

## **Difference Between Candida and Yeast Infection**

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# **Key Difference - Candida vs Yeast Infection**

Fungi can be divided into 4 main groups based their on morphology: yeast, moulds, dimorphic and yeast like. The group consisting of unicellular fungal species is known as yeast. They can be spherical or ovoid in shape. Yeast reproduces by budding. They do not produce branching chains. Malassezia furfur, which causes Pityriasis Versicolor, and Candida, which causes candidiasis, fall under the yeast category. Therefore, it is clear that yeast infection is a broad term which is used to address a group of illnesses caused by unicellular, ovoid/spherical fungi whereas Candida infection is a term used to address illnesses caused only by Candida species. Thus, the key difference between Candida and yeast infection is their causative agent.

## What is Candida?

Candida infection or candidiasis is caused by fungi of *Candida* species which are yeasts. Most common <u>pathogens</u> belonging to this group are b *Candida* albicans, *C.tropicalis*, *C.glabrate*, and *C.krusei*. *Candida* is a member of normal flora mainly in the skin, vagina, and gut. Factors like <u>steroids</u>, pregnancy, <u>AIDS</u>, malignancies, <u>obesity</u>, <u>diabetes mellitus</u> and <u>antibiotics</u> can predispose candida infection. In a normal host, *Candida* can cause cutaneous infections, and in immunocompromised patients, it can cause cutaneous infections and systemic illnesses.

#### **Clinical Course**

In normal hosts, oral thrush, vaginitis, and diaper rash are commonly seen. Creamy white patches with exudate which cannot be removed by tongue blade are visible in oral thrush. Those patches are mainly found on the erythematous mucosa. Treatment includes oral fluconazole, nystatin swish and spit and clotrimazole candies.

Vaginitis is most commonly seen in women taking antibiotics, oral contraceptive pills, during pregnancy or during menses. Thick copious vaginal discharge and vaginal itching are the main symptoms of vaginitis. On speculum examination of the vagina, inflamed vaginal walls and creamy white patches can be seen on the

vaginal walls. For treatment imidazole vaginal suppositories and oral fluconazole are helpful. Males too can be affected by similar illness on the penis. It can be transmitted during sexual intercourse. Diaper rash can be seen in warm moist areas under the diapers and also between skin folds in adults. Skin becomes reddened, softened and separated.

Intertrigo is the super-infection of C.albicans with bacteria. This mainly affects the submammary, axillary and inguinal body folds, giving a shiny and macerated appearance. Paronychia is caused by C.albicans. It is usually seen in wet workers who do not dry their hands and feet properly. The cuticle of the nail is lost. The nail plate becomes irregular and off-colored. Co-existing gram-negative bacteria can make the nail look blue-green colored. This condition can be treated with topical imidazole. Precautions should be taken to keep hands dry.



Figure 01: Agar plate culture of C. albicans

Candida is mainly cultured from urine, stools, and sputum as it is a member of the normal flora. But the isolation of Candida from blood is not normal. In immunocompromised patients, Candida can disseminate to the bloodstream, causing infections in multiple organs such as cystitis, pyelonephritis, endocarditis, and sepsis. Treatment is IV amphotericin B, fluconazole or caspofungin. Spreading of oral thrush into the esophagus may cause esophagitis in immunosuppressed patients. This can be treated with fluconazole.

## **Diagnosis**

- Direct smear in 10% KOH
- Culture in Sabourod's Dextrose agar

## What is Yeast Infection?

Yeast infection is a broader term used to address a group of illnesses caused by yeast (unicellular, ovoid/spherical fungi). This mainly includes Pityriasis Versicolor and candidiasis.

Pityriasis (Tinea) Versicolor is caused by unicellular fungi *Malassazia furfur*. Infection mainly occurs in humid and tropical conditions. It involves only the superficial keratin layer of the skin. In young adults, mainly the trunk and proximal parts of the limbs are affected. In fair skinned people, pinkish spherical patches appear. On exposure to sunlight, the skin around the patch will tan. In people with dark skin, patches with hypopigmentation may appear.



Figure 02: Tinea versicolor

Diagnosis is primarily with KOH preparation. Mainly spherical yeast cells are found with dispersed short, curved, stout, unbranched filaments giving rise to the typical spaghetti and meatball appearance.

• Management- Topical application of imidazole, Dandruff shampoo containing Selenium sulfide.

# What are the similarities between Candida and Yeast Infection?

- Both are caused by fungi
- Both are caused by the yeast morphological type
- Can be diagnosed by KOH preparations

# What is the difference between Candida and Yeast Infection?

Candida vs Yeast Infection	
Candida infection is a fungal infection due to any type of Candida.	Yeast infection is a broad term used to address a group of illnesses caused by yeast.
Diseases	
Candida is a subset of yeast infection.	Yeast infection mainly includes Pityriasis Versicolor and candidiasis.
Causative Agent	
This is caused by any type of Candida.	Malassezia furfur, Candida are common causative agents.

## **Summary - Candida vs Yeast Infection**

Both Candida and yeast infection are caused by fungi. While candida is considered a subset of yeast infection, the difference between candida and yeast infection

depends on their causative agents; candida is only caused by types of Candida whereas yeast infection is caused by any type of fungal yeast, including Candida.

With the increase in the number of immunocompromised persons, the incidence of fungal infections has rapidly gone up. It is therefore important to maintain personal hygiene and a clean environment to protect yourself from these pathogens.

#### **Reference:**

1. Carroll, Karen C., Jeffery A. Hobden, and Steve Miller. *Jawetz, Melnick & Adelbergs Medical Microbiology*. New York: Mc Graw Hill, 2016. Print.

### **Image Courtesy:**

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