

## Concept of Health and Disease

### Health

- ⇒ According to WHO "Health is a state of Complete Physical, mental and social well-being and not merely the absence of disease or infirmity.
- ⇒ The state of being free from illness or injury.
- ⇒ A person's mental or physical condition.

### Disease

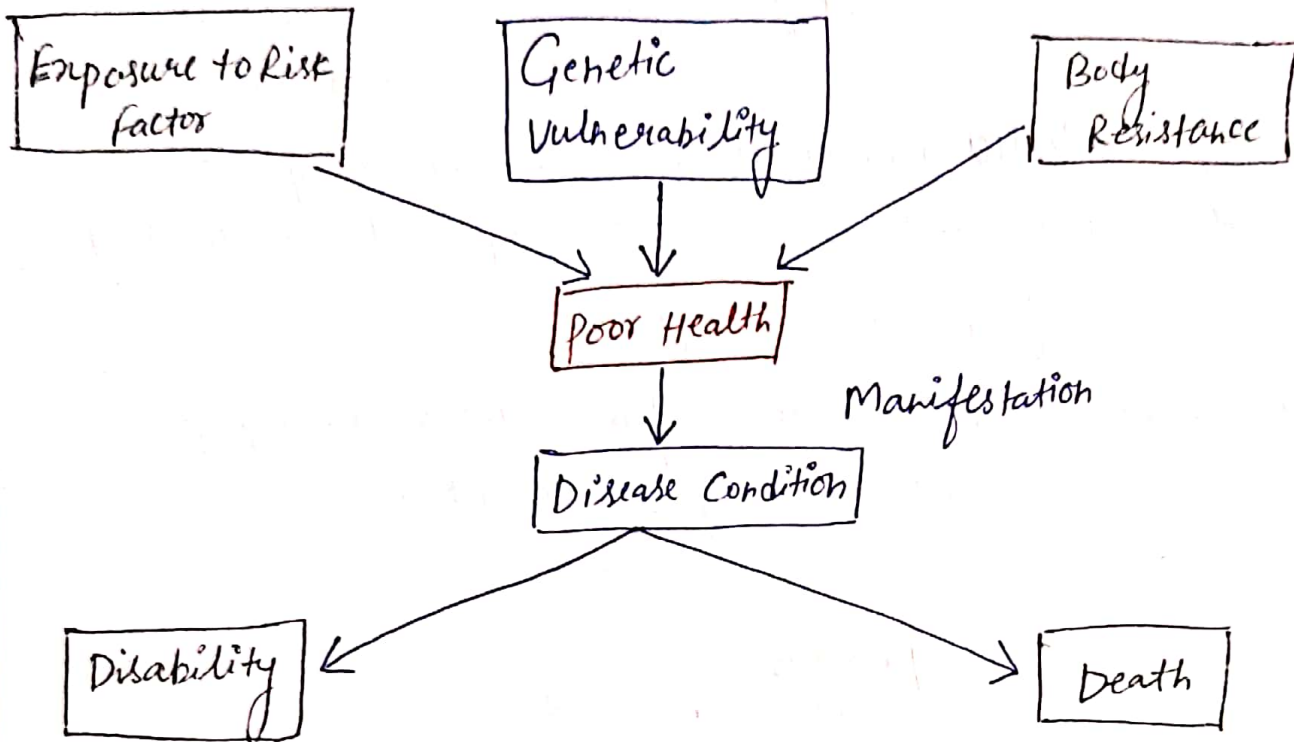
- ⇒ Any harmful deviation from the normal structural or functional state of an organism, generally associated with certain signs and symptoms and differing in nature from physical injury.
- ⇒ A diseased organism commonly exhibits signs or symptoms indicative of its abnormal state
- ⇒ An illness of the body in humans, animals or plants.

### Concepts and evaluation of Public Health

Public health is defined as the science of protecting the safety and improving the health of communities through education, policy making and research for disease and injury prevention.

## A Model of Health

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## Basic Concepts of Public Health

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The WHO definition of health can not be considered as an operational definition because it does not lend itself to direct measurement.

Epidemiological studies of health have been hampered because of our inability to measure health and well being directly.

Dimensions of Health: — The WHO definition envisages three specific dimensions - the physical, the mental and the social. Some other dimensions may also be considered as more knowledge is acquired on them in due course of time.

1.] Physical Dimension: — The signs of physical health in an individual are a good complexion, a clean and healthy skin, bright eyes, lustrous hair with a body well clothed with firm flesh, not too fat or obese, a sweet breath, a good appetite, sound sleep, regular activity of bowels and bladder, and smooth, easy and well co-ordinated body movements.

2.] Mental Dimensions: — Mental health is not merely the absence of mental illness. Good mental health is reflected by the ability to respond to the many varied experiences of life with flexibility and a sense of purpose.

Following characteristics of a mentally healthy person.

- a) a mentally healthy person is free from internal conflicts, he is not at "war with himself"
- b) He is well adjusted i.e. he is able to get along well with others.
- c) He searches for identity.
- d) He has a strong sense of self esteem.
- e) He knows himself, his needs, problems and goals.

3.] Social Dimension: — Social well-being implies harmony and integration with in the individual, between the individual ~~and~~ and other members of society.



and between the individuals and the world in which they live.

The social dimension of health also includes the levels of social skills and interaction one possesses, social functioning and the ability to see oneself as a member of a larger society.

4] Spiritual Dimension:— According to the proponents of holistic health concept, spiritual dimension plays a significant role in health and disease. Spiritual health refers to that component of individual's thinking which reaches out and strives for meaning and purpose in life.

Methods measuring for causation and risk assessment

To determine causation, scientists must measure differences between groups. A typical measurement is to discern risks regarding the frequency of a disease by comparing a group that has been exposed to a risk factor and a group that is ~~an~~ unexposed.

		Disease Present		
		Yes	No	Totals
Risk factor Present	Yes	A	B	A+B
	No	C	D	C+D
Total		A+C	B+D	A+B+C+D

A = those with the risk factor and with the disease

B = those with the risk factor and not the disease

C = those without the risk factor but with the disease

D = those without the risk factor and not the disease

Therefore-

A+B represents everyone with the risk factor.

C+D represents everyone without the risk factor

A+C represents everyone with the disease

B+D represents everyone without the disease

"A+B+C+D" represents everyone in the study population.

Risk difference:— Sometimes it is important to determine the difference in risk between two groups. Usually this will be the difference between the risk in an exposed group versus the risk in the unexposed group. This is called as risk difference. The risk difference or attributable risk (AR) can be defined as.

$$AR = [A/(A+B)] - [C/(C+D)]$$

= Risk among the exposed - Risk among the unexposed

Risk Ratio:— A risk ratio is another measure common to the Science of Public Health. This is the ratio of the risk in the exposed group compared to the ratio of the risk in those who are unexposed.

The calculation for risk ratio (RR) is as follows:

$$RR = [A/(A+B)] / [C/(C+D)]$$

= Risk in the exposed / Risk in the unexposed.

## Understanding the Concept of Prevention and Control of disease:—

Disease prevention covers measures not only to prevent the occurrence of disease, such as risk factor reduction, but also to arrest its progress and reduce its consequences once established.

Objective of Prevention:—  
 Health Promote  
 Health Preserve  
 Health Restore  
 decrease suffering  
 decrease Distress etc

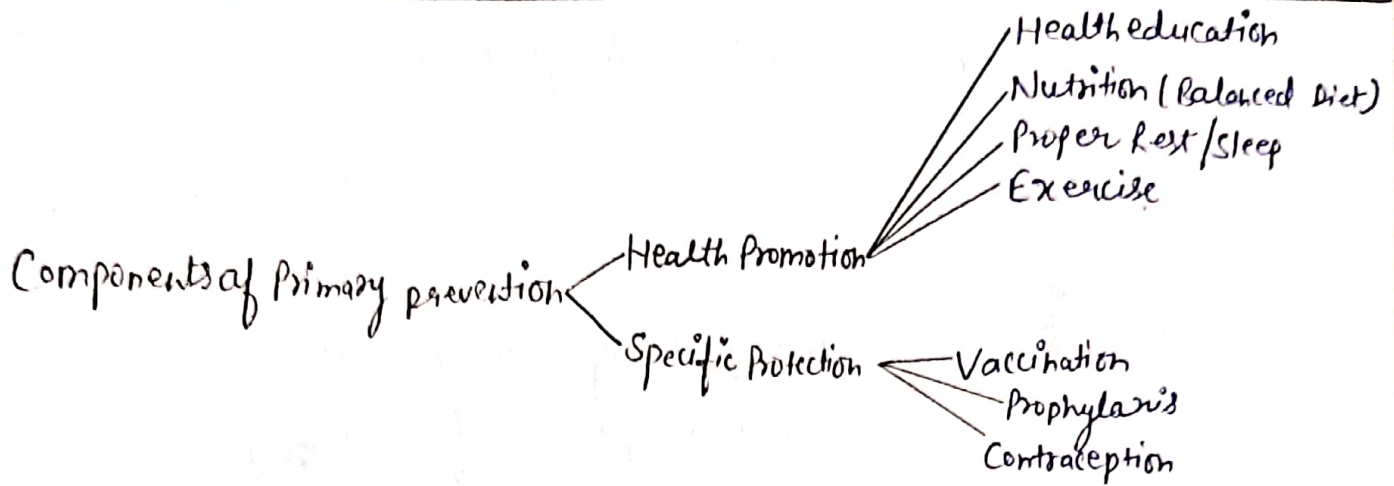
Level of Prevention: → Primordial Prevention  
 → Primary prevention  
 → Secondary prevention  
 → Tertiary prevention

1. Primordial Prevention:— Action taken prior to development of risk factors in population.  
 (Risk factor ~~is~~ Absent)

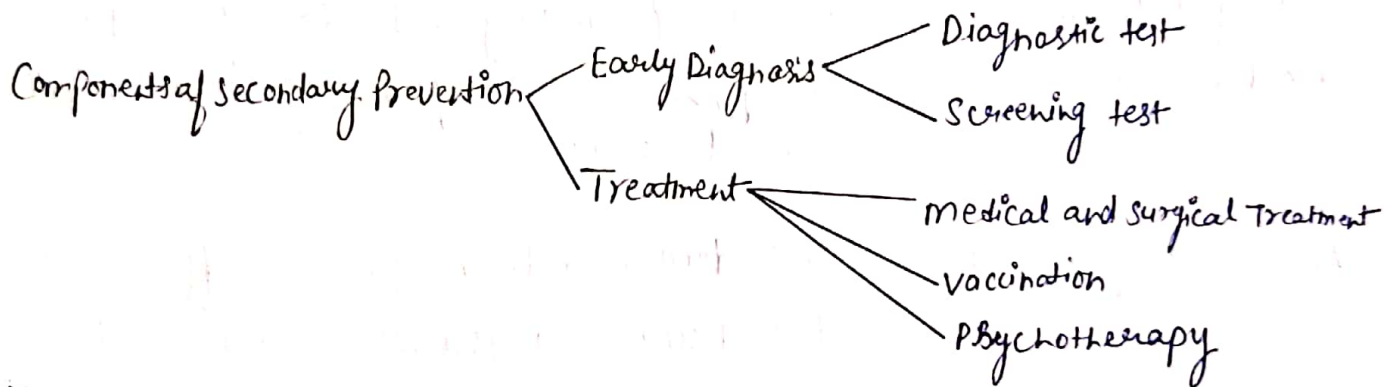
- a) Individual Education:— For Particular Person
- b) Mass Education:— For Large group

2. Primary Prevention:— Action taken prior to the onset of the disease which removes the possibility that a disease will ever occur. (Risk factor Present)





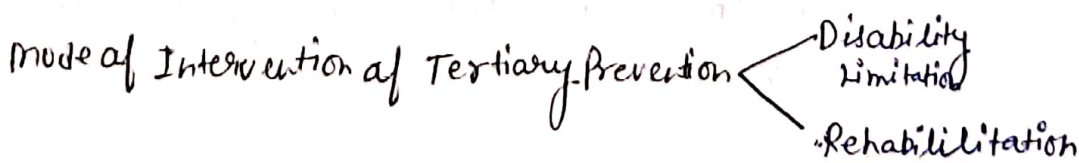
3] Secondary Prevention:— Action taken to interrupt disease progress at initial state and prevent complications.



4] Tertiary Prevention:— Tertiary prevention signifies the intervention in the late pathogenesis phase.

⇒ Action taken in later phase of disease

⇒ To reduce impairments (Loss) and Disabilities.



Rehabilitation:— The action of restoring someone to health or normal life through training and therapy after imprisonment, addiction, or illness.

# Social causes of diseases and social problems of the sick—

## Social Problems

Population Explosion

Adverse sex ratio of  
falling child sex ratio

Smoking & tobacco &  
Alcohol abuse

Accidents & suicides

HIV & STDs  
~~HIV & STDs~~

Mental Disorder &  
behavioral problem in  
Child

Drug Addiction/  
dependence

## Behavioral Component

High fertility, early marriage  
Non acceptance of Contraceptive

Female feticide, Infanticide  
Gender bias

Habit of smoking in the family or peer  
group, social acceptability seen as a  
social status.

Rash driving, disobeying traffic rules  
driving under influence of alcohol drugs  
or stress

Pre & extra marital sex, unprotected  
sex with multiple sexual partners

Broken families, Problem families  
Adjustment disorder, inability to cope  
with stress



## Social & Health Education:

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**Food:**— Any substances which when taken in to the body or an organ may be used either to supply energy or build a tissue.

**Diet:**— Diet is referred to as food & drink regularly consumed.

- ⇒ Total oral intake of a substances that provides nourishment
- ⇒ It is the total intake of substances that furnish nourishment of Calaries.

**Nutrition:**— According to WHO "Nutrition is the science of food" and its relationship to health."

⇒ It is concerned primarily with the part played by the nutrient in body growth, development & maintenance.

⇒ The science which deals with the study of nutrients and foods and their effects on the nature & function of organism under different condition of age, health & disease.

⇒ Energy, growth, metabolism, genetic material transformation

**Balanced diet:**— Balanced diet is defined as one which contains a variety of foods in such quantities and proportions that the need for energy, amino acids, vitamins, minerals, fats, carbohydrates and other nutrients is adequately met for maintaining health, ~~and~~ and generally well being also makes a small provision for extra nutrients to withstand short duration.

A balanced diet has become an accepted means to safeguard a population from nutritional deficiencies.

Daily requirement of protein should be met. This amounts to 15-20% of daily energy intake.

Fat requirement should be limited to 20-30% of daily energy intake.

Carbohydrate such in natural fibers should constitute remaining energy intake.

## Protein

Proteins are complex organic nitrogenous compounds comprising of carbon, hydrogen, oxygen, nitrogen and sulphur in varying amounts.

There are 24 amino acids of which 9 are essential amino acids and the remaining are non essential amino acids.

Proteins are classified into 3 types

- Simple protein
- Conjugated protein
- Derived protein

Sources

- Animal sources - meat, eggs, cheese, fish
- Vegetable sources - pulses, beans, nuts, oil seeds.

Assessment of protein nutrition status - Serum albumin concentration

Function of Protein: - Body building

Repair and maintenance of body tissues, synthesis of certain substances like antibodies, plasma proteins, hemoglobin, enzyme hormones and coagulation factors.

Proteins are connected with the immune mechanism.



## Vitamin

Any of a group of organic Compounds which are essential for normal growth and nutrition and are required in small quantities in the diet because they can not be synthesized by the body.

Vitamin-A (Retinol)	loss of vision (Blindness)
Vitamin-B1 (Thiamine)	Weak muscles and severe weight loss (Beriberi)
Vit B2 (Riboflavin)	Poor diet and mouth sores
Vit B3 (Niacin)	Diarrhoea and dermatitis
Vit B5 (Pantothenic acid)	Ischemic attacks and multiple sclerosis affect brain
Vit B6 (Pyridoxine)	low number of lack of red blood cells
Vit B7 (Biotin)	Red and itchy skin
Vit B9 (folic acid)	Immature RBCs in the bone marrow
Vit B12 (Cyanocobalamin)	Abnormal absorption in the small intestine
Vit-C (Ascorbic Acid)	Bleeding <del>of bones</del> gums & swollen joints
Vit-D (Calciferol)	weakening of bones near joint
Vit-E (Tocopherol)	faster depletion of RBCs from the body
Vit-K (Phylloquinone)	Irregular and slow blood bleeding and clotting



Malnutrition and its prevention:— Malnutrition is a condition that results from nutrient deficiency or overconsumption.

Undernutrition:— This type of malnutrition results from not getting enough protein, calories or micronutrients.

It leads to low weight-for-height (wasting), high-for-age (stunting) and weight-for-age (underweight)

Overnutrition:— Overconsumption of certain nutrients, such as protein, calories or fat, can also lead to malnutrition. This usually results in overweight or obesity.

Common Causes of malnutrition:— Malnutrition is a worldwide problem that can result from environmental, economic and medical conditions.

- ⇒ Food insecurity or a lack of access to sufficient and affordable food
- ⇒ Digestive problems and issue with nutrient absorption
- ⇒ Excessive alcohol consumption
- ⇒ Mental Health disorders
- ⇒ Inability to obtain and prepare food.

Population at risk:—

- ⇒ People living in developing countries or area with limited access to food.

- ⇒ Individuals with increased nutrient needs, especially children and pregnant or breastfeeding women
- ⇒ People that live in poverty or have low incomes
- ⇒ Older adults, particularly those who live alone or have disabilities
- ⇒ People with issue that affect nutrient absorption

### Prevention and Treatment:—

- ⇒ Government agencies, independent organizations and schools can play a role in preventing malnutrition
- ⇒ Research suggest that some of the most effective ways to prevent malnutrition include providing iron, zinc and iodine pills, food supplements and nutrition education to populations at
- ⇒ Prevented by eating a diet with a variety of foods that include enough carbs, proteins, fats, vitamins, minerals and water.

### Sign & Symptoms of malnutrition:—

- ⇒ a lack of appetite or interest in food or drink
- ⇒ tiredness and irritability
- ⇒ an inability to concentrate
- ⇒ always feeling cold
- ⇒ depression
- ⇒ Loss of fat, muscle mass, and body tissue
- ⇒ A higher risk of getting sick and taking longer to heal
- ⇒ longer healing time for wounds
- ⇒ a higher risk of complications after surgery

## Sociology and Health

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The understanding or learning such various aspects means the society which is known as sociology.

Sociology is the youngest branch of social science but we all are practicing it since mankind.

The term sociology is derived from two different languages Latin and Greek. Latin word "Socius" means society and Greek word "logus" means study or science. Thus sociology means the scientific study of society or science of society.

Health Sociology:— The subject deals with the study of social aspects of health, health-related problems, health-related events, health-related behaviours and health institutions. It was previously known as medical sociology.

Culture and role of Cultural factors in Health:—

In sociology the word culture is used for acquired behaviour, which is learned through ~~the~~ socialisation and is transmitted from one generation to the next. It is a heritage in which a child is born. Thus human behaviour is reflection of his/her cultural background. Culture is associated with human being.

Some important issues of health-related cultural behaviour in our country are discussed below.

a) Cultural based concept of disease causation and disease cure



- b) Cultural practices with environment and sanitation.
- c) Cultural aspects of food and nutrition
- d) Cultural Practices related to mother and child health
- e) Cultural Practices related to Personal hygiene
- f) Cultural Practices related to marriage and sex

### Impact of Urbanization on Health and disease

Urban area is defined as many people live and work together closely. In India census 2011 they defined urban area are those do not have panchayat and municipality, Corporation, Cantonment board or notified town Committee area. Along with this the population must be more than 5000 and 75% of population working in non-agriculture area and population density of at least 400 per sq. km.

- ⇒ Unplanned and unsustainable patterns of urban development are making developing cities focal points for many emerging environment and Health hazards.
- ⇒ As urban population grow, the quality of global and local ecosystem, and the urban environment, will play an increasingly important role in public health with respect to issue ranging from solid waste disposal, provision of safe water and ~~sanitation~~ sanitation, and injury prevention, to the interface between urban poverty, environment and Health.

Poverty and Health:— Poverty is a major cause of ill health and a barrier to accessing health care when needed. The poor cannot afford to purchase those things that are needed for good health, including sufficient quantities of quality food and health care.

Health Hazards of Poverty:—

1. Communicable Disease:—

- 1) Water borne disease
- 2) Food-borne disease
- 3) Respiratory disease
- 4) STI's including HIVs

2. Non Communicable Disease:—

- malnutrition
- Anaemia
- Vitamin and mineral deficiency

3. Social Problem:—

- Drug addiction
- Alcoholism
- Family disintegration
- Antisocial behaviour  $\Rightarrow$  beggary, violence  
diligency, terrorism

4. Mental Problem—

- Depression
- Loneliness
- Inferiority Complex

Hygiene and Health:— According to the World Health Organization (WHO) "Hygiene refers to conditions and practices that help to maintain health and prevent the spread of disease" "Personal Hygiene refers to maintain the body's cleanliness. Many people equate hygiene with cleanliness but hygiene is a broad term.

Personal Hygiene:— Personal Hygiene may be described as the principle of maintaining cleanliness and grooming of the external body.

Regular Routine of Personal Care washing and Grooming:—

Hair

Face & Skin

Teeth

Ears

Hands

Nails

Feet

Factor's for ~~the~~ Personal Hygiene

⇒ Economic Factors