

# (Fungi)

## Objectives:

- ❖ To describe the general characteristics of fungi and recognize a fungus from all other living organisms
- ❖ To establish familiarity with the terminology needed by medical students
- ❖ To know certain fundamental facts about classification reproduction and identification of fungi

Color index

**\*Important**

**\*Further explanations**

**\*Examples**



# LECTURE TEN

## What is Mycology?

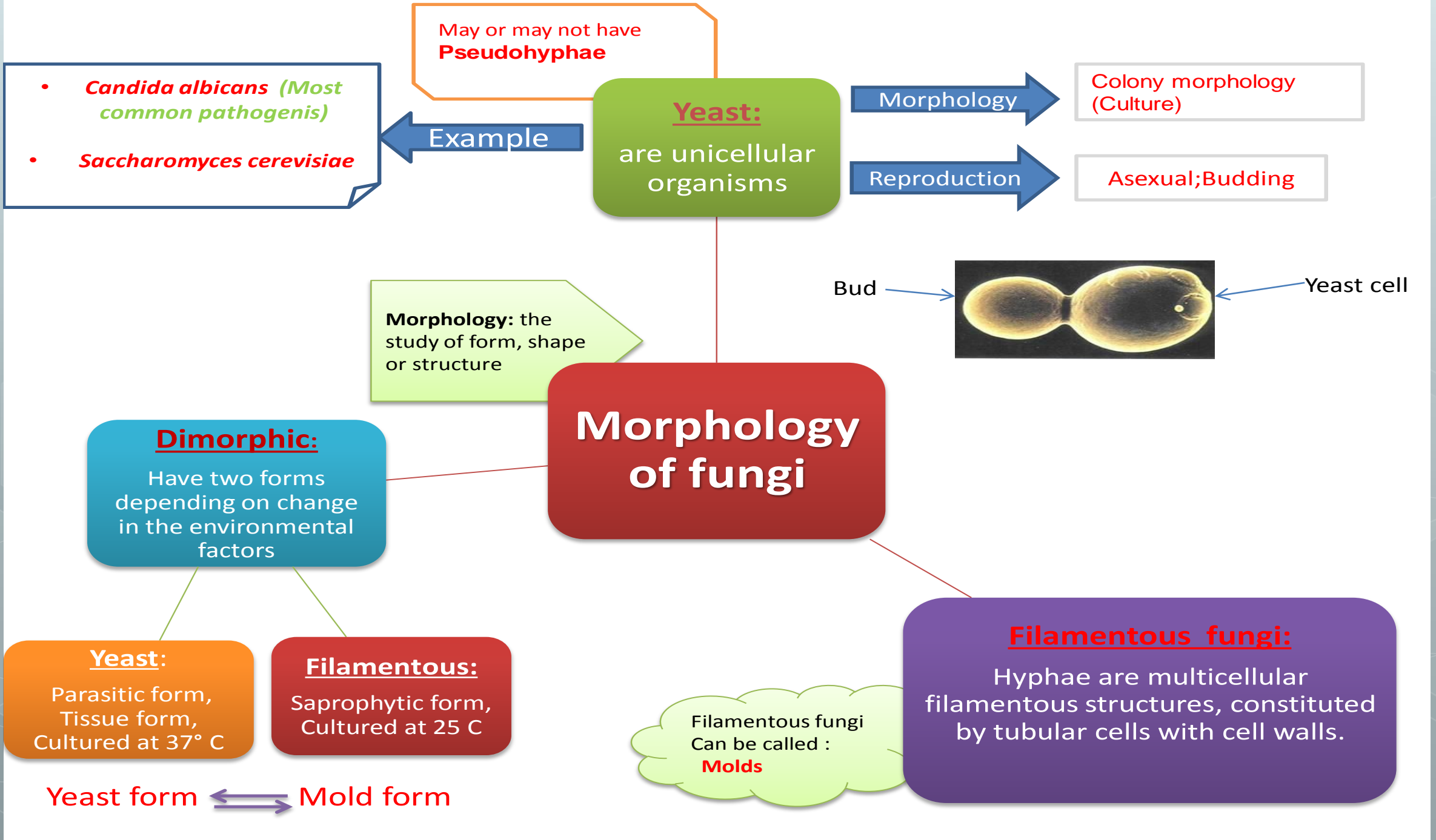
- **Mycology**: is the study of fungi .  
(Kingdom myceteae=kingdom fungi )
- **Medical mycology** : Study of medically important fungi and the mycotic diseases.
- **Mycoses**: A disease caused by a fungus

## What is a Fungus ?

- 1) **All Eukaryotic organisms** (a true nucleus)
- 2) **Heterotrophic** (Saprobic, symbiotic, parasitic)
- 3) **Do not have chlorophyll** (Achlorophyllous)
- 4) **The cell is surrounded by rigid cell wall made of chitin and complex carbohydrates** (Mannan, glucan)
- 5) **Cell membrane**: (sterol, ergosterol)

## Characteristics of fungi:

- **Saprobic**: feed on dead tissues or organic waste (decomposers).
- **Symbiotic**: mutually beneficial relationship between a fungus and another organism.
- **Parasitic**: feeding on living tissue of a host. (disease)

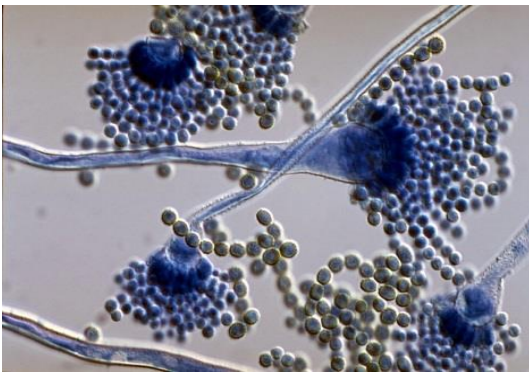


## FILAMENTOUS FUNGI:

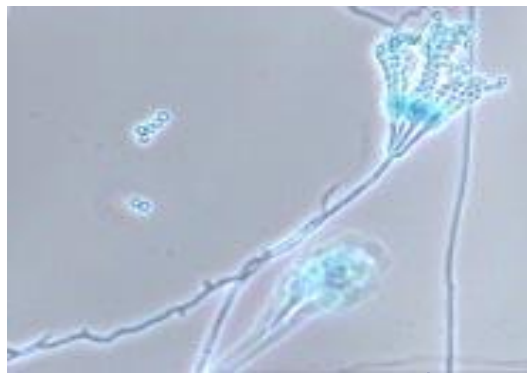
(Mold=Mould)

- **A hypha:** (**plural hyphae**) is a long, branching filamentous cell. hyphae are the main mode of vegetative growth.
- **Mycelium:** The intertwined mass of hyphae that forms the fungal colony.
- **Conidia / Spore:** asexual spores borne externally on hyphae or on a conidiophore.

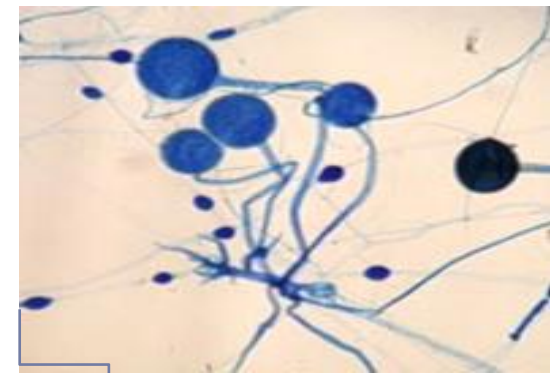
### Examples:



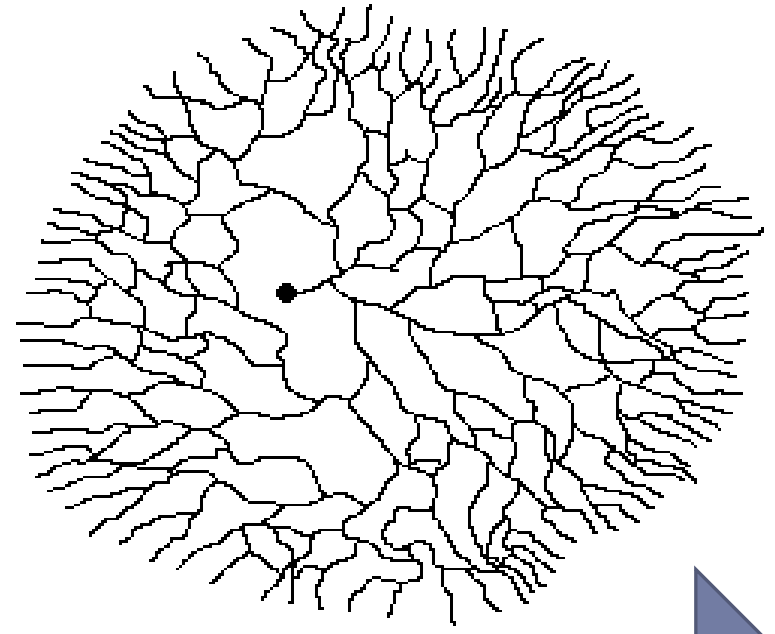
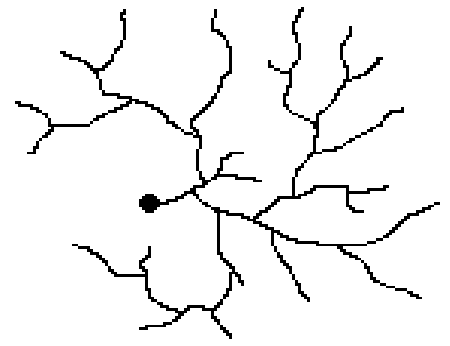
**Aspergillus** (Second most common pathogenesis )



**Penicillium**



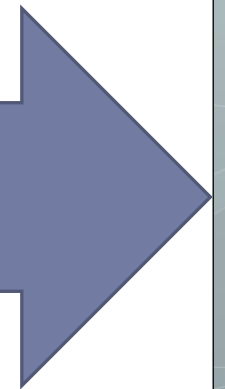
**Rhizopus** (Found in bread)



Spore/ conidia

Hyphal

mycelium



# FILAMENTOUS FUNGI

## Hypha might be :

- **Septate hypha:** Cross-walls (**septa**) that divide hyphae into segments.
- **non-septate:** there are no cross-walls

## Moniliaceous molds :

### Pigment of hypha might be:

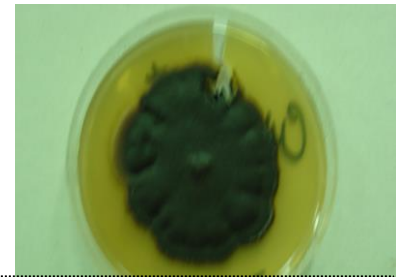
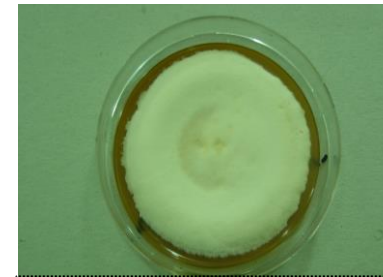
- Hyaline
- lightly pigmented conidia or *hyphae*
- Colorless



Septate hypha



non-septate



Moniliaceous molds

## SPORES :

- These are the small airborne particles by which fungi reproduce.
- They are produced by mitosis and readily disseminate in the air.

## Reproduction in Fungi:

- **Asexual** : Only **mitotic** cell division
  - 1) **Somatic** by *hyphal fragmentation*
  - 2) **Spore formation**
- **Sexual**: Fusion, mitosis, meiosis.

## Pathogenicity of Fungi : Not all fungi are pathogenic

### Fungi can cause diseases to humans:

- *Cause superficial infections,*
- *some can cause allergic reactions*
- *Few cause invasive infections*

### To cause the disease:

- *Thermotolerance*
- *Ability to survive in tissue environment*
- *Ability to withstand host defenses*

# MCQ'S

**Q1. Which of these is NOT correct about Yest:**

- a) Reproduce by budding.
- b) *Saccharomyces cerevisiae* is an example.
- c) May have Pseudohyphae.
- d) Multi-Cellular.

**Q2. Filamentous fungi are called:**

- a) Pseudohyphae.
- b) Molds.
- c) Dimorphic.
- d) Mycelium.

**Q3. Fungi can Cause superficial infections to humans:**

- a) True
- b) False

**Q4. Cross walls only occurs in non Septate hypha:**

- a) True
- b) False

<http://quizlet.com/>



Done by:

-ظاهرة الجهني  
-الجوهرة الدهش  
-روى العوهلي  
-نوف المسعود  
-ريما الحماد  
-ريما هزازي  
-آيه الدايل  
-حنان خشيم  
-منال الحمدان  
-وجدا الهذلان  
-الجوهرة العمران  
-أمل أفراح  
-الهنوف المهنا

-عبد العزيز المانع  
-ناصر القحطاني  
-محمد الرويتع  
-أسامة عبدالقادر  
-فراس السويداء  
-عبدالعزیز النوييت  
-سعيد الناصر  
-يزيد السعدان  
-خليل الهنداس

Q1: d

Q2: b

Q3: a

Q4: b