

# **THE EPIDEMIOLOGY OF THE EBOLA VIRUS: Evolution, Incidence, Distribution, and Control**

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# AFRICAN HEMORRHAGIC FEVER

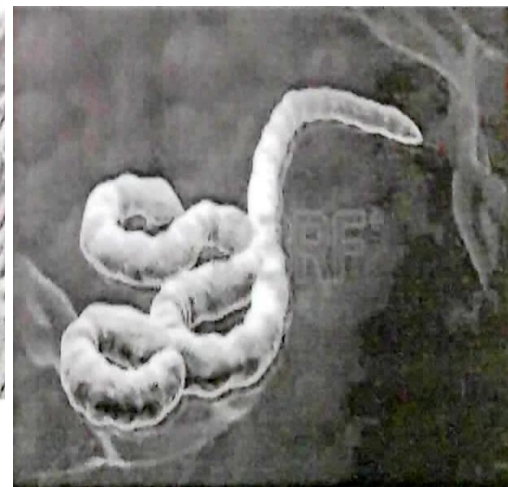
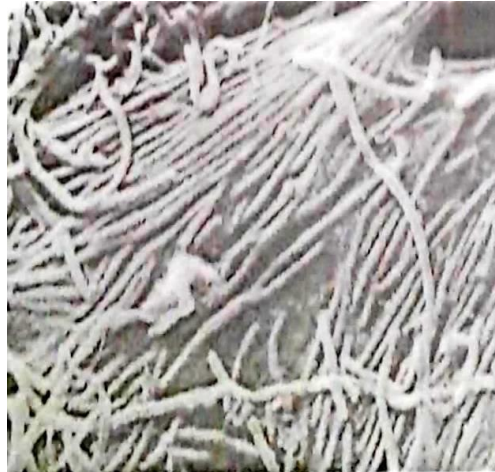
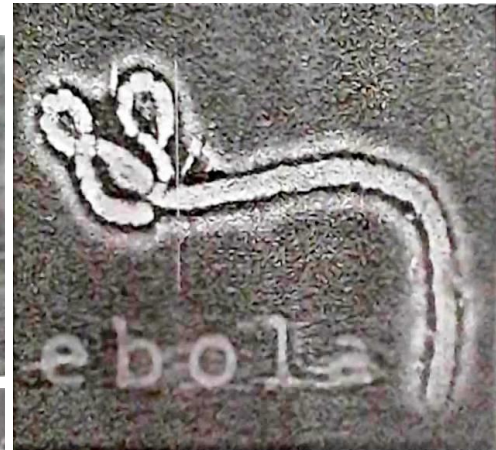
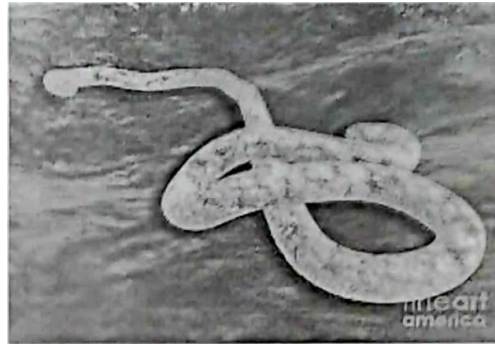
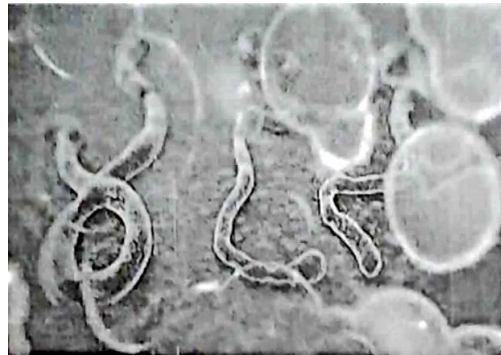
## (Marburg-Ebola Disease)

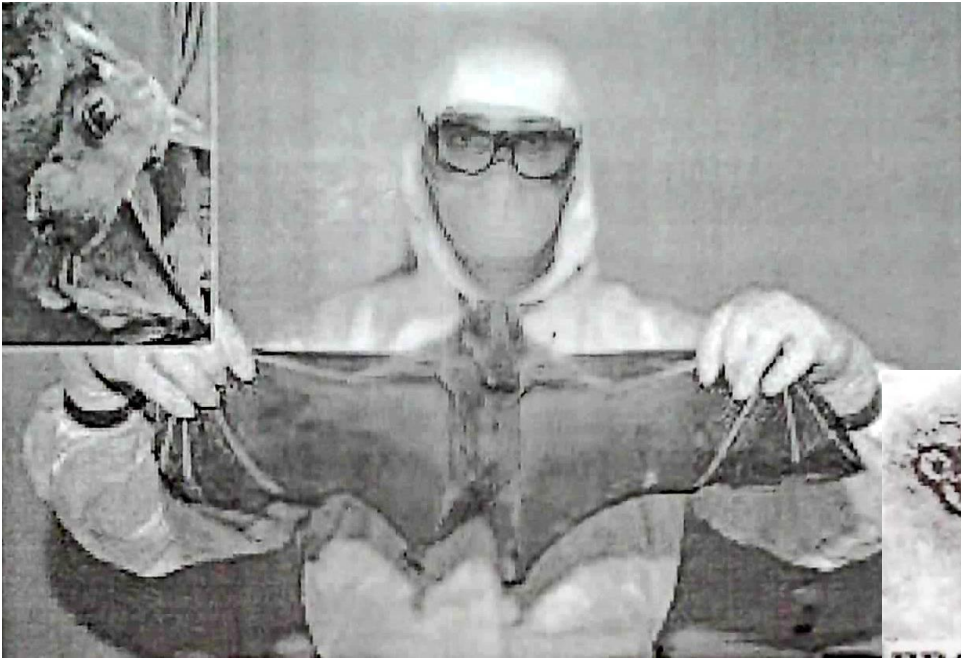
- **ETIOLOGY:** Family Filoviridae : Marburg & Ebola Viruses Similar morphology but distinct antigenically Origin = African green monkeys
- In the Philippines, closely related to Ebola virus was isolated from sick cynomolgus monkeys that were imported to the USA (1989) for vaccine production. Animal caretakers experienced Sero conversion to the virus without associated illness.

# Historical Epidemiology

- **1967** – In Germany and Yugoslavia at vaccine manufacturing facilities: workers exposed to tissue of infected African green monkeys from Uganda became sick & died of **MARBURG VIRUS** (is indigenous to Africa)
- **1976** – Ebola epidemics in Sudan & Zaire
- **1995** – 315 cases in Kitwit, Zaire
- **1996** – 54 cases and 41 deaths in Gabon

# Filoviridae (Marburg Ebola)





# Symptoms of EBOLA typically include

- Fever (greater than 38.6°C or 101.5°F)
- Severe headache
- Muscle pain
- Weakness
- Diarrhea
- Vomiting
- Abdominal (stomach) pain
- Lack of appetite

# Some patients may experience

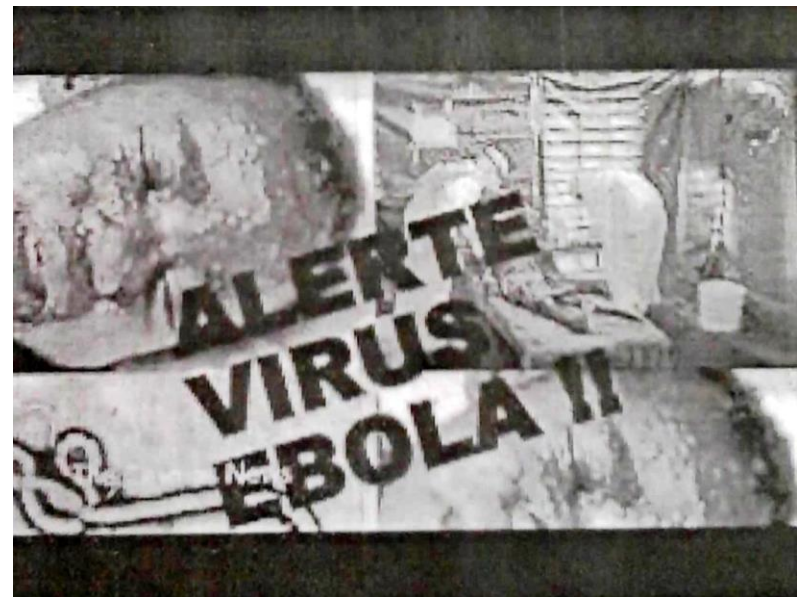
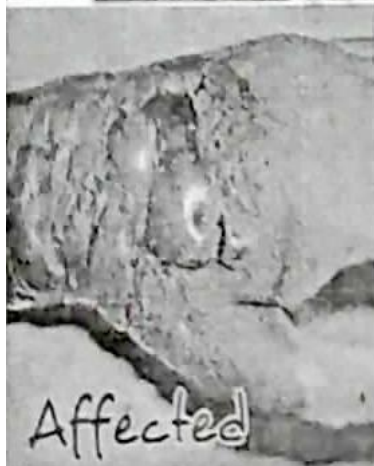
- Rash
- Red eyes
- Hiccups
- Cough
- Sore throat
- Chest pain
- Difficulty breathing
- Difficulty swallowing
- Unexplained bleeding inside and outside body\*
  - \* Nose, Lips, Eyes, Ears, Vomitus, Skin where injection took place



Symptoms may appear anywhere from 2 to 21 days after exposure to ebola virus, although 8-10 days is most common.

Some who become sick with Ebola are able to recover. We do not yet fully understand why. However, patients who die usually have not developed a significant immune response to the virus at the time of death.





## MANAGEMENT

FEVER

Acetaminophen  
(NO salicylates)

Dehydration (vomiting)

ORS

PREVENTION OF SHOCK

5% dextrose in 0.3% PSS

Shock : pulse pressure  
< 20 mm Hg

Dextran 10ml/kg  
not to exceed  
20 ml/kg/hour

HEMORRHAGE  
platelet < 50,000/mm<sup>3</sup>

Fresh blood

Blood pressure and  
Hematocrit stabilized

Resume  
5% dextrose in  
0.3% PSS

48 hours after fever ↓

BP & Hct NORMAL

Discontinue  
IV Fluids

# PREVENTION

- BARRIER NURSING PREVENTED NOSOCOMIAL TRANSMISSION
- MONOCLONAL ANTIBODIES
  1. ZMAPP : 2 out of 4 Rhesus monkeys survived 24 to 48 hours after infection with ebola virus
  2. MV 003: 4 out of 6 Rhesus monkeys survived 24 to 48 hours after infection with ebola virus

Thank you!

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