

Whiteside JL, Hijaz A, Imrey PB, et al. Reliability and agreement of urodynamics interpretations in a female pelvic medicine center. *Obstet Gynecol.* 2006;108:315-323.

Q Is urodynamic testing reliable?

A Yes and no. For stress urinary incontinence, there was substantial reliability and interobserver consistency in interpretations of urodynamic tests.

However, reliability was only moderate for diagnoses of detrusor overactivity, and interobserver consistency was only fair. Thus, urodynamic testing may not be as informative for this diagnosis.

EXPERT COMMENTARY

Amy Park, MD, Fellow in Female Pelvic Medicine, The Cleveland Clinic, and **Marie Fidela Paraiso, MD**, Co-Director of Female Pelvic Medicine and Reconstructive Surgery, Department of Obstetrics and Gynecology and the Urological Institute, The Cleveland Clinic, Cleveland, Ohio

Dr. Paraiso is an author of the study by Whiteside and colleagues.

Urodynamic testing has traditionally been used to evaluate and distinguish between different types of urinary incontinence. Weidner and colleagues¹ demonstrated that subjective symptoms may not always predict the ultimate diagnosis and recommended urodynamic evaluation prior to initiation of therapy or surgical intervention.

Urodynamic testing is not without limitations:

- **It is invasive** and entails patient discomfort.
- **Cost is significant:** at least \$55 million per year in the United States.²
- **Reproducibility and accuracy** have been hampered by the lack of a standard, and office cystometry may be just as cost-effective.³

Interobserver agreement was moderate

METHODS Six physicians reviewed the records (ie, blinded study packets that retained key portions of the patient's history and urodynamic findings) of 100 women who presented to a urogynecology or female urology practice and were referred for urodynamic testing. The 6 physician reviewers assigned both clinical and International Continence Society diagnoses to each record and reviewed the packets again at least 4 months later.

RESULTS Reviewers were consistent in their own evaluations of urodynamic tracings and diagnoses. Nor was there much intra-observer difference between female urologists and urogynecologists.

However, interobserver agreement varied with the diagnosis, and also was lower when a particular sign or symptom was present, suggesting that the absence of symptoms and signs was used to rule out diagnoses, as opposed to ruling them in.

Detrusor overactivity a more elusive diagnosis?

These results are consistent with earlier studies that showed stress incontinence to be more reliably diagnosed on both simple cystometry and multichannel cystometry, and which showed that symptoms alone are not a sufficient basis for surgical management.

However, the interpretation of detrusor overactivity appears to be less reliable and less consistent. The demonstration of urge incontinence with office cystometry has

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FAST TRACK

Stress incontinence is more reliably diagnosed via urodynamic testing than is detrusor overactivity

been shown to predict detrusor overactivity, but its absence does not preclude this diagnosis.⁴

Urodynamic testing is most useful for diagnosing stress incontinence

This study occurred at a single institution without standardized guidelines for interpretation of urodynamic test results. A multicenter study by Zimmern et al⁵ for the Urinary Incontinence and Treatment Network demonstrated excellent inter-rater reliability for urodynamics between both central and local-site reviewers—after establishing uniform certification standards.

Thus, it seems clear that standardized guidelines and modules would assist in the interpretation of urodynamic tests. Until then, urodynamic testing should entail a

concerted effort to standardize the interpretation of urodynamic diagnoses.

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Low weight at birth is associated with an increased risk of elevated blood pressure in adulthood²

Within an analysis of 11 clinical trials involving a total of 6894 women¹:

- In women at high risk of hypertension with low baseline dietary calcium, taking 1000 mg or more of calcium during pregnancy was associated with significant reductions in¹:
 - Maternal Hypertension
 - Preeclampsia
 - Low Birth-Weight Babies
- Modest decreases in blood pressure were seen during childhood, but blood pressure became more elevated in adulthood (P=0.03)²
- In one well-controlled study, the children of mothers taking 2000 mg of supplemental calcium during pregnancy had significantly lower systolic blood pressures, when measured at age 2 (P<0.05)³

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Calcium benefits to mother and child may extend far beyond pregnancy, delivery and lactation.



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Long C-Y, Liu C-M, Hsu S-C, et al. A randomized comparative study of the effects of oral and topical estrogen therapy on the vaginal vascularization and sexual function in hysterectomized postmenopausal women. *Menopause*. 2006;13:737-743.

Q Which works better: Vaginal or oral estrogen for atrophy and dyspareunia?

A Vaginal estrogen administration led to greater improvement of both dyspareunia and vaginal dryness in postmenopausal hysterectomized women—despite higher serum estradiol levels with the oral route. Vaginal estrogen had no effect on libido, whereas oral estrogen may lower libido because of related increases in sex hormone binding globulin (SHBG), which decreases free testosterone levels.

EXPERT COMMENTARY

Anthony A. Luciano, MD, Director of the Center for Fertility and Women's Health, and Director of Endoscopic Surgery, Center for Advanced Reproductive Services, and Professor of Obstetrics and Gynecology, University of Connecticut School of Medicine, New Britain, Conn

METHODS Investigators randomized 57 postmenopausal, hysterectomized women to receive oral (0.625 mg of conjugated equine estrogen [CEE]; n = 27) or vaginal (0.625 mg of CEE per 1 g of vaginal cream; n = 30) estrogen once daily.

Vaginal vascularization and sexual function were assessed through a variety of measures, including serum estradiol, introital color Doppler ultrasound, and personal interviews.

RESULTS After 3 months of treatment, both groups of women had significant increases in the number of vaginal vessels, and “marked” decreases in the pulsatility index.

- **Anorgasmia** decreased significantly in both groups.
- **Sexual function in the vaginal dryness and dyspareunia** domains was significantly improved with vaginal estrogen therapy, but not with oral administration. However, the efficacy of oral therapy for vaginal dryness and dyspareunia was 80% and 70.6%, respectively. For vaginal therapy, the corresponding figures were 79.2% and 75%, respectively.

Unopposed estrogen has its own benefits, risks

In hysterectomized postmenopausal women, unopposed estrogen has been shown to relieve menopausal symptoms and protect against bone loss and osteoporosis-related fractures without increasing the risk of breast cancer or cardiovascular disease.

- **Oral** estrogen increases the risk of stroke and venous thromboembolic events (VTE), and may decrease libido, as mentioned above.
- **Transdermal** administration has not been associated with decreased libido, and may be associated with a lower risk of VTE.^{1,2}

Don't be fooled by serum levels

Measurements of serum estradiol levels in women who are taking CEE either orally or vaginally do not truly reflect the total estrogenic load of these patients, because the bulk of estrogen in CEE is estrone sulfate with several equine estrogenic compounds that have activity not reflected by serum estradiol. Consequently, the estrogenicity of the women in this study was not accurately evaluated through the serum estradiol measurements.

Vaginal estrogen is not “topical”

Moreover, the authors refer to the vaginal group as receiving “topical” estrogen—another misconception. Systemic absorption of vaginal estrogen is probably greater and more rapid than with the oral route. It is no surprise that vaginal administration was associated with greater improvement of both dyspareunia and vaginal dryness, because the vagina is exposed to a greater concentration of estrogen when it is administered vaginally than when it is given orally. With oral administration, a significant

FAST TRACK

Systemic absorption of vaginal estrogen is greater and more rapid than oral estrogen

EXAMINING THE EVIDENCE

amount of estrogen is metabolized by the liver, and a much lower dose of estrogen reaches the vaginal epithelium.

■ Oral estrogen can reduce libido

The lack of improved libido with the oral preparation is not surprising. In fact, some women may experience a decrease in libido with orally administered estrogen because of the associated increases in SHBG. With vaginal administration, SHBG levels are not increased, and sexual desire may improve, especially when vaginal lubrication is improved.

Does either form affect sexual function? Unfortunately, this study was not long enough or sufficiently powered to adequately assess sexual function.

■ Systemic absorption is high even with vaginal route

The same dose of CEE yields slightly greater benefits to vaginal health and function when it is administered vaginally. When estrogen is given vaginally, systemic absorption is significant—and may be greater than with the oral route.

Indications and contraindications of oral estrogen, consequently, also apply to vaginal administration. ■

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