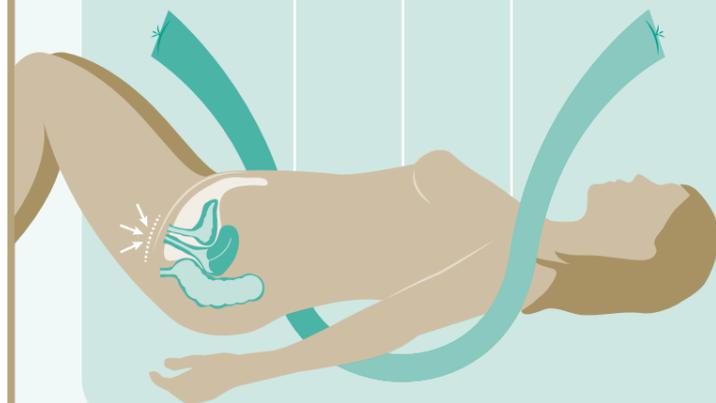


For the Primer, visit [doi:10.1038/nrdp.2017.42](https://doi.org/10.1038/nrdp.2017.42)

→ Urinary incontinence is the unintended leakage of urine. The two main types are stress urinary incontinence (urine leak in association with physical exertion) and urgency urinary incontinence (urine leak in association with a sudden compelling desire to void).

## Rx MANAGEMENT

Typically beginning during pregnancy, after childbirth or at the time of menopause, urinary incontinence symptoms can worsen or improve over time. Women may delay accessing care for many years and, when they do, they may have widely varying goals for treatment. Non-invasive measures such as weight loss, pelvic floor muscle training or fluid intake optimization might improve symptoms of both stress and urgency incontinence. For women with urgency incontinence who do not tolerate or respond to oral medication, neuromodulation (stimulating the sacral nerves with either implanted spinal devices or percutaneous devices) or bladder onabotulinumtoxinA injections are also options. Surgery to stabilize the bladder neck and proximal urethra — by placing sutures or a mesh tape — is effective for stress urinary incontinence, although associated with some controversy.



## MECHANISMS

Urgency urinary incontinence is caused by detrusor overactivity, poor detrusor compliance and bladder hypersensitivity.

After pelvic radiotherapy or prolonged periods of catheterization, the bladder may fail to expand as it fills (in the storage phase).

Detrusor overactivity, whereby spontaneous uninhibited contractions of the detrusor occur during filling, is common after spinal cord injury or in diseases that affect the central nervous system.

Stress urinary incontinence is thought to arise when the bladder neck and urethra are relatively unsupported owing to damage to the endopelvic fascia. Weakness of intrinsic urethral continence mechanisms might also contribute.

BLADDER

PELVIC FLOOR MUSCLES

ENDOPELVIC FASCIA

Bladder hypersensitivity — increased afferent signalling from the urothelium to the brain — can result from bacterial colonization or inflammation.

## OUTLOOK

Genome-wide association studies are seeking to shed light on the molecular pathogenesis of incontinence and identify risk

variants. Better understanding of at-risk women could open the opportunity for primary prevention, which might, for

example, involve correction of dysbiosis of the resident microbial flora in the bladder or vagina.

! Although some overlap in pathophysiology is evident between sexes, incontinence in men is often a consequence of prostatic enlargement or damage to continence mechanisms during surgery or radiotherapy for prostate cancer

## DIAGNOSIS

The typical diagnostic work-up involves an assessment of medical risk factors (including obstetric, gynaecological, medical, medication and surgical history), physical examination, a bladder diary, analysis of the urine, measurement of post-void residual volume and exclusion of conditions requiring specialist referral (such as pelvic organ prolapse). Invasive urodynamics studies can be undertaken to measure bladder function, including urine flow rates, and detrusor and urethral pressures, to better understand the bladder physiology, but are typically reserved for women in whom initial treatments have failed.



In frail older women, the medical history includes assessment of functional causes of incontinence, such as delirium, infection, pharmaceutical use, psychological morbidity, excess fluid intake, restricted mobility and stool impaction

## QUALITY OF LIFE

Several validated patient-reported outcome measures have been developed to help clinicians and researchers to better understand the needs of patients and determine the effects of treatment. Furthermore, the effects urinary incontinence have on the partners or caregivers of affected women is also an important area of consideration for the multidisciplinary team providing care, which can include physiotherapists, specialist continence nurses, occupational therapists, gynaecologists, urologists and geriatricians.