



# No effect of basic bladder advice in enuresis: A randomized controlled trial

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## Summary

### Background

There are two firstline, evidence-based treatments available for nocturnal enuresis: desmopressin and the enuresis alarm. Prior to use of these therapies, international experts usually recommend that the children also be given basic bladder training during the daytime. The rationale behind this recommendation is that daytime bladder training or urotherapy, is a mainstay in the treatment of daytime incontinence caused by detrusor overactivity. Still, there is, as yet, no firm evidence that daytime bladder training is useful against nocturnal enuresis.

### Aim

To explore whether basic bladder advice has any effect against nocturnal enuresis.

### Study design

The study was prospective, randomized, and controlled. The evaluated intervention was bladder advice, given in accordance with ICCS guidelines and focused on regular voiding, sound voiding posture, and sufficient fluid intake. Forty children aged 6 years or more with previously untreated enuresis, but no daytime incontinence, were randomized (20 in each group) to receive either first basic bladder advice for 1 month and then alarm therapy (group A)

or just the alarm therapy (group B). Based on power calculations, the minimum number of children required in each treatment arm was 15.

### Results

The basic bladder advice did not reduce the enuresis frequency in group A ( $p = 0.089$ ) and the end result after alarm therapy did not differ between the two groups ( $p = 0.74$ ) (see Table). Only four children in group A had a partial or full response to bladder training, and two of these children relapsed immediately during alarm therapy.

### Discussion

This was the first study to evaluate, in a prospective, randomized manner, the value of daytime basic bladder training as a treatment of enuresis. It was found that the treatment neither resulted in a significant reduction in the number of wet nights, nor did it improve the success of subsequent alarm therapy.

### Conclusions

The recommendation that all children with enuresis be given bladder training as a firstline therapy can no longer be supported. Instead, we recommend that treatment of these children start with the enuresis alarm or desmopressin without delay.

**Table** Number of wet nights out of 14 before, during, and after the study.

	Baseline	After bladder advice	After alarm treatment
Group A ( $n = 20$ )	8–14, median 14 (11.9 ± 2.5)	0–14, median 13.5 (10.5 ± 4.8)	0–14, median 4.5 (5.6 ± 5.36)
Group B ( $n = 20$ )	8–14, median 14 (12.6 ± 2.3)		0–14, median 2.5 (4.85 ± 5.38)

## Introduction

There are two firstline, evidence-based treatments for NE: the enuresis alarm and desmopressin [1]. Both methods share a success rate, in unselected populations, of approximately 50%. Many authorities, including the expert panel behind the current International Children's Continence Society (ICCS) guidelines, share the opinion that children with enuresis should first be given basic bladder advice (BBA) before the enuresis alarm or desmopressin is introduced [1].

BBA describes a package of explanations and instructions that can be provided by any healthcare professional and which is sometimes given the slightly nebulous term "standard urotherapy." The BBA, as recommended by the ICCS, can be summarized as: 1) regular voiding, 2) good voiding posture, 3) sound drinking habits, and 4) treatment of constipation, if present [1].

The rationale for recommending this therapy to enuretic children is that detrusor overactivity is recognized as a pathogenetic factor in enuresis [2]. BBA, or more extensive urotherapy, is an evidence-based treatment for children with daytime incontinence caused by detrusor overactivity [3]. Recommendation for use against nocturnal enuresis is, however, as yet not based on the results of prospective, randomized trials.

The primary purpose of the study was to see whether the general recommendation to treat all enuretic children with BBA could be supported by evidence. We wanted to test both if the treatment is useful as a standalone therapy and/or if it increases the chances of success of subsequent alarm therapy.

## Patients and methods

Children were recruited from two pediatric outpatient clinics. Recruitment started in April 2012 and concluded in April 2014. The inclusion criteria were age 6 years or older and enuresis on at least 8 out of 14 nights. Current daytime incontinence, previous treatment of daytime incontinence, previous treatment with the enuresis alarm or secondline anti-enuresis therapies, as well as concurrent urological disorders, constituted exclusion criteria.

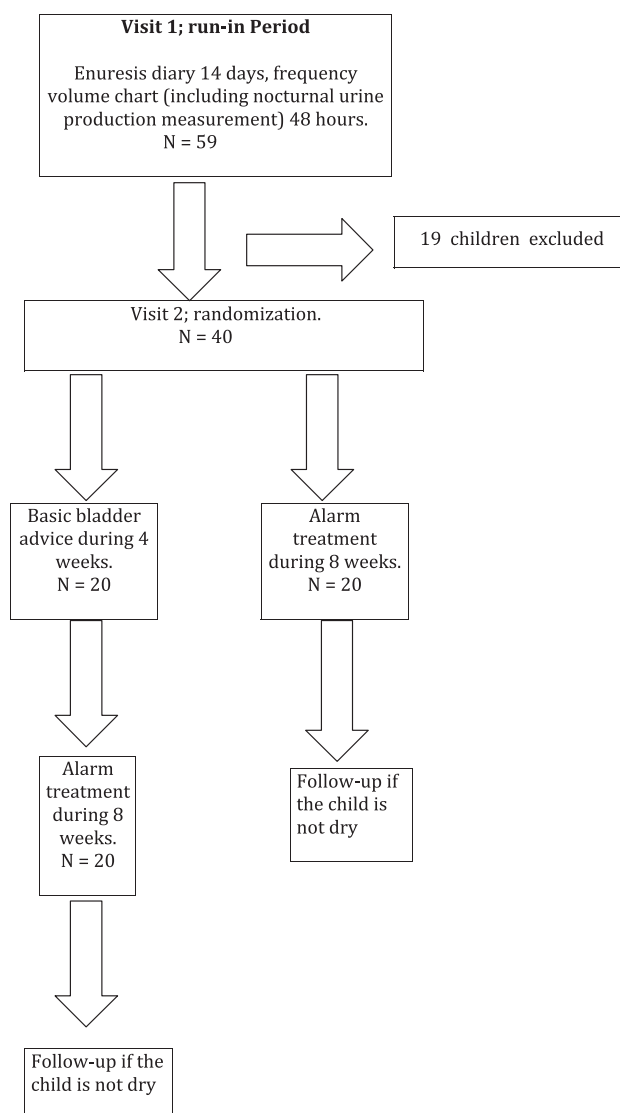
A case history was taken, focusing on micturition habits. The children were examined by a pediatrician to rule out underlying conditions, as well as to identify constipation, which was defined according to the Rome III criteria [4]. A non-invasive urodynamic investigation, consisting of uroflowmetry and residual urine assessment, was performed. Thereafter, the families were asked to complete a voiding chart over a 2-week period, recording wet and dry nights and daytime lower urinary tract symptoms. The parents were also asked to measure voided volumes and nocturnal urine production (via recording of diaper weight) during 48 h. Daytime voided volumes and nocturnal urine production were expressed as percentages of expected bladder capacity (EBC), calculated using the standard formula  $EBC = 30 + \text{age (years)} \times 30$  [5]. Constipation, if present, was treated with stool softeners and the establishment of regular bowel habits.

The children were then randomly assigned to two groups (Fig. 1). The children in group A were treated with BBA for 1 month, recording wet and dry nights again during the last 2

weeks. Subsequently, alarm therapy was given for 8 weeks. Once again, wet and dry nights were documented during the last 2 weeks of treatment. The children in group B were only given alarm therapy during 8 weeks, without preceding BBA. The information given to all the families was that BBA is the recommended treatment for NE but is not yet based on evidence from randomized trials.

The following bladder advice was given, according to the ICCS recommendations [1]:

- 1) *Information and demystification.* The child and family were informed that enuresis is very common and that it is not the child's fault. Explanations regarding the pathogenesis were also given.
- 2) *Regular voidings during the day,* that is in the morning, twice during the school day, after school, at dinnertime, and before going to bed.
- 3) *Sound drinking habits,* that is liberal fluid intake in the morning, at lunch and early afternoon, but in the evening only enough to quench thirst.



**Figure 1** Treatment schedule for groups A and B.

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