

A 7-year-old boy is brought to the physician for persistent bedwetting. Since age 3, he has been able to stay dry during the day but continues to have "accidents" 3 nights a week. He does not drink any juice or caffeinated beverages. The child drinks fluids primarily in the morning and early afternoon. For the past 2 months, his parents have tried enuresis alarms and awarded "gold stars" for dry nights. The boy is sad about missing summer camp and sleepovers, and his parents are frustrated with his minimal improvement. He has otherwise been in good health, has met all other developmental milestones, and takes no medications. The father had a history of nocturnal enuresis until age 8. Physical examination, serum chemistry, and urinalysis are normal. Which of the following is the best next step in management of this patient?

- ☐ A. Desmopressin
- ☐ B. Imipramine
- ☐ C. Magnetic resonance imaging of the spine
- ☐ D. Oxybutynin
- ☐ E. Urine culture
- ☐ F. Vesicoureterogram

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- ✓ ☒ A. **Desmopressin** [56%]
☐ B. Imipramine [28%]
☐ C. Magnetic resonance imaging of the spine [0%]
☐ D. Oxybutynin [5%]
☐ E. Urine culture [4%]
☐ F. Vesicoureterogram [7%]

Proceed to Next Item

Explanation:

User Id: [redacted]

Monosymptomatic (isolated) enuresis	
Definition	Urinary incontinence in children age ≥ 5
Workup	<ul style="list-style-type: none">• Urinalysis• Urologic imaging for children with significant daytime symptoms & history of recurrent UTI
	<ul style="list-style-type: none">• Behavior modifications<ul style="list-style-type: none">◦ Avoid sugary/caffeinated beverages◦ Void regularly during the day & immediately before bedtime

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Management	<ul style="list-style-type: none">• Behavior modifications<ul style="list-style-type: none">◦ Avoid sugary/caffeinated beverages◦ Void regularly during the day & immediately before bedtime◦ Drink ample fluids in the morning & early afternoon; minimize fluid intake before bedtime◦ Reward system (eg, "gold star" chart)• Enuresis alarm: 1st-line intervention when behavior modifications fail; best long-term outcome• Pharmacotherapy: Best for short-term improvement; high risk of relapse<ul style="list-style-type: none">◦ 1st-line: Desmopressin◦ 2nd-line: Tricyclic antidepressants

UTI = urinary tract infection.

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Monosymptomatic enuresis is urinary incontinence that is not explained by another medical condition and that occurs at least **twice a week after age 5**. The history and examination should be reviewed for medical conditions or medications that could be responsible for the enuresis. This child has no evidence of an underlying medical problem. However, **boys with family history** of delayed bladder control are predisposed to prolonged bedwetting.

The initial steps for managing isolated enuresis include the behavior modifications shown in the table. Although enuresis has a high rate of spontaneous resolution over time, many families seek active intervention to improve quality of life. For children who do not

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The initial steps for managing isolated enuresis include the behavior modifications shown in the table. Although enuresis has a high rate of spontaneous resolution over time, many families seek active intervention to improve quality of life. For children who do not respond to lifestyle changes, **enuresis alarms** are the most effective long-term intervention but can take 3-4 months to be effective.

Pharmacotherapy is indicated if these changes are unsuccessful in patients who desire immediate improvement. Bedwetting can be embarrassing and frustrating for children who want to participate in sleepovers. **Desmopressin**, the **antidiuretic hormone** analogue, can help decrease urine production during sleep. Oral desmopressin is the first-line medication as it has few side effects. The downsides are risk of **relapse** (up to 70%) and **hyponatremia** if too much fluid is consumed in the evening. Intranasal desmopressin is no longer used due to increased risk of hyponatremic seizures.

(Choice B) Tricyclic antidepressants (eg, imipramine, amitriptyline, desipramine) are just as effective as desmopressin. However, they are reserved for patients who do not respond to desmopressin due to their propensity for more serious side effects (eg, increased suicidality, cardiotoxicity).

(Choice C) This child has a normal examination (eg, no sacral hair tuft or dimple, no abnormal reflexes), making evaluation for neurogenic bladder unnecessary.

(Choice D) Oxybutynin is an anticholinergic medication that causes urinary retention. It is reserved for use in combination with desmopressin to increase bladder capacity in children with daytime incontinence.

(Choice E) Urine culture is unnecessary as the patient's urinalysis is normal and he has no symptoms of urinary tract infection (eg, dysuria, abdominal pain).

(Choice F) A voiding cystourethrogram is used to diagnose urinary reflux, but this patient has no history of recurrent urinary tract infections. The test is unnecessary in patients with isolated nocturnal enuresis.

Educational objective:

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Educational objective:

Desmopressin is the first-line pharmacotherapy for enuresis. It can provide immediate improvement for frustrated families when behavior modifications and alarm therapy have failed but has a high rate of relapse if used alone.

References:

1. [Evaluation of and treatment for monosymptomatic enuresis: a standardization document from the International Children's Continence Society.](#)
2. [Randomized comparison of long-term desmopressin and alarm treatment for bedwetting.](#)
3. [Efficacy of desmopressin and enuresis alarm as first and second line treatment for primary monosymptomatic nocturnal enuresis: prospective randomized crossover study.](#)
4. [The comparative safety of oral versus intranasal desmopressin for the treatment of children with nocturnal enuresis.](#)