

Enuresis (bedwetting) is a heterogenous condition. Although there are familial links for some, the genes identified as being associated with enuresis do not correspond with other influential factors, such as how long the bedwetting will continue or how an individual will respond to treatment. Family history is, therefore, not helpful in predicting outcomes or responses to treatment.

There are three accepted main causes of enuresis:

1. Nocturnal Polyuria

Vasopressin is a hormone that increases water reabsorption in the renal tubules, hence it reduces urine output. Vasopressin levels usually increase during the night, with a corresponding reduction in urine output. This mechanism allows sleep to be undisturbed by a need to empty the bladder. Bedwetting can be caused by insufficient vasopressin secretion associated with nocturnal polyuria. The bladder is unable to store all the urine produced, resulting in wetting.

2. Bladder overactivity

The detrusor muscle in the bladder wall is relaxed during bladder filling, only tightening when the bladder is emptying. In contrast, the bladder neck is usually contracted during bladder filling and relaxes at bladder emptying. If the child is experiencing sudden contractions of the detrusor during sleep the bladder neck may relax and the bladder will empty spontaneously.

3. Inability to wake to bladder signals

Those who wet the bed are unable to wake to bladder signals. However, those bladder signals are known to disturb sleep, reducing sleep quality, increasing tiredness during the day. This has a negative impact on daytime functioning and wellbeing.

Comorbidities

Other conditions associated with bedwetting include:

- Constipation. The full bowel takes up space the bladder needs and may put pressure on the bladder, making enuresis more likely.
- Increased fluid intake in the evening, increases diuresis in the early part of the night and may lead to bedwetting.
- Inadequate daytime fluid intake reduces urine production and ultimately bladder capacity. This may result in bedwetting.
- Carbonated and caffeinated drinks (tea, coffee, cola, chocolate and many energy drinks) can irritate the bladder lining increasing the likelihood of wetting.
- High protein and high salt foods increase diuresis. Consumption of these in the evening may cause enuresis.
- Sleep disordered breathing (snoring or sleep apnoea) may be associated with frequent arousals from the upper airways. These disturbances of sleep reduce the ability to respond to bladder signals.
- Underlying medical conditions such as urinary tract infections, diabetes mellitus and polyuric renal failure should be excluded when children experience sudden onset of bedwetting after a period of being dry.

- Low levels of vitamin B12 and vitamin D have been associated with intractable bedwetting. The former is more likely in children with vegan or dairy-free diets and gastrointestinal conditions. The latter may be related limited exposure to sunlight, particularly in those with darker skin tones.

All children and young people with bedwetting should be offered an assessment of their bladder and bowel health and treatment options should then be discussed.

Further information

Find more information about bladder and bowel health in our information library at www.bbuk.org.uk. You can also contact the [Bladder & Bowel UK confidential helpline \(0161 214 4591\)](tel:01612144591).

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