

# Diseases Development and Prevention

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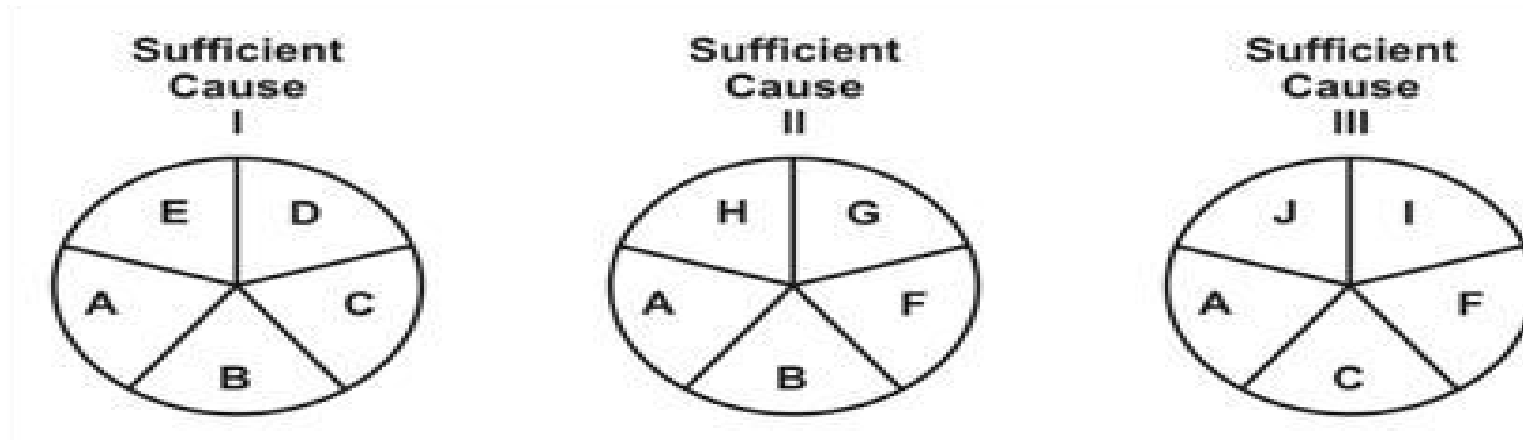
435 Lecture Notes by Sara Alenezy & Ahmed Alyahya  
Original Content | **Titles** | Additional Notes | **Important**

# LEARNING OBJECTIVES

- Describe theories and models postulated for the development of diseases.
- Explain the concept of iceberg phenomenon in diseases.
- Define the terms prevention, control, elimination and eradication.
- Identify the level of prevention in relation to stage of disease development.
- Identify the measures applied at each level of prevention.

Most of the lecture's contents overlap with lecture **3: History of Disease**, therefore, we will only include and emphasize on the points that have not been mentioned previously.

# SUFFICIENT-COMPONENT CAUSES MODEL



When we have  $A + B + C + D + E$ , these components all together are sufficient for developing disease. The components might change, and regardless of the differences, they all can be sufficient causes for developing the same disease.

- **Sufficient Cause (whole circle):** Set of factors or conditions that inevitably produces disease.
- **Component Causes (letters):** Factors or conditions that form a sufficient cause.
- **Necessary Cause:** a component cause in every causal mechanism. If absent, the disease will not occur. E.g. Mycobacterium Tuberculosis is a necessary cause of TB, but in lung cancer, smoking is not a necessary cause.

# PREVENTION

- Averting a disease or ill-health before its occurrence.
- Actions aiming at **eradicating, eliminating, or minimizing the impact of disease and disability**, or if none of these is feasible, retarding the progress of disease and disability.
- The concept of prevention is best defined in the context of levels of prevention; primary, secondary, and tertiary prevention.

**Primordial Prevention:** Politics & legislations to address behaviour of the population and environment.

**Primary Prevention:** Health promotion & Specific protection.

**Secondary Prevention:** Screening & Mass treatment.

**Tertiary Prevention:** Disability limitation & Rehabilitation.

## **Primary: Prevent diseases before it occurs by:**

- 1) Health Promotion e.g. exercise → at the stage of perfect health.
- 2) Specific Protection e.g. vaccination → at the stage susceptibility.

## **Secondary: Treatment of an ongoing, asymptomatic disease by:**

Early diagnosis e.g. screening for cervical/breast cancer in women +40.

**OR IF THE PATIENT IS SYMPTOMATIC BUT THE SYMPTOMS ARE UNCLEAR/UNSPECIFIED**  
E.g. lethargic patients, we deal with them by secondary prevention.

## **Tertiary: Reducing complications of an ongoing, diagnosed disease by:**

- 1) Disability limitation: Preventing organ damage as much as possible.  
E.g. eyes and feet protection in patient with diabetes.
- 2) Rehabilitation: Maximum utilization of the remaining abilities.  
E.g. teaching blind patients to practice an independent lifestyle.

# PRIMARY PREVENTION

## HEALTH PROMOTION

- Health education
- Nutrition intervention
- Sanitation of the environment
- Life style modification

## SPECIFIC PROMOTION

- Immunization
- Chemoprophylaxis
- Specific micronutrient
- Protection from unintentional injuries
- Protection from environmental hazards

# DISABILITY LIMITATION & REHABILITATION

- Disability limitation ===== Prevent progress
- Rehabilitation ===== attain highest level of functional abilities
  - Medical rehabilitation
  - Vocational rehabilitation
  - Social rehabilitation
  - Psychological rehabilitation