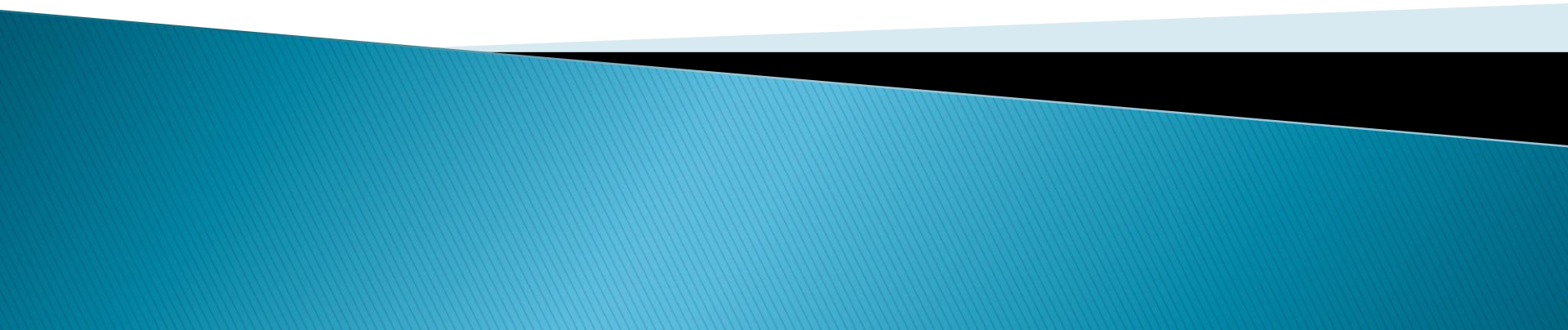


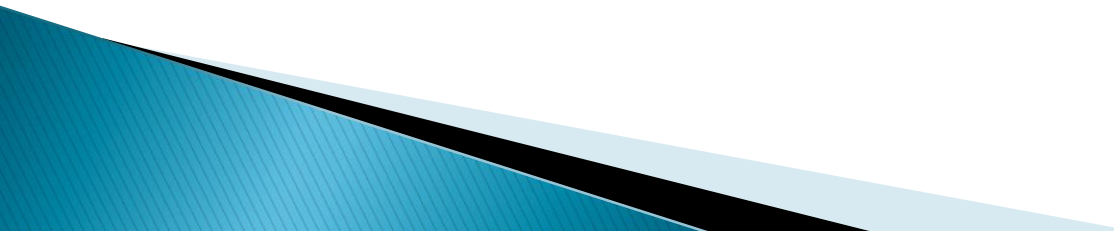
SYSTEMIC FUNGAL INFECTIONS



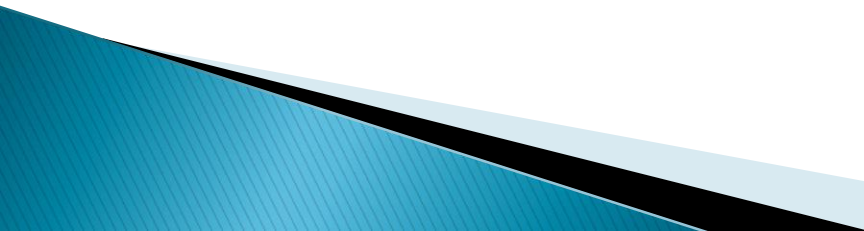
SYSTEMIC FUNGAL INFECTIONS

- ▶ *Histoplasma capsulatum*, *Blastomyces dermatitides*, & *Coccidioides immitis*.
- ▶ All 3 are **dimorphic** fungi. They grow as mycelial forms, with spores, at 25°C on Sabouraud's agar. At 37°C on blood agar, they grow in a yeast form. This **dimorphism plays a part** in human infection.
- ▶ In their natural habitat (the soil) they grow as mycelia and release spores into the air.
- ▶ These spores are inhaled by humans and at the "human temperature" of 37°C they grow as yeast cells.

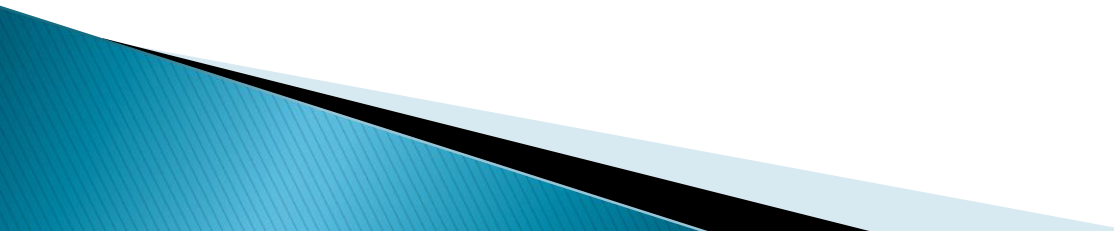
- ▶ The 3 fungi have 3 clinical presentations:
- ▶ **1) Asymptomatic:**
- ▶ The majority of cases are asymptomatic or mild respiratory illnesses that go unreported.
- ▶ **2) Pneumonia:**
- ▶ A mild pneumonia can develop with fever, cough, and chest X-ray infiltrates.
- ▶ A small percentage of persons will develop a severe pneumonia, and an even smaller group will progress to a chronic cavitary pneumonia, marked by weight loss, night sweats, and low-grade fevers, much like a chronic tuberculosis pneumonia.

- ▶ 3) **Disseminated:** disseminated disease,
 - ▶ such as meningitis, bone lytic granulomas, skin granulomas that break down into ulcers, and other organ lesions. This disseminated form commonly occurs in the immunocompromised host.
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LIKE TUBERCULOSIS

- ▶ Inhaled, primary infection in the lung.
 - ▶ Asymptomatic, mild, severe, or chronic lung infections.
 - ▶ Lung granulomas, calcifications, and/or cavitations.
 - ▶ Can disseminate hematogenously to distant sites.
 - ▶ Skin test.
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UNLIKE TUBERCULOSIS

- ▶ No person-to-person transmission.
 - ▶ Fungi with spores, NOT acid-fast bacteria.
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▶ *Histoplasma capsulatum*:

- ▶ Nonencapsulated despite its name.
- ▶ Present in bird and bat droppings, so outbreaks of pneumonia occur when cleaning chicken coops.

▶ *Blastomyces dermatitides*:

- ▶ Fungi are isolated from soil and rotten wood.
- ▶ The rarest systemic fungal infection.

▶ *Coccidioides immitis*:

- ▶ Commonly causes a mild pneumonia in normal persons.
- ▶ Common opportunistic infection in AIDS patients.