Part – V Physical Education

Second Year Study Materials

1. **Definition of Health Education:**

"Health education aims at creating such a quality of life as enable an individual to live most and serve to best"

- WHO (World Health Organization)

Components of Health Education:

i. Unity of human beings in respect to their physical, mental and social aspect.
ii. The Knowledge, attitudes and practices are more important to influence health behavior.
iii. The focus of health education on individual family and community.

"Health education is concerned with the health related behavior of people".

"Health education is a process that bridge between the health information and practices".

2. **First Aid:**

First aid is the first assistance or treatment given to causality for an injury (or) sudden illness before the arrival of an ambulance or qualified medical expert. It may involve improvising with facilities and materials available at that time.

Aims of First Aid:

i. To preserve (Save) life.
ii. To prevent the coarsening of the condition.
iii. To promote recovery.

Responsibility of First Aid:

i. Assess the situation without endangering your life.
ii. Identify the present situation.
iii. Give immediate and appropriate treatment.
iv. Arrange the transport without any delay for the disposal of a casualty to hospital.

3. **Fracture:**

It is a bone injury. A fracture is the partial or complete breakage, crack or bend of the bone.

Causes:

a) **Direct Force** – The bone breaks at the spot of application of the force. (example: wheel passing over the part)
b) **Indirect Force -** The bone breaks away from the spot of application of the force (example: collar bone fracture)

Types of Fracture:

1) **Simple Fracture:**

It means closed fracture. The broken ends of the bone do not cut open the skin and show on the outside.

2) **Compound fracture:**

It means open fracture when the broken bone is in contact with outside air is as a result of an injury. (Bone comes outside)

3) **Complicated fracture:**

The broken bone gives injury to internal organs like brain, blood vessels, spinal cord, spleen, liver and lung etc.

4. **Sprain:**

A Sprain is the tearing of the ligaments of join and the tissues around the joint. It is caused by a sudden twist or wrench at the joint.

Sign and Symptoms:

i. Pain at the spot.
ii. Swelling on the spot.
iii. Not able to move the joint.

First Aid:

i. Rest and support the injured part.
ii. Reduce pain
iii. To get medical aid.

Treatment:

RICE method.

R – Rest – makes the rest position of the joint. Give steady and support.

I – Ice – apply ice or cold pack on the swollen joint to reduce blood flow.

C – Compression – Apply a bandage. This will reduce pain and support to the joint.

E – Elevation – Raise and support to minimize the injury.

5. **Need and aim of Health Education:**

There are three main aims of Health education.

i. In forming People
ii. Motivating People
iii. Guiding into action

i. Informing:

The first aim of health education is to uniform the people or to develop health knowledge by presenting and interpreting scientific health data based on research and discoveries such information will help the individuals.

ii. Motivating:

Merely informing people about health is not enough. They must be motivated to the point that they want to apply this knowledge to everyday living.

iii. Guiding into action:

Good practices will result in good health and harmful practices will lead to negative health. The health practices will determine the health status of the person.

Need of Health Education:

i. Health education programs are basically preventive nature in disease. Prevention is better than cure.
ii. It insists the health knowledge, habits and attitudes. So the whole society and individual will improve their health.
iii. It helps an individual to assess the good and bad habits.

6. **First Aid - Electric Shock:**

If any part of the body comes in the contact with a live' wire (Current Passed) which is exposed and not covered by insulator or with a cable in which current is leaking a person gets an electric shock.

Electrical shock is produced only when on electric current passes through the human body which is in contact with the earth. It passes even more quickly if the part is wet. High voltage industrial current can jump 16 – 18 Meters and kill the life.

Effect of Electrical Shock:

i. There may be fatal paralysis of heart.
ii. There may be sudden stoppage of breathing.
iii. Face appearance may be change to blue.
iv. There may be burns occurs.

Methods for managing the Electric Shock:

i. Intelligent and prompt action needed for the first aids otherwise he may also receive the electric shock.
ii. If the causality (affected person) is still contact with current, first the rescuer cut the current by remove the wire (or) switch off (or) main off. By using the insulated materials first stand on dry wooden piece.
iii. If high voltage the first aids may use insulated lengthy dry bamboo stick or walking stick to remove the current connection from causality. after removing,
iv. Give respiration to the causality.
v. Give treatment for burns.
vi. Transfer to hospital.

7. **Bleeding:**

Bleeding is a common cause of death in accidents it is caused by the rupture of blood vessels.

i. External Bleeding:

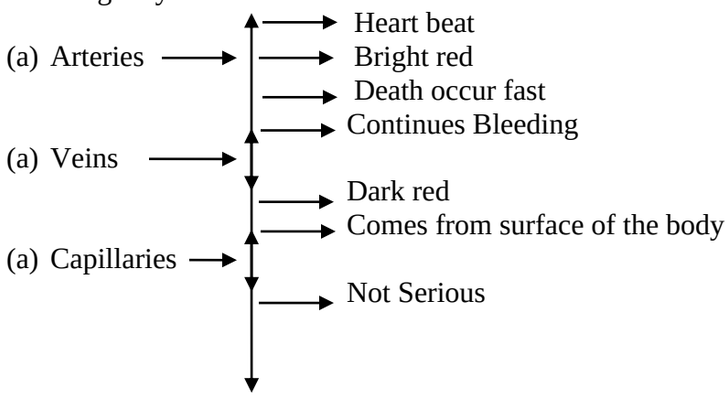
If the bleeding is from the surface of the body is called external bleeding.

ii. Internal Bleeding:

Bleeding with in the chest, Abdomen, Skull etc called internal bleeding. It can't be seen immediately; later blood may ooze out through, nose, ear, cough, vommit.

Types of Bleeding:

Bleeding may occur from



First aid for bleeding:

Minor Bleeding:

It may occur at usual work or play, bleeding may stop by firm posture and bandaging elevate the limbs.

i. First aiders wash the hands and give treatment.
ii. Remove the foreign material.
iii. Don't use cotton.
iv. Cover the wound with dry sterile dressing.
v. Seek medical aid.

Major Bleeding:

It is a result of a heavy accident or large blood vessel damage.

i. Stop the bleeding quickly by give pressure in the points and bandage.
ii. Immediate medical aid.

8. Poisoning:

Some substances when taken into the body in fairly large quantities can be dangerous to health or can cause death.

Poisons get into the body by

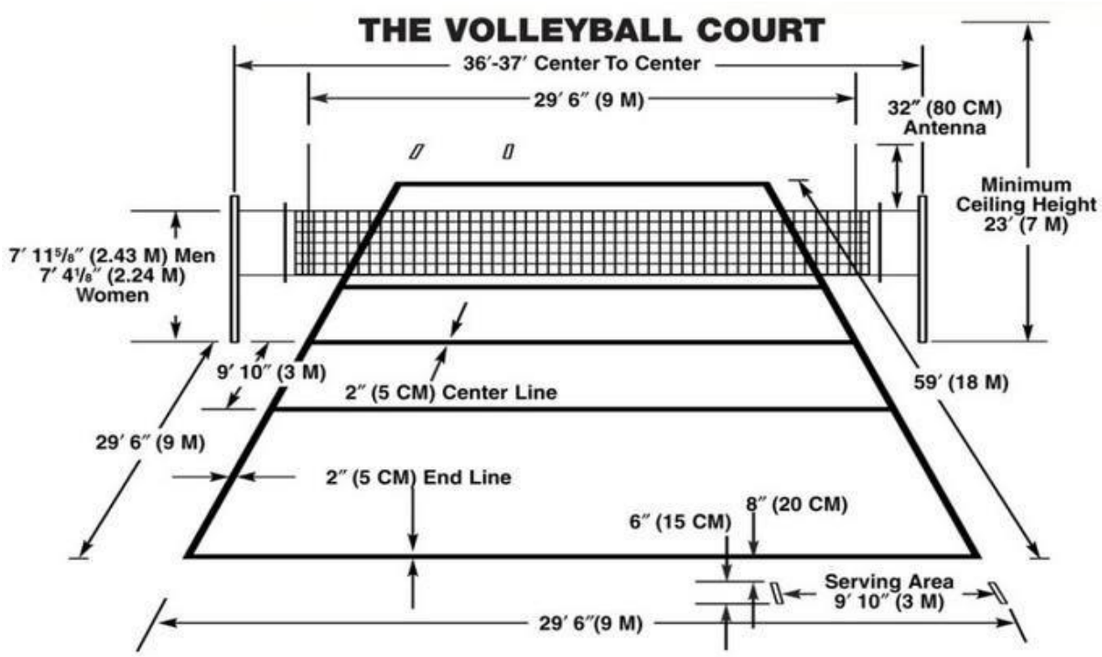
i. Swallowing – High Alcohol, Sleeping Pill, Pain Killer etc.
ii. By breathing poisonous gas – Charcoal Stoves, Household gas.
iii. By injections – Bites of snakes, rabid, dogs, scorpion etc.

Management:

i. Patient must remove to hospital.
ii. Preserve the packet, bottles which you suspect contained poison and also vomits, sputum etc.
iii. If unconscious.
    a. Do not induce vomit.
    b. Give artificial respiration.
    c. Avoid vomiting by giving salt water.
    d. Poison must be diluted by giving large quantities of cold water, later tender coconut will be provided.

S.NO	POISON	SOURCE	FIRST AID
1.	Arsenic	Rat Poison	Induce Vomiting
2.	Aspirn	Tablets	Induce Vomiting, Give soda bi carbonate.
3.	Carbon Monoxide	Gas Stoves	Give artificial respiration
4.	Sleeping Tablets	Chemists	Induce Vomiting, Give Magnesium Sulphate.
5.	Petrol or Kerosene	Vehicle or home	Induce Vomiting, Give large amount of water
6.	Snake bite	Snake Poison	Stop spread of venom, wash the wound, try to make bleeding, try to stop the venom spread by tight bandage.

9. Volleyball Court and Measurements:



Playing Court:

Playing court is rectangle measuring 18 meter x 9 meter surrounded by a free zone which measures 5 meters from sidelines and 8 meters from end lines.

Service Zone:

The service zone is 9 meter wide area behind each end line. It is laterally limited by 2 short lines each 15 centimeter.

Equipments:

Net:

The net is 1 meter wide and 9.5 meter long. It is made up of 10 centimeter. Square black mesh with a 5 centimeter. wide horizontal band at its top.

Side Band:

Two white bands 5 centimeter wide and 1 meter long are fastened vertically and placed above each side line.

Antenna:

An antenna is a flexible rod 1.80 meter long and 10 millimeter in diameter two antennas are fastened at the outer edge of the each side band.

Height of the Net:

The height of the net shall be 2.43 meter for men and 2.24 meter for women.

Posts:

The posts must be rounded and smooth with a height of 2.55 meter up to top of the wheel.

10. Effect of Exercise on different systems of the Human Body:

Acute and chronic exercise programs develop physiological adaptations in different systems of the body, due to the stress placed on the system. Acute exercise refers to short duration exercise, such as cycle ergo meter or a treadmill maximal exercise test. Chronic refers to extended or long term exercise, such as a physical training program of four to six months duration.

1) Effect of exercise on the Circulatory System:

Acute and chronic exercise causes an augmented supply of oxygenated blood to the working tissues and an increased return of deoxygenated blood to the heart and the lungs. Due to chronic exercise the following adaptive changes in the circulatory system take place.

i. Stroke Volume:

Stroke volume can be defined as the amount of blood that is ejected or pumped out from the left ventricle of the heart in one maximal contraction of the heart. At the rest time stroke volume of untrained and trained athletes are about 70 ml and 100 ml respectively. During maximal exercise the amount of blood pumped out from the heart in one forceful contraction for the athletes is about 175 ml, compared to non – athletes who eject about 120 ml of blood.

ii. Cardiac Output:

Cardiac output is a product of stroke volume and heart rate per minute and is the amount of blood pumped out from the heart in one minute. The resting cardiac output for athletes and non- athletes are approximately equal (about 5 liter per minute). The cardiac output for athletes is higher compared to non athletes and thus more oxygen and nutrients are supplied to the working tissue every minute .In untrained individual the cardiac output increases by about 4 times the resting level to an average maximum of 20 liters. However, well trained athletes achieve a maximum cardiac output of 35- 40 liters per minute during intense maximal exercise ,which is 7 to 8 fold increase from the normal resting level.

iii. Blood Pressure:

Systolic pressure increase in direct proportion to increase in exercise intensity. The systolic pressure may increase up to and above 200 mm Hg. The increase in systolic pressure is due to Increase in the cardiac output, with increase in the exercise intensity. Diastolic pressure changes are negligible and even an increase of about 10 mm Hg from the normal resting value of 80 mm Hg is considered to be an abnormal response to exercise. This is used as one of the test criteria in an exercise test to stop the test prematurely.

iv. Coronary Circulation:

Coronary circulation is the circulation with in the heart muscles itself .Due to regular exercise the heart muscle receive more blood and there is increased vascularisation in the cardiac muscle for is efficient functioning. At rest the heart muscle utilizes 75 percent of the oxygen from it blood supply 4 to 5 times increase in cardiac output is accompanied by a similar increase in coronary circulation.

v. Cardiac Muscles:

Due to increased blood supply by the coronary circulation to the heart, die heart muscles get more quantity of oxygen as well as energy regular training increases the size and bulk of the cardiac muscles and specifically diet of left ventricle .Well trained endurance athletes have a larger left ventricle and hypertrophied muscles compared to untrained individuals .Thus more forceful contraction of the left ventricular heart muscle fibers occurs during each heart beat, resulting in an increased stroke volume.

vi. Arterial –Venous O2 Difference (a-v O2 diff):

Chronic exercise supplies more quantity of blood to the working muscle, and as a result more O2 is carried by the blood to the muscles .The amount of CO2 and also waste products produced within the muscle is also removed at a faster rate by the blood returning through the veins. The arterial-venous difference is the amount of O2 extracted from the blood at cellular level, i.e the difference in oxygen content between the arterial and the venous blood .at rest, about 5 ml of O2 is utilized from the 20 ml of O2 in each 100ml of arterial blood that passes through the capillaries. During exercise about 15 ml of oxygen is extracted from 100ml of blood.

vii. Resting Heart Rate:

Chronic exercise specially aerobic exercise cause the resting heart of individual to decrease below the normal resting the heart rate that ranges between 70 to 80 beats per minute., resting heart rate as low as 38 beats per min was recorded for BJORN BORG, the 5 times Wimbledon champion .with decreased heart rate the athletes can eject equal or more amount of blood from the heart then non athletes in the same unit of time.

viii. Heart Rate during Exercise:

The relationship between heart-rate and oxygen consumption the heart-rate accelerates rapidly as the exercise intensity increases, whereas in trained endurance athletes accelerate as a slower pace. As a result, trained athletes would be able to exert his heart and do more work to achieve a higher maximal oxygen uptake when compared to a untrained individual. During a sub maximal exercise the trained

athlete's heart rate will be lower than that of the untrained individuals at a given level of maximal oxygen consumption .for example at an oxygen consumption of 2.0 liters per minute, the heart rate of the athletes is generally lower by 42 to 50 beats per minute, compared to non-athletes.

ix. Blood Flow:

Blood is directed away from areas where they are not essentially, to the working muscular tissues that are active during the exercise .at rest, only 15-20 percent of the cardiac output is directed to the muscles, whereas in exhaustive exercise, the muscles receive 80-85 percent of the cardiac output. This diversion of blood to the working muscular tissue is accomplished by a decrease.

In blood flow to the kidneys, stomach, liver and intestines .prolonged exercise causes the internal body temperature to increase above the normal value of 37 degree centigrade. The body temperature is cooled by shifting an increasing amount of blood to the skin for dissipating the heat away from the body core. The heat is last to the environment sweat, by conduction and convention. When the sweat evaporates, it reduce the temperature of the blood by cooling process

x. Availability of the Nutrients:

The blood is the only source by which carbohydrate (glucose), protein and fat can be taken to different part of the body. Due to regular exercise the utilization of the energy sources by the working muscles and other tissues is increased. Increased cardiac output and vascularisation of tissues enable .the body to supply adequate amount of nutrients to different parts of the body to meet the required energy needs.

2) Effect of Exercise on the Muscular System:

A regular program of systematic strength training causes a number of anatomical and physiological changes in the muscular system. They are described in detail below:

i. Muscle Fiber Splitting (HYPERPLASIA):

It is believed that heavy resistance training actually causes the muscle fibers to split. This known as hyperplasia. All individual are born with a genetic makeup of specific number of muscle fibers .researchers have imported that fibers from trained animals undergo a process of longitudinal muscle splitting .body builders who trained with heavy weights ,develop large limb circumference and muscle mass possibly through muscle fiber splitting. MacDougail (1984) has demonstrated the possibility of hyperplasia occurring in body builders.

ii. Muscle Size:

The muscle fiber size and composition undergo adaptive changes due to strength training .the muscle fibers increase in size because of increased vascularisation of the muscles an the develop the ability to generate more force. Increase in the size of the muscle is known as hypertrophy. However, there is no evidence to suggest that, there is increase in the percentage of the slow to fast twitch muscle fibers. The degree of muscular hypertrophy varies between men and women due to strength training .despite improvement in strength, increases in muscle girth is less for women.

iii. Availability of Metabolites to the Muscle:

The amount of nutrients available to the muscles is increased due to increased vascularisation .increased circulation in the muscle provides more amount of energy yielding substances such as glucose, protein and fats .about 4 to 5 grams of glycogen is present in 100 grams of wet muscle .the quantity of glucose present in the muscle can supply immediate energy for muscular work.

iv. Better Safety Mechanism:

The muscle spindles, the Golgi tendon organs at tuned properly for a quick response in order to prevent injurious to the muscle and to give continuous feedback to the brain regarding the length and the tension generated in the muscle.

v. Muscular Tone:

Chronic exercise program helps to maintain the normal muscular tone, facilitating the muscle to be in a state of readiness at all times.

vi. Oxygen supply to the Muscle:

In a normal individual at rest the O2 supply to one Kg of muscle per minute is 3.5 ml of O2 which is known as one MET (metabolic equivalent).due to regular exercise the O2 supply resting muscle is increased .during maximal exercise well trained athletes can

extract about 60 to 70 ml of oxygen per Kg of muscle, which is almost 20 times the normal resting value.

vii. Posture:

Chronic exercise strengthens the postural muscles, such as soleus, gluteal and back muscle to help to maintain a proper posture .quick, powerful and graceful moments are developed with improved efficiency in walking, jumping and running.

viii. Body Coordination:

Chronic exercise integrates the nervous system with the muscular system in a proper way which results in well coordinated movements of different body parts.

3) Effects of Exercise on the Respiratory System:

The respiratory system does not limit exercise performance, since it is capable of supplying adequate oxygen and in the prompt removal of CO2 .regular training causes physiological adaptation in the respiratory system there are follows:

i. Efficiency of Gaseous Exchange:

Due to exercise the efficiency of the complete respiratory system is improved. The respiratory pathways and the area for present in these areas .as a result the in an increase in the ability of the lungs to enhance the exchange of gases that takes place between the lungs and the blood. This improves the efficiency of respiratory system.

ii. Ventilation-Perfusion Ratio:

At rest, about 4.2 liters of air ventilate the alveoli each minute and the quantity of blood that flows through the pulmonary capillaries is about 5.0 liters. The ratio of alveolar ventilation to pulmonary blood flow is known as ventilation perfusion ratio and is 0.8(4.2/5.0=0.8).This means that for each liter of blood that perfuse the lungs, 0.8 liter of ventilation is available to the Alveoli of the lungs .During the maximal exercise there is a disproportionate increase in alveolar ventilation and the ventilation perfusion ratio may increase beyond 5.0 to provide adequate supply of air to the blood returning to the lungs.

iii. Availability of O2 and Elimination of CO2:

Maximal exercise increases the quantity of air that is moved in and out of the lungs by many folds. There is an increase tidal volume and in the frequency of breathing per minute.

In well conditioned athletes, the minute volume may increase to 150 liters in response to maximal exercise. The amount of O2 of O2 that will reach the alveoli is greater and its diffusion across the alveoli membrane and to the arterial blood is increased. During acute exercise 90% of the lungs are ventilated compared to only 60 % ventilation at rest. Hence the amount of O2 available for diffusion in the blood alveoli is more and hence the greater purification of blood takes place .the CO2 form the venous blood defuse in to the lungs and are exhaled quickly so as to maintain normal acid –base balance.

iv. Increased area for exchange of Gases:

Important factors that are necessary for exchange of gases are(a) increased surface area of the alveoli (b) increased surface tension around the alveoli and (c) a reduced thickness of the membrane of the alveoli. Regular exercise causes continuous movement of air in and out of lungs in large volume and as a result the elasticity and surface tension of alveoli are greatly increased. This helps in faster exchange of O2 and CO2 across the membranes of the alveoli.

v. Respiratory Muscles:

The amount of O2 consumed by the respiratory muscles at is about 1 to 2 % of the total oxygen consumption of the body. During heavy exercise, with the increased active movement of the Respiratory muscles, the oxygen consumption of the ventilator muscles increases to about 8 to 10% of the total oxygen consumption of the body. This increase in oxygen cost of the respiratory muscles is sufficient to meet the demands of strenuous exercises.

vi. Body Temperature & pH:

One of the most important functions of respiratory system is to maintain the body homeostasis (normal body's internal environment) by increasing or decreasing the respiratory rate, the respiratory system is able to maintain the normal body temperature and pH, so that quantity of CO2 present in the blood is maintained at normal levels. Athletes compared to non athletes have greater ability to fluctuate above or below normal homeostasis which is brought back to normal within a short span of time by increasing the respiratory frequency (hyperpnea) and expelling the excess CO.

vii. Ability to function at Low O2 Levels:

Since athletes are used to performing at O2 debt, their capacity to continue exercise is far greater than non athletes. the athletes can also perform exercise an aerobically for a longer time than non athletes .in hill stations ,where the availability of O2 is low in the atmosphere, the athletes quickly develop physiological coping mechanisms ,such as increase in concentration of hemoglobin and in glycol tic oxidative enzyme.

4) Effect of Exercise on the Nervous System:

Acute and chronic exercise programs produce physiological adaptations in central and peripheral nervous system .the important physiological changes and adaptations are as follows:

i. Sympathetic and Parasympathetic Nervous System:

The functions of the sympathetic and the parasympathetic nervous systems are typically opposite to each other. During exercise, the sympathetic nervous stimulation increases the heart rate thereby increasing cardiac output. it causes the dilation of the coronary blood vessels there by increasing the blood supply to the heart vessels. this enables the heart to get necessary nutrients and remove waste products at a faster rates .sympathetic stimulation increases the blood pressure to allow sufficient blood to return to the heart in order to continue to maintain the increasing demand for blood in the working muscular tissues .the parasympathetic nervous system place an opposing role to that of the sympathetic nervous system in controlling the systemic blood vessels.

ii. Recruitment of Motor Units:

Acute chronic exercise enhances the excitability of the alpha motor neurons, which increases the recruitment of more number of motor units and produces powerful muscular contractions. Neuromuscular activity is graded on the basis of a fixed order of recruitment of motor limit. When more forces needed to perform a certain unit, more number of motor units is recruited.

iii. Glycogen Supply:

There is an increase in the blood supply to the brain as a result of acute and chronic exercise. The brain utilizes glucose as the only source of energy. The brain functions efficiently with an augmented supply of glucose.

iv. Screening and Facilitation Process:

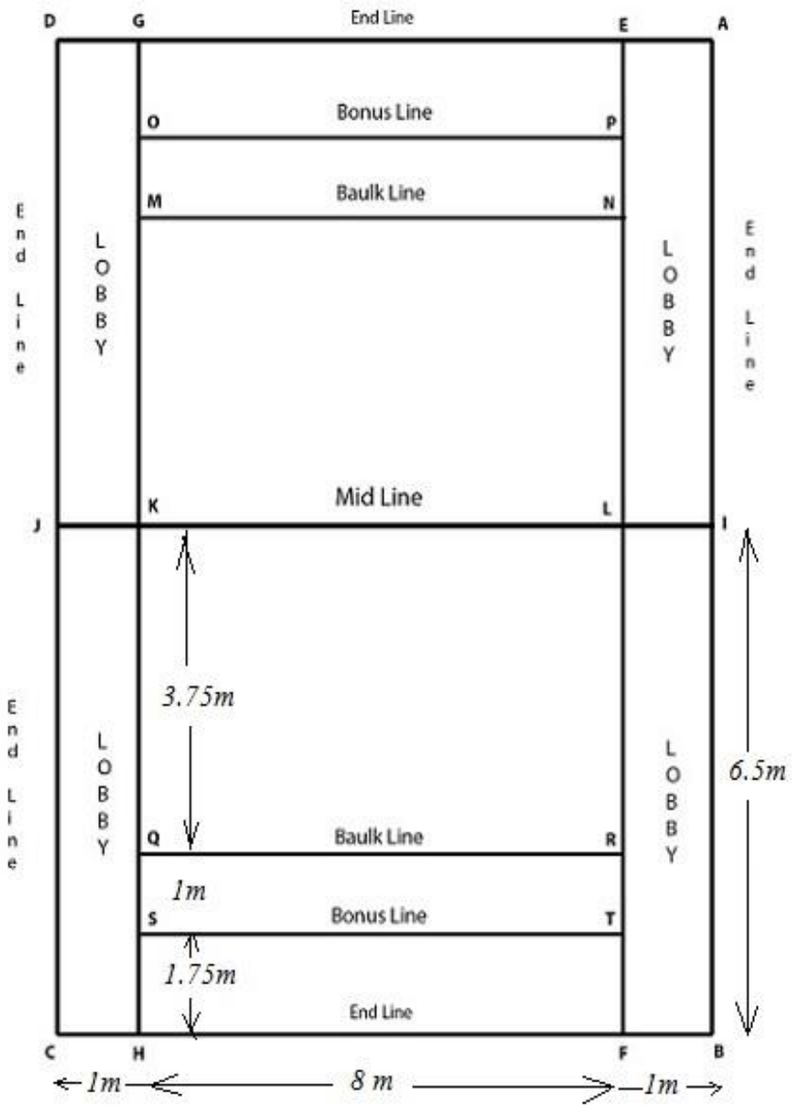
The regular exercise sends constant information to the spinal cord and brain from the sensory receptors, and when corrective action is required, signals to initiate movement are transmitted to the motor organs through efferent neurons. As a result of the screening process the movement patterns in the brain are memorized. Hence, smooth, co-ordinate and skillful execution of simple as well as complex motor movements can be performed.

v. Safety Mechanism:

The muscle spindles are sensory receptors present in the muscles, which provide continuous information to the brain and the spinal cord regarding, the status of the lengthening of the muscle and its tension. The Golgi tendon organs are also sensory receptors through which the muscle tendons pass, before their attachment to the muscle fibers. The Golgi tendon organs are sensitive to increasing tension and when stimulated, they inhibit the agonist or the contraction muscles and excite the antagonist or the opposite muscles, the reducing the strength of contraction. The muscle spindles and Golgi tendon organs act to integrate the sensory and motor information and play an important role in preventing damage.

11. KABADDI

Kabaddi Men Court



a) Men and Junior Boys

13 X 10 Meters (as shown in the diagram).

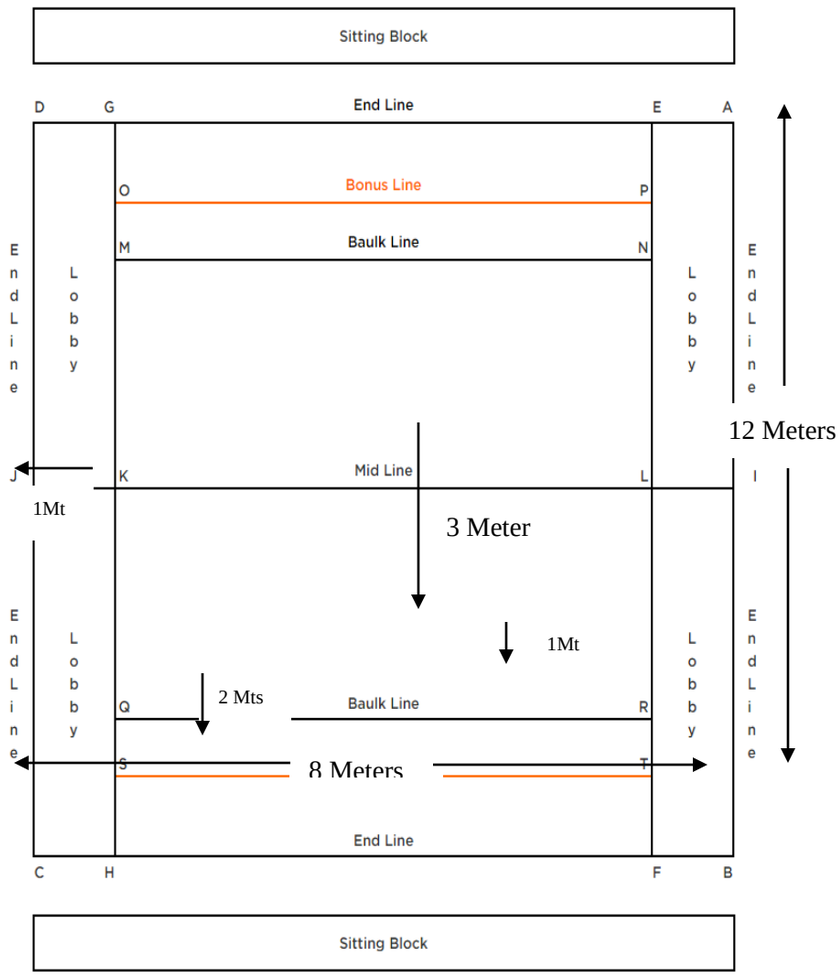
MEN below 80 Kg Weight

Boys: Age 20 years & below (last day of the year) and below 65 Kg weight

11 X 8 Meters (as shown in the diagram).

SUB-JUNIOR BOYS Age 16 years & below (last day of the year) and below 50 Kg weight.

Kabaddi Women Court



b) Women and Junior Girls

12 X 8 Meters (as shown in the diagram).

WOMEN below 70 Kg Weight

JUNIOR GIRLS Age 20 years & below (last day of the year) and below 60 Kg Weight.

SUB-JUNIOR GIRLS Age 16 years & below (last day of the year) and below 50 Kg weight.

Note: The National Association should furnish original date of birth certificate from the institution. The date of birth and the photograph of participating player should be attested and verified by the Head Master/Principal. The Original Date of Birth Certificate shall only be accepted in the Championship. Random test on players from participating teams will be conducted by the IKF from the concerned Institutions. If any Association is found guilty, the concerned National Association's Team shall be debarred for a period of 3 years from the same year. Achieved position will also be effected and Association has to return the Medals and Certificates to the Federation.

Play Field

The play field means that portion of the ground, which measures 13 meter by 10 meter for Men and 12 meters by 8 meter for Women, 4) Sitting Block

The sitting block shall be at a distance of 2 meter from the end lines. It shall be a rectangle of 1 meter by 8 meter in case of Men & Junior Boys and 1 meter by 6 meter in case of Women, Junior Girls, Sub-Junior Boys and Sub-Junior Girls.

Boundary

The lines on the four sides of the play field are known as the boundaries. All lines shall be of 3 to 5 cm width and form the part of the play field.

Note: It is necessary to have 4-meter clear space outside the boundaries.

Lobbies

The strips on both the sides of the playfield measuring one meter in width are known as the Lobbies. When the lobbies, as per rule 4 under 'Rules of Play' are included in the playfield, the boundaries of the play-field are extended up to the four lines, which enclose the play-field including the lobbies.

Mid Line

The line that divides the play field into two halves is known as the mid-line.

Court

Each half of the play field divided by the mid line is known as the Court.

Baulk Line

Each of the lines in court parallel to the midline is known as baulk line. The distance of the baulk line from the mid line shall be 3.75 meter in case of Men and Junior Boys and 3 meter in case of Women, Junior Girls, Sub-Junior Boys and Girls.

Bonus Line

The line parallel to Baulk line towards end line is known as Bonus line. The distance between Bonus line and Baulk line shall be 1 meter

Note: Raider is said to have crossed the Bonus line when he comes into contact with the ground between the End line and Bonus line. At the same time any part of his body should not have contact with the ground between the mid line and Bonus line.

Cant

The repeated, without break; at a stretch and clear aloud sounding of the approved word "KABADDI" within the course of one respiration shall be called 'Cant'.

Raider

One who enters into the court of the opponent with the cant is known as a 'RAIDER'. The raider must begin his cant before he touches the opponent's court.

Anti or Anti-Raider

Every player in whose court the raid is being made shall be called Anti or Anti Raider.

Loosing the Cant

To stop the repeated and clear aloud sounding of the word KABADDI' or take in a breath during cant by the raider is known as loosing the cant. A cant must be continued within one and the same respiration.

Touch

If the raider touches the anti or antis by any part of his body or even the clothing, shoes or any other outfit, it is called a touch.

Struggle

When the anti or antis come into contact with the raider, it is called struggle. After touch or struggle the play field includes the lobbies.

Raid

When the raider enters the court of opponent with cant, it is known as Raid.

Successful Raid

When the raider crosses the Baulk line of the defending team at least once during the course of a raid and reaches his court with cant, it is known as Successful Raid.

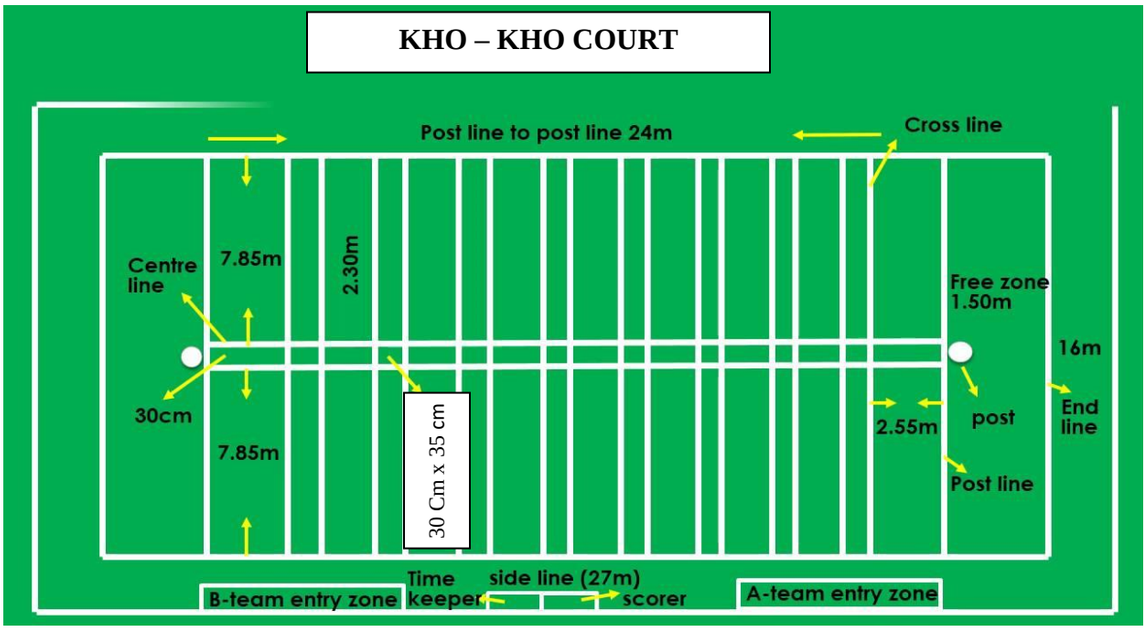
NOTE:

1. In case the Raider touches an anti or an anti touches the raider during the raid, the raider need not cross the Baulk line but must reach his court with the cant.

2. Baulk line is said to be crossed when any part of the body of the raider is in contact with the ground between the Baulk line and the End line of the opponent's court. At the same time any part of the raider's body should not have contact with the ground between the mid line and the Baulk line.

3. Pursuit: When an anti rushes into the opponent's court with cant and without breach of rules chasing the returning raider with a view to touch, it is called pursuit.

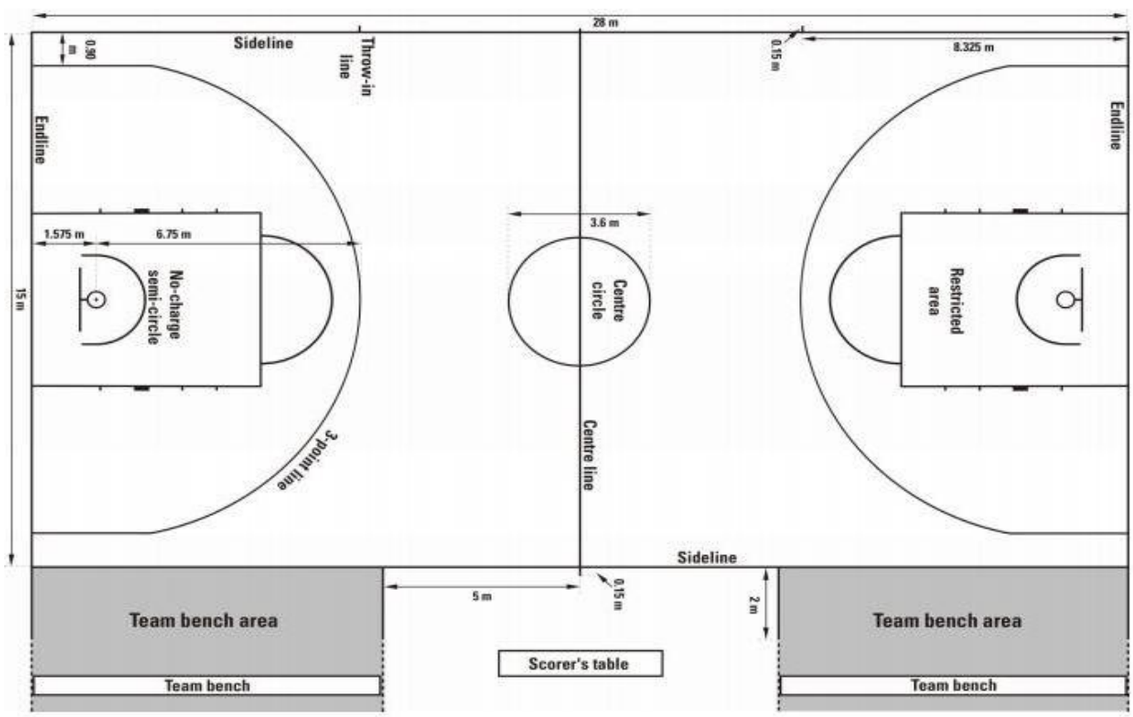
12. KHO –KHO



Field Measurements:

Men, Women, Boys & Girls
Length – 27 Meters
Width – 16 Meters
Central Lane – 24 Meters x 30 Centimeters
Cross Lane - 16 Meters x 30 Centimeters
Squares – 30 Centimeters x 35 Centimeters
Distance Between two Adjacent Squares – 2.30 Mts
Distance Between the post line and first cross lane – 2.55 Mts
Free Zone – 16 Mts x 1.50 Mts
Lobby – 1.5 Mts
Width of lanes – 3 Centimeters

13. BASKETBALL



Basketball is a non-contact team sport played on a rectangular court by two teams of five players each. The objective is to shoot a ball through a hoop 18 inches (46 cm) in diameter and 10 feet (3.048 m) high that is mounted to a backboard at each end of the court. The game was invented in 1891 by Dr. James Naismith, who would be the first basketball coach of the Kansas Jayhawks, one of the most successful programs in the game's history.

A team can score a field goal by shooting the ball through the basket being defended by the opposition team during regular play. A field goal scores three points for the shooting team if the player shoots from behind the three-point line, and two points if shot from in front of the line. A team can also score via free throws, which are worth one point, after the other team is assessed with certain fouls. The team with the most points at the end of the game wins, but additional time (overtime) is mandated when the score is tied at the end of regulation. The ball can be advanced on the court by passing it to a teammate, or by bouncing it while walking or running (dribbling). It is a violation to lift, or drag, one's pivot foot without dribbling the ball, to carry it, or to hold the ball with both hands then resume dribbling.

The game has many individual techniques for displaying skill

1. Ball-Handling,
2. Shooting,
3. Passing,
4. Dribbling,
5. Dunking,
6. Shot-Blocking, and
7. Rebounding.

Basketball teams generally have player positions, the tallest and strongest members of a team are called a center or power forward, while slightly shorter and more agile players are called small forward, and the shortest players or those who possess the best ball handling skills are called a point guard or shooting guard. The point guard directs the on court action of the team, implementing the coach's game plan, and managing the execution of offensive and defensive plays (player positioning).

Playing Regulations

Games are played in four quarters of 10 FIBA or 12 minutes NBACollege men's games use two 20-minute halves, college women's games use 10-minute quarters, and high school varsity games use 8 minute quarters. 15 minutes are allowed for a half-time break under FIBA, NBA, and NCAA rules and 10 minutes in high schools. Five players from each team may be on the court at one time. Substitutions are unlimited but can only be done when play is stopped. Teams also have a coach, who oversees the development and strategies of the team, and other team personnel such as assistant coaches, managers, statisticians, doctors and trainers.

For both men's and women's teams, a standard uniform consists of a pair of shorts and a jersey with a clearly visible number, unique within the team, printed on both the front and back. Players wear high-top sneakers that provide extra ankle support.

Equipment

1. **BALL:**

The size of the basketball is also regulated. For men, the official ball is 29.5 inches (75 cm) in circumference (size 7, or a "295 ball") and weighs 22 oz (623.69 grams). If women are playing, the official basketball size is 28.5 inches (72 cm) in circumference (size 6, or a "285 ball") with a weight of 20 oz (567 grams). In 3x3, a formalized version of the halfcourt 3-on-3 game, a dedicated ball with the circumference of a size 6 ball but the weight of a size 7 ball is used in all competitions (men's, women's, and mixed teams)

The only essential equipment in a basketball game is the ball and the court: a flat, rectangular surface with baskets at opposite ends. Competitive levels require the use of more equipment such as clocks, score sheets, scoreboard(s), alternating possession arrows, and whistle-operated stop-clock systems.

2. **COURT:**

A regulation basketball court in international games is 91.9 feet (28.0 meters) long and 49.2 feet (15 meters) wide. In the NBA and NCAA the court is 94 by 50 feet (29 by 15 meters). Most courts have wood flooring, usually constructed from maple planks running in the same direction as the longer court dimension. The name and logo of the home team is usually painted on or around the center circle.

The basket is a steel rim 18 inches (46 cm) diameter with an attached net affixed to a backboard that measures 6 by 3.5 feet (1.8 by 1.1 meters) and one basket is at each end of the court. The white outlined box on the backboard is 18 inches (46 cm) high and 2 feet (61 cm) wide. At almost all levels of competition, the top of the rim is exactly 10 feet (3.0 meters) above the court and 4 feet (1.2 meters) inside the baseline. While variation is possible in the dimensions of the court and backboard, it is considered important for the basket to be of the correct height – a rim that is off by just a few inches can have an adverse effect on shooting.

FOULS

The referee signals that a foul has been committed.

Main articles: Personal foul (Basketball) and Technical foul

An attempt to unfairly disadvantage an opponent through certain types of physical contact is illegal and is called a personal foul. These are most commonly committed by defensive players; however, they can be committed by offensive players as well. Players who are fouled either receive the ball to pass inbounds again, or receive one or more free throws if they are fouled in the act of shooting, depending on whether the shot was successful. One point is awarded for making a free throw, which is attempted from a line 15 feet (4.6 m) from the basket.

The referee is responsible for judging whether contact is illegal, sometimes resulting in controversy. The calling of fouls can vary between games, leagues and referees.

There is a second category of fouls called technical fouls, which may be charged for various rules violations including failure to properly record a player in the scorebook, or for unsportsmanlike conduct. These infractions result in one or two free throws, which may be taken by any of the five players on the court at the time. Repeated incidents can result in disqualification. A blatant foul involving physical contact that is either excessive or unnecessary is called an intentional foul.

If a team misses the first shot of a two-shot situation, the opposing team must wait for the completion of the second shot before attempting to reclaim possession of the ball and continuing play.

If a player is fouled while attempting a shot and the shot is unsuccessful, the player is awarded a number of free throws equal to the value of the attempted shot. A player fouled while attempting a regular two-point shot thus receives two shots, and a player fouled while attempting a three-point shot receives three shots.

If a player is fouled while attempting a shot and the shot is successful, typically the player will be awarded one additional free throw for one point. In combination with a regular shot, this is called a "three-point play" or "four-point play" (or more colloquially, an "and one") because of the basket made at the time of the foul (2 or 3 points) and the additional free throw (1 point).