

## What are the indications for urodynamic testing in older adults with incontinence?

**EVIDENCE-BASED ANSWER** Urodynamic testing is indicated for older adults with incontinence when the underlying cause remains unclear (Grade of Recommendation: B, based on multiple well designed, but inconsistent, randomized controlled trials [RCTs]). Simple cystometry—specifically, measuring post void residual and bladder capacity—is helpful in the evaluation of urinary incontinence when the cause has remained unclear. It may also offer benefit when surgery is under consideration, when there is a history of genitourinary surgery, or when a conservative therapeutic trial has not had an adequate response (Grade of Recommendation: C, based on a small number of RCTs, retrospective cohort studies and systemic reviews).

**EVIDENCE SUMMARY** Current studies regarding urodynamic testing in older adults with incontinence are limited by multiple factors, including inherent gender bias, poor reproducibility, and small study populations. Moreover, the lack of a reference standard has contributed to difficulty in assessing outcome measures. No published study to date has convincingly supported a role for advanced urodynamic testing (leak point pressure measurement, pressure flow studies, electromyography, etc.) in the evaluation of routine urinary incontinence. Simple cystometry, (measuring post-void residuals and determining bladder capacity), has proved particularly useful in detecting abnormalities of detrusor compliance and contractility, especially when the cause of incontinence is unclear.<sup>1,2</sup>

One well designed retrospective cohort study of 950 women found that the positive predictive value of clinical symptoms in urinary incontinence alone (74% in the context of a 53% prevalence of incontinence) was not accurate enough to rely on for decisions about surgery.<sup>3</sup> This study supports the need for urodynamic evaluation in most women prior to surgical incontinence treatment.

Another recent small RCT (n=87) found that, of patients with previous genitourinary surgery or more severe stress incontinence, about one quarter were more likely to have their management revised after urodynamic studies.<sup>4</sup> Patients who demonstrated little or no improvement during the first few months of conservative treatment also ran a higher risk of misdiagnosis. Despite these findings, no difference in treatment outcomes was detected for women randomized to urodynamic testing.

Two additional RCTs suggest that, despite the wide use of urodynamic testing, reproducibility is limited and may lack sufficient sensitivity and

specificity to identify underlying pathology.<sup>5,6</sup> Specific concerns raised in these studies included test-retest variation, as well as concerns about possible interpretation error of urodynamic testing.

**RECOMMENDATIONS FROM OTHERS** In its 1996 Clinical Practice Guideline Update, the Agency for Healthcare Research and Quality (AHRQ) recommended a focused history and targeted examination (including urinalysis and post-void residual measurement) in order to detect reversible causes of urinary incontinence.<sup>1</sup> The guideline stresses that uro-

**TABLE**

### Indications for urodynamic evaluation in older adults

Unclear diagnosis and inability to develop a reasonable treatment plan based on basic diagnostic evaluation.

Consideration of surgical intervention, particularly if previous surgery failed or the patient is a high surgical risk.

Patient dissatisfaction after an adequate therapeutic trial or desire to pursue further therapy

Table adapted from Reference 1.

dynamic testing is invasive and expensive, and it should be reserved for those situations when the patient desires such evaluation and the information gathered would potentially change management. Although AHRQ considers this guideline too old to direct current medical practice, we found little recent evidence to refute these recommendations.

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Clinical Commentary by John Gazewood, MD, at  
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