

Nocturia: Excessive Night-time Urination Media Backgrounder

What is nocturia?

Nocturia, derived from the Latin word for night and the Greek word for urine, is the common medical term used to describe the complaint when an individual has to wake at night one or more times to pass urine.^{1,2,3,4}

What's the impact of nocturia?

The condition is often trivialised and assumed to be an inevitable part of the ageing process. However, research has shown that nocturia is a serious condition which, can have far-reaching social, health and economic implications for patients, their families and society.⁵

One recent study suggested that otherwise healthy nocturic patients were 9.2% less productive than other individuals and cost European businesses around €3,700 per patient per year.⁶ In addition, in Europe the estimated total cost of hospitalisation for hip fractures due to severe nocturia is approximately €1 billion per year.⁷

Nocturia is the leading cause of sleep disruption in older adults.⁸ Sleep is crucial for well-being, health, vitality and essential biological rhythms.^{9,10,11} Studies show that insufficient or disrupted sleep can lead to physical and mental problems including depression and mood alteration.^{12,13,14} Indeed, poor sleep is associated with disrupted endocrine and immune functioning, reduced health, and increased mortality.^{15,16,17,18}

Interruption of the sleep cycle may be especially damaging if individuals are forced to get up during the first third of the night when they are in a deep stage of sleep.¹⁹

On average, individuals with nocturia need to get up to go to the toilet two to three hours after going to sleep.²⁰

Nocturia can also negatively affect the sleep of other family members as they are often woken up or disturbed when individuals visit the toilet during the night.²¹

Nocturia is associated with significant reductions in quality of life, and has also been associated with an increased risk of morbidity and mortality.^{2,22} New research shows that the impact of nocturia on quality of life is comparable to conditions such as hypertension, diabetes and arthritis. In addition, nocturia is associated with an increased likelihood of depression, especially among younger men and women.²³

Tiredness and getting up during the night can also lead to an increased risk of falling and accidents,²⁴ particularly in the elderly, which can have severe consequences including bone fractures.²⁵ The risk of falling rises from 10% in those individuals without nocturia to 21% in those individuals who make three or more toilet visits per night.²² Furthermore, a recent study found that nocturia is an age-independent risk factor for hip fracture,²⁶ suggesting that it may not be only elderly individuals with nocturia who are at risk of falls and fractures.

How common is nocturia?

Nocturia is common condition, equally prevalent in men and women²⁷. Although it tends to affect a larger percentage of people as they get older, it does affect a significant proportion of younger people.²⁸ On average, around 20% of adults aged 40–59 years have two or more toilet visits per night.^{2,29,30} This increases to around 35% in those aged over 60 years.²

What causes nocturia?

Nocturia is a complex condition with many causes. It is typically categorised into three broad headings:³¹

1. *Problems associated with fluid balance:*

- Excessive fluid intake during the day and/or evening, including alcohol
- Medical conditions which affect fluid balance, such as diabetes mellitus, diabetes insipidus, hypercalcaemia, renal failure, cardiac failure, oedema and sleep apnoea
- Side effects associated with taking diuretic medication

- Disruption of normal vasopressin (antidiuretic hormone) secretion. In healthy individuals, vasopressin levels increase at night to reduce the amount of urine produced
- Nocturnal polyuria – the production of an abnormally large volume of urine during sleep: >20% of daily output for young people, > 33% of daily output for elderly people

2. Neurological conditions such as multiple sclerosis, cervical cord compression and tethered spinal cord syndrome

3. Disorders of the lower urinary tract which cause a low night-time bladder capacity:

- Bladder outflow obstruction caused by prostatic disease or urethral disease
- Bladder over-activity
- Sensory urgency
- Conditions such as urinary tract infection, inflammation and malignancy
- Pregnancy

Diagnosing nocturia

Nocturia is much under-reported since many people assume the condition is either part of the normal ageing process, too minor to seek help, or they are unaware that the problem can be treated.³²

Accurate diagnosis of the cause of nocturia is crucial to selecting appropriate treatment and achieving a clinically meaningful reduction in night-time toilet visits. If no serious co-morbidities are present, and nocturia cannot be attributed to excessive evening fluid intake, information gained from a frequency–volume chart (FVC) can be helpful in guiding treatment decisions.³³

Treating nocturia

Clinicians often assume that nocturia is a symptom of bladder storage problems due to overactive bladder (OAB) or benign prostatic hyperplasia (BPH), and prescribe traditional therapies for these conditions (eg anticholinergics and alpha blockers). However, data from several high quality randomised controlled trials consistently show that these therapies - which target daytime urinary symptoms - fail to achieve a

meaningful reduction in nocturia compared with placebo, even when reductions are reported to be statistically significant.^{34,35,36,37} This is likely to be due to the fact that nocturnal polyuria – the production of an abnormally large volume of urine during sleep that typically exceed the nocturnal bladder capacity - is present in the majority of patients with nocturia (60–80%).^{38,39,40,41,42}

Patients may have nocturnal polyuria alone, or in combination with OAB and/or BPH. Nocturnal polyuria patients may benefit from antidiuretic therapy (desmopressin) to reduce the volume of urine produced overnight.

In 2008, The International Consultation on Incontinence (ICI) renewed their recommendation for desmopressin as the only treatment for nocturia caused by nocturnal polyuria. Patients who also have daytime symptoms may benefit from combination therapy which addresses all contributory factors.

This document is designed for use **proactively** with accredited healthcare journalists, and **reactively** in the event of any queries from consumer / consumer health journalists.

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