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Health Physical & Yoga Education

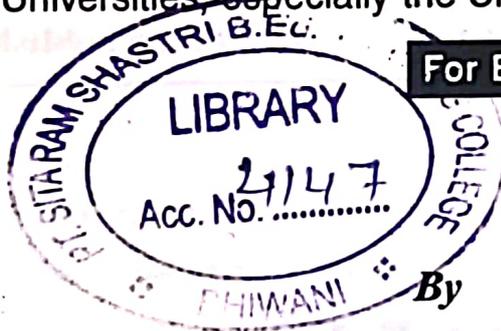
JYOTI NARULA BAHL

VIJAYA PUBLICATIONS

LUDHIANA

Health, Physical and Yoga Education

(According to the latest syllabus prescribed by NCTE
for B.Ed. students of C.R.S.U. Jind, M.D.U. Rohtak,
K.U. Kurkshetra, C.D.L.U. Sirsa & All Indian
Universities, especially the Universities of Haryana)



For B.Ed. Students IInd Year

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SYLLABUS

C.R.S.U., Jind & M.D.U., Rohtak

Time: 1:30 Hours

Max. Marks : 50

(Theory: 40, Internal: 10)

Unit – I

Health Education

- Concept
- Aims and objectives of Health Education
- Factors influencing health
- Role of the Teacher in School Health Programme

Physical Education

- Concept
- Misconception
- Aims and Objectives
- Relation with General Education

Posture

- Concept and Values of good posture
- Causes of poor posture
- Common postural deformities and their management

Unit – II

Communicable Diseases

- Meaning and Characteristics
- Mode, control and prevention
- First Aid - Meaning and Scope
- Qualities and duties of a First Aider

Yoga Education

- Meaning and importance of yoga
- Aims, scope and functions of yoga education
- Components of Patanjali's Ashtang Yoga

Yoga Diet

- Concept and types of diet/food
- Its application in modern context

Tasks & Assignments : Any one of the following (5 marks)

- Any two postural deformities and their management
- Any five Asanas and their effects on Human Body.
- Any other project/assignment given by the institution

Terminology in Content

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1

Chapter

HEALTH AND HEALTH EDUCATION

"Health is the quality of life that enables an individual to live most and serve best"
-Williams.

1. Health is the level of functional or metabolic Efficiency of a living being. In humans it is the general condition of a person's mind and body i.e. free from illness, injury or pain.
2. The English word health comes from the old English word 'hale' meaning wholeness, a being whole, sound or well.
3. According to WHO (1946) *"Health is state of complete physical, mental and social well-being and not merely the absence of disease or inferiority."*
4. Medical Dictionary has three definitions for health:
 1. "The state of organism when it functions optimally without evidence of disease or abnormality.
 2. A state of dynamic balance in which an individual or a groups capacity to cope with the circumstances of living is at an optimal level.
 3. A state characterizes by Psychological anatomic and physiologic integrity, ability to perform personally valued family, work and community roles, ability to deal with physical, biological, psychological and social stress; a feeling of well-being and freedom from the risk of disease and untimely death.

Importance of Health

Health is important because it helps in attainment of personal ambition. It favours personal efficiency. It contributes an individual

life span. Many people do not realize the importance of Health. Whether they work at home or in an office or anywhere else. We need good health in order to perform our duties well. Generally when people talk about health, they usually refer to the condition of the body. However, health does not merely being free from physical pain. The mind is of crucial consideration in the overall assessment of well being. The main causes behind poor health condition are diseases, improper diet, injury, mental stress, lack of hygiene and unhealthy life style, etc. Over the past few years, our lifestyle has changed and we often tend to ignore the importance of healthy living in one way or the other.

Importance of Health for Youngsters

Staying healthy for youngsters is vital for proper growth and development of their mind and body. They require enough energy to spend the entire day in school or college. They should be able to focus in the classroom and fully participate in the activities on the field. For this, they need proper nutrition which includes carbohydrates, proteins, calcium minerals etc. Today most parents have a basic knowledge of food and health related issue. However, they often fail to understand that regular medical checkup is must for everyone, even a youngster behavior has to be monitored closely. This way any major health problem can be prevented in future.

Importance of Health at Work place

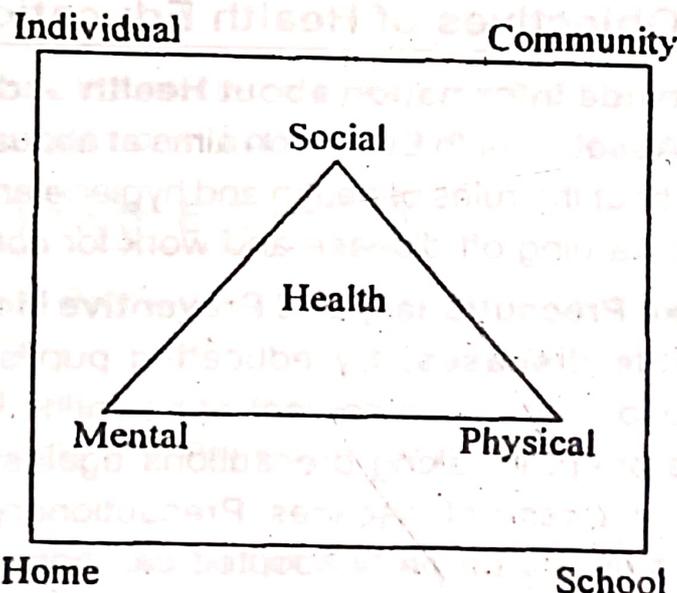
As an employee, you should take good care of your health both at the workplace as well as at home. This will make you feel more energetic and you will be able to carry out both simple as well as difficult tasks without pushing yourself too hard. As your mind and body is free from work pressure and mental stress, you can handle the daily tasks at workplace with a positive attitude. Your mind develops a natural tendency to focus upon the positive and is not bothered much about the negatives. Most important is that at the end of the day, you can sleep well and you do not have to start the next day with a body ache or joint pain. As a result, you do not need a medical leave too often and you will get your salary at the

end of the month without any deductions. Good health has a positive effect on the productivity of the employers. Therefore, an organization should also give the prior importance to the health care of its employers through its policies.

Health Education

Health education is the profession of educating people about health. Areas within this profession encompass environmental health, physical health, social health, emotional health, intellectual health and spiritual health. It can be defined as the principle by which individuals and groups of people learn to behave in a manner conducive to the promotion, maintenance or restoration of health. However as there are multiple definitions of health, there are also multiple definitions of health education.

The joint committee on Health Education and Promotion Terminology of 2001 defined Health Education as "any combination of planned learning experiences based on sound theories that provided individuals, groups and communities the opportunity to acquire information and the skills needed to make quality health decisions".



Dr. Thomas Wood defines health education as. "The sum of experiences in and schools elsewhere that favourably influence habits, attitudes and knowledge related to individual, community and racial health."

According to K.C Pang "Health Education is a method of conveying to the community the knowledge that necessary for the prevention of disease, the opportunity to lead a full normal life physically mentally and socially."

Health Education is dynamic in nature. Therefore to be effective it requires interaction between the individual, home, school and community to increase the abilities of people to make informed decisions affecting their personal, family and community well being.

In simple words the basic concept about health should be clear to the child. He should know-"why to do, what to do and how to do?" For example washing hands before taking meals is necessary. Why? because it reduces the risk of disease. No false fear should be created in the mind of the child nor any superstition should be attached to it. Health Education, however, is a human creation and although imperfect in many respects, it is a more manageable concept it is restricted to the process of presenting information and the educational experiences designed to influence behaviour in ways beneficial to health. Health Education is distinct and separate from medical treatment and other forms of health services.

Aims and Objectives of Health Education.

(i) **To Provide Information about Health and its Values as a Community Asset:** Health Education aims at acquainting the pupils and teacher about the rules of health and hygiene and precautionary measures for warding off disease and work for common good.

(ii) **To take Precautionary and Preventive Measures against Communicable diseases:** By educating pupils about rules of Health Education and advancement of scientific knowledge, they can be made adept in taking precautions against contamination, contagions and spread of diseases. Precautionary and preventive measures, if they are properly adopted can help in improving the health standard of society.

(iii) **To Maintain norms of good Health, it aims at:** The school authorities must provide hygienic environment in the form of adequate. Ventilation, proper temperature, good sanitation and all

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(iii) **To Maintain norms of good Health, it aims at:** The school authorities must provide hygienic environment in the form of adequate. Ventilation, proper temperature, good sanitation and all

round cleanliness which help in promoting desirable health habits among the pupils.

(iv) **To Sender Assistance to the School going Children in Understanding the Nature and Purpose of Health Services and Facilities:** It aims at discovering physical defects and other abnormalities in the child and promoting their correction, if they are remediable easily.

(v) **To Develop School, home and Community Cooperation in Health promotion:** 'School is a miniature of Society' Responsibility of ill health does not lie on one's shoulders. Even some causes of ill health have their origin in social conditions, which require action of the part of community as a whole in order to eradicate them. It aims at realizing the people to do combined efforts and work for common good.

(vi) To help students to expose students a variety of activities and experiences related to Health Education.

(vii) To help individual to develop a sound understanding of their total development and enable them to attain positive self-images.

(viii) To allow the students to experience the social relations that will encourage a desirable cooperation with others.

Principle of health Education

Health Education brings together the art and science of medicine and the principles and practice of general education. The teacher cannot teach until the pupil wants to learn. On the basis of learning principles we have tried them to use them in Health Education.

1. Principle of Interest of People: Health teaching should be related to the interest of people, Public is not interested in health slogans like 'Be healthy' or 'Eat good food.' Health Educators must find out the real health needs of the people.

2. Principle of Life style: Health education is concerned with everybody living as it affects the individual, his family and community. Health Education deals not only with the health problems of the

individual but also with those of the family of pupil, the school, the community and the nation as well. These problems are of the present and future.

3. Principle of Facts: Health Education deals in specific facts and not in generalities. These facts are based on research, experiments and well founded conclusions of school health education, public health, medicine, nutrition and pharmacy. The purpose of health education is to interpret the conclusion so that the students can easily understand the facts.

4. Principle of Positivity: Health Education is positive in its approach. For healthful living school students need guidance. It is only health education that can help the students to form positive opinions to guide their action. Valid health information positive in its approach may be able to redirect a developing non-beneficial health behaviour in to beneficial one.

5. Principle of Projection: Health Education has a five pronged attack. It attempts to improve mental and physical health of the students, erase misconceptions, promote beneficial health practices and healthy attitudes. Specific and valid health attitudes applied in everyday life can strengthen the individual health practices, attitudes and interests so that health becomes a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

6. Principle of Objective Information: Health education is based on objective information about pupils' health states, physical and mental attitudes, knowledge and interests etc. Health Education will be meaningful only if it satisfies the needs and interests of the individual.

Why is Health Education Important?

Health Education is important because:

- (i) It improves the health status of the individual, families and communities, states as well as nation.
- (ii) It helps in reducing early deaths.
- (iii) It enhances the quality of life for all people.
- (iv) Its purpose is to positively influence the health behaviour of individuals, communities as well as the living and working conditions that influence their health.

- (v) It helps systematic strategies to improve health knowledge, attitudes, skills and behavior.

By applying Prevention is better than cure health education reduces the costs (financial as well as human)

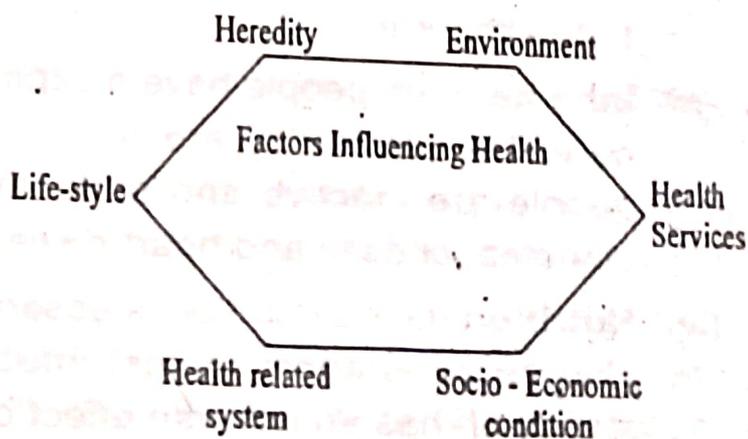
Factors Influencing Health

Maximum attention is focused on people's behaviour and their decision to smoke, drink over-eat and so on with strong messages about the changes needed to become healthier. But the behaviour of the people influenced by the circumstances and events, family and friends, education, income, job prospects and environment.

Most specifically key factors that have been found to influence whether people are healthy or unhealthy include:

- (i) Culture
- (ii) Physical Environment
- (iii) Culture Environment
- (iv) Gender
- (v) Health care services
- (vi) Working conditions/Employment
- (vii) Biology and genetics
- (viii) Personal health Practice
- (ix) Income and social status
- (x) Education and literacy
- (xi) Social support Network
- (xii) Healthy child development
- (xiii) Personal Health Practice etc.

There are number of factors which exist with in the individual and the society but there are some important factors which determine health are:



1. Heredity: Genes determine the health of an individual from the moment of conception. This genetic make up can not be altered. Some diseases like mental Retardation (MR) and diabetes have genetic origin. So the health of an individual depends on its genetic constitution.

2. Environment: Some diseases are caused by changes in environment like air, water, climate etc. as the environment is of two types; internal as well as External both types of environment affects our health. Internal environment relates to each & every tissue, organ and system of the body. External Environment is the physical, psychological and biological components to which an individual is exposed. Environment has direct influence on the mental, physical and social well being of a person.

3. Life style: "Health is the way people live" It includes culture, behaviour and also habits like smoking and alcoholism. A number of diseases like cancer, diabetes, heart problem are related to an individual's life style. Good life style like good food, exercise, sleep promotes good health.

4. Socio economic Conditions: This includes education employment, income and nutrition.

- (i) **Education:** Education plays a vital role in influencing health education especially female Education. Education helps the people to understand the importance of clean environment and how to maintain good health.
- (ii) **Employment:** Employed people enjoy good health. Unemployed people, due to lack of income do not have access to health care.
- (iii) **Income:** Rich people have a capacity to seek better medical care. Therefore they are healthy. On the other hand, rich people are inactive and sedentary. So they are prone to diabetes, obesity and heart diseases.
- (iv) **Nutrition:** Good nutrition is essential for normal growth. It is also for resistance against infection. On the other hand, starvation has an adverse effect on health.

5. Health Services: The aim of health and family welfare services is to prevent illness, treat diseases and promotion of health. Health services like immunization and safe water supply prevent a variety of diseases.

6. Health Related Systems: This includes education, industry agriculture and rural development. It has an impact on health by raising the standards of living.

School Health Programmes

There is a famous saying, "Health Education is the real education."

It is right as there is no substitute of health education, since by the passing of time, people have been interested in knowing more about their health and fitness as they believe if they stay fit only then they can achieve impossible or most difficult.

Health Education is now a compulsory curriculum in every class and standard starting from school to college level. Now a days, there is health education for kids, youth, adults alike in order to polish their knowledge about how to make healthy living their daily routine.

Aims and objective objectives of the school Health Education Programme

- (i) To set up certain standards of health and to keep the school pupils informed of the common defects of the body.
- (ii) To educate the parents and other adults through health education programmes for child so that they may develop better habits and attitudes.
- (iii) To teach the pupils what can be done by way of remedial action.
- (iv) To establish in the pupils the habits and principle of living hygienically, so that they grow as healthy adults with abundant vigour and vitality.
- (v) To improve the individual's and community life for future and to ensure a better second generation and still better more generations to be healthier.

- (vi) To acquaint the pupils with health rules so that they may be healthy and inspire others to be so.
- (vii) To bring to the notice of the pupils the evil consequences of various bad habits so that a healthy environment may be built up within and outside the school.
- (viii) To inculcate healthy habits in the children and develop them in to healthy physically as well as mentally fit individuals.
- (ix) To inculcate various social virtues through games, sports, plays and social service.

Basic Elements in Health Education Programme

- (i) The habits of cleanliness with regard to body, bodily organ like teeth, and dress.
- (ii) The balanced diet, how the diet may be prepared, nutritive diet.
- (iii) The need for fresh air, water, ventilation, rest and sleep.
- (iv) Knowledge of structure of the various organs of the body.
- (v) Knowledge of functioning of the various systems of the body.
- (vi) Sanitation at home, school, neighborhood factory areas and slums etc.
- (vii) The sewerage system, the arrangement for fresh water, the sanitary arrangements in the health centers and their functioning.
- (viii) Knowledge of various common diseases, their causes, symptoms and precautionary measures.

Health Education and School Health Programme

The school attempts to promote health children and youth through a specialized programme that contributing to the understanding, maintenance and improvement of the health of pupils and school personnel, including health services, health education and healthful school living.

A recognition of the need for health education in schools has developed through the years, as educators and the lay public health

have come to realize the importance of providing learning experiences which will result in health living for more people. Furthermore, they have come to see more clearly the relationship of knowledge, attitude and practices in respect to health. Health is rapidly being regarded as "every body's business."

Every school, regardless of size, should have some one on its staff assigned to coordinate the various aspects of the school health programme. In larger schools this might be a full-time position. In smaller schools it could be a principle physical education teacher or some qualified staff member who has interest and responsibility in this area.

Health Education at Elementary Level

Health Education at the elementary level is aimed primarily at having the child develop good health habits and live happily, healthy fully and safely. This is achieved in great measure by adapting good health practices to the regular routine of school and home living, rather than by dispensing technical, factual knowledge concerning health.

The type of health programme offered should be adapted to the child's level and planned in accordance with his or her interests and needs.

It should also be remembered that health education is a continuous process and cannot be compartmentalized within a definite subject area or within a class period. It embraces all the activities and subjects that are a part of child's life.

It is difficult to prescribe the amount of time that should be devoted to the teaching of health on the elementary level because the needs and interests of pupils vary. However, the amount of time devoted to health education should be equal to the other major areas of the curriculum.

The Norfolk, Virginia, public schools list fourteen basic areas of health instructions for the elementary school.

- (i) Play and physical education.

- (ii) Personal hygiene, including diet, rest, exercise, clothing and hand washing etc.
- (iii) Emotional and Mental health
- (iv) Social hygiene
- (v) Experiences in healthful living
- (vi) Nutrition
- (vii) Dental hygiene
- (viii) Eye hygiene
- (ix) Posture Education
- (x) Safety Education
- (xi) First aid
- (xii) Communicable diseases, listed under health services
- (xiii) Experiences in health services
- (xiv) Foot hygiene

Health Education at Primary Level

At the primary grade level the emphasis should be more on the child and his daily routine as affected by certain health practices and attitudes. His various routines and associations at school and at home form the basis for the health. The importance of healthful classroom environment is stressed. Such items as cleanliness, eating safety and good mental hygiene are brought out as the child plays, eats and perform those many experiences which are common to all youngsters of his age.

According to the American Association of school the following topics includes at primary level.

- (i) Growth and health
- (ii) Nutrition
- (iii) Elimination
- (iv) Exercise, relaxation, rest and sleep
- (v) Personal hygiene
- (vi) Prevention and control of diseases

- (vii) Care of eyes and ears
- (viii) Medical and dental attention
- (ix) Emotional and social adjustment
- (x) Safety

Health Education at Secondary Level

At the secondary level the values of certain health practices are brought out. A planned progression in instruction is developed. Although there is still stress on the actual practices and attitude concerned with the daily routines and associations, more factual information is incorporated to form the basis for such habits. Furthermore, more and more responsibility is placed on the child for his own self direction and self control.

The utilization of trips and text books which point out the value of healthful living, interesting and inspiring stories, visual aids, class discussions and projects can become a part of the experiences of each child so that the need for certain behaviour is dramatically and effectively stamped upon his mind and total being.

The structural organization of the secondary level differs from the elementary and primary level. At these levels, the classroom teacher takes over all in charge of a group of children. She teaches them various subjects and stays with them throughout the entire day & also has supervision of their activities, at the secondary level, the child has many different Teachers. These teachers specialize in subject matter to a greater degree than they specialize in pupils.

The content covered at secondary level should also be adapted to the needs and interests of the students.

During the junior secondary level the following topics are included

- (i) Food, rest and exercise
- (ii) First aid
- (iii) Safety
- (iv) Alcohol and narcotics

- (v) Mental health
- (vi) Communicable disease
- (vii) Growth and functions of the human body.

At Secondary Level

- (i) Importance of family life
- (ii) Child development
- (iii) Consumer Health Problems
- (iv) Evaluation of professional health services
- (v) Industrial health
- (vi) Civil defense
- (vii) Housing
- (viii) Food Budgeting
- (ix) Governmental Health Agencies
- (x) International Health activities
- (xi) Environment factors affecting community life.
- (xii) Importance of health in achieving adult objectives

Should be covered. Health Education at the secondary level can represent an experience which will have a lasting effect for the betterment of human lives.

Some Method for Imparting Health Education Programme in School

Programme of health education should not confine itself to personal hygiene of pupils only. It should include the health of community as a whole. A school health programme is in two folds

- (a) Prevention of the development of poor health
- (b) Preservation of good health

This programme can be followed under the following heads.

1. Health instruction
2. Health services
3. Health supervision

1. Health instruction :

- **Aim :** To acquaint the pupils about the functioning of various organs of body, rules of health and hygiene of body, rules of health and hygiene and methods of curing diseases.
- Method of imparting Health instruction includes guidance
 - (i) In the development of specific health habits
 - (ii) In giving right type of information about physiology and hygiene which could lead the pupils to live in a healthy manner.
 - (iii) Developing civic sense.

The following steps will go a long way in this regard :

- (i) Incidental teaching
- (ii) Lectures on health by experts
- (iii) Printed Material
- (iv) Film and Film strips
- (v) School Broad cast and Radio Talks
- (vi) Educational field trips
- (vii) Health weeks.

2. Health Services :

- **Aim :** Locate ill health and provide medical care after proper medical check up.
- **Health services in school**
 - (a) Proper arrangement of medical check up at the time of admission and in subsequent years.
 - (b) Regular check up should be done on the common problems of the students like vision, hearing, dental health and personal hygiene.
 - (c) If there is any dangerous disease students should be properly checked and advised in a systematic manner.
 - (d) There should be arrangements in schools for emergency treatment

School should establish certain organised services whose programme should constitute:

- (a) Medical examination and its follow-up.
- (b) Maintenance of records of medical inspection and health of the children.
- (c) Clinical treatment of pupils who suffer from diseases.
- (d) Vaccination and immunization
- (e) Observation by the teacher and experts to locate defects and diseases, if any, especially, of skin, eyes, ears, teeth, chest feet etc.
- (f) Recording history and defects regarding special cases.
- (g) Emergency service and sanitation conditions of the school.

3. Health Supervision

- **Aim :** To provide a healthy environment in the school and to maintain cleanliness and hygienic conditions in the school.

In order to ensure good physical condition of school campus there should be:

- (a) Healthy environment of the school and classroom
- (b) A suitable place away from congested areas or public place so that the environment is not noisy.
- (c) Physical facilities

School Health Services

The health of school children is a most important consideration for educators, parents, physicians and other who desire to develop a fit populace. A good health service programme is an essential in the achievement of this goal. Without satisfactory health services, the health of school children cannot be adequately developed maintained and projected.

Health services contribute to the realization of educational aims. Educational committees, conferences and other important groups have continually listed health as one of the objectives of education.

Health services are necessary to attain this objective. Certainly it is just as important that our educational systems turn out healthy children as it is to turn out graduates who are well informed in such areas as Mathematics, English and Geography. Life's goals cannot be accomplished successfully with mere facts. Health is a very important consideration.

Necessity of School Health Services

The conditions in the schools are usually such as are not conducive to health. Long hours of work at the desks, poorly ventilated rooms prolonged strain on the eyes of the pupils warrant some service that protects their health. School health service is thus a necessity in the present situations.

Responsibility of School

The school is responsible for the physical; moral, mental and spiritual development of future citizens. Physical development constitutes one of its major responsibilities.

In our country most of the parents are illiterate and they are not expected to inculcate health habits among pupils. In certain cases, they need to be educated themselves. The responsibility of educating the parents and the ordinary citizens should be shouldered by some agency, especially the school. The school should act as community centre and educate the people.

Our country is still poor and backward. Our children are generally un-fed. School should look to malnutrition of children and locate their deformities and disabilities in the earliest stages, through physio-medical examination. The parents are not in a position to have such a medical checkup. The school must play its vital role in promoting health of pupils.

Programme of Health Education

Programme of health Education for child?

- (i) Cleanliness
- (ii) Health Examination

- (iii) Physical Exercise
- (iv) Ventilation
- (v) Health Instruction
- (vi) Refreshment and pure water
- (vii) Inculcation of good health habits.

In 1913 the legislature placed responsibility on the commissioner of education for carrying out the provision of the Education Law, in 1973 the law was augmented and reinforced by the commissioner's Regulations governing school Health service and by Department Regulations fixing responsibility for administering the above law and regulations on the Bureau of Health Services. In accordance with the above law regulations, the following areas represent the state's Programme in School Health Service

1. Essential Phases of School Health Service

- (a) Annual and subsequent medical examinations.
- (b) Annual testing of all pupils for vision and hearing.
- (c) Communicable Disease control in cooperation with parents and Public Health authorities.
- (d) Notification of parents regarding child health status.
- (e) Dental hygiene examinations and Dental Health Education.
- (f) Recording and reporting
- (g) Health guidance of the individual pupil, his parents and teachers.
- (h) First aid care in school emergencies.
- (i) Follow through of each individual pupil with his parents until needed medical and dental care is secured.
- (j) Sanitation and safety of the school plant.
- (k) Evaluation of programmes as the basis for planning, organization and coordination.
- (1) In service training of school administrators and Health service personnel.

- (m) Cooperation with all state and community agencies concerned with child health.

2. Deterrent factors

- (a) Lack of sufficient training facilities in state for dental hygiene teachers.
- (b) Lack of adequate Health Service for preschool children.
- (c) Lack of medical and dental treatment facilities.
- (d) Assignment of school nurse teachers to duties not heaving such professional preparation.
- (e) Insufficient school Nursing Service Personnel employed by boards of education.

3. Present achievements by Local school authorities

- (a) 94.5% of enrolled pupils service an annual health examination.
- (b) In cities and village approximately 73.8% of children with defects service needed medical care.
- (c) In central schools approximately 55.7% receive recommended treatment.

Role of the teacher in school Health Programme

The role of teacher in school health programme revolves around some basic functions of school health service as:

- (a) To teach children the fundamentals of healthful living
- (b) To protect each child from acquiring disease from one another.
- (c) To provide data concerning the status of each child, so that the school health programme may be adapted to individual needs.
- (d) To advice parents and guardians of children concerning defects, which should receive the attention of the family physician.

Hence the teacher in the above context will undertake:-

- (a) To impart knowledge about health by giving information as to the structure and function of body so as to enable students to take proper care of body.
- (b) To give information about first aid rules of safety and what to do until doctor arrives.
- (c) Meet with the school physician nurse and others in order to determine how she can best contribute to the total health programme.
- (d) Discover the health needs and interests of her pupils.
- (e) To teach basic facts of ventilation, the effects of air, sunlight, sterilization, disinfection.
- (f) To see the children needing special care are referred to proper places for help.
- (g) Participle in work of the school health council.
- (h) To organise and arrange seminars on health matters.
- (i) Provide an environment for children while at school which is conducive to healthful living.
- (j) To implement the instruction of Block Medical officer or of Medical officer.
- (k) Help pupils assume an increasing responsibility for their own health as well as the health of others.
- (l) Provide a well renowned class physical education programme.
- (m) Become familiar with teaching aids and school and community resources for enhancing the health programme.
- (n) To assist the nurse or health inspector in immunization work.
- (o) Take the responsibility for the development of healthy physical environment i.e. school plant, lighting, drinking water and sewerage.
- (p) To keep permanent cumulative record of the inspections and examination of each child.

- (q) Be aware of the individual differences of pupils.
- (r) Set an example for the child of what constitutes healthful living.
- (s) Motivate the child to be well and happy.

Questions

- Q.1 What do you mean by Health Education? Discuss in detail the role of teacher in school Health Programme.
- Q.2 Write a detailed note on the place of health education in the school Education Programme.
- Q.3 What do you mean by Health? Explain the aims and objective of imparting Health Education at the school stage.
- Q.4 Define Health Education Give its importance in any scheme of education.
- Q.5 What exactly the role of Education in promoting health in the school?
- Q.6 Health is the quality of life that enables an individual to live most and serve best." Explain.
- Q.7 Explain in detail about "Health Supervision".
- Q.8 Why it is so important to run School Health Programmes?

2

Chapter

PHYSICAL EDUCATION

Introduction

The human being is an active creature. He possesses capacities for movement. He has all the necessary neuromuscular mechanisms which make movement possible without its basis movement there is no life and physiologically, while man is alive, he must move in some way. The ability to run, walk, throw, bend, manipulate the fingers, Swing a stick, Swin in a river or climb a mountain-all these movement have played a major role in man's evolutionary experience. The role has been not only physical but intellectual also.

Meaning of Physical Education

The term "Physical Education" takes on a new meaning after the consideration of the word Education. The word physical used in reference to various bodily characteristics such as physical strength, physical development, physical prowess, physical appearance and physical heath it referees to the body as contrasted to the mind. Therefore when you add the words "Education" to the word physical and use the word physical education, you are referring to the process of education which goes on when you are related to activities which develop and maintain the human body, when an individual is playing a game, swimming out on parallel bars, marching, skating or performing in any one of the gamut of physical education activities which aid in the development and maintenance of his body education is taking place at the same time.

Physical education is a very important part of the education process. It is not a "trill" or an "ornament" which has been tacked o

the school programme as a means of keeping children busy. It is, instead, a vital part of education. Through a well-directed physical education programme, children skill for the worthy use of leisure time, engage in activity which is conducive to healthful living, develop socially and contribute to their physical and mental health. Definition of Physical Education

The term 'Physical Education' has been defined by different educationists in different ways:

- According to *Nash* "Physical Education is that field education which deals with big muscle activities and their related responses."
- According to *A.Apher*, "Physical Education is the way of education through physical activities which are selected and carried on with regard to value in human growth, development and behaviour."
- *J.F. Williams*, "Physical Education is the sum of man's physical activities selected and conducted as to their outcome."
- *R. Cassidy*, "Physical Education is the sum of changes in the individual caused by experience involving motor activity."
- *Delbert oberteuffer*, "Physical Education is the sum of those experiences which come to the individual through movement."
- *A.E. Wayman*, "Physical Education is part of education which has to do with the development & training of the whole individual through physical activities."
- *Charles A Bucher*, "Physical Education is an integrated part of the total education process is a field of endeavor, which has its aim of development of physically, emotionally and socially fit citizens through the medium of physical activities, which has been selected with the view of realizing these outcomes. Thus, physical education is the phase of total education process which come through playful activities and tend to bring about a desirable change in behaviour and attitude of an individual.

Aims and Objectives of Physical Education

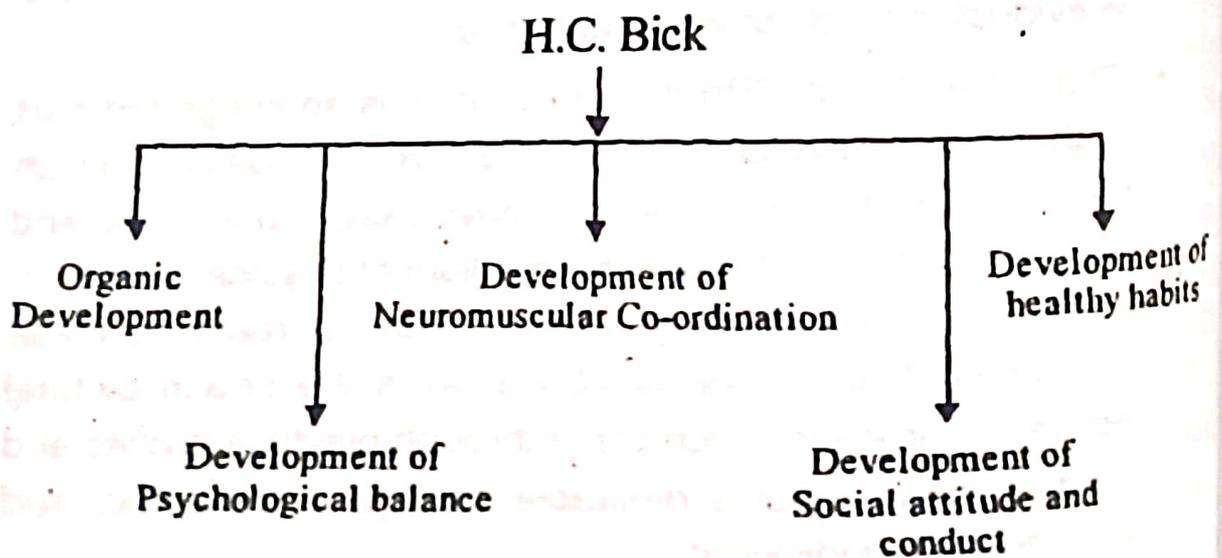
Physical education is a component of education that takes place through movement. It creates the opportunity for every individual to learn and understand academic applications for every individual to physical education as in all academic areas; students must learn the basic skills which require practice and refinement in physical education settings. Students integrated and apply these skills in everyday life. By regular participation in physical activities students will have the opportunity to develop a pattern of life enhancing and self-rewarding experiences that contribute to their potential to be healthier member of society students should be challenged to participate daily in healthy choices and health enhancing activities and behaviours.

Aims of physical education: Aims physical education is the make every child physical, mentally and constitutionally fit to develop in his such personal and social qualities that help him to live happily with others and build his into a good citizen.

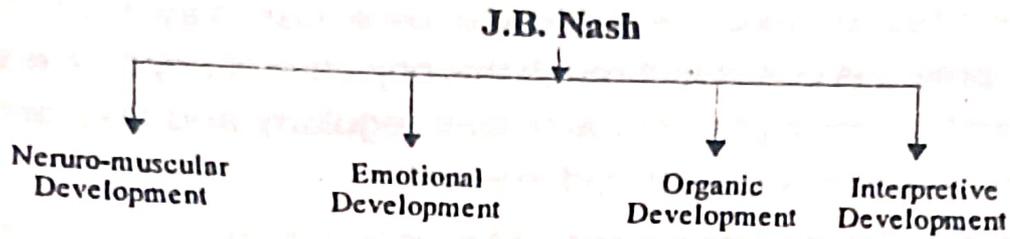
According to J.F. William, "Physical education should aims to provide skilled leadership adequate facilities and ample time for the individual and the groups to participation in activities that are physical whole some mentally stimulating and socially sound."

Objectives of Physical education : Many educationists have expressed their views regarding objectives of physical education.

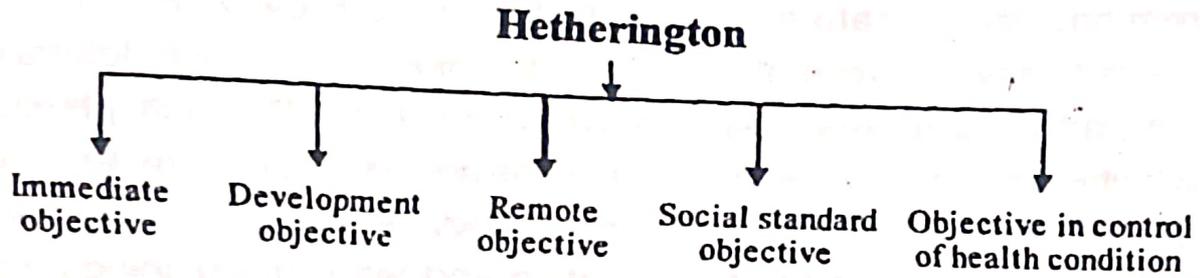
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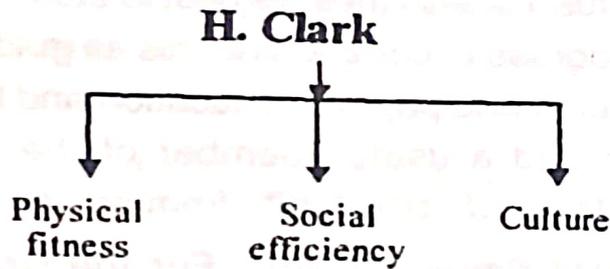
According to **J.B. Nash**



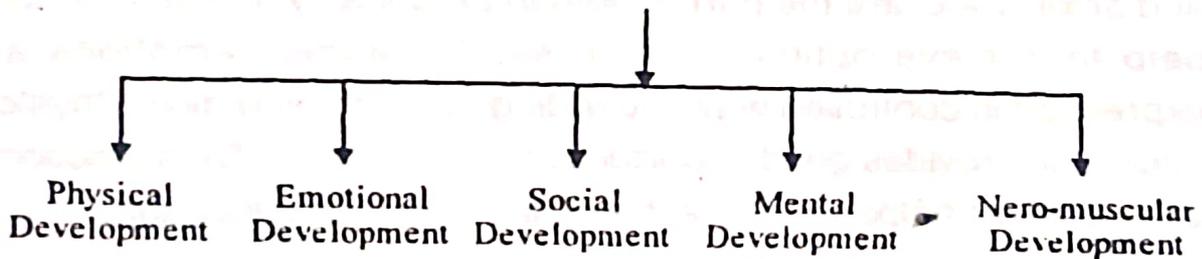
According to **Hetherington**



According to **H. Clark**



From the above we conclude that the main objectives of physical education are :



Brief description of objective:

1. Physical development: It is commonly said that 'Health is Wealth' "A sound mind resides in a sound body." To keep the body sound and fit physical exercise are necessary. Physical exercise improve our neuro-muscular response and leads to maximum physical development we should perform activities to develop growth. Our organ systems develop in size, shape and efficiency

etc. These systems and organs have to function optimally to cop up with stress of exercise. Hence we can say that Physical development is possible through this objective of physical education. We must perform physical activities regularly and take active part in them with full strength and interest.

2. Social development : Man is a social animal. He cannot survive without society. It is society which makes him human being from has animal nature. In order to adjust the society, an individual needs to develop several social qualities like co-operation, tolerance sympathy, sportsmanship, courtesy, fair play. Through physical activities, the players belonging to different places, culture and back ground come closer to each other. They adjust themselves with each other according to the situation and learn many things from one another. In society he learns the socialization process which improves the status. He also tries his best to stop the cools of society and leads the progress of community. This all guides him to achieve the aim of education and physical education and thus, he becomes an ideal citizen and a useful member of the society. Physical education provide good opportunity from social development.

3. Emotional development : For the development of an individual's personality emotion are very important. Emotion like love anger, hate, cheerfulness, pleasure, jealousy aggressiveness and anxiety etc. are the part of human personality. These emotions help to achieve optimum progress. Sometimes emotions are expressed in controlled way depending upon the situation. Physical education provides good opportunity to practice this. Thus emotional development helps man to achieve the physical education.

According to *L.D. Crow*, "Emotion is an effective experience that accompanies generalized inner adjustment and mental physiological stirred upstate's in the individual and that shows itself in the over behaviour.

Mental Development : Mental development is related to thoughts, ideas, behaviours, conduct attitude and responses. It leads to development of mind and intellectuality. The various physical activities need alertness of mind, deep concentration and calculative

movement. In one hand physical activities & sharpens the mind and on the other hand concentration of mind is essential to perform various activities. Physical education along with physical activities is a subject as other subject. It includes rules and regulation, techniques of games, physiological studies, balanced diet, sanitation, personal hygiene, health and disease. By taking part in various physical activities an individual learns to draw certain conclusions. He is able to tackle new situation which development of the individual takes place in many ways.

Neuro muscular Development: Neuro muscular coordination take place by participating in various physical activities likes games and sports. In game neuro muscular coordination helps to keep off fatigue during vigorous activities and get accuracy and smooth function of our body. The fundamental psycho-motor skills like walking, running, jumping, throwing, catching, climbing etc. become more and more easier. Thus it help the athlete to learn different types of activities quietly and efficiently.

Modern Concept of Physical Education

In modern days physical education is considered as an integral part of education. The government has introduced physical education as a subject in schools and college. This indeed a positive step towards the emphasis on physical education

According to **Hitch Cook**: "Physical education as understood in such a cultivation of power and capacities of students as well enable him to maintain bodily condition in the best working order provide at the same time for greater efficiency of these intellectual and spiritual life. Modern physical education lays stress on balanced development to body and mind. i.e. harmonious growth and development. The bodily development goes side by side with mental and emotional development if mind is not healthy body will also not be healthy."

Thus, we can say that the aims and objectives to physical education is that optimum qualities should be develop in persons through physical education. It also emphasis the balanced

development of physical, mental social, intellectual and emotional behaviour.

Aims and objective of teaching Physical Education at the Teacher's Training (B. Ed) Level

1. To development useful fundamental skills of body mechanics.
2. To develop understanding of the role of physical education in the developmental process of children.
3. To develop understanding and maintenance of total fitness and inter-relationship among physical, mental, emotional and social will being.

Immediate Objectives

(A) Immediate objectives sought by pupils:

1. Fun
2. Joy
3. Strength and endurance (boys)
4. Attractive appearance (girls)
5. Fellowship with group
6. Good physique
7. Play games well
8. Personal achievement
9. Recognition by others.

(B) Immediate objectives of the physical education teacher:

1. Teach games and activities that can be used in later life, provided the children like those game and active.
2. Engender a spirit of sportsmanship.
3. Teach the fundamental of game and activities in their proper progression.
4. To keep up with the latest trends in physical education.
5. To stimulate the activities of organic tissues by physical activity.

6. Endeavour of formulate one's own personality.
7. To learn more of nature and functions of man and plan teaching programmes accordingly.
8. Teach games and activities that develop wholesome social attitudes and desirable patterns of behaviour.
9. Build up the physique of children as a defence against disease.
10. Develop organic fitness and normal muscular strength.

(C) Immediate objective of Administration :

1. Provide a central administrative office for the purpose of communication and record keeping.
2. Eliminate unscientific practices that still cling tenaciously to school physical education procedure.
3. Provide opportunity for further study and research for physical education teacher.
4. Provide adequate, trained and intelligent teacher.
5. Eliminate unsatisfactory conditions such as bad lighting, unhealthy facilities etc.
6. Provide safe condition for class work.
7. Provide adequate and attractive facilities.

Need and Importance of Physical Education

Physical education is an integral part of the total education of the child and virtually every state, district and school. Quality physical education programmes are needed to increase the physical competence, health related fitness, self-esteem and enjoyment of physical activity for all students so that can be physically active for a life time. Knowing the physical activity promotes health is not enough; Students must be given opportunities to gain the knowledge and skills needed to adopt active life styles. Physical education teacher how to add the habit to physical activity in to their daily lives by aligning instruction with the standard for physical education and providing content and learning experiences that develop the skills and desire to be active for life.

(A) **Need of Physical Education** : Physical education is necessary to bring about a complete growth and development of child's personality. It can bring about a growth and development as well as character and personality. The children can be turned into good citizen by physical education.

- **According to B.C. Buck:** Physical education is that part of the general education programme which is concerned with the growth development and education of children through the medium of has muscle activities.
- **According to Dr. S. Radha Krishan:** Human beings are psycho-physical in nature. They have bodies which obey certain definite laws of growth. They must be kept in a state of good health and physical fitness. No great nation can be built without strong physical foundation.

Even the UNESCO to adopt an international charter on physical education. It says, "Every human being should have the fundamental right of access to physical education and sports, which is concern for the full development of his personality physical education must be grouted with education system and also in every aspect of social life."

It is the education of the whole child by the means of physical activity should be so selected and contacted as to influence each & every part of the child's life emotion, mentally, physically and morality. It is rightly said, "Physical exercise not only adds years to life, but life to year. To keep one self physically fit and healthy, physical activities are essential at every stage of human life.

(B) **Importance of Physical Education** : On the basis of studies conducted at different times and in different countries. It is proved that physical education plays an important role for the all round development of child.

1. **Physical well being** : Regular exercise plays an important role in development and maintaining a healthy well functioning circulatory system and efficient functioning of other organic systems of the body the physical fitness included speed, strength, endurance,

flexibility etc. Regular exercise increase the efficiency and capacity of individual to lead a good life.

2. Importance of exercise : Dr. Paul Duely white President Dwight D. Eisenhower's heart specialist has written, "Proper exercise is as essential to good health as eating and sleeping."

3. Control of Obesity : Physical inactivity and overeating are the most important factors for obesity. It is a serious problem excess weight and long life are not well associated over weight persons are more susceptible to diseases than the thin ones physical activity controls obesity and weight. It helps in consuming energy and burns calories.

4. Channelization of Surplus Energy : Children possess extra surplus energy. Sports and games provide a healthy of surplus energy. Proper channelization of surplus energy helps in socialization process, otherwise it may indulge the child towards anti social activity.

5. Mental Alertness : Physical fitness is related to mental alertness of the child studies have related that physical traits and intelligence are not only significantly related but, that a person's general potential for a given level of intelligence, is increased or decrease with his degree of physical fitness.

6. Development of Discipline : A player has to play under certain rules and regulation of the game in discipline. Thus, games and sports develop the habit of discipline in the child fear of punishment and disqualification in the game direct a player to remain in discipline inspite of emotional arousal.

7. Healthy instinctive expression : Physical education offers many opportunities for the wholesome expression of original tendencies. Outdoor and team game are valuable in their recognition of the gregarious interest of children. The basic urge to kick and throw is satisfied in football game and athletics.

8. Personal and social Adjustment: Physical education helps in personal and social adjustment. Studies have related that boys especially high in strength tend to be well adjusted socially and

psychologically and boys low in strength show tendencies in social difficulties, maladjustment and inferiority comply.

9. Sportsmanship : Physical education provides ample opportunities for the training in sportsmanship. Sportsmanship is that quality to honour that desires always to be courteous, fair and respectful. It is also interpreted in the conduct of player, spectators, coaches and school auto rites.

10. Work of Adrenalin secretion : During adolescence stage specially and in youth generally, there are emotional stresses and strains because of contractions in one's own thinking and the thinking of others. As a result the child develops anger or fear him. Causing increased secretion of the adrenalin. It is better to work off there, products normally though vigorous activity than it is to force the vital organs to make adjustment.

11. Mental Relaxation : Physical activities provide mental relation. It takes the child's mind off his worries and troubles and helps in better concentration.

12. Development of character : Physical education is one phase of school work that tends itself particularly to the development of character. Physical education class provides opportunities to discuss character education theory; it furnishes a laboratory for actual practice.

13. Development of national integration : Physical education help in development of national integration. By taking part in games and sports feeling to brotherhood develops games and sports provide a lot of opportunities to all the citizen to get together on one platform and work together with the feeling of brotherhood which leads to national integration.

14. Development of sympathetic attitude: If some player gets hurt while playing then all the players show sympathy with him. It can be seen in all matches. Whenever any player gets hurt or get an injury all the them mates rush towards the injured player with sympathy.

15. Knowledge of Human body system: Physical Education provides knowledge and understanding of various organ system &

their functions. It enables a person to know about the effects of exercise on various organ system in them. This information is very helpful for a player to protect himself from various diseases.

16. Worthy use of Leisure: It contributes to the worthy use of leisure time. Through activities the child can well utilize his surplus energies and make the best of the time available. This keeps the idle man occupied and does not let the unsocial behaviour develop.

17. Economic Value : Participation in games and activities provides economic value also. Today many people make their living by teaching, coaching and playing physical activities. It increases and efficiency in types of work.

18. Development of leadership Qualities: Physical Education develops leadership qualities in a player. Leadership training is provided when a leader is appointed for warming up. Sometime organisation position is given to some player during competition. This also helps in the development of leadership qualities among the players.

Scope of Physical Education : The total physical education programme consists of three aspects given ahead?

1. The Service Programme
2. Intramural Programme
3. Extra mural Programme

1. The Service Programme : In "Service Programme" the emphasis is instructional. Its objectives is to provide each child with minimum essentials of physical education.

2. The Intramural Programme: The intramural programme is concerned with the provision of competitions for all students within the school. It is important because it provides opportunities to all students to develop skills in athletics and other games.

3. The Extramural or Inter-school Programme: The extramural or interschool programme is important as it is concerned with the provision of competition for most highly proficient students in various sports.

Activities Included in Physical Education Programmes

Keeping in view the major aspects of the scope of physical education, the following activities have been included in it to achieve the main aims and objective of physical education.

1. Games & sports - Athletics, table tennis, footballs, volley-ball, wrestling etc.
2. Swimming, waterpolo etc.
3. Rhythmic
4. Gymnastics
5. Free plays
6. Dancing, dramatics
7. Corrective exercises
8. Recreational activities
9. Yoga
10. Natural activities - Jumping, climbing etc.
11. Excursion, tours & trips.

Popular Misconceptions about Physical Education

Physical education is mostly misunderstood as physical training drill which is not so physical training drill is used for force to produce tough and strong person which trainer and his trainees, like animals. There is a strong note of authoritarianism. On the other hand physical education implies, expressions from within self-disciplined initiated responses, reflective thinking, participation in planning as well as the desired outcomes in strength and organic vigour.

1. Physical Education Body Building: Some have the impression that physical education is only body building. They believe it to be exercising for physical fitness. Hence, anything which gives exercise or develops perspiration is assumed to be physical education.

2. Physical Education is Only Participation in Sport People generally think that physical education means to participate in games. Play needs no instructions and no supervision. Learning

children alone and they will play. Instructions are needed in some cases; an fight with power. Some people consider physical education as sports like hockey, football, basketball, race, and competitive events where as this is wrong concept. In fact, wrong opinions have made many to misunderstood this subject. Some of the misconceptions are:-

(i) Physical Training and Physical Education: There is a popular misconception that physical training and physical education are one and the same thing. Some schools and colleges even name the department of physical education as 'physical training'. But there are two different terms. Training implies exercise mainly for physical values related to some special attainment. Training is that programme, which is used in the army to train the soldiers for vigorous duties. Such training includes conditioning exercises, mass drill and gymnastics. Its purpose is to train a man and make him physically fit and robust. Training implies a aspects of school or one instructor in physical education class can handle one hundred or two hundred students at a time. It is a negative conception. Even horses are exercised with more care & individual attention.

3. Physical Culture : Some say physical culture is physical education. But physical culture is building one's body shapely and beautiful through special exercisers. The muscles of the body are controlled and developed. 'Gymnastics' refers to the exercises performed in Akharas or Gymnasiums such as Roman Rings, vaulting horse, parallel bars and Amalkhambh etc.

4. Physical Education Sports, Games Mass Drill : The term sports is often misunderstood, games like hockey, football, volleyball, basketball and many others, played in groups do not fulfil the term physical education. These are a part of physical education. Similarly 'Mass drill' is a series of exercise done in a group with or without music. Because of its spectacular effect and discipline it is taking the place of physical education but it is not physical education involves the whole man not his body alone body building is a secondary objective.

5. These are the activities having no other objective than physical fitness: There are some who believe it is a hotch potch or unrelated, unplanned and untaught activities having no other objective than physical fitness. Some teachers believed that to be on the safe side "get in everything" thus they perform calisthenics for conditioning the body, march part of discipline, play games like hockey, basketball for fun and square dance for social values. This was a concept of the 19th century. Modern physical education gives a variety of activities presents them in a progressive order and evaluated them for the good.

6. Wastage of Time: Many people think taking part in physical activity is just a wastage of time. But this opinion is wrong physical activity develop body and mind, both all interrelated aspects of some unit. There is a proverb that sound mind exists in sound body. If physical condition of body is disturbed the mental condition of the individual is also affected.

7. Leads to Indiscipline: People generally thinks that sports and games create indiscipline in students, but this is wrong opinion. A good sportsman always believe in disciplined way and follows the rules and regulations not only in playground but also in real life.

8. No security of job, career and profession: People also think that there is no career and profession for a player. But today attention is paid to sports personal in the selection of various competitive examination. Jobs are reserved in various govt. departments for sportsman.

9. Wastage of Money: Many games are costly. Money is needed for its equipments playground and apparatus etc. But now a days government is providing many facilities for good players like scholarships, awards Stephens and sports equipment or ground etc. Govt. has open sports department for coaching the players and also provides free education and diet to players.

10. Poor Social Status: Participation in games and sports is generally considered for poor and are not given any recognition by society. But trend is changing how. Today there are many sports

awards like Arjuna Award, Rajiv Gandhi Khel Ratan award, Padam Shir etc. given to good sportsman and add to their social status.

Relation of Physical Education with General Education

Physical education is an essential part of total education process. Whole educational process become more easy and efficient when physical education put its contributions. It has been accepted as the integral part of education. It is that part of education which proceeds by means of or predominately, through physical activity; it is not a separate or partially related field. 'Physical Education' when well taught can contribute more to the goals of general education than any other school subject.

Two Statements 'a sound mind lies in a sound body'

&

"Physical education is an integral part of total education."

One statement empowers the other statement. A complete personality is consisted of healthy body and healthy mind.

As Mahatama Gandhi once said, "By education I mean, an all round drawing out of the best in child and man-body, mind and spirit" that is his physical, mental and social aspects must be considered together.

In other words it can be said physical educations assist whole educational process in developing all-round personality. Theoretical approach many produce a sound mind only but for a sound body physical approach is required.

Therefore only classroom education itself cannot be considered as a complete educational programme until and unless physical education is regarded as an integral part of the programme.

A.R. Wayman considers, "Physical education as that phase of education, which has to do with the development and training of the whole individual through physical activities." It is an indispensable part of educational programme. Its activities should be so planned as to develop the physical and mental health of the students; cultivate

recreational interests, skills and promote the spirit of team work, sportsmanship and respect for others.

Physical education is one of the most keen edged tool in the educational kit. With it the physical educator may sculpture beautiful figures or hack to pieces and mutilate the already partially shaped raw material that comes to him.

Relationship of physical education with general education is well recognized and understood. It is therefore, physical education found essential place in regular curriculum of every educational institution.

Questions

1. Define physical education? What are the popular misconceptions about it?
2. What is the importance of physical education?
3. Write down the objectives of physical education?
4. 'A sound mind lies in a sound body'. Explain.
5. Explain the Modern concept of Physical Education.
6. Why there is so misconceptions related to physical education? Explain in detail about the Misconceptions.
7. "Physical Education is part of education which has to do with the developing and training of the whole individual through physical activities." How?

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3

Chapter

POSTURE

Introduction

Posture is not a static concept but it is a dynamic concept without good posture, our overall health and total efficiency such as digestion, elimination, breathing, muscles joints, a person who has been poor posture may often be tired or unable to work efficiently or move properly. We need to improve our posture to make our life healthy.

What is good posture?

A neutral position when there is minimal strain on the muscles, joints, bones and ligaments and where your internal organs are not compressed, blood vessels are not pressed and nerves are irritated. Thus it is a position of highest bodily integrity and efficiency, one where you feel complete freedom of movement. The head-neck-back relationship (spine) is a key focal point in ensuring freedom of movement.

Posture concerns the way, a person carries himself while standing a walking or sitting it means carriage or the manner of holding one's body.

Major causes of poor posture

1. Disease and nutritional state: Disease and nutritional can cause conditions that directly affect the bones and muscles in the musculoskeletal system that provide the strength and flexibility for good posture.

2. Heavy bags: Carrying heavy bags or on the upper back results round shoulders or one shoulder high and other shoulder low.

3. Injuries: Breaking bones, poor healing and uneven legs can be contributing factors towards poor posture. Even after a bone breaks and re-heals, the adjacent muscles may shrink and the injured person tends to alter his step or the way he walks to protect that area. All of this creates an impalpable, which causes a deviation in the way one moves, sits and stands.

4. Repeated behaviors: Additional bad "posture habits include working at a computer for long hours playing video games or driving for long periods of time. All of these factors contribute to our inability to keep our spines straight. Certain jobs also lead to spine fatigue.

5. Poor fitting shoes: Women who spend a lot of time walking around in their inch high heels are likely wreaking havoc with their posture. Shoes that wear unevenly due to overreaction. Promoting is a symptom of the foot rolling in and flattening the arch.....can certainly create poor posture.

6. Over work: Over work mental or physical causes fatigue. The body gets tired after a specific time needs rest but continuous over work leads to wrong posture by adopting different postural position to lessen tiredness and to finish work.

7. Fashion: Due to fashion many people adopt a specific style of holding the body or put on very tight clothes which hinder the activity of the body. Even one cannot breathe properly and twist one's body to feel away.

8. Fatigue: Fatigue is a common cause of poor posture of the muscles in your back if are tired and overworked they, are unable to support your spine as they should. Even the fatigued muscles are located in other parts your body, your posture may suffer latest Swedish muscles or the temporary addition of weight caused difficulty in posture.

9. Some other causes are

(i) Unhygienic school condition.

- (ii) Improper furniture
- (iii) Wrong punishment
- (iv) Lack of proper knowledge
- (v) Stress strain
- (vi) Poor muscular development
- (vii) Low self esteem
- (viii) Feet problem structural
- (ix) Alignment issues in the hips.
- (x) Not knowing how to stand up straight careless setting, standing and sleeping habits.
- (xi) Excessive weight
- (xii) Visual or emotional difficulties

Values of good posture: Posture ranks right up at the top of the list when we are talking about good health. Good posture is a way of doing things with more energy less fatigue, without good posture, you can't really be physically fit So it is rightly said - Good posture is Good health. The values of Good posture may be related to pupil's appearance movement efficiency and physics fitness. These values are described below in detail.

1. Physical fitness: There are three basic components of physical fitness. They are:

- (i) **Muscular strength:** Muscular strength in the maximum strength applied to a single muscular contraction. For example, the grip strength.
- (ii) **Muscular endurance:** It is the of ability to continue of muscular exertion.
- (iii) **Circulatory endurance:** It involves moderate contraction of large muscles for a long period of time.

2. Reduces body fatigue: When a person tries to remain in good posture, the muscles of the body are used more efficiently. Thus, more work can be done employing less amount of body energy and preventing fatigue.

3. Reduces the risk of back pain: The most important benefit of a good posture is the reduced risk of having back and neck pain. Keeping the body in the correct postural alignment prevents the ligaments and muscles from being overworked and strained. There are less chances of the discs being compressed thus reducing the risk of back and neck pain.

4. Beneficial to the brain: Good posture is quite beneficial for the brain because people with good posture have greater concentration and better mental ability compared to those with poor postures.

5. Enhance confidence: People having good posture feel and appear quite confident as compared to those who are not aware of their posture. Such people project greater authority on others both at formal and informal places.

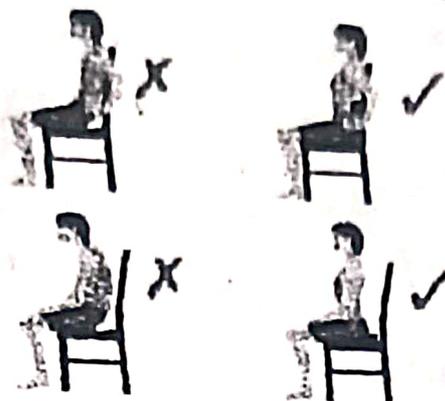
6. Improve appearance: Good posture helps the people to improve their appearance and make them look taller and slimmer. Posture is a part of your life as it is important whether you are sitting, standing or sleeping or moving. The mattress you choose for sleeping should not be too soft nor too hard as either of the two will spoil your posture. While sitting, align your shoulders vertically on your hips and sit symmetrically so that there is equal pressure in this direction, which will improve appearance.

7. Spiritual values: With the physical uplift of the body by assuming a correct posture, the spirit is uplifted. One cannot enjoy the beauty of the rising sun with a hunched back and protruding neck.

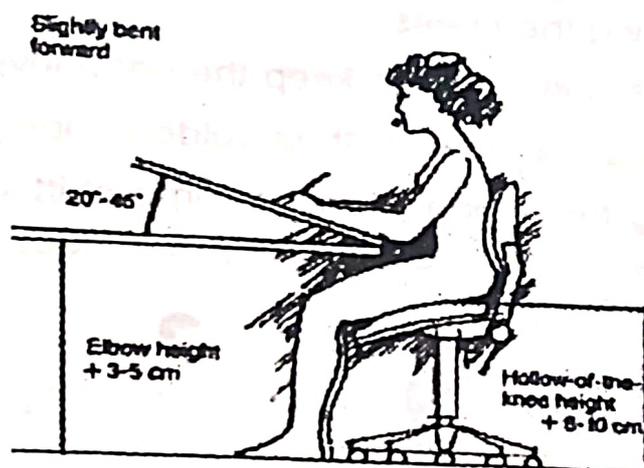
Some important posture positions: There are four important postural positions. They are

1. Sitting Posture

(i) Simple sitting: In this type of sitting, head, shoulders, hips, and feet are in a line with the spinal column. The spine is erect with its natural curves. Legs should rest vertically on the feet, thighs horizontal, and both feet flat resting on the ground.

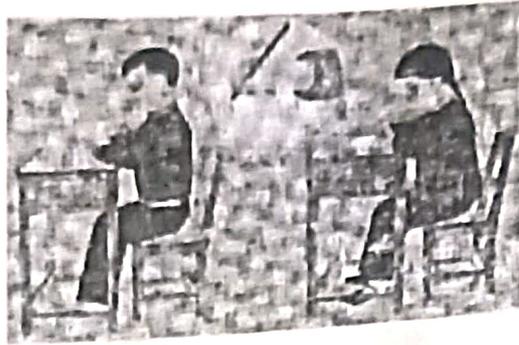


(ii) **Proper Reading posture:** The child must sit erect and hold the book at an angle 45° to the horizontal and at a distance of 12 inches from the eyes and try to keep your knees at the same height as your hips if you feel don't touch the ground, use a footrest.



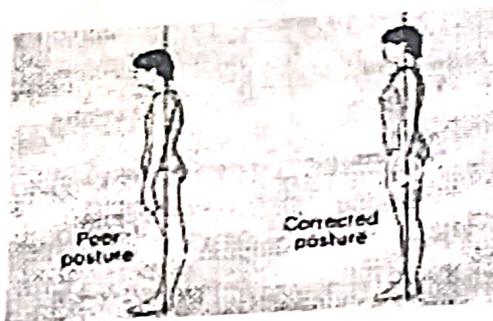
Make sure your upper back and neck are straight but still in a comfortable position. Pick up your book and tilt it up toward you. Hold it close enough to your eyes so that you do not have to strain your vision. Take ample breaks and avoid sitting in one position for long periods of time.

(iii) **Writing posture:** In classroom desk should not be too high and not too low. Parents and teacher must observe the writing posture of their child. Watch your child regularly slope the page slightly to the left for a left hander. Always head should be upright not hunched over the page. Only light pressure should be applied to the pencil when writing. Child's non-writing hand should be used to hold the paper still so the writing arm is free to move.



2. Standing posture

- Stand when with weight mostly on the balls of the feet not with weight on the heels.
- Keep feet slightly apart about shoulder width
- Let arms hang naturally down the sides of the body.
- Avoid locking the knees.
- Tuck the chin in a little to keep the head level.
- Stand straight and tall, with shoulders, upright.
- If standing for a long period of time shift weight from one foot to the other, or rock from heels to toes.



3. Walking posture



Good walking reflects the personality of a person. Wrong walking can cause early fatigue to the leg and foot muscles or pain in the legs and feet.

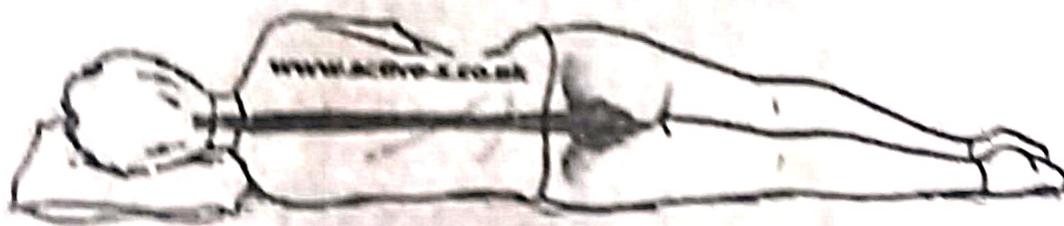
- Keep the head up and eyes looking straight ahead.
- Avoid pushing the head forward.
- Keep shoulders properly aligned with the rest of the body.

4. Driving posture :



- Sit with the back firmly against the seat for proper back support.
- The seat should be a proper distance from the pedals and steering wheel to avoid leaning forward or reaching.
- The headrest should support the middle of the head to keep it upright. Tilt the headrest forward if possible to make sure that the head to headrest distance is not more than four inches.

5. Sleeping (lying) posture :



- Need proper good mattress.
- Sleeping on the side or back is usually more comfortable for the back than sleeping on the stomach.
- Use a pillow to provide proper support and alignment for the head and shoulders.

- Consider putting a rolled up towel under the neck and a pillow under the knees to better support the spine.
- It sleeping on the side a flat pillow placed between the legs will keep the spine aligned and straight.

Some common posture deformities

Various deformities are detected at an early stage proper steps taken at right time to prevent the deformities. These defects are of the following.

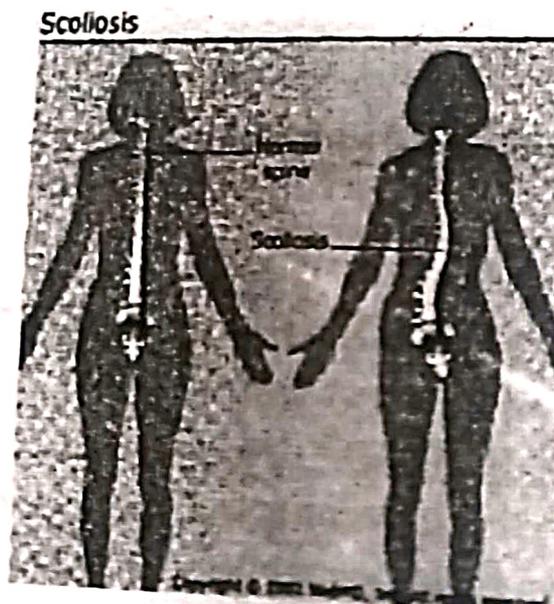
1. Kyphosis :

- Bending of head and body in the forward direction.
- Round back
- Flat chest
- Round shoulders
- Round hollow back
- Bulging out of the belly

2. Scoliosis :

Scoliosis is a lateral (towards the side)

Curvature in the normally straight vertical line of the spine.

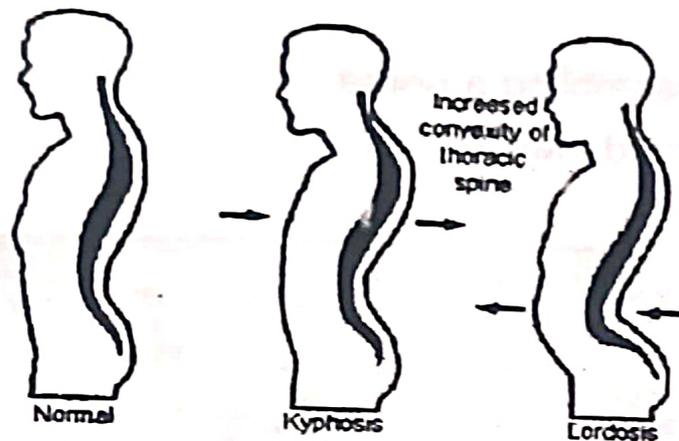


- It can be caused by a bone abnormality present at birth or a result of abnormal muscle or nerves.

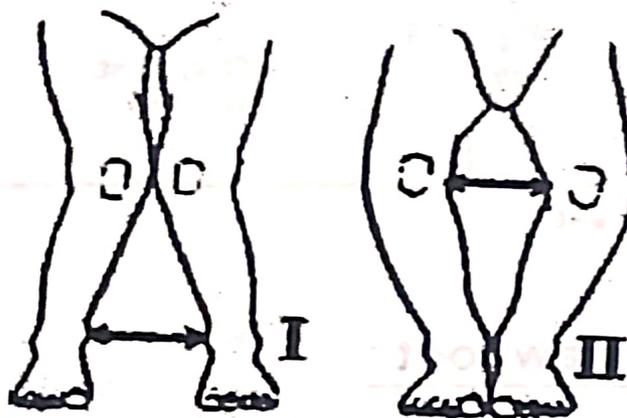
- The most common type of scoliosis is idiopathic scoliosis and other types are : Neuromuscular scoliosis and degenerative scoliosis.
- Uneven shoulders or,
- Uneven waist

3. Lordosis :

- The condition where there is exaggeration of the normal forward curve in the lumbar region resulting in the hollow back.



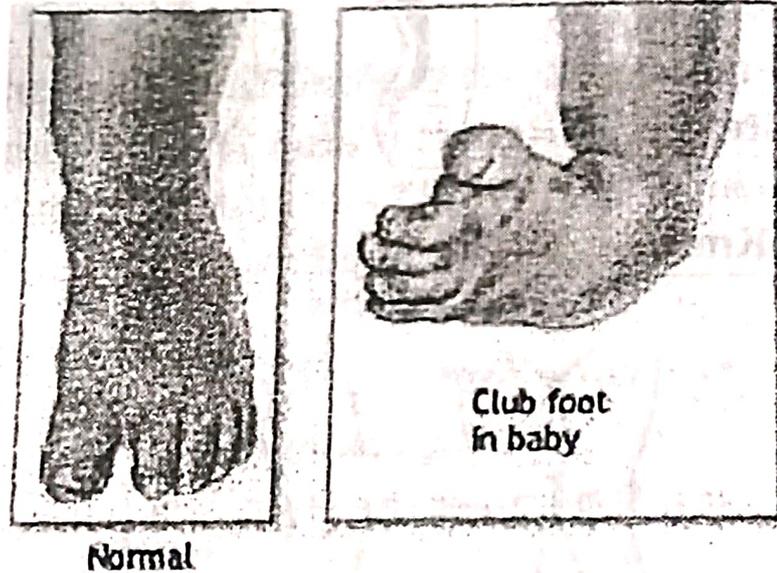
4. Knock Knee :



- In knock knee when the child stands the knees join together and the feet parallel,
- A big gap can be seen between the ankles.
- Ickets, obesity chronic problems maximum body weight are the in main causes.

5. Club foot (Talipes equinovarus)

- The other name of this problem is CTEV, (congenital talipes equinovarus)
- A congenital deformity involving one foot or both.
- It is a relatively common birth defect occurring in about one in every 1000 lives birth.
- When the child starts walking the foot is so twisted that sole of foot faces inward.
- The term talipes is from Latin language Talus - Ankle
Pes - foot
Equine - resembling a horse
Varies - turned inward



6. Flat goat or claw foot :

- Flat feet is also known as pes plan us or fallen arches.
- The appearance of flat feet is normal and common in infants
- A medical condition in which the arch of the foot collapses with the entire sole of the foot coming into complete or near complete contact with the ground.
- Person is unable to walk comfortably.

- There is a sensation of weakness, strain on the inner side of the foot and ankle.



Postural management

1. **To improve the head and neck position:** Standing with back to wall, touching but lacks, shoulder and back of head. Then raise chest flatten lower back, pull in the abdomen and press the back of the head against the wall.
2. **To improve the round upper back and kyphosis:**
 - lying on back with knees drawn up and feet flat on the floor and hands on sides.
 - Then move your arms sideways horizontal at shoulder level palms up.
 - After it move your arms along floor to position over head palms still up.... Repeat it after few seconds
3. **To improve the kypho - scoliosis:** Prone lying, hands clasped behind lower back, then press elbows together. After it pushing lands towards the feet.
4. **To improve your feet:**
 - While sitting sit with legs extended.
 - Cross your left leg over the right one with toes fixed.
 - During standing bastion toes should be turned in. then rise in balls of feet, shifting weight to outside of each foot.
 - Avoid light heels.
 - Avoid standing for a long time.

Question

- Q1. What is Good posture? Explain its importance also.
- Q2. Identify the common postural defects found in school students.
- Q3. What are the causes of incorrect posture?
- Q4. Being a teacher what type of posture training would you suggest for students?
- Q5. Write short note on : (a) Preventive measures for postural deviation.
- Q6. Explain in detail about the some important posture positions.
- Q7. Write short note on :
 - Kyphosis
 - Clubfoot

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4

COMMUNICABLE DISEASES

Chapter

Disease

A disease is any abnormal condition that causes a disruption in the functions of a body tissue, organ, or entire organism. Diseases are recognized by a specific set of symptoms. Think about the diseases you know: a cold, the flu, measles, cancer, stroke, or diabetes, just to name a few. These diseases all disrupt the body in very characteristic ways. Now think about what **causes** these conditions: viruses, bacteria, fungi, smoking, genetic defects, etc. There are countless diseases, each with its own unique and characteristic cause. But why can you 'catch' some diseases but not others? This is due to the two different types of disease: communicable and noncommunicable.

Communicable Diseases

Communicable diseases are spread from person to person or from animal to person. The spread or transfer can happen through the air, through contact with contaminated surfaces, or through direct contact with blood, feces, or other bodily fluids. A **cold** is an example of a communicable disease (a cold is the general term given to a viral infection of the upper respiratory tract).

This is probably why those airline passengers mentioned at the start of this lesson were wearing masks. Viruses in the respiratory passageways can easily be coughed or even just breathed out. So, if the inconsiderate cold-carrier sitting next to you on the plane coughs, viruses are spewed into your vicinity. You breathe, and suddenly those viruses have found a new respiratory tract to call

home. That cold has now been passed from one infected person to another uninfected person, spreading the communicable disease.

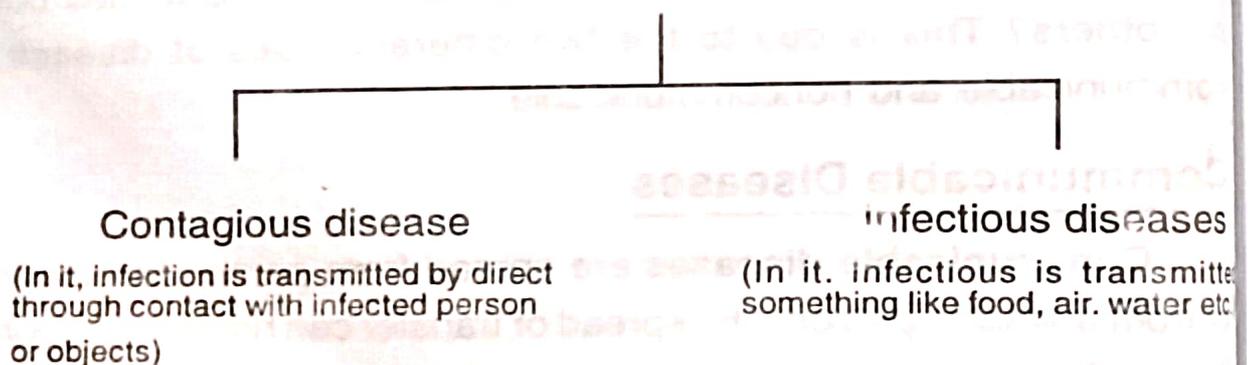
You can probably identify other communicable diseases. If a disease is caused by viruses, bacteria, fungi, or protozoa it's likely, although not always, communicable. Rabies, HIV, malaria, influenza, and athlete's foot are just a few examples of communicable diseases you may be familiar with.

A disease that is transmitted through direct contact with an infected individual or indirectly through a vector. Also called contagious disease.

Stedman's Medical Dictionary, *Any disease transmitted from one person or animal to another; also called contagious disease. Sometimes quarantine is required to prevent the spread of disease.*

Types of communicable diseases : Communicable diseases are of the following types:

Classification of Communicable Diseases



New Dictionary of Cultural Literacy, Epidemiologic classification of communicable diseases based on the mode of transmission of the infectious agent, communicable diseases can be classified as

- **Waterborne diseases:** transmitted by ingestion of contaminated water.
- **Foodborne diseases:** transmitted by the ingestion of contaminated food.
- **Airborne diseases:** transmitted through the air.
- **Vector-borne diseases:** transmitted by vectors, such as mosquitoes and flies.

Non-communicable disease

A **non-communicable disease (NCD)** is a medical condition or disease that is *non-infectious* or *non-transmissible*. NCDs can refer to chronic diseases which last for long periods of time and progress slowly. Sometimes, NCDs result in rapid deaths such as seen in certain diseases such as autoimmune diseases, heart diseases, stroke, cancers, diabetes, chronic kidney disease, osteoporosis, Alzheimer's disease, cataracts, and others. While sometimes (incorrectly) referred to as synonymous with "chronic diseases", NCDs are distinguished only by their non-infectious cause, not necessarily by their duration. Some chronic diseases of long duration, such as HIV/AIDS, are caused by infections. Chronic diseases require chronic care management as do all diseases that are slow to develop and of long duration.

Some Common symptoms of communicable diseases

No doubt, every communicable disease has some specific symptoms but some symptoms are common in all types of communicable diseases. They are of follows:

1. Pain in different parts of body.
2. Patient feels shivering in body.
3. Rise in body temperature.
4. Small red scars on body.
5. Nausea or Vomiting.
6. Sore throat.
7. Headache problem.
8. Feels difficult in work.
9. Fatigueness (Physical & Mental tiredness[^])

Stages of communicable diseases : After the Entry of the germs in human body, there are some important stages, as given below:

1. Incubation period

- Now germs enters in the body & the appears/ or the appearance of actual symptoms.

- Length can be differ in different diseases.
- Usually few hours to several days
- 2. **Active Demonstrable period**
 - Symptoms completely appears a patient feels sickness.
 - patient feels irritation, fever, headache and coughing etc.
- 3. **Convalescent period**
 - Active period.
 - Recovery process is at work and patient's health begin to restore.

Some important communicable diseases are as follows

(A) Measles

Measles is one of the leading cause of death among young children. Even though a safe a cost-effective vaccine is available in 2011, there were 1,58,000 people died from measles in it. About 430 deaths every day and is death every hour. More than 95% of measles deaths occurs in low-income countries with weak health infrastructure,

Cause : Measles is a highly contagious, serious disease caused by a virus in the paramyxovirus family, that normally grows in the cells that line the back of throat and lungs.

Sign and Symptoms : The first sign of measles is usually a high fever, which begins about 10 to 12 days after exposure to the virus and last 4 to 7 days.

- Runny nose
- Red and heatery eyes.
- Small white spots inside the cheeks
- cough problem
- A rash erupts usually on the face and upper neck. Over about 3 days, the rash spreads and reaching the hands and feet. The rash lasts 5 to 6 days and then fades. On average, the rash occurs 14 days after exposure to virus.

Mode of spread : The highly contagious virus is spread by coughing and sneezing. Close personal contact or direct contact with infected nasal or throat secretions.

Treatment

1. If the fever goes very high, cold sponging should be done.
2. Keep the patient warm in a dark room.
3. Good nutrition and adequate fluid intake.
4. ORS (Oral Rehydration Solution) recommended by WHO.
5. Vitamin 'A' supplements.
6. To relieve itching an application with carbolated Vaseline will be effective.

Preventions

1. Proper vaccination of all new born at 3 -9 months.
2. Use of measles vaccine or routine Measles vaccination for children. For eg. MMR (Measles Mumps Rubella) or MMRV (Measles, Mumps, Rubella and Varicella or chicken pox)
3. No person from the infected house should attend school or office.

(B) Chicken Pox

Chickenpox is a highly communicable viral disease which affect almost all children from 3-10 years of age. Mostly it occurs in winter season. It can be more serious in newborn babies and in adults. Its rashes usually begins as small lumps that turn into blisters and will dry, crust over and form scabs eventually.

Though chickenpox is mostly a mild disorder in childhood some people are at risk of serious complications from chickenpox like:-
The unborn foetus of a pregnant woman who develops chickenpox, neonates any person with a weekend immune system etc.

Cause: It is caused by a specific varicella zoster virus (VZV)

Sign and Symptoms: Sudden onset of slight fever

- Feeling of tiredness and weakness.
- Itching and rashes starting on the scalp and face
- Watery fluid starts appearing in these blister, then it turns Yellowish

Mode of Spread: Chickenpox is transmitted from person*to person by direct contact like touching the rash, through droplet or air born spread like through sneezing and coughing. It could also transmit indirectly through articles of that particular person also.

Treatment: Though its infectious usually resolves without any treatment. However when there are some complications then we need proper medical advice.

1. Keep finger nails of patient trimmed short to avoid scratching.
2. Use calamine lotion.
3. Aspirin or aspirin -Containing products should not be taken to relieve fever.
4. Non-aspirin medications such as acetaminophen should be used.

Preventions

1. A patient should wear clean clothes.
2. A child suffering from this diseases should be given light diet.
3. Patient should segregated from others.
4. Proper treatment of skin.
5. Injection of varicella zoster immune globulin within 3 days of exposure can cause temporary protections of non-immune individuals.
6. Patient should avoid public places until the blusters are dry crusted.

(C) Smallpox

Smallpox stands eliminated from the world. This is a very serious infectious disease. This disease is also known by the Latin names 'Variola' or 'variola Vera' derived from varius (means spotted)

or varus (pimple). The term "Smallpox was first used in Great Britain in 15th century its last case was dragnesed on 26th October 1977."

Cause: Smallpox was an infectious disease, caused by two, virusvariants like 'varrole major' and 'VariolaMinor'.

Sign and Symptoms

1. Severe headache.
2. High fever (40°C / 104°F)
3. Severe Backache
4. Vomitting
5. On 3rd day or so fever falls and rash appears which is seen on face and extremities including palms and soles.
6. Dark red spots.
7. On 13-15 days scabs are formed which fall off leaving pitted scars with disfrgurement.

Mode of spread : It spreads through a virus named Vriola virus a species of Orthopoxvirus infection usually occurred via the respiratory tract (droplet spread) or skin inoculation.

Treatment

1. Keep the patient in a dark room.
2. Give liquid diet to patient.
3. Cold sponging should be done if the temperature goes very high.
4. To relieve itching, carbolated vaselin will be effective.

Prevention

1. Patient should segregate from others.
2. Avoid public places like School, Markets etc.
3. Proper vaccination of all new born at 3-9 months.
4. To intimate about the infection report to the health officer.
5. Do not allow any child to come to school if spot is seen on his face or arms.

6. Keep the normal child away from the infected home.
7. Complete rest.
8. Keep the child under observations.

(D) Whooping cough (Pertussis)

The other name of whooping cough is pertussis. This is a very serious infectious respiratory disease. It can affect all age groups but most commonly in children. For eg: in adolescents and adults symptoms are usually mild, while in children less than 01 year of age symptoms can be particularly severe. Whooping cough affects female more commonly than males, though the reason for this is not fully understood.

Causes: Whooping cough is caused by bacteria called *Bordetella pertussis*.

Sign and Symptoms

1. It starts like a cold, with congestion and upper respiratory symptoms and then progress to a cough.
2. Sneezing and fever.
3. The eyes may get red and the child seems to have ordinary cough.
4. After 2 weeks the cough increases and become paroxysmal.
5. During the fit, the face of the child turns blue due to the continuity of cough.

Mode of spread : It spreads through close contact with oral secretions or respiratory droplets it is easily spread through the cough and sneezes

Treatment

1. Keep the patient warm in bed but plenty of fresh air should come in the room.
2. Proper bed rest.
3. Small frequent meals.

4. Maintaining fluid intake.
5. Use of Antibiotics specially Erythromycin.

Preventions

1. Immunization is essential against whooping cough for this purpose, immunization against Whooping Cough is given free to children as a part of national immunization schedule.
2. Total 3 doses for children.

(E) Influenza

It is an Italian word meaning influence. People who contact influenza are most ineffective between the second and third days after infection.

Cause : Influenza is caused by a group of virus.

Sign and Symptoms

1. Sore throat
2. Weakness
3. Pain in body
4. Headache
5. Fever
6. Sneezing due to irritation of nose.
7. Harsh Cough

Mode of Spread : Influenza can be spread by three main ways:

- By direct transmission (When an infected person sneezes mucus directly into the eyes, nose or mouth of Another person)
- The airborne route when some inhales the aerosol produced by an infected person through cough, sneezing or spitting.
- Though hand -to-Eye, hand-to-nose or through hand-to-mouth transmission or from direct personal contact such as hand-shake.

Treatment

1. Give liquid diet.
2. Room temperature must warm.
3. Use face musks
4. Alcohol is an effective sanitizer against influenza viruses.
5. For headache - fever crocine tablet can give relief to patient.

Precautions

Who (World Health organizations) recommendations are as follows:

1. Get yourself vaccinated against current strains of influenza if possible.
2. Do not send the children to school.
3. Reduce the time spent in crowded Places.
4. Practice good health habits
5. Keep your distance from people who show Symptoms of influenza. So try to maintain a distance of about 1 metre if possible.
6. Avoid touching your mouth, nose & Eyes as much as possible.
7. Improve an flow in your living she space by opening windows.

(F) Malaria

Malaria is a mosquito-borne infections disease of human. It is a very common problem in our country it spreads quickly from a sick person through female Mosquito which bites the human being at sunset or at night & sucks blood along with the malaria parasites which are present in the sick person.

Cause : It being with a bite from an infected female Anopheles mosquito, which introduces the parasites through saliva into the circulatory system.

Signs & Symptom

1. Fever Problem

2. Headache (In severe case can progress to coma or death)
3. Shivering
4. Excessive Weakness
5. Joint pain
6. Vomiting problem
7. Anemia etc.

Classical Symptoms : The classical symptoms of Malaria is paroxysm a cyclical occurrence of sudden coldness followed by rigor and then fever and sweating, occurring every two days.

Mode of spread : Malaria is transmitted by the bite of an infected female anopheles Mosquito. In rural areas hygienic conditions are not good do the ill - Ventilated & ill - lit houses provides ideal indoor resting places for Mosquitoes.

Treatment

1. Give light liquid diet to patient.
2. Choloquine may be used where the parasite is still sensitive
3. When the temperature rises above 104°F reduce it with cold sponging on patient's head.
4. Give paracetamol or aspirin to patient.

Precautions : Many researches shows that the Malaria prevention is much more cost-effective than the treatment. There is a wide disparity in the costs of control and elimination programmes between different countries we can clear it with the help of an example. For example, in china - Government announced (2010) a strategy to Eliminate the Malaria in Chinese provinces but the required investment is a small portion of public Expenditure on health. In contrast a same programme was launched by the Tanzanian government & the government used one-fifth of the public health budget.

1. Use D.D.T powder on suspicious places.
2. Use one tablet of quinine in a week where Malaria spreads.
3. Don't collect water on open places.

4. Use odomos & other tubes. As a medicine on open body parts like arms, legs etc.
5. Mosquito net should be used every night.
6. Use kerosene oil in standing water.
7. The pits should be filled up before the rainy season.

(G) Diphtheria

Diphtheria is a very serious infectious disease that primarily affects the mucous membranes of the respiratory tract although it may also affect the skin & lining tissues in the Ear, Eye, & the genital areas.

Most recently in the year of 1990, large outbreaks of diphtheria bacterium was first identified in the year of 1880.

Cause : It is caused by a bacillus corynebacterium diphtheria. It attacks younger children between the age group from 2-5 years.

Sign & Symptoms

1. Sore throat
2. Fever
3. Hoarseness
4. Difficulty in breathing
5. Muscle weakness (related to skin)
6. The neck gets swollen & there is watery discharge from the nose

Mode of Spread: Diphtheria is transmitted to close contact via airborne respiratory droplets. Rarely it can be spread by objects contaminated by an infected person. Along with these reasons, overcrowding and poor living conditions can further contribute to its spread.

Treatment

1. The Patient should be segregated from others.
2. Diphtheria antitoxin is mainstay of therapy. It neutralizes circulating diphtheria toxin & reduce the progression of the disease.

3. Use Penicillin and Erythromycin antibiotics.

Preventions

1. Its prevention can be possible through universal immunization with diphtheria toxoid containing vaccines.
2. Travelers to areas where diphtheria is Endemic should review and update their Vaccinations.

(H) Tuberculosis (TB)

Tuberculosis is a highly communicable disease. If TB is not treated in a proper way then it can be fatal. Approximately one-third of the world's population is infested with tuberculosis bacteria. More than 1 Million become sick with TB disease annually.

Cause: TB is caused by bacteria (Germs) that attacks the lungs or other parts of the body such as kidney, spine or brain.

Sign & Symptoms

1. Light fever
2. Coughing
3. Pain in chest & throat
4. In some case, blood also comes with sputum
5. Loss of weight
6. Rapid pulse etc.

Mode of spread: Its two major source are: Infected sputum & infected meat & Milk.

When the sputum dries up then tubercle bacilli are scattered in dust. The bacilli spreads persons to person through the air when a person with active TB coughs or sneezes then its bacteria's get in the air. Anyone who has close and frequent contact with a person with active TB disease can breathe in the bacteria and becomes infected.

TB is not spread by shaking some one's hand shaking food or drink, touching bed linens or toilet seats or Kissing's etc.

Treatment

1. Patient should be kept away from others.
2. Places should be neat & clean.
3. Sputum & excreta of the patient should be burnt.
4. Contact to Distt. Tuberculosis office.
5. Patient should take medicine 1 to 1 * years as advised. Usually patient feels better after 3 month & leaves medicines and is not cured completely.

Precautions

1. BCG Vaccination to a child from birth to 19 years of age.,
2. Improving Environmental conditions.
3. Proper balanced diet
4. Morning & evening walks.
5. Proper ventilation in homes.
6. Knowledge about DOTS system should be given at every stage of education

(I) AIDS

Aids stands for Acquired Immune Deficiency Syndrome. It was first time identified in the Early 1980 in north America. Today, there are an estimated 34 million people living with HIV Aids. HIV infections are also increasing among women.

Cause: It spreads with the help of virus is found in African Green Monkeys. A large number of African people migrated to different parts of the world.

HIV virus attacks immune system cells & damage these cells. HIV has damaged the immune system enough for AIDS to develop.

Sign & Symptoms : Symptoms & signs of HIV infection appear 2 to 12 weeks after Exposure. The symptoms of this phase are flu-like.

1. Diarrhea
2. Fatigue or Weakness.

3. Joint pain
4. Rashes on body parts.
5. Weightless
6. Persistent cough
7. Yeast infections (of the mouth or vagina).
8. Itching on skin
9. Night sweats.
10. Headache etc.

Mode of Spread: HIV spreads only through the exchange of certain body fluids - Most commonly, semen and blood. These fluids can be exchanged during a variety of activities.

However, the 3 activities in which they are most commonly passed in amounts large enough to transmit the virus are sex, blood transfusions and the sharing of needles by intravenous drug users.

Treatment

1. HIV is usually treated with HAART (Highly active Antiretroviral Therapy), medications. HAART can reduce the amount of virus in the blood, improve the immune system and can slow the progress of the disease.
2. It is very important to take the medicines correctly as prescribed by the doctor.
3. Due to latest researches, a patient can contact to the (ATIE (The Canadian AIDS Treatment information Exchange)).

Preventions

1. Using Condoms during Sex.
2. Not sharing needles or others.

(J) H1N1 (Swine) Flu 2009

H1N1 (Swine) Flu is an infectious disease & commonly referred to as swine influenza or pig flu. Swine Influenza is common in the pig population world wide. The centre for disease control and prevention

(CDC) has found that this variant strain of swine flu (H1N1) can infect humans, spread from human to human and cause illness. At the time it is not known how easily the virus spreads.

Causes : Mainly Swine flu occurs only as a result of H1N1 virus but it is important to know that influenza virus changes on a constant basis to produce many strains & swine flu is caused by one such strain while some strains of virus infect birds, pigs, human & some strains infect pigs only.

Sign & Symptoms : Swine flu symptoms are regular like regular flu.

1. Fever
2. Cough
3. Sore throat
4. Body aches
5. Headache
6. Fatigue
7. Vomiting Diarrhea etc.

Mode of Spread : Swine flu is spread just like the regular seasonal flu spreads it goes from one person to another person through close contact and through direct touch, indirect touch, respiratory droplets carrying the virus from person to person it also occurs through coughs & sneezes.

For ex. - If you touch an infected person then you will most likely pick up the virus & get the swine flu.

Treatment

1. Protect yourself with the help of Flu vaccination.
2. Use antiviral drugs like Tamiflu and Relenza etc.
3. Antibacterial Therapy.

Preventions

1. Proper & Frequent hand washing.
2. Use of hand sanitizer with at least 60 % alcohol content

3. Avoid touching your face, eyes, nose & mouth
4. Always use warm water for 15-20 seconds especially after you cough and sneeze
5. Try to avoid close contact of sick person.
6. Avoid crowded places.
7. Stay home from work or school if you get sick with the flu.

Communicable Diseases in India

The thirteen common communicable diseases found in India are as follows:

1. Malaria
2. Typhoid
3. Hepatitis
4. Jaundice
5. Leptospirosis
6. Diarrhoeal Diseases
7. Amoebiasis
8. Cholera
9. Brucellosis
10. Hookworm Infection
11. Influenza
12. Filariasis
13. Tuberculosis.

Worldwide, the lack of clean water for drinking, cooking and washing, and the lack of sanitary waste disposal are to blame for over 12 million deaths a year, say researchers. About 1.2 billion people are at risk because they lack access to safe fresh water. India too has its share of infectious epidemics; and though mortality owing to these is decreasing, it is a significant part of the disease burden our society carries.

The disease burden is high in India, for obvious reasons like poor sanitation, lack of access to fresh water, poor hygiene, etc.,

which are common in the most developing countries. Though exact dependable statistics are not available, a good percentage of cases go unreported. Secondly, 'infection is not recognized till it becomes symptomatic.

1. Malaria

Malaria is a very common disease in developing countries. The word malaria is derived from the word 'mal-aria meaning bad air. Ronald Ross first discovered the transmission of malaria by mosquitoes, while he was working in India (Secunderabad, AP) in 1897. Malaria is one of the most widespread diseases in the world.

Each year, there are 300 to 500 million clinical cases of malaria, 90 percent of them in Africa alone. Among all infectious diseases, malaria continues to be one of the biggest contributors to disease burden in terms of deaths and suffering. Malaria kills more than one million children a year in the developing world, accounting for about half of malaria deaths globally.

The risk of getting malaria extends to almost the entire population in India (almost 95 percent). The following states that have the highest number of malaria cases are Madhya Pradesh, Maharashtra, Orissa, Karnataka, Rajasthan, Assam, Gujarat and Andhra Pradesh.

2. Typhoid

Typhoid fever is an acute, systemic infection presenting as fever with abdominal symptoms, caused by *Salmonella typhi* and *paratyphi*. Before nineteenth century, typhus and typhoid fever were considered to be the same. Enteric fever is an alternative name for typhoid. *Salmonella typhi* and *paratyphi* colonise only humans.

The organisms are acquired via ingestion of food or water, contaminated with human excreta from infected persons. Direct person-to-person transmission is rare. Typhoid is a global health problem. It is seen in children older than the age of one.

Outbreak of typhoid in developing countries results in high mortality. The recent development of antibiotic resistant organisms

is causing much concern. Typhoid fever is more common in the tropics. It tends to occur in places, where the sanitation standards are poor. A bacterial organism called salmonella typhi causes typhoid fever.

Salmonella paratyphi can also cause fever and abdominal symptoms. The disease caused by both these entities is called enteric fever. The disease presents with a typical, continuous fever for about three to four weeks, relative bradycardia with abdominal pain (due to enlargement of lymph nodes in the abdomen), and constipation.

Geographical Distribution Worldwide, typhoid fever affects about six million people with more than 6,00,000 deaths a year. Almost 80 percent of cases and deaths occur in Asia, and most others in Africa and Latin America. Among Asian countries, India probably has a large number of these cases.

Indian Statistics Typhoid fever is endemic in India. Health surveys conducted by the Central Ministry of Health in the community development areas indicated a morbidity rate varying from 102 to 2,219 per 1,00,000 population in different parts of the country. A limited study in an urban slum showed 1 percent of children up to 17 years of age suffer from typhoid fever every year.

Carriers of Typhoid Fever Typhoid infection is mainly acquired from persons who are carriers of the disease. Carriers are the people who continue to excrete salmonella through their urine and feces a year after an attack of typhoid. A chronic carrier state develops in about 2 to 5 percent of the cases. The organisms in such cases make the gall bladder their habitat.

3. Hepatitis

Hepatitis is the inflammation of liver. It can be caused by viruses (five different viruses— termed A, B, C, D and E cause viral Hepatitis), bacterial infections, or continuous exposure to alcohol, drugs, or toxic chemicals, such as those found in aerosol sprays and paint thinners, or as a result, of an auto-immune disorder.

Hepatitis results in either damage or reduction in the liver's ability to perform life-preserving functions, including filtering harmful, infectious agents from blood, storing blood sugar and converting it into usable energy forms, and producing many proteins necessary for life.

Symptoms seen in Hepatitis differ according to the cause and the overall health of the infected individual. However, at times, the symptoms can be very mild. The commonly seen clinical features are general weakness and fatigue, loss of appetite, nausea, fever, abdominal pain and tenderness. The main feature is the presence of jaundice (yellowing of skin and eyes that occurs when the liver fails to break-down excess yellow-coloured bile pigments in the blood).

Depending on the progress and intensity, Hepatitis can be categorized as acute or chronic. In acute Hepatitis, clinical features often subside without treatment within a few weeks or months. However, about 5 percent of the cases go on to develop into chronic Hepatitis, which may last for years. Chronic Hepatitis slowly leads to progressive liver damage and cirrhosis.

Hepatitis A : Hepatitis A is a self-limiting disease that is found all across the world. It is usually transmitted through oral ingestion of infected material (mainly water), but sometimes transmitted parenterally; most cases resemble the symptoms of a mild flu attack and jaundice is mild too.

Hepatitis B : Hepatitis B is an acute viral disease. It primarily spreads parenterally, but sometimes orally as well. However, the main mode of spread is intimate contact and from mother to the new born. Fever, anorexia, nausea, vomiting are the initial symptoms, and they soon lead to severe jaundice, urticarial skin lesions, arthritis, etc. Some patients become carriers or even remain chronically ill, even though most patients recover in about three to four months.

Hepatitis C : Hepatitis C is a viral disease commonly occurring after transfusion or parenteral drug abuse. It frequently progresses to a chronic form that is usually asymptomatic, but may involve liver cirrhosis.

Hepatitis D : Hepatitis D or Delta Hepatitis is caused by the Hepatitis D virus. It usually occurs simultaneously with or as a super infection in case of Hepatitis B, thus increasing its severity.

Hepatitis E : Hepatitis E is transmitted by the oral fecal route; usually by contaminated water. Chronic infection does not occur but acute infection may be fatal in pregnant women.

4. Jaundice

Jaundice, also known as icterus, is a condition, which is characterized by yellowish dis-colouration of the skin and whites of eyes. It is a symptom or clinical sign, not a disease by itself. The yellow colouration is caused by an excess amount of bile pigment known as bilirubin in the body. Normally, bilirubin is formed by the breakdown of haemoglobin during the destruction of worn-out red blood cells.

5. Leptospirosis

Leptospirosis is a disease caused by a type of bacteria and is associated with animals. It is more common in the tropical countries. The disease is also known as canefield fever; canicola fever, field-fever, mud fever, seven day fever and swineherd disease. Leptospirosis is caused by different strains of bacteria of the genus *Leptospira*. Of all the varieties that cause disease, *Leptospira icterohaemorrhagiae* is the most serious type.

If not treated properly, it could lead to serious complications. Leptospirosis is a disease of animals that can spread to humans. Rats are the most common carriers. Soil contaminated with urine of infected animals can also transmit the disease to persons exposed to cattle urine, rat urine or to foetal fluids from cattle. Sewage workers, agricultural workers, butchers, meat inspectors, workers in contact with contaminated waters and veterinarians are generally at risk.

Person to person transmission is not possible. Leptospirosis can spread due to contact with urine, blood or tissues from infected persons. The organisms enter the body through the breaks in the skin or through mucous membranes.

The organisms can also be acquired by drinking contaminated water. Infection is commonly acquired by bathing in contaminated water. The organisms multiply in the blood and tissues of the body. Though the organism can affect any organ of the body, the kidney and liver are commonly involved. The incubation period is usually 10 days. It may vary from 2 to 20 days.

6. Diarrhoeal Diseases

The term 'gastroenteritis' is most frequently used to describe acute diarrhoea. Diarrhoea is defined as the passage of loose, liquid or watery stools. These liquid stools are usually passed more than three times a day. The attack usually lasts for about 3 to 7 days, but may also last up to 10 to 14 days.

Diarrhoea is a major public health problem in developing countries. Diarrhoeal diseases cause a heavy economic burden on health services. About 15 percent of all pediatric beds in India are occupied by admissions due to gastroenteritis. In India, diarrhoeal diseases are a major public health problem among children under the age of 5 years. In health institutions, up to a third of total pediatric admissions are due to diarrhoeal diseases.

Diarrhoea related diseases are a significant cause of mortality in children less than five years of age. Incidence is highest in the age group of 6 to 11 months. The National Diarrhoeal Disease Control Programme has made a significant contribution in averting deaths among children less than five years of age.

7. Amoebiasis

Amoebiasis is an infection caused by a parasite 'Entamoeba Histolytica'. The intestinal disease varies from mild abdominal discomfort and diarrhoea to acute fulminating dysentery. Extra intestinal amoebiasis includes involvement of the liver (liver abscess), lungs, brain, spleen, skin, etc.

Amoebiasis is a common infection of the human gastrointestinal tract. It has a worldwide distribution. It is a major health problem in the whole of China south-east and west Asia and

Latin America, especially Mexico. It is generally agreed that amoebiasis affects about 15 percent of the Indian population. Amoebiasis has been reported throughout India.

8. Cholera

Cholera is an acute diarrhoeal disease caused by *V. Cholera* (classical or El T). It is now commonly due to the El T or biotype. The majority of infections are mild or symptomatic. Epidemics of cholera are characteristically abrupt and often create an acute public health problem. They have a high potential to spread fast and cause deaths. The epidemic reaches a peak and subsides gradually as the 'force of infection declines. Often, when time control measures are instituted, the epidemic has already reached its peak and is waning.

9. Brucellosis

Brucellosis is one of the major bacterial zoonoses, and in humans is also known as undulant fever, Malta fever or Mediterranean fever. It is occasionally transmitted to humans by direct or indirect contact with infected animals.

The disease may last for several days, months or occasionally, even years. Brucellosis is both a severe human disease and a disease of animals with serious economic consequences. Brucellosis is a recognized public health hazard that is found the world over.

It is endemic wherever cattle, pigs, goats and sheep are raised in large numbers. The important endemic areas for Brucellosis exist in Mediterranean zones, Europe, Central Asia, Mexico and South America. Animal Brucellosis has been reported from practically every state in India. However, no statistical information is available about the extent of infection in humans in various parts of the country. The prevalence of human Brucellosis is difficult to estimate. Many cases remain undiagnosed either because they are not apparent,

or because physicians in many countries are unfamiliar with the disease.

10. Hookworm Infection

Hookworm infection is defined as: 'any infection caused by *Ancylostoma* or *Necator*'. They may occur as single or mixed infections in the same person through various factors, which have to be prevented. Hookworm infection is widely prevalent in India.

Necator americanus is predominant in south India, and *Ancylostoms duodenal* in north India. Recently, another species, *A. ceylanicum* has been reported from a village near Calcutta. The heavily infected areas are found in Assam (tea gardens).

West Bengal, Bihar, Orissa, Andhra Pradesh, Tamil Nadu, Kerala and Maharashtra. More than 200 million people are estimated to be infected in India. It is believed that 60 to 80 percent of the population of certain areas of West Bengal, Uttar Pradesh, Bihar, Orissa, Punjab, and the eastern coast of Tamil Nadu and Andhra Pradesh are infected with hookworms.

11. Influenza

Influenza is an acute respiratory tract infection caused by influenza virus of which there are three types—A, B and C. All known pandemics were caused by influenza A strains, due to various factors. Influenza is found all over the world.

It occurs in all countries and affects millions of people. Outbreaks of influenza A occur virtually every year. Major epidemics occur at intervals of two to three years, and pandemics at intervals of about 10 to 15 years. The first pandemic during the present century occurred in 1918-19, which affected an estimated 500 million people and killed more than 20 million.

In India alone, over six million people died during this pandemic. This pandemic was caused by what is now known as the swine influenza virus. Recent pandemics occurred in 1957-58

owing to the influenza A (H2N2) and in 1968 owing to the influenza A (H3N2). Outbreaks of influenza B also occur annually with epidemics occurring at intervals of 40-70 years. Influenza brought on by the type C virus occurs sporadically as small outbreaks.

The unique features of influenza epidemics are the suddenness with which they arise, and the speed and ease with which they spread. The short incubation period, a large number of subclinical cases, a high proportion of susceptible population, short duration of immunity, and an absence of cross-immunity, all contribute to its rapid spread. The fate of the virus during inter-epidemic periods is also known. Possible explanations include transmission of virus to extra-human reservoirs (pigs, horses, birds, etc.) latent infection or continuous transfer from one human to another. This explains the occurrence of sporadic cases.

12. Filariasis

It is caused by a parasite, which belongs to the nematode family Filariasis. According to WHO reports, an estimated 751 million people are at 'risk' for infection, and 120 million have actually been infected. The public health problem of lymphatic filariasis is greatest in China, India and Indonesia. These three countries account for about two-thirds of the estimated world total of persons infected.

Filarial Problem in India

Filariasis is a major public health problem in India. There are an estimated six million attacks of acute filarial disease per year, and at least 45 million persons currently have one or more chronic filarial lesions. Heavily infected areas are found in Uttar Pradesh, Bihar, Andhra Pradesh, Orissa, Tamil Nadu, Kerala and Gujarat.

The infection is acquired from a person who has filariasis. The maximum infectivity is when the organisms are circulating the blood. The largest number appears in the blood at night time, and retreats from the blood stream during the day. Their usual habitat is in the lymph nodes.

The mosquito feeds on such a person and acquires the filarial parasite. The filarial organism is transmitted when the mosquito bites a person. The parasite is deposited near the site of puncture. It passes through the punctured skin or may penetrate the skin on its own and finally reach the lymphatic system. Filariasis affects all age groups.

Causative Factors which Favour the Spread of Disease

Filariasis is seen mainly in developing countries. Lymphatic filariasis is often associated with urbanization, industrialization, illiteracy, poverty and poor sanitation. Migration of people favoured the spread of filariasis. The movement of people from one place to another has led to the extension of filariasis into areas where filariasis was not so prevalent. It largely explains the presence of filariasis in the urban areas of the Third World countries.

Climate is an important factor in the epidemiology of filariasis. Regions which are damp and moist and have stagnant water all year round afford a good breeding ground for mosquitoes. It influences the breeding of mosquitoes, their longevity and also determines the development of parasite in the insect vector.

13. Tuberculosis

Tuberculosis remains a worldwide public health problem, particularly in the Third World countries. Tuberculosis is India's biggest public health problem. An estimated that 5, 00,000 deaths annually are reported due to this disease, while a similar number of persons get cured.

The population in the Third World countries like India is exposed to tuberculosis. The disease, however, does not develop in everyone who is exposed. Poor nutrition, overcrowding, low socio-economic status, are more likely to develop the disease.

The prevalence of people who are infected is about 30 percent of the population. The prevalence of infection is more common in

the younger population. The vast majority of cases are to be found in rural and semi-urban areas, where more than 80 percent of the country's population lives. In urban areas, tuberculosis is found more frequently in slum-dwellers and lower socio-economic groups than in well-off groups.

Prevention of Communicable Diseases in Schools

Most Communicable diseases can be prevented by following the steps listed below :

- **Hand washing:** Wash hands with soap and warm water frequently, especially after using the restroom. Give children enough time to properly wash their hands. (*single* most important factor)
- **Stay home when ill:** Strongly suggest that ill children and staff stay home when ill. Avoid close contact with others during the infectious period. Consult with ARM or local public health for guidance.
- **Education:** Be informed about signs, symptoms and prevention of diseases. Share information with students and parents. Learning *how* diseases are transmitted can help to actively *prevent* the spread of disease.
- **Disinfect surfaces:** Clean and disinfect surfaces or objects. Focus especially on frequently touched surfaces at home, work and school.
- **Vaccinate:** Be sure to check immunization status of children for those diseases that can be prevented with vaccines.
- **Seek care:** Visit your health care provider when ill to get diagnosed and treated properly.

Questions

1. How do Communicable diseases spread? Illustrate with Example

2. What are the various infectious diseases which are prevalent among school children? Give suggestions for their prevention.
3. Write short note on the following:
 - (i) Causes of AIDS.
 - (ii) Mode of spread of Diphtheria.
4. Discuss the symptoms, causes & prevention of the following diseases.
 - (a) Smallpox.
 - (b) Chicken pox.
 - (c) Measels
5. Classify the communicable diseases and explain in details?
6. How can a school help in prevention of the communicable diseases.
7. Explain the stages of communicable diseases.

5

Chapter

FIRST AID

Introduction

First aid is known world wide and has been practiced ever since the inception of humanity. In India, many examples are available in our history quoting a few, the wars of Mahabharata the Sikhs, the Mughals and during natural and man made calamities. Mahatama Gandhi. Who was torch bearer of the struggle for freedom to our country from British rule lead a band of dedicated first aid volunteers in 1906 in the time of Zulu Rebellion. Earlier in 1899, at the line of Boer war in South Africa, himself carried the wounded General Buller to the base hospital.

Learning first Aid is a civic responsibility of each citizen. Especially, every teacher should have complete acquaintance with first aid so that assistance may be rendered to the injured before the arrival of the doctor. If first Aid is rendered in time, the patients trouble can be alleviated before the arrival of the doctor and the person can be saved from death.

Definition and Meaning

The elementary assistance given to the needy in case of emergency is known as first Aids: It is an immediate aid given to the victim of an accident on sudden illness before medical help is obtained. It is an immediate and temporary care. It is not expected from the first-aider to impart any treatment but to practices the basic principles of first aids and render such help as needed by the victims till the medical aid arrives or he is carried to the hospital. It is a help which calms the victims fears and reduces any chance of further injury.

First Aid also requires a lot of innovation and versatility to use resources available to the first aider. The first-aider must not overplay his duty of doing what is not in his domain. He must not consider himself to be a doctor. His job is to save and sustain life and limb till the doctor arrives; or the patient is transferred to medical care.

Aims of First Aid

- To save the patients from the jaws of death.
- To send first aid immediately at the time of need.
- To collect all the first Aid material.
- To stop the bleeding from the wounds.
- To maintain the temperature of the patient at normal.
- To give maximum relief to the patient.

Principles of First-Aid

- Remove the cause of injury.
- Attend to severe Hemorrhage immediately irrespective of other injuries.
- Ensure the free air supply to the patient. See that there is no obstruction to the air passages. Start artificial respiration if breathing has ceased.
- In case of fracture, do not move the patient till bone has been made immovable, unless there is danger to life.
- Poison swallowed should be neutralized according to the nature of the poison.
- Cover the wound with clean dressing.
- Do not allow people to crowd around this causes anxiety or embarrassment.
- Watch and record any changes in the condition of patient; specially
 - o Rate and depth of breathing.
 - o Colour of face.
 - o Rate and character of pulse

- o Bleeding from ear, nose or mouth.
- o Colour of face.
- Determine the level of consciousness. He should check whether the patient is semi-conscious or unconscious.

Scope of First Aid

The scope of first aid includes the diagnosis, the treatment and the disposal of the case.

(a) For **diagnosis**, the first aider must first know how the accident or sudden injury has occurred. This can be got from the victim if he can tell or from witnesses. This is called the history of the case.

The next step in diagnosis is to watch the symptoms like faintness, thirst, pain or shivering.

Then the first aider looks at the signs, which are variations from normal conditions. These may include swelling, congestion, paleness or deformity, which can be very easily observed by the first aider. Signs are the most reliable indications on which diagnosis can be based.

(b) For **treatment**, the cause of the condition should be immediately removed, with a view to prevent the condition from becoming worse. Special attention should be paid to cases of severe bleeding, shock, unconsciousness and failure of breathing.

(c) For quick **disposal**, the casualty or the victim should either be examined by the doctor on the spot or, if that is not possible, he should be immediately taken to his home or to a suitable place of shelter or to a hospital, according to circumstances. The members of the victim's family or his relatives should be informed at once.

Qualities of a First Aider

- A first-aider should never take the duties and responsibilities of a doctor.
- The first Aider should observe carefully and think clearly.
- He should be calm and cool.

- He should be confident.
- He should be assertive in his limits.
- He should be able to use his common sense and use the resources available to him.
- While waiting for a doctor he should render first aid methodically.
- The first aider must not overplay his duty of doing what is not his domain.
- He should be persevering, that he may continue his efforts even if he does not see any improvement.

The role of a first aider

First aid is the help given to someone who is injured or ill, to keep them safe until they can get more advanced medical treatment by seeing a doctor, health professional or go to hospital.

The role of a first aider is to give someone this help, while making sure that they and anyone else involved are safe and that they don't make the situation worse.

If you think someone needs your help, these are the seven things you need to do as a first aider:

1. Assess the situation quickly and calmly:

- Safety: Are you or they in any danger? Is it safe for you to go up to them?
- Scene: What caused the accident or situation? How many casualties are there?
- Situation: What's happened? How many people are involved and how old are they? What do you think the main injuries could be?

2. Protect yourself and them from any danger:

- Always protect yourself first - never put yourself at risk
- Only move them to safety if leaving them would cause them more harm
- If you can't make an area safe, call 999/112 for emergency help

3. Prevent infection between you and them:
 - Wash your hands or use alcohol gel
 - Wear disposable gloves
 - Don't touch an open wound without gloves on
 - Don't breathe, cough or sneeze over a wound or a casualty
4. Comfort and reassure:
 - Stay calm and take charge of the situation
 - Introduce yourself to them to help gain their trust
 - Explain what's happening and why
 - Say what you're going to do before you do it
5. Assess the casualty:
 - If there's more than one casualty, help those with life-threatening conditions first
 - Start with the Primary Survey and deal with any life-threatening conditions
 - Then, if you've dealt with these successfully, move on to the Secondary Survey
6. Give first aid treatment:
 - Prioritise the most life-threatening conditions
 - Then move on to less serious ones
 - Get help from others if possible
7. Arrange for the right kind of help:
 - Call 999/112 for an ambulance if you think it's serious
 - Take or send them to hospital if it's a serious condition but is unlikely to get worse
 - For a less serious condition call 111 for medical advice (in England)
 - Suggest they see their doctor if they're concerned about a less serious condition
 - Advise them to go home to rest, but to seek help if they feel worse
 - Stay with them until you can leave them in the right care.

Contents of a First-Aids Box

The First-Aid Box should contain the following equipments and medicines to enable the first-aiders to render effective, timely and appropriate aid.

Equipments or Apparatus

- | | |
|---------------------------|----------------------|
| 1. Scissors | 2. Clean Cotton wool |
| 3. Bandages | 4. Measuring tape |
| 5. Adhesive Dressing | 6. Safety Pins |
| 7. Tourniquet | 8. Tweezers |
| 9. Splints | 10. Spoons |
| 11. Pads of various Sizes | 12. Needle |
| 13. Thermometer | |

Medicines

- | | |
|------------------|---------------------------|
| 1. Smelling salt | 2. Common salt |
| 3. Burnol | 4. Dettol |
| 5. Iodex | 6. Throat Paint |
| 7. Balm | 8. Potassium Permanganate |
| 9. Locula | 10. Gum Paint |
| 11. Glycerin | 12. Dusting Powder |

Use of First Aid in various problems

First Aid in Wounds: A puncture wound doesn't usually cause excessive bleeding. Often the wound seems to close almost instantly. But this doesn't mean treatment is not necessary.

First, stop the bleeding: When a small cut occurs, allow it to bleed for a minute, which actually cleans out any dirt or bacteria naturally. Then clear the area of blood, elevate the wound above the level of your heart (if possible) and apply direct pressure on the cut. When a large cut or wound occurs, stop the bleeding immediately. Any extensive blood loss should be treated by a doctor immediately.

Types of Wounds

1. **Contusions** : Contusions are caused by blunt objects like blow, from blunt weapon, stone, fist, boots and from falling on a street. There is painful swelling with injury to underlying tissue without break in the continuity of skin. It needs no treatment.

2. **Abrasions** : The cause is the same as for contusion but there is injuring to superficial skin only. It can also be caused by finger nails, teeth bite. In such cases, wash the area with soap and warm water to remove all dirt on the surface. Then cover it carefully with sterilized dressing and bandage.

3. **Incised wounds** : Incised wounds are deep cuts, made by broken glass, razor blade or a sharp knife. Blood come out freely. Bandage the area firmly and take the patient to a doctor as early as possible.

4. **Lacerated wounds** : Lacerated wounds are torn wounds made by blunt instruments or by violent falls on hard projecting surfaces by machinery or railway or vehicular accidents, by claws or teeth of animal. In such cases the patient should be removed to the hospital.

5. **Punctured wounds** : Punctured wounds are caused by narrow, pointed instruments like nails, needles, thorns or bullets and arrows. In such cases wounds be cleaned. After this a firm pressure bandage should be applied and the patient taken to doctor.

Precautions

1. Never leave the wound uncovered because germs in the air find their way into the uncovered wounds.
2. It should be remembered that whenever the skin is broken, there is always danger of infection. So care should be taken not to touch the wound with the tips of finger or with dirty cloth and dirty water.
3. Wash the wound with soap, remove surroundings hair, apply cotton pad and bandage carefully.
4. After applying antiseptic solution and take the patient to a qualified doctor.

Cuts

A cut refers to skin wound with separation of the connective tissue elements unlike an abrasion none of the skin is missing the skin is just separated. A cut is typically thought of as a wound caused by a sharp object (knife, glass etc)

Causes of cuts : Cuts happen when your skin is accidentally broken or worn away. This can be the result of a fall, banging against a hard object or being cut by something sharp. We all get cut sometime, but people are more prone to these injuries than others. Children, for instance almost always have some sort of minor skin damage, just for playing others more likely to get cuts including other people and people who have delicate skin cuts can be caused by:

Blunt objects that tear or crush the skin these cuts are more common over bony areas. Such as finger, hand, knee feet etc. but they can occur anywhere on the body.

- Sharp objects injuries are more likely to cut deeper and damage underlying tissue.
- A combination of blunt and sharp objects that tear, crush and slice the skin tissue.

Types of Cuts

Some types of cuts are more serious and need medical evaluation and treatment. These more serious cuts include.

- Long or deep cuts.
- Cuts that may scar and affect the appearance or function of body area. A cut on an eyelid or lip which doesn't well or leave a noticeable scar.
- Cuts that open with movement of the body area, such as cut over a joint. A cut over a joint many take a long time to heal because of the movement of the wound edges.
- Cuts that remove all the layers of the skin, such as slicing off tip of a finger. An avulsion injury may take a long time to heal.
- Cuts from an animal or human bite.

- Cuts that have damage to underlying tissues. Injuries to nerves, tendons or joints are more common with cuts on the hands or feet.
- Cuts over a possible broken bone. Bacteria can get into a cut over a broken bone and infect the bone.
- Cuts with a known or suspected objects such as glass or wood, in the wound.

What to do if you get a cut :

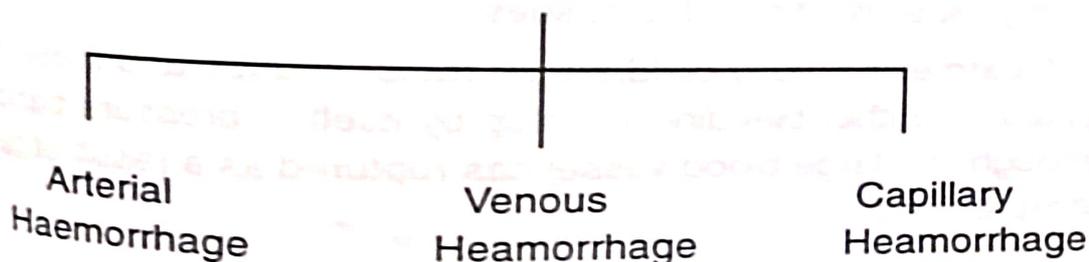
- Stop the bleeding with direct pressure to the wound.
- Determine if other tissues, such as blood vessels, never, tendons, ligaments, joints, bones or internal organs have been injured.
- Determine of treatment by a doctor, such as stitches, staples or skin adhesives, is needed.
- Clean the wound and remove any dirt or debris to prevent infections, both bacterial skin infections and tetanus.
- Determine whether you need a tetanus shot.

Cuts to the head or face may appear worse than they are and bleed a lot because of the good blood supply to this area. Controlling the bleeding will allow you to determine the seriousness of the injury.

Hemorrhage

Hemorrhage or bleeding is a common cause of death in accidents. It occurs when the blood vessels are injured. As blood is a nutrient of the body. If some blood comes out the body heart and lungs cannot function properly.

Type of Hemorrhage

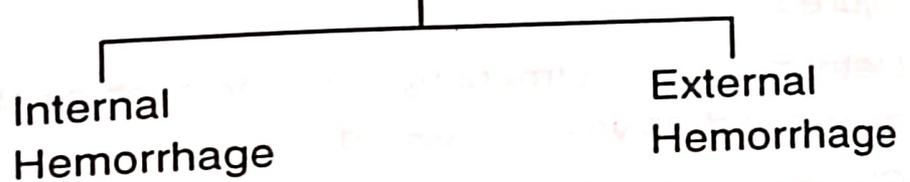


1. Arterial Hemorrhage: The bleeding occurring from the blood vessel is in the form of jet and corresponds to the beating of heart. The loss of blood is maximum and if corrective measures are not taken it results in to death. The blood is bright red in colour.

2. Venous Hemorrhage: The bleeding is in a continuous stream which is dark red. If a major vein ruptures air may be sucked in where pressure is below atmosphere. The air gets with blood and impedes circulation.

3. Capillary Hemorrhage: The blood oozes out slowly, it is not of much importance if on surface but assumes significance if it is internal hemorrhage from some viscera.

Hemorrhage may be



- **Internal Hemorrhage :** It is due to the rupture of blood vessel situated in the brain, abdominal cavity, injury to any organ or gaster intestinal tract. It is very dangerous. A rupture of meningeal blood vessel, rupture of aneurysm, of artery inside the cavity, rupture of blood vessel in tubercular cavity a mild bleeding in kidney or stomach is of serious consequences.
- **External Hemorrhage:** When the blood vessel reputed is situated on the surface of body. It can be easily stopped by pressure bandage and shift the patient to hospital.

Signs and Symptoms: The patient complains of cold and giddiness and may vomit. The vision is blurred, the skin becomes clammy and the pulse is rapid feeble. He is air hungry and feels thirsty. Blood pressure falls and the patient gives anxious expression. Air hunger due to loss of blood and consequently loss in oxygen carrying capacity of blood to tissues.

Treatment: Mostly children get minor injuries and these is not get panicky. Either bleeding will stop by itself or pressure bandage is enough. If a large blood vessel has ruptured as a result of fall or a sharp objects.

- Stop bleeding by pressure bandage.
- Make to patient lie down on bed or stretcher.
- Raise the foot and of bed.
- Give a hot drink.
- Transport casualty to hospital.

Treatment in internal hemorrhage : To prevent worsening of the condition immediately transport the patient to near by hospital.

- Lay the casualty down with foot and raised.
- Keep the patient calm.
- Do not give anything orally.

Laceration

A laceration is an injury that result in an irregular break in skin, more commonly referred to as a cut, but defined as a torn and ragged wound. There are five general types of laceration.

1. Split laceration : This type of wound is caused when part of the body is crushed between two objects. While not as serious and a crush injury a split laceration is caused in the same manner, with the striking object making a blunt impact and causing the skin and tissues to tear from compression. Split lacerations most commonly show up on the face, head, hands and legs.

2. Grinding compression: When an object strikes the skin with a blunt impact at either an angle or with a sweeping motion, the essentially peeled a person's skin is essentially peeled back when this types of laceration occurs. As the object strikes the skin, the tissue is crushed beneath the epidermis and the top layer of the skin peels away.

3. Over stretching: This would is typically caused by a single, angular force that strikes the skin and either pusher or pulls the skin, causing it to stretch and break. An example of an-over stretching wound would be a gunshot. As a bullet pierces the skin at an angle and continues underneath. It will lodge beneath the skin and cause compression and expansion that will tear the skin beyond the initial point of impact.

4. Cut laceration: The most common type of laceration, a cut occurs when any type of blade (knife, scissors etc) comes into contact with the skin, causing a break of the skin and possibly the underlying tissue.

5. Tearing: Just as the name implies, type of laceration occurs when the skin is broken by an object and the break is ripped due to pressure pushing the wound in two different directions, essentially causing the skin to tear like a piece of paper.

Causes: Laceration are caused where an object strikes the skin and causes a wound to open. Depending on a variety of characteristics (angle, face, depth, object) some lacerations can be serious than others, reaching as far as deep tissue and leading to serious bleeding.

Symptoms: The predominant symptoms to laceration are mild to serious breaking of the epidermis, tears in the first layer of skin that can range from small slices to deep gashes. Depending on the laceration, there can be bleeding of different levels of severity. Mild lacerations may experience brief bleeding accompanied by mild pain deeper laceration will experience greater bleeding and more intense pain.

Treatment: First step in most injuries skin to clean the wound, cleaning of the wound is of utmost importance as to stave off infection and inflammation. For mild lacerations, the use of a topical ointment, such as Neosporin is recommended. For deeper wounds, that affect the tissue beneath the skin and experience heavier bleeding, attention from a medical professional should be required, as the wound will likely need to be closed with stitches, staples or even sutures. As with minor laceration, while waiting medical attention with more serious wounds, it is imperative to clean the wounds first and then apply pressure with a clean bandage to limit leading as much as possible.

Prevention: With laceration and any skin wound in general the best means of prevention is to the right equipment, wear the proper clothing and exercise strong judgment and reason when in situations that could be detrimental to your health or physical well being.

Contusion also called a bruise, refers to an area of skin discoloration (typically black and blue) that occurs after an trauma beneath the skin rupture and blood leaks into the soft tissue beneath the skin. Contusions and bruises are common injuries in sports with a risk of collision or impact.

Contusion are classified as

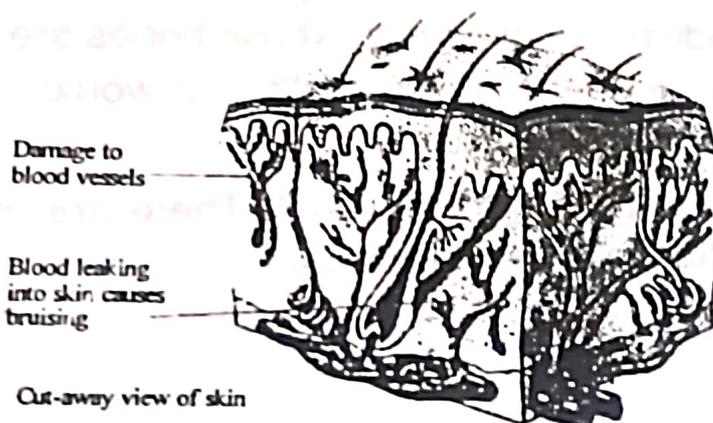
1. **Subcutaneous:** A Contusion beneath the skin.
2. **Intramuscular:** A contusion with in a muscle.
3. **Priosteal:** A contusion to a bone.

Symptoms: Contusions can occur suddenly and last from days to months. Contusion generally cause pain, swelling and tenderness over a black and blue area of skin discoloration. As it heals, it often changes from black and blue to green and yellow.

Treatment: Treatment a contusion is similar to other soft tissue injuries. Apply ice to the contusion for 15 minutes, several times per day. Mild contusion or bruises typically heal within five days. The contusion is a miner problem that usually needs little treatment. Consult your doctor if the injury does not clear up with in a few weeks. If you skin is broken, you may need a tetanus injection or antibiotics.

Dislocation

If the displacement of one or more bone of the joint, most common are at shoulder or elbow joint after a fall. It is due to the uneven placing of hand or food as a result of falling. So when the bones of joints slip from their natural position it is known as dislocation of bones.



Dislocation

Signs and Symptoms

1. Pain and tenderness
2. Deformity
3. Loss of function of the effected joint.
4. In dislocation of mandibular joint the patient is unable to close the mouth.

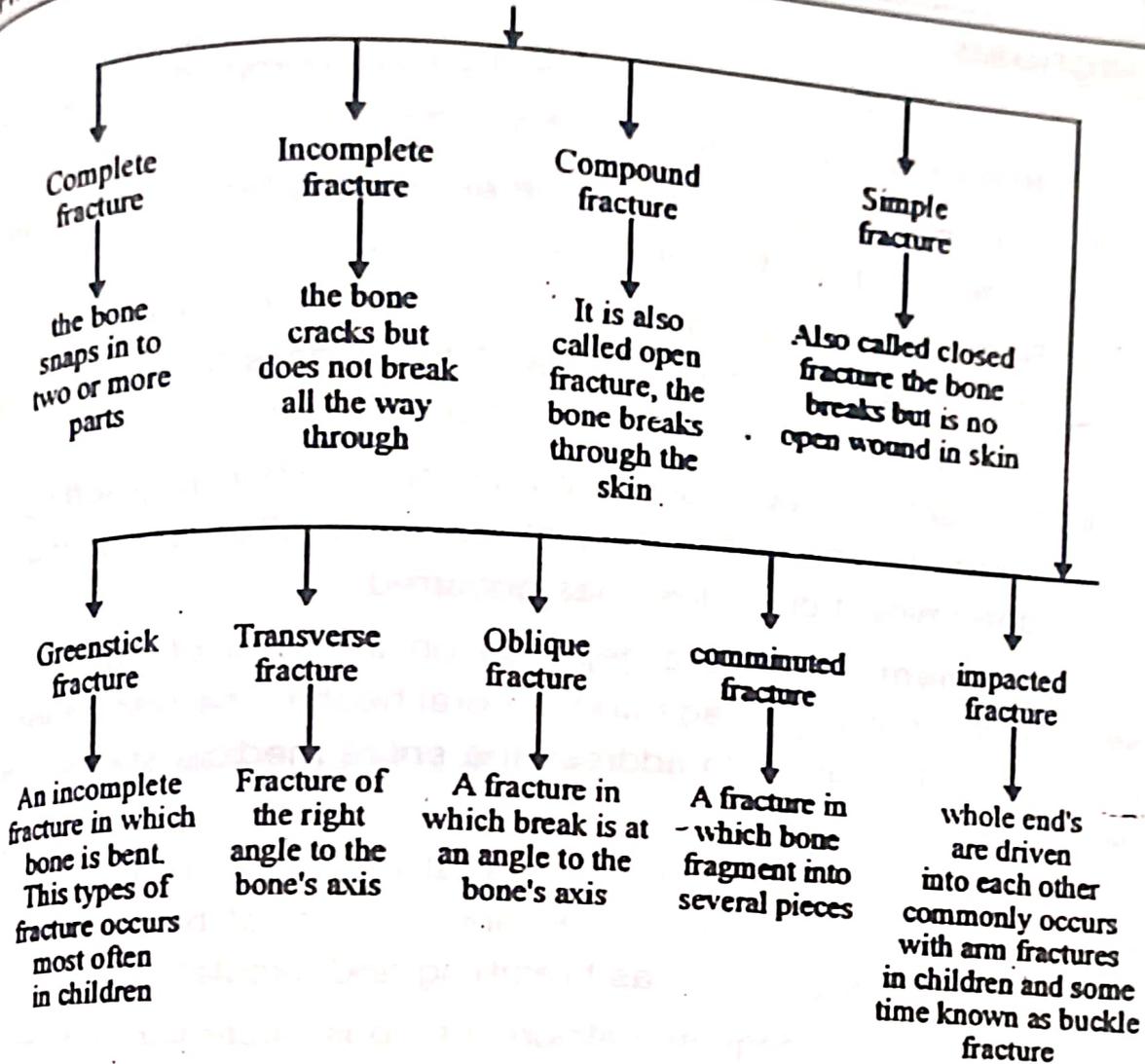
Treatment

1. Slipped bones should be tied together.
2. Tie the organ of the patient and take him to the doctor. This may be done with the help of a sling or support.
3. Ice or cold water bandage should be applied on the joint.
4. If there is excessive pain, hot water fermentation should be applied.
5. The joint should be provided with rest motion causes slipping. Dislocated bones should not be moved.

Fractures

A fracture is a complete or incomplete break in a bone resulting from the application of excessive force, or fractures are a common occurrence when the physical force exerted on a bone is stronger than the bone itself. Your risk of fracture depends partly on your age. Broken bones are very common in childhood, although children's fracture are generally less complicated than fractures in adults. Older people, whose bones are more brittle, are more likely to get fractures from falls that would not have the same effect on younger people.

Types of fractures: There are many types of fractures, but the main categories are:



Among other types, some fractures are caused by a disease that weakens the bones, and a stress fracture which is a hair line crack. The severity of a fracture depends on its location and the damage done to the bone and near by tissue. Serious fractures can have dangerous complications if they are not treated promptly, such as damage to blood vessels or nerves and infection of the bone.

Signs and symptoms

1. Deformity of an arm or leg.
2. Swelling or bruising our bone.
3. Pain in the injured area that gets worse when the area is moved or pressure is applied.
4. Loss of function in the injured area.
5. In compound fractures, bone protruding from the skin.

Diagnosis

1. An X-ray of the injured area is the most common test used to determine the presence of bone fracture.
2. In some cases CT, MRI or other imaging tests are required to demonstrate fracture.
3. Some times, especially in children, the initial x-ray may not show any fracture but repeat 7 to 14 days later may show changes in the bones of the affected area.
4. If a fracture is open and occurs in conjunction with soft tissue injury. Further laboratory studies are often conducted to determine if blood loss has occurred.

Treatment: Treatment depends on the type of fracture, its severity, the individual's age and general health. The first priority in treating any fracture is to address the entire medical status of the patient.

First aid is the appropriate initial treatment in emergency situations. It includes proper splinting, control of blood loss and monitoring vital signs such as breathing and circulation.

Prevention: Adequate calcium intake is necessary for strong bones and can help in decreasing the risk of fractures.

- Exercise can help strengthen bones by increasing bone density.
- Fractures can be prevented if safety measures are taken seriously.

Strain and Sprain

Sprain: Sprain refers to damage or tearing of ligaments or a joint capsule.

Strain: Strain refers to damage or tearing of muscle.

Strains are injuries that affect muscles or tendons, thick bands that attach muscles to bones. They occur in response to a quick tear, twist or pull of the muscle. Strains are an acute type of injury that results from over stretching or over contraction. Pain, weakness

and muscle spasms are common symptoms experienced after a strain occurs.

Sprains are injuries that affect ligaments, thick bands of cartilage that attach bone to bone. They occur in response to a stretch or tear of a ligament. Sprains are an acute type of injury that results from trauma such as a fall or outside force that displaces the surrounding joint from its normal alignment. Sprains can range from a mild ligament stretch to a complete tear. Bruising, swelling, instability and painful movement are common symptoms experienced after a sprain occurs.

Causes and symptoms

Sprains

There are three grades of sprains

Grade I: Sprains are mild injuries where there is no tearing of the ligament and no joint function is lost, although there may be tenderness and slight swelling.

Grade II: Sprains are caused by a partial tear in the ligament. These sprains are characterized by obvious swelling, extensive bruising, pain, difficulty bearing weight and reduced function of the joint.

Grade III: Sprains are caused by complete tearing of the ligament where there is severe pain, loss of joint function, wide spread swelling and bruising and the inability to bear weight. These symptoms are similar to those of bone fractures.

Strains

Causes & symptoms strains can range from mild muscle stiffness to great soreness. Strain result from overuse of muscles, proper use of the muscles or as the result of injury in another part of the body when the body compensates for pain by alerting the way it moves.

Diagnosis

Grade I sprains are mild strains are usually self diagnosed. Grade II & III sprains are often seen by a physician, who x-rays the area to differentiate between a sprain and a fracture.

Treatment

1. Grade I sprains and mild strains can be treated at home.

2. Basic first aid for sprain consists of **RICE**

R - Rest

I - Ice for 48 hours

C - Compression (wrapping in an elastic bandage)

E - Elevation of the sprain above the level of the heart.

3. In addition to RICE people with grade II & IE sprain in the ankle or knee usually need to use crutches until the sprains have healed enough to bear weight.

However, once a joint has been sprained, it will never be as strong as it was before.

Prevention

Sprains and strains can be prevented by warming-up before exercising, using proper lifting techniques, wearing properly fitting shoes and taping or bracing the joint.

Bites of Insects

There are very few types of insects that carry venom or poison and none whose venom is dangerous. However, it is possible for an insect bite or sting to cause an allergic reaction that can range from a mild local reaction to something like a severe asthma attack. In extreme allergic reactions your airways can close up and you can even stop breathing.

Stinging insects

- Honeybee

- Wasps (yellow jackets) and hornets.
- Fire ants (a wingless insect)
- All three have different kind of venom, but none is likely to be dangerous in small doses unless someone is allergic to the poison.

Biting and blood sucking insects

- Flies (black flies, sand flies, deer flies, horse flies)
- Mosquitoes
- Bed bugs

None of them are actually poisonous, but some have saliva that can irritate or provoke a reaction and others can introduce infections when they bite.

Symptoms : Many people infected with bites or stings will have only mild symptoms or no symptoms at all. People with cancer, diabetes or heart disease are at much higher risk for the more serious symptoms of the disease. Any one experiencing signs of severe headache, with high stiff neck, vomiting, difficulty swallowing, drowsiness, loss of consciousness, lack of coordination, muscle weakness or paralysis should receive emergency medical attention.

Treatment

- If the stinger has been left in the skin, it should be removed as soon as possible.
- Wash the affected area with soap and water.
- Apply an icepack to prevent the venom from spreading.

Prevention

- To avoid insects and insect bites, do not wear brightly coloured clothing or strong flowery perfumes.
- Do not carry fruit or walk through fields.
- Applying insect repellents may also be useful to avoid insect bites.
- Wear long-sleeve shirts, pants and socks for protection.

Questions

1. Write short note on the following :
 - (i) Qualities of a first aider.
 - (ii) Types of Wounds.
2. How will you prepare a first aid box?
3. Explain the aims and principles of first aid.
4. Explain in detail about the types of fracture.
5. Write short note on :
 - (i) Contusion
 - (ii) Laceration
6. "Homorrhage is the common cause of death in accidents"
Explain.
7. How strain and sprain different from each other.

6

Chapter

YOGA EDUCATION

Yoga education can supplement school and university education. It can prepare the students physically and mentally for the integration of their physical, mental and spiritual faculties so that the students can become healthier, saner and more integrated members of the society and of the nation.

Yoga education helps in self discipline and self-control, leading to immense amount of awareness, concentration and higher level of consciousness. Briefly the aims and objectives of Yoga education are :

- 1) To enable the student to have good health.
- 2) To practice mental hygiene.
- 3) To possess emotional stability.
- 4) To integrate moral values.
- 5) To attain higher level of consciousness.

All these objectives could be dealt with in an integrated manner.

Meaning of yoga

The true essence of yoga revolves around elevating the life force or 'Kundalini' at the base of the spine. It aims to achieve this through a series of physical and mental exercises. At the physical level, the methods comprise various **yoga postures** or '**asanas**' that aim to keep the body healthy. The mental techniques include breathing exercises or '**pranayama**' and meditation or '**dhyana**' to discipline the mind.

The ultimate goal of yoga is, however, to help the individual transcend the self and attain enlightenment. As the Bhagavad-Gita says, "A person is said to have achieved yoga, the union with the Self, when the perfectly disciplined mind gets freedom from desires, and becomes absorbed in the Self alone."

Importance of Yoga

Yoga is not a religion; it is a way of living that aims towards a healthy mind in a healthy body'.

Man is a physical, mental and spiritual being; yoga helps promote a balanced development of all the three. Other forms of physical exercises, like aerobics, assure only physical well-being. They have little to do with the development of the spiritual or astral body.

Yogic exercises recharge the body with cosmic energy and facilitates :

- Attainment of perfect equilibrium and harmony
- Promotes self- healing.
- Removes negative blocks from the mind and toxins from the body
- Enhances personal power
- Increases self-awareness
- Helps in attention, focus and concentration, especially important for children
- **Reduces stress** and tension in the physical body by activating the parasympathetic nervous system

The aspirant feels rejuvenated and energized. Thus, yoga bestows upon every aspirant the powers to control body and mind.

Aims And Objectives of Indian Yoga Association

1. Maintaining and promoting the different Indian Yoga traditions
2. To provide extensive research facilities for carrying out fundamental and clinical research in the discipline of Yoga

- and its applications keeping in view the socio-economic needs of all sections of the society.
3. To hold Conferences, Seminars, Workshops, Camps and Public meetings to propagate information and knowledge of Yoga, its various techniques and practice in various parts of India as well as abroad
 4. To conduct workshops, seminars around the world through its lifetime members
 5. Accreditation and affiliation of Yoga Institutions including Prescribing of basic requirements for affiliation of Yoga Institutions
 6. To bring certain amount of self discipline in the operations of the Yoga Institutions
 7. To conduct experiments and research on emerging trends in Yoga
 8. To develop techniques and approaches based on the Ancient Yoga Texts and Granthas of Yoga to meet the challenges of the modern era.
 9. To prescribe different courses for imparting Yoga education, training, therapy and research.

Introduction to Ashtanga Yoga

In Sanskrit "Ashta + anga" is Ashtanga. "Ashta" means Eight and "Anga" is limbs so it means Eight Limb path, ashtanga yoga is based on Yoga Philosophy of Patanjali. The asanas, Pranayamas or the dharana which we have studied earlier or the yam and niyam are based on the Yoga Sutras of Patanjali. Hence, we will acquaint ourselves with the fundamentals as stated by Patanjali first.

History of Ashtanga Yoga

Yoga has its roots about 5000 years BC as described in Vedic Philosophy and Tantras. Patanjali, great sage composed this path into a Darshan (Philosophy) in his Book Patanjali Yoga Sutra. In which he has formulated Yoga as a Eight Limbs or Eight Fold path.

Eight Limbs of Ashtanga Yoga

1. Yama (Principles or moral code)
 - o Ahimsa - A principle of non-violence
 - o Satya - A principle of Truthfulness
 - o Asteya - A principle of non stealing
 - o Brahmacharya - Continence / Celibacy
 - o Aparigraha - A principle of non-hoarding or non possessiveness
2. Niyama (Personal Disciplines) -
 - o Shoucha - Purity
 - o Santosh - Contentment
 - o Tapa - Endurance
 - o Swadhyaya - Self study
 - o Eshwar Pranidhan - Dedication
3. Asana (Yoga Positions or Yogic Postures)
A stable and comfortable posture which helps attain mental equilibrium.
4. Pranayama (Yogic Breathing)
Extension and control of breath.
5. Pratyahara (Withdrawal of Senses)
A mental preparation to increase the power of mind.
6. Dharana (Concentration on Object)
Concentration of mind on one object and its field.
7. Dhyana (Meditation)
With drawing mind from all external objects and Focusing on one point and meditating on it.

8. Samadhi (Salvation)

State of Super bliss, joy and merging individual consciousness in to universal consciousness. Union between Jivatman and Paramatman. Union of Shiva and Shakti in Sahasrar Chakra (the top of the head). Realizing the Bramhan (pure consciousness) or Realization of God is the ultimate achievement of Human Birth.

Detailed Study Of Asthang Yoga

The practice of yoga is an art and science dedicated to creating union between body, mind and spirit. Its objective is to assist the practitioner in using the breath and body to foster an awareness of ourselves as individualized beings intimately connected to the unified whole of creation. In short it is about making balance and creating equanimity so as to live in peace, good health and harmony with the greater whole. This art of right living was perfected and practiced in India thousands of years ago and the foundations of yoga philosophy were written down in *The Yoga Sutra* of Patanjali, approximately 200 AD. This sacred text describes the inner workings of the mind and provides an eight-step blueprint for controlling its restlessness so as to enjoying lasting peace.

The core of Patanjali's *Yoga Sutra* is an eight-limbed path that forms the structural framework for yoga practice. Upon practicing all eight limbs of the path it becomes self-evident that no one element is elevated over another in a hierarchical order. Each is part of a holistic focus which eventually brings completeness to the individual as they find their connectivity to the divine. Because we are all uniquely individual a person can emphasize one branch and then move on to another as they round out their understanding.

In brief the eight limbs, or steps to yoga, are as follows:

1. **Yama** : Universal morality
2. **Niyama** : Personal observances

3. **Asanas** : Body postures
4. **Pranayama** : Breathing exercises, and control of prana
5. **Pratyahara** : Control of the senses
6. **Dharana** : Concentration and cultivating inner perceptual awareness
7. **Dhyana** : Devotion, Meditation on the Divine
8. **Samadhi** : Union with the Divine

The first two limbs that Patanjali describes are the fundamental ethical precepts called *yamas*, and the *niyamas*. These can also be looked at as universal morality and personal observances. *Yamas* and *niyamas* are the suggestions given on how we should deal with people around us and our attitude toward ourselves. The attitude we have toward things and people outside ourselves is *yama*, how we relate to ourselves inwardly is *niyama*. Both are mostly concerned with how we use our energy in relationship to others and to ourselves.

The *yamas* are broken down into five "wise characteristics." Rather than a list of dos and don'ts, "they tell us that our fundamental nature is compassionate, generous, honest and peaceful." They are as follows:

I. Yamas (Universal Morality)

Ahimsa – Compassion for all living things. The word *ahimsa* literally mean not to injure or show cruelty to any creature or any person in any way whatsoever. *Ahimsa* is, however, more than just lack of violence as adapted in yoga. It means kindness, friendliness, and thoughtful consideration of other people and things. It also has to do with our duties and responsibilities too. *Ahimsa* implies that in every situation we should adopt a considerate attitude and do no harm.

2. Satya – Commitment to Truthfulness

Satya means “to speak the truth,” yet it is not always desirable to speak the truth on all occasions, for it could harm someone unnecessarily. We have to consider what we say, how we say it, and in what way it could affect others. If speaking the truth has negative consequences for another, then it is better to say nothing. Satya should never come into conflict with our efforts to behave with ahimsa. This precept is based on the understanding that honest communication and action form the bedrock of any healthy relationship, community, or government, and that deliberate deception, exaggerations, and mistruths harm others.

3. Asteya - Non-stealing

Steya means “to steal”; asteya is the opposite-to take nothing that does not belong to us. This also means that if we are in a situation where someone entrusts something to us or confides in us, we do not take advantage of him or her. Non-stealing includes not only taking what belongs to another without permission, but also using something for a different purpose to that intended, or beyond the time permitted by its owner.ⁱⁱⁱ The practice of asteya implies not taking anything that has not been freely given. This includes fostering a consciousness of how we ask for others' time for inconsiderate behavior demanding another's attention when not freely given is, in effect, stealing.

4. Brahmacharya - Sense control

Brahmacharya is used mostly in the sense of abstinence, particularly in relationship to sexual activity. Brahmacharya suggests that we should form relationships that foster our understanding of the highest truths. Brahmacharya does not necessarily imply celibacy. Rather, it means responsible behavior with respect to our goal of moving toward the truth. Practicing brahmacharya means

that we use our sexual energy to regenerate our connection to our spiritual self. It also means that we don't use this energy in any way that might harm others.^{iv}

5. Aparigraha - Neutralizing the desire to acquire and hoard wealth

Aparigraha means to take only what is necessary, and not to take advantage of a situation or act greedy. We should only take what we have earned; if we take more, we are exploiting someone else. The yogi feels that the collection or hoarding of things implies a lack of faith in God and in himself to provide for his future.^v Aparigraha also implies letting go of our attachments to things and an understanding that impermanence and change are the only constants.

The Yoga Sutra describes what happens when these five behaviors outlined above become part of a person's daily life. Thus, the yamas are the moral virtues which, if attended to, purify human nature and contribute to health and happiness of society.

II. Niyama (Personal Observances)

Niyama means "rules" or "laws." These are the rules prescribed for personal observance. Like the yamas, the five niyamas are not exercises or actions to be simply studied. They represent far more than an attitude. Compared with the yamas, the niyamas are more intimate and personal. They refer to the attitude we adopt toward ourselves as we create a code for living soulfully

1. Saucha - Purity

The first niyama is saucha, meaning purity and cleanliness. Saucha has both an inner and an outer aspect. Outer cleanliness simply means keeping ourselves clean. Inner cleanliness has as much to do with the healthy, free functioning of our bodily organs as with the clarity of our mind. Practicing asanas or pranayama are

essential means for attending to this inner sauca. Asanas tones the entire body and removes toxins while pranayama cleanses our lungs, oxygenates our blood and purifies our nerves. "But more important than the physical cleansing of the body is the cleansing of the mind of its disturbing emotions like hatred, passion, anger, lust, greed, delusion and pride."

2. Santosa - Contentment

Another niyama is santosa, modesty and the feeling of being content with what we have. To be at peace within and content with one's lifestyle finding contentment even while experiencing life's difficulties for life becomes a process of growth through all kinds of circumstances. We should accept that there is a purpose for everything - yoga calls it karma - and we cultivate contentment 'to accept what happens'. It means being happy with what we have rather than being unhappy about what we don't have.

3. Tapas - Disciplined use of our energy

Tapas refers to the activity of keeping the body fit or to confront and handle the inner urges without outer show. Literally it means to heat the body and, by so doing, to cleanse it. Behind the notion of tapas lies the idea we can direct our energy to enthusiastically engage life and achieve our ultimate goal of creating union with the Divine. Tapas helps us burn up all the desires that stand in our way of this goal. Another form of tapas is paying attention to what we eat. Attention to body posture, attention to eating habits, attention to breathing patterns - these are all tapas.

4. Svadhyaya - Self study

The fourth niyama is svadhyaya. Sva means "self" adhyaya means "inquiry" or "examination". Any activity that cultivates self-reflective consciousness can be considered svadhyaya. It means

to intentionally find self-awareness in all our activities and efforts, even to the point of welcoming and accepting our limitations. It teaches us to be centered and non-reactive to the dualities, to burn out unwanted and self-destructive tendencies.

5. Isvarapranidhana - Celebration of the Spiritual

Isvarapranidhana means "to lay all your actions at the feet of God." It is the contemplation on God (Isvara) in order to become attuned to god and god's will. It is the recognition that the spiritual suffuses everything and through our attention and care we can attune ourselves with our role as part of the Creator. The practice requires that we set aside some time each day to recognize that there is some omnipresent force larger than ourselves that is guiding and directing the course of our lives.

III. Asanas (Body postures)

Asana is the practice of physical postures. It is the most commonly known aspect of yoga for those unfamiliar with the other seven limbs of Patanjali's *Yoga Sutra*. The practice of moving the body into postures has widespread benefits; of these the most underlying are improved health, strength, balance and flexibility. On a deeper level the practice of asana, which means "staying" or "abiding" in Sanskrit, is used as a tool to calm the mind and move into the inner essence of being. The challenge of poses offers the practitioner the opportunity to explore and control all aspects of their emotions, concentration, intent, faith, and unity between the physical and the ethereal body. Indeed, using asanas to challenge and open the physical body acts as a binding agent to bring one in harmony with all the unseen elements of their being, the forces that shape our lives through our responses to the physical world. Asana then becomes a way of exploring our mental attitudes and strengthening our will as we learn to release and move into the

state of grace that comes from creating balance between our material world and spiritual experience.

As one practices asana it fosters a quieting of the mind, thus it becomes both a preparation for meditation and a meditation sufficient in and of itself. Releasing to the flow and inner strength that one develops brings about a profound grounding spirituality in the body. The physicality of the yoga postures becomes a vehicle to expand the consciousness that pervades our every aspect of our body. The key to fostering this expansion of awareness and consciousness begins with the control of breath, the fourth limb – Pranayama. Patanjali suggests that the asana and the pranayama practices will bring about the desired state of health; the control of breath and bodily posture will harmonize the flow of energy in the organism, thus creating a fertile field for the evolution of the spirit. "This down-to-earth, flesh-and-bones practice is simply one of the most direct and expedient ways to meet yourself. ... This limb of yoga practice reattaches us to our body. In reattaching ourselves to our bodies we reattach ourselves to the responsibility of living a life guided by the undeniable wisdom of our body."^{viii} To this B.K.S. Iyengar adds: "The needs of the body are the needs of the divine spirit which lives through the body. The yogi does not look heavenward to find God for he know that He is within."

IV. Pranayama (Breath Control)

Pranayama is the measuring, control, and directing of the breath. Pranayama controls the energy (prana) within the organism, in order to restore and maintain health and to promote evolution. When the in-flowing breath is neutralized or joined with the out-flowing breath, then perfect relaxation and balance of body activities are realized. In yoga, we are concerned with balancing the flows of vital forces, then directing them inward to the chakra system and upward to the crown chakra.

Pranayama, or breathing technique, is very important in yoga. It goes hand in hand with the asana or pose. In the *Yoga Sutra*, the practices of pranayama and asana are considered to be the highest form of purification and self discipline for the mind and the body, respectively. The practices produce the actual physical sensation of heat, called tapas, or the inner fire of purification. It is taught that this heat is part of the process of purifying the nadis, or subtle nerve channels of the body. This allows a more healthful state to be experienced and allows the mind to become more calm.^x As the yogi follows the proper rhythmic patterns of slow deep breathing "the patterns strengthen the respiratory system, soothe the nervous system and reduce craving. As desires and cravings diminish, the mind is set free and becomes a fit vehicle for concentration."^{xi}

V. Pratyahara (Control of the Senses)

Pratyahara means drawing back or retreat. The word *ahara* means "nourishment"; pratyahara translates as "to withdraw oneself from that which nourishes the senses." In yoga, the term pratyahara implies withdrawal of the senses from attachment to external objects. It can then be seen as the practice of non-attachment to sensorial distractions as we constantly return to the path of self realization and achievement of internal peace. It means our senses stop living off the things that stimulate; the senses no longer depend on these stimulants and are not fed by them any more.

In pratyahara we sever this link between mind and senses, and the senses withdraw. When the senses are no longer tied to external sources, the result is restraint or pratyahara. Now that the vital forces are flowing back to the Source within, one can concentrate without being distracted by externals or the temptation to cognize externals.

Pratyahara occurs almost automatically when we meditate because we are so absorbed in the object of meditation. Precisely because the mind is so focused, the senses follow it; it is not happening the other way around.

No longer functioning in their usual manner, the senses become extraordinarily sharp. Under normal circumstances the senses become our masters rather than being our servants. The senses entice us to develop cravings for all sorts of things. In pratyahara the opposite occurs: when we have to eat we eat, but not because we have a craving for food. In pratyahara we try to put the senses in their proper place, but not cut them out of our actions entirely.

Much of our emotional imbalance are our own creation. A person who is influenced by outside events and sensations can never achieve the inner peace and tranquility. This is because he or she will waste much mental and physical energy in trying to suppress unwanted sensations and to heighten other sensations. This will eventually result in a physical or mental imbalance, and will, in most instances, result in illness.

Patanjali says that the above process is at the root of human unhappiness and uneasiness. When people seek out yoga, hoping to find that inner peace which is so evasive, they find that it was theirs all along. In a sense, yoga is nothing more than a process which enables us to stop and look at the processes of our own minds; only in this way can we understand the nature of happiness and unhappiness, and thus transcend them both.

VI. Dharana (Concentration and cultivating inner perceptual awareness)

Dharana means "immovable concentration of the mind". The essential idea is to hold the concentration or focus of attention in one direction. "When the body has been tempered by asanas; when the mind has been refined by the fire of pranayama and when the senses have been brought under control by pratyahara, the sadhaka

(seeker) reaches the sixth stage, dharana. Here he is concentrated wholly on a single point or on a task in which he is completely engrossed. The mind has to be stilled in order to achieve this state of complete absorption."

In dharana we create the conditions for the mind to focus its attention in one direction instead of going out in many different directions. Deep contemplation and reflection can create the right conditions, and the focus on this one point that we have chosen becomes more intense. We encourage one particular activity of the mind and, the more intense it becomes, the more the other activities of the mind fall away.

The objective in dharana is to steady the mind by focusing its attention upon some stable entity. The particular object selected has nothing to do with the general purpose, which is to stop the mind from wandering -through memories, dreams, or reflective thought-by deliberately holding it single-mindedly upon some apparently static object. B.K.S. Iyengar states that the objective is to achieve the mental state where the mind, intellect, and ego are "all restrained and all these faculties are offered to the Lord for His use and in His service. Here there is no feeling of 'I' and 'mine'."^{xiv}

When the mind has become purified by yoga practices, it becomes able to focus efficiently on one subject or point of experience. Now we can unleash the great potential for inner healing.

VII. Dhyana (Devotion, Meditation on the Divine)

Dhyana means worship, or profound and abstract religious meditation. It is perfect contemplation. It involves concentration upon a point of focus with the intention of knowing the truth about it. The concept holds that when one focuses their mind in concentration on an object the mind is transformed into the shape of the object. Hence, when one focuses on the divine they become more reflective

of it and they know their true nature. "His body, breath, senses, mind, reason and ego are all integrated in the object of his contemplation – the Universal Spirit."^{xv}

During dhyana, the consciousness is further unified by combining clear insights into distinctions between objects and between the subtle layers of perception. "We learn to differentiate between the mind of the perceiver, the means of perception, and the objects perceived, between words, their meanings, and ideas, and between all the levels of evolution of nature."^{xvi}

As we fine-tune our concentration and become more aware of the nature of reality we perceive that the world is unreal. "The only reality is the universal self, or God, which is veiled by Maya (the illusory power). As the veils are lifted, the mind becomes clearer. Unhappiness and fear – even the fear of death – vanishes. This state of freedom, or Moksha, is the goal of Yoga. It can be reached by constant enquiry into the nature of things."^{xvii} Meditation becomes our tool to see things clearly and perceive reality beyond the illusions that cloud our mind.

VIII. Samadhi (Union with the Divine)

The final step in the eight-fold path of Yoga is the attainment of Samadhi. Samadhi means "to bring together, to merge." In the state of samadhi the body and senses are at rest, as if asleep, yet the faculty of mind and reason are alert, as if awake; one goes beyond consciousness. During samadhi, we realize what it is to be an identity without differences, and how a liberated soul can enjoy pure awareness of this pure identity. The conscious mind drops back into that unconscious oblivion from which it first emerged.

Thus, samadhi refers to union or true Yoga. There is an ending to the separation that is created by the "I" and "mine" of our illusory perceptions of reality. The mind does not distinguish between self and non-self, or between the object contemplated and the process

of contemplation. The mind and the intellect have stopped and there is only the experience of consciousness, truth and unutterable joy.

The achievement of samadhi is a difficult task. For this reason the *Yoga Sutra* suggests the practice of asanas and pranayama as preparation for dharana, because these influence mental activities and create space in the crowded schedule of the mind. Once dharana has occurred, dhyana and samadhi can follow.

These eight steps of yoga indicate a logical pathway that leads to the attainment of physical, ethical, emotional, and psycho-spiritual health. Yoga does not seek to change the individual; rather, it allows the natural state of total health and integration in each of us to become a reality.

Questions

1. What do you mean by Yoga Education? Explain in detail.
2. "Yoga is good for health" Highlight this and tell how a person will be benefitted by yoga.
3. Write down the importance of yoga in detail.

Components of Asthang Yoga

Eight Limbs of Asthang Yoga

4. What do you mean by Indian Yoga? Explain in detail.
5. Write notes on following:
6. Explain in detail Patanjali's Asthang yoga.
7. Why is it important to adopt yoga in school?

ॐ नमो भगवते वासुदेवाय

7

Chapter

YOGIC DIET

"And he knew that food was Brahman. From food all beings are born. By food they live and into food they return". – Upanishad

Everything that we eat is food for our soul. Yogis believe that food is the creator of prana (life force) that sustains our bodies and brings us vitality and health. Therefore, the types of foods we choose to eat reflect the level of our conscious development. The discipline of yoga suggests a pure (ethical) vegetarian diet, which facilitates the development of *sattva*. *Sattva* is a quality of love, awareness, connection, and peace with all sentient beings. Yogis believe that food is our first interaction with the world around us, and if we do not eat with a sense of love, connection, and peace, all other facets of our lives are inclined to suffer.

The basis of *sattva* is the concept of *ahimsa* (non-harming). A sattvic diet avoids any foods that involve killing or harming of animals. Sattvic diets also encourage foods grown harmoniously with nature, and foods that are ripened and grown naturally.

In addition, the foods that we eat should be prepared with love and positive intention. In eating a yogic diet, we are increasing prana and a higher state of consciousness. Please take note of these suggested yogic foods, while avoiding foods that do not align with yogic principles. These suggestions are recommended for any level of yoga practitioner or individual seeking a healthy, spiritual path.

Types of Yogic Diet

A diet that is wholly conducive to the practice of Yoga and spiritual progress is called Yogic diet. Diet has intimate connection

with the mind. Mind is formed out of the subtlest portion of food. Diet is of three kinds viz., Sattvic diet, Rajasic diet and Tamasic diet. Milk, barely, wheat, cereals, butter, cheese, tomatoes, honey, dates, fruits, almonds and sugar-candy are all Sattvic foodstuffs. They render the mind pure and calm. Fish, eggs, meat, salt, chillies and asafoetida are Rajasic foodstuffs. They excite passion. Beef, wine, garlic, onions and tobacco are Tamasic foodstuffs. They fill the mind with anger, darkness and inertia.

SATTVIC		RAJASIC	TAMASIC
Cow's milk, Cream, Cheese, Butter, Curd, Ghee, Sweet fruits, Apples, Bananas, Grapes, Papaya, Pomegranates, Mangoes, Oranges, Pears, Pineapples, Guavas, Figs, Vegetables, Coconut, Brinjals, Potatoes, Cabbages, Spinach, Tomatoes.	Cucumber, Pumpkin, Cauliflower, Lady's finger, Peaches, Almonds, Pistachios, Raisins, Wheat, Red rice, Unpolished rice, Barley, Oat-meal, Dried peas, Dates, Sugar- candy, Green gram, Bengal gram, Green pulse, Groundnut, Cereals, Dried ginger, Myrobalan, Lemon, Honey, Charu.	Fish, Eggs, Meat, Salt, Chillies, Chutney, Asafoetida, Pickles, Tamarind, Mustard, Sour things, Hot things, Tea, Coffee, Cocoa, Ovaltine, White sugar, Carrots, Turnips, Spices.	Beef, Wine. Pork, Onions, Garlic, Tobacco, Rotten things, Stale things, Unclean things, Twice cooked things, All intoxicants, All liquors, All drugs.

There are three types of yoga diet viz. Rajasik, Tamasik and Sattavik as per yoga diet philosophy. It is considered that food is building block of the body, as we eat so we become in mind and body. The type of food we eat gradually manifests in our mental make up or state of mind. Eating of Sattavik food leads to purity/Godliness, Rajasik food towards action and Tamasik food leads to a dull, lethargic life with lot of inertia.

Rajasik Food

Rajasik food comprises of a variety of dishes on the pattern of food served to Indian kings. This type of food includes various types of foods like fried, roasted, curried, highly seasoned along with various types of desserts, wine and drinks. Food of this type are not recommended for yoga practitioners as these foods acts as body stimulants and excite passions, making the mind restless and uncontrollable. These foods result in obesity and generate a typical feeling of heaviness in the stomach for a long time after eating a meal.

Tamasik food

Tamasik food includes dishes prepared with too many spices, excessive use of salt, pepper, chilies, artificial colours and additives. These types of foods have very less nutrition value for either mind or body. They make body dull, lazy and drowsy. These foods stimulate emotions of anger and greed. Tamasik foods include alcohol, tobacco, onions, garlic and fermented foods such as vinegar. This type of food is undesirable and not recommended for yoga practitioners.

Saatvik Food

This type of food is cooked with least amount of spices and without much seasoning. The food is fresh, attractive, nutritive and

is cooked in a simple way. This type of food is desirable and highly recommended for yoga practitioners.

Foods to Eat When Following a Yogic Diet

1. Fruits of all types, especially those that are naturally sweet
2. All vegetables, except onions and garlic
3. Whole grains, especially oats, wheat, and rice
4. Beans, tofu, mung, aduki
5. Plant-based oils, like sesame, sunflower, and olive oil
6. Nuts and seeds, yet not salted or overly roasted
7. Natural, raw sugar, maple, molasses
8. Herbal teas, water with lemon and/or lime
9. Sweet spices, like cinnamon, cardamom, mint, basil, turmeric, ginger, cumin, fennel
10. Food prepared with love, and gratitude given before consumption

Foods to Avoid or Reduce When Following a Yogic Diet

1. Meat and fish of all types, including eggs
2. Processed and/or artificial foods, junk food, artificial sweeteners, soda
3. Animal fats, margarine
4. Fried foods
5. Canned foods, except naturally canned tomatoes and fruit
6. White flour, white sugar
7. Garlic, onions, spicy foods
8. Stale or overly cooked foods
9. Microwaved foods
10. Alcohol, tobacco, stimulants

11. Foods that are genetically engineered
12. Foods that are eaten in a rush or in a disturbed environment

A yogic diet can improve your body, mind, and spirit. For maximum benefit, combine these dietary suggestions with asana (physical postures), pranayama (breathing techniques), and meditation.

Application of Yogic Diet in Modern Context

In this present age our attitudes towards life are fragmented and we are constantly running after objects of luxury in order to find happiness and peace of mind. We have forgotten that happiness and peace are very much a part of our essential nature and are within us. The experience of these inherent qualities is lost because we have lost contact with the core of our existence, the spiritual dimension, which is the source of boundless energy, happiness and unfathomable peace. To actualize our inner potential we need to establish integration between our head (thinking), heart (feeling) and hands (behaviour), which means discarding discrepancies in our thinking, feeling and behaviour. To achieve this, yoga psychology recommends leading a disciplined lifestyle and developing a positive attitude towards the events of life.

Ananda or bliss is the essential nature of a human being; it is the state of spontaneity and harmony. Hence we find that the state of bliss and the state of total health are synonymous. In Indian philosophy health is defined as a state of being where one is established in one's own essential nature, swaroop.

In the materialistic thinking of the modern world, we understand health merely as a disease-free state. So, here the approach becomes symptomatic and negative. Health is not only a disease-free state, rather it is a positive state of being where one's body, mind and spirit exist in total harmony. It is the state of totality, and yoga psychology shows a path to actualize this totality.

Defining the aim of yoga in the second verse of the Yoga Sutras, Patanjali says, 'Yoga chitta vritti nirodhah', which means, "Yoga is the cessation of all the modifications of mind." Vritti here means all the painful or non-painful elements of the mind which keep on surfacing in the forms of thoughts, feelings, emotions and neurotic tendencies. These elements restrict the enjoyment of freedom and spontaneity in thinking, feeling and behaviour. However, the moment these modifications cease to exist, another vista opens, as Patanjali explains in the third verse: 'Tada drashtuh swaroope avasthanam', which means, 'Then the seer is established (abides) in his own essential nature'. Here the individual experiences spontaneity, freedom and everlasting bliss.

To reach this state of being, the path of discipline must be followed. In this context discipline means the management of the actions and reactions of the body, mind and emotions starting from the physical or gross level through to subtle levels. To achieve this aim, Patanjali has propounded the famous eight-fold path, which shows a way of living in the world and how to interact and behave in society. The eight-fold path is:

1. Yama (social code)
2. Niyama (personal code)
3. Asana (posture)
4. Pranayama (control of prana)
5. Pratyahara (sense withdrawal)
6. Dharana (concentration)
7. Dhyana (meditation)
8. Samadhi (superconsciousness)

Management of the mind

From the psychological perspective it can be said that the total potential of the personality can be realized when one is able to

sublimate the primal energy from the lower dimension to the higher dimension. This is possible by fulfilling the needs of the individual – from material to more subtle spiritual needs – in a systematic, balanced and disciplined way. As we have seen, these needs and desires are diversions on the path of free-flowing energy. This is the reason why management of the lifestyle is given so much importance in yoga. To bring to fruition any yogic practices, the background of a disciplined lifestyle is the foremost prerequisite. This is also the reason why Rishi Patanjali places yama and niyama before asana and other yogic practices.

The yamas and niyamas are the two essential prerequisites for achieving the ultimate goal of the yogic path. They are listed as follows :

Yamas (social code)	Niyamas (personal code)
<ol style="list-style-type: none"> 1. Ahimsa(non-violence) 2. Satya(truthfulness) 3. Asteya(honesty) 4. Brahmacharya(sensual abstinence) 5. Aparigraha(non-acquisitiveness) 	<ol style="list-style-type: none"> 1. Saucha(cleanliness) 2. Santosha(contentment) 3. Tapas(austerity) 4. Swadhyaya(self-study) 5. Ishwara Pranidhana (resignation to God)

The five yamas and five niyamas form the basic yogic attitudes which help an individual to attain self-discipline at both personal and social levels. They also prepare a solid foundation for the path of yoga. Rishi Patanjali advises these disciplines for calming the mind; he knows that there is a large discrepancy between the mind in terms of thoughts and feelings, and the behaviour or conduct of the individual. Through the practice of yama and niyama one can discard this discrepancy.

Living with these ten positive attitudes will always create a harmonious environment for the aspirant, both internally and externally. Psychology has realized that the mind and body are closely interrelated; the state of one affects the other. For example, if my body is exhausted then I will clearly see that my mind is dull and tired and vice versa. Similarly, if my mind is filled with healthy, positive thoughts, it transforms all the internal processes of the body. The mind is such a powerful agent; it can produce a disease like cancer and yet it also has the potential to cure such a disease. Therefore, the way we think, feel and behave affects our physical body, changing the whole chemistry of the body considerably.

In another way we can say that our thoughts and feelings transform themselves into different bodily responses. We have seen that 80% of diseases are psychosomatic in nature, which means the root or cause is in the mind. Therefore, in yoga we use this mind as a tool to reverse the condition of the body by following the same psychosomatic route which has caused the disease. Manage your mind, organize your thoughts and feelings, make them positive and healthy and you will definitely get results.

Proper utilization of energy

The mind runs after the senses all the time, which in turn are fuelled by the instincts, and because of this we can't perceive the unified picture of reality. The senses, mind and instincts are transient in nature and will always prevent us from developing a state of balance in our personality. According to yoga psychology, to achieve mental balance and stability management of the instincts is advised. Food (ahara), sleep (nidra), fear (bhaya) and sex (maithuna) are the four basic instincts described in Indian philosophy which pull the individual down to the instinctive level of existence. These instincts colour our thinking, feeling and behaviour, and we fail to enjoy spontaneity and freedom. So, freeing ourselves from these

instincts means achieving a state where energy and consciousness move freely without any blockages or barriers in their path. Management of these four instincts also corresponds to the management of the four different dimensions of our personality, the physical (food), mental (sleep), emotional (fear) and energy (sex).

To develop positive interaction within the personality these four instincts must be managed efficiently. Yoga advises using the two tools of viveka, discrimination, and sanyama, restraint, through which we can sublimate our energy. Using one's viveka, discrimination between right and wrong, and sanyama, restraint of the senses, mind and behaviour, one can free oneself from the clutches of the instinctive patterns of behaviour. The aim of all yoga practices is to strengthen these two potent qualities in order to elevate oneself above the realm of instincts. As long as behavioural patterns are guided by these instincts we remain subject to the principle of duality. Hence we remain in a state of despair, tension and suffering. According to yoga, the transient tendencies of the mind are the cause of kleshas, afflictions, and many other neurotic states such as obsessive thoughts, anxieties, fears, passions, etc. Therefore, until and unless one frees the mind from the conditioning of these basic instincts, elevation from the plane of suffering is a distant dream.

Following a lifestyle based on yogic principles acts like a panacea in this modern age; such a lifestyle not only prevents and cures disease, it also promotes health and well-being.

Questions

1. Write short notes on:

Satvik Food

Rajasik Food

Tamsik Food

2. What is Yogic diet? List some types of Yogic diet in detail
3. Why is it important to take Yogic diet as everybody has very tight schedule?
4. Explain in detail Satvik Food. Why is it beneficial for health?
5. "Following a lifestyle based on yogic principles acts like a panacea in this modern age" Explain.
6. 'Yoga chitta vritti nirodhah' Throw a light on this.

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8

Chapter

PERSONAL HYGIENE

“Stay Clean, they fresh, stay healthy.”

Introduction

Personal hygiene is the basic concept of cleaning, grooming and caring for our bodies while it is an important point of our daily lives at home, personal hygiene is not just about combed shiney hairs & brushed teeth but its important for worker health & safety on the workplace. Workers who pay proper attention to personal hygiene can prevent the spread of germs and diseases, reduce their explosive to chemicals and contaminants, and avoid developing skin allergies, skin conditions & chemical sensitivities.

Meaning of Personal Hygiene

The word ‘Hygiene’ has been derived from Greek word ‘Hygiene’ which means ‘healthful’. The word hygiene is derived from hygeia, the goddess of health in Greek mythology. According to Greek mythology this goddess is a symbol of health & healing.

Hygiene means ‘the science of preserving health.’ Or the science concerned with the maintenance of health. S.o we can say personal hygiene is the principle of maintaining cleanliness and grooming of the external body.

Different Kinds of Hygiene

- 1. Personal Hygiene:** Proper living habits, cleanliness of body and clothing, healthy diet, proper rest and exercise.
- 2. Domestic Hygiene:** Sanitary, preparation of food, cleanliness and ventilation of the home.

3. Public Hygiene: Supervision of water and food supply, containment of communicable disease, disposal of garbage and sewage control of on water pollution.

4. Industrial Hygiene: Measures that minimize occupational disease and accidents.

The laws of Manu - that "all persons should clean their teeth, open their bowels and take bath every morning before starting the day's work... with face towards Sun and offer water & see its image in water; for benefit of vision are some examples passed on to us by our ancestors.

Personal Hygiene includes following topics

1. Truth: Truth have their own specific positive & importance. If their cleanliness is neglected, the child suffers from many diseases and as a result he gives up chewing. If the food is not sufficiently chewed, the intestine is unable to digest it. This causes many diseases like problem in digestive system, and restrains the development of body and mind.

So irrespective of age one should have a healthy mouth & pleasing smile. So the teeth should be cleaned at least twice a day in the morning a before going to bed. Teacher should also pay attention to this.

2. Mouth: Mouth should be washed properly after eating cleanliness of the mouth is of primary importance. Usually little children have little or no sense of the boundaries they must maintain in their interaction with the environment. Little children naturally tend to put everything they find in their mouths their fingers, toys and whatever they find on the floor, including pieces of food, buttons, pins etc.

As parents we must constantly watch them to see that they do not put anything harmful in their mouth. The best way of cleaning is put some water into mouth, keep it closed by putting pressure of air force the water to pass through teeth inwards & outwards.

3. Nose: Many diseases spread via droplet infection, gain their entry through nose to for simply removing dirt from the inside of

your nose a regular saline spray should be sufficient, covering the nose & mouth with handkerchief.

4. Ears: Poor hearing makes a child seem dull many lead to serious emotional disturbance parents & teachers must provide instructions for the cleanliness of ears. They should remember the following instructions:

- (i) Do not hit on ears.
- (ii) Always use cotton swabs.
- (iii) Do not bathe in dirty river and lakes.
- (iv) Do not use pins in your ears.
- (v) Use carbamide peroxide as a wax solution.
- (vi) If you can't clear the wax of your ears then consult with a medical professional.
- (vii) Do not use the hydrogen peroxide technique if you have a perforated eardrum or a history of ear problem.

5. Eyes : The eye is an important part. There are lot of pollutants that we face everyday. Children need to be taught how best to care for and to protect eyes. Children must practice following points for the protection of their eyes:

- (i) Wash your eyes with cold & clean water.
- (ii) Use rose water during summer if eyes get red.
- (iii) Have eye exercise, preferably in the morning.
- (iv) Do not use dirty handkerchief.
- (v) Do not overburden your eyes if tired rest eyes for some time.
- (vi) Use vitamin 'A' & vitamin 'C' butter tomato etc.
- (vii) Don't rub the eyes.

6. Skin : We need proper care of our skin. Waste & dirt collect upon face from outside and to some extent from the secretions of sweat glands.

- (i) Wash your skin with a mild face wash.
- (ii) Use proper balanced diet.

- (iii) Proper care of skin.
- (iv) Maximum use of water.
- (v) Use herbal products.
- (vi) Don't smoke.

7. Nails : It is very important to keep the nails of the fingers short, so that no dirt accumulates and chances of infections are reduced. Fingernails should be kept short, and the undersides should be cleaned frequently with soap and water. Infections of the fingernails or toenails are often characterized by swelling of the surrounding skin, pain in the surrounding area or thickening of the nail.

- (i) Keep nails short & trim them often
- (ii) Scrub the underside of nails with soap & water (or nail brush)
- (iii) Avoid biting or chewing nails.
- (iv) Avoid cutting cuticles, as they act as barriers to prevent infections.
- (v) Moistening finger tips with saliva to turn pages of books is a bad habit so try to avoid it.

8. Hair: For health of hair, these should be washed with a good quality shampoo once or twice a week & then properly dried up use olive oil or any good oil will be appreciable. Never use soap, because sodium bicarbonate which soap is rich in, is horrible for the hair. Coconut oil is excellent nutrition for the hair.

9. Urinal Parts: Urinary tract infection, commonly known as UTI, happens mainly because of bad bathroom habits. This is mostly common in women when the bacteria travels up and urethra & finds abode there. This cause itching & bad rash. So keep your private parts clean wash & wipe well after urinating or defecating. Keep your toilets clean to avoid any infection through communication. Avoid wearing synthetic underwear & use only cotton clothes.

Importance of Personal Hygiene in Our Life

Personal hygiene is a way of protection from illness. Basically, hygiene can be described as a set of standards requirements

necessary to be fulfilled for a healthy & positive way of living. It has been rightly remarked that healthy body is the means of achieving the highest goal of life. We cannot ignore the importance of personal hygiene because:

1. It helps in developing healthy habits and positive attitude.
2. It helps in the development of intellectual as well as helpful to maintain the emotional stability.
3. It helps in all round development of a person.

Questions

1. What do you mean by personal hygiene? Explain its importance also.
2. Write short note on the following:
 - (a) Significance of personal hygiene.
 - (b) Different kinds of personal hygiene.

9

Chapter

ENVIRONMENTAL HYGIENE

Introduction

Environment hygiene/sanitation is very vital for any nation and in order to live a world free from diseases, we must task ourselves in a more collaborative and more sustained ways to frequently embark on general cleaning exercises in our houses our communities. Environmental hygiene are activities aimed at improving or maintaining the standard of basic environmental conditions.

Concept of Environmental Hygiene

Environment hygiene is a set of actions geared towards improving the quality of the environment and reducing the amount of diseases. By doing so the hope is that living conditions will improve a health problems will decrease. In this term many conditions includes like (i) clean and safe water supply, (ii) clean & safe ambient air, (iii) efficient and safe animal, human and industrial waste disposal, (iv) protection of food from biological and chemical contaminants, and (v) adequate housing in clean and safe surroundings.

So the management of water solid waste & industrial waste as well as the topic of pollution and noise control, all fall under the umbrella of environmental sanitation.

Environmental Hygiene : Need of the Hour

The need of the hour is to identify the existing system of environmental hygiene with respect to its structure and functioning

and to prioritize, the control strategies according to the needs and conditions of the country. These priorities are particularly important because of issue of water constraints, environment - related health problems, rapid population growth, inequitable distribution of water resources issues related to administrative problems, urbanization and industrialization, migration of population, and rapid economic growth.

Importance of Environmental Hygiene

The importance of hygiene cannot be over outlined, but it involves both household and environmental hygiene. Household hygiene involves household food safety and the maintenance of clean living conditions which do not promote the spread of diseases. It includes general cleaning in our places where we keep food.

With the help of proper environmental hygiene we can improve our standard of living, improve our health and lastly can develop our nation's also.

Environment Hygiene with Special Reference to India

Environmental hygiene is a major public health issue in India. Mostly cities & towns are characterized by over-crowding, congestion, inadequate water supply and inadequate facilities of disposal of human excrete, waste water & solid wastes in our country public health concerns are usually raised on the institutional setting, such as municipal services hospitals, environmental sanitations etc.

Sectoral demands for water are growing rapidly in India owing mainly to urbanization and it is estimated that by 2025, more than 50% of the country's population will live in cities & towns population increase, rising income and industrial growth are also responsible for this dramatic shift. National Urban Sanitation Policy 2008 was the recent development in order to rapidly promote hygiene in urban areas of the country. India's ministry of urban development commissioned the survey as a part of its National Urban Sanitation Policy in November 2008.

Challenges and Ways of Improvement

It comprises disposal and treatment of human excreta, solid waste and Whitewater. It also comprises the control of disease vectors. All these are aims at improving the quality of life of the industrials and contributing to social development.

Waste Management

While some communities provides wastewater treatment and trash collection, others do not, which reduce the ability to control the well-being of the environment and its people. When proper disposal and treatment methods are followed, diseases and pollution can usually be reduced.

Solid Waste Management

Everyday people throw away a large amount of garbage which is usually referred to as solid waste. Some commons ways to dispose of the garbage include incarnations, which is the burning of waste, or landfalls, which are places to store waste. These methods are commonly used to manage the solid waste.

Water Management

The water supply can directly impact pollution & the spread of various diseases. The most common source of water include groundwater & surface water and both require treatment before being consumed because various chemicals, bacteria's can enter the water many countries have water treatment plants where drinking water is cleaned of dirt & particles, disinfected, and store until needed and this water may be run through pipes directly to homes and business.

Industrial Waste Management

When factories dispose of chemical & physical wastes, is called industrial waste management. Some countries have developed a system to properly dispose of industrial waste and help to protect the environment.

Ways to Help (For the Environmental Hygiene)

1. Individuals should avoid wasting water. They can do this by taking shorter showers, not leaving the water running.
2. Recycle the waste like paper, plastic & glass products.
3. Individuals can walk, ride a bike, or carpool to reduce air pollution.
4. Educate the people & explain the ways to reduce environmental degradation.

Questions

1. Write short note on the following:
 - (i) Waste Water Management
 - (ii) Concept of Environmental hygiene
2. What do you mean by Environmental Hygiene? Explain its major challenges also.
3. What are the ways to reduce to environmental hygiene?
4. Explain the importance of Environmental hygiene in Present Scenario.

10

Chapter

POLLUTION

Ecological imbalance caused by man or nature according to the quality and quantity of imbalance may be termed as pollution. The pollution is a necessary evil of all development. Pollution control in our country is a recent environmental concern. There is a race in developed countries to exploit even our natural resources to convert them into goods for their use and comfort and to export them to other needy countries.

Since pollution is viewed from different angles as an environmental problem by the geographers in general and environmental geographers in particular and natural scientists, as a social problem by the sociologists; as an economic problem by the ecologists etc. and thus it may be defined in a number of ways. It is commonly agreed that pollution is, without doubt, the outcome of urban-industrial technological revolution and rapacious and speed)' exploitation of natural resources, increased rate of exchange of matter and energy and over increasing industrial wastes, urban effluents and consumer goods.

Definitions of Pollution

Pollution is viewed as "the release' of substance and energy as waste product of human activities which result in changed usually harmful, within the natural environment." Natural environment research council (NCERT), 1976.

Pollution is defined as "the presence of large of substance or energy pattern which have been involuntarily produced, have

POLLUTION

outlived their purpose, have escaped by accident, or have unforeseen effects, in quantities which harm his (man's) health or do offend him."

Pollution : A pollutant is defined as any form of energy or matter that causes degradation and pollution in the existing natural balance of ecosystems. On the basis of sources of genesis pollutants are divided into two main types e.g. (I) Natural pollutants (II) Man made pollutants.

Natural pollutants are manageable because of laws of cybernetics or home static mechanism. But unfortunately man is not making any permanent arrangement for pollutants made by himself.

Pollutions are further divided in two parts on the basis visibility in two types viz. (I) Visible pollutants and (II) Invisible pollutants, visible pollutants include smoke, gases, dusts coming out of volcanoes (chimneys), waste water or sewage water coming from factories and urban area, animal and human waste etc.

Invisible pollutants include several types of bacteria, toxic chemicals mixed with water and soils etc.

Major types of Pollution

Air Pollution: The atmosphere is a gaseous envelope which surrounds the earth from all sides and the air is a mechanical mixture of several gases, mainly nitrogen (78.09%), oxygen (20.95%), argon (0.93%). Besides, other trace gases like neon helium, hydrogen xenon and ozone are also present. Air is a very important for all types of life in the biosphere. Human life is not possible without air because man can live for a few days without water or for a few weeks without food but cannot survive even for a few minutes without air. It constitutes about 80 percent of total intake of all things by a person every day.

The air pollution is generally accomplished through the pollutants of gases and solid and liquid particles of both organic and inorganic chemical. It is true that air is never pure because some gases such as sulphur dioxide, carbon monoxide, hydrogen sulphide, etc. are emitted from volcanoes, swamps, dusts, salt spray pollens from plants, etc. are cautiously added to the air by these natural processes. Thus the air becomes polluted when its natural composition is disturbed either by natural or manmade sources or activities or by both.

Air pollution causes several kinds of damages to man, animals, plants and also to the weather, climate and atmospheric processes. Some significant effects have been enumerated here in the following paragraphs.

1. Air pollution has very serious types of pathological effect of man. It causes several types of diseases to man.
2. It causes destruction to vision of pilots and have caused air craft accidents.
3. Air pollution has damaged both agricultural crops and natural plants and vegetation.
4. Air pollution also affects weather and climate on regional, continental or global basis.
5. The increase amount of carbon dioxide in atmosphere causes to increase the temperature of earth. It is known by the phrase 'Green house effect.' It has tends to prevent the long wave radiation from earth. Thus it has atmospheric effect.

Water Pollution

Water is the most important element in the biosphere because on one hand it is vital for the maintenance of all forms of life and on the other hand it helps in the movement circulation and cycling of nutrients in the biosphere.

These days rapidly increasing population and industrial units have been polluting the water. The water coming from the factories and homes contains liquid and solid wastes this is called sewage.

Water pollution is defined as a natural or induced change in the quality of water which renders it unsuitable or dangerous as regards food, human and animal health, industry, agriculture, fishing or leisure pursuits :

- Water born diseases like jaundice, hepaticas, and gastroenteritis will be more prevalent due to water pollution.
- Reduced bone development and muscular development.
- Loss of memory power and reduced mantel sharpness.
- Dangerous effects on growing fetus in pregnant woman.
- Increased incidence of skin disorders due to contact with pollutants.
- Reduced reproduction rate of animals.
- Large scale death of aquatic and terrestrial animals.
- Birth of deformed children.
- Less of memory power and reduced mental sharpness.
- Reduce male, fertility.
- 'Blue Baby' disease caused by methane Globinemia - which result in asphyxia reduced. Co_2 growing.
- Increased incidence of tumours ulcers due to nitrate pollution.

Soil Pollution

Soil are infect the very heart of the life layer (the biosphere) because these represent a zone where in plant nutrients are produced held, maintained and are made available to plants through their roots and to the micro-organism which lives in the soil. Soil is very important environment attribute for human society because (i)

It is the basic medium for food and timber production; (ii) It provides formation for building and roads; (iii) It is very important exhaustible natural resources because it can not be replaced if it is destroyed or lost through excessive soil erosion caused by atmospheric activities and it is the base for the development of human civilisation.

Definition of soil pollution: "The contamination of soil with excess of chemicals fertilizers, insecticides, herbicides are known as soil pollution."

Effects of soil pollution: Effects of soil pollution on human beings, animals and plants are far reaching. Since pollution degrades the quality of soil, soil pollution thus results in substantial decrease in agricultural production, substantial decrease in agricultural production, some forms of soil pollution even render the land unusable for crop forming.

- The presence of heavy metals in soil in toxic amounts can cause irreversible development damage in children.
- Human of any age may also suffer kidney or liver damage from exposure to excessive mercury in soil.
- Plants that are grown in lightly polluted soil continuously absorb molecules of the pollutants. Since the plants cannot get rid of these molecule, they accumulate in the plant, causing higher amount of pollution to exist in the plant. Animals who eat many of these polluted plants take on all the pollution those plants have accumulator.
- Many common soil pollutants are carcinogenic, or cancer causing.
- Soil pollution can cause economic damage for example, in some parts of China, soil that is pollution health heavy metals is nevertheless used to grow again.

Questions

- Q.1 Write brief notes of the following:
 - (a) Water pollution
 - (b) Air pollution
- Q.2 What are the major types of pollution?
- Q.3 What are the effects of soil pollution on human health?

Meaning of Global Warming

Global warming is when the earth becomes warmer. It happens when greenhouse gases like carbon dioxide, methane and nitrous oxide are trapped in the atmosphere. These gases are produced by factories, cars and other activities. They cause the earth to heat up, leading to global warming.

What is the Greenhouse effect?

The greenhouse effect is when the earth's surface warms up because the sun's heat is trapped in the atmosphere. The sun's heat is trapped in a car on a hot day because the heat is trapped in the car. This is because the heat is trapped in the car. This is because the heat is trapped in the car. This is because the heat is trapped in the car.

11

Chapter

GLOBAL WARMING

Introduction

Climate change is the single biggest environmental & humanitarian crisis of our time. The earth's atmosphere is overloaded with heat-trapping carbon dioxide, which threatens large scale disruptions in climate with disastrous consequences. So we must now spur the adoption of cleaner energy sources at home and abroad. Climate change is changing our economy, health and communities in diverse ways.

Meaning of Global Warming

Global warming is when the earth heats up (the temperature rises). It happens when greenhouse gases (carbon dioxide, water vapor, nitrous oxide, and methane) trap heat and light from the sun in the earth's atmosphere, which increases the temperature. This hurts many people, animals and plants. Many cannot take the change, so they die.

What is the Greenhouse effect?

The greenhouse effect is when the temperature rises because the sun's heat and light is trapped in the earth's atmosphere. This is like when heat is trapped in a car. On a very hot day the car gets hotter when it is out in the parking lot. This is because the heat and light from the sun can get into cars by going through the windows, but it can't get back out. This is what the greenhouse effect does to the earth. The heat and light can get through the atmosphere, but it can't get out.

Green house gases: Greenhouse gasses are in the earth's atmosphere that collect heat and light from the sun. With too many greenhouse gasses in the an, the earth's atmosphere will trap too much heat and the earth will get too hot. As a result people animals, and plants would die because the heat would be too strong.

Cause of Global warming: Global warming is cause by many things. The causes are split up into two groups, man made or anthropogenic causes, and natural cause.

Causes of Global Warming

Natural Causes

Man - made Causes

1. Natural causes:

- (i) Natural causes are causes created by nature. One natural cause is a realest of methane gas from arctic tundra and watt Lands. Methane is a greenhouse gas.
- (ii) Another natural cause is that the earth goes through a cycle of climate change. This climate change usually lasts about 40,000 years.

2. Man-made causes: There are many man-made causes and these causes probably do the most damage.

- (i) Pollution is one of the biggest man made problem. Burning fossil fuel is one thing causes pollution. Fosse fuels are fuel made of organic matter such as coal or oil. When fossil fuels are burned they give off a green house gas called CO_2 .
- (ii) Another major man-made cause of global warming is population. Many people means more food, and more methods of transportation. This means more methane. Another problem with the increasing population is transportation. More people people means more cars, and more cars means more pollution.

- (iii) CO_2 contributes to global warming because the increase in population makes the problem worse because we breathe out CO_2 and the trees that convert our CO_2 to oxygen are being demolished because we're using the land that we cut the trees down from as property for our homes and buildings. We are constantly taking benefits from our natural resources and giving nothing back in return.

Impact of Global Warming on Human health

Climate change is expected to have **hriderrangive** consequences for human health. Public health depends on sufficient food, safe drinking water, secure shelter good social conditions and a suitable environment and social setting **fey** controlling infectious diseases. All of these factors can be affected by climate.

Heat waves are linked to cardiovascular respiratory and other diseases. Illness and deaths from these causes could be expected to increase especially for the elderly and the urban people. While the biggest rise in heat stress is expected in mid high latitude cities, milder winters in temperate climate would probably reduce cold related deaths in some countries.

By reducing fresh water supplies climate change may affect heater resources & sanitation. This in turn could reduce the water available for drinking & washing. Water scarcity may force people to use poorer quality sources of fresh water, such as rivers which are often contaminated. All of these factors could result in an increased of diarrhoea diseases. Heat waves, flooding, storms & drought can cause deaths & injuries **mine** the displacement of population, disease outbreaks and psychological disorders.

Local declines in food production would lead to more malnutrition and hunger long term health consequences, particularly for children. Climate change impact models suggest that the largest changes in the potential for malaria transmission will occur at the fringes in terms of both latitude and altitude of the current malaria risks area; generally, people in these border areas will not have developed **unity** to the disease.

The seasonal transmission & distribution of many other diseases that are transmitted by mosquitoes (dengue yellow fever) and by ticks (Lyme diseases, Hantavirus pulmonary syndrome, ticks borne encephalitis) may also be affected by global warming.

Question

Q.1 Write short note on the following :

(i) Green House Gases

(ii) Global Warming : A Global Challenge

Q.2 Explain major impacts of Global warming on human beings.

12

Chapter

PHYSICAL FITNESS

Introduction : The physical fitness is considered as the ability of an individual to perform a specific physical task at a high level of effort. It not only covers the physical aspect but also has many other aspects on which the physical fitness varies. The statement issued by **Americal Medical Association** clearly defines physical fitness as "fitness for living rests first of all upon a solid foundation of basis of basic good health.....fitness for living implies freedom from disease; enough strength, agility, endurance and skill to meet the demands of daily living, reserves sufficient to withstand ordinary stress without strain; and mental and emotional adjustment appropriate to the nature of the individual. Physical fitness is but one element of total fitness".

Physical fitness is a capacity of an individual to do work effectively and efficiently. Physical fitness is a matter of belong to optimum development of an individual. We can achieve the objective of W.H.O. "**Live most and serve Best**" with the help of physical fitness programmes. Physical fitness is an important factor to fulfill the objective of physical education. The first and primary objective of physical education is to develop a physique. Through physical training, the efficiency of organic systems like; circulatory system, respiratory system digestive system endocrine system, neuro-muscular system improves. These organic developments lead to the development of physical fitness.

Physical fitness is not a matter of concern only for individual personality but also for the nation. It is therefore responsibility of every country to promote physical fitness of its citizens because physical fitness is the basic requirement for the tasks to be undertaken by an individual in his daily life.

So it is very important and necessary to know about physical fitness. The scientifically and systematically way of training are followed to improve the standard of physical fitness. Healthy living also make a person good citizen.

Meaning and Definition of Physical Fitness

Meaning : Different people have different views regarding physical fitness. According to **Layman** to have a good looking physique is a symbol of physical fitness. According to **physician** proper functioning of our every system like respiratory system, circulatory etc. is called fitness. Before knowing to meaning of physical fitness, we should know about the meaning of fitness. **Fitness is a state of well-being.**

Types of Fitness

1. Anatomical fitness
2. Psychological fitness
3. Physiological fitness

1. Anatomical fitness : This factor refers to the suitability of a person's body structure to the work to be performed. It means that a person must possess:

- (i) All essential body parts of an activity.
- (ii) Proper body size and shape for an activity.

e.g. A lean and thin man cannot become a good weight lifter or a wrestler and a short height player has a disadvantage in Basketball. Difference in length of bones and strength of muscles, result in a mechanical advantage or disadvantage in different games and sports. Anatomical differences are mostly due to genetic reasons or hereditary draw back.

2. Psychological fitness : It means that an individual has proper awareness, motivation and emotional stability to accomplish a task. Psychology play a big role in fitness for performing an activity.

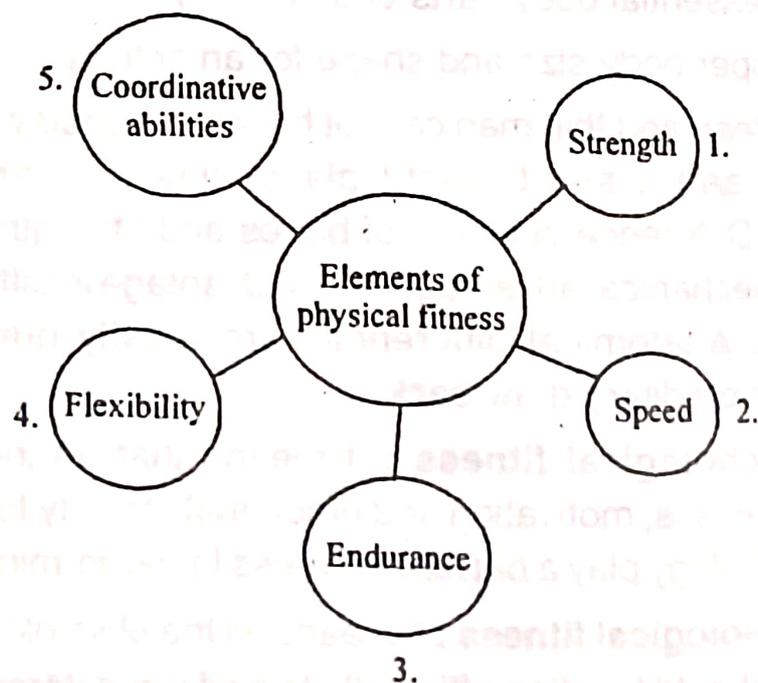
3. Physiological fitness : It means all the physiological system of the body should function efficiently to perform different strenuous activities.

Definition of Physical Fitness

- According to David R. Lamb, "Physical fitness is the capacity to meet the present and potential physical challenges of life with success."
- According to Dr. Kroles, "Physical fitness is successful adaptation to the stresses of one's life style."
- According to Don Hoskins, "The human body's ability to move with the desired speed, balance, agility and strength gained through proper exercise and nutrition."
- According to Webster Encyclopedia, "It is the ability of a person to do daily routine work without fatigue, moreover to participate in playful activity and still reserve enough capacity to meet any emergency."

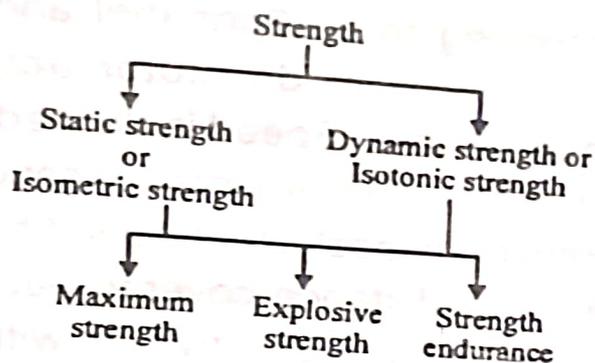
Elements of Physical fitness

Physical fitness has five components which are essential in the field of physical education. The exercise are planned in such a manner that all the elements are developed simultaneously. The sports performance largely depends upon following physical fitness elements.



I. Strength: Strength is necessary to perform good in various games and sports. Many games or athletic events require strength like shot-put, discus, javelin throw, hammer throw, judo, wrestling weight lifting etc.

The strength is defined as greatest amount of force that muscles can produce in a single effort. In other words, strength is considered as ability to overcome resistance. It can be divided into following parts.



1. **Static strength:** It is also known as isometric strength. It cannot be seen directly.
2. **Dynamic strength:** It is also known as isotonic strength. It directly related to movements like push up pull ups etc.

These are of three types.

(i) **Maximum strength:** It is the ability of muscles to overcome against maximum resistance. Mainly maximum strength can be derived by voluntary actions. It is the ability of muscle or muscle group to apply maximum force against resistance in a single effort. Maximum strength is important in sports where heavy resistance is needed eg. Weight lifting, throwing events, jumping event etc.

(ii) **Explosive strength:** Explosive strength is the ability of the body to apply strength & speed together. The sports where explosive strength is needed are listed below.

- Jumping in Basket ball before taking rebound.
- Take off in long jump, high jump, triple jump etc.
- Jumping in Volley ball while spiking.

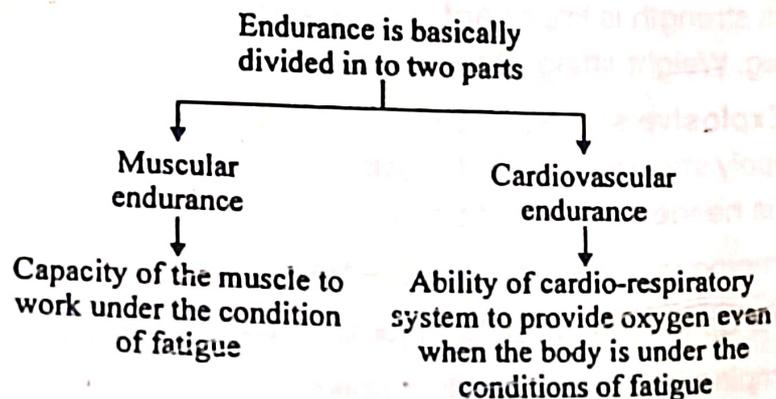
(iii) **Strength endurance:** Strength endurance is the combination of two components as well i.e. strength and endurance. It is the ability of the muscles to overcome resistance under conditions of fatigue. The sports like judo and wrestling require strength endurance because in the last moments of the fight the players have to apply strength in spite of being fatigued. The long distance races also require strength endurance to finish the race. Many sports like swimming, road cycling etc. also require strength endurance.

II. **Speed:** According to G. Schnabel and Thiess, "It is the performance pre-requisite to do motor actions under given conditions in minimum of time." Speed is defined as the ability of an individual to perform similar movements consecutively at the fastest rate. Speed is different from mechanical speed because mechanical speed is calculated from distance covered per unit of time where as many sports perform speed activities without covering any distance e.g. gymnastic exercises performed on horizontal bar. Many sports require speed movements which are as under.

- (i) Running between the wickets while taking runs in cricket,
- (ii) Generating speed before taking long jump or triple jump.

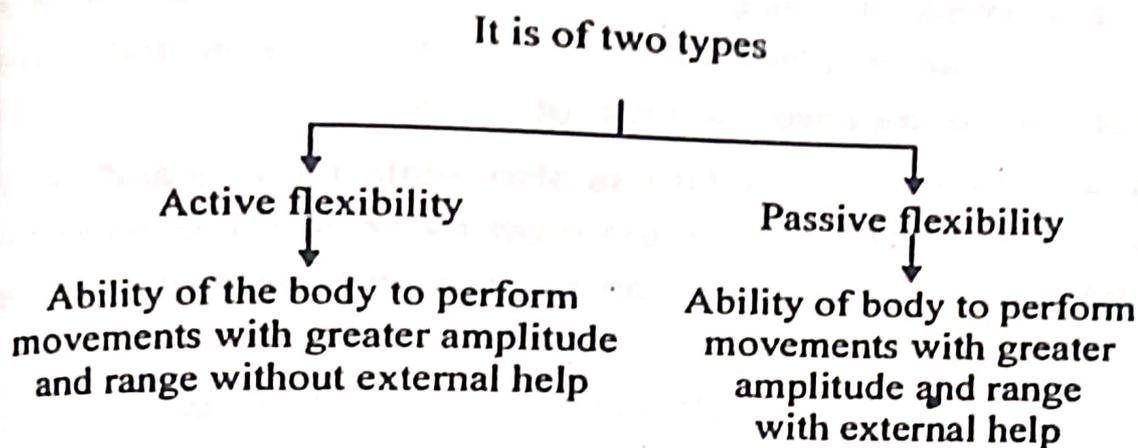
III. **Endurance:** According to D. Harre, "Endurance is the ability to resist fatigue."

Endurance is also one of the important elements of physical fitness. It is the ability of the body to work for a long time without getting fatigued.



IV. Flexibility: According to David R. Lamb, "Flexibility is the range of motion of the body's joint."

Flexibility is defined as the maximum range of movement possible at a joint. The flexibility is often overlooked but it is also an important element. The flexibility of the body largely depends upon the structure of joints, muscles, tendons, and ligaments. Flexibility is important to perform daily routine work because it can prevent injury especially low back pain.



V. Coordinative abilities: The term coordinative ability was taken from the term 'agility'. The term agility was discarded because it was difficult to explain the meaning of it. The coordinative abilities mainly depend on central nervous system. The neuro muscular co-ordination is primarily dependent factor for co-ordinative abilities. A person possessing co-ordinative abilities can perform speedy and flexible movements. The following activities include co-ordinative abilities.

- Gymnastic exercises.
- Basket ball offensive and defensive movements.
- Kho-Kho

Factors affecting physical fitness: Physical fitness vary from person to person. The following factors are responsible for it.

1. Heredity: Heredity means passing on biological characteristics from one generation to another. The process of heredity is applicable to all living beings. It is said that sprinters are

learn not made" because speed is mainly dependent on heredity. A person having more fast twitch fibers can be physically fit because he/she already inheres the ability of speed.

2. Regular exercise: Exercise improves the physical fitness or it is earned through daily routine of physical exercise. If a person does exercise regularly he remains physically fit. In the other hand, a healthy, person can be physically unfit if the does not exercise regularly.

3. Nutrition: Balance Diet directly effect the level of physical fitness. Improper diet can lead to fitness problems and a person was not able to improve the level of fitness.

4. Age/Sex: Physical fitness also related to age and sex level. The level of fitness affect as we grow elder and according to sex. Male has more strength in comparison to female. It is a natural factor given by nature.

5. Living style: The habits and living style has also an important impact on fitness. A person having good habits regarding exercise, diet and personal hygiene etc. is mostly physically fit and people, who have low standard of living, are likely to have less physical fitness.

6. Training: Training also affect the level of fitness directly. If training is not given according to the scientific method tijen it is impossible for a person to maintain level of fitness.

7. Rest, Relaxation and Recreation: These factors contribute a lot to health development. Relaxation is essential for better mental health. If proper rest and relaxation is not given to the individual he/she will not able to attain fitness.

8. Environment: Environment includes climate condition, attitude, temperature and our culture. A person residing in a polluted area may face the problems of fitness and a person residing on hills is often found to be more fit.

9. Psychological factors: Psychological factors such as perception emotional stability motivation and intelligence are of vital importance in determining one's fitness level.

10. Physiological factors: Physiological system of the human organism must function effectively to sustain the particular activity that the individual is performing. Since different activities make different demands on the organism relating to neurological respiratory, circulatory and metabolic system. Physiological fitness is specific to each activity.

11. Stress: Each person experiences stress. It has both positive and negative effects. Some time positive effect of stress can motivate a person to keep fit and on the other side, negative effect of stress can lead to many problems like asthma, headache, depression, ulcers etc. These diseases can have adverse effects on fitness and wellness.

12. Cigarette smoking/Drugs: Cigarette smoking damages the lungs and blood vessels. It raises pulse rate and blood pressure. Drugs like cocaine, nicotine, LSD or others are a great threat to fitness and well being of an individual.

Importance of Physical fitness: Physical fitness is important to make body fit and to lead a well balanced life. Lay man think that physical fitness is necessary only for sports person not for a common man. But it is not true. It is beneficial for all. Following are the importance of physical fitness:

1. Total Efficiency is improved: Physically fit person can perform more and more work with less fatigue. The total output of an individual is increased to a great extent. One is able to perform more work may be mental or physical. Therefore his/her total efficiency is improved.

2. Healthy environment: It is very important to remain fit. Every body requires healthy clean and safe environment & it is built through physical fitness programmes.

3. Healthy utilization of time: Time can be utilized by many physical fitness programmes that provide good environment for growth and development.

4. Improves the better quality of work: If we are physically fit, we will give better performance in every field with less wastage of energy. We get good responses and better quality of work.

5. Attractive personality: Physical fitness help to maintain good physique. It give good shape, size and body structure i.e. an attractive personality.

6. Develop social qualities: Co-operation, adjustment, tolerance, patience etc. social qualities can be improve through the help of active participation in games and sport which help us to make good citizen of a nation.

7. Prevention from psychological problem: Stress anxiety, depression like psychological problems can be prevented with the help of physical fitness.

8. Prevention of diseases: The regular fitness work can prevent many diseases, especially those related to the heart. A physically fit person is less prone to coronary heart diseases because of low level of cholesterol in the body.

9. Harmonious growth and development: Harmonious growth and development is the most importance objective of physical education. All living things grow. A ting seed can grow in to huge tree. Adult elephants are 60 times heavier than baby elephant. Every living organism consists of cells. The cells can multiply and divide to form other calls. Physical education also has relation with growth and development. Exercise may promote muscle strength. The regular physical training can improve the efficiency of various organs.

10. Quality of life: Physical fitness plays an importance role in improving the quality of one's life. Many experiments have shown that regular exercises and fitness improve the quality of life. In our daily life a physically fit person can manage the routine work efficiently and without getting fatigued. He may over come the difficult situations coming in this way. The totally fit person possesses not only physical well-being but also possesses the qualities like good human relations, humanism, maturity and high ethical standards. The person satisfies the basic needs such as love, affection, security and self respect.

Conclusion: We can way that fitness in necessary for everyone.

In swami Vivekanand's words: "Today we donot need Bhagawad Geeta but football fields." It Proves that today we need fitness and wellness to make a fit nation.

Questions

1. Write short note on the following :
 - (i) Concept of physical fitness.
 - (ii) Impotant of physical fitness in life.
2. "Physical fitness is essential for a student." comment.
3. Explain the components and factors of physial fitness.

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13

Chapter

NUTRITION AND BALANCED, DIET

Nutrition is the sum total of the processes involved in the taking in and the utilization of food substances by which growth, repair and maintenance of the body are accomplished. It involves ingestion, digestion, absorption and assimilation. Nutrients are stored by the body in various forms and drawn upon when the food intake is not sufficient.

Nutrition is one of the most important elements of our lives. It has a profound impact on our health status, as well as many other factors.

Food

Food is a substance which produces heat and energy in the body, build and repairs tissues. It also contains some roughage which adds quantity or bulk to our diet.

Function of Food

It produces heat and energy in our body.

It builds up new tissues.

It keeps up the body temperature.

It protects from disease.

It helps in the production of compounds that regulate body process.

In nutshell we can say food is very important for life.

Diet

Diet is the daily intake of food by the human body. The body is a living organism that grows, functions and acts with the help of food.

Balanced Diet

Eating a balanced diet means choosing a wide variety of foods and drinks from all the food groups. It also means eating certain things in moderation, namely saturated fat, trans fat, cholesterol, refined sugar, salt and alcohol. The goal is to take in nutrients you need for health at the recommended levels.

"A balanced diet is food intake that includes all of the dietary needs of the organism in the correct proportions."

Components of Balanced Diet

1. Proteins
2. Carbohydrates
3. Fats
4. Minerals
5. Vitamins
6. Water

1. Protein: Protein is an essential nutrient. There is no life without protein. Protein is contained in every part of your body, the skin, muscles, hair, blood, body organs, eyes, even fingernails and bones. Next to water, protein is the most plentiful substance in your body.

Functions of Proteins:

1. Body building, repair and maintenance of tissues.
2. Maintenance of osmotic pressure.
3. Synthesis of antibodies, plasma proteins and hemoglobin.

1. Sources of Proteins: Proteins are classified as vegetable and animal, depending upon their sources. Their chief sources are as under:

- (i) Vegetable protein e.g. beans, peas, Lentils (dais) containing legumin wheat having gluten.
- (ii) Animal proteins: egg, fish, cheese, milk.

2. Carbohydrates: Carbohydrates play a major role in promoting your health fitness. They form a major part of your food and help a great deal in building your body strength by way of generating energy. In fact they are among the three prominent macronutrients that serve as excellent energy providers, the other two being fats and proteins.

Functions of Carbohydrates

1. The primary function of carbohydrates in the body is to supply energy. Each gram of carbohydrates, as starch and sugar, provides 4 kcal/g.
2. Carbohydrates are a source of readily available energy, which is needed for physical activities as also the work of the body cells.
3. Carbohydrates act also as reserve fuel supply in the form of glycogen, stored in muscles and liver.
4. Carbohydrates are needed to prevent dehydration.
5. Carbohydrates are an important part of some compounds, which increase our resistance to infection.

Sources of Carbohydrates

Carbohydrates include all kind of sugar and starch. Its main sources are cereals, millets, rice, potatoes, wheat, maize, barley, oat, arrow-root, banana, sweet potatoes, sugarcane etc.

Fats: Fats alongwith proteins and carbohydrates, are one of the three nutrients used as energy sources by the body. The energy produced by fats as 9 calories per gram. Protein and carbohydrates each provides 4 calories per gram.

Functions of Fats :

1. Fat provides needed energy. It is difficult to eat the large amounts of food in a very low fat diet to get all the energy you need.
2. Provides insulation under the skin from the cold and the heat.

3. Protects organs and bones from shock and provides support for organs

Sources of Fats: Fats are found in both animals and plant origin we get it from oil seeds, coconut, milk product, butter, ghee, egg yolk, fish etc.

Minerals: Your body needs minerals to build strong bones, create hormones and regulate your heartbeat. Minerals help release the energy from food and improve brain functioning, which can help you think more clearly and make wiser decision.

A mineral is defined as inorganic elements containing to carbon that remains as ash when food is burned. Although as many as 40 minerals are in existence, the table below describes the 08 minerals that are essential to human nutrition and list their functions and sources in food.

Mineral	Function	Sources
Calcium	Strengthens bones and teeth; involved in muscle contraction and relaxation, blood clotting, water balance, nerve functions.	Milk and milk product, green leafy vegetables, almond, fish (with bones), egg.
Phosphorus	Involved in calcification of teeth and bones, acid-base balance, energy metabolism.	Meats, poultry, fish, milk, soft drink, whole grains, egg.
Sodium	Promotes acid-base balances, water balance, nerve impulse transmission, muscle activity.	Salt, soy sauce, processed foods cured, pickled and many prepackaged foods.
Sulfur	Information of brain, nails, hair (both of human beings and animals) digestion of food.	All protein-containing foods
Magnesium	Involved in protein synthesis muscle contraction, nerve transmission.	Whole grains, nuts, chocolate, meat, dark green leafy vegetables.
Iron	Hemoglobin formation, part of myoglobin in muscles; used in energy utilization	Red meats fish, egg, dried fruits spinach, whole wheat and dates.
Iodine	Part of thyroxin, a thyroid hormone that influences growth and metabolism	Sea water, egg, onions, fresh vegetables.
Copper	Necessary for formation of hemoglobin, part of energy metabolism enzymes	Organ meats, nuts, seeds, peanut butter chocolate.

VITAMINS: Vitamins don't give you calories or energy but do help you stay healthy. You cannot make vitamins so you must get them from the foods you eat.

There are two types of vitamins

- (i) Fat soluble vitamins include vitamins A, D, E and K and they can be stored in your body. High amounts of fat soluble vitamins are not recommended, as these can cause health problems.

Vitamin	Function	Food Sources
Vitamin A	Help you to see in the day and at night. Protects you from infections by keeping skin and other body parts healthy. Promotes normal growth and development.	Green leafy vegetables, beans, spinach pees, potatoes, milk, milk product, egg, and meat.
Vitamin D	Increases the amount of calcium and phosphorus. Your body absorbs from foods Deposits calcium and phosphorus in bones and teeth, making them stronger and healthier. Protects against infections by keeping your immune system healthy.	Sun-rays, milk, some fish, egg, organ meats, fish liver oils.
Vitamin E	Helps to maintain a healthy immune system and other body processes. Acts as an antioxidant and protects cells from damage.	Vegetable oils, green leafy vegetables, wheat germ, nuts, peanut butter.
Vitamin K	Makes proteins that cause our blood to clot, when you are bleeding. Involved in making body proteins for your blood, bones and kidneys	Soybeans, dark green leafy vegetables such as Kale, collards, turnip/beet greens and spinach.
Vitamin B1	Help with energy production in your body	Whole grains, dried beans, nuts and seeds.
Vitamin B2	Helps with energy production in your body. Helps your body use other B Vitamins	Soybeans, meat, eggs, mushrooms, milk, cheese,
Vitamin B6	Help your body to make and use protein and glycogen which is the stored energy in your muscles and liver, Helps form hemoglobin which carries oxygen in your blood.	Potatoes, Bananas, 100% bran, meat, fish, poultry, soybeans, pistachio nuts, sunflower seeds.
Vitamin B12	Work with the vitamin folate to make DNA. Helps to make healthy blood cells, low level of Vitamin B12 can cause a type of anemia. Keep nerves working properly	Cooked spinach, beets, broccoli, green peas, oranges, orange juice.

- (ii) Water soluble vitamins include vitamins B1, B2, B3, B6, B12, Vitamin C. They are not stored in large amount in the body, and any extra is lost through your urine.

The following table will help you to understand why it is important to get enough of some of the common vitamins and lists the best food sources of these vitamins.

WATER: Clean and safe drinking water is an essential component of a healthy diet. According to Medline plus, how much water you need depends on "your size, activity level and weather." Man cannot live without water and it is the best fluid to drink in any form. 75% of the body consists of water. The percentage of water in the body tends to decrease with age. Thus infants and children have a larger water content than adults.

Functions of Water

- (i) It helps in the digestion of food.
- (ii) It saves the bones from becoming brittle and dry.
- (iii) It helps in circulation of blood.
- (iv) It regulates the body temperature.
- (v) It supplies the mineral salt to the body.
- (vi) It helps for every chemical process.
- (vii) It helps for all the tissues of the body.

Sources of water:

Certain foods like cucumber, green leafy vegetables, milk and watermelon contain a high percentage of water.

"Faulty nutrition resulting from malabsorption, poor diet or overeating."

Malnutrition

Malnutrition is a broad term which refers to both under nutrition (subnutrition) and over nutrition. Individuals are malnourished, or suffer from undernutrition if their diet does not provide them with adequate calories and protein for maintenance and growth, or they

cannot fully utilize the food they eat due to illness. People are also malnourished, or suffer from overnutrition if they consume too many calories.

Malnutrition can also be defined as the insufficient excessive or imbalanced consumption of nutrients. Several different nutrition disorders may develop, depending on which nutrients are lacking or consumed in excess.

Signs and Symptoms of malnutrition

- Loss of fat (adipose tissue)
- Breathing difficulties, a higher risk of respiratory failure.
- Depression
- Higher risk of complications after surgery
- Higher risk of hypothermia-abnormally low body temperature.
- Higher healing times for wounds.
- Longer recover times from infections.
- Longer recovery from illness.
- Lower sex drive.
- Problem with fertility
- Tiredness, fatigue or apathy.
- Skin may become thin, dry, inelastic, pale and cold.
- Weakness is teeth.
- Eyes become sore and eyesight problems
- Hair becomes dry and sparse, falling out easily

Causes of Malnutrition

There are many causes for malnutrition. These causes can be divided in two main categories:

1. Causes related to food.
2. General causes.

1. Causes related to food

A lot of causes related to food are responsible for malnutrition.

(a) **Lack of nutrition's and Balanced diet** : Lack of nutrition's and a balanced diet is responsible to a great extent for malnutrition in children. In our country, because of poverty, there is a lack of essential elements like proteins, carbohydrates, fats etc. In everyday meal; hence, manifestation of malnutrition in children is natured.

(b) **Indigestive and Harmful diet** : Intake of indigestive and harmful diet is one of the main causes of malnutrition. Children belonging to the rich families do have expensive food items but in general these food items are indigestive and harmful. Intake of such type of food items often leads to lack of hunger and hence sometimes the children fall prey to malnutrition.

(c) **Lack of Regulated Diet** : Irregular intake of food is one of the main causes leading to malnutrition. The timing for breakfast, Lunch and dinner must more or less be fixed. Indiscipline in this matter is very bad. This bad habit of taking irregular meals causes indigestion and finally results in malnutrition.

(d) **Lack of Breastfeeding** : Experts say that lack of breast-feeding, especially in the developing world, Leads to malnutrition in infants and children. In some parts of the world mother still believe that bottle feeding is better for the child. Another reason for lack of breastfeeding, mainly in the developing world, is that mothers abandon it because they do not know ho to get their baby to latch on properly, or suffer pain and discomfort.

2. General Causes

(a) **Dirty Environment** : Dirty Environment of home and school also causes malnutrition In Indian cities the home and school environment becomes dirty due to lack of fresh and pure air, lack of sunlight, non availability of playground, dirty lanes, which hampers right nutrition of children.

The children working in glass factories, leather industry, brick industry etc. Face the kind of dirty, unhygienic and unhealthy

environment, which is hard to imagine hence child labour must also be completely banned so as to avoid the children from such filthy environment.

(b) Lack of Sound Sleep and Rest: Lack of space and suffocated bedroom causes lack of sleep. Besides this excess of homework. Television watching in Late hours causes lack of sleep result in indigestion, which leads to malnutrition. Lack of proper and sufficient rest also leads to malnutrition.

(c) Negligence of Children : Negligence of children at home and in school causes anxiety in children. This also result in malnutrition.

(d) Bodily diseases: Many children being infected from the diseases are neither able to have balanced diet nor their bodily function take place properly resulting in malnutrition.

(e) Heavy work: The digestive process of children gets affected because of continuous hard work. Especially for the children of low income-groups, the heavy labour uncoupled diet take a toll on their physical and mental development. Nearly forty percent of total children in India suffer from malnutrition.

(f) Lack of Exercise and Games: The lack of exercise and games also leads to malnutrition. Even if a child takes a balanced and nutrition diet, the lack of exercise and games resulting in slowing down of digestive process and consequently the food is not digested properly causing malnutrition. This also causes physical deficiencies.

Remedies for Malnutrition

1. Punctually is the most important remedy so that we should take our meals punctually.
2. Always take balanced diet. In this diet we must add variety of foods.
3. Food should be easily digestible and nutritious.
4. Spread awareness programme among females regarding the importance of breastfeeding.

5. The home and school environment must be neat and clean as possible.
6. Arrangements should be made for the medical examination of each student at least once in a year.
7. Regular exercise as well as games, both are very essential for every individual.

Questions

1. What do you mean by Nutrition & Explain the components of Balanced diet.
2. Short note on the following :

(i) Vitamins	(ii) Importance of water
(iii) Remedies for Malnutrition	(iv) Sources of Carbohydrates



Kyphosis
Lordosis
Scoliosis

KYPHOSIS : Kyphosis implies an increase of exaggerated a back void or postural curve or a decrease or reversal of a normal curve. It is also called round upperback. Degeneration of the intervertebral discs is common in kyphosis.

Causes of kyphosis: Kyphosis is caused by muscular weakness, osteoporosis of the spine, insufficient exercise, carrying heavy loads on the shoulders, unusual posture, and heredity and habit of going to bed by leaning to ward etc.

TASK & ASSIGNMENTS

14

Chapter

COMMON POSTURAL DEFORMITIES

Various types of postural deformities are discussed below :

- Spinal curvature
- Flat foot
- Knock knees
- Bow legs
- Round shoulders

SPINAL CURVATURE : This type of deformity is related to spine. This deformity is caused by carrying excessive weight beyond capacity. In another way we can say that weak muscles cause the formation of spine curvature. The normal lumbar spine is characterised by a moderate anterior hyperextension curve, when viewed laterally. Although there is absolute standard for the determination of the degree or extent of the anterior convexity of the normal lumbar curve. There are three types of spinal deformities:

- Kyphosis
- Lordosis
- Scoliosis

KYPHOSIS : Kyphosis implies an increase or exaggeration of a backward or posterior curve or a decrease or reversal of a forward curve. It is also called round upperback. Depression of chest is common in kyphosis.

Causes of kyphosis: kyphosis is caused by malnutrition, illness, crowd, deficiency of pure air, insufficient exercises, rickets, carrying heavy loads on shoulders, unsuitable furniture, weak muscles and habit of doing work by leaning forward etc.

Precautions: If specific precautions are not followed, it may result in kyphosis. So, the teachers and parents should pay specific attention on this point. From the very beginning, they should teach appropriate posture of sitting, standing and walking to children so that their posture may remain balanced. The proper exercises are not only helpful in maintaining the proper posture but also control the problem of kyphosis.

Remedies: The following exercises should be performed for remedification of kyphosis :

- Sit in a chair, your buttocks should touch the back of chair. By looking upward, hold your hands each other behind the back in such a way that your shoulders may remain in stretch backwards. Remain in this position for some time:
- Always keep a pillow under your back while sleeping.
- Bend your head backward in standing position.
- Perform the dhanurasana, the yogic asana regularly.
- Lie down in front lying position . keep your hands near the shoulders. Now straighten up your arms slowly, raise the chest. Head should be backwards. Maintain this position for some time
- Hold your arms out at shoulder level and bend elbows. Snap elbows back return to starting position. Repeat this exercise at least 8 times for the best results.

LORDOSIS: Lordosis is the inward curvature of spine. In fact, it is an increased forward curve in the lumber region. It creates problem in standing and walking. The body seems to be stiff. The individual feels shame and inferiority. Lordosis can be corrected in an early stag.

Causes of lordosis: Generally imbalanced diet, improper environment improper development of muscles, obesity and diseases affecting vertebrae and spinal muscles are such causes which result in lordosis. In addition to these causes, not performing exercises and taking excessive food are also major causes of lordosis.

Precautions:

- Balanced diet should be taken
- Obesity should be kept away specially in early age.
- The body should be kept straight while carrying weight.
- Excessive intake of food should be avoided.

Remedies: For remedification of lordosis, following exercises should be performed:

- From standing position bend forward from hip level. Repeat this exercise ten times.
- Lie down your back, raise your head and legs simultaneously for 10 times.
- Perform sit-ups regularly
- Halasana should be performed regularly
- You should lie down in supine position, i.e., on your back, then should raise your legs at 45 degree angle. Remain in this position for some time.
- Toe touching should be performed for at least 10 times.
- Sit down and extend your legs forward. Try to touch your forehead to your knees. Repeat this exercise 10 times.

SCOLIOSIS : Postural adaptation of the spine in lateral position is called scoliosis. Scoliosis means bending, twisting or rotating. In fact, these are sideways curves and may be called scoliotic curves. These are defined in terms of their convexities. They are identified as either convexity right or right convexity. A simple or single curve to the left or convexity left is commonly called a 'C' curve. Scoliotic curve may be found in 'S' shape.

Causes of scoliosis: Scoliosis may be because of a lot of reasons but the main reasons are disease in the joints of bones, underdeveloped legs, infantile paralysis, rickets etc. It may also be due to carrying heavy weights on one shoulder, unhealthy conditions, like inadequate lightning arrangement, unsuitable desks, partial deafness and wrong standing posture. It may be caused by congenital or acquired abnormalities of vertebrae, muscles or nerves.

Precautions:

- Balanced diet should be taken.
- The study should be avoided in sideways bending position.
- Avoid walking for long time with carrying weight in one hand.

Remedies:

- Scoliosis can be remedied by performing following exercises:
- Bending exercise should be performed in opposite side of 'c' shaped curve.
- Hold the horizontal bar with your hands and swing your body to the left and right side.
- To swim by using breast stroke technique.

Flat Foot : Our feet act as the base of support for the body in standing, walking, running and jumping. Flat foot is generally found among newly born babies but it becomes a postural deformity if it still persists during lateral childhood. The children with flat foot deformity cannot be efficient sportspersons. Such children feel pain in feet. They face problem in standing and walking. It is easy observe whether a person has flat foot deformity or not. Dip your feet in water and walk on the floor. If there is not a proper arch of footprints on the floor then you have the deformity of flat foot . in fact, there should be proper arch of the feet.

Causes of flat foot : The main causes of flat foot is weak muscles. Weak muscles of the foot cannot bear the body weight. Hence, feet become flat or without arches. Along with this rapid increase in body weight, improper shoes, carrying heavy weight for a longer period are also the cause of flat foot.

Precautions :

- The shoes should be of proper shape and size.
- Don't walk bare feet for a long duration
- Obesity should be avoided.
- Don't force babies to walk at very early stage.
- Carrying heavy weight in early childhood should be avoided.

- High heeled shoes should be avoided.

Remedies: the following exercises should be performed to remedy this deformity:

- Walking on heels.
- Walking on inner and outer side of feet.
- Walking on toes.
- To perform up and down the heels.
- Jumping on toes for sometime .
- To skip on rope.
- To perform Vajrasana, the yogic asana.

KNOCK KNEES: The Knock knees are one of the major postural deformities. In this deformity, both the knees knock or touch each other in normal standing position. The gap between ankles goes on increasing. The individual faces difficulty in walking and running. He cannot walk or run in a proper manner. Owing to this deformity, they cannot be good players and even they are not selected in defence services.

Causes: Generally, the lack of balanced diet especially vitamin 'D', calcium and phosphorus is the main cause of knock knees. It may also be due to rickets. Chronic illness, obesity, flat foot and carrying heavy weight in early age may be other possible causes of knock knees.

Precautions:

- Balanced diet should be taken.
- Babies should not be forced to walk at very early age.

Remedies: To remedy this deformity, the following points should be taken in to consideration :

- Horse-riding is the best exercise for remedification of this deformity.
- Perform padmasana and gomukasana regularly for some time.
- Cod liver may be beneficial in reducing this deformity up to some extent.

- Keep a pillow between the knees and stand erect for some time.
- Use of walking callipers may also be beneficial.
- In severe cases, consult the doctor.

Bow legs: 'Bow legs' is also a postural deformity. Approximately, it is opposite to knock knees position. If there is wide gap between the knees when standing with feet together, the individual has bow legs or genu varum. In this deformity, the knees are widely apart. There remains a wide gap between knees when a bow legged person keeps his feet together. This deformity can be observed easily, when an individual walks or runs.

Causes: the main cause of bow legs is the deficiency of calcium and phosphorus in bones. Long bones of legs become soft, hence they are bent outwards. The chances of bow legs also increase when the children become overweight. This deformity may be because of the deficiency of vitamin 'D'. Improper way of walking and forcing the babies to walk at very early age may also lead to bow legs.

Precautions:

- Don't let the children become overweight.
- Don't force the babies to walk at a very early age.
- Balanced diet should be given to children. There should not be any deficiency of calcium, phosphorus and vitamin 'd' in the diet.

Remedies: The following measures should be taken for remedification of bow legs

- Vitamin 'D' should be taken in required amount .
- Balanced diet should be taken.
- Bow legs can be corrected by walking on the inner edge of the feet.
- Walking by bending the toes in ward.

ROUND SHOULDER: in this type of deformity the shoulder become round and sometimes they seem to be in bent forwards.

Causes :

- Round shoulders may be due to heredity.
- Sitting, Standing and walking in bent position may also result in round shoulders.
- By wearing very tight clothes.
- Sitting on improper furniture.
- Lack of proper exercise especially of shoulders may lead to round shoulders.
- To become habitual to press the chest.

Precautions :

- Don't sit, walk or stand in bent position.
- Avoid tight fitting clothes.
- Avoid sitting on improper furniture at the time of bench press.

Remedies: the following should be performed for the remedification of round shoulder deformity:

- Keep your tips of fingers on your shoulder and encircle your elbows in clockwise and anticlockwise direction
- Hold the horizontal bar for some time.
- Perform chakrasana and dhanurasana regularly.

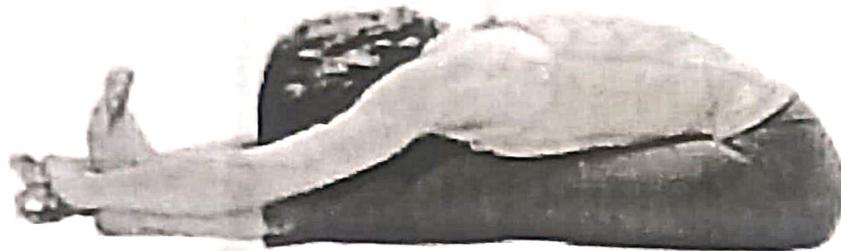
YOGA ASANAS

Yoga is an ancient form of exercise that has got global recognition. More and more people are adopting this form of exercise regime to stay healthy and fit. It is one form of exercise that can be done by people of all age groups. Its exercise positions are called 'Asanas'. Not only the common people but many movie stars and celebrities are reaping the benefits of yoga.

By practising yoga not only the body stays fit but the mind too. It helps cure many diseases apart from weight reduction that other exercise forms cannot cure. People who have perfect body shape too are indulged in yoga as it is for overall fitness and health of the body.

Although yoga has many asanas and newly evolved fusion variations like **power yoga**, **vikram yoga** etc , that can be practised but a few basic ones are easy to perform and are great for our body too.

Paschimottanasana



The first one is the 'Paschimottanasana'. All you have to do is sit down on the floor. Keep your back absolutely straight. Stretch your legs out. Stretch out your hand and then slowly bring them down to touch your ankles. Remember you must not bend your knees while doing this. Repeat the same four to five times. After you are done with it, breathe in deeply and then relax.

Bhujangasana



The second one is the Bhujangasana. It is also called the Cobra pose. This is believed to strengthen your backs, is good for your heart and also for your arms. First lie down on the floor on your

stomach. Stretch out your legs and keep your palms flat on the floor by your chest. Keeping your lower body touched to the ground, raise the upper half as high as you can. Repeat.

Trikonasana



The third one is the Trikonasana or the triangle pose. This improves flexibility of the body, strengthens back and torso. Stand straight on the floor with your legs wide apart. Bend towards one side without bending the knees. Touch your feet or ankle with one hand and keep the other straight up. Reach as low as possible. Now repeat the same by bending the opposite side. While doing this Asana keep your head straight looking at front.

Uttanasana



The fourth asana is the Uttanasana. This is one of the simplest asanas in Yoga. It helps make legs more flexible and the spine stronger. Stand straight and slowly raise your arms up. Inhale while

doing this. Now exhale and bend your upper half of the body and touch the floor or your feet. Try not to bend your knees. Repeat the exercise about 5 times.

Tadasana



The fifth asana is Tadasana or the mountain pose. It puts a stretch on the whole body and helps you relax. Stand straight with feet together and hands by your side. Raise your body to your toes and while doing this stretch your body taking your arms up. Hold the position for a few seconds and then come back slowly.

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IMPORTANT TERMINOLOGY

- Birth Control (BC) Counselor:** Provides information on BC options to avoid unplanned pregnancy.
- Carriers:** They are individuals who possess the infectious agent without suffering from the disease but are capable of transmitting the disease to others.
- Chiropractor:** Prevents and treats muscle, joint and ligament problems by adjusting the spinal column.
- Communicable disease:** It is a common term which includes both infectious and contagious diseases.
- Contagious disease:** It is disease which is transmitted from one individual to the other by direct contact.
- Dislocation:** A separation of two bones where they meet at a joint. A dislocated bone is no longer in its normal position.
- Dentist:** Specializes in mouth and dental health problems.
- Dermatologist:** Specializes in diagnosis and treatment of diseases/conditions of the skin, hair, or nails.
- Dietitian/Nutrition Counselor:** Teaches about nutrition or develops diets to promote health.
- Endemic:** It is a disease restricted to a particular area in a relatively low level throughout the year.
- Endotoxin:** It is a toxic substance produced by a microorganism when it is alive and the toxic substance affects a distant tissue away from the site where the organism lives.
- ENT/Ear Nose & Throat Specialist:** Specializes in the diagnosis/treatment of diseases/conditions of the ear, nose, and throat.
- Epidemic:** It is the quick and rapid spreading of a disease on a mass scale.
- Epizootic:** It is an epidemic occurring in animals.
- Exotic:** It is a disease which is introduced from a foreign land.
- Fomites:** They are articles like towel, utensils, pens, pencils or even books which can absorb, retain and transfer an infection.

IMPORTANT TERMINOLOGY

Fracture: A Complete or incomplete break in a bone resulting from the application of excessive force.

Health: A State of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Health Educator: Provides information on health issues through education, presentations and materials.

HIV Counselor: Helps assess risk for HTV and discusses ways behaviors can be made safer.

Incubation period: It is the latent period between the entry of an infectious agent into the body and the onset of symptoms of a disease.

Infection: It is the entry and development of an infectious agent in the body.

Infectious agent: It is a micro-organism like bacteria, virus, fungus or protozoa which is capable of producing an infection.

Infectious disease: It is a disease resulting from infection.

Infestation: It is the presence of a parasite either on the surface or in the tissue of the body e.g. round worm infestation.

Joint: An area where two bones come together.

Laceration: An injury that results in an irregular break in the skin, commonly known as a cut.

Massage Therapist: A licensed therapist who provides massage for stress reduction & other healing purposes.

Optometrist: Diagnoses and treats vision problems and diseases of the eye.

Pandemic: It is a disease which spreads from one country to the other in a short time or occurs in different countries at the same time.

Pharmacist: Dispenses prescription drugs and provides information about medications and their use.

Podiatrist: Diagnoses and treats medical and surgical problems of the feet and ankles.

Quarantine: It is the isolation of an infected individual such that he does not mingle with others till the incubation period of the infecting organism is over.

Sporadic: It is the occasional occurrence of a disease in a few individuals in scattered or isolated areas.

Sports Medicine Specialist: Treats injuries to bones, muscles, joints, tendons, or ligaments that result from physical activity.

Substance Use Counselor : Listens to a person's concerns about alcohol, tobacco, or other substance use and offers assistance and referrals.

Toxin: It is a harmful substance produced in the body by an infecting micro-organism.

Vectors: They are insects like mosquitoes, flies, lice etc. which transmit a disease.

Zoonotic: It is an infectious disease of animals through which it affects human beings.



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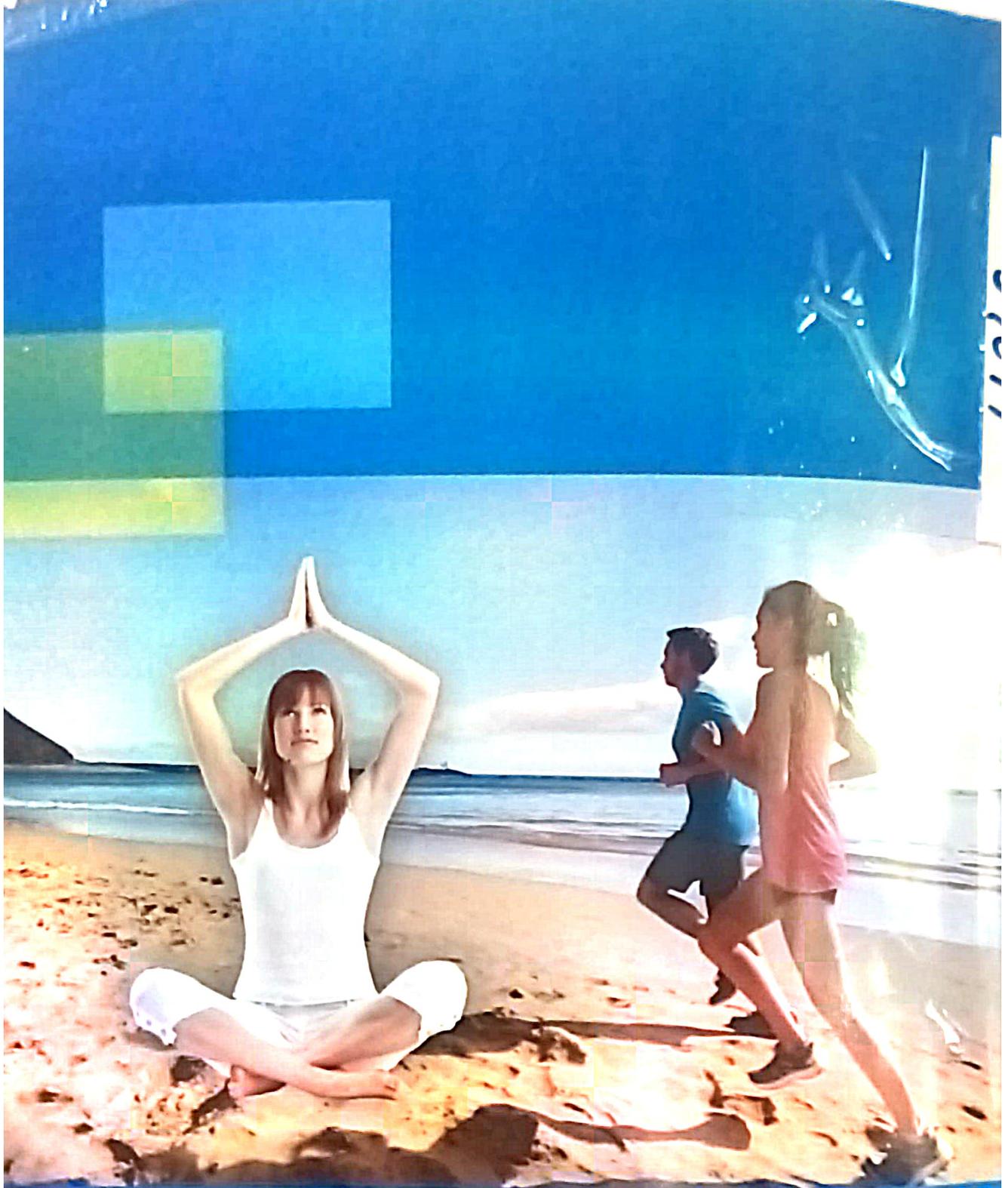
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