INTRODUCTION TO HEALTH

- Importance of Health, well being & Healthful living
- Scope for Healthy living

GOALS OF HEALTH

- To enjoy fruitful living
- Avoid disease
- Delay death

DEFINITION OF HEALTH

- According to **WHO** Health is a state of complete, physical, mental and social well being. It is not merely freedom from disease and infirmity.

DIMENSIONS OF HEALTH

- Physical
  Mental
  Social
  Moral
  Spiritual

Physical

- Physical health is measure of physical fitness of the human organism

Mental

- it is a state of internal adjustment of man, achieved by balancing expectations with realizations

social

- Social health denotes successful adjustment of a man in his society

Moral

- Moral health is indication of the adherence of an individual to an acceptable moral code which adds strength to his conduct and character

Spiritual

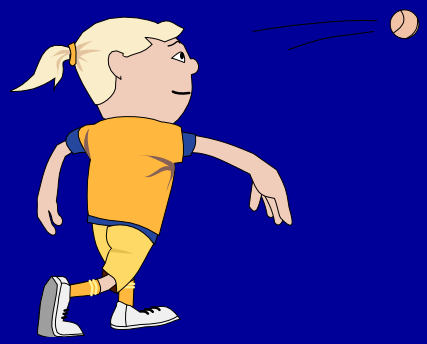
- Spiritual health is related to soul or spirit which though a separate and a distinct entity is an essential ingredient of human life and personality

DETERMINANTS OF HEALTH

Personal	Genetic Endowment Positive Attitude Health Awareness Healthy Life Style
Environmental	Healthy family environment Healthy physical environment Healthy social environment Healthy occupational environment
Governmental	Socio - Economic Development Appropriate Health Care Services political commitment

Physical Fitness Includes

- Skill-Related Fitness
- Health-Related Fitness



the ability to carry out daily tasks with vigor and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and meet unforeseen emergencies. It is the ability to withstand stress and preserve under difficult circumstances where an unfit person would quit. Implied in this is more than lack of illness. It is a positive quality that everyone has to some degree. Physical fitness is minimal in the severely ill and maximal in the highly trained athlete.

Skill-Related Fitness Components

- Agility
- Balance
- Coordination
- Power
- Reaction time
- Speed

Health-Related Fitness Components

- Aerobic Fitness
- Muscular Strength and Endurance
- Flexibility
- Body Composition

Agility

Agility is the ability of the performer to change the position of their body quickly, whilst keeping their entire body under control.

Agility is especially important in sports like fencing and squash that require quick and precise movements.

BALANCE

Balance is the ability of the performer to retain their centre of mass over their base of support.

static – for example, standing on one leg

dynamic – for example, keeping your balance on a bike as it goes round a corner.

What type of balance does a surfer need?

BALANCE TEST

Wobble Board: Using a wobble board or cushion, balance for as long as possible. Tests can be conducted on one leg, or both as long as subsequent tests are the same.

Stork Test: Stand on one leg with the free foot positioned just below the standing knee. Raise the heel of the standing foot and hold for as long as possible.

Coordination

Coordination is the ability of the performer to move two or more body parts accurately and smoothly in response to stimuli from the senses.

Coordination allows you to produce complex actions from a number of smaller movements.

For example, an effective tennis stroke requires coordinating footwork and arm action.

REACTION TIME

Reaction time is the amount of time it takes for a performer to initiate movement after the presentation of a stimulus.

For example, how quickly a table tennis player reacts to a wide serve from their opponent.

The faster they react, the better their chance of making the return.

A **stimulus** could be anything from a starting gun to a sudden side-step by an opponent, or a shout from a teammate.

Reaction Time Test

Ruler Drop: Using a meter ruler, get a friend to hold the ruler so that the 0cm line is level with and in between your open index finger and thumb. The friend drops the ruler and you must catch it as soon as possible, between your finger and thumb. The cm mark on the ruler closest to the top of the thumb is your score. The faster your reaction, the less of the ruler will pass through!

Power

Power is a combination of strength and speed – it is the ability to do strength performances quickly.

power = strength × speed

Power is important in explosive events like throwing and sprinting.

Power is vital to getting a good start in short races.

POWER TEST

Vertical Jump Test: Standing sideways on to a wall with the arms raised above you, mark the highest point you can reach. Still standing sideways, jump as high as you can, marking the point you can reach. Your score is the difference between your standing and jumping score. This test measures the power in your leg muscles.

Standing Long Jump: Start behind a starting line, jump from two feet and land on two feet as far as possible. You may use your arms to aid you.

Speed

Speed is the rate at which a performer is able to perform a movement or cover a set distance.

It could be how fast a badminton player can move their racket to cover a drop shot, or how fast an athlete can run 1,500 m.

Speed is very important in many sports – it can often be the thing that separates a good performer from a great performer.

Speed test

30m Sprint: Acceleration must be eliminated and so a flying start of 20m is recommended. Record the time between metres 20 and 50.

Aerobic Fitness

The ability to perform large muscle, dynamic, moderate- to high-intensity exercise for prolonged periods

Aerobic Endurance Test

Cooper Run: Following a 10 minute warm-up, run as far as you can in 12 minutes. Record the distance travelled to the closest 100m.

Multi-Stage Fitness Test (Bleep Test): For this test you need a bleep test tape or cd which has recorded 'bleeps' at pre-determined intervals. The participants must run between 20m markers, in time with the tape. The bleeps get faster as the tape progresses and is divided into stages to help monitor your progress at subsequent tests. The test finishes when you can no longer reach the end marker before the bleep.

MUSCULAR FITNESS

In the Physical Best program, muscular fitness refers to the development of a combination of muscular strength and muscular endurance

Strength:

One Rep Max: The heaviest weight you can lift for a single repetition, on a given exercise. Often abbreviated to 1RM. Ten rep max can also be used. Ensure you are fully warmed up prior to attempting to lift your estimated 1RM. If you feel you could have lifted more, do not attempt to do so on the same day as your muscles will be faitgued and so reduce the reliability of the test.

Local Muscular Endurance Test

Press-up Test: Perform as many press-ups as you can without rest. This test measures the endurance of your upper body muscles.

Sit-up Test: As above, repeated as many sit-ups as possible without rest. Make-sure you define before-hand what counts as a sit-up! This process of fatiguing a muscle (or muscle group) to measure its endurance can be repeated with any body part.

BODY COMPOSITION

Percentage of fat and nonfat tissue in the body. Fat free mass and percent body fat (%BF) are typically frequently reported values from a body composition assessment.

Person Body Fat refers to percentage of the total weight compost of the fat tissue. Calculated by dividing fat mass by total weight

Lean Body Mass – weight of fat free tissues and essential , life sustaining lipids

Fat Free Mass – weight of the nonfat tissues of the body

BODY COMPOSITION TEST

Skin Fold Callipers: These can be used to determine the percentage of body fat an athlete has. It involves taking four (or sometimes 6) measurements from the biceps, triceps, suprailiac (just above the pelvis bone on the back) and subscapular (just below the shoulder blade). These 4 measurements can then be calculated to give an estimate of the total percentage body fat.

Bioelectrical Impedance Analysis: A far more accurate method of measuring body fat percentage. Two Electrodes are placed on a hand and the foot on the same side, whith the subject laying down. A safe electrical current is passed through the body. The speed of the current in moving from hand electrodes to the foot determines body fat percentage as fat is an insulator and slows down the movement of the current

FLEXIBILITY

The ability to move a joint through its complete ROM, or range of motion

Flexibility test

Sit & Reach Test: To assess the flexibility of the hamstrings. You will need either a special sit & reach table, or a bench and ruler/tape measure. Start with your feet flat against the table and your knees straight. Reach your arms as high as possible above your head and then lead forwards, to reach as far along the bench/table as possible. The furthest point your fingertips reach is your score. A specialist table has an overhang of 15cm and so if using a bench and ruler, a score of 10cm equals 25cm.

Calf Flexibility Test: Stand facing a wall and bend the knees to touch the wall whilst keeping the heels flat on the floor. Keep moving back to find the furthest distance away from the wall where you can still touch the wall with your knees. Measure the distance from the wall to the heel.

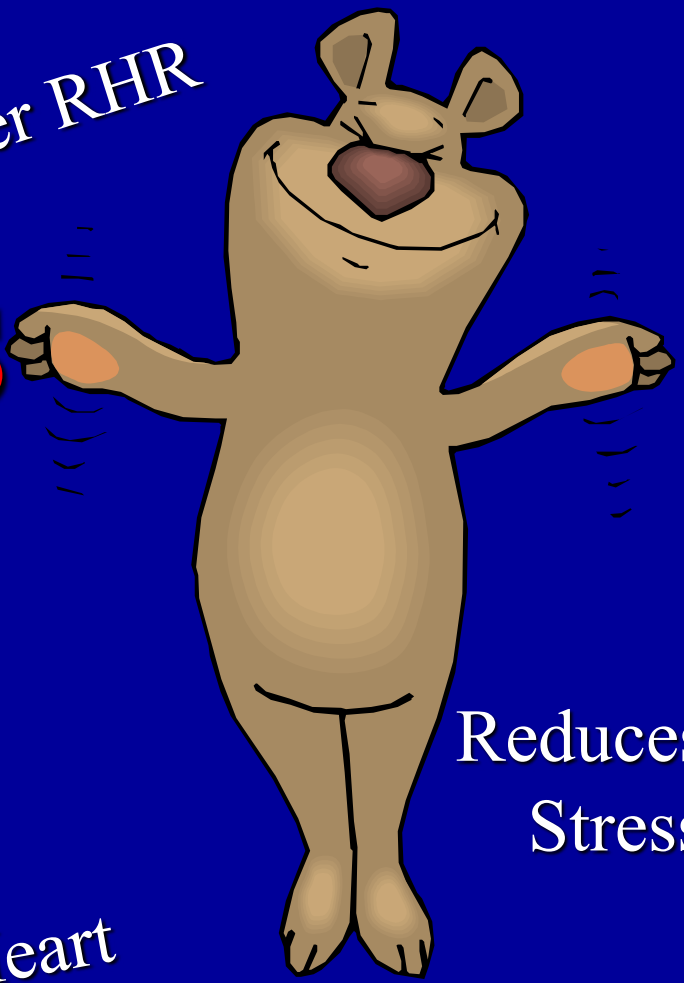
BENEFITS OF FITNESS

Reduces Risk of Heart Disease

Stronger Bones & Muscles

Lower RHR

More Energy



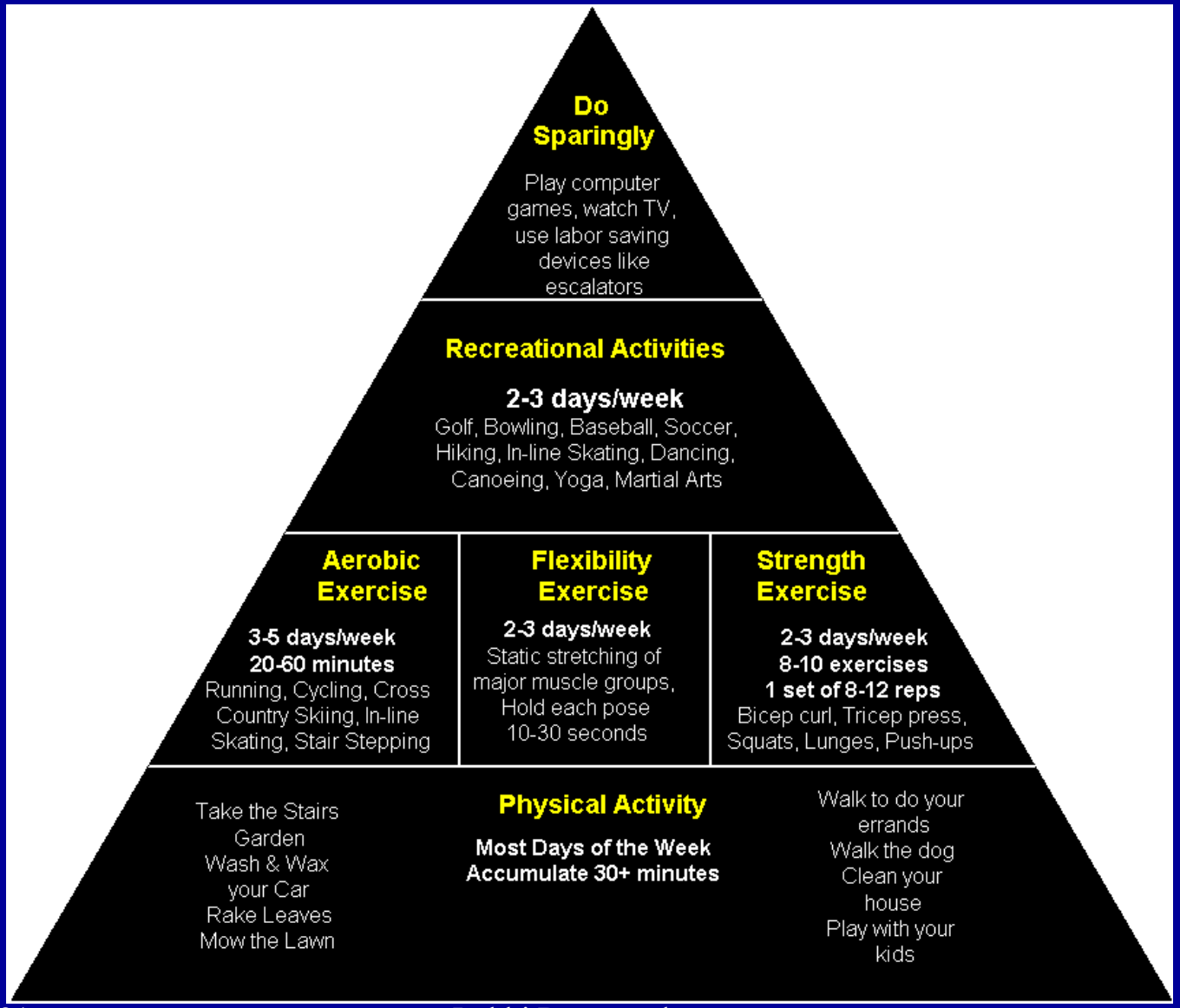
Reduces Stress

Lower Blood Pressure

Strengthen Heart

Helps Maintain Healthy Body Weight

PHYSICAL FITNESS PYRAMID



Health Benefits of Exercise and Physical Activity

- Reduce the risk of premature death
- Reduce the risk of developing and/or dying from heart disease
- Reduce high blood pressure or the risk of developing high blood pressure
- Reduce high cholesterol or the risk of developing high cholesterol
- Reduce the risk of developing colon cancer and breast cancer
- Reduce the risk of developing diabetes
- Reduce or maintain body weight or body fat
- Build and maintain healthy muscles, bones, and joints
- Reduce depression and anxiety
- Improve psychological well-being
- Enhanced work, recreation, and sport performance

Benefits of Strength Training

- Increased muscular strength
- Increased strength of tendons and ligaments
- Potentially improves flexibility (range of motion of joints)
- Reduced body fat and increased lean body mass (muscle mass)
- Potentially decreases resting systolic and diastolic blood pressure
- Positive changes in blood cholesterol
- Improved glucose tolerance and insulin sensitivity
- Improved strength, balance, and functional ability in older adults

ABDOMINAL STRENGTH METHODOLOGY

- Curl-up

TRUNK EXTENSOR STRENGTH METHODOLOGY

- Trunk Lift

UPPER BODY STRENGTH METHODOLOGY

- 90^0 Push-up

FLEXIBILITY METHODOLOGY

- Back Saver Sit-and-Reach