guidelines with some exceptions. For example, the guidelines recommend against pharmacological therapy for stress UI while the review shows that alpha agonists can improve symptoms of stress UI but are associated with adverse events.

Other clinical associations, including the American College of Obstetricians and Gynecologists (ACOG),<sup>9</sup> American Academy of Family Physicians

(AAFP),<sup>10</sup> American Urological Association (AUA),<sup>11</sup> and American Urogynecologic Society (AUGS)<sup>12</sup> provide information on treatment options for UI. These resources recommend using nonsurgical treatments included in our review such as Kegel exercises, bladder training, weight loss, biofeedback, neuromodulation, pessaries for stress UI, and medications. Like the review, these resources report on the adverse events associated with the use of alpha agonists, anticholinergics, BTX, and periurethral bulking agents.

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