

# Lower Urinary Tract Symptoms in Women – Aspects on epidemiology and treatment

## Akademisk avhandling

som för avläggande av medicine doktorsexamen  
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av

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*Avhandlingen baseras på följande arbeten:*

- I. Longitudinal population-based survey of urinary incontinence, overactive bladder and other lower urinary tract symptoms in women.  
Anna Lena Wennberg, Ulla Molander, Magnus Fall, Christer Edlund, Ralph Peeker and Ian Milsom.  
*Eur Urol 2009;55(4):783-791.*
- II. Lower urinary tract symptoms: Lack of change in prevalence and help-seeking behaviour in two population-based surveys of women in 1991 and 2007.  
Anna Lena Wennberg, Ulla Molander, Magnus Fall, Christer Edlund, Ralph Peeker and Ian Milsom.  
*Accepted for publication, BJUI, 15 January 2009.*
- III. The heritability of lower urinary tract symptoms (LUTS).  
A population-based survey in a cohort of adult Swedish twins.  
Anna Lena Wennberg, Daniel Altman, Cecilia Lundholm, Åsa Klint, Anastasia Iliadou, Ralph Peeker, Magnus Fall, Nancy L Pedersen and Ian Milsom.  
*Manuscript.*
- IV. Stamey's abdominovaginal needle colposuspension for the correction of female genuine stress urinary incontinence.  
Long-term results.  
Anna Lena Wennberg, Christer Edlund, Magnus Fall and Ralph Peeker.  
*Scand J Urol Nephrol 2003;37(5):419-423.*

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# ABSTRACT

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## **Lower urinary tract symptoms in women – aspects on epidemiology and treatment**

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Lower urinary tract symptoms (LUTS) are common conditions that compromise a person's quality of life and result in increased health care costs for society.

The aims of this thesis were to describe the prevalence and natural course of different LUTS in women (*Paper I*), to assess prevalence changes over time (*Paper II*), and to evaluate the importance of genetic factors on LUTS (*Paper III*). The long-term results of the Stamey needle colposuspension for female stress urinary incontinence were also assessed (*Paper IV*).

**Paper I:** In this population-based, longitudinal study the very same women (n=1081) were assessed regarding the prevalence, progression and remission of various LUTS in 1991 and 2007, using a postal questionnaire. The proportion of women reporting urinary incontinence (UI), overactive bladder (OAB), nocturia and daytime voiding frequency of  $\geq 8$  times/day increased markedly over time. Both incidence and remission for most symptoms were considerable.

**Paper II:** The prevalence of LUTS, help-seeking behaviour, treatment and quality of life were compared in two population-based surveys of women performed in 1991 (n=2911) and 2007 (n=3158) using a similar questionnaire. The reported prevalence of UI and OAB was unchanged over time as was help-seeking due to UI. In 2007, more women stated that the presence of UI limited their daily life.

**Paper III:** Questionnaire-based national cohort survey evaluating the prevalence of LUTS in Swedish twins born 1959-1985 (n=25 364). Heritability was assessed in female twins. LUTS were more common in women than in men. The strongest genetic effects were observed for UI and nocturia and the lowest for OAB without incontinence where environmental effects dominated. Shared environment accounted for nearly one third of the total variation for OAB without incontinence and for one fifth of the variation for stress UI. Non-shared environmental effects were in the range of 45-65% for the various LUTS.

**Paper IV:** Twenty-four women, treated by the Stamey method for stress UI, were followed up by means of a questionnaire, urodynamic assessment and a standardised quantification test. Time to follow-up was 63 months. Approximately half of the women considered themselves continent at follow-up. The mean postoperative leakage was significantly reduced as compared to preoperatively. Most women were satisfied with the result of the operation.

**Conclusions:** These studies showed that the prevalence of UI and OAB in women has been largely unchanged in the last 16 years. UI, OAB and other LUTS constitute dynamic conditions. The prevalence of symptoms increases with increasing age, but both progression and remission over time are common. The strongest genetic effects were observed for conditions involving UI and for nocturia while the lowest genetic effects were observed for OAB, where environmental factors were more important. The Stamey procedure may be used in a selected group of women with genuine stress UI and stable detrusor with acceptable long-term results and patient satisfaction.

**Keywords:** Urinary incontinence; Overactive bladder; Lower urinary tract symptoms; Epidemiology; Prevalence; Incidence; Progression; Remission; Twins; Genetic; Heritability; Stress urinary incontinence; Stamey

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