

# PHYSICAL EDUCATION



# TEST, MEASUREMENT AND EVALUATION IN SPORTS

## Test

A test is a tool used to obtain data of an individual or a group. It is intended to measure knowledge of what students have learned or what they know. It meets some requirements, such as validity and reliability.

## Measurement

Measurement is the score that shows the size or amount of something. It is used to obtain information about the characteristics of students, such as their knowledge, skills, abilities, and interests.

## Evaluation

Test and measurement are prerequisites for evaluation. The evaluation is the process which tells the worth or progress of the individual or group. It is a process of making judgments based on criteria and evidence.

## Importance of Test, Measurement & Evaluation

- **Classification of sportsperson:** Test helps to classify the sportsmen of various groups by testing their capacities and present level of fitness.
- **Selection of sportsperson:** Tests are used to select participants for various categories of sports activities based on their selection criteria.
- **Training effects:** The progress of sports training and physical fitness program can be evaluated with the help of scientific measurement and evaluation procedure
- **The individualisation of the training program:** The measurement and evaluation process helps to diagnose the weakness or needs of the students, based on this training schedule.
- **The motivation of sportsperson:** Test, measurement and evaluation are highly associated with self-involvement of students. Thus create interest among students and motivate them towards fitness programs.
- **To achieve goals and objectives specifically:** It helps students to find out whether the specific goal and objectives have been achieved.

- **To study the development of a sportsperson:** It helps to check the development of neuromuscular, interpretive, social and emotional aspects of an individual.
- **To prepare standards and norms:** The measurement and evaluation process is used to conduct standards or norms.
- **To predict performance:** The evaluation process helps to predict future performance potential.
- **To compare and evaluate training methods:** This enables the coach to compare different training methods suitable for different groups.
- **To conduct research work:** Measurement and evaluation are very helpful to research work.

## Calculation of BMI & Waist – Hip Ratio

### Body Mass Index (BMI):

This fitness testing is used to measure body composition based on weight and height. BMI helps a person to know whether he is underweight, normal weight or overweight. Accordingly, diet and workout can be done to gain or to reduce weight.

BMI is calculated by taking a person's weight (in kg and gram) and dividing by height (metres and centimetres) square.

### **BMI = WEIGHT (in KG) ÷ (HEIGHT × HEIGHT in meters)**

Evaluation: Higher the figure, more overweight is the person. Lower the score, normal weight a person possesses.

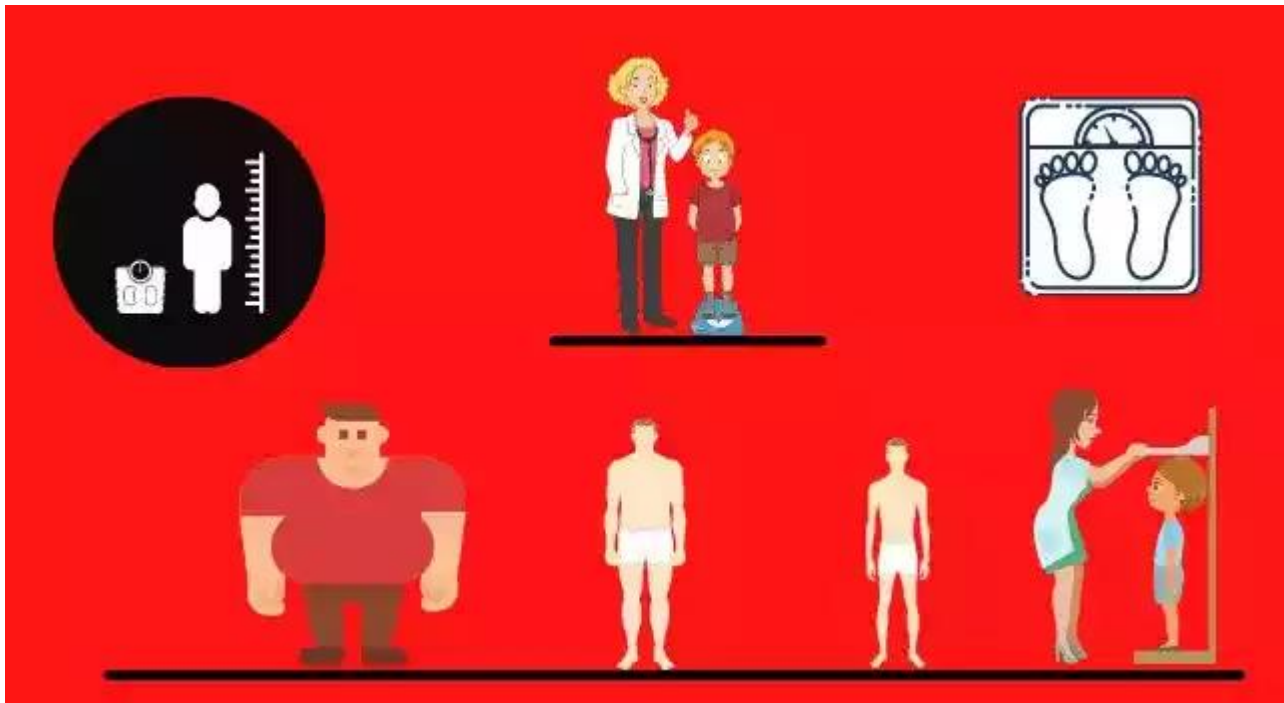
### Waist Hip Ratio (WHR)

This is the ratio of the circumference of the waist to that of the hips. It is calculated by measuring the smaller circumference of the waist (above the navel) and dividing by the hip circumference at the widest part of buttocks or hip.

### **WHR = Waist circumference ÷ Hip circumference**

Evaluation of test: WHR is a good indicator of health and attractiveness of a person. The ratio around 0.7 is considered good health among women, whereas the ratio at around 0.9 is considered good health among men.

These people have fewer chances of health problems like diabetes, cardiovascular disorder, cancers etc.



## SomatoTypes (Endomorphy, Mesomorphy & Ectomorphy)

### Endomorphic:

An endomorphic person is generally stocky with the large round body, short neck, short arms and wide hips. They have plenty of fat all over their body.

Their physical fitness level is low, related to speed and endurance, whereas they have massive strength. They are comfort-loving, peaceful, sociable, relaxed and tolerant Personal.

### Mesomorphic:

Mesomorphic persons are muscular with a broad chest, strong legs and arms with medium height. These people have a lot of strength, speed and flexibility. Also, have attractive Personality.

They are good for almost all kinds of activities. Their characters say that they are active, assertive and competent persons.

### Ectomorphic:

Ectomorphic people are very thin with a slim face, narrow shoulders, chest and hip. They have less fat on their body. Ectomorphs people have less strength, whereas they dominate in endurance activities.

Personality-wise they are quiet, sensitive, restrained and non-assertive. They are very self-conscious, socially anxious, artistic and thoughtful.

## Measurement of health-related fitness

### Anthropometric Measurement:

It is the measurements of height, weight, arm, leg length, waist circumference and skin folds of a different part of body etc.

Anthropometric measurements play an important role in the selection of activities. It is used for understanding human physical variation and attempt to correlate physical and psychological traits.

### Height:

Height must be measured using a stadiometer to the nearest half of a centimetre.

### Weight:

Standard weighing machine should be used to measure weight. Measurement must be recorded to the nearest 0.1 kg.

### Arm length:

Measurement should be done from the shoulder to the tip of the little finger.

### Upper arm length:

Measurement should be done from shoulder to elbow. Before measuring the arm should be bent 90 degrees at the elbow with the palm facing upwards.

### Leg length:

Measurement should be done from the outside edge of the centre of the foot to the upper edge of the hip.

### Skinfold measurement for fat:

- Arms (triceps) skin fold.
- Subscapular skinfold.
- Suprailiac skinfold.
- Abdomen skinfold.
- Thigh skinfold.