

In this article...

- Causes and symptoms of chronic pelvic pain syndrome (CPPS) and prostatitis
- Investigations needed to diagnose CPPS and chronic prostatitis and exclude other conditions
- Drug and non-drug treatment approaches for CPPS and chronic prostatitis

Chronic pelvic pain and prostatitis: symptoms, diagnosis and treatment

Key points

1 Chronic pelvic pain syndrome in men is continuous or recurrent non-malignant pain perceived in structures such as the muscles and nerves of the pelvis

2 Prostatitis is thought to be caused by infection or inflammation of the prostate gland

3 Both conditions cause a wide range of symptoms related to pain, urinary function, quality of life and sexual dysfunction

4 Affected men can find these conditions difficult to cope with and may experience emotional or psychological issues

5 Holistic care is needed to help patients manage these long-term conditions

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Abstract Chronic pelvic pain syndrome and chronic prostatitis are long-term conditions in men. They are poorly understood, difficult to treat and cause a range of symptoms including pain, urinary problems, reduced quality of life and sexual dysfunction. This article gives an overview of these two related and overlapping conditions, explains how to assess patients and diagnose, and presents the various treatment approaches. Nurses have an important role in helping men manage the physical, psychological and emotional effects of these conditions.

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Chronic pelvic pain syndrome (CPPS) and chronic prostatitis are long-term conditions that are poorly understood, difficult to treat and for which there is currently no cure. As well as causing a range of disruptive symptoms – including severe pain, erectile dysfunction and urinary and bowel problems – that patients often find difficult to cope with, they can have a deleterious effect on an individual's psychological wellbeing.

CPPS

This non-malignant pain is perceived in structures such as the muscles and nerves of the pelvis that has been continuous or recurrent for at least six months – the minimum length of time for pelvic pain to be regarded as chronic. 'Perceived' indicates that the patient and clinician, to the best of their ability from the history, examination and investigations (where appropriate) have localised the pain as being felt in the specified anatomical pelvic area (Fall et al, 2010).

CPPS can encompass several conditions causing pain in the different anatomical structures around the prostate, including various muscle types, nerves and bony

structures in the pelvis, abdomen and spine (Rees et al, 2015). The causes are not completely understood; CPPS is not thought to be caused by infection, but a number of other factors may be involved (Prostate Cancer UK, 2015). A range of genetic variations have been described that may explain chronic pelvic pain (Marszalek et al, 2009).

Prostatitis

Prostatitis, which is a contributing factor to CPPS, is a set of symptoms thought to be caused by infection or inflammation of the prostate gland. It is common but poorly understood (European Association of Urology, 2014; Pavone-Macaluso, 2007), and a significant burden in terms of physical symptoms, emotional distress and financial costs (Schaeffer, 2008; Calhoun et al, 2004; McNaughton Collins et al, 2001). Men with prostatitis have a very poor quality of life: it is comparable to that of people with conditions such as unstable angina, inflammatory bowel disease or congestive heart failure (bit.ly/MSHProstatitis).

The condition affects men of all ages but it is most prevalent in those aged

Box 1. Symptoms of chronic pelvic pain syndrome

- Pain in the perineum
- Pain in the lower abdomen
- Pain in the penis, especially the tip, and the testicles
- Pain in the rectum and lower back
- Pain or burning during ejaculation
- Premature ejaculation
- Erectile dysfunction
- Urinary problems such as feeling that the bladder is not emptying properly, urinary frequency or urgency, and pain when urinating
- Bowel problems
- Mild discomfort or pain when urinating
- Blood in semen (haematospermia)

36-50 years. Its presentation in some older men may be due to normal prostate enlargement; it is known that increased detrusor pressure is needed to empty the bladder in obstructive voiding, which can predispose men to a reflux of urine into the prostate gland (Kirby et al, 1982).

A systematic review found an 8.2% prevalence of prostatitis symptoms (range 2.2-9.7%) in a population of over 10,600 men (Krieger et al, 2008) while, between April 2016 and March 2017, the specialist nurse team at Prostate Cancer UK received 289 contacts from men seeking help about prostatitis.

The condition can be acute or chronic, bacterial or non-bacterial, and symptoms can occur with or without signs of infection. It is categorised as:

- Acute bacterial prostatitis;
- Chronic bacterial prostatitis (rare);
- Chronic non-bacterial prostatitis/CPPS;
- Asymptomatic inflammatory prostatitis (Krieger et al, 1999).

Chronic prostatitis

Chronic non-bacterial prostatitis is the most common type experienced (Daniels et al, 2007; Clemens et al, 2005) and is defined as urological pain or discomfort in the pelvic region associated with urinary symptoms and/or sexual dysfunction lasting at least three months (Krieger et al, 1999). Although it is a benign condition, it can severely reduce quality of life, as patients often experience considerable physical and psychological morbidity (PCUK, 2015).

Chronic prostatitis is related to CPPS due to the following possible causative factors:

- Urine entering the prostate gland (Kirby et al, 1982); the prostatic utricle

cyst and dilated prostatic duct in the peripheral zone of the prostate should be recognised as prostate benign lesions and are involved in urine reflux into the prostate (Inamura et al, 2016);

- An infection that does not show in tests;
- Inflammation of the nerves around the prostate gland;
- Problems with nerves that send pain signals to the brain without physical cause;
- Stress and/or anxiety;
- Problems with, or previous damage to, the pelvic floor muscles.

Symptoms and comorbidities

The hallmark of chronic prostatitis and CPPS is persistent and disabling pain (Kwon and Chang, 2013), but both conditions can cause a wide range of symptoms relating to pain, urinary function, quality of life and sexual dysfunction (Boxes 1 and 2). Each man is affected differently and symptoms can be constant or intermittent.

Many mechanisms involved in CPPS are based in the central nervous system (EAU, 2014), which is why it is sometimes called pelvic myoneuropathy. Affected men are more likely to develop allergies, fibromyalgia, chronic fatigue syndrome, irritable bowel syndrome and anxiety disorders such as panic attacks and obsessive-compulsive disorder (Sinclair, 2014).

Inflammation in the prostate can cause a rise in blood levels of prostate-specific antigen (PSA), which can cause anxiety – as a raised PSA level is a potential marker of prostate cancer. However, there is debate as to whether continued or recurrent inflammation of the prostate may lead to the development of prostate cancer. Studies are under way to determine whether reducing inflammation can prevent prostate cancer (Walsh and Worthington, 2012).

Persistent and recurrent pelvic pain can significantly reduce quality of life (Turner et al, 2002), causing disturbed sleep, fatigue, withdrawal, social isolation, shame, anger and depression, and, in some cases, suicidal feelings (Wood, 2013).

Assessment and investigations

Clinical diagnosis of CPPS and/or chronic prostatitis relies on patient history and physical examination. Various investigations are conducted to detect signs and exclude other pathologies.

Symptom scoring

Patients are normally assessed using the Chronic Prostatitis Symptom Index of the

US National Institutes of Health (bit.ly/NIHCPSI), which scores issues relating to pain, voiding and quality of life. Patients with chronic prostatitis and/or CPPS are no longer considered a homogenous group affected by a single disease entity, so a newer tool, the UPOINT classification (upointmd.com), is increasingly used (Nickel and Shoskes, 2009). It classifies signs and symptoms in six domains:

- Urinary;
- Psychosocial;
- Organ specific;
- Infection;
- Neurologic/systemic;
- Tenderness.

A reliable tool to assess urinary symptoms is the International Prostate Symptom Score (urospec.com/uro/Forms/ipss.pdf).

Physical examinations

If CPPS and/or chronic prostatitis is suspected, examination of the abdomen and external genitalia (Rees et al, 2015; National Institute for Health and Care Excellence, 2010) and a digital rectal examination (Rees et al, 2015) should be performed. This last may reveal a tender prostate on palpation; it will also allow the health professional to assess the pelvic floor muscles' tenderness and ability to relax and contract.

Tests to rule out other pathologies

Urodynamic studies can demonstrate decreased urinary flow rates, incomplete relaxation of the bladder neck and prostatic urethra, and/or an abnormally high urethral closure pressure at rest (Shergill et al, 2010). To detect infection, common investigations include a urine dipstick test and/or an early morning urine specimen and expressed prostatic secretions for culture/microscopy (Rees et al, 2015).

Screening for sexually transmitted infections should be considered, and a

Box 2. Prostatitis symptoms

- Discomfort, pain or aching in the testicles, perineum or tip of the penis
- Discomfort, pain or aching in the lower abdomen, groin or back
- Urinary frequency or urgency
- Pain or stinging during or after urinating
- Feeling as though sitting on a golf ball
- Lack of libido
- Less common: erectile dysfunction, pain or burning during ejaculation, and premature ejaculation

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urethral swab and culture taken if urethritis is suspected (Rees et al, 2015).

Uroflometry, retrograde urethrography and/or a bladder scan will help exclude urinary retention, while cystoscopy can be performed to exclude bladder outlet obstruction, bladder neck stenosis, bladder cancer or urethral stricture (Rees et al, 2015).

Magnetic resonance imaging and computerised tomography are useful to rule out a prostate abscess (Venyo, 2011). A number of other tests can be useful; for example, if prostate cancer is a concern, a blood test to measure PSA levels can be undertaken.

Sexual and psychological factors

Taking a detailed sexual history is essential. Patients who disclose information about sexual abuse need to be managed sensitively and, with their consent, relevant agencies should be involved.

Patients also should be assessed for the psychological impact of their symptoms using an appropriate tool such as the Patient Health Questionnaire-9 to monitor depression severity or the seven-item Generalised Anxiety Disorder Assessment. If they experience low mood and attribute it to pain, psychologically based pain management may be required.

Management

Health professionals in primary care are in an ideal position to identify chronic prostatitis/CPPS, explain to patients the available treatment options, and provide appropriate therapy and ongoing support. It is essential to combine physical and emotional and/or psychological interventions, and adopt a multiprofessional approach.

There are no established treatments that consistently relieve symptoms, but treatment options are improving (Strauss and Dimitrakov, 2010). However, there have been few randomised controlled trials (RCTs) focusing on chronic prostatitis/CPPS, so more research is needed.

Chronic prostatitis and CPPS can be refractory, in which case they require treatment by specialist professionals. If the drug treatment options outlined below are ineffective, patients should be referred to secondary care (Rees et al 2015).

The '3As'

Antibiotics, alpha-blockers and anti-inflammatory drugs – the '3 As' of drug treatment – are all used to treat chronic prostatitis and CPPS (Thakkinstian et al, 2012).

Box 3. Self-management measures and lifestyle changes

- **Fluids** – adequate fluid intake and avoidance of alcohol, fizzy drinks and caffeine reduce the risk of bladder irritation, which can exacerbate urinary symptoms
- **Diet** – some men find certain foods – for example, citrus fruits and spicy foods – can trigger symptoms, and should be advised to recognise and avoid them
- **Posture** – sitting for long periods can increase pain: patients should be advised to avoid this and/or use a soft or inflatable cushion; they should also avoid activities that put pressure on the perineum, such as cycling
- **Temperature** – cold seems to aggravate symptoms, while often heat brings relief (Hedelin and Jonsson, 2007); warm baths, for example, can provide temporary relief
- **Bowel care** – defaecation requires relaxation and coordination of the pelvic floor muscles and anal sphincters, so CPPS can cause pain and difficulty, leading to constipation (bit.ly/PPHLevatorAni); men experiencing pain or discomfort when defecating should take measures to avoid constipation
- **Exercise** – brisk walking, jogging, running, playing sports or yoga may increase wellbeing and reduce symptoms
- **Stress relief** – stress can exacerbate symptoms, so patients should try to avoid stressful situations and learn to manage stress; anecdotal reports to Prostate Cancer UK indicate that relaxation techniques can be helpful

Antibiotics potentially have a moderate effect on pain, urinary symptoms and quality of life, and should be considered as an initial treatment option (Rees et al, 2015).

Like antibiotics, alpha-blockers may have a modest effect on urinary symptoms, pain and quality of life. They should be considered as an initial treatment option in men with voiding issues, as they help relax the muscles of the prostate and bladder neck. Side-effects include:

- Decreased or retrograde ejaculation;
- Nasal congestion;
- Dizziness;
- Tiredness.

If no symptom relief is seen with alpha-blocker therapy within 4-6 weeks, an alternative alpha-blocker should be considered (bit.ly/PatientProstatitis).

Non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, are sometimes prescribed. Although there is no strong evidence that they are effective, some men find they alleviate symptoms such as pain. Some NSAIDs are available over the counter, but men should always discuss them with their GP because of their potential side-effects (such as stomach irritation and stomach ulcers).

Other drug options for pain relief

Some drugs may ease discomfort or pain; sometimes an over-the-counter medication such as paracetamol may be effective. Low doses of antidepressants (such as amitriptyline) or anti-epileptic drugs (such as gabapentin or pregabalin) can be used to treat long-term pain. Allopurinol, which decreases uric acid levels in the

blood, can also ease pain and alleviate urinary symptoms.

Treating urinary symptoms

A recent study in men with CPPS/chronic prostatitis concluded that quality of life is more affected by pain than by urinary symptoms (Wagenlehner et al, 2013). However, urinary symptoms still need investigating, and should be managed in line with guidance on lower urinary tract symptoms in men (NICE, 2010).

Treating erectile dysfunction

Erectile dysfunction is a major concern in men with prostatitis and should be managed according to the British Society for Sexual Medicine's (2013) guidelines.

Surgery

Evidence about the usefulness of surgery is very limited. Techniques include:

- Prostatectomy;
- Transurethral resection of the prostate;
- Transrectal high-intensity focused ultrasound;
- Transurethral needle ablation of the prostate;
- Transurethral microwave thermotherapy.

However, large RCTs are needed before firm conclusions can be made about their effectiveness (Rees et al, 2015).

Complementary therapies

Complementary therapies may also be helpful. Acupuncture appears to be a safe, effective, durable treatment option when it comes to reducing symptoms and

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improving quality of life in men with refractory chronic prostatitis/CPSP (Chen and Nickel, 2003).

Therapy with the bioflavonoid quercetin is well tolerated and provides significant symptomatic improvement in most men with chronic pelvic pain syndrome (Shoskes et al, 1999).

A simple remedy such as the herbal supplement *serenoa repens* (saw palmetto) has been reported to have a relaxing effect on urinary sphincter smooth muscles, a strong anti-inflammatory effect, and an antiproliferative effect (Wagenlehner et al, 2011).

Physical techniques such as specialist physiotherapy and biofeedback can help men to gain better control of their pelvic floor muscles. There is no evidence, however, to support the use of repetitive prostate massage (Rees et al, 2015).

Psychological therapies

Patients who have chronic conditions often need to adjust their aspirations as well as adapting their lifestyles and work conditions. Many grieve their predicament, others have protracted distress and develop psychiatric disorders – most commonly depression or anxiety (Turner and Kelly, 2000). Counselling and cognitive behavioural therapy can be considered and accessed via a GP, who can refer patients to appropriate specialists.

Self-management and lifestyle changes

A range of self-management measures can alleviate symptoms (Box 3). It can be useful for patients to keep a diary of symptoms, food and fluid intake, exercise undertaken and the amount of stress experienced; this will help them identify and avoid triggers (PCUK, 2015). Some find online forums and peer support groups helpful, such as those provided by the British Prostatitis Support Association (bps-assoc.org.uk)

Holistic support

Recognising and managing the emotional and psychological dimensions of long-term conditions can be challenging both for patients and health professionals.

Whether in primary or secondary care, health professionals need to develop an understanding of what men with chronic prostatitis or CPSP experience, so they can offer appropriate physical, psychological and emotional support. Education and support will help patients to understand their condition and manage the often disruptive symptoms. Showing empathy, supporting patients with treatment, encouraging them with lifestyle changes

Box 4. Further resources

Further information and useful advice for patients can be found online:

- Prostate Cancer UK. *Chronic Prostatitis and Chronic Pelvic Pain Syndrome: A New Consensus Guideline*. [Bit.ly/PCUK_CPSPGuideline](http://bit.ly/PCUK_CPSPGuideline)
- NHS Choices. *Prostatitis*. [Bit.ly/NHSChoicesProstatitis](http://bit.ly/NHSChoicesProstatitis)
- BMJ Group. *Prostatitis*. [Bit.ly/BMJBestPracticeProstatitis](http://bit.ly/BMJBestPracticeProstatitis)
- WebMD. *Men's Health Guide: Prostatitis*. [Bit.ly/WebMDProstatitis](http://bit.ly/WebMDProstatitis)
- Rees J. Men's health: chronic prostatitis. *GP Online*. [Bit.ly/GPOnlineProstatitis](http://bit.ly/GPOnlineProstatitis)
- National Center for Pelvic Pain Research. *Levator Ani Syndrome*. [Bit.ly/PPHLevatorAniSyndrome](http://bit.ly/PPHLevatorAniSyndrome)

and identifying useful complementary therapies will all help to give hope and help patients to gain control of, and better cope with, their condition. **NT**

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