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## Abstract Reproduction Form B-1

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Institution City Country	Weill Medical College of Cornell University, New York, NY USA
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Title (type in CAPITAL LETTERS)	VALIDATION OF THE NOCTURIA INDEX AND THE NOCTURNAL BLADDER CAPACITY INDEX AS COMPLEMENTARY QUANTIFIERS OF THE ETIOLOGY OF NOCTURIA.

**Aims of Study:** We have previously described two new diary-derived parameters useful in quantifying the etiology of nocturia, these being the Nocturia index (Ni) and the Nocturnal Bladder Capacity index (NBCi). We herein study the test-retest validity of these and other, more conventional, parameters in patients undergoing evaluation of lower urinary tract symptoms.

**Methods:** The records of 33 consecutive men and women with LUTS having undergone videourodynamic studies were reviewed. Criterion for entry into the study was the availability of two consecutive micturition diaries (day, night and 24 hour voided volume) in men or women not specifically treated for nocturia. Voiding diary analysis was carried out as previously described (1), determining nocturnal urine volume percentage of the 24 hour urine volume, ('Nocturnal Polyuria index' = NPi: >35% is defined as nocturnal polyuria) the Nocturia index (nocturnal urine volume/functional bladder capacity) and the Nocturnal Bladder Capacity index (NBCi). The NBCi is a parameter derived as follows: Nocturnal urine volume (NUV) divided by functional bladder capacity (FBC, the largest single voided volume in the 24 hour diary) minus 1 is the predicted number of nightly voids (PNV). If the PNV thus calculated is a mixed number, it is rounded up to the next highest integer. This parameter assumes bladder capacity during sleep hours is maximal. The extent to which this is not the case (eg where nightly bladder capacity is less than maximal) is described by the difference between actual number of nightly voids (ANV) and PNV. This difference is known as the NBC index. The greater the NBCi, the less the bladder capacity during sleep hours. The Nocturia index, NBC/FBC, is an index of nocturnal urine production relative to bladder capacity and along with the NPi, complements the NBCi as to the two major components of the etiology of nocturia, namely, nocturnal urine overproduction and diminished nocturnal bladder capacity. Comparisons were made within each parameter group over the series of diaries in this cohort. Statistical analysis utilized Dunn's Multiple Comparisons Test.

**Results:** There were 26 patients with serial diary data satisfactory for analysis. Mean age was 64.5 years (14 men and 12 women). The mean time elapsed between diary determinations was 4.4 months. The Table lists mean data for each nocturia parameter gleaned from the serial diaries. Parameters listed are: Actual number nightly voids (ANV), Functional bladder capacity (FBC), Nocturnal urine volume (NUV), Nocturia index (Ni), Nocturnal Bladder Capacity index (NBCi) and Nocturnal Polyuria index (NPi).

**Abstract Reproduction Form B-2**

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	Initial test	Retest	N =	p-value
ANV	2.19	2.12	26	>0.05
FBC (ml)	313.3	292.5	26	>0.05
NUV (ml)	649	614	26	>0.05
Ni	2.31	2.67	26	>0.05
NBCi	0.88	0.63	26	>0.05
NPi (%)	34.0	34.8	26	>0.05

There were no significant differences in initial test versus retest data for all diary-derived parameters of nocturia listed.

Conclusions: These data validate the Nocturia, Nocturnal Polyuria and Nocturnal Bladder Capacity indices as complementary quantifiers of the etiology of nocturia in patients with lower urinary tract symptoms. Such data support the validity of studies designed to diagnose and treat specific components of nocturia (the N index and NP index for nocturnal urine overproduction and the NBC index for diminished nocturnal bladder capacity) utilizing these parameters.

(1) Neurourol and Urodyn 16: 401, 1997.