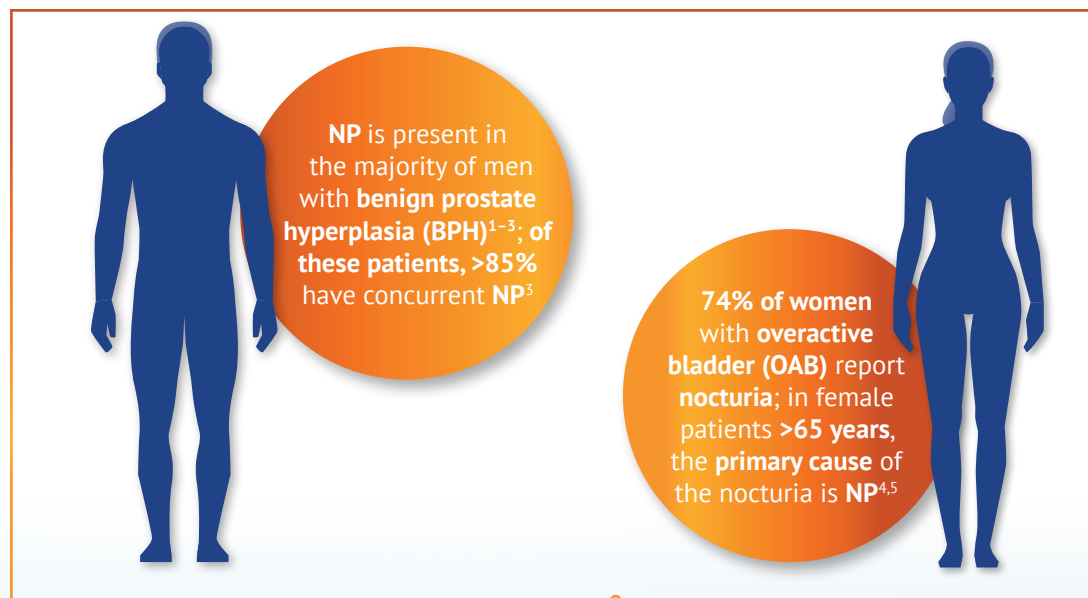


DIFFERENTIATING THE CAUSES OF NOCTURIA

Nocturnal polyuria (NP) is a common underlying condition of nocturia¹



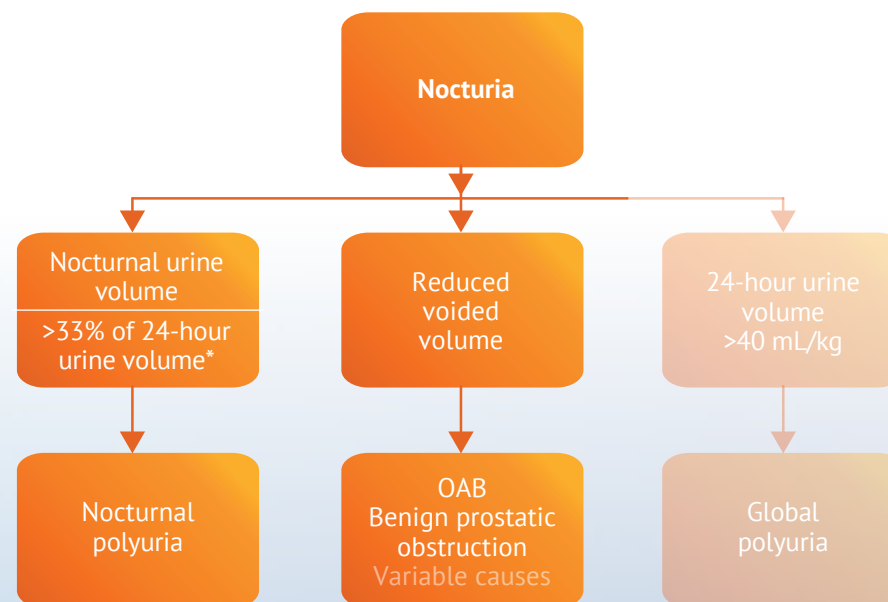
Nocturia has been traditionally regarded by urologists as a urine storage symptom associated with BPH and/or OAB.¹ BPH can result in bladder outlet obstruction (BOO) causing nocturia symptoms.¹ Studies show that **NP** presents in **76–88%** of reported nocturia cases – the majority of patients suffering from nocturia.¹ More importantly patients who suffer from OAB or BOO with persistent nocturia despite treatment, may have underlying nocturnal polyuria as well.¹ These findings are consistent regardless of gender, age, ethnicity and/or country;¹ this discovery suggests NP can have its own pathology.¹ A fuller understanding of the underlying causes of nocturia and correct diagnosis of patients suffering from nocturnal polyuria will help clinicians provide better patient care.

COMMON NOCTURIA CAUSES

Causes of nocturia can be simplified to its pathology:⁶

1. Increased nocturnal urine production
2. Reduced voided volume
3. Increased 24-hour void volume

These three pathways can lead to nocturia symptoms via different mechanisms.⁶



Adapted from: Van Kerrebroeck P *et al.* *Neurourol Urodyn* 2002;**21**:179–183.⁶ Copyright© 2002

*Threshold value of 33% is for elderly patients. Younger patients have definitions of NP with lower threshold values.

Nocturnal polyuria is also an important contributing factor to nocturia

Common conditions causing nocturia ^{7,8}			
	Overactive bladder (OAB) ⁹⁻¹²	Bladder outlet obstruction (BOO) ^{1,12-16}	Nocturnal polyuria (NP) ^{1,6,12,17,18}
Description	Muscles of bladder start to contract involuntarily even when volume of urine in bladder is low	Blockage to the base of the bladder, reducing or stopping the flow of urine into the urethra	Passing of large volumes of urine at night due to absence of diurnal rhythm of antidiuretic hormone (ADH) system 24-hour urine output is normal or only moderately increased
Gender	Female and male	Male > female	Female = male
Symptoms	Nocturia , urinary incontinence, urinary urgency, increased frequency, sleep disturbance, fatigue	Nocturia , abdominal pain, frequent urination, dysuria, hesitancy, poor stream, intermittent stream, terminal dribbling, urinary tract infection, sleep disturbance	Nocturia , sleep disturbance
Causes	Multifactorial <i>Specific cause of OAB is still unknown</i>	Multifactorial <i>Large prevalence due to benign BPH among men</i>	Multifactorial <i>Can be idiopathic</i>
Risk factors for development	Elderly Patients with cognitive decline	Largely dependent on cause	Largely dependent on cause
Diagnosis	Medical history Physical exam Urine sample Neurological exam Fluid and bladder diary	Physical exam Digital rectal exam Blood chemistries Prostate-specific antigen testing Cystoscopy and retrograde urethrogram Uroflowmetry Urodynamic testing	Medical history 3-day bladder diary
Treatment	Behavioural strategies such as pelvic floor exercises or scheduled toilet trips Lifestyle modifications such as fluid restriction Bladder injections (e.g. botox) Invasive/non-invasive nerve stimulation Bladder injections Nerve stimulation Surgery (last resort)	<i>Largely dependent on cause</i> Urinary catheterisation Prostate-specific: - 5-alpha reductase inhibitors - Alpha-1-adrenoreceptor antagonists - Trans-urethral resection of prostate (TURP) - Laser prostatectomy	<i>Largely dependent on cause</i> Fluid restriction Lifestyle modification ADH analogues (desmopressin)

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