

# Screening for Urinary Incontinence in Women: A Recommendation From the Women's Preventive Services Initiative

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**Description:** Recommendation on screening for urinary incontinence in women by the Women's Preventive Services Initiative (WPSI), a national coalition of women's health professional organizations and patient representatives. The WPSI's recommendations are intended to guide clinical practice and coverage of services for the Health Resources and Services Administration and other stakeholders. The target audience for this recommendation includes all clinicians providing preventive health care for women, particularly in primary care settings. This recommendation applies to women of all ages, as well as adolescents.

**Methods:** The WPSI developed this recommendation after evaluating evidence regarding the benefits and harms of screening for urinary incontinence in women. The evaluation included a systematic review of the accuracy of screening instruments and the benefits and harms of treatments. Indirect evidence was

used to link screening and health outcomes in the chain of evidence that might support screening in the absence of direct evidence. The WPSI also considered the effect of screening on symptom progression and avoidance of costly and complex treatments, as well as implementation factors.

**Recommendation:** The WPSI recommends screening women for urinary incontinence annually. Screening ideally should assess whether women experience urinary incontinence and whether it affects their activities and quality of life. The WPSI recommends referring women for further evaluation and treatment if indicated.

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\* For a list of members of the WPSI Multidisciplinary Steering Committee, see the Appendix (available at [Annals.org](http://Annals.org)).

Urinary incontinence, the involuntary loss of urine, is characterized by 3 main types: urgency, stress, and mixed (1). Affecting an estimated 51% of women overall, urinary incontinence increases in prevalence with age, ranging from 13% in young, nulligravid women to 25% in reproductive-age, 47% in middle-age, 55% in postmenopausal, and 75% in older women (2-4). These rates are twice those reported in men (3). Of women with symptoms, 32% to 51% have episodes daily and 20% to 32% weekly (5). In a national survey, symptoms of incontinence were reported by 44% of white, 29% of African American, and 35% of Hispanic women (5). Urinary incontinence adversely affects a woman's physical, psychological, and social well-being by limiting participation in social gatherings and work activities, interfering with sexual function, and reducing independence (6). Associated medical conditions include urinary tract infections, skin ulceration, and fractures resulting from falls occurring at night or while rushing to avoid urge incontinence episodes.

Obesity (7-9) and a history of vaginal delivery (10) are important risk factors for urinary incontinence. Symptoms also are associated with potentially modifiable factors, such as smoking, caffeine consumption, diabetes, depression, vaginal atrophy, and constipation (11), as well as other factors, including menopausal status, hysterectomy, cognitive and functional impairment,

and chronic medical conditions (12). In the United States, the direct cost of urinary incontinence care is approximately \$19.5 billion (13), with direct medical and nonmedical costs of \$51.4 billion (14). Approximately 6% of nursing home admissions of older women are attributed to urinary incontinence (15), costing \$3 billion per year (15).

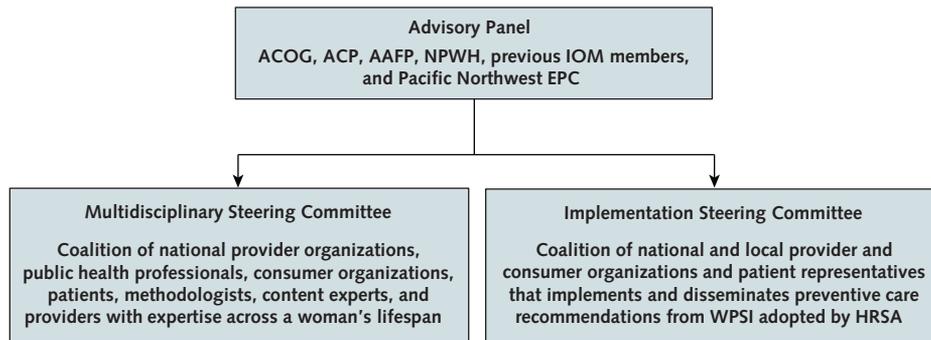
Despite its high rates and adverse effects on health, well-being, and function, urinary incontinence is underreported by women and therefore infrequently recognized by clinicians. In a survey, approximately 55% of women with urinary incontinence did not report symptoms to their health care providers (6) because of embarrassment, stigma, or acceptance as normal. However, symptoms may be treated by behavioral, non-pharmacologic (16), pharmacologic (16-18), and surgical interventions, depending on the type and severity of incontinence and patient preferences. Early intervention may reduce symptom progression, improve immediate and long-term quality of life, and limit the need for more complex and costly treatment (19).

## WOMEN'S PREVENTIVE SERVICES INITIATIVE

The Women's Preventive Services Initiative (WPSI) is a national coalition of 21 health professional organizations and patient representatives that develops, reviews, updates, and disseminates evidence-based clinical recommendations for women's preventive health care services in the United States (20).

The WPSI is supported by the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), and is led by the American College of Obstetricians and Gynecologists (ACOG). It was launched in 2016 to continue the work of the for-

<b>See also:</b>	
Related article . . . . .	311
Editorial comment . . . . .	344
Summary for Patients . . . . .	I-22

**Figure.** Organizational structure of the WPSI.

AAFP = American Academy of Family Physicians; ACOG = American College of Obstetricians and Gynecologists; ACP = American College of Physicians; EPC = Evidence-based Practice Center; HRSA = Health Resources and Services Administration; IOM = Institute of Medicine; NPWH = National Association of Nurse Practitioners in Women's Health; WPSI = Women's Preventive Services Initiative.

mer Institute of Medicine (IOM) (now the Academy of Medicine) Panel on Preventive Services for Women (21), which issued 8 clinical recommendations in 2011 that were accepted for coverage and implementation under the Patient Protection and Affordable Care Act (22). The prevention services mandate of the Affordable Care Act requires covered services to be incorporated into private and public insurance benefits, with no cost sharing or deductible charges to patients (22). Similar to the IOM panel's guidelines, WPSI recommendations are intended to guide clinical practice and coverage of services for the HRSA and other stakeholders. Initial WPSI work focused on reviewing and updating the IOM recommendations, and these updates were adopted by the HRSA in December 2016 (23). The WPSI will review its recommendations every 5 years and at any time relevant new evidence becomes available.

The WPSI focuses on gaps in current prevention recommendations for women. These include services that the U.S. Preventive Services Task Force (USPSTF) considered but for which it provided indeterminate recommendations, such as grade C (provide service for selected patients depending on individual circumstances) and I (insufficient evidence to assess benefits and harms) (24). Additional gaps include existing recommendations with a narrow scope, areas with new research, and topics not addressed by other guideline groups.

The WPSI bases its recommendations on evidence of both benefits and harms of an intervention or service and an assessment of the balance between the two (25). Cost is not considered in assessing a service. The WPSI recognizes that many of the most important clinical questions regarding effective use of preventive services are not addressed by research studies, particularly those involving adolescents, pregnant and postpartum women, or elderly women. In these cases, compelling indirect data also are considered to determine benefits and harms.

The WPSI based its rationale for urinary incontinence screening on several considerations. Screening

has the potential to identify urinary incontinence in many women who silently experience its adverse effects but may benefit from appropriate evaluation and treatment. Effective screening may lead to earlier or more timely treatment, including behavioral, medical, and surgical interventions, depending on the patient's age and the type and severity of symptoms.

## RECOMMENDATION FOCUS AND TARGET POPULATION

This is a new recommendation based on evidence of the benefits and harms of screening for urinary incontinence in women, including a new systematic review of the accuracy of screening instruments (26) and recently published systematic reviews on the benefits and harms of treatments. The evidence on urinary incontinence screening was not evaluated previously in a scientific review, and no clinical practice guidelines exist for screening. Previous guidelines developed by different professional organizations (12, 16, 18, 27, 28) addressed women with symptoms who are referred for diagnostic evaluation and treatment, not screening. The target audience for this recommendation includes all clinicians providing preventive health care for women, particularly in primary care settings. This recommendation applies to women of all ages, as well as adolescents.

## METHODS

### WPSI Topic Selection and Recommendation Development

The Evidence-based Practice Center methods of evidence review (25) are adapted from the USPSTF (29) and the previous IOM Panel on Preventive Services for Women (21). Details on methods, processes, and funding are available on a public Web site (20).

The WPSI is overseen by an advisory panel of representatives from ACOG, the American Academy of Family Physicians, the American College of Physicians, and the National Association of Nurse Practitioners in

Women's Health, representing most women's health care providers in the United States (Figure). In addition, 3 experts in women's preventive health care and evidence review serve on the advisory panel. Members of the Multidisciplinary Steering Committee are invited representatives of 21 women's health professional organizations and patients who select topics and develop and vote on recommendations. A separate Implementation Steering Committee plans dissemination. Scientific review of evidence is conducted by the Pacific Northwest Evidence-based Practice Center Committee, and conflicts of interest are evaluated before appointment and annually by the advisory panel, which determines eligibility for participation after an ACOG process.

The WPSI selects topics that fill gaps in existing screening and prevention guidelines and that meet eligibility criteria. Criteria include conditions that affect a broad population of women; that are specific, more common, more serious, or differ in women; and for which prevention would have a large potential effect on women's health and well-being. Additional criteria require that the health service be a primary or secondary prevention service feasible for practice in the United States, including screening, counseling, immunization, and preventive medication or therapy, and that the quality and strength of evidence directly or indirectly support its effectiveness.

The topic of urinary incontinence screening was selected by a vote of the Multidisciplinary Steering Committee members. The scope and key questions were developed by the advisory panel with additional input from subject experts. A systematic review addressing the key questions was conducted by the Pacific Northwest Evidence-based Practice Center and presented to the WPSI Multidisciplinary Steering Committee at an in-person meeting (26, 29).

Members discussed the strengths and limitations of the evidence for urinary incontinence screening, in-

cluding weighing the benefits and harms. The committee considered the quality and applicability of direct evidence indicating benefits and harms of screening on health outcomes, indirect evidence of the validity of screening instruments, and the effectiveness and adverse effects of treatments for urinary incontinence. Health outcomes included improved symptoms, function, and quality of life. Indirect evidence was used to link screening and health outcomes in the chain of evidence that might support screening in the absence of direct evidence. The committee also considered the effect of screening on symptom progression and avoidance of costly and complex treatments, as well as implementation factors.

The WPSI recommendations are based on reaching a threshold of supportive evidence, similar to the previous IOM panel (21). Once the draft recommendation was developed, it was made available online to the public for a 6-week comment period. The committee reviewed and considered all submitted comments before voting on the final recommendation. At least 75% agreement from all voting committee members was required for adoption. The recommendation for annual urinary incontinence screening in women was adopted by HRSA in December 2017 and will be incorporated into the summary of covered benefits for preventive services without cost sharing, as required by the Affordable Care Act. Covered benefits apply to non-grandfathered group health plans and issuers of non-grandfathered group and individual health insurance coverage.

### Evidence Review

The systematic review focused on key questions about urinary incontinence screening in women not previously diagnosed and not currently pregnant. Key questions included the effectiveness of urinary incontinence screening in improving symptoms, quality of life, and function and the accuracy and adverse effects of screening methods, including differences across population subgroups. Two contextual questions regarding the effectiveness and adverse effects of urinary incontinence treatments were addressed by recently published systematic reviews (17, 30–39). Details of the systematic review and contextual questions are summarized in a technical report and accompanying article (26).

The systematic review identified no studies directly evaluating the effectiveness or adverse effects of screening. Consequently, the review focused on indirect evidence of the diagnostic accuracy of screening tests and the effectiveness and adverse effects of treatment.

### Accuracy of Screening Methods

Seventeen studies evaluated the accuracy of 18 screening methods against a clinical diagnosis of incontinence or diagnostic test results (Table 1) (26, 40–56). Screening methods included brief clinician- or self-administered questionnaires describing symptoms. Responses typically were scored by using a Likert scale or other point system. Diagnostic cut points were de-

**Table 1.** Screening Instruments for Urinary Incontinence\*

Instrument	Reference
<b>Actionable Bladder Symptom Screening Tool</b>	45
Bladder Control Self-Assessment Questionnaire	40
Bristol Female Lower Urinary Tract Symptoms questionnaire	67
Detrusor instability score	68
Gaudenz-Incontinence-Questionnaire	48
Incontinence screening questionnaire	47
<b>Michigan Incontinence Symptom Index</b>	55
1 question	56
<b>Overactive Bladder Awareness Tool</b>	69
Questionnaire for Urinary Incontinence Diagnosis	43
Questionnaire	41
3 Incontinence Questions	44
Self-report	42, 46, 50
Symptoms	54
Urgency score	52
6-item Urogenital Distress Inventory	70, 71

\* Boldface indicates studies that are most applicable to screening in primary care settings.

**Table 2.** Strength of Evidence

Question	Number of Studies and Designs	Summary of Findings	Limitations	Strength of Evidence*	Overall Applicability†
KQ 1. Effectiveness of screening for urinary incontinence in improving symptoms, quality of life, and function	No studies	Not applicable	Not applicable	Insufficient	Insufficient
KQ 2a. Accuracy of methods to screen for urinary incontinence; differences between subgroups	17 diagnostic accuracy studies of 18 different methods (n = 4542)	Accuracy measures varied across methods. Of studies most applicable to screening, AUROC estimates ranged from 0.68 to 0.88 (MISI, B-SAQ, and OAB-V8).	Narrow patient spectrum (symptomatic referral population), the reference standard was not credible or replicable, nonblinded outcome assessment was used, and each method was tested in only 1 small study	Low	Low
KQ 2b. Adverse effects of screening	No studies	Not applicable	Not applicable	Insufficient	Insufficient
KQ 3a. Accuracy of diagnostic methods in women with urinary incontinence detected by screening	No studies	Not applicable	Not applicable	Insufficient	Insufficient
KQ 3b. Adverse effects of diagnostic methods in women with urinary incontinence detected by screening	No studies	Not applicable	Not applicable	Insufficient	Insufficient
CQ 1. Effectiveness of treatments for urinary incontinence in improving symptoms, quality of life, and function	10 systematic reviews and 1 narrative review	Effective treatments include weight loss, pelvic floor muscle training, medications (duloxetine, tolterodine, darifenacin, solifenacin, and fesoterodine), and surgical interventions (synthetic midurethral mesh slings, urethral bulking agents, retropubic suspension, and fascial slings) for selected cases of stress incontinence. Ineffective treatments include fluid restriction, bladder training, and intravaginal or intraurethral devices.	Number and quality of trials vary by treatment; the magnitude of effect for medications is low (absolute risk difference <20% for all drugs)	Low to moderate depending on treatment	Moderate
CQ 2. Adverse effects of treatments for urinary incontinence	10 systematic reviews and 1 narrative review	Discontinuation rates and adverse effects, including dry mouth, constipation, heartburn, and urinary retention, are more common with medications; information on long-term safety is unavailable. Adverse effects with nonpharmacologic/nonsurgical treatments are uncommon. Surgical complications include direct injury to the lower urinary tract and hemorrhage, infection, bowel injury, or wound complications.	Information on long-term medication safety is unavailable	Low to moderate depending on treatment	Moderate

AUROC = area under the receiver-operating characteristic curve; B-SAQ = Bladder Control Self-Assessment Questionnaire; CQ = clinical question; KQ = key question; MISI = Michigan Incontinence Symptom Index; OAB-V8 = Overactive Bladder Awareness Tool.

\* "High" indicates high confidence that the evidence reflects the true effect; further research is very unlikely to change confidence in the estimate of effect. "Moderate" indicates moderate confidence that the evidence reflects the true effect; further research may change confidence in the estimate of effect and may change the estimate. "Low" indicates low confidence that the evidence reflects the true effect; further research is likely to change confidence in the estimate of effect and is likely to change the estimate. "Insufficient" indicates that evidence is either unavailable or does not permit a conclusion.

† Describes how well the overall body of evidence would apply to the U.S. population on the basis of settings, populations, and intervention characteristics (high, moderate, low, and insufficient).

terminated by comparing scores against reference standards that differed across studies, including clinical diagnosis based on physical examinations, tests, and urodynamic testing. Several studies reported results specifically for stress and urge (or overactive bladder) incontinence, as well as general or mixed incontinence. Results were expressed as the area under the receiver-operating characteristic curve (AUROC) concordance statistics, sensitivity and specificity values, and positive and negative predictive values or likelihood ratios. Studies did not provide information to assess differences across population subgroups based on age, sociodemographic, and cultural groups or among women with comorbid conditions or those using additional medications.

Although all studies generally were designed to determine the accuracy of patient reports before diagnostic evaluations by specialists, most were based in referral clinics and enrolled women with incontinence symptoms. Two studies meeting criteria for good or fair quality did not recruit participants on the basis of incontinence symptoms and more closely reflected the population of women expected to be screened in routine clinical practice. Screening instruments evaluated in these 2 studies included 8 to 10 items that were easily scored and interpreted in primary care settings. In these studies, the instruments demonstrated fairly high levels of accuracy—most AUROC values were 0.80 or higher for stress, urge, and mixed incontinence (Michigan Incontinence Symptom Index, Bladder Control Self-Assessment Questionnaire, and Overactive Bladder Awareness Tool).

### Effectiveness of Treatment

The effectiveness of treatments for urinary incontinence has been evaluated in systematic reviews of surgical (30, 32, 33, 57) and nonsurgical (17, 34, 36, 37, 58, 59) interventions. In addition, a narrative review recently summarized some of the most commonly used treatments and highlighted an approach to initiate conservative and medical therapy while incorporating patient preference into evaluation and treatment (11).

Randomized trials and observational studies indicate that weight loss improves urinary incontinence symptoms in women who are obese, particularly those with stress versus urge incontinence (34, 58, 59). Women who received pelvic floor muscle training were more likely than control participants to report cure or symptom improvement and had better satisfaction and quality of life (36). In these studies, pelvic floor muscle training was defined as a program of repeated voluntary pelvic floor muscle contractions taught and supervised by a health care professional. Intravaginal or intraurethral devices for treating incontinence were not effective in trials, although studies enrolled few participants, had short follow-ups, and were otherwise methodologically limited (17, 39).

In randomized trials, medications were more effective than placebo in improving continence, but the magnitude of the effect was low (absolute risk difference, <20% for all medications) (17, 37). Two agents

(solifenacin and fesoterodine) demonstrated dose-response effects on symptom improvement in treatment versus control groups (17).

Surgical interventions generally are reserved for women whose symptoms do not improve sufficiently with more conservative therapies but may be the first treatment choice depending on the severity and cause of symptoms (57). Synthetic midurethral mesh slings are the most common primary surgical treatment for stress incontinence (16). Other surgical options include urethral bulking agents, retropubic suspension, and fascial slings, although trials using these approaches were methodologically limited (60–62).

### Adverse Effects of Treatment

No harms were identified in studies of behavioral interventions, such as pelvic floor muscle training or weight loss programs (34, 58, 59). In a large systematic review of nonsurgical treatments for urinary incontinence (17, 39), discontinuation rates and adverse effects were more common among patients who received pharmacologic treatment. Common adverse effects included dry mouth, constipation, heartburn, and urinary retention (17, 37). Information on long-term safety of medications is generally unavailable. Surgical complications included direct injury to the lower urinary tract and general surgical problems, such as hemorrhage, infection, bowel injury, and wound complications (60–62).

### Assessment of Benefits and Harms

In the absence of direct evidence of the benefits and harms of screening, the WPSI based its recommendation on the high prevalence of urinary incontinence in women; its effect on health, quality of life, and function; and indirect evidence on the accuracy of tests that may be used for screening in primary care settings and the effectiveness and harms of treatment.

A summary of evidence is presented in **Table 2**. On the basis of 17 studies of 18 screening methods that might be used in clinical settings, the WPSI determined that the strength of evidence is low regarding the accuracy of brief clinician- or self-administered questionnaires in identifying women with urinary incontinence. Methods used in studies that did not recruit participants on the basis of incontinence symptoms are more applicable to population screening than those investigated in trials recruiting patients from specialty clinics.

The WPSI determined that the strength of evidence ranges from low to moderate for the effectiveness of treatment and low to moderate for adverse effects, depending on specific treatments. How participants in the treatment trials were identified and diagnosed with urinary incontinence is unclear, but the applicability of the studies is probably moderate overall. Although the magnitude of treatment effects was modest in the trials, any improvement in symptoms might have an important effect on a woman's life. Adverse effects varied from none with behavioral interventions to serious complications from surgical interventions. The adverse effects of pharmaceutical treatments are common and

often lead to discontinuation rather than unfavorable health outcomes. Assessing the balance between treatment benefits and harms is difficult because of the different types of urinary incontinence and their degrees of severity, requiring an individualized approach to treatment.

Overall, the WPSI determined that the benefit-harm balance would probably be favorable for many women, although more definitive studies are needed to improve and strengthen current evidence. Although, like the previous IOM panel, the WPSI bases its guidance on a certain threshold of supportive evidence, the recommendation presented here could be translated to a weak-level recommendation on the basis of the American College of Physicians guideline grading system, adopted from the GRADE (Grading of Recommendations Assessment, Development and Evaluation) work group (Table 3) (63, 64).

## RECOMMENDATION

*The WPSI recommends screening women for urinary incontinence annually. Screening ideally should assess whether women experience urinary incontinence and whether it affects their activities and quality of life. The WPSI recommends referring women for further evaluation and treatment if indicated.*

The WPSI provides additional guidance regarding the decision to implement screening. It recommends that although increasing parity, advancing age, and obesity are associated with an increased risk for urinary incontinence, these factors should not be used to limit screening. Screening tools demonstrate fair to high accuracy in identifying urinary incontinence in women. Although minimum screening intervals are unknown, given the prevalence of urinary incontinence, that many women do not volunteer symptoms, and the multiple, frequently changing risk factors associated with incontinence, annual testing is reasonable.

Screening should include the use of validated assessment instruments that include questions about whether a woman has symptoms of urinary incontinence; the type and degree of incontinence; and how symptoms affect her health, function, and quality of life. Several brief clinician- or self-administered questionnaires for primary care settings identify women with stress, urge, or mixed incontinence and may be used to guide diagnostic evaluations and management.

In a previous recommendation adopted by HRSA, the WPSI advised that women receive at least 1 preventive health care visit each year beginning in adolescence and continuing across the lifespan (65). The primary purpose of this visit is the delivery and coordination of recommended preventive services as determined by age and risk factors. The preventive health visit may be an opportunity to screen for urinary incontinence, potentially including the questions on an intake form or in a check-in process.

**Table 3.** The American College of Physicians' Guideline Grading System\*

Quality of Evidence	Strength of Recommendation	
	Benefits Clearly Outweigh Risks and Burden or Risks and Burden Clearly Outweigh Benefits	Benefits Finely Balanced With Risks and Burden
High	Strong	Weak
Moderate	Strong	Weak
Low	Strong	Weak
	Insufficient evidence to determine net benefits or risks	

\* Adopted from the classification developed by the GRADE (Grading of Recommendations Assessment, Development and Evaluation) workgroup.

## FUTURE RESEARCH

So far, no trials have been conducted on the effectiveness and harms of urinary incontinence screening to improve symptoms, quality of life, and function. Although screening recommendations for other conditions, such as osteoporosis (66), also lack screening effectiveness trials, this research would strengthen the evidence base. In addition, studies on the incidence and prevalence of urinary incontinence are needed to better identify risk factors over the life course, as well as factors related to progression, and to assess differences among women on the basis of sociodemographic and other characteristics. This information would help target screening efforts. Additional research on the feasibility, accuracy, and effectiveness of screening instruments in larger, more diverse screening populations is needed to establish a standardized screening method and reference standards that could be widely implemented in routine practice. More studies, including head-to-head trials comparing the effectiveness and adverse effects of various treatments, as well as combinations and sequences of treatments, are needed to improve patient and clinician decision making. Information on long-term drug safety is currently unavailable but necessary to more accurately weigh the benefits and harms of screening.

## CONCLUSION

Urinary incontinence adversely affects health, quality of life, and function for most women at some point in their lives, yet it is underdiagnosed and undertreated in the United States. Standardized screening in routine clinical practice, particularly as part of a preventive health care visit, has the potential to identify affected women and initiate diagnostic evaluations and treatment. No clinical recommendations addressing routine screening for urinary incontinence have been issued from guideline groups, although recommendations for diagnostic evaluations and treatment are available and have generally been accepted as standards of care. The implementation of universal screening through the use of a brief questionnaire might identify symptoms of urinary incontinence before they further affect women's lives.

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## References

- Abrams P, Andersson KE, Birder L, Brubaker L, Cardozo L, Chapple C, et al; Members of Committees. Fourth International Consultation on Incontinence Recommendations of the International Scientific Committee: evaluation and treatment of urinary incontinence, pelvic organ prolapse, and fecal incontinence. *Neurourol Urodyn*. 2010;29:213-40. [PMID: 20025020] doi:10.1002/nau.20870
- O'Halloran T, Bell RJ, Robinson PJ, Davis SR. Urinary incontinence in young nulligravid women: a cross-sectional analysis. *Ann Intern Med*. 2012;157:87-93. [PMID: 22801671] doi:10.7326/0003-4819-157-2-201207170-00005
- Haylen BT, de Ridder D, Freeman RM, Swift SE, Berghmans B, Lee J, et al; International Urogynecological Association. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. *Neurourol Urodyn*. 2010;29:4-20. [PMID: 19941278] doi:10.1002/nau.20798

- Kinchen KS, Lee J, Fireman B, Hunkeler E, Nehemiah JL, Curtice TG. The prevalence, burden, and treatment of urinary incontinence among women in a managed care plan. *J Womens Health (Larchmt)*. 2007;16:415-22. [PMID: 17439386]
- Shamliyan T, Wyman J, Bliss DZ, Kane RL, Wilt TJ. Prevention of urinary and fecal incontinence in adults. *Evid Rep Technol Assess (Full Rep)*. 2007;1-379. [PMID: 18457475]
- Morrison A, Levy R. Fraction of nursing home admissions attributable to urinary incontinence. *Value Health*. 2006;9:272-4. [PMID: 16903997]
- Abrams P, Kelleher CJ, Kerr LA, Rogers RG. Overactive bladder significantly affects quality of life. *Am J Manag Care*. 2000;6:S580-90. [PMID: 11183901]
- Lawrence JM, Lukacz ES, Nager CW, Hsu JW, Luber KM. Prevalence and co-occurrence of pelvic floor disorders in community-dwelling women. *Obstet Gynecol*. 2008;111:678-85. [PMID: 18310371] doi:10.1097/AOG.0b013e3181660c1b
- Schulz JA, Nager CW, Stanton SL, Baessler K. Bulking agents for stress urinary incontinence: short-term results and complications in a randomized comparison of periurethral and transurethral injections. *Int Urogynecol J Pelvic Floor Dysfunct*. 2004;15:261-5. [PMID: 15517671]
- Rosenberg MT, Dmochowski RR. Overactive bladder: evaluation and management in primary care. *Cleve Clin J Med*. 2005;72:149-56. [PMID: 15757170]
- Lukacz ES, Santiago-Lastra Y, Albo ME, Brubaker L. Urinary incontinence in women: a review. *JAMA*. 2017;318:1592-604. [PMID: 29067433] doi:10.1001/jama.2017.12137
- Appell RA, Dmochowski RR, Blaivas JM, Gormley EA, Karram MM, Juma S, et al. Guideline for the Surgical Management of Female Stress Urinary Incontinence: 2009 Update. Linthicum, MD: American Urological Assoc; 2009.
- Nygaard I, Barber MD, Burgio KL, Kenton K, Meikle S, Schaffer J, et al; Pelvic Floor Disorders Network. Prevalence of symptomatic pelvic floor disorders in US women. *JAMA*. 2008;300:1311-6. [PMID: 18799443] doi:10.1001/jama.300.11.1311
- Al-Mukhtar Othman J, Åkervall S, Milsom I, Gyhagen M. Urinary incontinence in nulliparous women aged 25-64 years: a national survey. *Am J Obstet Gynecol*. 2017;216:149. [PMID: 27720862] doi:10.1016/j.ajog.2016.09.104
- Lukacz ES, Lawrence JM, Contreras R, Nager CW, Luber KM. Parity, mode of delivery, and pelvic floor disorders. *Obstet Gynecol*. 2006;107:1253-60. [PMID: 16738149]
- Urinary incontinence in women. *Female Pelvic Med Reconstr Surg*. 2015;21:304-14. [PMID: 26506157] doi:10.1097/SPV.0000000000000231
- Shamliyan T, Wyman J, Kane RL. Nonsurgical Treatments for Urinary Incontinence in Adult Women: Diagnosis and Comparative Effectiveness. Comparative Effectiveness Review No. 36. (Prepared by the University of Minnesota Evidence-based Practice Center under contract no. HHS 290-2007-10064-I.) Rockville: Agency for Healthcare Research and Quality; 2012.
- Lucas MG, Bedretinova D, Bosch JLHR, Burkhard F, Cruz F, Nambiar AK, et al. Guidelines on Urinary Incontinence. Arnhem, the Netherlands: European Assoc Urology; 2014.
- Vermeulen KM, Visser E, Messelink EJ, Schram AJ, Berger MY, de Bock GH, et al. Cost-effectiveness of a pro-active approach of urinary incontinence in women. *BJOG*. 2016;123:1213-20. [PMID: 26834046] doi:10.1111/1471-0528.13856
- Women's Preventive Services Initiative. WPSI Web site. 2016. Accessed at [www.womenspreventivehealth.org](http://www.womenspreventivehealth.org) on 11 June 2018.
- Institute of Medicine. Clinical Preventive Services for Women: Closing the Gaps. Washington, DC: National Academies Pr; 2011.
- Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 42 U.S.C. 18001 et seq. (23 March 2010). Accessed at [www.congress.gov/111/plaws/publ148/PLAW-111publ148.pdf](http://www.congress.gov/111/plaws/publ148/PLAW-111publ148.pdf) on 11 June 2018.
- Women's Preventive Services Initiative. Recommendations for Preventive Services for Women: Final Report to the U.S. Department of Health and Human Services, Health Resources and Services Ad-

- ministration. Washington, DC: American Coll Obstetricians & Gynecologists; 2016.
24. U.S. Preventive Services Task Force. USPSTF Web site. 2018. Accessed at [www.uspreventiveservicestaskforce.org](http://www.uspreventiveservicestaskforce.org) on 11 June 2018.
  25. Women's Preventive Services Initiative. Methodology. 2018. Accessed at [www.womenspreventivehealth.org/wp-content/uploads/2018/04/Methodology-sson.pdf](http://www.womenspreventivehealth.org/wp-content/uploads/2018/04/Methodology-sson.pdf) on 11 June 2018.
  26. Nelson HD, Cantor A, Pappas M, Miller L. Screening for urinary incontinence in women: a systematic review for the Women's Preventive Services Initiative. *Ann Intern Med*. 2018. [Epub ahead of print]. doi:10.7326/M18-0225.
  27. Bettez M, Tu le M, Carlson K, Corcos J, Gajewski J, Jolivet M, et al. 2012 update: guidelines for adult urinary incontinence collaborative consensus document for the Canadian Urological Association. *Can Urol Assoc J*. 2012;6:354-63. [PMID: 23093627] doi:10.5489/cuaj.12248
  28. Qaseem A, Dallas P, Forcica MA, Starkey M, Denberg TD, Shekelle P; Clinical Guidelines Committee of the American College of Physicians. Nonsurgical management of urinary incontinence in women: a clinical practice guideline from the American College of Physicians. *Ann Intern Med*. 2014;161:429-40. [PMID: 25222388] doi:10.7326/M13-2410
  29. U.S. Preventive Services Task Force. Procedure Manual. Rockville, MD: U.S. Preventive Services Task Force; December 2015.
  30. Kirchin V, Page T, Keegan PE, Atiemo KO, Cody JD, McClinton S, et al. Urethral injection therapy for urinary incontinence in women. *Cochrane Database Syst Rev*. 2017;7:CD003881. [PMID: 28738443] doi:10.1002/14651858.CD003881.pub4
  31. Rehman H, Bezerra CA, Bruschini H, Cody JD, Aluko P. Traditional suburethral sling operations for urinary incontinence in women. *Cochrane Database Syst Rev*. 2017;7:CD001754. [PMID: 28743177] doi:10.1002/14651858.CD001754.pub4
  32. Nambiar A, Cody JD, Jeffery ST. Single-incision sling operations for urinary incontinence in women. *Cochrane Database Syst Rev*. 2014:CD008709. [PMID: 24880654] doi:10.1002/14651858.CD008709.
  33. Ford AA, Rogerson L, Cody JD, Aluko P, Ogah JA. Mid-urethral sling operations for stress urinary incontinence in women. *Cochrane Database Syst Rev*. 2017;7:CD006375. [PMID: 28756647] doi:10.1002/14651858.CD006375.pub4
  34. Imamura M, Williams K, Wells M, McGrother C. Lifestyle interventions for the treatment of urinary incontinence in adults. *Cochrane Database Syst Rev*. 2015:CD003505. [PMID: 26630349] doi:10.1002/14651858.CD003505.pub5
  35. Wallace SA, Roe B, Williams K, Palmer M. Bladder training for urinary incontinence in adults. *Cochrane Database Syst Rev*. 2004:CD001308. [PMID: 14973967]
  36. Dumoulin C, Hay-Smith EJ, Mac Habée-Séguin G. Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. *Cochrane Database Syst Rev*. 2014:CD005654. [PMID: 24823491] doi:10.1002/14651858.CD005654.pub3
  37. Mariappan P, Ballantyne Z, N'Dow JM, Alhasso AA. Serotonin and noradrenaline reuptake inhibitors (SNRI) for stress urinary incontinence in adults. *Cochrane Database Syst Rev*. 2005:CD004742. [PMID: 16034945]
  38. Anger JT, Weinberg A, Suttrop MJ, Litwin MS, Shekelle PG. Outcomes of intravesical botulinum toxin for idiopathic overactive bladder symptoms: a systematic review of the literature. *J Urol*. 2010;183:2258-64. [PMID: 20400142] doi:10.1016/j.juro.2010.02.009
  39. Lipp A, Shaw C, Glavind K. Mechanical devices for urinary incontinence in women. *Cochrane Database Syst Rev*. 2014:CD001756. [PMID: 25517397] doi:10.1002/14651858.CD001756.pub6
  40. Basra RK, Cortes E, Khullar V, Kelleher C. A comparison study of two lower urinary tract symptoms screening tools in clinical practice: the B-SAQ and OAB-V8 questionnaires. *J Obstet Gynaecol*. 2012;32:666-71. [PMID: 22943714] doi:10.3109/01443615.2012.696158
  41. Bergman A, Bader K. Reliability of the patient's history in the diagnosis of urinary incontinence. *Int J Gynaecol Obstet*. 1990;32:255-9. [PMID: 1972118]
  42. Borup K, Hvidman L, Nielsen JB, Mommsen S. Validity of a self-administered questionnaire, with reference to a clinical stress urinary incontinence test. *Scand J Urol Nephrol*. 2008;42:148-53. [PMID: 17853006]
  43. Bradley CS, Rovner ES, Morgan MA, Berlin M, Novi JM, Shea JA, et al. A new questionnaire for urinary incontinence diagnosis in women: development and testing. *Am J Obstet Gynecol*. 2005;192:66-73. [PMID: 15672005]
  44. Brown JS, Bradley CS, Subak LL, Richter HE, Kraus SR, Brubaker L, et al; Diagnostic Aspects of Incontinence Study (DAISy) Research Group. The sensitivity and specificity of a simple test to distinguish between urge and stress urinary incontinence. *Ann Intern Med*. 2006;144:715-23. [PMID: 16702587]
  45. Cardozo L, Staskin D, Currie B, Wiklund I, Globe D, Signori M, et al. Validation of a bladder symptom screening tool in women with incontinence due to overactive bladder. *Int Urogynecol J*. 2014;25:1655-63. [PMID: 24859795] doi:10.1007/s00192-014-2417-7
  46. Diokno AC, Normolle DP, Brown MB, Herzog AR. Urodynamic tests for female geriatric urinary incontinence. *Urology*. 1990;36:431-9. [PMID: 2238302]
  47. Gunthorpe W, Brown W, Redman S. The development and evaluation of an incontinence screening questionnaire for female primary care. *Neurourol Urodyn*. 2000;19:595-607. [PMID: 11002302]
  48. Haeusler G, Hanzal E, Joura E, Sam C, Koelbl H. Differential diagnosis of detrusor instability and stress-incontinence by patient history: the Gaudenz-Incontinence-Questionnaire revisited. *Acta Obstet Gynecol Scand*. 1995;74:635-7. [PMID: 7660771]
  49. Khan MS, Chaliha C, Leskova L, Khullar V. The relationship between urinary symptom questionnaires and urodynamic diagnoses: an analysis of two methods of questionnaire administration. *BJOG*. 2004;111:468-74. [PMID: 15104612]
  50. Klingele CJ, Carley ME, Hill RF. Patient characteristics that are associated with urodynamically diagnosed detrusor instability and genuine stress incontinence. *Am J Obstet Gynecol*. 2002;186:866-8. [PMID: 12015497]
  51. Klovning A, Hunskaar S, Eriksen BC. Validity of a scored urological history in detecting detrusor instability in female urinary incontinence. *Acta Obstet Gynecol Scand*. 1996;75:941-5. [PMID: 9003097]
  52. Kujansuu E, Kauppila A. Scored urological history and urethro-cystometry in the differential diagnosis of female urinary incontinence. *Ann Chir Gynaecol*. 1982;71:197-202. [PMID: 6889831]
  53. Lemack GE, Zimmern PE. Predictability of urodynamic findings based on the Urogenital Distress Inventory-6 questionnaire. *Urology*. 1999;54:461-6. [PMID: 10475355]
  54. Sand PK, Hill RC, Ostergard DR. Incontinence history as a predictor of detrusor stability. *Obstet Gynecol*. 1988;71:257-60. [PMID: 3336562]
  55. Suskind AM, Dunn RL, Morgan DM, DeLancey JO, Rew KT, Wei JT. A screening tool for clinically relevant urinary incontinence. *Neurourol Urodyn*. 2015;34:332-5. [PMID: 24464849] doi:10.1002/nau.22564
  56. Walters MD, Shields LE. The diagnostic value of history, physical examination, and the Q-tip cotton swab test in women with urinary incontinence. *Am J Obstet Gynecol*. 1988;159:145-9. [PMID: 3394734]
  57. Rehman H, Bezerra CC, Bruschini H, Cody JD. Traditional sub-urethral sling operations for urinary incontinence in women. *Cochrane Database Syst Rev*. 2011:CD001754. [PMID: 21249648] doi:10.1002/14651858.CD001754.pub3
  58. Subak LL, Wing R, West DS, Franklin F, Vittinghoff E, Creasman JM, et al; PRIDE Investigators. Weight loss to treat urinary incontinence in overweight and obese women. *N Engl J Med*. 2009;360:481-90. [PMID: 19179316] doi:10.1056/NEJMoa0806375
  59. Wing RR, West DS, Grady D, Creasman JM, Richter HE, Myers D, et al; Program to Reduce Incontinence by Diet and Exercise Group. Effect of weight loss on urinary incontinence in overweight and

obese women: results at 12 and 18 months. *J Urol*. 2010;184:1005-10. [PMID: 20643425] doi:10.1016/j.juro.2010.05.031

60. Dmochowski RR, Blaivas JM, Gormley EA, Juma S, Karram MM, Lightner DJ, et al; Female Stress Urinary Incontinence Update Panel of the American Urological Association Education and Research, Inc. Update of AUA guideline on the surgical management of female stress urinary incontinence. *J Urol*. 2010;183:1906-14. [PMID: 20303102] doi:10.1016/j.juro.2010.02.2369

61. Smith A, Chang D, Dmochowski R, Hilton P, Nilsson CG, Reid FM, et al. Surgery for urinary incontinence in women. In: Abrams P, Cardozo L, Khoury S, Wein A, eds. *Incontinence*. Plymouth, United Kingdom: Health Publication; 2009:1191-272.

62. Ford AA, Rogerson L, Cody JD, Ogah J. Mid-urethral sling operations for stress urinary incontinence in women. *Cochrane Database Syst Rev*. 2015:CD006375. [PMID: 26130017] doi:10.1002/14651858.CD006375.pub3

63. Qaseem A, Forciea MA, McLean RM, Denberg TD; Clinical Guidelines Committee of the American College of Physicians. Treatment of low bone density or osteoporosis to prevent fractures in men and women: a clinical practice guideline update from the American College of Physicians. *Ann Intern Med*. 2017;166:818-39. [PMID: 28492856] doi:10.7326/M15-1361

64. Guyatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, Alonso-Coello P, et al; GRADE Working Group. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *BMJ*. 2008;336:924-6. [PMID: 18436948] doi:10.1136/bmj.39489.470347.AD

65. Women's Preventive Services Initiative. Well-woman preventive visits. 2016. Accessed at [www.womenspreventivehealth.org/recommendations/well-woman-preventive-visits](http://www.womenspreventivehealth.org/recommendations/well-woman-preventive-visits) on 11 June 2018.

66. U.S. Preventive Services Task Force. Final recommendation statement: osteoporosis: screening. April 2016. Accessed at [www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/osteoporosis-screening](http://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/osteoporosis-screening) on 11 June 2018.

67. Brookes ST, Donovan JL, Wright M, Jackson S, Abrams P. A scored form of the Bristol Female Lower Urinary Tract Symptoms questionnaire: data from a randomized controlled trial of surgery for women with stress incontinence. *Am J Obstet Gynecol*. 2004;191:73-82. [PMID: 15295345]

68. Kauppila A, Alavaikko P, Kujansuu E. Detrusor instability score in the evaluation of stress urinary incontinence. *Acta Obstet Gynecol Scand*. 1982;61:137-41. [PMID: 7113688]

69. Coyne KS, Zyczynski T, Margolis MK, Elinoff V, Roberts RG. Validation of an overactive bladder awareness tool for use in primary care settings. *Adv Ther*. 2005;22:381-94. [PMID: 16418145]

70. Donovan J, Bosch R, Gotoh M, Jackson S, Naughton M, Radley S, et al. Symptom and quality of life assessment. In: Abrams P, Cardozo L, Khoury S, Wein A, eds. *Incontinence*. Vol. 1. Paris: Health Publications; 2005:519-84.

71. Uebersax JS, Wyman JF, Shumaker SA, McClish DK, Fantl JA. Short forms to assess life quality and symptom distress for urinary incontinence in women: the Incontinence Impact Questionnaire and the Urogenital Distress Inventory. Continence Program for Women Research Group. *Neurourol Urodyn*. 1995;14:131-9. [PMID: 7780440]

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## **APPENDIX: MEMBERS OF THE WPSI MULTIDISCIPLINARY STEERING COMMITTEE**

Members of the WPSI Multidisciplinary Steering Committee on 17 November 2017 were Gretchen Borchelt, JD (National Women's Law Center); Gale R. Burstein, MD, MPH (American Academy of Pediatrics); Octavia Cannon, DO (American Osteopathic Association); David Chelmow, MD (American College of Obstetricians and Gynecologists); Michelle Collins, PhD, CNM (American College of Nurse-Midwives); John R. Fischer, MD, Col, USAF, MC, FS (American Urogynecologic Society); Stephanie Glover, MPA (National Partnership for Women and Families); Janine Hill, MPH (patient representative); Susan Hoffstetter, PhD, WHNP-BC (National Association of Nurse Practitioners in Women's Health); Linda Humphrey, MD, MPH (American College of Physicians); Jeanette Kowalik, PhD, MPH, MCHES (Association of Maternal and Child Health Programs); Alayne D. Markland, DO, MSc (American Geriatrics Society); Melissa McNeil, MD (Academy of Women's Health); Edith P. Mitchell, MD (National Medical Association); Rita J. Nutt, DNP, RN (National Medical Association); Kamran Sajadi, MD (Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction); Ana C. Sanchez-Birkhead, PhD, WHNP-BC, RN (National Association of Hispanic Nurses); Maureen Sayres Van Niel, MD (American Psychiatric Association); James Stevermer, MD, MSPH (American Academy of Family Physicians); Annamarie Streilein, MHS, PA-C (American Academy of Physician Assistants); Tracey Small Wilson, MD (American Geriatrics Society); and Rachel Urrutia, MD (American College of Preventive Medicine).