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test during the last 2 years. Group B 23 children who had bladder problems but no urodynamic test; only 6 of them had consulted a health carer. Group C 67 children without any symptoms.

Boys/girls distribution was similar in all groups. Their mean age was 11.5 years old.

In group A significantly more children had relatives in the previous generation with enuresis beyond the age of 7. More children in this group had cousins and nephews with continuing problems of bedwetting at the time of the interview.

In the symptom groups (A+B) the ability to take responsibility for personal hygiene and for homework was lower. A high number of children in these groups did not take part in any extra-scolar activity. No difference in level of class or school results were found and the family situation was identical in all groups.

The repeated answering proved very reliable (no level of agreement below 0.74 and most = 1).

Parents in the symptomfree group C seemed to start the dry-training earlier. Significantly more children were dry during the afternoon nap in group C at start. Parents from group C used less different methods than those from the symptom groups. In group C more parents did not insist when an attempt to void was unsuccessful, 3 % invited the child to push and 13 % opened the tap. In the symptom groups 25 % asked to push and 20 % opened the tap.

Parents in groups A+B were more ready to punish (17% compared to 1%).

We found a good correlation between LUT symptoms and bladder dysfunction.

It was surprising that 70% of the parents considered their children to be continent in spite of several leakages a day.

Conclusions The questionnaire used in this study has given interesting data. There seems to be a very good correlation between real dysfunction and dysfunction suggested through questionnaire. Children with and without LUT problems would seem to be different in hereditary factors, general independence and the age when their training started. It is remarkable that many children with lasting problems of bladder control did not consult a health carer.

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Title (type in CAPITAL LETTERS, leave one blank line before the text):

THE EVOLUTION OF TOILET-TRAINING DURING THE LAST 60 YEARS: CAUSE OF AN INCREASE IN LOWER URINARY TRACT DYSFUNCTIONS?

Aims of study To analyse the evolution of toilet training methods in children in the last three generations and to search for a possible cause for increase of lower urinary tract dysfunctions.

Methods A questionnaire of 25 questions, previously validated, was handled out to persons in public places together with a letter explaining the purpose of the study. The questionnaires were recollected via a special mail box and by personally picking them up. The first 10 questions were about the personal, social and family data. The next 9 questions were specific about the potty

training and the last 6 questions inquired about the age at which bladder and bowel control had been reached and about the duration of the training. The reliability of the answering to this questionnaire had been tested before.

Results We received 812 replies (32%) filled out by 321 persons (97% of them were female). This population was divided in 3 groups:

Group I 87 persons > 60 years old (mean 69.8 years) who trained 276 children; group II 104 persons between 40 and 60 (mean age 50.3 years old) who trained 262 children; group III 130 persons between 20 and 40 (mean age 32.8 years old) who trained 274 children.

The number of children pro family decreased from group I to III as expected. We could observe a major change in toilet-training methods over the years. The start of the training has been significantly postponed. As reason to start the training, bladder control during the afternoon nap has lost its importance. The season (summer) became a more important factor as well as start of school. Bladder drill, formerly widely used, was progressively abandoned and a more liberal attitude was adopted by the youngest parent group. The choice of diapers became very different. The baby chair with a hole in the seat became less popular in the younger generations and has been replaced by a normal toilet in a majority of cases in group III often even without a reducing seat or support for the feet.

Younger parents do not use one method anymore but try several things mixed. Prompting was used in 76% in group I, 23 % in group II, 8 % in group III. All groups used rewarding more often than punishing.

The attitude of the parents when an attempt to void did not succeed was significantly different between the groups: suggestion by running a tap, special noises made by the parent were used more in group I. The invitation to push was only used in group III.

The training took less than 6 months in the majority in all groups.

Day-time bladder control was achieved before 18 months in 71 % in group I, in 17% in group III. Night-time control was achieved before 18 months in 61 % in group I, in 23 % in group II and in 8% in group III. Bowel control during the night preceded bladder control in most children in all groups. For 90% the potty-training was done at home. In group I 48 % of the grandparents and in group II 80 % of the grandparents estimated that they actively participated in the bladder training.

Conclusions Our data show that a big change has occurred in bladder training over the last 60 years. Potty training has gradually been started later and the very strict schedules used in previous generations have been mostly abandoned. Prompting has not been advocated any more and parents are recommended to adjust the onset of the training to the child's individual needs [1]. Several authors are convinced that bladder and bowel control are mainly maturational processes which cannot be accelerated by training. Our findings do contradict this theory. There seems to be a great concordance between the programs proposed today for the treatment of dysfunctional voiding in children and the traditional bladder training methods used by parents 60 years ago [2-3]. It might be possible that starting bladder training when the child stays dry during the afternoon-nap and prompting are ways to avoid bladder dysfunction in children. Further study is being performed.

References

1. Largo RH, Stutzle W. Longitudinal study of bowel and bladder control by day and at night in the first six years of life. *Dev Med Child Neurol* 1977; 19: 598-606.

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2. Gesell A. Infant and child in the culture of today. Harper and Bross, New York 1943.
3. Hoebeke P, VanDeWalle J, Theunis M, DePaepe H, Oosterlinck W, Renson C. Outpatient pelvic floor therapy in girls with daytime incontinence and dysfunctional voiding. Urology 1996; 48: 923-927.

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Title (type in CAPITAL LETTERS, leave one blank line before the text):
THE VOIDING PATTERN OF NORMAL ELDERS

Aims of Study: Voided volumes and frequencies are routinely used in the diagnosis, management, and monitoring of diseases such as prostatic obstruction and heart failure. However, few normative data are available for the elderly, and none of those data account for comorbid conditions, medications, and bladder dysfunction. As well, the true meaning of "normal" as it relates to the elderly remains undefined. This study aims to determine, among continent older persons: (1) the normal voiding pattern, including frequencies and volume; (2) the influence of sex, age, and lower urinary tract dysfunction on voiding patterns; (3) the differences in voiding patterns which occur with use of more stringent definitions of "normal."

Methods: We obtained data from continent volunteers over the age of 65y (mean age = 77y). All were healthy, independent, and continent by both self-report and clinical evaluation. All completed >48 hr frequency/volume voiding diaries and underwent multichannel videourodynamics which included medium fill cystometry and pressure flow studies.

Results: The data of all subjects (n=46, 25M, 21F) are summarized in Table 1.

Table 1. Voiding Data (\pm standard deviation)

	Frequency (# voids)	Maximum Void (ml)	Minimum Void (ml)	Average Void (ml)	Total Output (ml)	Diuresis (ml/min)
Awake	6.7 \pm 2.3	313 \pm 157	85 \pm 54	170 \pm 75	901 \pm 485	1.0 \pm 0.5
Asleep	1.4 \pm 1.1	377 \pm 179	147 \pm 95	256 \pm 121	545 \pm 227	1.1 \pm 0.4

No significant differences were seen by sex. Those aged >75y (n=21) had less total output/day (721 vs 1051 ml, p=0.007), increased total output/night (619 vs 483 ml, p=0.04), and increased nocturia (2.0 vs 0.8 voids, p=0.0001). The rates of fluid excretion (ml/min) were similar across all subjects for day and night, and no circadian pattern was identified. Interestingly, those aged > 75y had a lower daytime rate of excretion (0.8 vs 1.1 ml/min, p=0.02) despite a similar nocturnal rate (1.1 vs 1.0 ml/min). Subjects with urodynamically normal bladders (n=6) had larger nocturnal voided volumes (maximum, minimum, and average, p<0.05), than those with overactive (n=25), underactive (n=4), or obstructed and overactive (n=11) bladders. Rates of diuresis and total output were similar across all urodynamic diagnoses. To consider the effect of aging alone, subjects were stratified into three groups defined by progressively more stringent criteria, by: (1) symptoms, (2) relevant disease or medications, and (3) urodynamic normality. Asymptomatic subjects (n=22) had less nocturia (1.1 vs 2.0 voids, p=0.002). Asymptomatic