

TEST & MEASUREMENT IN SPORTS

Tests → Tests are used to collect information about a specific skill, strength, endurance, knowledge, behaviours, attitude etc.

Measurements → are related to physical measurements such as size, height, weight, vital capacity, achievements, etc. Indeed measurements refers to the process of administering a test to obtain a quantitative data.

COMPUTATION OF FAT PERCENTAGE

A. Triceps and Calf Skinfold (Males 6 to 17 years)

$$\text{Body fat percentage} = (0.735 \times \text{sum of skinfold}) + 1.0$$

B. Triceps and calf skinfold (females 6 to 17 years)

$$\text{Body fat percentage} = (0.610 \times \text{sum of skinfold}) + 5.0$$

COMPUTATION OF BODY DENSITY

A = Abdominal Skinfold

B = Chest Skinfold

C = Arm Skinfold

A. For Men / Boys

$$\text{Body Density} = 1.1017 - (0.000282) \times (A) - (0.000736) \times (B) - (0.000883) \times (C)$$

$$\text{Fat Percentage} = \frac{4.570}{\text{Body density}} \times 100$$

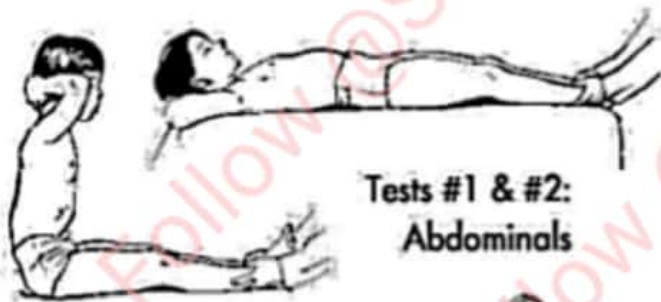
(B) For Women / Girls

A = Arm Skinfold

B = Iliac Skinfold

$$\text{Body Density} = (1.0764 - (0.00081) \times (A) - (0.00088) \times (B))$$
$$\text{Fat Percentage} = \left(\frac{4.570}{\text{Body density}} - 4.142 \right) \times 100$$

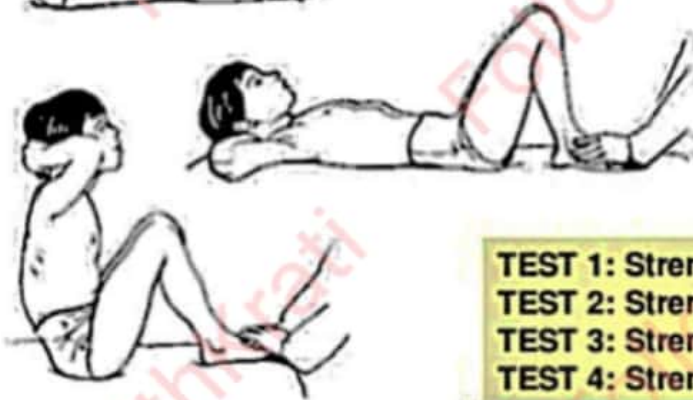
KRAUS-WEBER TEST



Tests #1 & #2:
Abdominals



Test #3: Psoas and
Lower Abdomen



Test #4: Upper Back



- TEST 1: Strength of Abdominal and Psoas Muscles
- TEST 2: Strength of Abdominal Minus Psoas Muscles
- TEST 3: Strength of Psoas and Lower Abdominal Muscles
- TEST 4: Strength of Upper Back Muscles

COMPUTATION OF FITNESS INDEX

1. Fitness index score (Jog term)

$$\Rightarrow \frac{100 \times \text{test duration in seconds}}{2 \times \text{sum of heartbeats in recovery period}}$$

2. Fitness index score (short term)

$$\Rightarrow \frac{100 \times \text{test duration in seconds}}{5.5 \times \text{pulse count between 1 to 1.5 minutes after exercise}}$$

Fitness index score		Rating
Male	Female	
> 90.0	> 86.0	Excellent
80.0 - 90.0	76.0 - 85.9	Good / Above average
65.0 - 79.9	61.0 - 75.9	Average
55.0 - 64.9	50.0 - 60.9	Below Average
< 55	< 50	Poor

AAHPER

(American Alliance for Health, Physical Education, Recreation and Dance)

1. (a) Pull-ups (Boys)

(b) Flexed-arm Hang (Girls)

2. Flexed-leg Sit-ups

3. Shuttle run

4. Standing Long Jump

5. 50-yard Dash

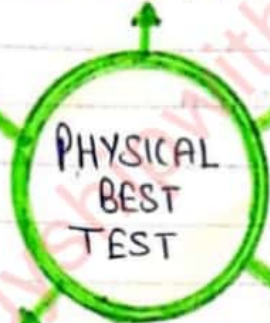
6. 600-yard Run-walk

* AAHPER introduced Physical Best Test in 1988.

1-1½ mile run or 12-minute run

(a) Pull ups (Boys)

(b) flexed-arm hang (girls)



Skin fold measurements

Sit ups

Sit and reach test

GENERAL MOTOR FITNESS : BARROW THREE-ITEM GENERAL MOTOR ABILITY

1. Standing Broad Jump (measures leg strength)
2. Zig-zag run (measures agility and speed)
3. Medicine Ball put (measures arm & shoulder strength)

CARDIOVASCULAR FITNESS

HARVARD STEP TEST

Take a bench (20 inch high for men and 16 inch for women) and athlete steps up and down on the bench.

ROCKPORT TEST

Objective is to observe maximum volume of oxygen. In this task the person is required to walk 1 mile.

RIKLI AND JONES : Senior Citizen Fitness Test

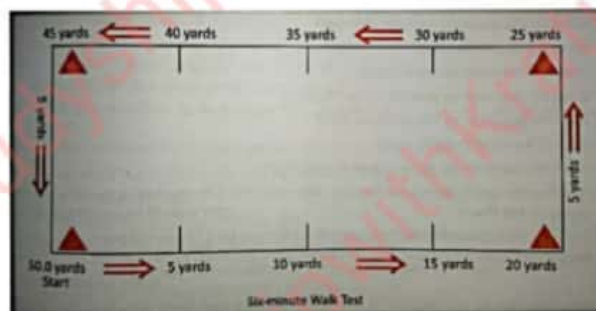
- Chair Stand Test
- Arm Curl Test
- Chair - Sit - and - Reach Test
- Back Scratch Test
- Eight Foot Up and Go Test
- Six - minute walk



Chair stand test



Arm curl test



Back scratch test



Chair sit-and-reach test



Eight foot up and go test