

Test-

A Test is a tool which is used to evaluate the skills, performance and reliability of the task completed by a sports person.

Measurement-

Measurement is about the collection of data about performance or task completed by a sports person by using a test.

Importance of Test and Measurement-

1. To frame the objectives
2. To evaluate the learners.
3. To evaluate the teaching programme.
4. To know the capacities and abilities.
5. To discover the needs of the participants.

Body Mass Index (B.M.I.) -

It is the value derived from the mass (weight) and height of an individual.

Formula for Calculating B.M.I. -

Weight in kg

Body Mass Index = -----

Height in m^2

Waist HIP Ratio -

Waist Hip Ratio is the ratio of the circumference of waist to that of the hips.

Formula for Calculating Waist HIP Ratio

Waist Circumference

Waist hip ratio = -----

Hip Circumference

Somato Types (Endomorph, Mesomorph, Ectomorph)

Somato Types means human body shape and physique type.

According to W.H. Sheldon, human beings can be classified into three extreme body types i.e.

1. **Endomorphy-** People with endomorph body structure have rounded physique their excessive mass hinders their ability to compete in sports. Suitable games- weight lifting and power lifting.
 2. **Mesomorphy-** People with mesomorph body structure have thick bones and muscles with rectangular shaped body. They have larger and broader chest and shoulders and can be top sports person in any sport.
 3. **Ectomorphy-** These are slim person because their muscle and limbs are elongated. They have flat chest and have less muscle mass. They have less strength but dominate endurance sports.
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Procedures of Anthropometric Measurement (Height, Weight, Arm and Arm Length and Skinfold)

Meaning of Anthropometric measurement-

Anthropometric measurements means measurements of height, weight, arm, leg length, waist circumference and skin folds etc.

Height- Height of an individual must be measured using a stadiometer to the nearest half of a centimeter.

Weight- Correct weighing machine should be used and measurement must be recorded to the nearest 0.1 k.g.

Arm length- Measurement should be done from the bony tip of the shoulder to the tip of the little finger.

Upper arm length-To measure the upper length the arm should be bent 90 degree at the elbow with palm facing upwards.

Leg length- It can be measured by using a flexible steel tape from the outside edge of centre of the foot to the upper edge of the greater trochanter.

Upper leg length- Bend the knee at 90 degree angle & sit up straight. Measure the upper leg length from inguinal crease to the proximal boarder of patella to the nearest of 0.1 centimeter.

Skin Fold Measurements-

Arms (triceps) skin fold

Sub scapula skin fold

Suprailiaskin fold

Abdomen skin fold

Thigh skin fold

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