

Primary(True) Pathogens:

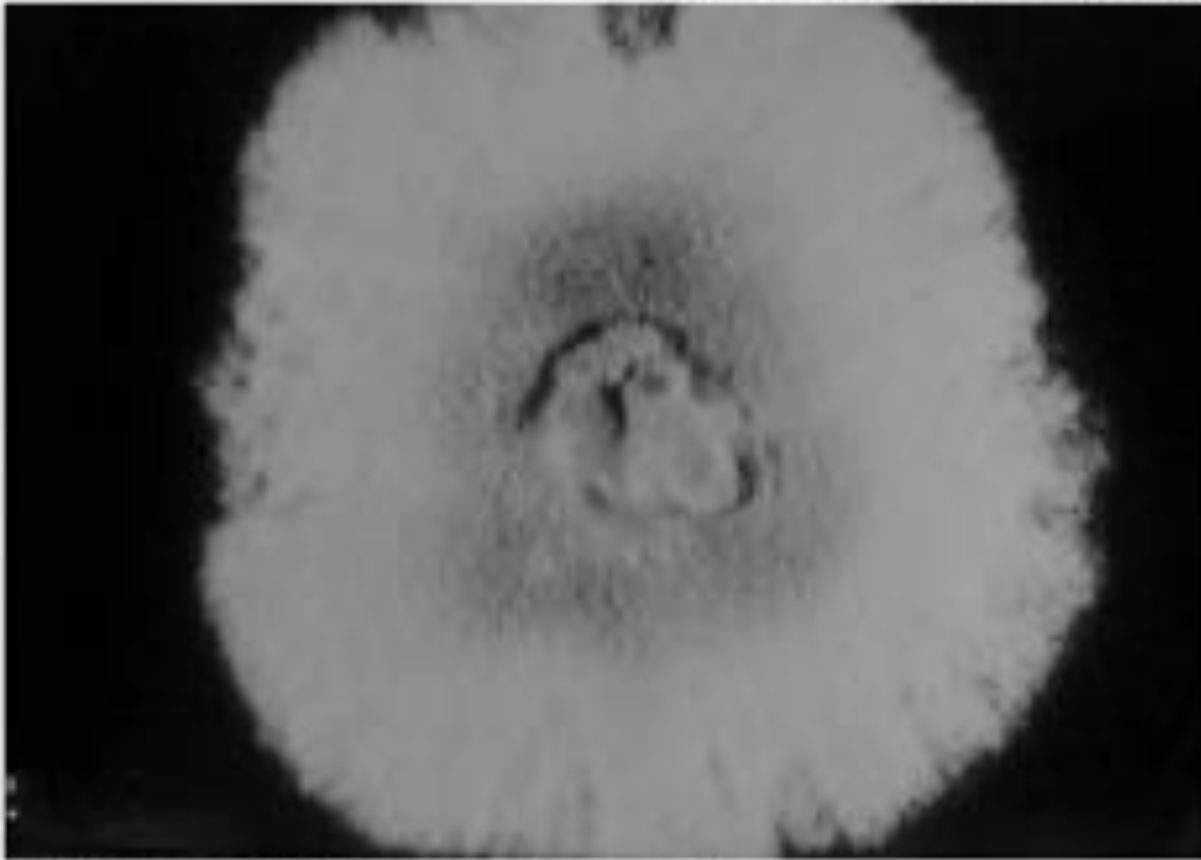
- *Histoplasma capsulatum*
- *Blastomyces dermatitidis*

Histoplasma capsulatum

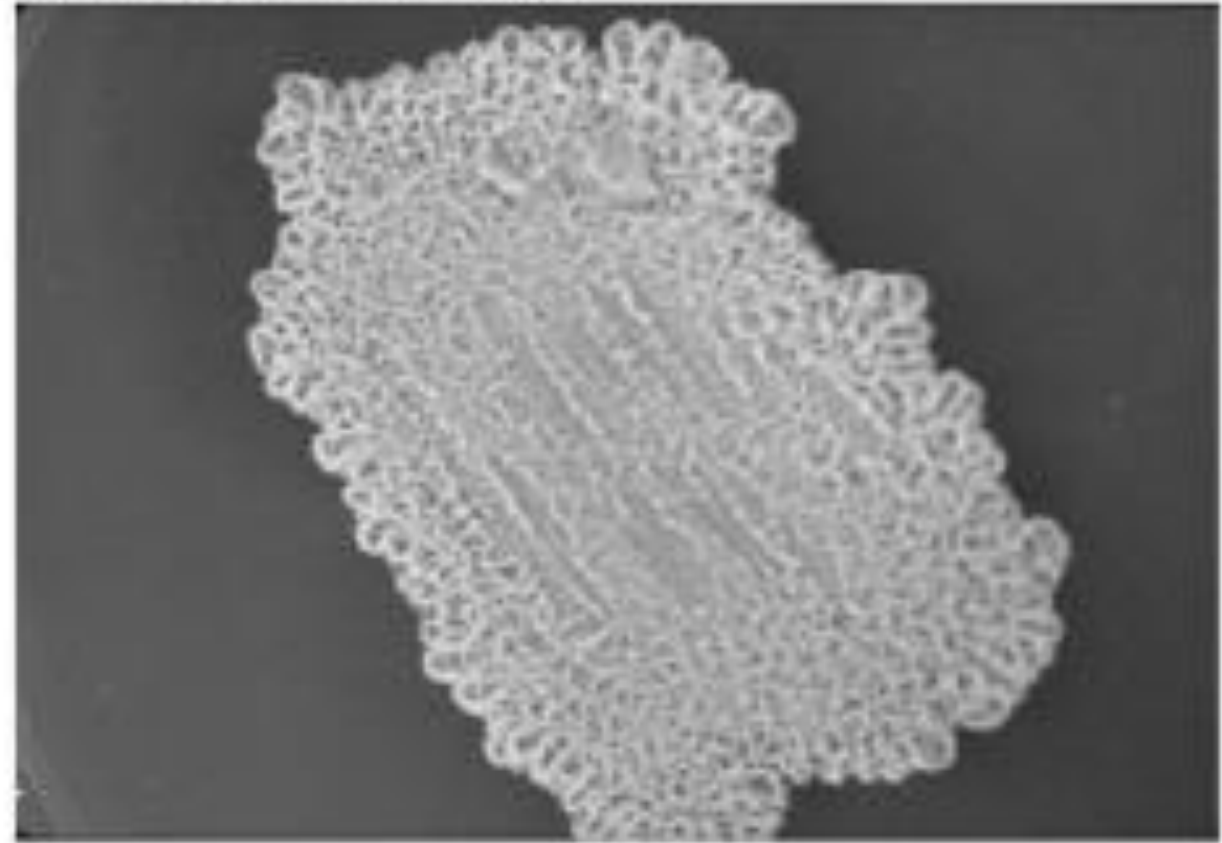
- cause histoplasmosis
- typically dimorphic
- grow in moist soil high in nitrogen content
- inhaled conidia produce primary pulmonary infection that may progress to systemic involvement of a variety of organs & chronic lungdisease
- amphotericin B, ketoconazole

Histoplasma capsulatum

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(a) A colony at 25°C produces a fuzzy mycelium.



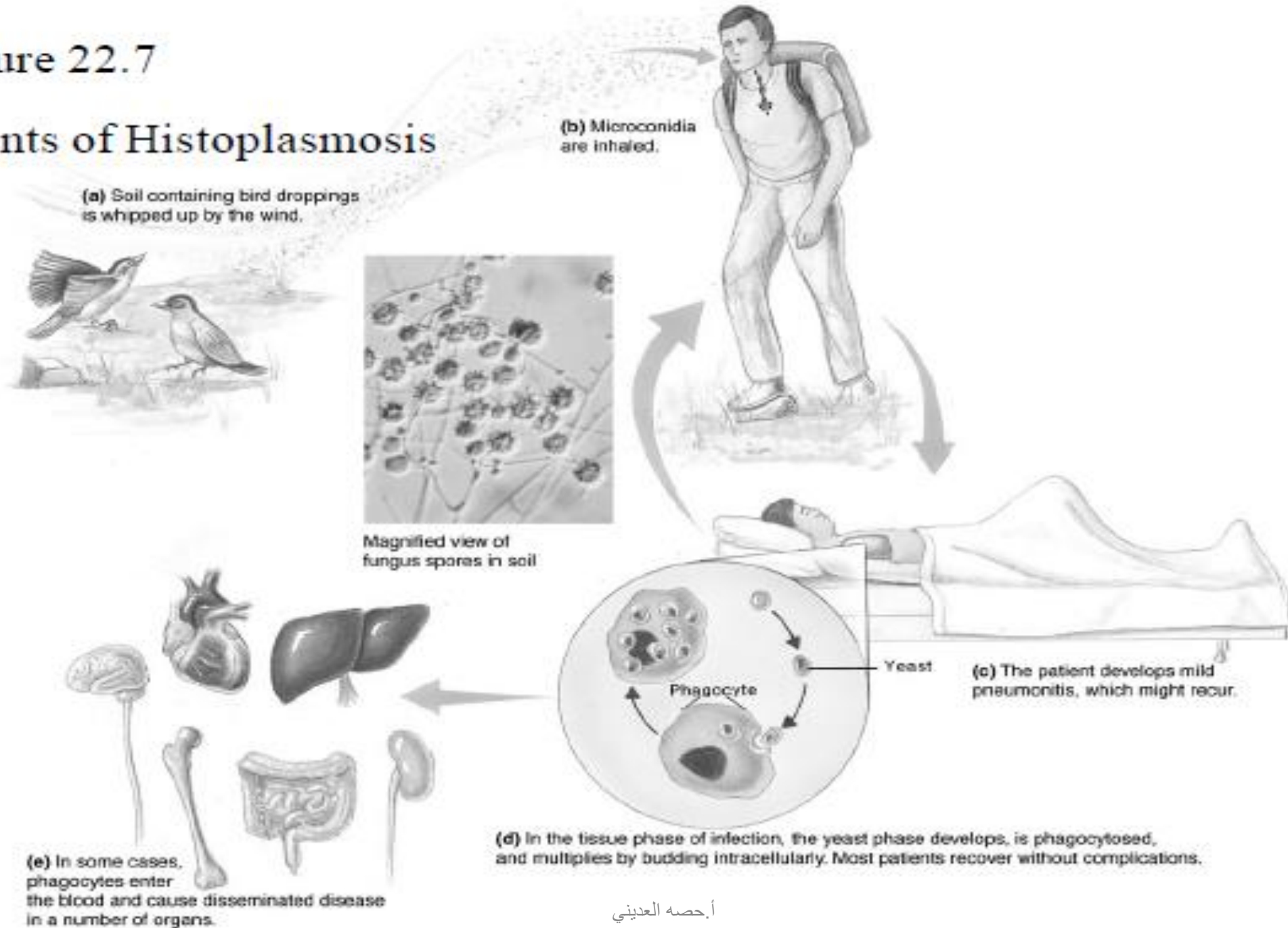
(b) A yeast colony (37°C) is dense and waxy.

Histoplasma capsulatum: Histoplasmosis

- Most common true fungal pathogen
- Has been found in poultry house litter, caves, and in bird roosts
- Spores are dispersed by wind and animals
- Upon inhalation of spores, growth of yeast cells occur in macrophages
- Mild symptoms include aches, pain, and coughing
- More serious forms in children and AIDS patients
- Systemic disease can lead to liver and spleen enlargement, anemia, circulatory collapse and death

Figure 22.7

Events of Histoplasmosis



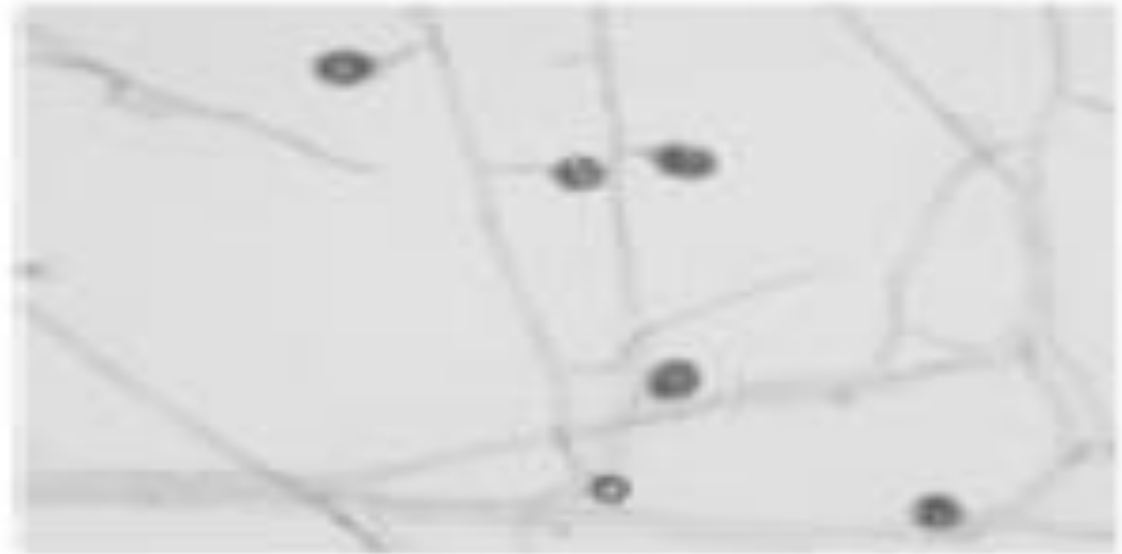
Blastomyces dermatitidis

- causes blastomycosis
- dimorphic
- inhaled convert to yeasts & multiply in lungs
- symptoms include cough & fever
- chronic cutaneous, bone, & nervous system complications
- Treatment with amphotericin B

Blastomyces dermatitidis

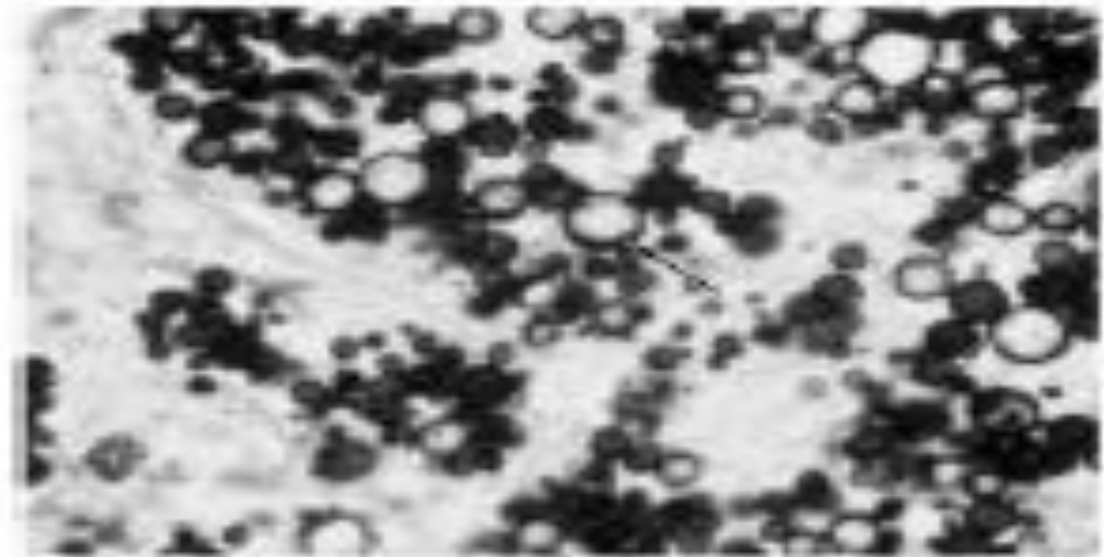
Figure 22.11

a) Hyphae and
conidia (25°C)



100

b) Yeast form (37°C)



100

Blastomyces dermatitidis: Blastomycosis

- Endemic to North America, Africa, and the Middle East
- Inhabits areas high in organic matter: forest soil, decaying wood, manure, abandoned buildings
- Can infect through lungs or skin
- In pulmonary form, symptoms include cough, chest pain, hoarseness and fever
- Chronic blastomycosis can result in abscesses and tumors often mistaken for cancer
- The cutaneous form is rather common; frequently begins on face, hands, or leg
- Can disseminate to bones resulting in arthritis and osteomyelitis
- Chronic systemic blastomycosis of spleen, liver, and urogenital tract can last for years and eventually destroy host defenses

Blastomyces dermatitidis

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