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# Enuresis: Information for Primary Care

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## Etiology

- Genetics
- Primary etiology
    - Developmental delay or immaturity in central control of bladder function
- Psychosocial
    - Most with enuresis show no symptoms of emotional/behavioural disturbance
    - Sleep studies have demonstrated a random pattern of wetting that occurs in all stages of sleep in proportion to the amount of time spent in each stage.
- Subgroups
    - A subgroup of enuretic patients has been identified where there is no arousal to bladder distention, along with unusual pattern of uninhibited bladder contractions before the enuretic episode, suggesting a dysfunctional arousal system during sleep as the causal factor.
    - Obstructive sleep apnea from upper airway obstruction associated with enuresis.

## Diagnosis

**DSM-IV-TR**

- Repeated voiding of urine into the bed or clothes at least twice per week for at least three consecutive months in a child who is at least 5 years of age
- Duration may be less if there is associated distress or functional impairment
- Terms
    - Nocturnal enuresis: Voiding during sleep
    - Diurnal enuresis: Voiding while awake
    - Primary enuresis: Child has never been consistently dry through the night
    - Secondary enuresis: Wetting that occurs after at least 6 months of dryness.

## Differential Diagnosis

- Stress, e.g. Previously dry child who now has bedwetting during stressful period (e.g. parental separation

- Medical causes
- Obstructive sleep apnea
- Mechanical pressure on bladder, e.g. Constipation, encopresis or stool impaction suggests mechanical pressure on bladder

## Physical Exam

- Enlarged adenoids or tonsils
- Bladder distention
- Fecal impaction
- Genital abnormalities
- Spinal cord anomaly
- Neurologic signs

## Investigations

- Routine
    - Urinalysis
    - Possibly urine culture
- More invasive tests only with specific indications
- First-morning specific gravity can help predict who will respond to desmopressin acetate (DDAVP) treatments
- 2-week baseline record of wet and dry nights

## Treatment

- If there appear to be relevant psychological issues or psychosocial stressors that may be contributing (e.g. parental separation or divorce, parental mental health issues), consider referring the child/family for counseling/psychotherapy
- Refer to Urology if indicated
    - Usual indications: Daytime wetting, abnormal voiding (unusual posturing, discomfort, straining, or a poor urine stream), a history of urinary tract infections or evidence of infection on urinalysis or culture, and genital abnormalities
- If normal, uncomplicated monosymptomatic primary nocturnal enuresis (e.g. normal history, physical, urinalysis), consider the following usual supportive approaches:
    - Supportive approaches
        - Night awakening
        - Fluid restriction
        - Keeping a journal
        - Ensure that parents do not punish the child for enuretic episodes.
        - Education
- First-line behavioural approach
    - Conditioning using a modern, portable, battery operated alarm along with a written contract, thorough instruction, frequent monitoring, overlearning, and intermittent reinforcement before discontinuation

## Medication Treatment

- Imipramine
    - Single bedtime dose 1.0 to 2.5 mg/kg; 40-60% effectiveness, though relapse rate 50%.
    - Risks

        - Cardiac arrhythmia associated with tricyclic antidepressants, including imipramine
        - Baseline investigations pre-treatment
        - Electrocardiogram may be obtained to detect an underlying rhythm disorder
- DDAVP
    - DDAVP is a synthetic analogue of the antidiuretic hormone (ADH) vasopressin, which decreases urine production at night when taken at bedtime
    - 0.2-mg tablets in doses of 0.2 to 0.6 mg nightly
    - Intranasal spray in doses of 10 to 40 µg (one to four sprays) nightly if intercurrent illness complicates the picture
    - Success rates of 10-80%
    - Can be prescribed for short periods, such as when the child is going to camp

## About this Document

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