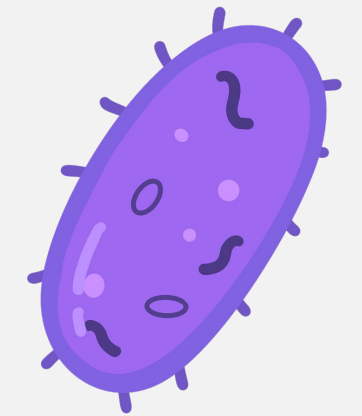
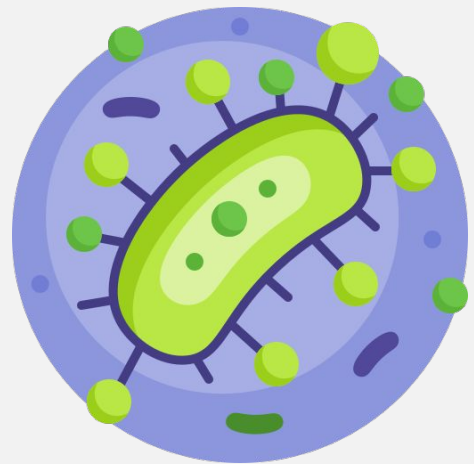


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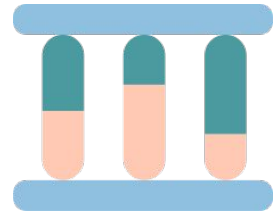
# Fungi and Their pathogenesis



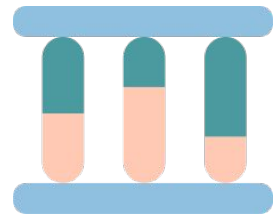
index:

- Main text.
- **Important.**
- In boys slides only.
- In girls slides only.
- Doctors notes.
- Extra info.

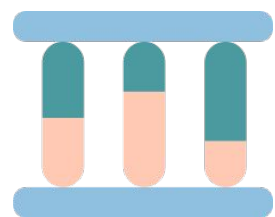
# OBJECTIVES



To describe the general characteristics of fungi and recognize a fungus from all other living organisms.



To establish familiarity with terminology needed by medical students.



To know certain fundamental facts about classification reproduction and identification of fungi

# What is mycology ?

## Definition

**Mycology:** Study of fungi Kingdom myceteae (Kingdom fungi)

**Medical mycology:** Study of medically important fungi & the mycotic diseases

**Mycoses:** A disease caused by a fungus

There are five kingdoms

Kingdom	Characteristic	Example
Monera	Prokaryocyte	Bacteria: Actinomyces
Protista	Eukaryocyte	Protozoa
<b>Fungi</b>	Eukaryocyte	<b>Fungi</b>
Plantae	Eukaryocyte	Plants, Moss
Animalia	Eukaryocyte	Arthropods Mammals Man

# Characteristics of fungi

1	All Eukaryotic organisms ( a true nucleus)
2	Heterotrophic (Saprobic , symbiotic, parasitic) heterotrophic means that they can not make their own food
3	Do not have chlorophyll ( Achlorophyllous) Autotrophic: for plants(النباتات تحتوي على الصبغة الخضراء هي الكلوروفيل)
4	The cell is surrounded by rigid cell wall made of chitin & complex Carbohydrates( Mannan,glucan)
5	Cell membrane :(sterol , ergosterol)

Doctor's Note:  
When we diagnose someone and we found that the level of (Mannan/glucan) are high, that's mean that the person has an fungi infection  
Thanks to ziyad alsuwilem from med 443

## Distinguishing feature

### 1- Saprobic (very good in cleaning environment)

feed on dead tissue or organic waste (**decomposers**)(They live in soil)

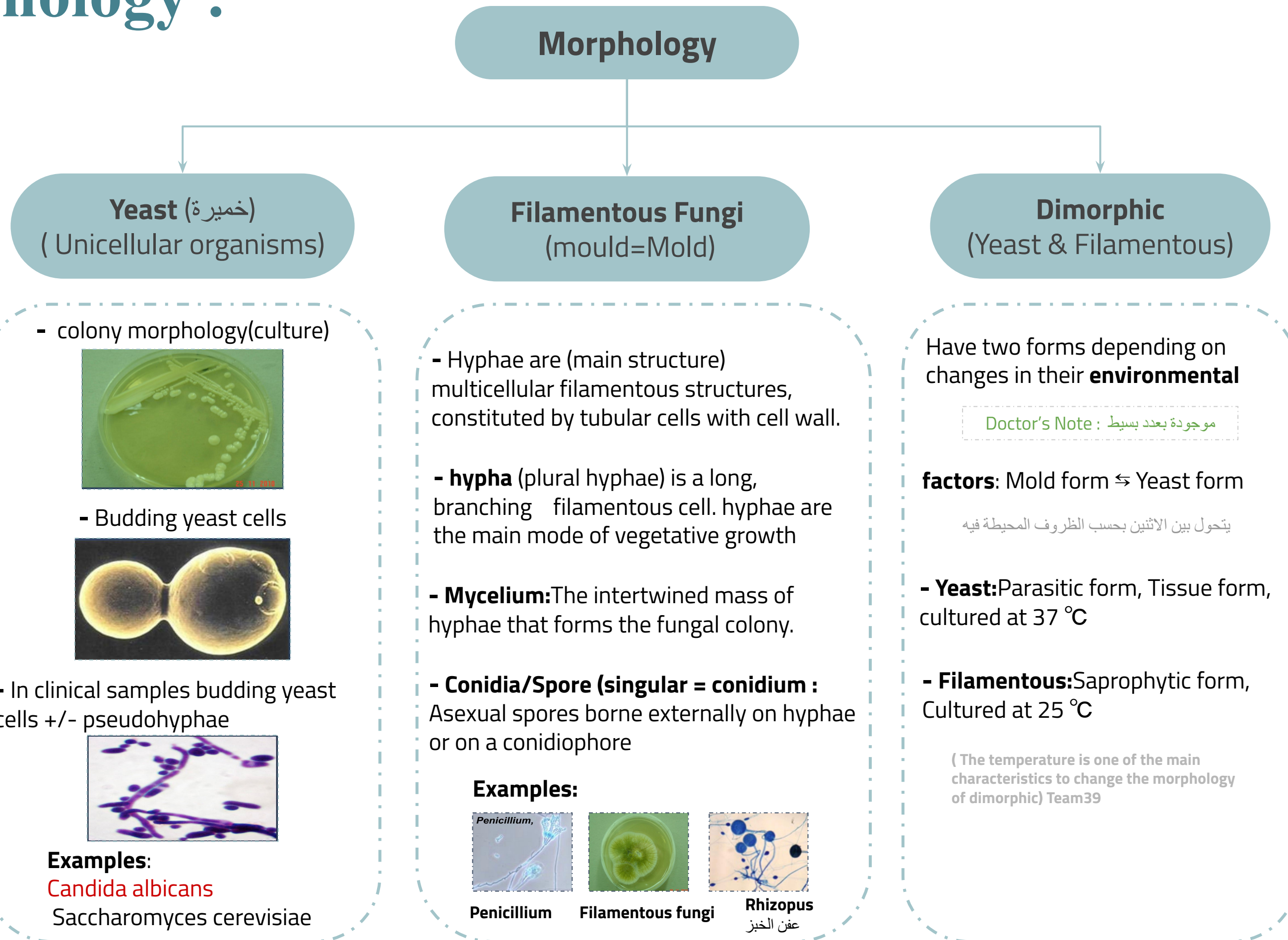
### 2-Symbiotic (علاقة تكافلية)

mutually beneficial relationship between a fungus and an another organism.(without causing harm to each other)

### 3-Parasitic (تطفلية)

feeding on living tissue of a host .(disease)(They cause harm to the host)

# Morphology :



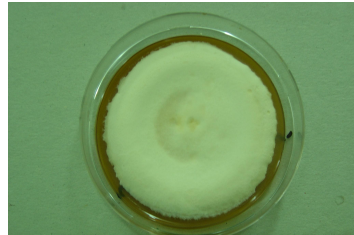
-some yeast cells produce pseudohyphae, they look like filamentous but they aren't  
-Pseudohyphae is a bud but it failed to separate/detach  
(Team439)

# Filamentous fungi

## Filamentous fungi

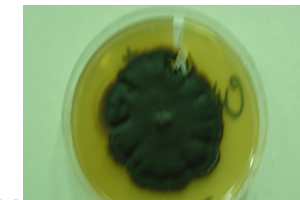
### Moniliaceous mold

Hyaline or lightly pigmented conidia or hyphae, colorless.



### Dematiaceous mold

Pigmented, and because of the pigment, the colonies appear dark, brown or black.



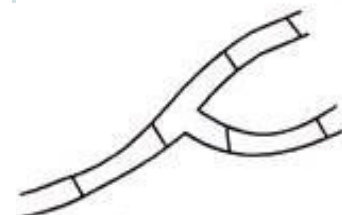
### Septa

Cross-walls that divide hyphae into segments (**Septate Hypha**).

If there are no cross walls, the hyphae are considered to be (**Non-septate Hypha**).



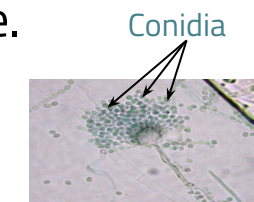
Non-Septate Hypha



Septate Hypha

### Conidia/Spore (singular = conidium)

Asexual spores borne externally on hyphae or on a conidiophore.



#### Doctor's Note:

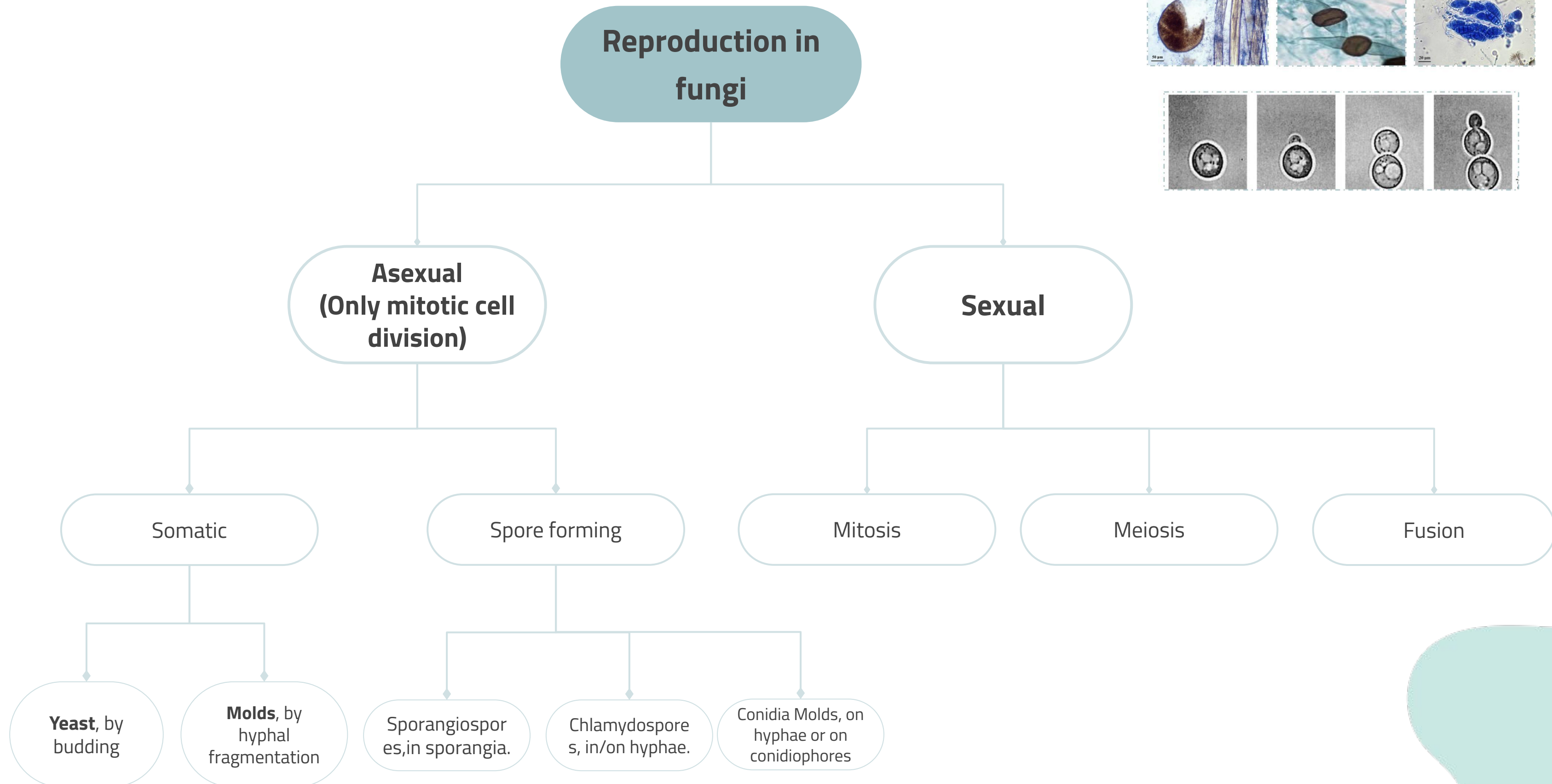
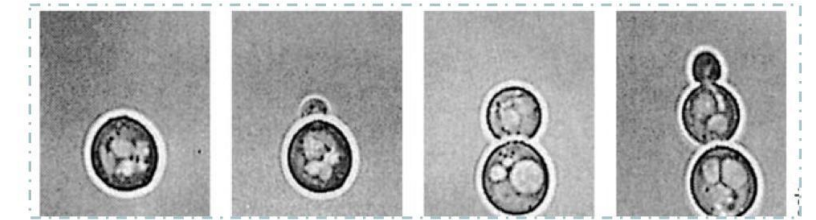
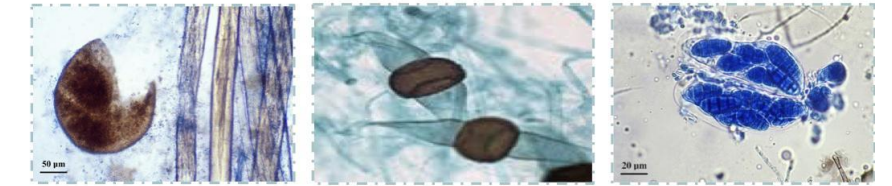
Knowing the types of hyphae helps us to know the best medicine for treatment

Note: Different filamentous fungi have different culture colors, whereas yeast usually has a white creamy color.

Dr. Note:  
this question may  
comes in exam

# Reproduction in Fungi

You don't have to know any pictures of any bacteria or fungi for the MCQs



# Spores

## Spores

Small airborne particles by which fungi reproduce

They are produced by mitosis and readily disseminate in the air

Note: It is difficult to identify yeast by its morphology only, so a chemical test is usually done. But **filamentous fungi can be easily identified according to its morphology**, so it is rare that a chemical test is required.

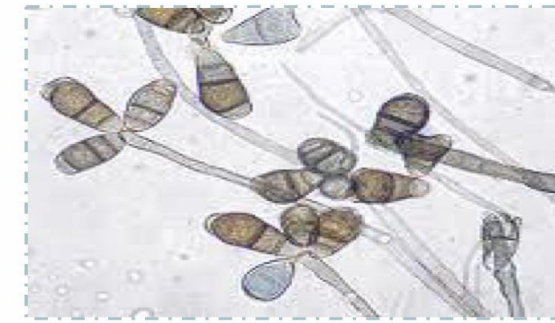
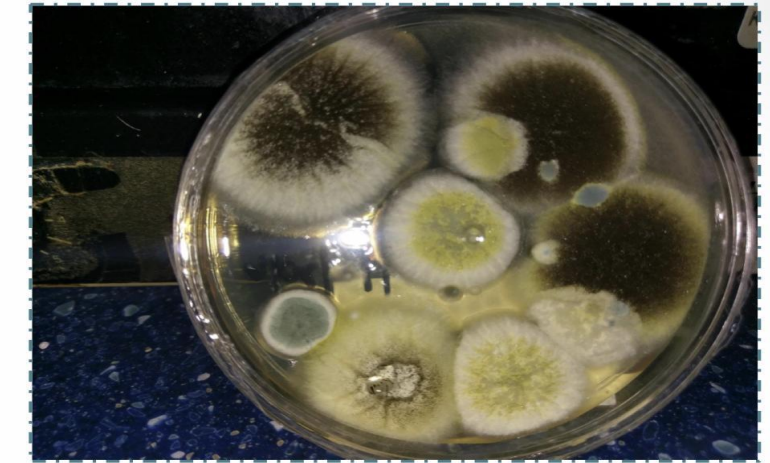


Plate air exposed for 5 minutes and incubated for 1 week.

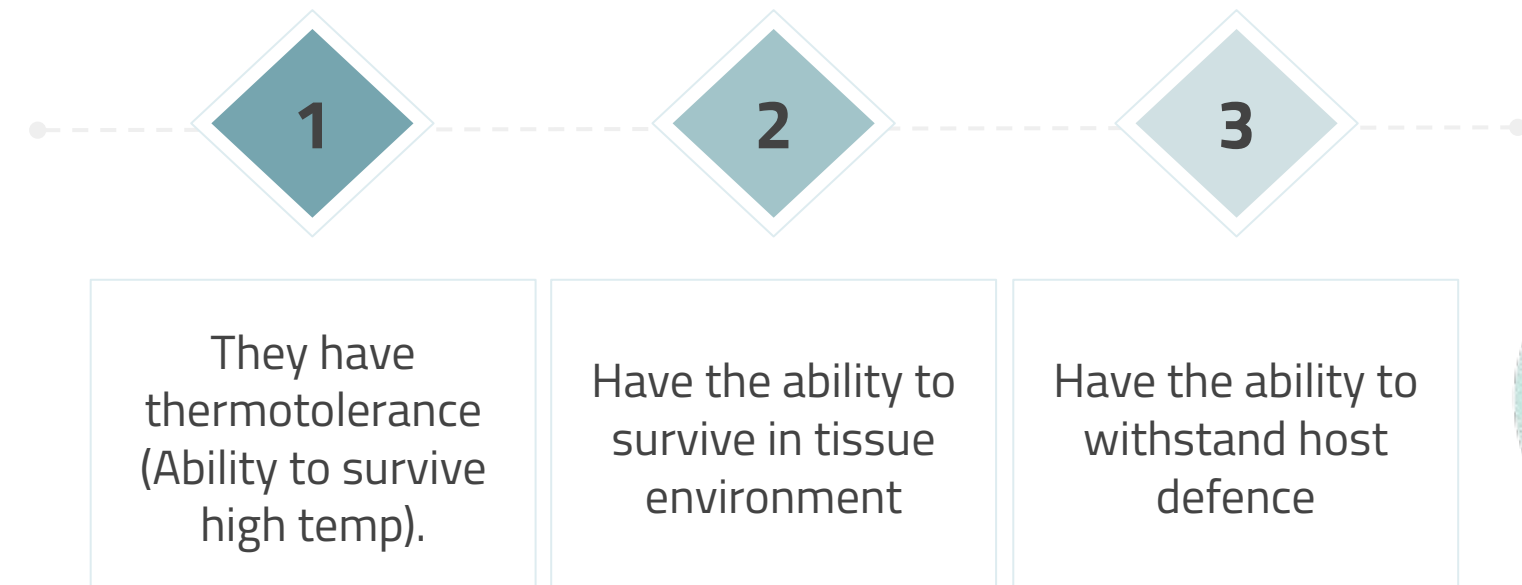


Fungi are all around us, widely distributed in nature (air, water, soil, decaying organic debris). They can cause many diseases to humans, such as

- ◆ Superficial infections
- ◆ Some causes allergic reactions
- ◆ Few cause invasive infections

Doctor's Note: some types of fungi are benefit to us, for example when it is enter our body it's produce penicilium.

For a fungi to cause a disease:



# Quiz

Q1: which one of the following is a characteristics of fungi?

- A** Prokaryotic      **B** Eukaryotic      **C** Have chlorophyll      **D** Autotrophic

Q2: Which of the following is an example of yeast?

- A** Candida albicans      **B** Penicillium      **C** Rhizopus      **D** Aspergillus

Q3: Cross-walls that divide hyphae into segments ?

- A** Septate hypha      **B** Non-septate hypha      **C** Mycelium      **D** Condida

Q4: Which of the following are the main mode of vegetative growth?

- A** Filamentous fungi      **B** Hypha      **C** Spore      **D** Saccharomyces cerevisiae

Q5: classification of fungi into yeast or mold is based on?

- A** Morphology of culture      **B** Ways of reproduction      **C** Mode of nutrition      **D** Mode of respiration





# MEET THE TEAM

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