

Help! There's blood in my urine

Blood in the urine (hematuria) is a common reason why patients are referred to see a urologist. Blood can make your urine look pink, red or cola-coloured. Bloody urine isn't usually painful, unless clots are passed, and often a person has no other symptoms of illness.

Causes

Blood in the urine occurs when the filters in the kidneys, or other parts of the urinary tract, allow blood cells to leak into urine. Causes can include the following.

- Urinary tract infections
- Kidney infections
- Bladder or kidney stones
- Enlarged prostate
- Kidney disease
- Genetic disorders, such as sickle cell anemia or Alport syndrome
- Injury to the kidney
- Cancer
- Medications
- Intense, strenuous exercise (rare)

See your doctor

Sometimes a change in the colour of your urine is a result of a medication or a food you've eaten (such as beets or raspberries). However, blood-coloured urine can also be a sign of a serious health problem, so it should be investigated by a doctor.

Diagnosis

To diagnose the cause, your family doctor will order a urine test and do a physical exam. You may also be sent for imaging tests, such as a CT scan, MRI or ultrasound. If further follow-up is required, you will be referred to a urologist, who may schedule a cystoscopy.

If the cause of the blood can't be found, your doctor may recommend regular follow-up visits to monitor your health, especially if you have other health risk factors (e.g. you smoke).

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Urinary Incontinence 101

Nobody wants to talk about it, but it happens – involuntary peeing, also called urinary incontinence. An estimated 10% of Canadians experience it.

Types of urinary incontinence

The three most common types of urinary incontinence are stress, urge and mixed urinary incontinence. Have you ever accidentally peed during exercise or while sneezing or coughing? That's stress urinary incontinence. It's the most common type, affecting 50% of patients with incontinence. Urge incontinence occurs in 14% of all cases of urinary incontinence. It's the loss of bladder control accompanied by a sudden, strong urge to pee. Mixed urinary incontinence is a combination of stress and urge urinary incontinence and occurs in 32% of all incontinence cases.

Less common types of urinary incontinence include overflow incontinence (constant dribbling of urine) and functional incontinence, caused by a physical or mental condition that keeps patients from making it to the toilet in time.

Causes

Urinary incontinence is a symptom that can be caused by lifestyle factors, medications, medical conditions or physical problems.

Causes of temporary urinary incontinence

Foods and beverages can impact the bladder, stimulating the bladder to "go" and/or increasing urine volume. The most common culprits are alcohol, caffeine, carbonated



drinks, chocolate and extremely spicy, sweet or acidic foods (e.g. chili peppers and citrus fruits).

Other causes of temporary urinary incontinence include medications (blood pressure medication, muscle relaxants and sedatives), urinary tract infections and constipation.

Causes of chronic urinary incontinence

Any damage or deterioration of the pelvic floor muscles or the tissues of the bladder can result in long-term urinary incontinence. Age is the most common risk factor. As we age, our bladder muscles change, bladder capacity decreases and involuntary bladder contractions increase. It's estimated that 30% to 60% of adults over 65 have urinary incontinence.

In women, childbirth, hysterectomy and hormonal changes during pregnancy

and menopause can cause stress urinary incontinence. In men, an enlarged prostate, prostate cancer or prostate cancer treatments can cause urinary incontinence.

Other, less common causes include obstruction of the urinary tract (tumors, urinary stones) and neurological disorders (e.g. multiple sclerosis and Parkinson's disease).

What to expect when you see your doctor

It's important to see your doctor if you have persistent urinary incontinence. Not only does it impact your quality of life, it may also be a symptom of a serious medical condition.

At your appointment, you can expect your physician to review your medical history and symptoms and do a physical exam. Your doctor may examine you with a full bladder and ask you to cough to trigger incontinence. In order to properly diagnose the type and cause of urinary incontinence, you may also be asked to complete the following:

- urine test (urine analysis)
- symptoms or quality of life questionnaire
- bladder/voiding diary
- urine volume tests
- PSA test (men only)
- cystoscopy
- urodynamic tests

Treatment

For many people, simple lifestyle changes solve incontinence issues. Your physician will begin by suggesting the most conservative (least invasive) treatment options, including behavior modification and pelvic-floor muscle training.

Behavior modification

- Regular, scheduled toilet times
- Fluid restrictions
- Smoking cessation
- Avoidance of caffeine and foods and beverages that impact bladder control
- Bladder training
- Treatment for constipation
- Weight loss
- Treatment for chronic cough

Along with behavior modification and muscle training, you may be prescribed medications that help with incontinence. Typically, a medication will be trialed for 4 to 12 weeks to determine if it's helpful.

Management

Many patients find the following temporary solutions to urinary incontinence are helpful for maintaining quality of life.

- Pessary – A silicone ring or disc that can be inserted into the vagina and worn throughout the day. It prevents leakage by supporting the bladder.
- Urethral insert – A small, tampon-like, disposable insert that can plug the urethra. It is used during incontinence-triggering activities, such as playing sports.
- Absorbent pads or undergarments
- Catheter – A soft, flexible tube that is inserted into the urethra that helps drain the bladder.

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The role of vitamin D in urological health

Vitamin D is a well-known factor in bone health; however, its role in the body extends far beyond. Recent studies point to links between vitamin D and urological health.

Our bodies make vitamin D through a process that begins when sunlight converts a chemical in our skin into pre-vitamin D3 (calciferol). We also get vitamin D from food, including fortified milk products, fortified cereal and fatty fish (e.g. salmon, mackerel and sardines). In Canada, vitamin D is also added to margarine and egg products.

Below are some of the urological impacts of vitamin D.

Overactive bladder

Studies have found that low vitamin D levels are linked to overactive bladder. Overactive bladder is characterized by frequent urination, incontinence, nocturia (the need to urinate more than twice per night) and sudden, intense urges to urinate.

Urinary tract infection

Vitamin D deficiency is associated with increased risk of urinary tract infections in both adults and children.

Bladder cancer

A recent research review concluded that low vitamin D is associated with increased risk of bladder cancer.

Kidney stones

Many studies have found no link between vitamin D supplementation and the development of kidney stones. Other studies conclude that certain patients are more "sensitive" to vitamin D and may develop kidney stones in response to vitamin D supplements. Still other studies have found that patients with kidney stones are more likely to have low vitamin-D blood levels. Confused?

If you have a history of kidney stones, talk to your urologist for specific advice related



to vitamin D supplements. If you have no history of kidney stones, it is likely safe to take vitamin D supplements following the recommendations set by Health Canada (see below).

Benign prostatic hyperplasia

Benign Prostatic Hyperplasia (BPH), also called prostate gland enlargement, can cause a variety of uncomfortable urinary symptoms. Researchers have found a correlation between increased vitamin D intake and decreased risk of BPH.

Sexual dysfunction

Several studies have found an association between vitamin D deficiency and female sexual dysfunction. Early evidence suggests that vitamin D therapy may improve sexual function in women with both sexual dysfunction and vitamin D deficiency.

Male fertility

The literature is not yet conclusive, but early studies suggest that vitamin D has a positive effect on male fertility, specifically by improving sperm motility.

Vitamin D deficiency – Who is at risk?

Canadians are at higher risk for vitamin D deficiency. Our higher latitude makes it difficult for us to get enough sun exposure in the fall and winter months. Individuals who don't get at least 15 minutes of sun exposure daily, who have darker skin, who are older, or who are overweight are also at risk of vitamin D deficiency.

Your doctor may suggest that you take vitamin D supplements, depending on your diet and risk factors.

Vitamin D Recommendations

Health Canada recommends the following daily intake for vitamin D.

Infants: 400 international units (IU) per day

Children and adults up to age 70: 600 IU per day

Adults over 70: 800 IU per day

References to research publications on this topic are available on our website at www.saiu.ca/blog/74.

Canadian men report unhealthy behavior

94% of Canadian men have at least one unhealthy behavior that, if modified, could extend their life, a recent study finds.

Researchers created a health classification model to assess the current health status of men. 2,000 men were included in the study and answered survey questions related to 5 key behaviours: exercise, diet, smoking, sleep and alcohol intake.

The results of the study were published in the Canadian Urological Association Journal (CUAJ) in April and showed the following:

- More than half of the participating men did not get enough sleep,
- Approximately half of the men didn't get enough exercise,
- Over 60% of the men had an unhealthy diet,
- Approximately 40% of the men overused alcohol, and
- Approximately 20% of the men smoked.

The study also found that men with less education, men with lower incomes, men who are retired and men who live with children and/or extended families engaged in fewer healthy behaviours. The researchers concluded that the study "affirm[ed] the need for targeted lifestyle interventions" for Canadian men.

Resource: Flannigan RK, Oliffe JL, McCreary DR, et al. Composite health behavior classifier as the basis for targeted interventions and global comparisons in men's health. Can Urol Assoc J. 2019 Apr;13(4):125-132.



How can you increase your lifespan?

Eliminating unhealthy behaviours could prevent as much as 80% of heart disease, stroke and type 2 diabetes and 40% of cancers in Canadians. You can decrease your risk of disease and possibly increase your lifespan by following the guidelines below.

- Sleep 7 to 9 hours per night
- Get a minimum of 150 minutes of moderate to intense exercise per week
- Eat 5 or more servings of fruits and vegetables per day and reduce salt, saturated fat and refined sugars in your diet
- Limit your alcohol consumption: maximum 10 drinks per week, 3 drinks per occasion (women), 15 drinks per week, 4 drinks per occasion (men)
- Quit smoking



The link between HPV and penile cancer

Many of us have heard that the human papillomavirus (HPV) causes cervical cancer. However, most people are unaware of the link between HPV and cancer of the penis.

Penile cancer is rare in North America, particularly in men who were circumcised as infants. However, it can be very serious, especially in later stages of the disease.

The exact cause of penile cancer is unknown. Most likely, multiple factors play a role. However, HPV is found in approximately half of all penile cancers.

HPV is very common and easily spread by skin-to-skin contact, usually entering the body through a cut, tear or abrasion in the skin. There are more than 100 varieties of HPV. Many types of HPV cause warts, although the body's immune system often beats the virus before warts form. The location and appearance of the warts depends on the type of HPV infection. Genital HPV infections are contracted through sexual intercourse, anal sex or skin-to-skin contact in the genital area.

Scientists suspect that the proteins made by certain types of HPV interfere with the body's natural tumor-suppression process. In addition to HPV infection, risk factors for penile cancer include tobacco use, chronic inflammation of the penis, age (penile cancer is more common in men over 60) and having AIDS.

Decrease your risk

You can decrease your risk of penile cancer by taking the following steps.

- Use a condom during sex (note: HPV can still be contracted by skin-to-skin contact, even if a condom is used)
- Limit your number of sexual partners, as this can decrease your exposure to HPV
- Stop smoking
- Keep the penis clean to decrease the likelihood of inflammation
- Get vaccinated for HPV

HPV vaccine

An HPV vaccine is available for men aged 9 to 26 and women aged 9 to 45. The vaccine protects against nine types of HPV, two types that have been linked to cancer of the penis, two types that cause genital warts and seven types that cause cervical cancer in women. Even if you've already been infected with one type of HPV, the vaccine can protect you from other types.

Currently, the HPV vaccine is available to grade five students in Alberta through a school-based immunization program.

Concerns following urological surgery

It can be difficult to determine if symptoms after surgery are normal or if you need medical attention. We summarize the most common concerns from patients, following urological surgery, and provide information about what to expect.

Blood in the urine

It's common to have blood in the urine following many kinds of urological surgery. It should dissipate over time and with drinking plenty of water (approximately 2L per day). If the blood is thick or dark, if you have blood clots, or if your urine continues to be bloody over several days with no improvement, seek medical attention.

Pain

Pain following surgery is normal. It may include soreness around the incision, abdominal pain from irritated abdominal muscles, and pain from secondary issues such as constipation. Your urologist may prescribe pain medication or recommend that you take over-the-counter pain medication (e.g. Tylenol® or Advil®).

Constipation

Constipation is a common side-effect of anesthesia and pain medications. Your urologist may prescribe a stool softener or suggest you take mineral oil or milk of magnesia to help with constipation.

Bloating

It is normal to feel bloated following surgery. Avoid eating gas-producing foods, such as flour, beans and broccoli. Also, limit spicy, greasy and fiber-rich foods. Some people find

that eating five or six smaller meals during the day is helpful for minimizing bloating.

Redness and swelling around incision

A small amount of redness and swelling around the incision is normal. You may also notice a lump at the top of the incision. This is where the suture material is tied. If you have redness greater than half an inch from the incision, you should seek medical attention.

Swelling of the scrotum and penile skin

Swelling of the scrotum and penile skin results from fluid collecting that has not yet been absorbed by the body. The swelling should subside over a few days. It's not harmful. Some patients find that supporting the scrotum with a rolled towel, while lying down, is helpful. Wearing underwear that has a pouch or mesh may also provide relief.

Leakage from the incision area

A small amount of clear or bloody fluid may leak from your incision. If the amount of fluid



is enough to soak dressings, or if you have a smelly discharge from the incision, seek medical attention.

Numbness around the incision

During surgery, small nerves can be injured. This may result in numbness around the incision point. Sensation should return within three to six months. If numbness spreads or gets worse, contact your urologist.

Cloudy urine

Urinary sediment can cause urine to look cloudy. This is a common occurrence following surgery and should improve with drinking lots of water. If your urine continues to be cloudy over days, seek medical attention.

Patients with catheters

Leakage – Patients with catheters may experience leakage around the catheter, especially when walking. This can be managed with the use of absorbent pads or undergarments.

Bloody discharge – A small amount of bloody discharge around the catheter is common, especially when straining during bowel movements. Patients are encouraged to drink plenty of fluids to dilute the blood and prevent blood clots in the catheter.

Bladder spasms – Patients with catheters may experience strong, sudden urges to urinate, which may be accompanied by bladder pain and leakage of urine or blood around the catheter. This is called a bladder spasm. Bladder spasm is common, particularly during bowel movements. It is recommended that patients lie down until the bladder spasm passes.

If you have any concerns following surgery, call your urologist's office. In Alberta, you may also call Health Link at 811.

When to seek medical attention

The following problems may indicate an infection or blood clot and require immediate medical attention.

Signs of infection:

- Fever or chills
- Persistent cloudy urine
- Significant swelling and redness around the incision
- Continuous pain at the end of the urethra
- Thick drainage around the catheter
- Bleeding that persists over days or gets worse
- Pain that doesn't get better or gets worse

Signs of blood clot:

- Urine not draining (catheter) or difficulty urinating
- Sudden weakness or fainting
- Chest pain
- Shortness of breath
- Pain that doesn't get better or gets worse
- Pain in the calf or swelling in the ankle or leg

In addition to the symptoms listed above, if you experience heavy bleeding (enough to soak through your dressings), seek immediate medical assistance.

Shock wave lithotripsy for kidney stones

Shock wave lithotripsy is a common, non-surgical treatment that uses shock waves to break kidney stones into small fragments.

Why is lithotripsy used?

Lithotripsy is used because it is minimally invasive and highly effective. Kidney stones are pulverized into small particles, which are then faster, easier and less painful to pass. The shock waves used in lithotripsy affect only the kidney stone, not the surrounding tissues, making the procedure relatively safe. Most patients will pass the stone fragments within days or weeks of treatment.

Who is a candidate for lithotripsy?

Most patients with kidney stones are able to pass the stones without medical intervention, apart from over-the-counter pain medication. Lithotripsy may be recommended under the following circumstances:

- The stone is too large to pass without assistance (usually larger than 5 mm),
- The stone is not passing on its own,
- The stone is blocking urine flow,
- The stone is causing bleeding,
- The stone is getting increasingly bigger, or
- The patient has only one working kidney.

Some patients are not good candidates for lithotripsy, including the following:

- Patients with very large stones or very hard stones,
- Patients who are very overweight, and
- Patients who are pregnant.



Where and how is the procedure performed?

In southern Alberta, shock wave lithotripsy is performed at the Rockyview General Hospital.

Most patients are given a sedative and painkillers through an IV to help them relax and remain still during the procedure. They are then positioned on the lithotripsy machine, which looks like a bed. The kidney stone is targeted with x-rays or ultrasound to ensure the precise location, and a water-filled cushion is placed between the patient's skin and the shock-wave generator, in order to conduct the shock waves.

During the procedure, patients hear a clicking sound and feel a tapping sensation. This is the activation of the shock-wave generator, as shock waves enter the body.

Lithotripsy takes approximately 60 minutes. Patients are monitored for at least an hour following treatment and are then sent home with an accompanying person.

What are the risks of lithotripsy?

It is normal for patients to experience some pain following lithotripsy, particularly when passing kidney stone fragments.

Complications following lithotripsy are rare, but can include the following.

- Internal bruising in and arounds the kidney
- Urinary tract infection
- Blocked flow of urine caused by stone fragments blocking the urinary tract (this may require further treatment)
- Infection
- Heavy bleeding

Fever, chills, shakes and prolonged pain are not normal following lithotripsy. They may indicate an infection or blockage. Patients should seek medical attention if they have any of these symptoms.

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If conservative treatment methods aren't working, you may be a candidate for the following.

- Electrical stimulation of the rectum or vagina to strengthen pelvic floor muscles
- Interventional therapies, such as Botox bladder injections, sacral nerve stimulation or injection of supportive material around the urethra
- Surgery

Urinary incontinence can be an annoying and embarrassing problem. Fortunately, there are many options for treatment and management. Talk to your doctor about the best options for you.

Research update

The Prostate Cancer Centre is currently recruiting patients for the studies below.

PROpel - The PROpel study is investigating the treatment of patients with metastatic castration-resistant prostate cancer with the drug LYNPARZA™ (olaparib). Previous lab studies have suggested that this drug, when combined with standard treatment, may significantly reduce the growth of prostate cancer cells.

Proteus - Researchers are studying if apalutamide (a type of drug that blocks the action of testosterone) plus androgen deprivation therapy improve results of surgery and delay the time to when prostate cancer tumors spread to other parts of the body. We

are recruiting patients who have localized or locally-advanced prostate cancer who are candidates for a radical prostatectomy.

APCaRI - The goal of APCaRI is to develop a reflex test for biomarkers that may indicate prostate cancer, through a blood-draw rather than a biopsy. We are recruiting patients with a PSA between 3 and 10. Participants are required to have a prostate biopsy.

Magnitude and **Quest** - These studies are investigating biomarkers for prostate cancer. We are recruiting patients with metastatic prostate cancer.

For more information go to www.prostatecancercentre.ca and click "Research Trials".

Patient Feedback

"I wanted to pass on how impressed my wife Kathy and I are with the SAIU and all the staff that we have dealt with over the last few months. From doctors, nurses, aids, volunteers and anyone else behind the scenes that we didn't meet, all are commended equally, right from diagnosis, admitting to present.

Thanks to Dr. Donnelley and Dr. Duffy for their caring and professionalism. They always had time to answer all our questions and concerns. Especially when we were first told I had prostate cancer."

Ken Wedin

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