

- **opportunistic Pathogens**

–*Aspergillus species*

- Aspergillosis is an infection caused by *Aspergillus*, a common mold that lives indoors and outdoors. Most people breathe in *Aspergillus* spores every day without getting sick. However, people with weakened immune systems or lung diseases are at a higher risk of developing health problems due to *Aspergillus*. The types of health problems caused by *Aspergillus* include allergic reactions, lung infections, and infections in other organs.

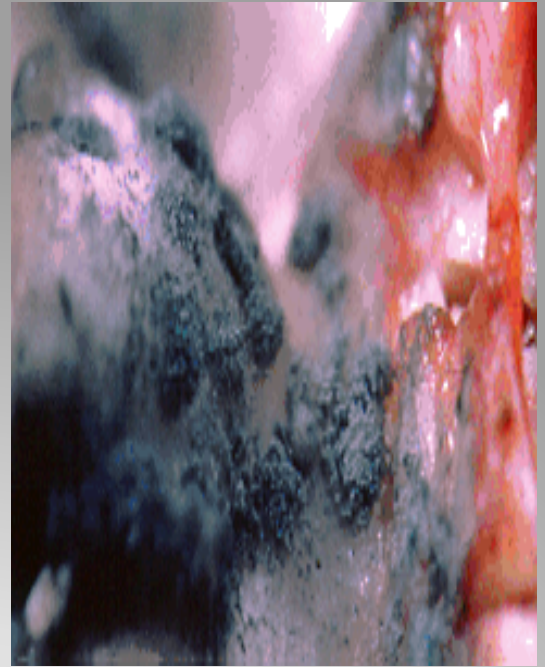
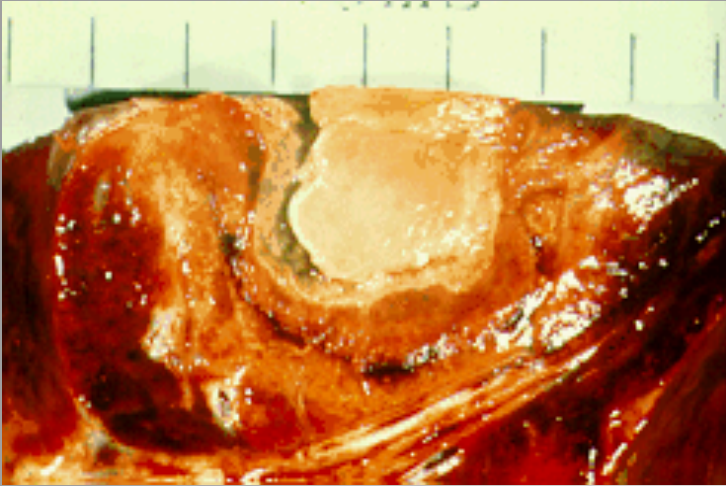
**Causative agents:**

- *Aspergillus flavus, Aspergillus fumigatus,*
- *Aspergillus nidulans, Aspergillus niger,*  
*Aspergillus terreus*

- There are different types of aspergillosis. Some types are mild, but some of them are very serious

## Types of aspergillosis

- **Allergic bronchopulmonary aspergillosis (ABPA):** *Aspergillus* causes inflammation in the lungs and allergy symptoms such as coughing and wheezing, but doesn't cause an infection
- **Allergic *Aspergillus* sinusitis:** *Aspergillus* causes inflammation in the sinuses
- **Aspergilloma:** also called a "fungus ball.", it is a ball of *Aspergillus* that grows in the lungs or sinuses, but usually does not spread to other parts of the body.



- **Chronic pulmonary aspergillosis:** *Aspergillus* cause cavities in the lungs.
- **Invasive aspergillosis:** a serious infection that usually affects people who have weakened immune system. Invasive aspergillosis most commonly affects the lungs, but it can also spread to other parts of the body.
- **Cutaneous (skin) aspergillosis:** *Aspergillus* enters the body through a break in the skin (for example, after surgery or a burn wound) and causes infection, usually in people who have weakened immune systems.

- The different types of aspergillosis affect different groups of people
- **Allergic bronchopulmonary aspergillosis (ABPA)** most often occurs in people who have cystic fibrosis or asthma.
- **Aspergillomas** usually affect people who have other lung diseases like tuberculosis.
- **Chronic pulmonary aspergillosis** typically occurs in people who have other lung diseases, including tuberculosis, chronic obstructive pulmonary disease (COPD).
- **Invasive aspergillosis** affects people who have weakened immune systems, such as people who have had a stem cell transplant or organ transplant, are getting chemotherapy for cancer, or are taking high doses of corticosteroids.

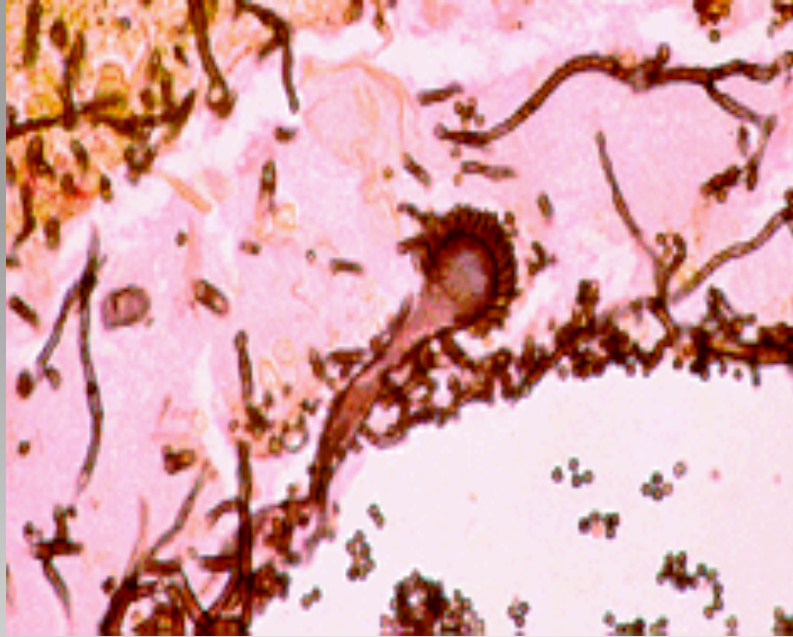
# Laboratory diagnosis:

1-Wet mounts (unstained)

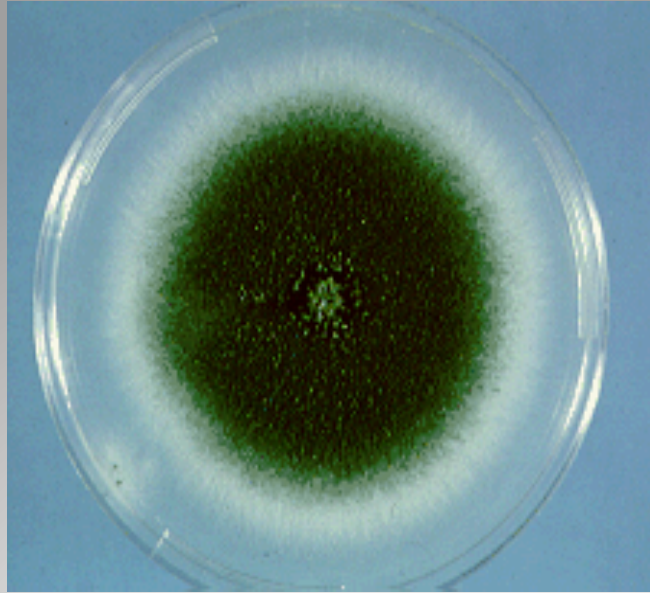
2-Stained preparations

- **1. Direct Microscopy:** (a) Sputum, make wet mounts in either 10% KOH & Parker ink or Calcofluor and/or Gram stained smears; (b) Tissue sections should be stained with H&E, GMS and PAS digest





- The presence of hyaline, branching septate hyphae, consistent with *Aspergillus* in any specimen, from a patient with supporting clinical symptoms should be considered significant.
- **2. Culture:** Clinical specimens should be inoculated onto primary isolation media, like Sabouraud's dextrose agar. Colonies are fast growing and may be white, yellow, yellow-brown, brown to black or green



- **Treatment for Aspergillosis**
- **Allergic forms of aspergillosis**

- For allergic forms of aspergillosis such as allergic bronchopulmonary aspergillosis (ABPA) or allergic *Aspergillus* sinusitis, the recommended treatment is **itraconazole**, a prescription antifungal medication. Corticosteroids may also be helpful.

- **Invasive aspergillosis**

- Invasive aspergillosis needs to be treated with prescription antifungal medication, usually **voriconazole**.. People who have severe cases of aspergillosis may need surgery