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## DOES A HISTORY OF CHILDHOOD URINARY SYMPTOMS PREDICT ADULT SYMPTOMS?

### Hypothesis / aims of study

Although anecdotal evidence supports an association between a history of childhood urinary tract symptoms and current lower urinary tract symptoms, there are few population based studies that support this association. Our objective was to describe the association between childhood symptoms and current adult urinary lower urinary tract symptoms in a sample of American women.

### Study design, materials and methods

The Reproductive Risks for Incontinence Study at Kaiser (RRISK) study included members of a large health maintenance organization, Kaiser Permanente Medical Care Program of Northern California who were enrolled in a cohort of 2109 women aged 40 to 69 when they were randomly selected from age and race strata. In-person interviews were conducted to ascertain childhood history of urinary frequency, urinary incontinence (UI), and multiple urinary tract infections (UTIs) and describe current symptoms of daytime and nighttime urination frequency, urinary urgency and multiple UTIs in the past year.

Participants were asked to 'think back to the period of your life between first grade and high school' and report how often each of the following happened: 'Frequent urination during the day', 'Accidental leakage of urine during the day', 'Frequent urination after going to bed', 'Accidental leakage of urine in bed', and 'More than one bladder or kidney infection a year'. Participants were defined as having a specific childhood urinary symptom if they responded 'sometimes' or 'often'.

Current urinary incontinence and urinary urgency were defined as self-report of monthly or greater incontinence or urgency in the past 12 months. Recurrent UTI was defined as self-report of a doctor telling the participant she had a urinary tract infection at least twice during the prior 12 months.

Current daytime and nighttime urinary frequency was defined as self-report of > 7 and > 1 voids per day and night, respectively, during the last 12 months.

Logistic regression was used to estimate the odds ratio and describe the 95% confidence intervals for evaluate the association between childhood urinary tract symptoms and current urinary symptoms while adjusting for age, race/ethnicity and body mass index.

### Results

The 2109 participants were racially diverse (48% White, 18% Black, 16% Latina, and 16% Asian) with a mean age of 56 ± 9 years. The frequency of current and childhood urinary symptoms is detailed in Table I.

Table I: Subjects reporting urinary symptoms.

<u>Current Urinary Symptom</u>	<u>Number (%)</u>
Urinary incontinence at least monthly	899 (43%)
Urinary incontinence at least weekly	603 (29%)
Daytime urinary frequency >7 daily	501 (24%)
Nighttime urinary frequency >1 nightly	638 (30%)
<u>Childhood Urinary Symptom</u>	
Frequent urination during the day	299 (14%)
Accidental leakage of urine during the day	103 (5%)
Frequent urination after going to bed	220 (10%)
Accidental leakage of urine in bed	164 (8%)
More than one bladder or kidney infection a year	100 (5%)

Frequent daytime urination in childhood was strongly associated with current urgency (OR=1.8,  $p<0.001$ ), and weakly associated with both daytime (OR=1.4,  $p=0.07$ ) and nighttime (OR=1.5,  $p=0.06$ ) adult frequency. Frequent nighttime urination in childhood was strongly associated with current nighttime frequency (OR=2.4,  $p<0.001$ ). A history of UTIs in childhood was also associated with current nighttime frequency (OR=1.7,  $p=0.04$ ) and current UTIs (OR=2.6,  $p<0.001$ ). Childhood symptoms were not associated with current urinary incontinence.

#### **Interpretation of results**

Data from the RRISK cohort support an association between recall of childhood urinary frequency and current urgency and urinary frequency. One explanation for this association may be that physiologic characteristics underlying overactive bladder symptoms in children, may persist to adulthood. Future research may reveal whether treatment of childhood disorders can prevent adult symptoms.

#### **Concluding message**

Our analysis confirms an association between childhood and adult lower urinary tract symptoms.

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