



@nephrology\_RMCH

# Night-time wetting

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4<sup>th</sup> June 2019



# Twitter

♥ Yvette Russell liked



**John Dingwall** ✓ @johndingwall · 1d



What's been your most absurd medical experience? Mine was today's prostate exam during which the doctor stuck a gloved finger up my backside. At which point all the pound coins fell out of my jeans pocket onto the floor and I told him he had hit the Jackpot.

💬 445

↻ 1,390

♥ 8,958



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# Nocturnal enuresis (NE)

- Background
- Aetiology
- Assessment
- Management
- Who to refer
- Conclusions





# Imperfect timing

WORLD BEDWETTING DAY - TIME TO TAKE ACTION - 28<sup>TH</sup> MAY 2019



**Bedwetting can have a serious impact on:**

- School
- Social performance
- Daytime functioning

Van Herzele C, Dhondt K, Roels S P et al. Desmopressin(melt) therapy in children with monosymptomatic nocturnal enuresis and nocturnal polyuria results in improved neuropsychological functioning and sleep. *Pediatr Nephrol.* 2016



# Background

- Definition varies (50% wet nights in 2/52, >3 wet in 3/12, etc.) When does it start?
- Prevalence:
  - 15% at 5 years
  - 7% at 7 years
  - 5% at 10 years
  - 2% at 15 years
  - 1% of adults
- Males > females until 10 years, then equal.
- “Low severity, high prevalence” condition.



# Background

- Socially and emotionally stigmatising
  - Parental disapproval
  - Sibling teasing
  - Bullying at school
  - Repeated treatment failure
- 
- All the above are worse the older the child and lower self-esteem



# Background

- 15% annual spontaneous cure rate.
- 50% of families don't consult a doctor.
- 75% are primary, 25% secondary - after 6 months reliably dry (stress, UTI, diabetes, etc).
- NE genes, 13q – ENUR1 (AD with variable penetrance) and 12q – ENUR2. All quiet for 15 years.
- If both parents have NE then 70% children have condition.



# Aetiology

- Virtually all with NE are 'normal' children
- Aetiology remains poorly understood.
- Multifactorial
  - Bladder capacity - reduced *functional* capacity, but normal bladder size. Detrusor instability mooted
  - Sleep - little evidence for depth of sleep, more for altered arousal



# Aetiology

- Multifactorial
  - Urine volume - no endogenous nocturnal rise in ADH in some children
  - Genetics
  - Constipation
  - Obstructive sleep apnoea
  - ADHD
  - UTI
  - Large intake caffeinated drinks



# Assessment

- History
  - Night (& day) symptoms, UTIs, development
  - Voiding history, **constipation**
  - Impact on family, stresses
- Examination
  - Bladder, spine, perineum, legs
- ? urinalysis unless:
  - It's secondary
  - UTI issues
  - daytime symptoms
  - concerns re diabetes (NICE)
- No other investigations are required



# Management

- Poorly researched area, despite huge numbers with NE.
- NICE – August 2010 (reviewed Nov 2018)
- General principals:
  - Often don't treat those under 5 years
  - Specialist enuresis clinics may be best
  - Sympathetic, supportive, enthusiastic approach - doctor, continence advisor



# Management

- Behavioural interventions
- Enuresis alarms
- Drug interventions
- Complimentary interventions



# Management

- Behavioural interventions:
  - Rewards: 'Star chart'
    - **Fluid target**, void before bed, help with sheets, regular voiding, take medication, etc
  - Lifting/waking
- *Cochrane*: small no. of trials, often one only. No firm conclusions can be reached.



# Recommended fluid intake

Age (years)	Sex	Total drink intake per day (ml)
4–8	Female	1000–1400
	Male	1000–1400
9–13	Female	1200–2100
	Male	1400–2300
14–18	Female	1400–2500
	Male	2100–3200



# Management

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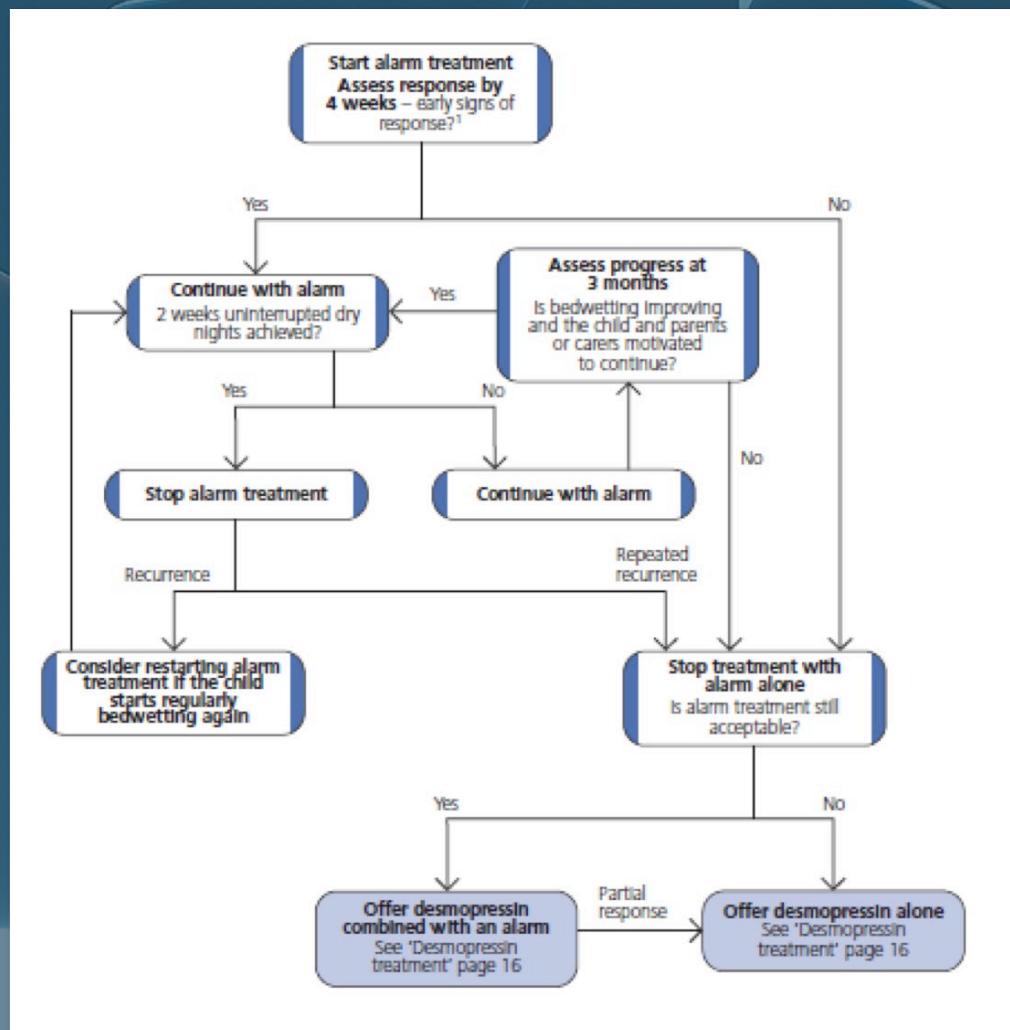


# Management

- Enuresis alarms:
  - Bell/buzzer.
  - Wireless Rodger pants.
  - Problems with adherence (40% drop out).
- Not for everyone.
- *Cochrane*: effective Rx. 66% dry during use. 50% dry after stopping – unlike drugs. Bell vs buzzer - not possible.



# NICE - alarm





# Management

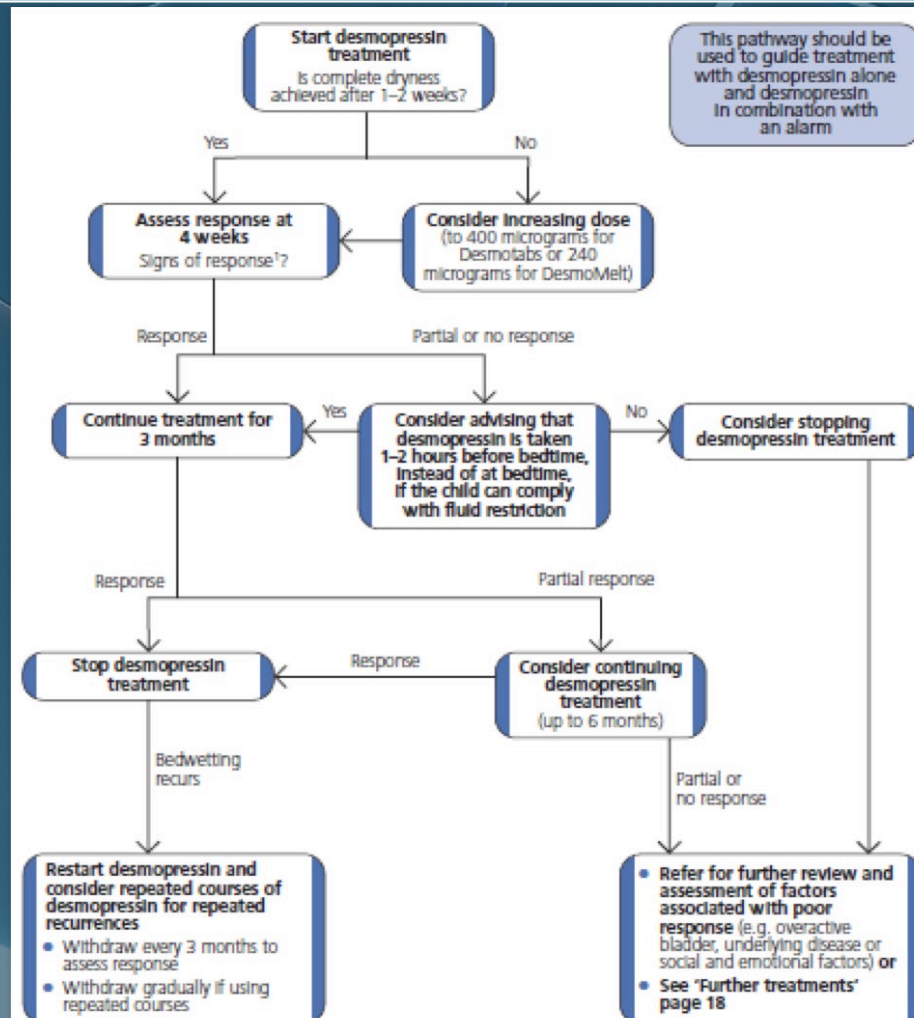
- Drug interventions
  - Desmopressin
  - Tricyclic antidepressants (TCADs)
    - Imipramine
  - Others
    - Indometacin, diclofenac, ibuprofen, oxybutynin



# Management

- Desmopressin
  - Nasal (withdrawn), oral, 'Melts'. 70% respond.
  - Short term - 3 months. Watch fluids.
- *Cochrane*: Reduced no. wet nights rapidly on Rx. Not sustained on stopping. No clear dose related effects. Fewer adverse effects c.f. TCADs but equal efficacy. Desmo + alarm better than alarm alone. Behavioural measures vs desmo – insufficient evidence.

# NICE - desmopressin



<sup>1</sup> Signs of a response to desmopressin may include smaller wet patches, fewer wetting episodes per night and fewer wet nights.



# Management

- Tricyclics
  - 25% dry on treatment. Not sustained.
  - NICE - Imipramine only. 3/12 trial.
- *Cochrane*: Average reduction of 1 wet night/week. Almost all relapse off Rx. Overdose risk. Troublesome adverse effects. TCAD vs TCAD – no good data. TCAD vs alarm – unreliable/conflicting data. TCAD vs desmo – as above.



# Management

- Other drugs
  - Indometicin, diclofenac, oxybutynin, tolterodine, etc.
  - NICE don't suggest which anticholinergic to use.
- *Cochrane*: Not enough evidence to support their use.



# Management

- Complimentary interventions include
  - Hypnosis
  - Psychotherapy
  - Acupuncture
  - Chiropractic adjustment
- *Cochrane*: No good evidence for any, often single trial data. Weak evidence that chiro adjustment better than sham adjustment.



# Who to refer?

- No response to alarm +/- desmopressin.
- Urinary tract infection present.
- Daytime wetting co-exists.
- Organic cause suspected (e.g. diabetes mellitus, spinal dysraphism, neuropathy).
- Significant psychological problems, either as a cause, or as an effect.



# Conclusions

- Common disorder
- Cause of great concern to parents & child
- ERIC - [www.eric.org.uk](http://www.eric.org.uk)
- Seldom any associated pathology
- Needs enthusiastic management
- Most cured, few persist into adulthood



# ERIC



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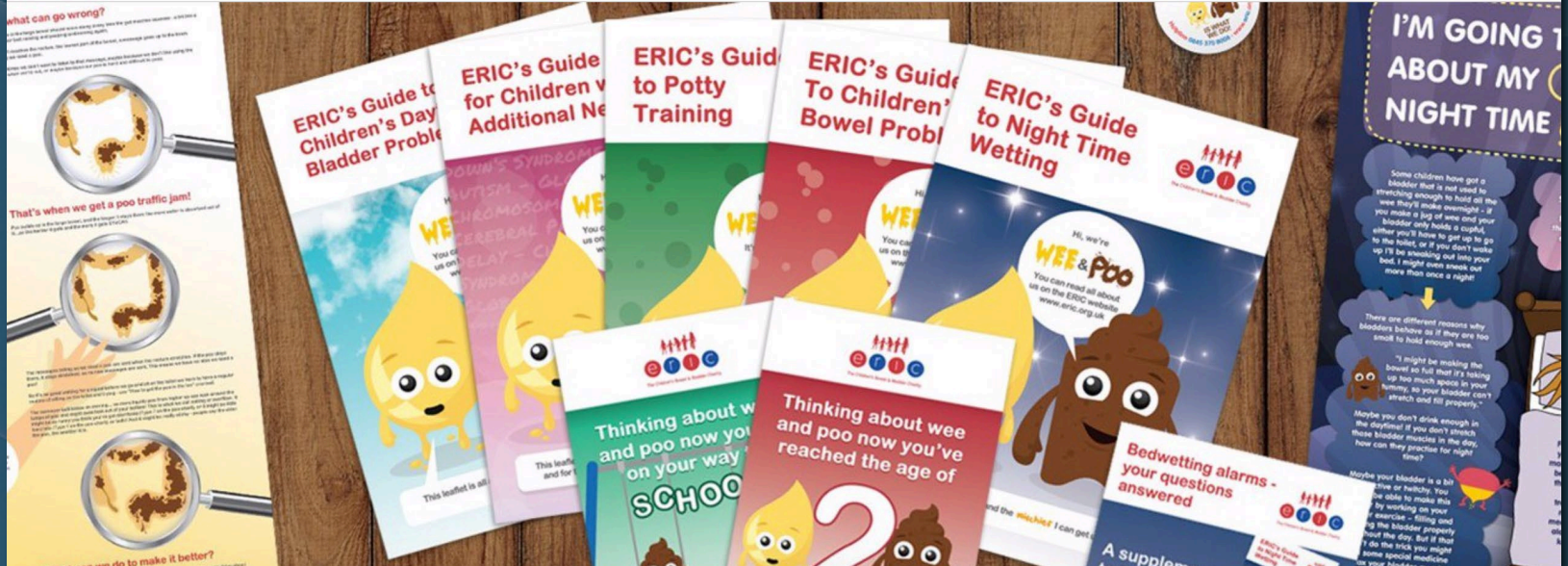
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...and finally.



These urinals are useless,  
the wee goes everywhere  
and it's too hot.