

Micturition syncope

What is micturition syncope?

Syncope results from a reduction of cerebral blood flow. There are many triggers for syncope – eg, coughing and defecation. Micturition syncope occurs when there is temporary loss of consciousness during or after urinating.

Micturition syncope epidemiology^[1] ^[2]

Syncope itself is a very common symptom, said to occur in 40% of the population at some time in life, with neurally mediated syncope being the most common type. There are no recent figures for the incidence of micturition syncope specifically. It is more common in males. Peak age of presentation is 30–49 years.

It occurs most often after ingestion of alcohol.

Micturition syncope causes (aetiology)

- Micturition syncope is a neurally mediated syncope, one of a number of 'situational syncopes'; others including defecation syncope and cough syncope.
- The underlying cause of micturition syncope is thought to be related to vasovagal syncope with hypotension and possibly bradycardia^[3]. This may involve postural hypotension and increased vagal tone as a result from straining (Valsalva manoeuvre).
- However, the trigger of the vasovagal response is unclear. It has been hypothesised that the bladder becomes hyper-reflexic. This is supported by spinal cord injury patients who develop hypotension and syncope when intermittent urinary catheterisation is performed^[4].

- The risk of developing hypotension is enhanced by any hypotensive medication - eg, alpha-blockers and even antidepressants.
- Excess ethanol intake and excess warmth are also precipitating factors for micturition syncope. Again it is thought that these contribute to hypotension.
- Research in patients with multiple system atrophy (MSA), who have frequent pre-syncope and syncope on micturition, reported that during bladder filling they experienced a slight rise in blood pressure with no change in heart rate (both increased in controls) ^[5]. This is thought to result from activation of the sympathetic nervous system. In controls, at the beginning of micturition this sympathetic activity increased with a further rise in blood pressure and heart rate. Following this, there is a decrease in blood pressure and heart rate (back to baseline). Patients with MSA showed a similar pattern but with less of an increase in blood pressure at the beginning of urination, followed by a fall during micturition. However, the fall is more marked and the duration is longer in MSA. These changes are similar to those seen in neurally mediated syncope.

Micturition syncope symptoms

A person with micturition syncope describes feeling dizzy or light-headed, or having short-lived loss of consciousness when passing urine or straight afterwards. A collateral history is vital.

Syncope does not occur at every episode of micturition. It tends to occur when there are other factors contributing, such as drowsiness, alcohol or dehydration. It more commonly occurs at night when getting up in the night to pass urine.

Differential diagnosis

Other causes of syncope:

- [Cardiac arrhythmias](#).
- Structural heart disease - eg, [aortic stenosis](#), [hypertrophic cardiomyopathy](#).
- Hypovolaemia.

- Postural hypotension.
- Postural tachycardia syndrome (PoTS).

Investigations

These are mostly directed towards excluding other more sinister causes – eg, ECG, Holter monitoring and lying and standing blood pressures. Tilt table testing can be used to determine the extent of the autonomic instability. Often the diagnosis may be made with a careful history, examination and normal ECG.

Micturition syncope treatment and management^[6]

Management on the whole involves identifying triggering factors and trying to avoid them, and taking safety measures to avoid injury should syncope occur.

- Advise men to urinate in the sitting position.
- Isometric exercises to improve circulation can be done prior to getting out of bed to pass urine, or should the warning symptoms be felt.
- Avoid trigger factors such as alcohol, exhaustion and dehydration where possible.
- Safety measures – eg, standing up slowly from a lying position, keeping the bathroom door open, moving sharp objects away.
- Stop any precipitating medications – eg, antihypertensive medication (if possible – especially alpha-blockers) and antidepressants with hypotensive side-effects.
- Fludrocortisone has been used and enhances blood pressure on standing.
- Botulinum A toxin injections have been injected into the detrusor muscle of the bladder of patients with spinal cord injuries with some success^[4].

Further reading

- [Wieling W, Thijs RD, van Dijk N, et al; Symptoms and signs of syncope: a review of the link between physiology and clinical clues. Brain. 2009 Jul 8.](#)
- [Transient loss of consciousness \('blackouts'\) in over 16s; NICE Quality Standard, October 2014](#)
- [Birlutiu V, Birlutiu RM, Feiereisz AI; SARS-CoV-2 infection associated with micturition syncope: Our experience with 4 case reports. Medicine \(Baltimore\). 2020 Jul 31;99\(31\):e21512. doi: 10.1097/MD.00000000000021512.](#)

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