



Enuresis Update

Welcome to the Spring 2019 edition of 'Enuresis Update'

'Enuresis Update' aims to be a resource for clinicians involved in caring for children and young people with bedwetting problems. The aim is to promote excellence in clinical practice.

In this edition we have included reviews of published papers on psychiatric disorders in children with enuresis, on trajectories of development of night time bladder control, on the association between enuresis and psychiatric disorders in children aged 6-11 years and about the relationship between obesity and enuresis as well as an article about the importance of maintaining realistic expectations in children and young people with enuresis. We hope you find them interesting and useful.

As always, we welcome ideas and comments, as well as suggestions about what you would like to see included in future editions. We would also be happy to share any updates about your developments in your service.

Please do get in touch with us at email:

bbuk@disabledliving.co.uk



World Bedwetting Day 2019

Tuesday 28th May

What are you doing for World Bedwetting Day?

WORLD BEDWETTING DAY
.....
TIME TO TAKE ACTION - 28TH MAY 2019

Have a look at our blogs, and social media postings.

Don't forget to use the resources available at www.stopbedwetting.org and at www.bbuk.org.uk . If you are doing something new , innovative, or different, or are making a difference to care consider entering the Bladder & Bowel UK Award.

SAVE THE DAY
BY FIGHTING
BEDWETTING
AT NIGHT

Enuresis Award 2019

Are you a Health Care Professional? Have you made a difference to the care of affected children and young people?

The winner will receive a cheque for £500 and present their work at the Paediatric Bladder and Bowel Education meeting in Manchester on 17th October 2019

For more information contact:

bladderandboweluk@disabledliving.co.uk



Realistic Expectations for Treatment Outcomes

Enuresis is not a benign condition. It adversely affects quality of life, is related to mental illness, distress, behavioural disorders, psychosocial problems, bullying, difficulties with peer relationships, social isolation and reduced self-esteem. The cumulative effect is a negative impact on quality of life for the children, young people and families affected.

Treatment of enuresis should therefore be a priority whenever families present for help, with active treatment interventions being offered from five years of age (NICE 2010). However, as professionals we have a responsibility, not only to empower families to improve outcomes (see Enuresis Update Autumn 2018), but also to ensure that they have realistic expectations for the treatments recommended.

A recently published systematic review and meta-analysis of 15 articles with a total of 1502 randomized participants in alarm and desmopressin treatments for enuresis (Chiung-Hui Peng et al 2018) found that 19.5% of children using alarms dropped out, compared to 15.4% taking desmopressin. Only 67.8% using the alarm and 45.5% using desmopressin had a sustained response. Desmopressin melt had a lower relapse rate and lower drop-out rate than desmopressin tablets.

Children and families need to understand the heterogeneous causes of enuresis and that spontaneous resolution is most likely in those wetting less than two nights a week. Treatment with one therapy alone is successful for many children. However, many will need combined treatments. Vande Walle et al (2012) argue that the commonest cause for non-response to treatment is undiagnosed non-monsymptomatic enuresis with subtle daytime symptoms, constipation, attention-deficit hyperactivity and sleep disorders.

Some children will continue to have treatment resistant enuresis despite combination treatment with alarms, desmopressin and anticholinergics. Some will not be able to try all treatment options for different reasons. The more treatments that children try unsuccessfully, the more likely they are to become despondent and reluctant to engage, feeling that treatment is not worth the effort involved.

For this latter group the onus is on us to work hard to understand the underlying psychology, to engage them and to foster realistic expectations, while instilling hope for future success. This is particularly important for young people who may have undergone treatment intermittently or continuously sometimes for almost as long as they remember. Research continues into the causes of treatment resistant enuresis, with the prospect of innovative solutions following.

Bascom et al (2019) found that children with enuresis from an unselected group undergoing sleep studies had more abnormalities of breathing during the night, than children who did not have enuresis and suggested this was due to impairments in autonomic control. They suggested further work was needed to investigate this. There is evidence of coexistence of obesity and enuresis, with no clear evidence of why these conditions occur together. There is suggestion that the high comorbidity between enuresis and ADHD indicates a more complex pathogenesis for enuresis than traditionally considered, with a possible pathway in the central nervous system (Van Herzeele et al 2015). Other current theories about possible causes of enuresis include that desmopressin resistant nocturnal polyuria may be caused by hypercalciuria, a problem with the prostaglandin circadian rhythm, or increased sodium excretion during the night. (Vande Walle & Van Laecke (2008). There has also been suggestion that desmopressin resistant nocturnal enuresis may be due to a problem with the circadian rhythms in the kidneys (Dossche et al 2016).

As long as we work with children and young people who have enuresis we need to ensure that we maintain our knowledge base about current theories and research into the aetiology of the condition. This will enable us to maintain hope for an eventual solution amongst those who have treatment resistance, even if this does take some time. We should continue to provide appropriate support and make suggestions to lessen and manage the impact of this bothersome condition. Enuresis Update will continue to provide information on new research, theories and understandings.

References

- Bascom et al (2019) 'Nocturnal enuresis in children is associated with differences in autonomic control' *Sleep Journal* 2019 1-6 doi: 10.1093/sleep/zsy239
- Chiung-Hui Peng C et al (2018) 'Systematic review and meta-analysis of alarm versus desmopressin therapy for pediatric nonsymptomatic enuresis' *Nature Scientific Reports* 8:16755
DOI:10.1038/s41598-018-34935-1
- Dossche L et al (2016) 'The pathophysiology of monosymptomatic nocturnal enuresis with special emphasis on the circadian rhythm of renal physiology' *European journal of pediatrics* 175, 6, 747-754
Author(s) Dossche, L; Walle, J Vande; Van Herzeele, C
Source *European journal of pediatrics*; Jun 2016; vol. 175 (no. 6); p. 747-754
Publication Date Jun 2016
- Vande Walle J et al (2012) 'Practical consensus guidelines for the management of enuresis' *European Journal of Pediatrics* 171 971-983
- Vande Walle J & Van Laecke E et al (2008) 'Pitfalls in studies of children with nonsymptomatic enuresis' *Pediatric Nephrology* 23 173 - 178
- VanHerzeele C et al (2015) 'Neuropsychological functioning related to specific characteristics of nocturnal enuresis' 11, 208.e1-208.e6
- Weintraub Y et al (2013) 'Enuresis – an unattended comorbidity of childhood obesity' *International Journal of Obesity* 37, 75-78

Research Reviews

1. Development of nighttime bladder control from 4 – 9 years: association with dimensions of parent rated child maturational level, child temperament and maternal psychopathology

Carol Joinson, Jon Heron, Richard Butler, Tim Croudace

Longitudinal and Lifetime Studies 2009, 1(1):73-94

2. Developmental Typology of Trajectories to Nighttime Bladder Control: Epidemiologic Application of Longitudinal Latent Class Analysis

Tim J. Croudace, Marjo-Riitta Jarvelin, Michael E. J. Wadsworth, Peter B. Jones

American Journal of Epidemiology 2003, 157(9):834-842

Abstract

These two papers are unique in that they both use newly developed statistical methods to illustrate what happens to bedwetting with age, in a way that has not been done before. We know from numerous studies from around the world that bedwetting is common at five years of age and steadily declines to low levels at about ten years of age, although without complete resolution leaving both adolescents and adults to wet the bed in small numbers.

These studies are all cross-sectional i.e. take a large population of all ages at one point in time and ask *Do you wet the bed?* As health professionals we are aware that this is not the picture we always see in clinic, with some children persisting for many years with treatment-resistant bedwetting and some being relatively good at a younger age and becoming worse as they get older. Longitudinal population studies allow these two papers to shed more light on what happens to different groups of children with bedwetting; these are studies that ask the same child the question '*do you wet the bed?*' on several occasions, at increasing age intervals, allowing longitudinal latent class analysis.

In the first paper the Avon Longitudinal Study of Parents and Children (ALSPAC) cohort, with birth dates 1991-1992 [1], is analysed; this cohort asked the parents of 5843 children about their child's bedwetting at 4.5, 5.5, 6.5, 7.5 and 9.5 years of age. Four groups of children were shown: a normal group, or those who did not bed wet (72.6%), a delayed group who spontaneously and steadily improved with time from 4.5 years and were dry by 9.5 years (13.5%), a persistent group with significant bedwetting until 9.5 years (8.8%), and an interesting fourth group (relapse) who showed signs of improvement between 4.5 - 5.5 years of age but then relapsed and worsened (5.1%). This latter and the persistent group continued to wet the bed at 9.5 years of age.

Very interestingly, another UK longitudinal cohort has been analysed in a similar way but from almost 50 years earlier: the MRC cohort consisted of 4755 children from across England, Scotland and Wales born in 1946 and followed up at ages 4, 6, 8, 9, 11 and 15 years [2] i.e. longer modelling than the ALSPAC data. The results show remarkably similar groups: the normal group of non-bedwetters is larger (84% vs. 72.6%). The delayed group (called transient) is 8.7%, the children with persistent wetting (called chronic and persistent) were a total of 4.4% and the relapsing group were 2.9%. In this cohort daytime wetting at 6 years of age was strongly associated with persistent and relapsing bedwetting.

Implications for practice

At primary school entry, bedwetting is common with most recent UK data suggesting 30% of children with some bedwetting. To answer the common parental question '*Will my child grow out of this and when?*', we know that with time three groups will emerge; about half of the children spontaneously improve with time and "grow out" of their bedwetting by 8-9.5 years of age. It is probably this group that respond well to general measures and first line treatment.

Another group gets worse with time (this group probably captures those children we call secondary enuresis) and the third group have persistent significant wetting. The last two groups make up about half of the wetting cohort and do not appear to spontaneously improve or "grow out" of their wetting. For the health professional who needs to know which children would benefit from escalation of treatment, underlying bladder dysfunction (any daytime wetting at six years) is strongly associated with these two groups and they should direct these children towards treatment that will address this successfully. Any child who has frequent bedwetting after 9.5/10 years of age also falls into this category. Recent ALSPAC analysis has shown significant psychological issues in 14 year olds who had bedwetting making this an even more pressing issue.

Psychiatric disorders in children with enuresis at 6 and 11 years old in a birth cohort

Denise M. Mota, Alicia Matijasevich , Iná S. Santos , Sandra Petresco , Laís Marques Mota

[J Pediatr \(Rio J\)](#). 2019 Feb 3. pii: S0021-7557(18)30929-X. doi: 10.1016/j.jped.2018.11.010. [Epub ahead of print]

Abstract

Objective: The objective of this study was to evaluate the association between enuresis and psychiatric disorders at 6 and 11 years of age.

Method: 3,356 children of a birth cohort were evaluated. A standard questionnaire on urinary habits and mental health (Development and Well-Being Assessment [DAWBA]), was used.

Results: The prevalence of enuresis at age 6 years was of 10.2% (9% non-monosymptomatic) and, at 11 years old, of 5.4% (4.5% non-monosymptomatic). At age 6 years, boys with non-monosymptomatic enuresis showed more hyperactivity disorders than those without enuresis. At 11 years old, among the boys with non-monosymptomatic enuresis, the prevalence of any psychiatric disorder, hyperactivity disorders, and oppositional disorders was up to 3 times higher than in boys without enuresis. Among the girls with non-monosymptomatic enuresis, the prevalence of any psychiatric disorder and oppositional disorders was up to 5.5 times higher than among girls without enuresis.

Implications for practice

This appeared to be a well conducted study which highlighted the link between enuresis, particularly non-monosymptomatic enuresis, and emotional and behavioural disorders.

This has clear implications for practice as it highlights the importance of carrying out a holistic assessment, to not only identify and exclude any underlying co-morbidities but also the child's ability and willingness to engage.

It is acknowledged that children with emotional and behavioural problems may well require more support and motivation to comply with lifestyle changes and treatment programmes. This factor therefore has to be built into the individualised treatment programme.

There also needs to be careful consideration regarding the introductions of first line treatments. The alarm, for example, may not be tolerated by some children and their families may not be able to cope with the disruption.

Enuresis – an unattended comorbidity of childhood obesity

Weintraub Y; Singer S; Alexander D; Hacham S; Menuchin G; Lubetzky R; Steinberg DM; Pinhas-Hamiel O

International Journal of Obesity 2013, 37, 75-78

Abstract

The authors hypothesized that as both enuresis and obesity are more common in children with obstructive sleep apnoea, attention deficit hyperactivity disorder (ADHD), type 2 diabetes and psychopathological problems, the prevalence of enuresis would be increased in children and adolescents who are obese.

They undertook a cross-sectional study of 281 children who were 7-18 years old. These were recruited from both paediatric obesity clinics and clinics where normal weight children were having routine health assessments. The parents completed a questionnaire about enuresis, medical conditions and sociodemographics. 37 children were overweight, 86 were obese and the remaining 158 were of normal weight.

There was no statistically significant relationships found between enuresis and academic achievement, sharing a bedroom, family size related to the number of rooms at home, parental education or religion.

Enuresis affected 8.8% of those with normal weight, 16% of those who were overweight and 30% of those who were obese. Enuresis was more common in the boys than the girls, where there was a positive family history, in those children where there were symptoms of voiding dysfunction, and among the children who had ADHD.

The authors found that enuresis was six times more likely to occur in children who were obese, than those who were normal weight. Obese boys were sixteen times more likely to have enuresis than normal weight girls, whilst obese girls were 6.5 times more likely to have enuresis than normal weight girls. Other known risk factors for enuresis increased the risk of enuresis in obese children:

- normal weight boys with a family history of enuresis were 11.65 times more likely to wet the bed than normal weight girls without a family history, but obese boys were 75.77 times more likely to wet than normal weight girls
- normal weight girls with a family history were 4.57 times more likely to wet than normal weight girls without a family history, but obese girls were 29.65 times more likely to wet than normal weight girls
- Boys with a positive family history and a voiding dysfunction who had a normal weight were 35.42 times more likely to wet than normal weight girls without these additional risks. The risk for boys who were obese was 230.34 times and for girls who were obese were 90.16 times that of normal weight girls.

It is suggested that obese children have an unhealthy diet that may impact nocturnal diuresis; hyperglycaemia might be a cause of secondary enuresis in young people who are overweight; psychological distress was postulated to result in a vicious circle of enuresis, obesity and further distress; parents who struggle with boundaries may find it difficult to adhere to dietary regimes and treatment programmes for enuresis. The authors also report to studies that have found an increased prevalence of constipation in obese children and to issues with upper airway obstruction (see Enuresis Update Autumn 2018 for more information on sleep disordered breathing and enuresis)

The authors acknowledge that their study is based on parental recall and not medical records and they did not evaluate whether the enuresis was monosymptomatic and non-monsymptomatic enuresis. The research group was also too small to be reliable.

Implications for practice

Treatment for enuresis should follow normal pathways. However, time should be taken to explain to children and their families about the possible relationship between obesity and enuresis.

Children with obesity should be offered health promotion work around their weight, as well as full assessment of bladder and bowel function, with referral to an appropriate professional to support weight management if desired and appropriate.

Conversely, those who work with obese children and young people should be alerted to the possible link between the two conditions and should therefore, be actively asking about bladder and bowel health and referring on if required, as a routine part of their interventions.

Bedwetting: Findings from Patient and Physician Surveys

Recent survey findings highlighted there are misconceptions underlying bedwetting, a condition that is under-recognised and misunderstood by society and healthcare professionals. A frequent misconception of bedwetting is that the cause is psychological, rather than having a multifactorial pathophysiological basis. Furthermore, the survey revealed that not only parents but also health care providers share this misconception and treatment was not necessarily consistent with guidelines.

“For physicians to effectively treat bedwetting, any existing behavioural issues must be managed as a separate condition,” said Dr. Michal Maternik, Department of Urology, Division of Paediatric Urology, Medical University of Gdansk. “The survey findings highlight the need for new educational initiatives to optimise the understanding and provision of care amongst the medical community, parents and the public.”

According to the new survey, patients and their respected caregivers reported bedwetting to be associated with behavioural difficulties including, ‘sustaining attention’ (28%), ‘maintaining attention at school’ (29%), and sleeping difficulties (21%), resulting in repercussions on school performance (Maternik 2018). These consequences are often prolonged as many parents seek lifestyle changes first and nearly half of them do not seek help in children five years or older (Schlomer et al 2013).

“For decades, bedwetting was considered as a simple condition that would resolve spontaneously,” said Professor Serdar Tekgül at the Department of Urology at Hacettepe University. “However, bedwetting is now regarded as a complex disorder involving several factors such as bladder dysfunction, and the over-production of urine at night”.

The survey was completed by physicians and patients in Alpe-Adria, Italy, Romania, Russia, Serbia and Slovakia on their understanding of the medical condition, its impact on the lives of patients and the prevalence of comorbidities (Maternik 2018).

References

Maternik. Understanding of and misconceptions around monosymptomatic nocturnal enuresis: findings from patient and physician surveys. *Journal of Pediatric Urology* 2018

Schlomer, Bruce et al Parental beliefs about nocturnal enuresis causes, treatments, and the need to seek professional medical care, *Journal of Pediatric Urology*.2013; 9, 1043e1048

Resources

World Bedwetting Day 28th May 2019

World Bedwetting Day 2019 will take place on 28th May 2019 and occurs on the last Tuesday of May each year. The theme is: *'Time to Take Action'*, in recognition that much more can be done to diagnose and treat those children who suffer from bedwetting.

For more information visit www.bbuk.org, www.stopbedwetting.org and www.worldbedwettingday.com.

Enuresis

Information leaflets are available from: **Bladder and Bowel UK** at: <https://www.bbuk.org.uk/children-young-people/children-resources/>

Children's continence special interest group

To join email bbuk@disabledliving.co.uk Members receive email newsletters and information about training, developments and issues related to continence.

Training

For more information about bespoke training email: bbuk@disabledliving.co.uk

Bladder and Bowel UK annual National Symposium 2020

Information available at: <https://www.bbuk.org.uk/professionals/professionals-training/training-symposium/>

Bladder and Bowel UK Paediatric Education Day

17 October 2019, Manchester. Information available from: <https://www.bbuk.org.uk/professionals/professionals-training/training-paediatric-continence-promotion-day/>

Sharing Best Practice

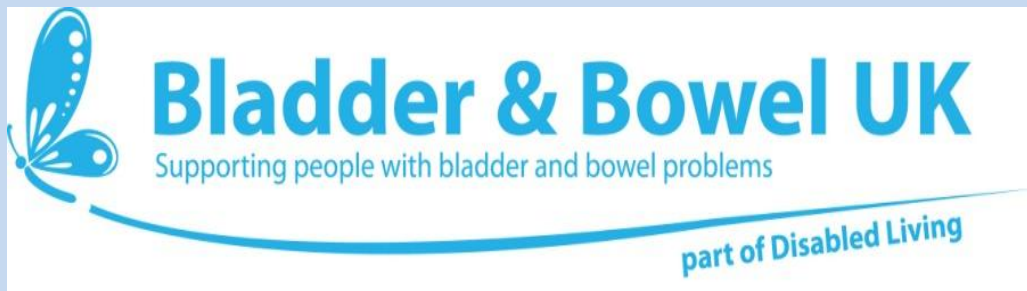
In future editions we would like to have a section in the Enuresis Update for you to share comments, concerns and local approaches to best practice.

We will publish your letters, comments, questions, ideas and descriptions of things you have done that have improved care for children and families in your area, or anything you feel might help others.

Let us know what you think of this newsletter and if there is anything you would particularly like to see in future editions. Email us at

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