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**COURSE: Epidemiology**

**CHO 300L**

In the epidemiological triad, the host refers to the person (or sometimes an animal) who can become infected by an agent. A susceptible host is an individual who lacks the resistance or immunity to fend off a particular disease-causing agent.

**Factors that make a host susceptible:**

**1. Age:**

Very young and very old individuals are more prone to infections because of weaker immune systems.

Example: Infants are more vulnerable to measles or pneumonia.

**2. Genetic Factors:**

Some people have inherited traits that make them more likely to get certain diseases.

Example: Sickle cell trait offers resistance to malaria, while its absence may increase susceptibility.

**3. Immunity Status:**

Individuals who have not been previously exposed to a disease or vaccinated against it are more susceptible.

Example: Unvaccinated people are at risk for diseases like measles or polio.

**4. Nutritional Status:**

Poor nutrition weakens the immune system, making infections more likely and severe.

Example: Malnourished children are more prone to diarrheal diseases.

**5. Lifestyle and Behaviour:**

Risky habits such as poor hygiene, smoking, unsafe sex, or substance abuse can increase disease risk.

Example: Unsafe sex increases susceptibility to HIV/AIDS.

**6. Chronic Illness or Immunosuppression:**

Conditions like diabetes, cancer, or HIV reduce resistance to infection.

## **7. Socioeconomic Factors:**

Poverty, overcrowding, and limited access to healthcare can heighten susceptibility.

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## **Control Measures to Protect the Host:**

### **1. Immunization (Vaccination):**

Provides artificial immunity against infectious diseases.

Example: Vaccines against measles, polio, and hepatitis B.

### **2. Improving Nutrition:**

Ensures a strong immune system to fight infections.

Example: Vitamin A supplementation to reduce measles complications.

### **3. Health Education:**

Teaching individuals about hygiene, sanitation, and disease prevention.

Example: Hand washing campaigns to prevent diarrheal diseases.

### **4. Chemoprophylaxis:**

Use of drugs to prevent disease in high-risk individuals.

Example: Antimalarial drugs for travelers to endemic areas.

### **5. Early Diagnosis and Treatment:**

Identifying and managing infections promptly reduces disease spread and severity.

### **6. Improved Living Conditions:**

Better housing, sanitation, and clean water supply reduce exposure to infectious agents.

### **7. Strengthening the Immune System:**

Through adequate rest, balanced diet, and healthy lifestyle choices.

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 In summary:

A susceptible host is a person at risk of infection due to weak immunity or exposure to disease agents. Control measures aim to increase resistance and reduce exposure, thereby breaking the chain of infection.