

GUIDELINES

Management of lower urinary tract symptoms in men: summary of NICE guidance

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This is one of a series of *BMJ* summaries of new guidelines based on the best available evidence; they highlight important recommendations for clinical practice, especially where uncertainty or controversy exists. The supporting evidence statements and further information about the guidance are in the full version on bmj.com.

Lower urinary tract symptoms (LUTS) in men are related to problems with storage and voiding of urine and can occur after micturition. The many causes of LUTS include abnormalities or abnormal function of the bladder, prostate, urethra, or sphincters. The prevalence of LUTS increases as men get older, with about 30% of men aged 65 years and older having troublesome symptoms,¹ which may require treatment. This article summarises the most recent recommendations from the National Institute for Health and Clinical Excellence (NICE) on LUTS.²

Recommendations

NICE recommendations are based on systematic reviews of best available evidence and explicit consideration of cost effectiveness. When minimal evidence is available, recommendations are based on the guideline development group's experience and opinion of what constitutes good practice. Evidence levels for the recommendations are in the full version of this article on bmj.com.

Lower urinary tract symptoms have been categorised according to the three stages of the bladder cycle³: storage (when filling of the bladder occurs), voiding (when the bladder actively expels its contents), and post micturition (immediately after voiding, while returning to the storage stage) (box).

Initial assessment

At initial assessment (in any setting and by a healthcare professional without specific training in managing LUTS in men) take the following actions.

- Offer the patient an assessment of his general medical history to identify possible causes of LUTS and associated comorbidities; review current medication, including herbal and over the counter medicines (for example, *Serenoa repens* (saw palmetto) and pumpkin seed extract), to identify drugs that may be contributing to the problem.
- Offer a physical examination guided by urological symptoms and other medical conditions; an examination of the abdomen and external genitalia; and a digital rectal examination.
- Ask men with symptoms that interfere with quality of life to complete a "urinary frequency/volume chart," recording the frequencies and volumes of fluid drunk and voided.⁴

- Offer a urine dipstick test to detect blood, glucose, protein, leucocytes, and nitrites.
- Offer the patient information and advice, and give him the time to decide whether he wishes to have prostate specific antigen testing if:
 - His symptoms suggest bladder outlet obstruction secondary to benign prostatic enlargement or
 - His prostate feels abnormal on digital rectal examination or
 - He is concerned about prostate cancer.
- Offer a serum creatinine test (plus calculation of estimated glomerular filtration rate) only if you suspect renal impairment (for example, if the man has a palpable bladder, nocturnal enuresis, recurrent urinary tract infections, or a history of renal stones).
- Refer for specialist assessment (in any setting by a healthcare professional with specific training in managing LUTS in men) if the symptoms are complicated by recurrent or persistent urinary tract infection, retention, renal impairment that is suspected to be caused by lower urinary tract dysfunction, or suspected urological cancer.
- Offer men considering any treatment for LUTS an assessment of their baseline symptoms with a validated symptom score (for example, the international prostate symptom score^{5 6}) to allow assessment of subsequent changes in symptoms.

Categories of lower urinary tract symptoms³

Storage (also symptoms of overactive bladder)

Urgency
Increased daytime frequency
Nocturia
Urinary incontinence

Voiding

Hesitancy
Straining
Slow stream
Splitting or spraying
Intermittency
Terminal dribble

Post-micturition

Post-micturition dribble
Feeling of incomplete emptying

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- ▶ Diagnosis and management of idiopathic childhood constipation (*BMJ* 2010;340:c2585)
- ▶ Neonatal jaundice (*BMJ* 2010;340:c2409)
- ▶ Pharmacological management of neuropathic pain in non-specialist settings (*BMJ* 2010;340:c1079)
- ▶ Assessment of recent onset chest pain or discomfort of suspected cardiac origin (*BMJ* 2010;340:c1118)
- ▶ Early management of unstable angina and non-ST segment elevation myocardial infarction (*BMJ* 2010;340:c1134)

Conservative management

- Offer men with storage symptoms (particularly urinary incontinence) temporary containment products (for example, pads or collecting devices) so that they can continue their normal daily activities until a diagnosis and management plan have been discussed.
- If symptoms are not bothersome or complicated, reassure the patient by explaining the possible causes of these symptoms, offer advice on lifestyle interventions (for example, adjusting fluid intake) and information on their condition. Offer a review if symptoms change.
- For men with symptoms suggestive of an overactive bladder (see box), offer supervised bladder training (which aims to reduce urgency and urinary frequency through a gradual increase in the intervals between urination episodes), advice on fluid intake, lifestyle advice (for example, caffeine and alcohol reduction), and if needed containment products.

Drug treatment

- For men with moderate to severe symptoms, offer an α blocker (alfuzosin, doxazosin, tamsulosin, or terazosin).
- For men with symptoms of an overactive bladder, offer an anticholinergic.

Specialist assessment

Specialist assessment refers to the assessment carried out in any setting by a healthcare professional with specific training in managing LUTS in men.

- For men with complicated symptoms or bothersome symptoms that have not responded to conservative management or drug treatment, offer referral for specialist assessment.
- Offer cystoscopy to those having specialist assessment only when clinically indicated—for example, if the patient has a history of recurrent infection, sterile pyuria, haematuria, severe symptoms, or pain.
- Offer imaging of the upper urinary tract to those having specialist assessment only when clinically indicated—for example, if the patient has a history of chronic retention, haematuria, recurrent infection, sterile pyuria, severe symptoms, or pain.

Surgery for voiding symptoms

- If offering surgery for managing voiding symptoms that are presumed secondary to benign prostatic enlargement, offer monopolar or bipolar transurethral resection of the prostate (TURP), monopolar transurethral vaporisation of the prostate (TUVVP), or holmium laser enucleation of the prostate (HoLEP). Perform HoLEP at a centre that specialises in the technique or has mentorship arrangements.
- If offering surgery for managing voiding symptoms that are presumed secondary to benign prostatic enlargement, do not offer minimally invasive

treatments (including transurethral needle ablation, transurethral microwave thermotherapy, high intensity focused ultrasound, transurethral ethanol ablation of the prostate, and laser coagulation) as alternatives to TURP, TUVVP, or HoLEP, as there is insufficient evidence that these techniques offer any advantage over TURP.

Providing information

- Make sure men with LUTS have access to care that can help with their emotional and physical conditions and with relevant physical, emotional, psychological, sexual, and social issues.
- Advise men with storage symptoms (particularly incontinence) about relevant support groups.

Overcoming barriers

Lower urinary tract symptoms (storage, voiding, and postmicturition) can affect both men and women (see the recent NICE guidance on female incontinence⁷), and this guidance on male LUTS aims to dispel the stereotype that men have only obstructive symptoms whereas women have incontinence. Men tend to be slow to seek health advice, particularly with symptoms that may be considered sensitive. This guidance is aimed at (a) encouraging healthcare practitioners to recognise the impact of LUTS on quality of life; (b) overcoming any stigma related to these symptoms; and (c) highlighting for patients and healthcare professionals alike that symptoms can be managed effectively after simple initial assessment. To enable accurate categorisation of underlying problems of the lower urinary tract, the guidance recommends the routine use of a simple chart for recording the frequencies and volumes of fluids drunk and voided. Use of the chart may show, for example, that urinary frequency is associated with drinking too much fluid or with underlying comorbidity, rather than being caused by a disorder of the lower urinary tract.

Primary care lacks resources for managing lower urinary tract symptoms, with not enough healthcare professionals specialising in this area. One way to overcome this could be to change reimbursement strategies, such as the quality and outcomes framework, to increase the incentives to improve care.

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DIAGNOSIS IN GENERAL PRACTICE

When no diagnostic label is applied

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This series aims to set out a diagnostic strategy and illustrate its application with a case. The series advisers are Kevin Barraclough, general practitioner, Painswick, and research fellow in community based medicine, University of Bristol; Paul Glasziou, professor of evidence based medicine, Department of Primary Health Care, University of Oxford; and Peter Rose, university lecturer, Department of Primary Health Care, University of Oxford.

Resisting the temptation to attach a diagnostic label to indeterminate symptoms can be in the patient's interests

Case scenario

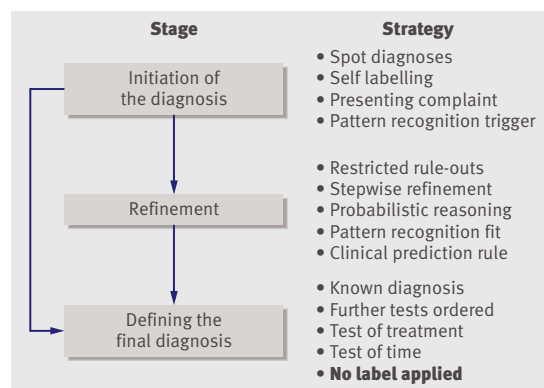
A 38 year old woman presented with "indigestion type" symptoms. She had a long history of frequent visits to her general practitioner (GP) and investigations for unexplained pelvic pain, dizziness, and headache. On this occasion she felt a "burning" sensation "in a band across my tummy" and felt as though the ground was unsteady when she walked. Her GP could reach no diagnosis and said he believed her symptoms were likely to resolve, advising follow-up in a few weeks.

Diagnostic labels

A "diagnostic label" in general practice is generally a working diagnosis that functions as a decision node. It is different from the histologically or microbiologically proved diagnoses made in secondary care and tends to take one of three forms:

- A working diagnosis on which treatment is based (such as "acute otitis media")
- A working diagnosis on which further investigations are planned (such as "bloody diarrhoea ? inflammatory bowel disease")
- A working diagnosis indicating the absence of serious disease (such as "calf pain, not DVT").

The aim of this article is to understand why diagnostic labels are sometimes not applied in general practice consultations and to understand how this approach contributes to making decisions about diagnoses.



Stages and strategies in arriving at a diagnosis

Why is a diagnosis sometimes missing?

Bruce Thomas, a general practitioner in Hampshire, UK, pointed out in the 1970s that in up to 40% of patients in general practice no diagnostic label could be attached.^{1,2} These patients did not require, and generally were not given, specific treatment, and most recovered spontaneously. This remains the case. In a 2005 review of consultation data in the UK, "symptoms, signs and ill-defined conditions" was the computer coded group of disorders presenting most frequently in general practice.³

Also in the 1970s, Howie described "the relative rarity of fully developed hospital illness" in general practice. He pointed out that using the same diagnostic terminology in general practice as was used in hospitals could sometimes be misleading because of the "different spectrum of disease" and the different level of diagnostic certainty in primary care.⁴ In primary care, diagnostic labels can give spurious and erroneous diagnostic precision when what is being managed is what Howie described as a symptom:sign complex (such as non-cardiac chest pain with mild localised chest wall tenderness).

When is management without a diagnostic label used?

For many patients in general practice, the diagnostic strategies described by Heneghan et al (figure) are appropriate.⁵ When pattern recognition and iterative diagnosis⁶ do not give an answer, when symptoms are vague, or when a clear diagnosis does not "crystallise" from investigations or tests

KEY POINTS

Some patients who present in primary care cannot be given a definite diagnostic label
Not giving a diagnostic label may indicate to the patient that nothing serious is wrong or may leave the door open for further investigation and clarification of symptoms
A definite, final diagnosis cannot be made in a large proportion of patients presenting with physical symptoms
Patients falling into the spectrum of medically unexplained physical symptoms (MUPS) are likely to require particularly skilful management

of time or of treatment, patients will need to be managed without having a diagnostic label. In not applying a diagnostic label the clinician may be “leaving the door open” for further investigations if symptoms persist. Alternatively, the lack of a label may be part of letting the patient know that, as far as can be ascertained, their symptoms do not add up to anything substantial or serious. Many patients to whom no diagnostic label can be attached can be managed without treatment or further investigation.

In the 1980s Thomas examined patient satisfaction in 200 consultations with patients who had symptoms but no abnormal physical signs. The patients were randomised to receive either a “positive” consultation (when they were given a firm diagnosis and told they would be better in a few days) or a “negative” consultation (in which no specific diagnosis or assurance was given), and also to receive either thiamine hydrochloride as a placebo or no treatment. Two weeks after the consultation 64% of those who were managed with a positive consultation reported being recovered as opposed to 39% of those given no assurances.⁷ The placebo drug treatment made little difference. This is consistent with a recent review of the placebo effect, which attributed the efficacy of the placebo to the overall content of the therapeutic interaction (doctor, patient, and context) rather than to any psychological effect that is specific to the (therapeutically inert) pill.⁸ Thomas’s study suggests that taking a positive attitude in the consultation may accelerate patients’ spontaneous recovery from a vague symptom complex. Many patients without an obvious diagnostic label could be managed in this way.

The remaining patients, those with persistent symptoms still requiring investigation, contain three subgroups:

- Those with important diagnoses that have not yet been made, which may be rare or are easily missed,⁹ such as Addison’s disease, coeliac disease, and cancer of the ovary or pancreas
- Those with new or emerging conditions, such as obstructive sleep apnoea or chronic cough from gastro-oesophageal reflux disease (many of whom were previously labelled as having “psychogenic cough”)
- Those with persisting symptoms whose physical basis is unclear.

The last (and largest) group will often have been extensively investigated for poorly defined, often painful, conditions that are often associated with apparently disproportionate effects on mood and general wellbeing. These

include patients with so called medically unexplained physical symptoms (MUPS), which comprise conditions such as dizziness, temporomandibular joint dysfunction, fibromyalgia, pelvic pain, “functional” abdominal pain, dyspepsia, and non-cardiac, non-reflux chest and thoracic pain. These patients present particular challenges for long term management, because they generally attend often and generate high healthcare costs, through over-investigation and inappropriate referral. From time to time clinicians may encounter patients with definite physical symptoms, such as haematuria or haemoptysis, in whom no definite diagnosis can be made. In a cohort study of patients with alarm symptoms in primary care, GPs did not make a diagnosis in over 60% of 37 000 patients.¹⁰

Case study

The following week, the 38 year old patient consulted her out of hours service and was given a prescription for a proton pump inhibitor for a presumed diagnosis of indigestion. Next morning she telephoned the surgery asking for a sick note as she was unable to get to work.

How does diagnosis go wrong?

Misdiagnosis can occur in two directions. Firstly, the doctor may conclude incorrectly that a patient does not have a condition to which a diagnostic label should be attached, or for which treatment is needed, and hence allow undiagnosed symptoms to persist, such as gastro-oesophageal reflux causing “non-cardiac” chest pain or chronic cough. Conversely, the doctor may confer a formal diagnosis on the patient’s symptoms, despite the absence of adequate evidence of a recognisable medical disorder, such as making a diagnosis of vertebrobasilar insufficiency in a patient with vague unsteadiness. A sense of pressure to make a specific diagnosis can come from patients, from fear of litigation if a disease is missed,¹¹ or from the expected role of general practitioners as identifiers of disease.¹²

Wrong diagnoses in primary care can be caused by atypical and non-specific presentations, very rare conditions, and comorbidity, and also perceptual factors such as failure to observe subtle changes in colour or contour or abnormal swellings¹³ or gradual changes over time, as sometimes happens with patients with hypothyroidism or acromegaly. Other causes are shown in the box.

How can we improve?

Clinicians need to understand the various ways in which diagnostic labels should and should not be applied to patients in general practice, and they should be prepared to deal with the potential causes of diagnostic error listed in the box. This has important implications for medical education: performing clinical investigations and looking for symptoms and signs need to be taught with a probabilistic approach to differential diagnoses. Spuriously accurate clinical diagnoses need to be discouraged, keeping in mind that patients benefit from a certainty of approach.

Managing unexplained symptoms requires a high quality relationship between doctor and patient, characterised by a sympathetic and empathic inquiry into the psychosocial background of symptoms as well as the provision of considerable emotional support. Patients with medically

Causes of wrong diagnoses in primary care

Cognitive oversight—simply not thinking of the correct diagnosis¹⁴—for example, forgetting coeliac disease as a cause of iron deficiency anaemia

Failure to gather adequate data—for example, inadequate physical examination for lower bowel symptoms caused by colorectal cancer

Misinterpretation of data—for example, diagnosing gout on the basis of a raised serum urate concentration or excluding it on the basis of normal serum urate.

Anchoring—sticking to an initial diagnosis despite disconfirming evidence,¹⁵ such as treating fatigue as depression despite evidence of abnormal renal function

Inappropriate confirmation—selective use of evidence to confirm an incorrect diagnosis, such as attributing importance to minor abnormalities in laboratory tests as an explanation for fatigue in someone with depression

Premature closure—arriving at a conclusive diagnosis before collecting all the data,¹⁶ such as diagnosing intermittent (vascular) claudication in a patient with lumbar canal spinal stenosis

unexplained symptoms are no more likely than those with explained symptoms to seek explanation, reassurance, or somatic interventions such as special investigations, drug treatment, or specialist referral—but they are much more likely to seek emotional support from their clinician.¹⁷ They are also more likely to be cautious about the extent to which clinicians will take their problems seriously.^{18,19} Clinicians may manage these patients more effectively if they explain the limited, and potentially negative, value of repeat investigations, and if they avoid premature closure by regularly reviewing previous diagnostic labels or apparent lack of such labels. Clinicians may avoid unfounded diagnoses and subsequent somatic interventions by getting patients to talk about their social and psychological problems.^{20,21} Brief educational interventions, including didactic sessions, small group work, and role play with video feedback can increase GPs' awareness of medically unexplained symptoms.²²

Case study

The general practitioner asked the woman to return for review. A careful history elicited a description of a superficial “burning sensation” across the lower chest and increasing difficulty in walking. A Romberg test was positive, and she had increased tone and hyper-reflexia in her legs. Admission and magnetic resonance imaging of her neck showed a central cervical disc prolapse causing a myelopathy.

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The wall of fame

Below is a random sampling of remarkable investigation results, diagnostic studies, and experiences shared by our medicine residents over the past few years which appear on our “wall of fame.” Our wall functions as a portal for the education, team building, and bonding that is core to the successful development and acculturation of young physicians. The remarkable facts on the wall pique curiosity and inspire a healthy competition, with our residents taking pride in raising the bar by updating or adding to its content.

Highest fever: 109°F
 Highest blood pressure: 309/166
 Most coronary care unit admissions in 24 hours: 17
 Most codes [cardiac arrest calls] on the same patient during one shift: three
 Highest number of cross coverage calls in 10 hours: 81
 Lowest ionised calcium: 0.40 mmol/l
 Highest glucose on first day of internship: 2300 mg/dl
 Highest Pco₂: 170 mm Hg
 Highest non-haemolysed potassium: 18 mmol/l “alive and kicking”
 Highest NT-proBNP [brain natriuretic peptide]: 348 000 pg/ml
 Highest blood urea nitrogen: 354 mg/dl

Lowest haemoglobin in an ambulatory patient: 1.6 g/dl
 Highest sodium: 187 mmol/l
 Highest blood alcohol: 680 mg/dl
 Lowest temperature: 81°F
 Oldest patient: 107 years
 Oldest surgical patient: 102 years
 Highest INR: 33
 Highest furosemide dose: 480 mg daily
 Lowest number of pages [bleeps] on a night float shift: three
 Highest thyroid stimulating hormone: 743.60 mIU/ml
 Highest parathyroid hormone, intact: 1912 pg/ml
 Highest ammonia level: 700 µmole/l
 Heaviest patient: 749 lb [340 kg, 53 st 7 lb]
 Oldest patient requesting sildenafil: 85 years
 Lowest high density lipoprotein: 5 mg/dl
 Highest white blood cell count: 629 800×10³/mm³
 Highest H/H [haemoglobin and haematocrit]: 26.7 g/dl/75.3%
 Longest QTc interval on electrocardiogram: 625 ms
 Furthest discharge destination: Ukraine.

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