



Nocturia

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## **This information was produced by the European Association of Urology**

This leaflet contains general information about nocturia. If you have any specific questions about your individual medical situation you should consult your doctor or other professional healthcare provider.

This information is in line with the EAU Guidelines on Nocturia 2017.

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You can find this and other information on urological diseases at our website: <http://patients.uroweb.org>

# Nocturia

## What is nocturia?

Nocturia is waking up one or more times during the night because of the need to urinate.

This means that if you wake up during the night — for instance because you are thirsty, hear noises, worry, or feel pain — and you decide to visit the toilet in the meantime, you do not have nocturia. You also do not suffer from nocturia if you go to the toilet first thing in the morning.

Waking up once in a while to urinate is common and is generally not very bothersome. However, if you regularly wake up two or more times a night, it can affect your quality of life and general health. The more times you wake up each night, the more it impacts your wellbeing.

Nocturia disrupts your sleep and may cause you to be more tired than usual during the day. This can make it difficult to concentrate at work and carry out your daily activities. Your lower energy levels could also affect your social life.

### ! Interesting Fact

While nocturia literally means “urination at night”, it may also occur during the day, for those who work night shifts and sleep in the daytime.

## How common is nocturia?

Nocturia affects both men and women, and becomes more common as you grow older. In adults under 30, more women than men suffer from nocturia while over the age of 50, it affects men more often. Over the age of 60, the chances of suffering from nocturia rapidly increase for men and women alike.

## What causes nocturia?

- In some people the kidneys produce too much urine. If the kidneys only overproduce at night, this is called nocturnal polyuria
- There are several conditions which can cause overproduction of urine, such as diabetes type I or II or primary polydipsia, the sensation that your mouth is dry which leads you to drink too much

- Some people have a smaller bladder which is filled to capacity more quickly and cannot store the urine all night
- If you have a bladder or prostate condition, such as benign prostatic enlargement (BPE), you may not be able to empty your bladder completely before going to bed. As a result, the bladder fills more quickly and may not store the urine all night

Other possible causes of nocturia are:

- Overactive Bladder Symptoms (OAB)
- A decrease in the production of the hormone vasopressin
- Obstructive sleep apnoea, or snoring
- Swelling of the ankles and legs, a condition known as peripheral oedema
- Lower urinary tract symptoms (LUTS)
- Congestive heart failure

Understanding what causes your nocturia will help your doctor to offer the best possible treatment option for your individual situation.

## Diagnosis of nocturia

Your doctor may order a series of tests to understand what causes your symptoms. This is called a diagnosis. The diagnosis of nocturia is relatively simple, but understanding the underlying causes is much more complex. This is because nocturia may be a symptom of other medical conditions, including lower urinary tract disorder (LUTD).

First, the doctor or nurse will take your medical history and do a physical examination. If needed, other tests will be performed, depending on:

- your age
- the impact the symptoms have on your daily life
- other medical conditions you may suffer from (in particular heart, kidney neurological or psychiatric conditions)
- your current medications

Based on the results of your evaluations, your doctor will identify the cause of your nocturia and recommend the right treatment. This section offers general information about the diagnosis of nocturia and situations may vary from country to country.

## Medical history

The doctor will take a detailed medical history and ask questions about your symptoms. You can help your doctor by preparing for the consultation:

- Describe your current symptoms and note how long you have had them for
- Describe the duration and quality of your sleep over the past weeks
- Describe your lifestyle:
  - what, when and how much you drink, including alcoholic and non-alcoholic drinks
  - specify your diet
  - how often you exercise
  - whether or not you smoke
- Make a list of previous surgical procedures
- Make a list of the medication you are currently taking

## Physical examination

Your doctor or nurse will do a physical examination. They will be looking for:

- A distended bladder (your bladder may stretch if it does not empty completely)
- Swelling to your ankles and legs (known as peripheral oedema)
- Skin damage on your genitals (a sign of urinary incontinence)
- Discharge from the urethra (a sign of infection)
- Abnormalities in the genitals
- Prostate (digital rectal) examination in men

Your doctor or nurse may also do a pelvic examination in women, test your blood pressure, and look for signs of heart, lung, or neurological conditions. Also, he or she may do more tests to see if there is lower urinary tract dysfunction. This can include urine analysis in the lab, voiding analysis with a uroflowmeter, or ultrasound examination of the bladder and/or prostate.

## Bladder diary

Your doctor may ask you to keep a bladder diary. Here you can note down how much you drink, how often you urinate, and how much urine you produce. The bladder diary is important because it helps your doctor to understand your symptoms better. Download a bladder diary at our website:

<http://patients.uroweb.org>.

## Questionnaires

Your doctor may ask you to fill out a questionnaire to better understand your symptoms and their impact on your quality of life. The most common questionnaire is Nocturia-Quality of Life (N-QoL).

## Treatment for nocturia

Your doctor may suggest treatment to improve your nocturia. This section describes different treatments.

Together with your doctor you can decide which approach is best for you. Factors which influence this decision include:

- Your medical history
- Any other medication you are taking
- Drugs available in your country
- Your personal preferences and values

This section offers general information about treatment and situations can vary in different countries.

## Watchful waiting

If your symptoms are only bothering you a little, watchful waiting can be an option. This means that you see your doctor regularly (usually every year) or when the symptoms become worse.

## Over-the-counter supplements

You may want to try supplements which have not been prescribed by your doctor because you consider them more natural and safer. However, it is not entirely clear how these supplements work to relieve nocturia. It is also not clear how effective they are because their quality can vary greatly. Doctors do not recommend taking them to improve nocturia. If you take any supplements to relieve your symptoms, inform your doctor during consultation.

## Muscarinic receptor antagonists

Muscarinic receptor antagonists (MRAs) are drugs which reduce the abnormal contractions of the bladder. They may reduce the sudden need to urinate which is difficult to postpone. There are several types of MRAs:

- Darifenacin
- Fesoterodine
- Mirabegron
- Oxybutynin
- Propiverine

- Solifenacin
- Tolterodine
- Trosipium chloride

Mirabegron is a beta-3 receptor agonist. This medicine relaxes the bladder muscle and helps to increase the capacity of the bladder. Because of this, you will feel less need to urinate.

Side effects of MRAs are usually mild. They may include dry mouth and eyes, acid reflux, and constipation. In rare cases they may cause symptoms of the common cold, blurred vision, and dizziness as well as difficulty urinating.

In the elderly, long-time use of MRAs may worsen the side effects. You should always follow your doctor's advice about the duration of treatment.

## Loop diuretics

In some patients, nocturia may be caused by improved blood circulation. When you lie down, it is easier for the heart to pump blood around the body, including your kidneys. Your body then produces more urine because the kidneys filter more blood, causing nocturia. To treat this, you can take a mild loop diuretic drug. Taking diuretics in the afternoon will drain excess fluid from your body during the day, rather than at night.

There are several loop diuretics available:

- Furosemide
- Bumetanide
- Torsemide

Side effects include dehydration, gout, low salt or low potassium levels in your blood, dizziness and low blood pressure.

## Desmopressin

If your nocturia is caused by a decrease in the production of the hormone vasopressin (see [What causes nocturia?](#)), it can be replaced by the drug desmopressin. This drug helps reduce urine production by concentrating the urine and is recommended if you have nocturnal polyuria.

Desmopressin may reduce the number of times you wake up to use the toilet and allow you more hours of uninterrupted sleep. It comes as a tablet, a nasal spray, or a melt-in-the-mouth tablet and is taken right before sleeping. It is effective for 8-12 hours. The drug is available in various doses and women often need a lower dose than men.

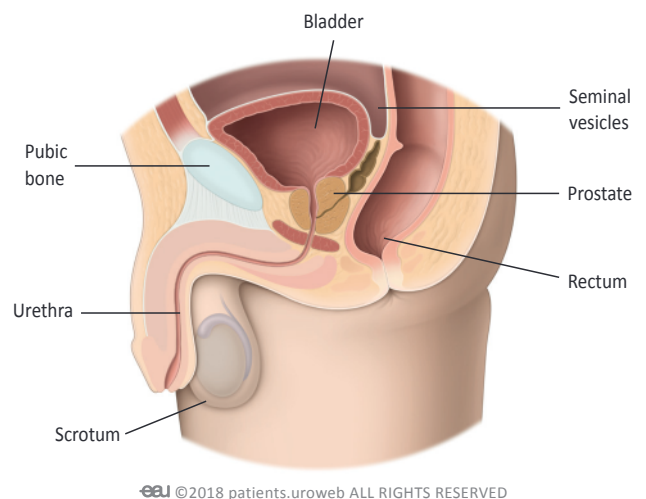
Desmopressin can cause a drop in blood sodium levels. That is why it is common to have your blood tested before and during your treatment. Less common side effects are headache, nausea, diarrhoea, pain in the abdomen, dizziness, facial flushing or dry mouth. In rare cases, desmopressin can cause high blood pressure and swelling of the feet and ankles (known as peripheral oedema).

## Prostate medication and surgery

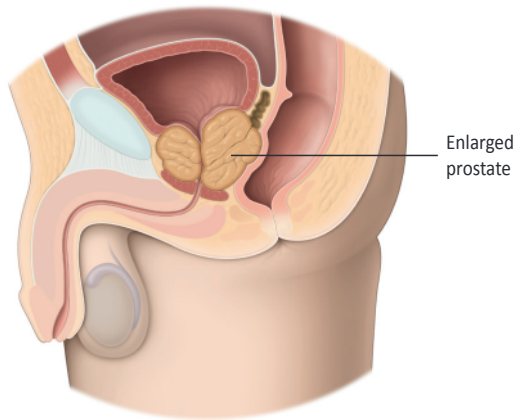
Because of the relationship between the prostate and the bladder, some men are prescribed medication to relax the muscle within the prostate gland or reduce the size of the prostate. This may improve their lower urinary tract symptoms (LUTS) but is less effective in improving nocturia.

In some cases, transurethral resection of the prostate (TURP) is recommended to improve the symptoms of benign prostatic enlargement (BPE) when it affects bladder function (**Fig. 1 and 2**). The surgery unblocks the bladder outlet by cutting away parts of the prostate. However, unless you have urinary symptoms during the day as well, TURP is unlikely to improve nocturia.

*For more information on BPE see EAU Patient Information on Benign Prostatic Enlargement.*



*Fig. 1: A healthy prostate in the lower urinary tract.*



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Fig. 2: An enlarged prostate compressing the urethra and bladder.

## Lifestyle advice for nocturia

Nocturia is usually bothersome and can have a negative impact on your quality of life. It disrupts your sleep and may cause you to be more tired than usual during the day.

General lifestyle changes can help manage your symptoms and improve your quality of life:

- Maintain a good sleep routine:
  - o to bed and wake up around the same time 7 days a week
  - o Stay in bed as long as you need to be alert and active the next day. If you stay in bed too long or too short, the quality of your sleep may diminish
  - o Avoid taking naps during the day
  - o Sleep in an environment which is free from disturbing light and noise, and has a comfortable temperature
- Drink less in the late afternoon and evening to avoid getting up at night to urinate
- Drink at least 1-1.5 litre every day and discuss with your doctor if you can drink more
- Reduce alcohol and caffeine, because they may increase urine production and irritate the bladder. Remember that even drinks marked as decaffeinated, such as tea, coffee or soft drinks, may have some caffeine
- Avoid eating large meals shortly before you go to sleep. Also, certain foods can worsen nocturia. It may be helpful to reduce chocolate and spicy foods, especially in the evenings
- Avoid smoking because nicotine is a stimulant and can affect your sleep
- If recommended by your doctor, encourage yourself to “hold it” longer when you feel the urgency to urinate. This will train your bladder to keep more urine so that you will urinate less often

- Reduce swelling in your ankles and legs. During the day, water in your body may flow down to your legs, causing swelling. This condition is called peripheral oedema. When you lie down, or elevate your legs for several hours, the fluid returns to the kidneys. Your body will then get rid of it when you urinate. If this happens at night, it causes nocturia. Lying down or elevating your legs in the afternoon may allow you more hours of uninterrupted sleep.
- Self-management sessions as part of watchful waiting can also help improve your symptoms and quality of life.

## Living with nocturia

Nocturia is a major problem for many adults. It is defined as waking up one or more times per night to urinate. It can last for a long time and there is no simple cure. Different people cope differently with their symptoms and the possible side effects of treatment. The impact of nocturia on your life should not be underestimated.

Quality of life involves both physical and psychological health. It is important not only to feel healthy but also to feel free of the psychological pressure of living with nocturia.

There are many ways to keep the symptoms under control. They should not stop you from being happy in your relationships and participating in the social, cultural, and economic life of your community. Read about changes in your habits which may improve your nocturia in the section Lifestyle advice for nocturia.

Nocturia can have a negative effect on your personal relationships. It can be difficult to feel attractive and confident when you do not always feel in control of your body. Do not be embarrassed to seek help if your symptoms bother you: consult your family doctor, general practitioner, or a urologist.

### Useful link

Read more about continence products, such as different types of pads, at the Continence Product Advisor website:

<http://www.continenceproductadvisor.org/>

# Glossary of terms

## **Bladder**

Organ that collects urine from the kidneys (*see also Kidneys*)

## **Benign prostatic enlargement (BPE)**

An enlargement of the prostate related to hormonal changes with age

## **LUTS**

Lower urinary tract symptoms. A term used for the collection of symptoms which can point to a number of diseases affecting the urinary tract.

## **Kidneys**

Two bean-shaped organs in the back of the abdomen that filter the blood and produce urine

## **Nocturnal polyuria**

When the kidneys overproduce urine at night

## **Obstructive sleep apnoea**

Repetitive pauses in breathing during sleep, despite the effort to breathe, commonly paired with snoring

## **Overactive Bladder Symptoms (OAB)**

A collection of urinary storage symptoms, including urgency, incontinence, frequency and nocturia

## **Peripheral oedema**

Oedema means swelling. Peripheral oedema refers specifically to swelling of the ankles and legs.

## **Primary polydipsia**

The sensation that your mouth is dry which leads you to drink too much

## **Prostate**

The gland which produces the fluid which carries semen. It is located in the male lower urinary tract, under the bladder and around the urethra.

## **Transurethral resection of the prostate (TURP)**

TURP is a standard surgery to treat benign prostatic enlargement (BPE). A part of the prostate is removed to improve the symptoms without making an incision in your lower abdomen. This type of surgery is known as minimally invasive treatment.

## **Urethra**

The tube which carries urine from the bladder and out of the body

## **Urgency**

The sudden need to urinate which is difficult to postpone

## **Urinary incontinence**

Involuntary loss of urine

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