

# Candidiasis

- Primary or Secondary mycotic infection
- Clinical manifestations: Acute / Subacute / Chronic
- Mouth, throat, skin, scalp, vagina, fingers, nails, bronchi, lungs, gastrointestinal tracts, systemic (septicemia), endocarditis, meningitis.
- Systemic candidiasis is usually seen in patients with cell-mediated immune deficiency, and those receiving aggressive cancer treatment, immunosuppression, or transplantation therapy.

# Candidiasis

Acute Oral Candidiasis

Intertriginous Candidiasis

Diaper Candidiasis

Paronychia

Chronic Candida Onychomycosis

Vulvovaginal Candidiasis

Balanitis

# Acute Oral Candidiasis

## Prevalence:

Healthy adults: Rare

New born infants: up to 5%

Elderly: up to 10%

## Risk factors:

Severe immunological impairment due to:

Diabetes mellitus, leukemia, lymphoma, malignancy, neutropenia, & HIV infection

## Predisposing factors:

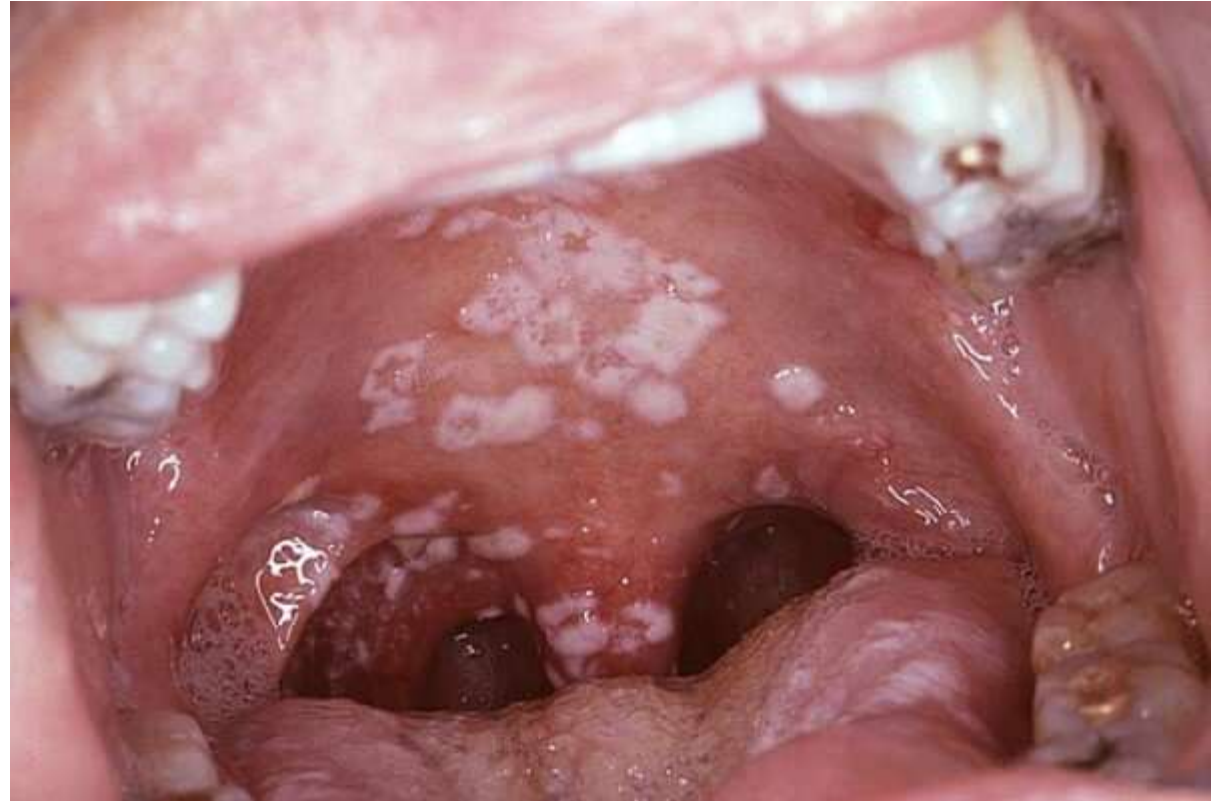
Broad-spectrum antibiotics, corticosteroids, cytotoxic drugs, & radiation therapy

## Signs:

White plaques (milk curd form) on the buccal mucosa & less commonly on the tongue, gums, the palate or the pharynx.

## Symptoms:

May be absent or include burning or dryness of the mouth, loss of taste, & pain on swallowing







# Angular cheilitis



**Figure 2.67**

Angular cheilitis—intertrigo and fissuring caused by maceration of the corners of the mouth are frequently complicated by chronic infection with *C. albicans*. There are white pseudomembrane-like colonies in the mouth corners of this adult patient.

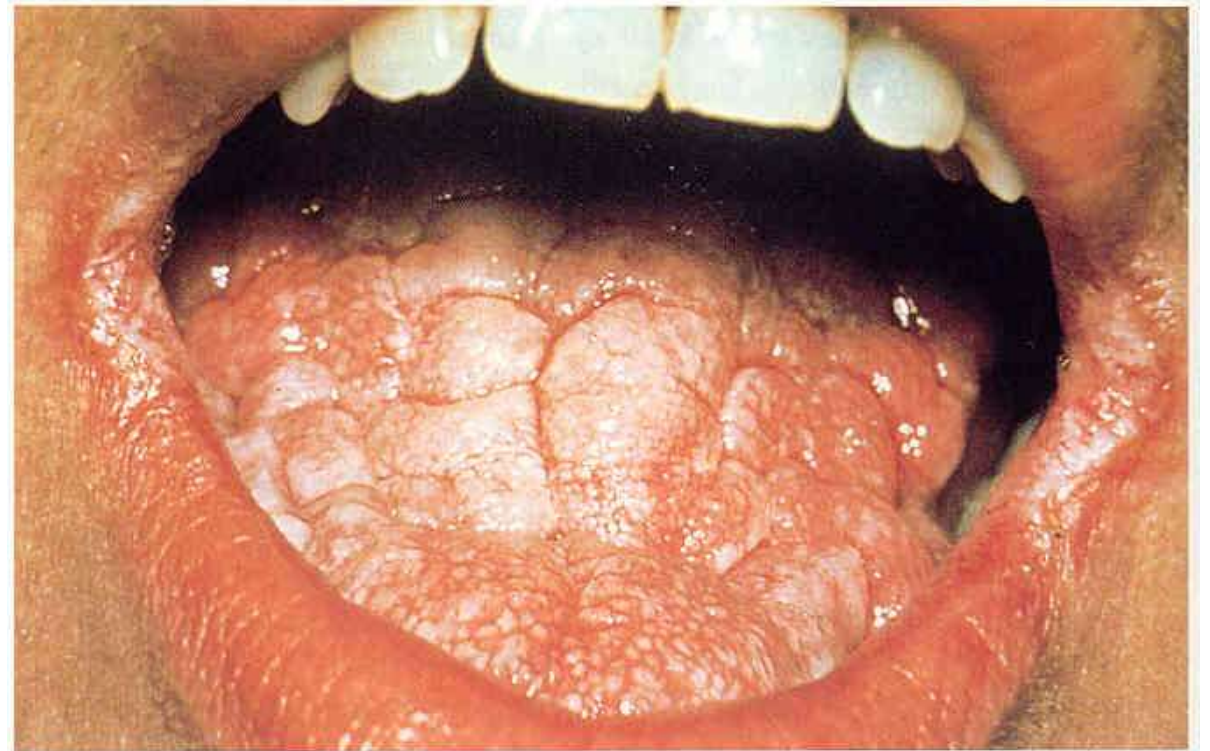






**Figure 2.77**

A young infant with chronic superficial candidiasis showing spread to the mouth area and conjunctiva. The erythematous scaling lesions have well marginated borders and the small satellite lesions on the chin show the typical collar of scaling. *C. albicans* was isolated.



**Figure 2.66**

Chronic oral candidiasis of the tongue and mouth corners (angular cheilitis) in an adult with underlying immune deficiency. The characteristic white pseudomembrane is composed of the cells and pseudohyphae of *C. albicans*.

# Intertriginous Candidiasis

Most commonly in axillae, groin, inter- and sub-mammary folds, intergluteal folds, interdigital spaces, & umbilicus.

## Predisposing factors in normal patient:

Moisture, heat, friction & maceration of the skin

## Risk factors:

obesity, diabetes mellitus, warm water immersion or occlusion of the skin, broad-spectrum antibiotics

## Clinical signs:

Lesions consist of a moist, macular erythematous rash with typical satellite lesions presents on the surrounding healthy skin.











# candidiasis

**groin**



**groin**



# Diaper candidiasis

Common in infants under unhygienic conditions of chronic moisture and local skin maceration associated with ammonitic irritation due to irregularly changed unclean diapers.

## Signs:

erythematous lesions with erosions and satellite pustules , with prominent involvement of the skin folds and creases.





# Paronychia

Paronychia of finger nails may develop in persons whose hands are subject to **continuous wetting, especially with sugar solutions or contact with flour, that macerates the nail folds & cuticle.**

Signs:

Painful, erythematous swelling about the affected nails.

In chronic cases the infection may progress to cause onychomycosis with total detachment of cuticle from the nail plate.



# Paronychia: candida







# Chronic Candida Onychomycosis

Often causes **complete destruction of nail tissue** & is seen in patients with Chronic Mucocutaneous Candidiasis or other underlying factors that affect either the hormonal or immunologic status of the host:

Diabetes mellitus, hypoparathyroidism, Addison's disease, dysfunction of the thyroid, malnutrition, malabsorption & various malignancies.

## **Other Contributing factors:**

Steroids, antibiotics and antimitotics



# Candida Onychomycosis









# Vulvovaginal Candidiasis

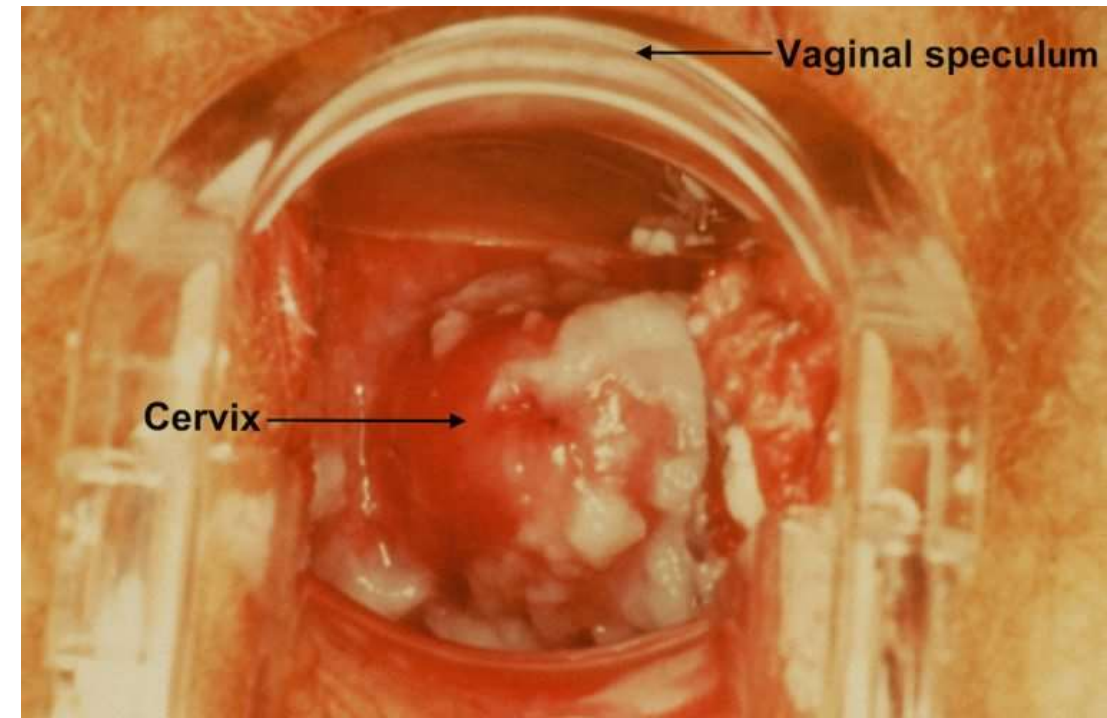
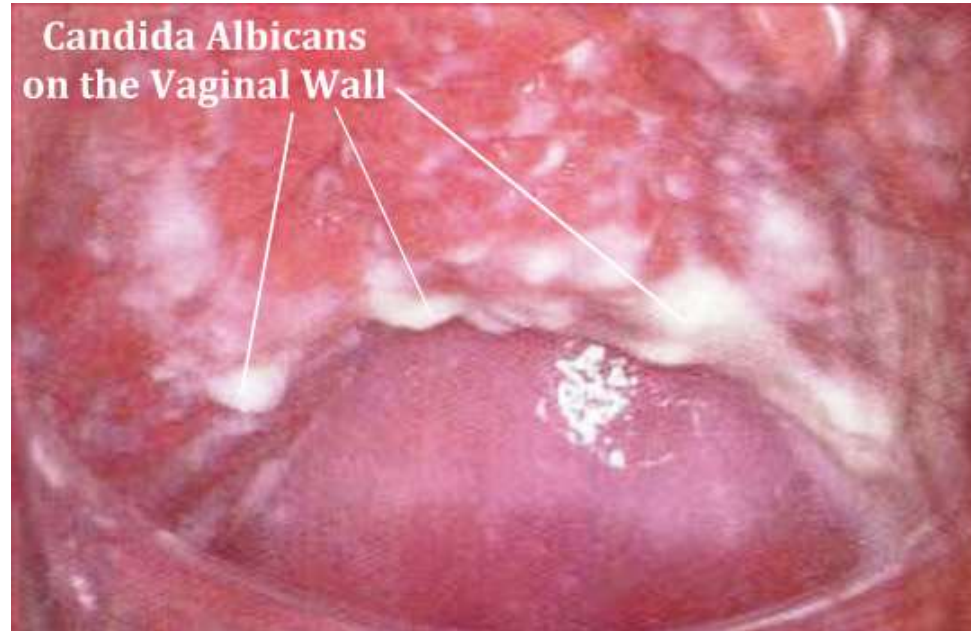
Is a common condition in women, often associated with the use of **broad-spectrum antibiotics**, the **3<sup>rd</sup> trimester of pregnancy**, **low vaginal pH** & **diabetes mellitus**.

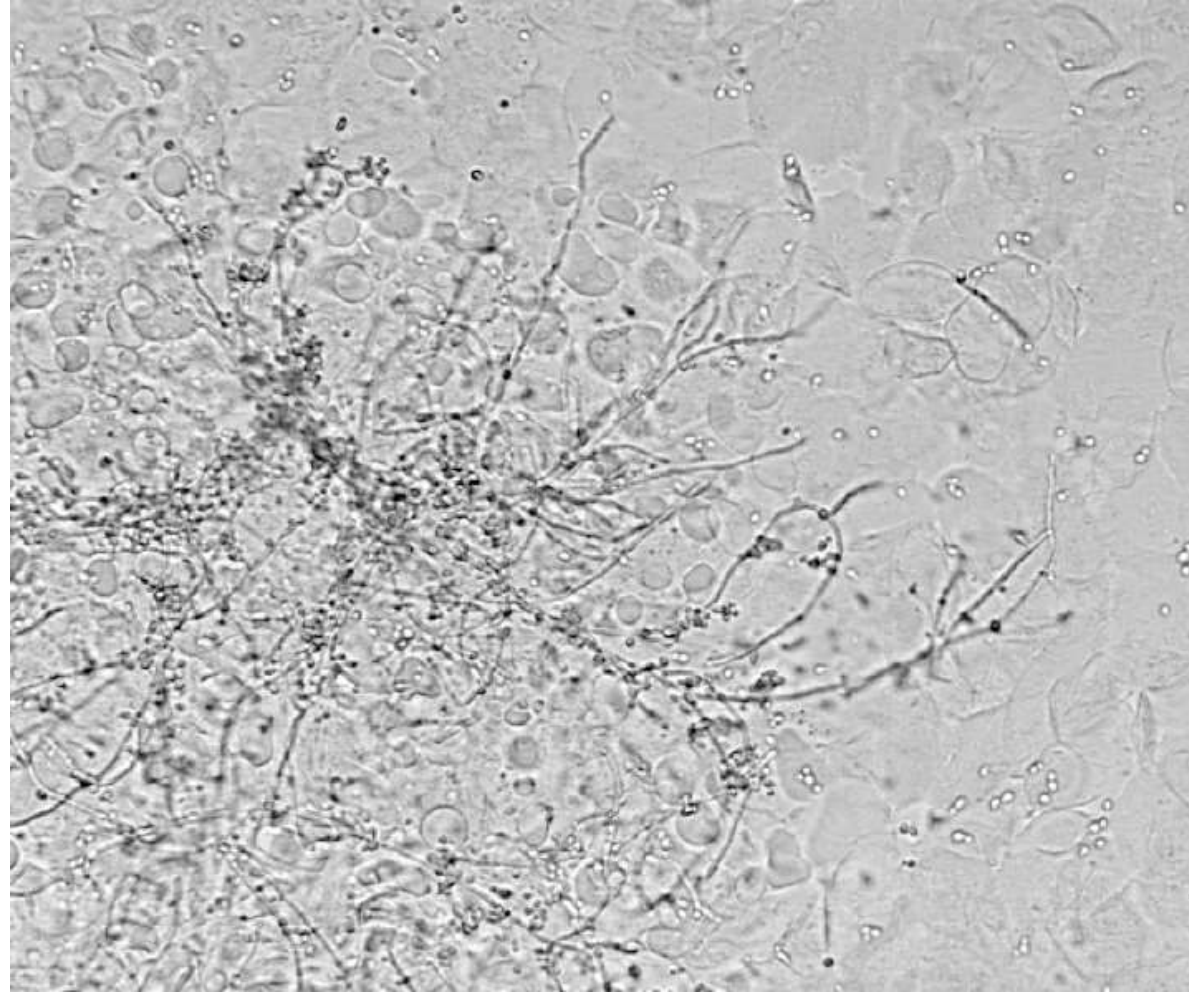
Sexual activity & oral contraception may also be contributing factors & infection may extend to include the perineum, the vulva & the entire inguinal area.

**Chronic refractory Vaginal Candidiasis**, associated with oral candidiasis, may also be a presentation of HIV infection or AIDS.

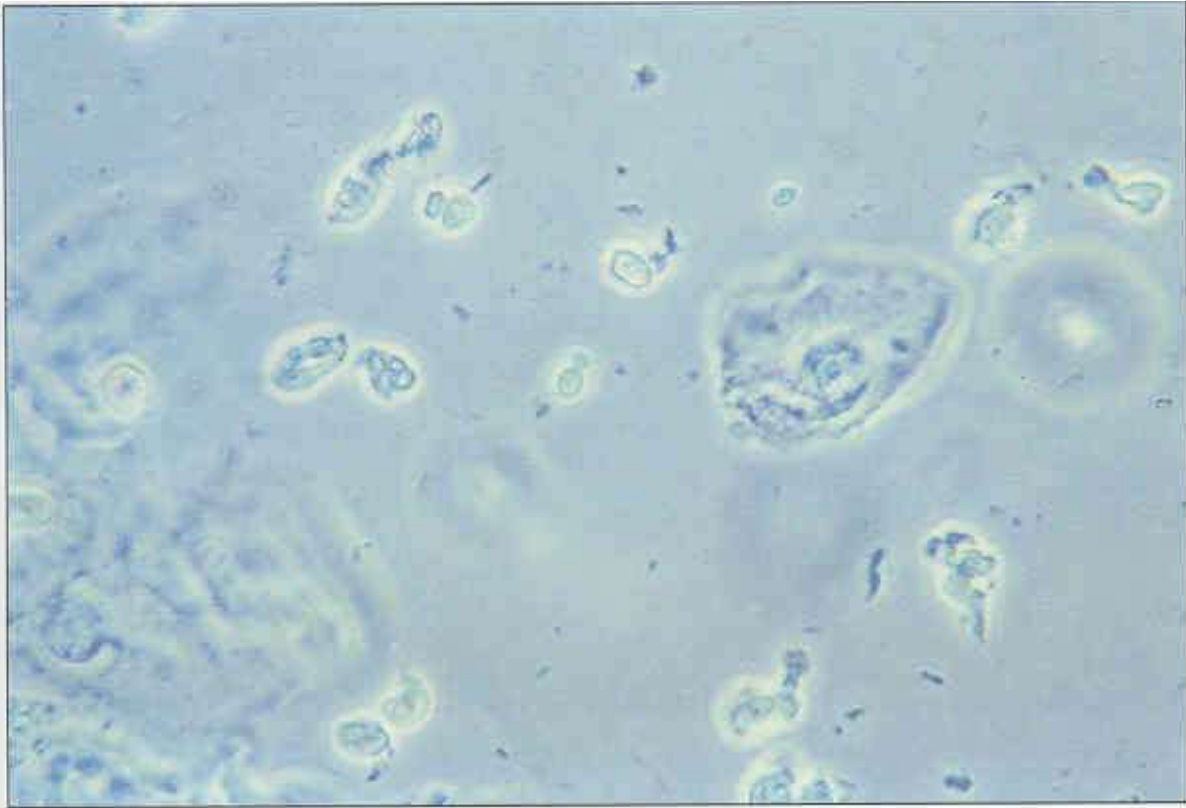
## Symptoms:

Intense vulval pruritus, burning, erythema & dyspareunia associated with creamy white, curd-like discharge.









**FIGURE 7-46** Phase microscopic examination (wet mount) of vaginal discharge in vulvovaginal candidiasis (VVC). Many patients with symptomatic VVC have small numbers of yeasts in the vaginal pool. The overall sensitivity of wet mount in the diagnosis of VVC may be as low as 50%, and thus, a negative wet mount does not rule out



**FIGURE 7-34** Curd-like, white, floccular discharge adherent to vaginal surface in a patient with *Candida* vaginitis. This discharge is easily removed by wiping.

# Balanitis

In cases of balanitis, **diabetes mellitus** should be excluded & the sexual partner should be investigated for **vulvovaginitis**.

Symptoms:

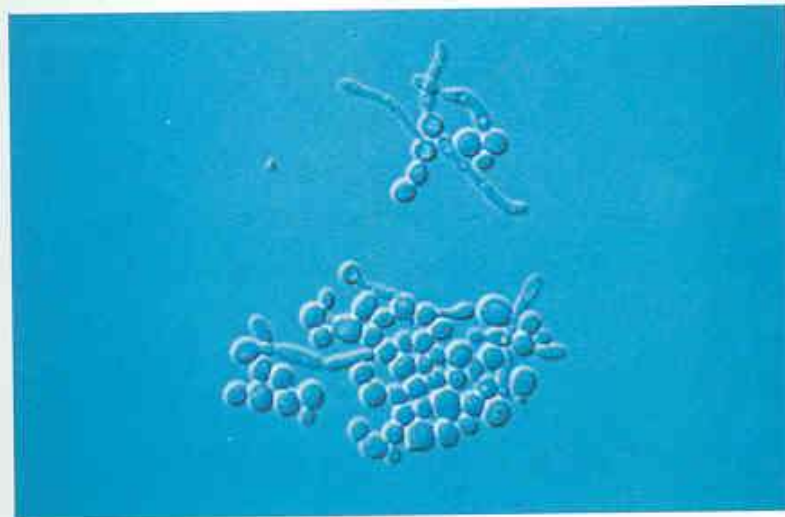
Erythema, pruritus, & tiny papules, pustules, vesicles, vesiculopustules or persistent ulcerations on the glans penis or prepuce.

Uncircumcised men, and poor hygiene





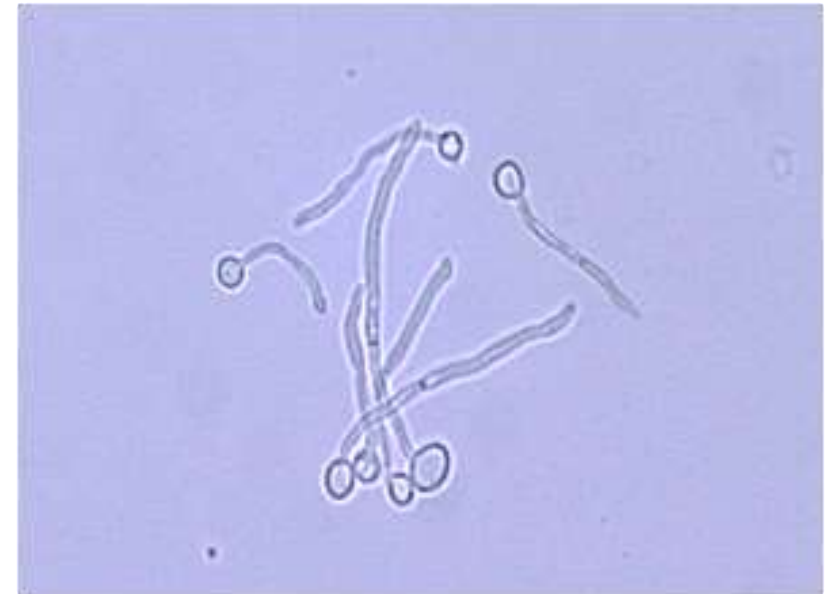
a



b

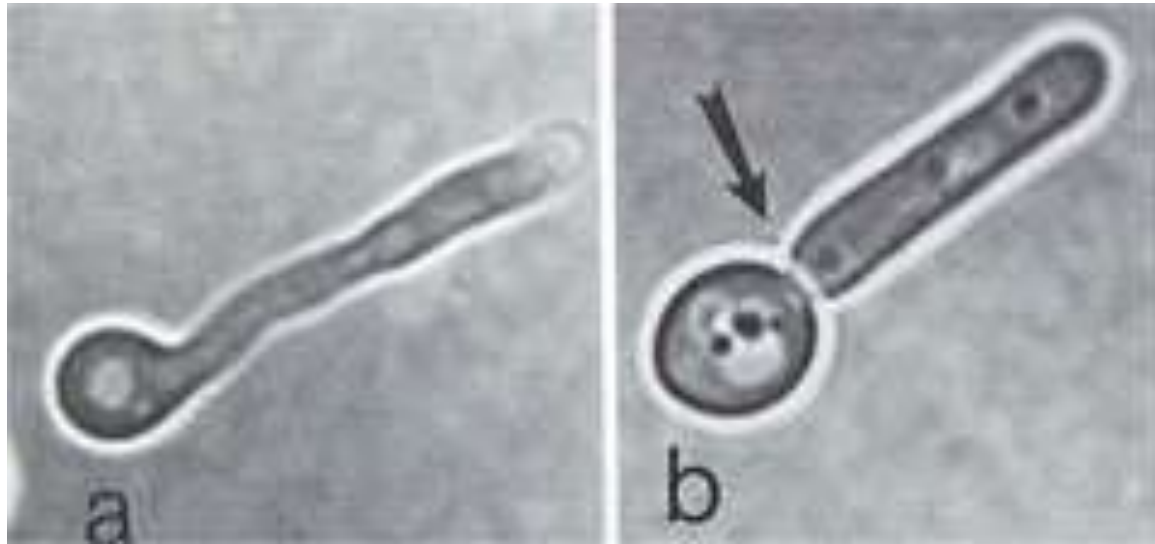
### Figure 1.12

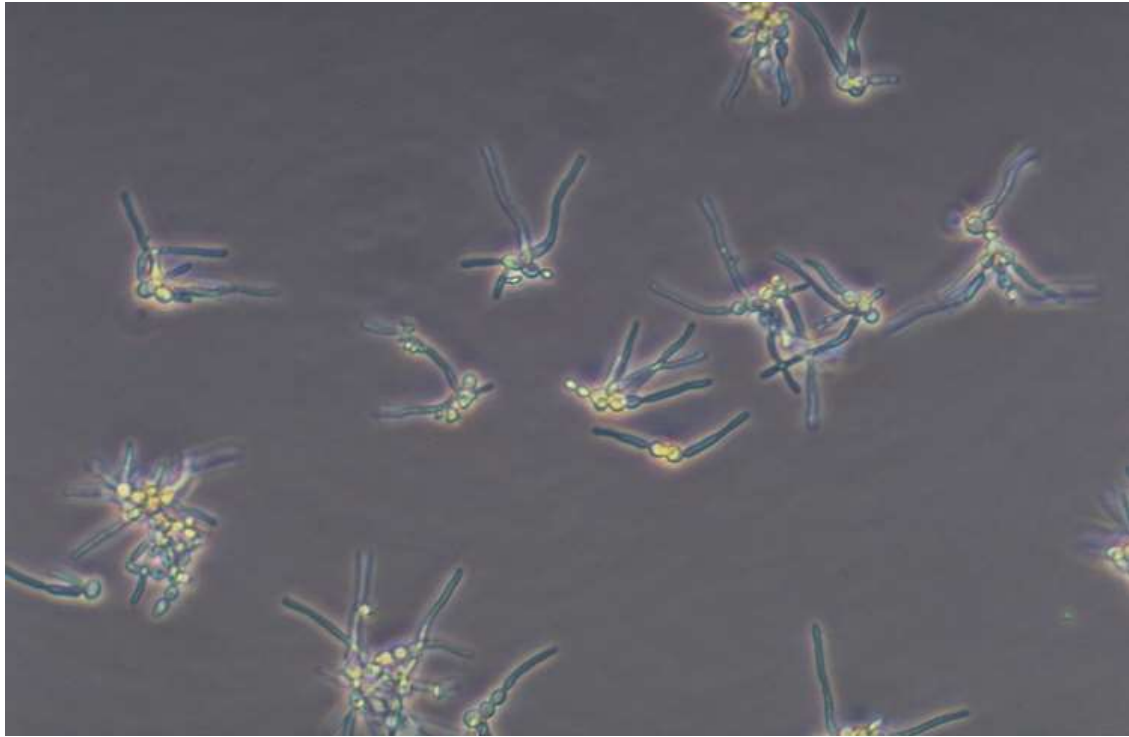
(a) A culture of *C. albicans* on Sabouraud's dextrose agar showing typical cream-coloured, smooth-surfaced waxy colonies. (b) The microscopic morphology of *C. albicans* showing budding spherical to ovoid blastoconidia.



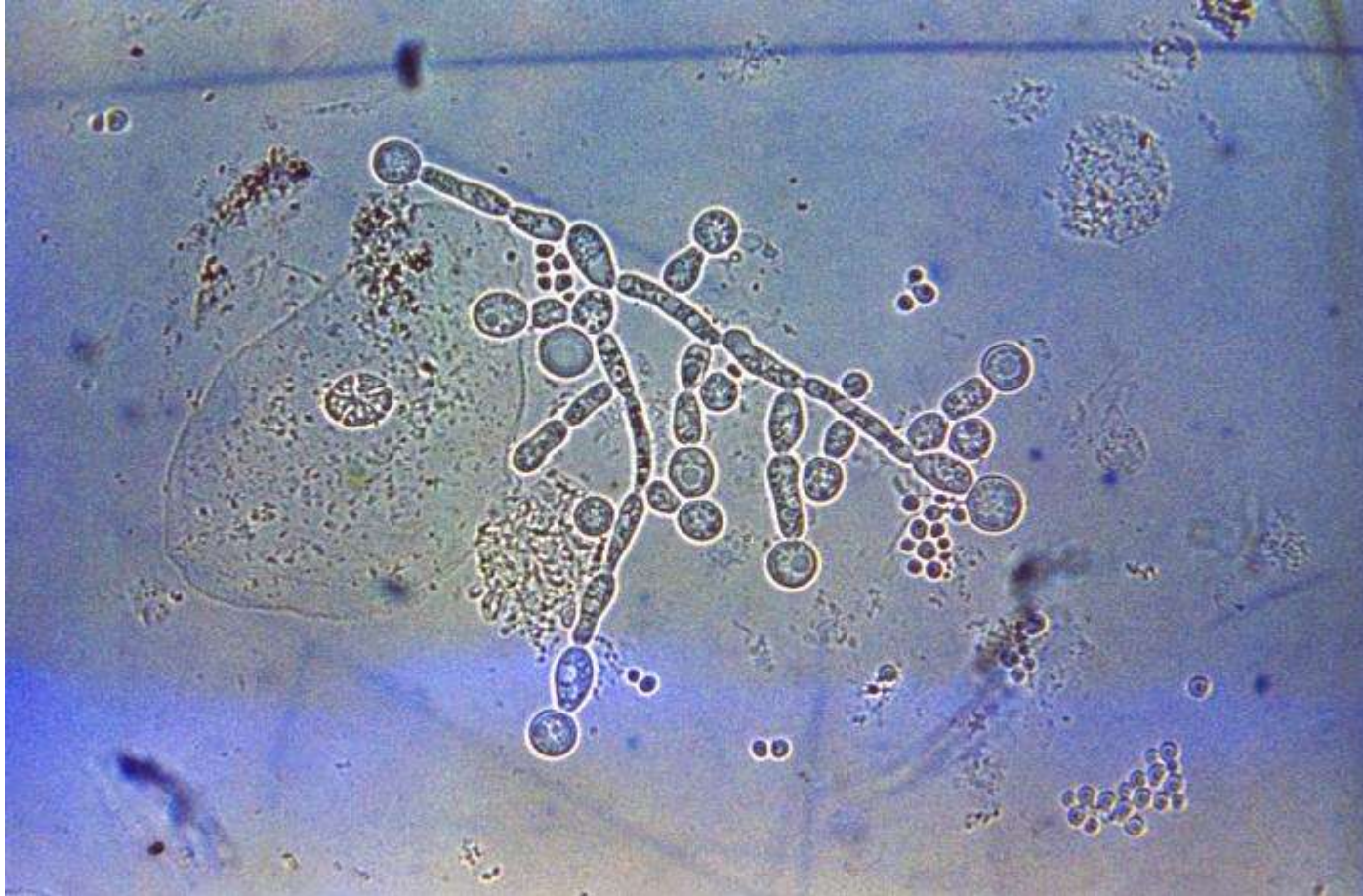


germ tube vs pseudohyphae



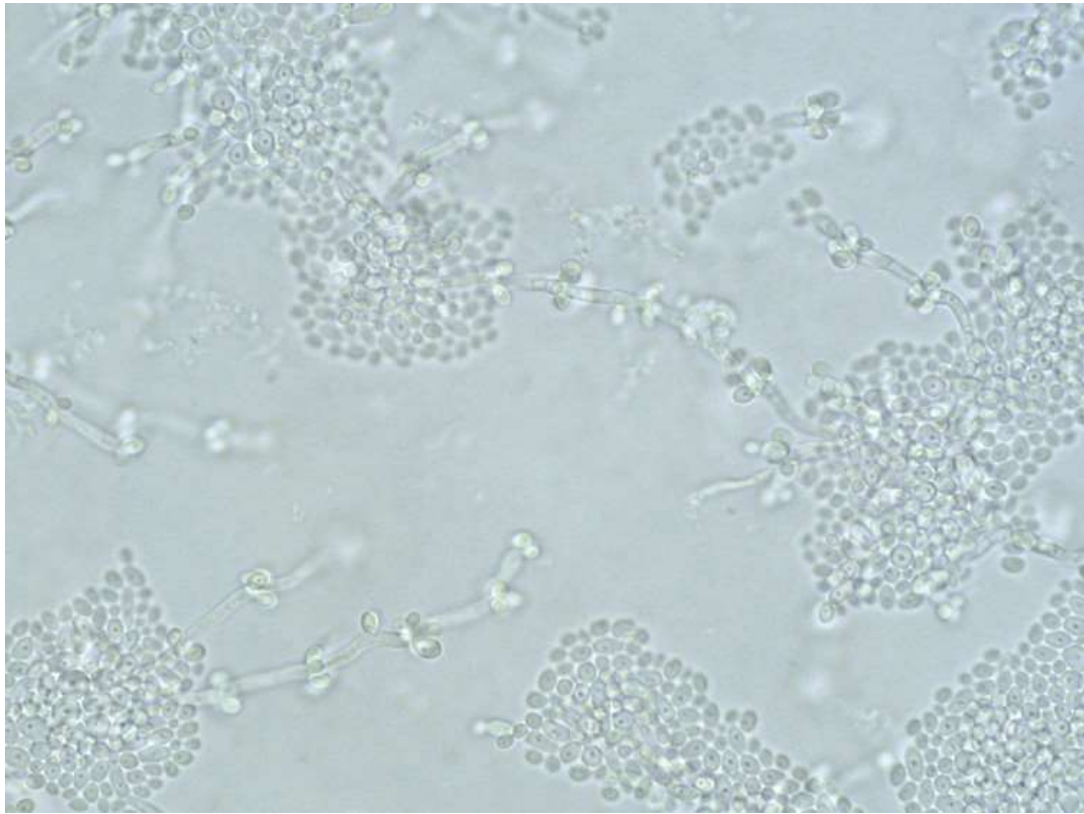


invasive pulmonary candidiasis in sputum





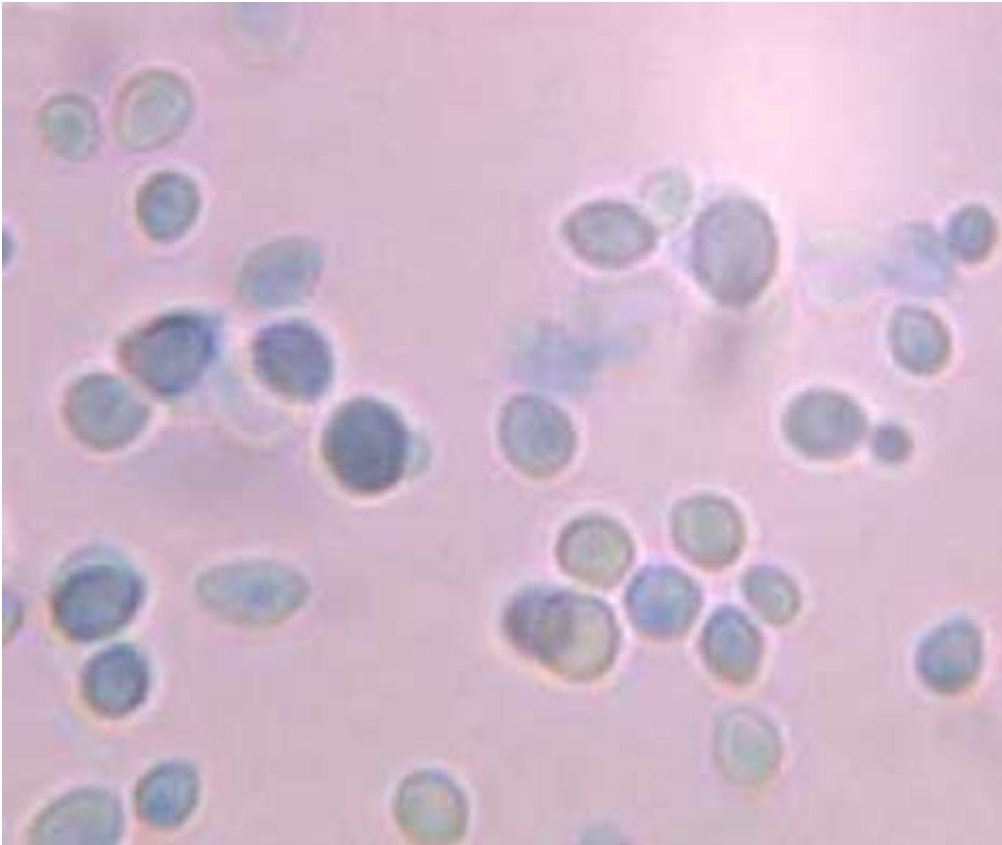
**C. luzitaniae**



**C. luzitaniae**



**C. dubliniensis**



**C. dubliniensis**



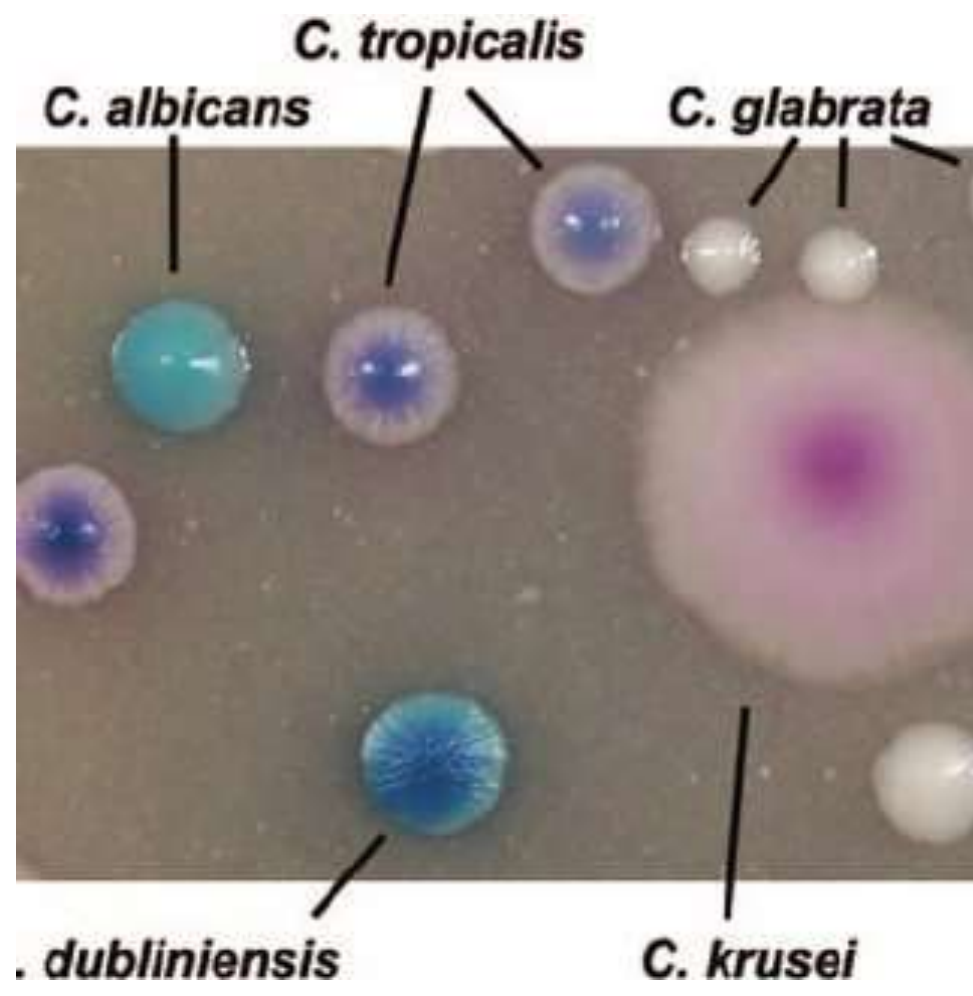
**Smooth colony of *Candida albicans*,  
with on top wrinkled *Candida albicans***

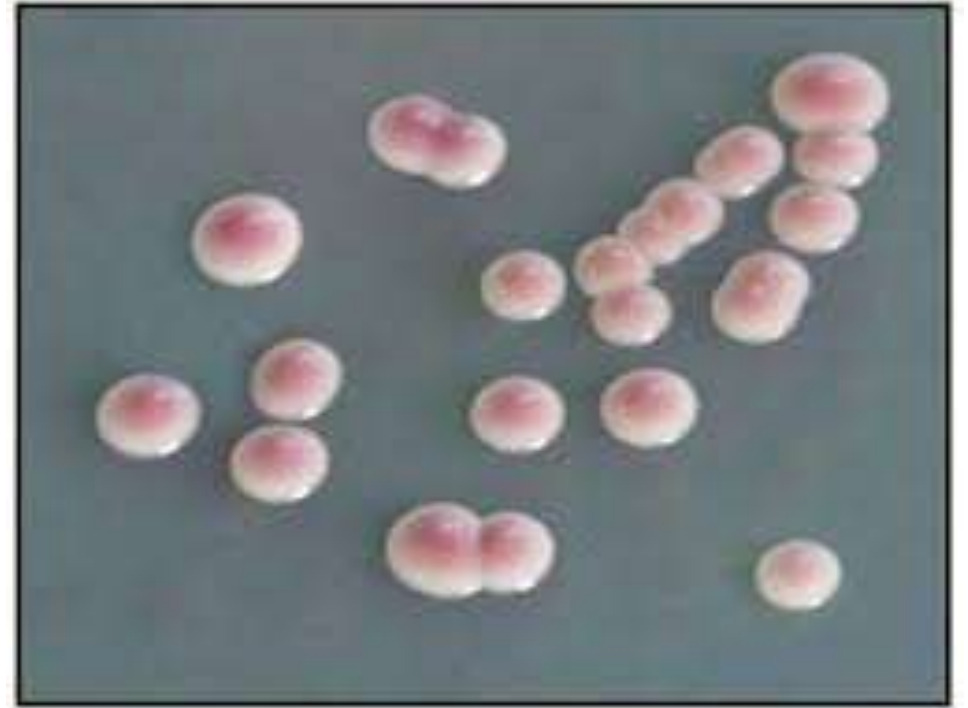


**C. albicans**







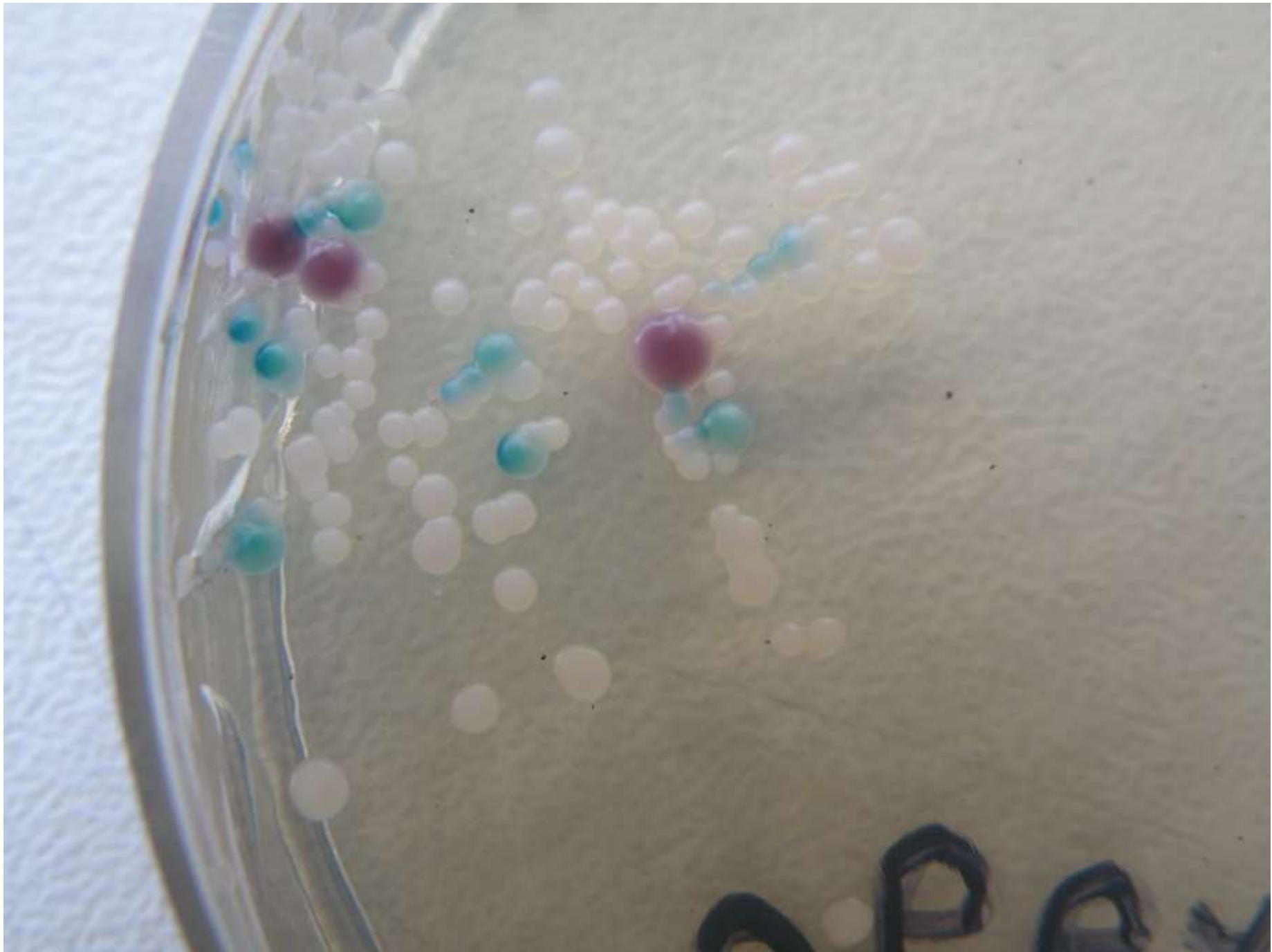


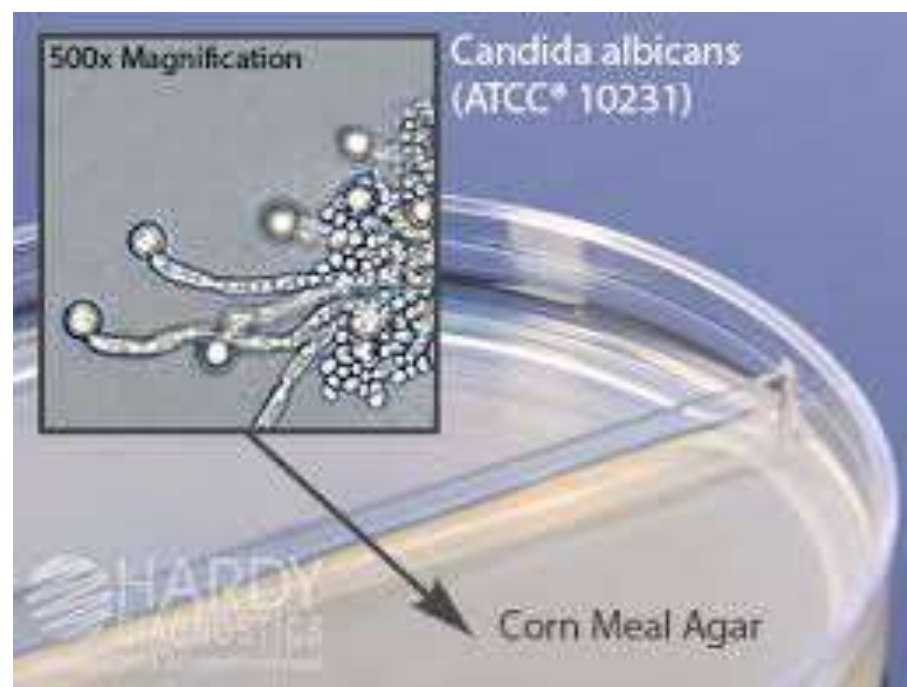
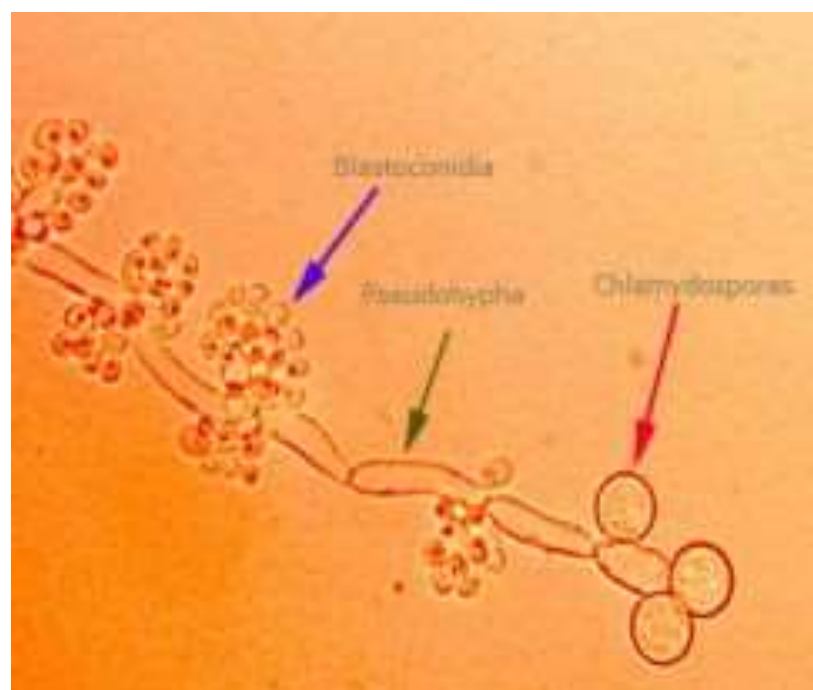


*Candida albicans*

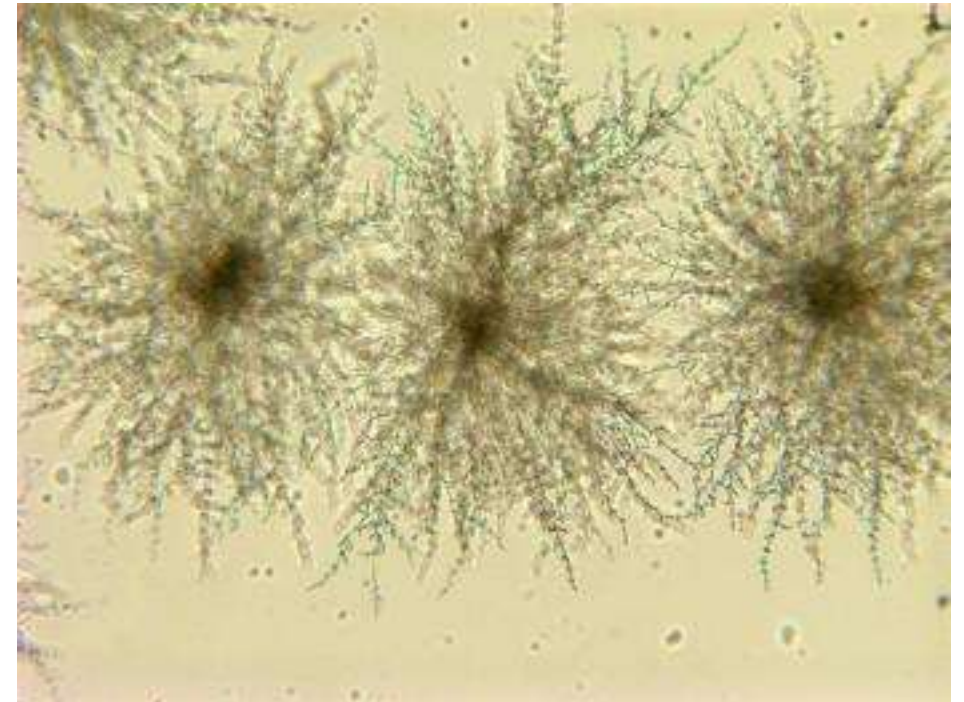
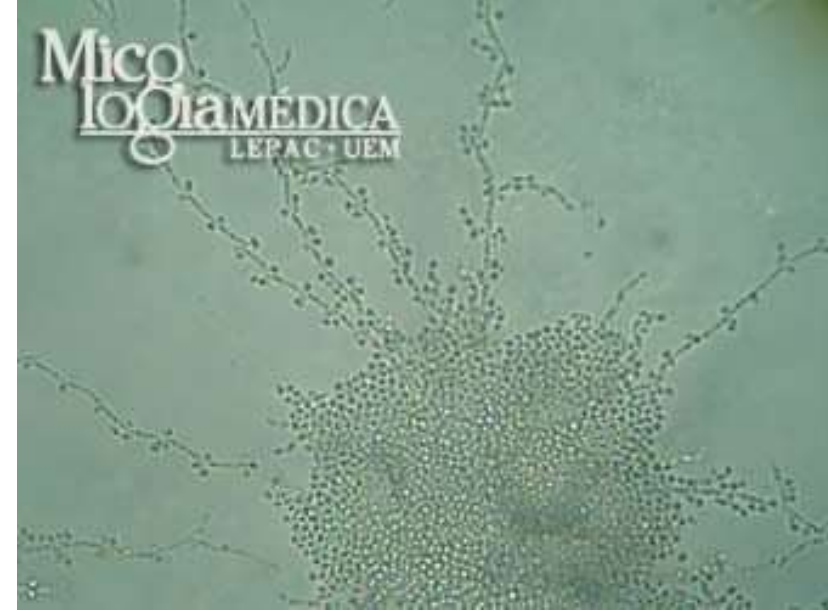
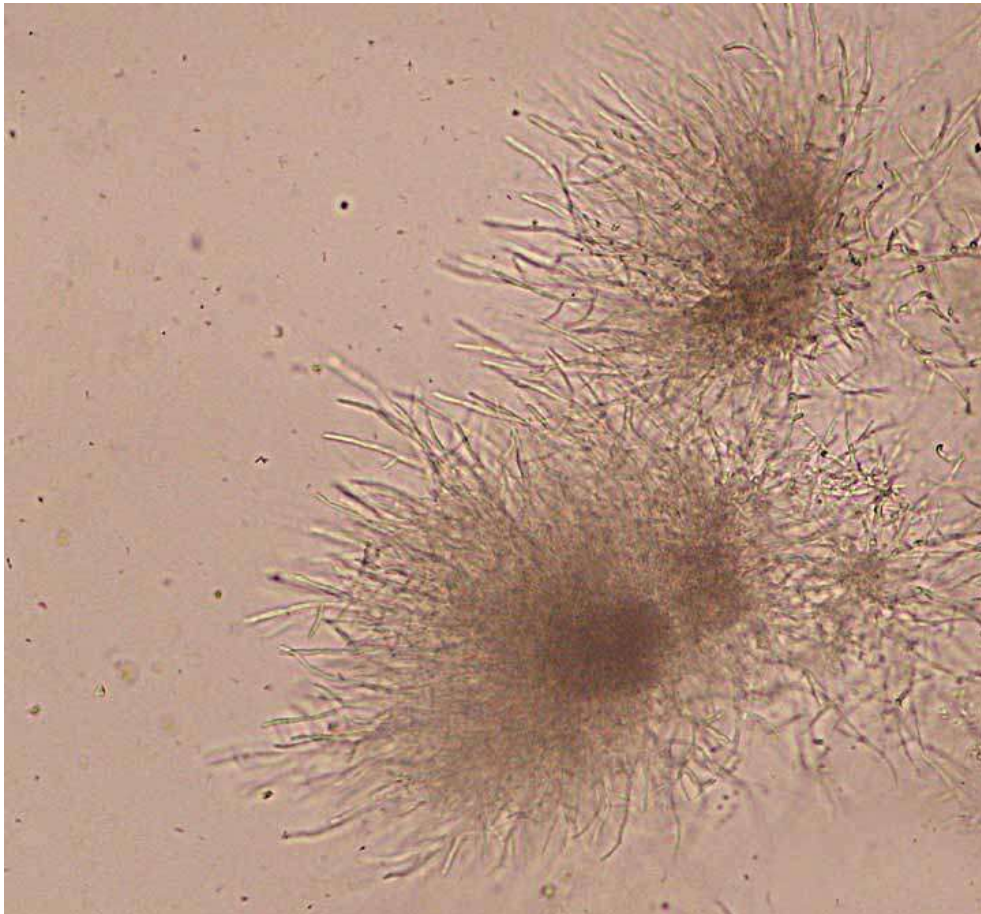
*Candida parapsilosis*



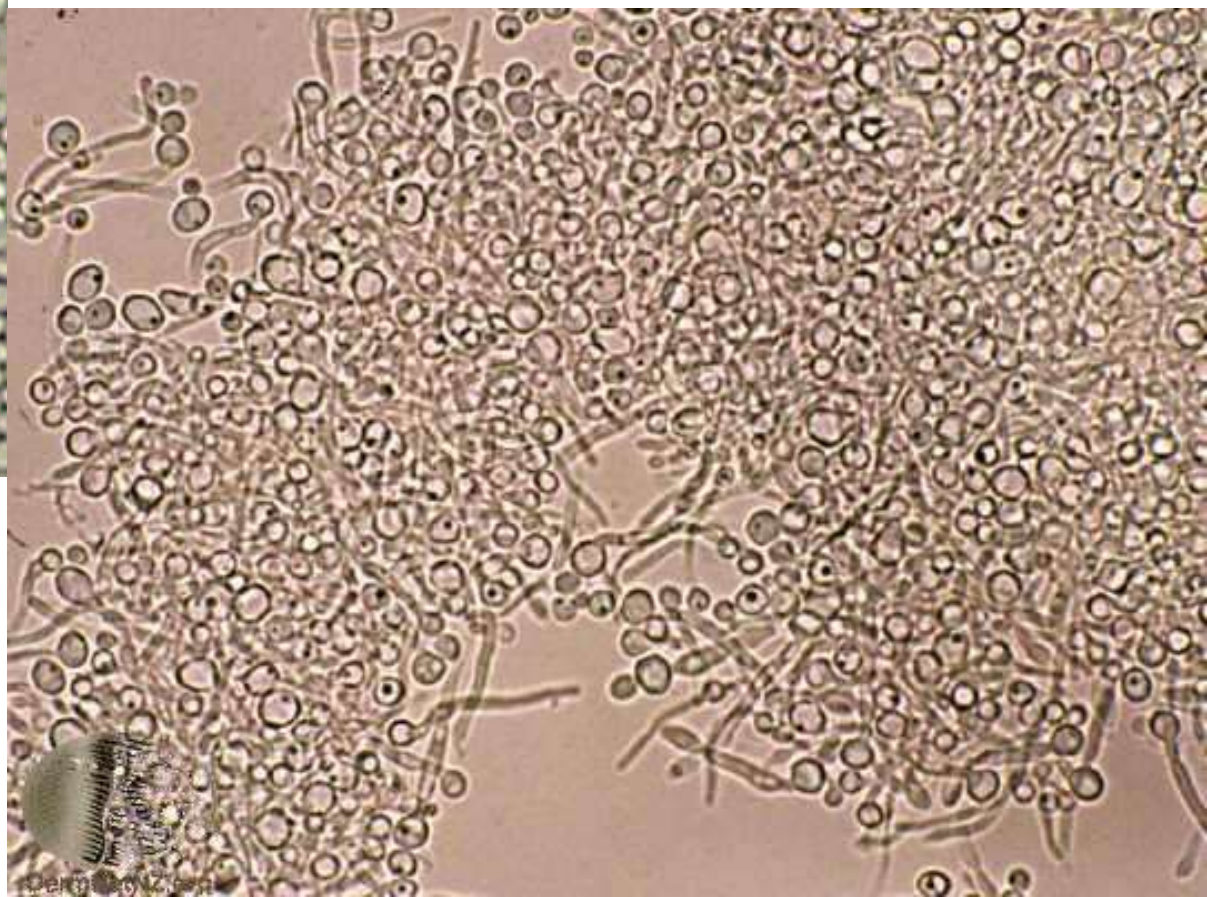




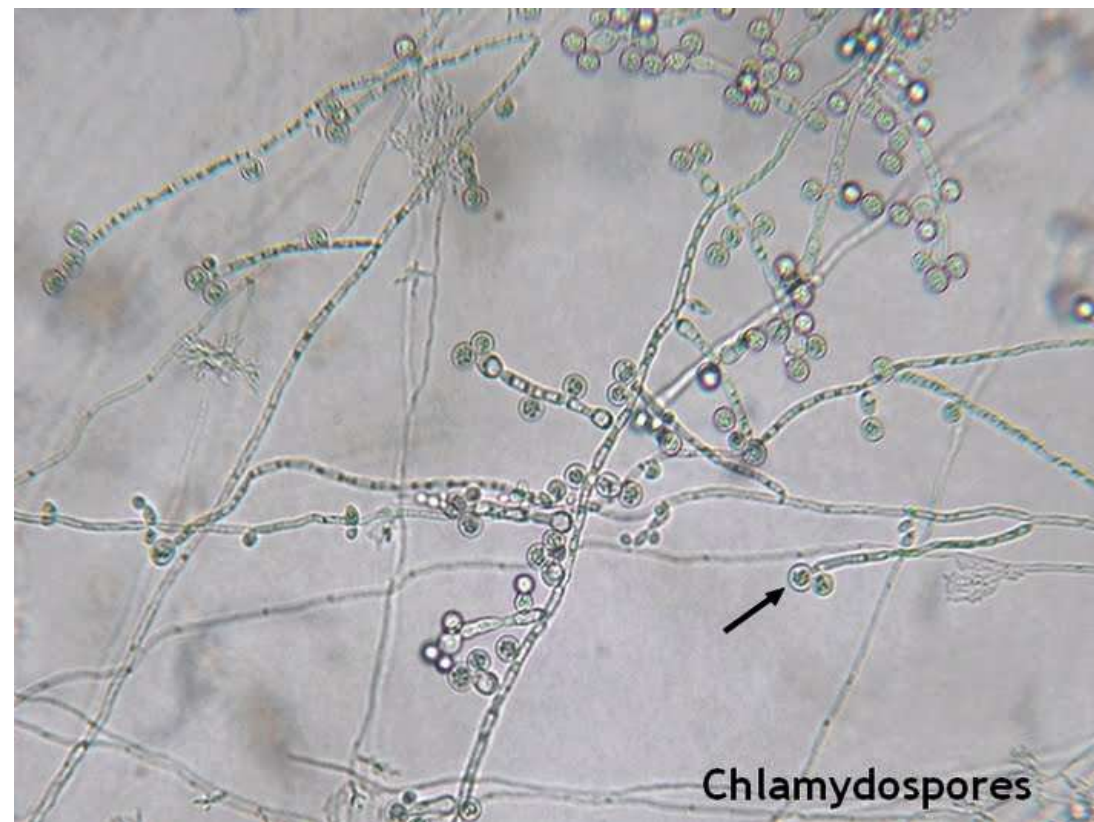
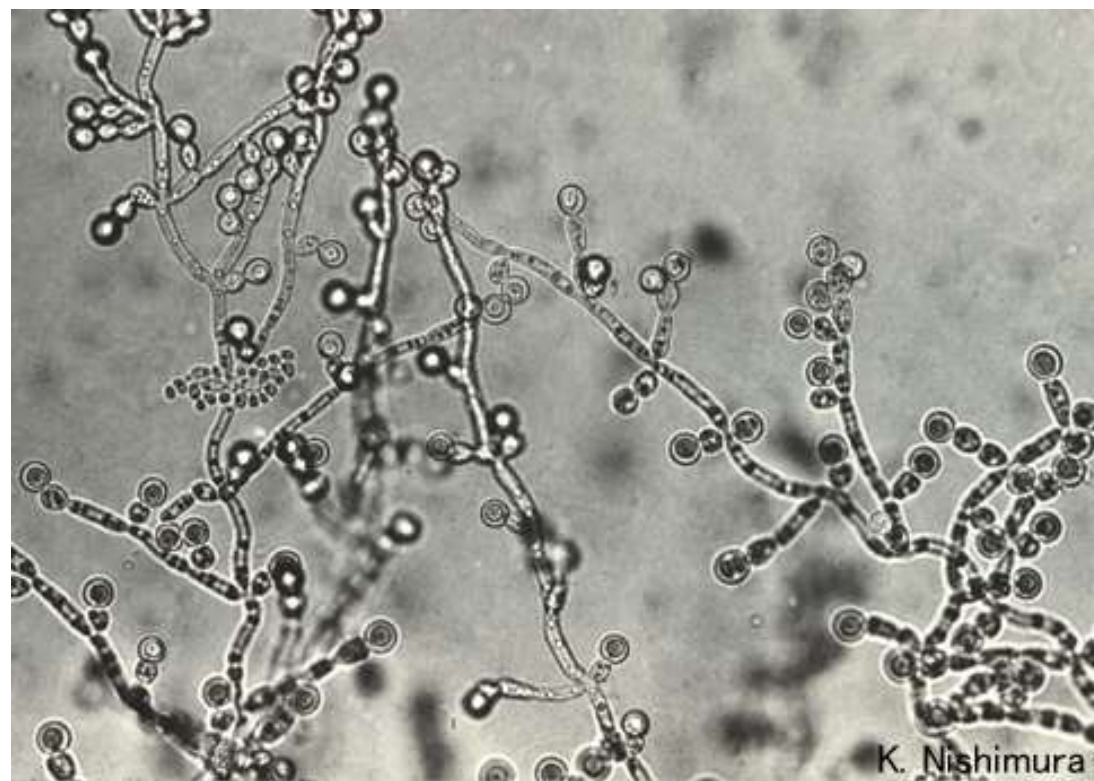
Candida parapsilosis Spider appearance



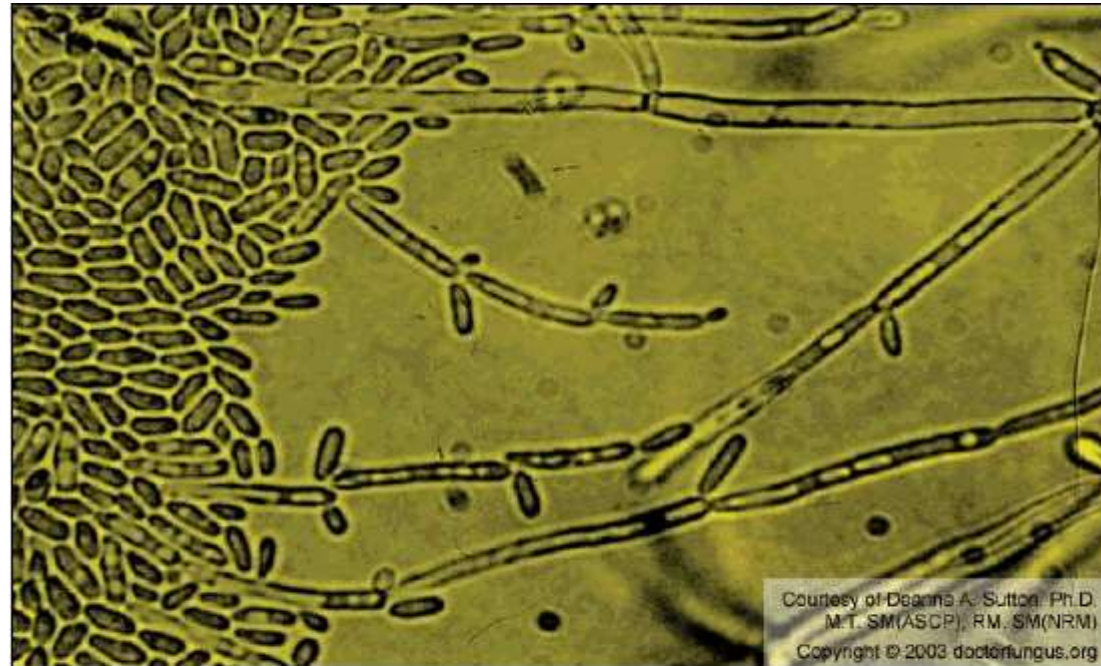








## C. krusei

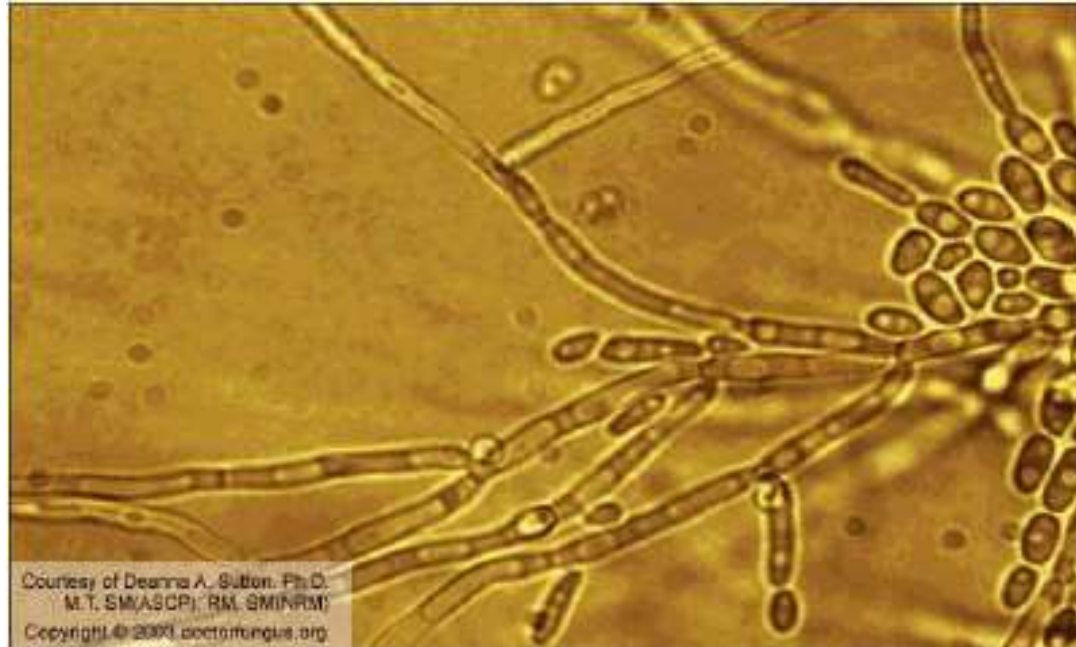


Genus: *Candida*  
Species: *krusei*  
Disease(s): Candidiasis  
Image Type: Microscopic Morphology  
Title: Growth on Corn Meal agar  
Image Legend: Branched pseudohyphae with elongated blastoconidia.

Color enhanced.



## C. tropicalis



Courtesy of Deanna A. Sutton, Ph.D.  
M.T. SM(ASCP), RM, SMINRM  
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Genus: *Candida*

Species: *tropicalis*

Disease(s): Candidiasis

Image Type: Microscopic Morphology

Title: Growth on Corn Meal agar

Image Legend: Multibranched pseudohyphae with blastoconidia formed singly or in chains along the pseudohyphae.  
Color enhanced.