

Thrush

If you have the thrush infection, you are unlikely to notice any symptoms until the fungus has already multiplied. The main symptom of male thrush is balanitis. Balanitis is inflammation of the penis.

Balanitis

If you have balanitis, you may have the following symptoms:

- a very itchy, red, and sore glans (head of your penis),
- small red spots on the head of your penis (glans),
- discharge from your penis
- pain when passing urine,
- difficulty pulling back your foreskin, and
- a 'cheese-like' substance called smegma that smells a bit yeasty and sometimes collects under your foreskin.

In some men, thrush also causes their foreskin to swell and crack. This is probably caused by an allergy to the yeast

Glossary

Discharge

Discharge is when a liquid such as pus oozes from a part of your body.

Pain

Pain is an unpleasant physical or emotional feeling that your body produces as a warning sign that it has been damaged.

Inflammation

Inflammation is the body's response to infection, irritation or injury, which causes redness, swelling, pain and sometimes a feeling of heat in the affected area.

Breaks in the skin of the penis (cracked fissures) commonly result from irritation as a result of vigorous sexual activity or if there is not enough lubrication. Skin cracks can also result from several skin disorders.

Balanitis is an inflammation of the glans penis which usually results from an infection but can also be predisposed to by irritation. Usually the inflammation presents as distinct red spots or dots, red plaques and may affect the entire head of the penis/prepuce. At times the irritation can be so great as to include small breaks in the surface of the skin (fissures). These open wounds are often very sensitive to touch, particularly when soaps or detergents come into contact with affected skin.

Phimosis, a condition in which the patient is unable to retract the inflamed foreskin can be associated with edema and cracked fissures.

A skin disease known as lichen sclerosis et atrophicus (LSA) can also lead to cracked fissures in the penile skin. A special variant of this disorder on the penis known as balanitis xerotica obliterans (BXO) is localized to the glans penis and foreskin and presents as white scar-like areas. Not only painful at times, it may result in an inability to retract the foreskin (phimosis) and sometimes leads to meatal stenosis. Fissures, erosions, and ulcers result in secondary bacterial infection, and sexual intercourse becomes impossible because of pain induced by erections.

Thrush is a yeast infection caused by the candida species of fungus. Thrush is also called candida or candidiasis. It happens when a fungus called candida albicans grows too much.

Candida occurs naturally in the body, especially in warm, moist areas such as the mouth and genitals. It normally does not cause any problems because it is kept under control by the immune system and other bacteria in the body. However, some factors can cause the fungus to multiply (grow), leading to infection.

Thrush infections usually appear in the mouth (oral thrush) or genitals. Candida is commonly found in the vagina, making thrush more likely to develop in women. However, the infection can also appear in men, too. Men with a foreskin are more likely to get thrush because the warmth and moisture underneath the foreskin encourages the fungus to grow.

Thrush is not a sexually transmitted infection (STI) because many people already have a small amount of it in their bodies. It is actually more common in men who are not sexually active. The infection can, however, be passed on through sex.

Symptoms

The main symptom of male thrush is balanitis. This means inflammation of the penis. The head of your penis (glans) will be very itchy, red and sore. You may have pain when passing urine and it can be difficult to pull back the foreskin.

You may also notice small red spots on the head of the penis, and you may have a discharge from the penis. A cheese-like material called smegma that has a yeast-like smell sometimes collects under the foreskin.

Thrush causes the foreskin to swell and crack in some men. This is probably caused by an allergy to the yeast. You are unlikely to notice any symptoms until the fungus has already multiplied.

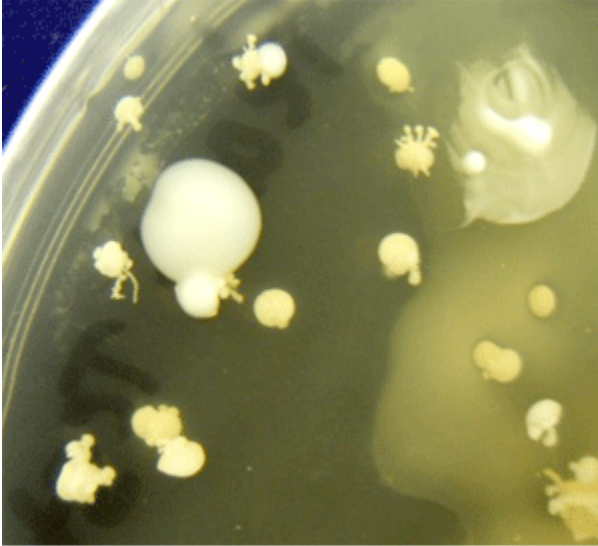
Men can get two types of thrush: Penis thrush and mouth (also called oral) thrush. Both types of thrush come with their own symptoms. These symptoms can be highly unpleasant and cause a lot of discomfort, but luckily they are often treatable.

Candida Albicans

Candida albicans is a fungus that lives on the skin and inside the mouth with the body's natural bacteria. At times, candida can overproduce because of a poor diet, consuming too much chlorinated water or from taking too many antibiotics. The candida then tends to overtake the good bacteria and cause inflammation and rashes or penile thrush. This condition tends to strike those men with weakened immune systems: Diabetics, HIV and cancer patients and those with autoimmune diseases.

Candida albicans also exists in the colon and digestive tract. Systemic overgrowth may cause many autoimmune symptoms in those with thrush,

including joint, hand and muscle pain, headaches, fatigue, irritability, memory loss, depression and respiratory problems.



The image above shows Candida albicans fungus cultured in a petri dish.

Candida albicans infections, commonly known as 'thrush' is fungal infections [mycosis] (from yeast relatives) is the causal agent of opportunistic oral and genital infections in humans and can be a major cause of morbidity and mortality in immuno-compromised patients (e.g., AIDS, cancer chemotherapy, organ or bone marrow transplantation). In addition, hospital-related infections in patients not previously considered at risk (e.g. patients on an intensive care unit) have become a cause of major health concern.

Normally *Candida albicans* ranks amongst the normal gut flora — the many organisms which live in the human mouth and gastrointestinal tract. Under normal circumstances, *C. albicans* lives in 80% of the human population with no harmful effects. However, any effect that results in the overgrowth of the fungus results in diseases known as *candidiasis*. Candidiasis is often observed in immuno-compromised individuals such as HIV-positive patients. It most commonly occurs in the mouth and genital tract but can also occur in the blood. Candidiasis, also known as 'thrush' is a common condition which is usually easily cured in people

who are not immuno-compromised. To infect host tissue, the usual unicellular yeast-like form of *Candida albicans* reacts to environmental cues and switches into an invasive, multicellular filamentous form.

Candidiasis encompasses infections that range from superficial, such as oral thrush and vaginitis, to systemic and potentially life-threatening diseases. These more severe forms of *Candida* infections are known as candidemia and are usually confined to severely immuno-compromised persons, such as cancer, transplant, and AIDS patients. In contrast the superficial infections of skin and mucosal membranes by *Candida* typically cause local inflammation and discomfort is common in many human populations.

Candida generally manifests itself in the following areas:

- the oral cavity (oral thrush)
- the vagina or vulva (vaginal candidiasis or thrush)
- folds of skin in the groin (nappy/diaper rash)
- the nipples while breastfeeding
- the penis or foreskin
- the armpit
- the ear
- the skin around the nostrils or in the nostrils

Candidiasis is a very common cause of vaginal irritation, or vaginitis, and can also occur on the male genitals. Children, mostly between the ages of 3 and 9 years, can be affected by chronic mouth yeast infections, normally seen around the mouth as white patches. However, this is not a common condition.

Mouth Thrush Symptoms

Mouth thrush usually affects the inside cheeks, tongue and roof of the mouth. Common characteristics of this infection include creamy white or yellow spots, pain, itching and sometimes blistering. Also, the lesions can bleed if one tries to rub them off. Another symptom for men with this

condition is cracked lips at the corner of the mouth. Thrush can also hinder a man's taste buds.

Mouth thrush can spread to a person's throat and esophagus. This can hinder a man's ability to swallow food and even drink beverages. Other times, a man can physically swallow food but may have a sensation that he is unable to get food down. Ulcers of the esophagus can be another complication.



The image above shows a severe case of oral thrush with Candida albicans fungal growth coating the entire tongue.

The other common form of thrush is oral thrush. Most commonly candidal growth is seen on the tongue. But it can also be present on the palate and at the back of the throat.

In men, symptoms include red patchy sores near the head of the penis or on the foreskin, severe itching and/or a burning sensation. Candidiasis of the penis can also have a white discharge, although uncommon. However, having no symptoms at all are common and usually, a more severe form of the symptoms may emerge later.

Penile Thrush

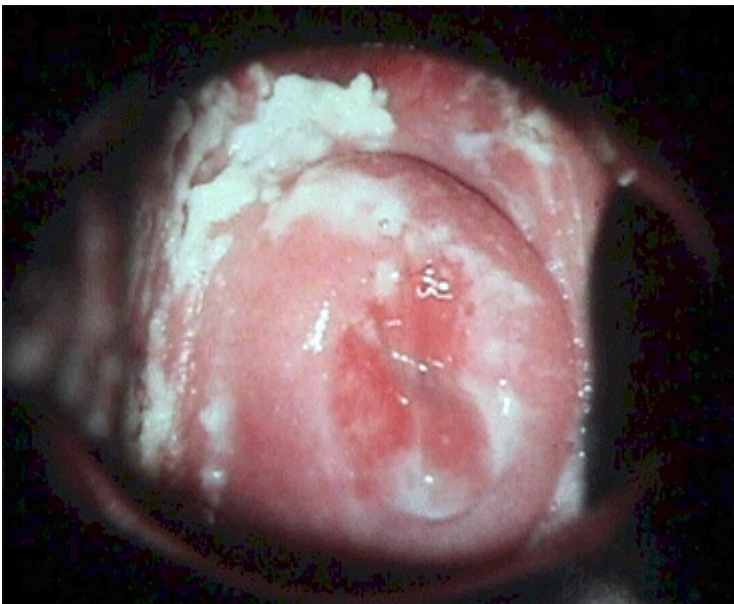
Thrush of the penis is known as balanitis. This condition can cause itching and inflammation on the glans or head of a man's penis. Other symptoms include red spots and, at times, some discharge. A starchy odor can accompany any of these symptoms. Uncircumcised men are prone to

this condition because of their foreskin. Occasionally, they can have a buildup under their foreskin that resembles cottage cheese. Men can spread penile thrush to their spouses or sexual partners. Penile thrush is normally treated with anti-fungal creams and ointments.



*The image above shows a severe case of penile thrush with *Candida albicans* fungal growth on the head and behind the head of the penis.*

Vaginal thrush



*The image above shows a severe case of vaginal thrush with *Candida albicans* fungal growth at the mouth and around the sides of the cervix.*

Vaginal thrush, also known as candida, vulvo-vaginal candidiasis, or vaginal candidiasis most commonly affects women in their thirties and

forties, and those who are pregnant. Many women are affected by vaginal thrush at some point in their lives and, in some women, it recurs regularly.

Candida albicans is often found in the vaginas of women who do not have thrush, but the infection commonly causes irritation and swelling of the vagina and vulva. However, in the majority of cases, thrush can be treated effectively.

The symptoms of vaginal thrush include:

- vulval itching,
- vulval soreness and irritation,
- vaginal discharge,
- pain, or discomfort, during sexual intercourse (superficial dyspareunia), and
- Pain, or discomfort, during urination (dysuria) may sometimes be present.

As well as the above symptoms of thrush, you may also have vulvo-vaginal inflammation. The signs of vulvo-vaginal inflammation include:

- erythema (redness) — of the vagina and vulva,
- vaginal fissuring (cracked skin) - in severe cases of inflammation,
- oedema (swelling from a build up of fluid) - also in severe cases of inflammation, and
- Satellite lesions (sores in the surrounding area) - this is rare, but may indicate the presence of other fungal conditions, or the herpes simplex virus.

Vaginal discharge

A vaginal discharge is a common symptom of vaginal thrush. It is often white and 'cheese-like', but may also be watery or purulent (contain pus). The discharge is usually odourless.

Many women mistake the symptoms of the more common bacterial vaginosis for a yeast infection. In a 2002 study published in the Journal of Obstetrics and Gynecology, only 33 percent of women who were self treating for a yeast infection actually had a yeast infection. Instead they had either bacterial vaginosis or a mixed-type infection.

Causes

Many people have a small amount of the candida fungus in their bodies. It does not usually cause any problems because the body's immune system and other harmless bacteria keep it under control.

Anything that destroys the good bacteria in your body that keeps candida under control can lead to thrush. For example, if you are taking antibiotics for an infection, the antibiotics will not know the difference between good and bad bacteria and will fight off both types. If you are run down and your immune system is weak, the bacteria that cause thrush may also multiply.

Candida tends to grow in warm, moist conditions. Thrush can sometimes develop if you do not dry your penis carefully after washing. Candida also thrives on skin that is already damaged. Using perfumed shower gels and soaps can irritate the penis, making thrush more likely to develop.

Men, who have HIV, diabetes or other conditions that cause a weakened immune system, are more at risk of getting Candida. This is because the infection develops very quickly and the weakened immune system is not strong enough to fight it off.

If your diabetes is uncontrolled (usually because you do not realise you have the condition) you are more likely to develop thrush. Typical signs of diabetes include:

- excessive thirst,
- lots of trips to the toilet to pass urine,
- Tiredness
- Weight loss.

Accepted risk factors for developing candidiasis include:

Antibiotics — Thrush occurs in about 30% of women who are taking a course of systemic, or intravaginal antibiotics. Although using any type of antibiotics can increase your risk of getting thrush. However, to develop the condition Candida must already be present.

Pregnancy — changes in the levels of female sex hormones, such as estrogen, make you more likely to develop thrush. During pregnancy, the Candida fungus is more prevalent, and recurrent infection is also more likely.

Diabetes mellitus — If you have diabetes mellitus which is not properly controlled you are significantly more likely to develop thrush.

Immunodeficiency — having an immune system that is weakened by an immunosuppressive condition such as HIV increases the risk of developing thrush. This is because your immune system, which usually fights off infection, is unable to effectively control the spread of the Candida fungus.

Other potential risk factors:

Contraceptives — it is thought that the use of oral contraceptives, particularly combined oral contraceptives, increase the risk of thrush. Though the results of the various studies that have been conducted in this area remain inconclusive.

Sexual behaviour — whilst it is true that thrush is more common during the peak years of sexual activity (during the thirties and forties), there is little evidence to support that the condition is spread during sex, or that there is any benefit in treating sexual partners; though oral sex may be a contributing factor.

Tight-fitting clothing — wearing tight-fitting clothing, such as tights, or using panty liners, may increase your chances of developing thrush as this keeps the genital area more moist and warm than would otherwise be the case.

Female hygiene — there is little evidence to suggest that sanitary towels are a risk factor for thrush. There is also no evidence that tampons, or vaginal douching, are risk factors for developing the condition.

Hormone Replacement Therapy and infertility treatments may also be predisposing factors.

In *penile candidiasis*, the causes include sexual intercourse with an infected party, low immunity, antibiotics and diabetes. However, male yeast infection is less common and the risk of getting it is only a fraction of that in women.

Diagnosis

The medical name for redness and soreness of the glans is balanitis. Balanitis is usually caused by thrush, particularly if you notice it after sex. However, the symptoms could also be a sign of something else.

If you have had thrush before and recognise what it is, you can buy over-the-counter (OTC) treatments to clear up the infection.

If you are not sure what is causing your symptoms, you should see your doctor for tests. You will probably have a swab taken from the head of your penis, or just under the foreskin, to be looked at under a microscope. Results are usually available straightaway.

If you keep getting thrush, or it does not clear up with treatment, test for diabetes, as thrush in men can be the first sign of the condition.

If you are a heterosexual man and have thrush, it is likely that your partner may also be carrying it in her vagina. This is because the candida fungus commonly lives in the vaginal area. It is a good idea for both of you to get treatment to stop the infection being passed back and forth between you.

A diagnosis of thrush is usually based on the presence of the symptoms of the condition, such as vaginal or vulval itch, discomfort, pain during sexual intercourse, and a thick, creamy, odourless discharge.

However, if the more common recommended treatments fail to relieve the symptoms or if the itch regularly recurs or if the symptoms are particularly severe then further tests may be conducted. Testing will usually involve a sample of vaginal secretion being taken for analysis in a laboratory.

Typically two methods are utilized to diagnose yeast infections: microscopic examination, and culturing.

For microscopic examination scrapings or swabs are taken from the infected area. These are placed on a microscope slide and a single drop of 10% potassium hydroxide (KOH) solution is then added. The KOH dissolves the skin cells but leaves the *Candida* untouched, so that when the slide is viewed under a microscope, the hyphae and pseudo spores of *Candida* are visible. Their presence in large numbers strongly suggests a yeast infection.

For culturing a sterile swab is rubbed on the infected skin surface. The swab is then rubbed across a culture medium (a growth medium for the fungus) which is then incubated for several days, during which time colonies of yeast and/or bacteria develop. The characteristics of the colonies provide a presumptive diagnosis of the organism causing symptoms.

Treatment

If you have had thrush before and you know what it is then you can get anti-fungal creams or a single dose pill (fluconazole). You may use a steroid cream as well as the anti-fungal medication to reduce the symptoms of the infection. If there is infection of the glans (head of the penis) then a steroid cream should not be used by itself because steroids can make the infection worse.

Good hygiene can help to clear up the infection. Wash the affected area carefully with warm water. Dry your penis carefully after washing as the *Candida* fungus thrives in damp conditions. Wear cotton underwear that

fits loosely. Do not use perfumed shower gels or soaps on your genitals, as they can irritate them.

Some heterosexual men get a mild form of balanitis after having sex. This is probably caused by an allergy to thrush in your partner's vagina. If your partner gets treatment, it will usually clear up. Gay men can also get thrush by having unprotected sexual intercourse. Again, if you and your partner get treatment, your condition will usually clear up.

Try to avoid having sex, or at least use a condom, while you are being treated for thrush, so that the infection does not pass back to your partner.

Candida infections are commonly treated with antifungal or anti mycotic drugs which for mild infections will typically last for 1 to 3 days. Typical antifungal treatments include:

Oral antifungal treatment

Oral antifungal treatment is usually recommended for girls who have vaginal thrush and are between 12-16 years of age. The antifungal drugs commonly used to treat candidiasis are topical clotrimazole, topical nystatin, fluconazole, and topical ketoconazole. For example, a one-time dose of fluconazole (as a 150-mg tablet taken orally) has been reported as being 90% effective in treating a vaginal yeast infection. However, oral antifungal treatments can cause side effects that include: nausea, vomiting, diarrhoea, constipation, bloating, and an upset stomach.

Intra-vaginal pessaries

Intra-vaginal pessaries that are often recommended include clotrimazole, econazole, or miconazole. They do not cause as many side effects as oral antifungal treatments, but they can: be awkward to use; cause mild irritation, and stinging, when they are inserted, and can damage latex condoms and diaphragms. Therefore, you should use another form of contraception while you are using intra-vaginal pessaries.

During pregnancy, or breastfeeding, you will not be prescribed oral antifungal treatment because it may affect your baby. You will probably be prescribed intra-vaginal pessaries, such as clotrimazole, econazole, or miconazole, to be used for at least seven days.

If you have thrush, as well as using OTC treatments, there are also a number of other things that you can do to help ease the problem. These include: washing your vaginal area using water - avoid using perfumed soaps, shower gels, vaginal deodorants, or douches; avoiding using latex condoms, spermicidal creams, and lubricants, if they cause irritation; avoiding wearing tight-fitting, synthetic clothes, and wearing cotton underwear and loose-fitting clothes, where possible.

Treatment for thrush using antifungal medication is ineffective in up to 20% of cases. Treatment for thrush is considered to have failed if the symptoms do not clear up within 7-14 days.

Depression and psychosexual problems (anxiety about having sex) can sometimes occur in women who have recurrent thrush. Your GP will be able to advise you about specialist treatments, such as counselling, if you have either of these conditions.

In rare cases, candida balanitis (inflammation of the head of the penis) can occur in male partners of women who have thrush.

Some women, who have vaginal thrush, use probiotics, such as live yoghurts, to help treat and prevent the condition. There is no medical evidence that probiotics are effective but, equally, there is no reason to think that they could be unsafe.

Complications

In people who have a weak immune system, the candida fungus can sometimes spread into the blood. You may be at risk of this if you have leukaemia or diabetes mellitus, if you are taking antibiotics over a long period of time, or if you are using intravenous drugs.

If the infection gets into the blood, symptoms can come on suddenly and may include:

- fever,
- shivering,
- nausea,
- headache

Blood poisoning needs to be treated to stop it spreading through the rest of the body and causing a more serious infection. If it spreads, it may affect the brain, eyes, liver and heart.

Prevention

A balanced diet that is low in fat and sugar, along with regular exercise and not letting you get run-down can help to stop thrush coming back.

Could be a reaction to soap or any cleaning substances you have been using. If you wash your penis with soap, stop. This dries it up and causes foreskin cracking and splitting. Just wash with water. Rub on Vitamin E creams.

When having sex use a gel or other lubricant for the penis.

Other causes of sore and inflamed foreskin can be yeast infections, Banjo tear, herpes infections, trauma/soreness from dry intercourse or masturbation and other reasons. You can find some mild antibiotic antibacterial cream that might be helpful.

Soreness and inflammation is a sign of infection. It would be beneficial to consider a visit to an Urologist doctor for a comprehensive evaluation of available options.