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Video Demonstration

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Title (type in CAPITAL LETTERS)	<b>THE COTTON SWAB (QTIP) TEST: PREDICTOR OF URETHRAL HYPERMOBILITY?</b>

**AIMS OF STUDY:** The cotton swab (Qtip) test is likely the most widely used clinical test for diagnosing urethral hypermobility. Most textbooks equate a straining cotton swab angle  $\geq 30^\circ$  with hypermobility. Urethral hypermobility, although not involved in the diagnosis of genuine stress incontinence, is important in determining optimal treatment options such as injection of periurethral bulking agents and choice of surgical method. This study was designed to test the hypothesis that a single cotton swab test can accurately identify subjects with urethral hypermobility.

**METHODS:** All patients receiving initial evaluation in our clinic from August 1996 to March 1999 were eligible for this study. To be included in the study, a subject had to have complaints of incontinence, no history of surgery involving the bladder neck or anterior vaginal wall, and a straining cotton swab angle  $< 30^\circ$  on initial exam. Of the 191 patients who met this criteria, 28 subjects consented to a repeat cotton swab test performed at a followup appointment. Subjects were examined in a standardized fashion by a single examiner with the patient in a modified dorsal lithotomy position. An orthopedic goniometer was used to measure resting and straining angles. The 28 women were divided into two groups based on a straining cotton swab angle  $< 30^\circ$  on repeat exam. These two groups were compared with respect to age, weight, parity, number of spontaneous vaginal deliveries, resting and straining cotton swab angles on initial exam, and length of time between initial and repeat cotton swab tests. Within each group the initial and repeat test results for both resting and straining angles were compared.

**RESULTS:** Only 14 of the subjects (50%) had a straining cotton swab angle  $< 30^\circ$  on the repeat test. The two groups did not differ significantly with respect to age, weight, parity, number of spontaneous vaginal deliveries, resting and straining cotton swab angles on initial exam, or length of time between initial and repeat cotton swab tests. Cotton swab data is summarized below.

	Repeat test $\geq 30^\circ$ (n=14)	Repeat test $< 30^\circ$ (n=14)
Initial resting angle ( $^\circ$ )	-3.6 $\pm$ 9.7	-6.5 $\pm$ 5.8
Repeat resting angle ( $^\circ$ )	7.28 $\pm$ 15.0	-4.4 $\pm$ 7.4
p	.03	.42
Initial straining angle ( $^\circ$ )	18.4 $\pm$ 8.5	12.6 $\pm$ 9.1
Repeat straining angle ( $^\circ$ )	42.8 $\pm$ 8.6	12.4 $\pm$ 10.7
p	<.001	.95

**CONCLUSIONS:** Based on a repeat cotton swab test, half of the subjects in this study "converted" from urethra immobility to urethral hypermobility. Thus, an initial straining cotton swab angle  $< 30^\circ$  is a poor predictor of urethral immobility. Subjects with urethral hypermobility cannot confidently be diagnosed on the basis of a single test. Repeat cotton swab testing should be done on all patients with incontinence, no previous history of bladder or anterior vaginal wall surgery, and an initial straining angle  $< 30^\circ$ .