

# EPIDEMIOLOGY OF LEPROSY

# EPIDEMIOLOGY

Study of  
**Distribution and Determinants**  
of a disease (leprosy) in a **specified population**  
and to  
Apply this knowledge for **control** of that disease

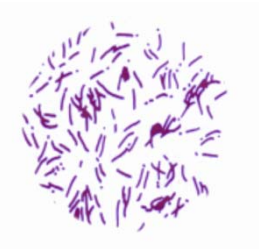
# Determinants of Leprosy

## Leprosy

### Host

### Environment

### Agent



# Causative Organism/ Agent

- ❖ **Mycobacterium leprae**
- ❖ **Gram Positive**
- ❖ **Acid or Alcohol Fast Organism**
- ❖ **Non-toxin** producing bacterium.
- ❖ **Slow growing** – 12-14 days to divide
- ❖ **Non Cultivable** – Production of vaccine difficult
- ❖ **Low Antigenicity** – Limited body reaction



# BACTERIOLOGY OF LEPROSY contd.

- ❖ Schwann cell or occasionally axons
- ❖ Obligate intracellular
- ❖ Multiplies inside macrophage  
skin (Histiocytes)  
nerves (Schwann cells).
- ❖ Life span :  
About 6 months,  
Longer in case of Persisters

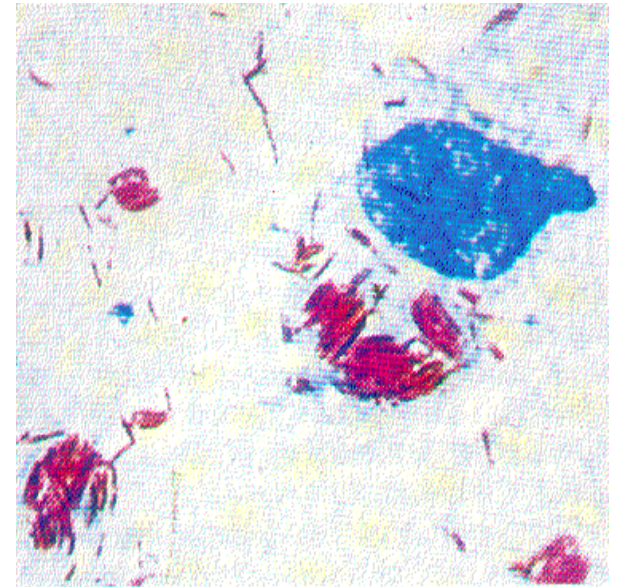
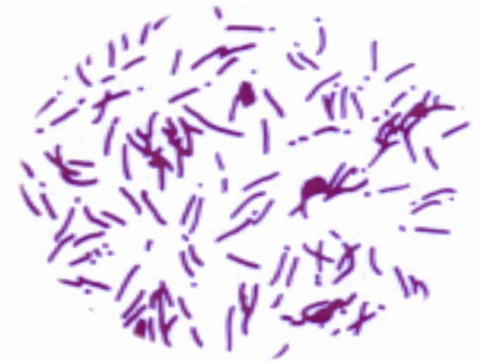


Fig. 5 *M. leprae*, singly and in globi

# Causative Organism/ Agent

- ❖ **Source:** Human being.
- ❖ **Reservoir:** None
- ❖ **Portal of Exit:** Respiratory tract / nose
- ❖ **Transmission:** Air-Borne / Droplets
- ❖ **Portal of Entry:** Respiratory route
- ❖ **Long Incubation Period:** 5 – 7 years



# Host Factors.

- ❖ 95% population naturally immune to leprosy in India
- ❖ Age Distribution: 10 -20 years  
(Any Age)
- ❖ Gender wise distribution:  
Male > Female
- ❖ Occurrence of leprosy by clusters  
Family clusters influencing factors are  
Sharing of same environment ?  
Genetic predisposition ?  
Combination of both ?  
(one of the opinions)



# Host Factors.

## ❖ Distribution by ethnic factors

Europeans, Chinese and Burmese belong to a 'highly susceptible' group

as compared with Africans, Indians and Malaysians.

## ❖ Mortality

Leprosy is rarely an immediate and direct cause of death.





# Environmental Factors

- ❖ **Socio-Economic Factor:**  
**Poverty Related Factors:**  
**Overcrowding,**  
**Lack of hygiene,**  
**Lack of ventilation**

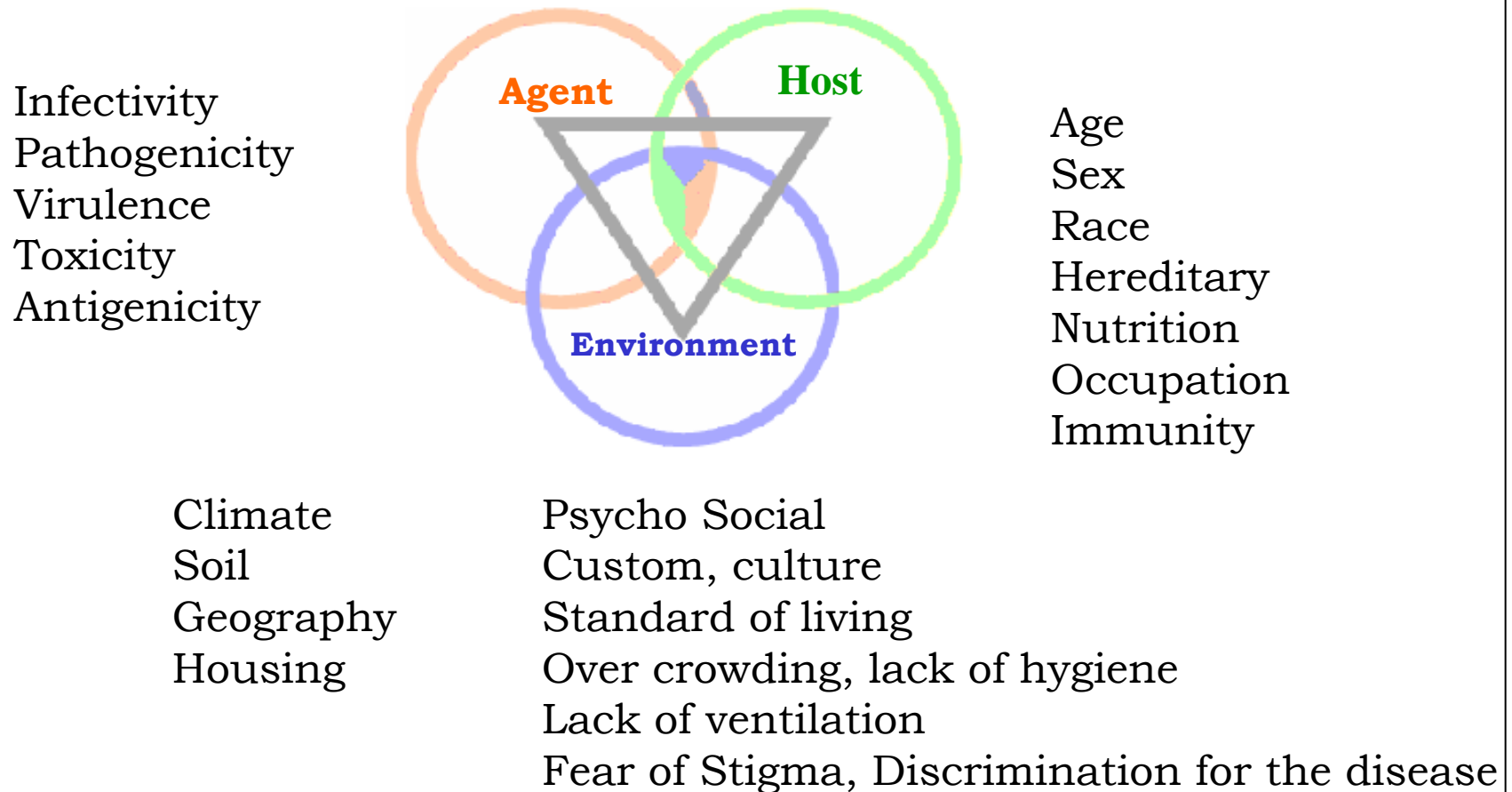
Improved socio-economic condition

- ❖ *Migration: Affecting elimination*  
&
- ❖ Major cause of spread of leprosy
- ❖ Fear of Stigma & discrimination



# Epidemiology of Leprosy

## Epidemiologic concept of interactions of the Agent, Host & Environment

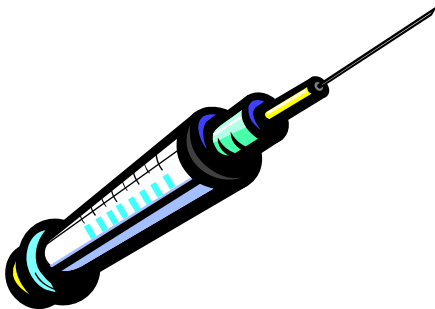


# Prevention & Control of leprosy

**Non Cultivable**



**No Vaccine available**



**No Primary Prevention**



# Prevention & Control of leprosy



**Early Diagnosis and Treatment**  
**Screening of Contacts**

**Generating Awareness**

**Improving Environment  
& basic hygiene**



# Disability prevention and Rehabilitation:



**Early Diagnosis of  
Primary Disability and  
self care**

**Reconstructive Surgery**

Socio- economic  
Rehabilitation



# Thanks !!!