

HOW TO TRAIN YOUR SELF: A GUIDE

GURSHARAN SINGH GILL

Assistant Professor, Khalsa college Patiala, Punjab, India

ABSTRACT

The purpose of this study was to understand the difference between physical fitness components and health related fitness components. However, they are often confused with one another, and the terms are sometimes used interchangeably. This paper proposes definitions to distinguish them. Physical fitness components is defined as any bodily movement produced by skeletal muscles that results in energy expenditure. The energy expenditure can be measured in kilocalories. Physical activity in daily life can be categorized into occupational, sports, conditioning, household, or other activities. Exercise is a subset of physical activity that is planned, structured, and repetitive and has as a final or an intermediate objective the improvement or maintenance of physical fitness. Physical fitness is a set of attributes that are either health- or skill-related. The degree to which people have these attributes can be measured with specific tests. These definitions are offered as an interpretational framework for comparing studies that relate physical activity, exercise, and physical fitness to health.

Keywords: Fitness, Endurance, Components and Health

INTRODUCTION:

Fitness is defined as the quality of being suitable to perform a particular task. Around 1950, perhaps consistent with the Industrial Revolution and the treatise of World War II, the term fitness increased in western vernacular by a factor of ten. Modern definition of fitness describe either a person or machine's ability to perform a specific function or a holistic definition of human adaptability to cope with various situations. This has led to an interrelation of human fitness and attractiveness which has mobilized global fitness and fitness equipment industries. Regarding specific function, fitness is attributed to personnel who possess significant aerobic or anaerobic ability, i.e. strength or endurance. A holistic definition of fitness is described by Greg Glassman in the Cross Fit journal as an increased work capacity across broad times and modal domains; mastery of several attributes of fitness including strength, endurance, power, speed, balance and coordination and being able to improve the amount of work done in a given time with any of these domains. A well rounded fitness program will

improve a person in all aspects of fitness, rather than one, such as only cardio/respiratory endurance or only weight training.

Fitness is a topic that may be touchy for some and exciting for others. In either case, it is an important addition to everyday life. Fitness reaches far and wide and is done in many ways, ranging from grinding it out in the gym to taking the stairs at work instead of the elevator. Fitness is useful for everyone; it keeps athletes in good condition to perform well and keeps the everyday person in good health. There are a wide number of benefits which can be attained from a fitness routine and here are a few examples:

- 1. Strengthens the immune system to ward off disease*
- 2. Helps with managing stress and lowers risk of depression*
- 3. Makes the heart stronger and promotes healthy circulation*
- 4. Helps maintain a healthy body composition*
- 5. Keeps the body's organs vital and promotes longevity*
- 6. Reduces fatigue from everyday tasks*
- 7. Helps healthy bones, muscles, and joints*

Before starting a fitness routine, a few things must be considered. The first and foremost thing to consider is safety, it wouldn't be wise for a 65 year old with heart problems to jump out of bed and run a marathon. In order to start a routine, it is best to start out at a comfortable level if you're a beginner, because trying to push yourself too hard too fast will only result in a failed effort and have no benefits in the long run.

PHYSICAL FITNESS

Physical fitness is a general state of health and well-being and, more specifically, the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, moderate-vigorous physical activity, exercise and rest. It is a set of attributes or characteristics seen in people and which relate to the ability to perform a given set of physical activities.

Before the industrial revolution, fitness was the capacity to carry out the day's activities without undue fatigue. However with automation and changes in lifestyles physical fitness is

now considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypo kinetic diseases, and to meet emergency situations.

IMPORTANCE OF FITNESS

- ✚ prevention and treatment of high blood pressure
- ✚ control of body weight
- ✚ reduction in the chance of developing certain cancers, for example colon cancer
- ✚ enhancement of the immune system
- ✚ reduction in the chance of developing cardiovascular diseases
- ✚ • reduction in the chance of developing depression, and increase in confidence and self-esteem.

The 11 components of physical fitness are comprised of 5 components that are considered the “most important” for being healthy and physically fit and 6 components that are more skill-related.

The **5 components of physical fitness** that are most important, directly related to one's health, and can be directly measured are: *cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition*. These 5 components of fitness are typically taught and measured in elementary, secondary/middle, and high school physical education classes all around the world. Fitness centers, gyms, and health clubs use these health-related components of physical fitness to measure clients fitness levels in order to prescribe the appropriate exercise program for each individual.

Then there are **6 components of physical fitness** that are more skill-related and/or sports-related. These include: *agility, balance, coordination, power, reaction time, and speed*. These skill-related components of physical fitness are directly related to sports and daily activities. These components can be measured and improved using very specific training techniques.

There are two types of components of fitness:

Health and Skill

HEALTH RELATED FITNESS COMPONENTS

1. Cardiovascular Fitness

2. Muscular Strength

3. Muscular Endurance

4. Flexibility

5. Body composition

SKILL RELATED FITNESS COMPONENTS

1. Agility

2. Balance

3. Coordination

4. Power

5. Reaction Time

6. Speed

Five Components of Health Related Fitness

This type of physical fitness is primarily influenced by an individual's exercise habits; thus, it is a dynamic state and may change. Physical characteristics that constitute health-related physical fitness include strength and endurance of skeletal muscles, joint flexibility, body composition, and cardiorespiratory endurance. All these attributes change in response to appropriate physical conditioning programs, and all are related to health. Overall fitness is made up of five main components. In order to assess your level of fitness, look at all five components together.

CARDIO-VASCULAR ENDURANCE

It is the ability of the circulatory and respiratory systems to supply oxygen during sustained physical activity. To improve your cardio-vascular endurance, try activities that keep

your heart rate elevated at a safe level for a sustained length of time such as walking, swimming, or bicycling. The activity you choose does not have to be strenuous to improve your cardio-respiratory endurance. Start slowly with an activity you enjoy, and gradually work up to a more intense pace. Cardiovascular endurance can be measured indoors by performing a 3 minute step test or by stress tests on a treadmill or stationary bike. Cardiovascular endurance can also be measured by field tests such as Cooper's 12-minute Run, the 1.5 Mile Run, the 600 Yard Walk/Run, or a Shuttle Run. A cross-country running race, running a marathon, jumping rope, high-intensity circuit training, or manipulating your way through an obstacle course. Running a marathon is a great example of cardiovascular endurance.

MUSCULAR ENDURANCE

It is the ability of the muscle to continue to perform without fatigue. Muscular endurance is the ability of the muscle to continue to perform without fatigue. To improve your muscle endurance, try cardio-respiratory activities such as walking, jogging, bicycling, or dancing. Muscular Endurance can be measured by a 60 second push-up test or 60 second half sit-up or crunch test. Examples of muscular endurance: Long-distance cycling, using a rowing machine or crewing, or doing push-ups until fatigue has been reached. A long-distance cycling race is a good example of muscular endurance.

MUSCULAR STRENGTH

Muscular strength is the ability of the muscle to exert force during an activity. The key to making your muscles stronger is working them against resistance, whether that be from weights or gravity. If you want to gain muscle strength, try exercises such as lifting weights or rapidly taking the stairs. Muscular Strength can be measured by performing a 1 repetition maximum (RM) test or a 10 RM test on a chest press in order to test upper body strength. Other ways of testing strength can be done by using a dynamometer, cable ensiometer, load cells or strain gauges, or various strength exercises, such as how many pull-ups, push-ups, or biceps curls an individual can do. Examples of muscular strength exercises: Performing a bench press, squats, pull-ups, biceps curls, or lunge pictured below. The walking lunge is a great way to improve muscular strength, balance, and coordination. It helps to:

- To maintain good posture in old age
- To maintain an independent lifestyle, for example being able to climb the stairs at home
- To avoid certain types of injuries – for example back injuries
- To co-ordination while moving – for walking and running.
- In relation to sport, strength is vital for a number of activities, such as: weightlifting – to lift a heavy weight, boxing – to produce a powerful punch , gymnastics – for example, upper body strength is important to maintain a handstand.

FLEXIBILITY

It is the ability to bend and move the joints through the full range of motion. Good flexibility in the joints can help prevent injuries through all stages of life. If you want to improve your flexibility, try activities that lengthen the muscles such as swimming or a basic stretching program. Good flexibility allows you to pick up the shopping bags from the floor or to reach for something. The most common tests for flexibility include the Sit-and-Reach Test and the Shoulder Joint Reach Flexibility Test. Examples of flexibility include: a gymnast doing a leg split, a hockey goalie reaching with arms and/or legs to save a goal, someone doing yoga, or bending over to touch your toes. There are three techniques that can be used to increase one's flexibility: ballistic stretching, static stretching, and proprioceptive neuromuscular facilitation.

1. Ballistic stretching is a short-duration, high-force stretch that uses bouncing movements to stretch muscles. Ballistic stretching is a high-risk injury type of stretching and is not recommended to the general public.
2. Static stretching is the most common type of stretching that uses slow and steady movements that takes a muscle to a point of slight tension and then force is slowly applied to produce a greater stretch.
3. Proprioceptive Neuromuscular Facilitation (PNF) stretching is more advanced and requires force applied against the stretching muscle while incorporating an isometric contraction on either the muscle being stretched or its opposite. This advanced type of stretching should be done with a professional fitness trainer or physical therapist.

The health and lifestyle benefits associated with a good level of flexibility are:

- + improvement of posture
- + prevention of lower back pain
- + maintenance of healthy joints
- + reduction in the risk of injury
- + better dynamic balance (balance while moving)
- + reduction in muscle soreness after exercise
- + increased blood flow and nutrients to the joints.

BODY COMPOSITION

It is a high ratio of lean tissue to fat tissue in the body. Body composition refers to the relative amount of muscle, fat, bone, and other vital parts of the body. A person's total body weight may not change over time. Body Composition can be measured by skinfold calipers, waist-to-hip ratios, circumference measurements, bioelectric impedance, and hydrostatic weighing. Hydrostatic weighing is the best way to determine one's body fat percentage, followed by skinfold calipers, and bioelectric impedance. Body composition is a health-related component of physical fitness. In addition to body composition, individuals should know their body mass index (BMI) as well.

SKILL AND SPORTS RELATED FITNESS COMPONENTS

There are six skill related components of fitness. These are Agility, Balance, Coordination, Power, Reaction Time, Speed. These are important fitness components, not just for sporting ability, but for use in everyday life. In times of illness, or in ageing, these components are often features of our lives that fail and their levels are reduced. Exercise and activities that promote skill components of fitness are therefore very important at all ages.

AGILITY

The ability to stop, start, and change directions quickly. One's agility can be increased by doing specific footwork drills on an agility ladder, staggered tire formation, or any other type of obstacle course that requires the individual to adjust body position, speed, and direction quickly. Pictured below is a good example of an agility sprint test. Agility can be tested by timing

individuals running through a series of staggered cones or obstacles for a predetermined distance. Examples of agility: A football player cutting across the field, a gymnast doing a floor routine, a hockey player bringing the puck down the ice maneuvering around defenders, or a soccer player dribbling the ball around defenders.

BALANCE

Controlling body positions while standing still or moving. Balance can be tested by standing on one leg with eyes closed for 30 seconds on each leg or by performing the Y-Balance Test. Balance can be improved by increasing one's overall core strength. Specific training techniques using exercise equipment such as balance discs, Fit-Balls, or standing on one leg while performing an exercise can help to improve one's balance. Examples of balance: A gymnast jumping and landing on a balance beam, a surfer on a surfboard riding a wave, a one leg deadlift pictured above, equestrian events, or simply jumping around on one foot.

COORDINATION

Making movements work together smoothly. This usually consists of upper and lower body movements being performed at the same time. Coordination can be improved by performing exercises that require the individual to use upper body muscle groups and lower body muscle groups at the same time. Coordination can be tested with a variety of manual dexterity tests and hand/eye coordination tests. One example of such test is balancing on one leg and throwing a tennis ball against a wall and catching the returning ball in the opposite hand. Examples of coordination: a baseball pitcher throwing a pitch, a pole vaulter or a high hurdler in track and field, or jumping rope.

POWER

The ability to use muscle strength quickly. How can power be improved or increased? Power can be increased by three general ways: increase the force-producing capabilities of muscles; decrease the time it takes to move across a distance due to faster speed; and increase the distance a force acts on one's body. Total body strength training, increased flexibility through stretching, sport specific training and improved technique, sharp mental focus, and increased reaction time are many ways to improve overall power. Power can be tested by

performing a vertical jump test or standing long jump. Examples of power: Plyometric training (such as jump squats or box jumps), jumping exercises, or in track and field- the running long jump or high jump. The Vertical Jump Test is a good way to test one's power.

REACTION TIME

How quickly an individual responds to a stimulus. Reaction time can be tested in a variety of ways. A simple test is a Reaction Time Ruler Test. Examples of reaction time: playing tennis or table tennis, a baseball player swinging at a pitch, sprinters starting a 100 meter sprint, or a soccer goalie saving a ball kicked at the goal. A soccer goalie saving a goal is an excellent example of reaction time and reaction time is sprinters reacting to the start gun to begin a race. A Ruler Reaction Test is a simple and fun way to test one's reaction time.

SPEED

Performing a movement or covering a distance in a short period of time. Speed can be measured by timing a 40-yard dash, 30 meter sprint, or the Illinois Agility Test. Individuals can increase speed by sprinting down hill or wearing a small parachute or weighted vest on your back while sprinting. examples of speed: the summer olympics 100 meter sprint, swimming 50 meters as fast as possible, or speed skating.

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