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# HEALTH RELATED FITNESS AND ITS IMPACT ON SPORTS PERFORMANCE

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## ABSTRACT

*Regular exercise and physical activity promotes strong muscles and bones. It improves respiratory, cardiovascular health, and overall health. Staying active can also help you maintain a healthy weight, reduce your risk for type 2 diabetes, heart disease, and reduce your risk for some cancers. Aerobic exercise, like running and swimming, appears to be best for brain health. That's because it increases a person's heart rate, "which means the body pumps more blood to the brain," says Okonkwo. But strength training, like weight lifting, may also bring benefits to the brain by increasing heart rate. Health related physical fitness is primarily oriented towards systematic development of motor abilities and their manifestation through sports skills. Health related physical fitness help to improve sports performance. In Sports performance stamina, muscle strength, and body movement is important. It is develop by physical fitness training. Health-related components focus on factors that promote optimum health and prevent the onset of disease and problems associated within activity.*

## INTRODUCTION

To improve health and fitness effectively through physical activity or exercise, we need to understand how this comes about. For many of these changes, the stimulus has been grossly defined in terms of type, intensity, duration, and frequency of exercise, but for others a dose-response relationship has not been determined. Physical activity that appears to provide the most diverse health benefits consists of dynamic, rhythmical contractions of large muscles that transport the body over distance or against gravity at a moderate intensity relative to capacity for extended periods of time during which 200 to 400 kilocalories (or 4 kilocalories per kilogram of body weight) are expended. For optimal health benefits, such activity should be performed daily or at least every other day and should be supplemented with some heavy resistance and flexibility exercises. The greatest benefits are achieved when the least active individuals become moderately active; much less benefit is apparent when the already active individual becomes extremely active. Overexertion or inappropriate exercise can produce significant health risks. Research is needed to characterize better the health-promoting features of physical activity and exercise.

Sports performance is to enhance one's performance in competition and increase one's potential for success in a chosen sport or everyday activity. Sports performance is the execution of specific physical routines or acts by an athlete while participating in a sport or activity.



**Components of health related fitness :****Health related fitness divided into five parts****Cardiovascular Endurance**

Cardiovascular fitness is the ability of the heart (cardio) and circulatory system (vascular) to supply oxygen to muscles for an extended period of time. Cardiovascular is also called cardiorespiratory (lungs) fitness. Usually the mile run or some other type of continuous fitness activity (12 minute run, cycling, step-test, etc.) is used to assess

Cardiovascular fitness. Cardiovascular, which is synonymous with cardiopulmonary exercise or "Cardio", is aerobic physical activities that last longer than 90 seconds. Cardiovascular or cardiopulmonary endurance is your physical ability to maintain aerobic exercise for prolonged periods of time. Physiologically, cardiovascular endurance deals with the efficiency of your body's (heart, lungs and vascular system) ability to transfer oxygen rich blood to your working muscles during activities that last longer than 90 seconds.

**Important of Cardiovascular Endurance**

Life without exercise or physical Fitness contributes to the early onset and progression of life style disease such as cardiovascular disease, hypertension, diabetes and obesity.

The importance of cardiovascular fitness to health for all individuals has been well documented. Physical fitness is a required element for all the activities in our life. Cardiovascular fitness of an individual is mainly dependent on lifestyle related factors such as daily physical activity levels. It was believed that the low cardiovascular fitness level of an individual is associated with higher mortality rate. (jourklesh et.al.2012). Cardiovascular endurance is very important because the more cardiovascular fit you are, the healthier your lungs, heart and vascular system is. While exercising this may be obvious to you but there is more. If you demonstrate high levels of cardiovascular endurance during exercise you also have more efficient heart, lungs and vascular system while at rest which takes up the bulk of your time. This means less stress is put on your heart and lungs around the clock which enables you to avoid illness and live a long healthy life. Many argue that cardiovascular endurance is the most important of the 5 components to physical fitness.

In sports cardiovascular endurance is important for improves your posture and health, Enhances stamina which improves your performance ability, Boosts your immune system and reduces the risk of injury, Increases oxygen supply to muscles – efficient functioning Improves your anaerobic ability, Reduces the risk of fatigue, enhances concentration and reduces stress levels.

**MUSCULAR STRENGTH**

Muscular strength refers to the maximum amount of force a muscle can exert against an opposing force. Fitness testing usually consists of a one-time maximum lift using weights (bench press, leg press, etc.). Muscular strength is the amount of force your muscle can exert against resistance for short duration, anaerobic (without oxygen) activities. Resistance includes external objects such as free weights or household objects as well as your own body weight. Physiologically, muscular strength it is the ability to your body to supply ATP (Adenosine Tri-Phosphate or muscle energy) to your muscle fibers for concentric, eccentric and isometric contractions in short times, which range from 0 to around 15 seconds.



## **IMPORTANT OF MUSCULAR STRENGTH**

While muscular strength may be subjective, the primary reason why muscular strength is important is your efficiency at Activities of Daily Living (ADLs). ADLs one of the most important reasons why being proficient at all 5 components of physical fitness is important. At the very least, to be physically fit for in the muscular strength department, you should demonstrate the basic muscular strength needed to efficiently your ADLs. While ADLs vary from person to person, you can also consider activities such as push-ups, pull-ups and carrying heavy objects as ADLs. Even though each of the 5 components of fitness depends on one another, poor muscular strength can also affect aerobic fitness and muscular endurance negatively.

Muscular strength can enhance the ability to perform general sport skills such as jumping, sprinting, and change of direction tasks. Muscular strength allows an individual to potentiate earlier and to a greater extent, but also decreases the risk of injury. Greater muscular strength when it comes to improving an individual's performance across a wide range of both general and sport specific skills while simultaneously reducing their risk of injury when performing these skills.

In sports muscular strength is important for increase your ability to do performance in sports without getting tired, Reduce the risk of injury, Help you keep a healthy body weight, Lead to healthier, stronger muscles and bones and Improve confidence and how you feel about yourself.

## **MUSCULAR ENDURANCE**

Muscular endurance refers to the ability of the muscle to work over an extended period of time without fatigue. Performing pushups and sit-ups or crunches for one minute is commonly used in fitness testing of muscular endurance. While muscular strength deals with short duration muscle contractions muscle endurance deals with sustained muscle contractions and other anaerobic activities lasting less than about 90 seconds. Muscular endurance is the bridge between muscular strength and cardiovascular endurance. In order to be cardiovascular fit, you must demonstrate muscular endurance. Physiologically while muscle strength deals primarily with type II, fast twitch muscle fibers, muscular endurance deals with primarily type I, slow twitch muscle fibers. Your body contains both but only anaerobic exercises which last longer than around 15 seconds and less than 90 seconds strengthen your type I muscle fibers.

In sports muscular endurance is important for helping maintain good posture and stability for longer periods, improving the aerobic capacity of muscles, improving the ability to carry out sports performance activities, increasing athletic performance in endurance-based sports.

## **FLEXIBILITY**

Flexibility is the range of motion possible for each of your joints or groups of joints. To some degree, your flexibility determines how efficiently your muscles are. Increased flexibility has also been associated with decreased risk of acute and chronic (overuse) injuries. Poor flexibility can directly affect cardiovascular endurance, muscle strength and muscular endurance. Physiologically flexibility can include extra-muscular (range of motion at a joint) and intramuscular factors such as hyper tonicity (knots) within the muscles themselves.

Flexibility is important for completing sports activities with ease, increased joint mobility, better posture, decreased back pain and a lower risk of injury. Improved performance of daily sport performance activities, Improved performance in sport, Enhanced joint health, Relief of pains. Relief of muscle cramps, Relaxation and stress relief (mental and physical), Improved posture and balance.



## **BODY COMPOSITION**

Body composition is the percentage of your body's tissues which you exhibit. The easiest way to look at body composition is with a 2 compartment analysis which estimates the amount of body fat you have with lean body mass which includes muscle, bone, water, and organs. It takes expensive equipment for a 3 compartment analysis which isolates bone mass which can also be considered an important part of body composition. You could say body composition depends on the other components of physical fitness. Having a poor body composition has many negative physical and psychological effects such as increased chance of a host of chronic diseases and depression. As mentioned previously, improper exercise habits and choices can not only lead to being overweight and obesity, but decreased bone mass associated with osteopenia and osteoporosis.

## **NEED OF PHYSICAL FITNESS**

Regular physical activity can improve your muscle strength and boost your endurance. Exercise delivers oxygen and nutrients to your tissues and helps your cardiovascular system work more efficiently. And when your heart and lung health improve, you have more energy to tackle daily chores. Regular physical activity can help children and adolescents improve cardio respiratory fitness, build strong bones and muscles, control weight, reduce symptoms of anxiety and depression, and reduce the risk of developing health conditions. Exercise can help provide: Sharper memory and thinking. The same endorphins that make you feel better also help you concentrate and feel mentally sharp for tasks at hand. Exercise also stimulates the growth of new brain cells and helps prevent age-related decline

## **IMPACT ON SPORTS PERFORMANCE**

Health related physical fitness training can improve stamina, strength, body movement and body posture. Physical fitness leads to better athletic performance, and persistent training will usually develop physical fitness. Ability of the endurance athlete to use oxygen is related to circulatory and respiratory capacity, but in sprints, weight lifting, and swimming there are many other important specifics. In sports, good physical fitness can increase the efficiency of learning sports skills, but also can reduce the incidence of injuries and accidents caused by the movement. Maintain and improve sports performance by health related physical fitness training.

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