
PHYSICAL FITNESS AS ASPECT OF TOTAL FITNESS

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MOTOR FITNESS

The terms 'fitness', 'physical fitness' and 'motor fitness' are often used interchangeably, though these have slightly different meanings and connotations. Fitness has a broader meaning which includes not only physical fitness but anatomical, psychological and physical fitness too. Thus, fitness is not a matter of mere muscles. Neither, it is a matter of physical capacity alone. It includes the realms of mental, moral, social and emotional fitness as well. According to American Association for Health, Physical Education and Recreation (1965). Fitness is that state which characterizes the degree to which a person is able to function efficiently. Fitness is an individual matter. It implies the ability of each person to live most effectively with his potentialities. Ability to function depends upon the physical, mental, emotional, moral and spiritual components of fitness, all of which is related to one another and are mutually inter-dependent.

The definition given by AAHPER clearly implies that one should view physical fitness only as a part or aspect of total fitness. The definition of physical fitness only as a part or aspect of total fitness. The definition of physical fitness as given by Clarke (1966) makes it amply explicit. According to him "physical fitness is the ability to carry out daily tasks with vigour and alertness without undue fatigue and with ample energy to enjoy leisure time, pursuits and to meet unforeseen emergencies". Thus, physical fitness is the ability to last, to bear up, to withstand stress and to reserve energy to face situations under difficult circumstances where an unfit person would quit? It is the opposite of becoming fatigued from ordinary efforts, to lacking energy to enter restfully into life's activities, and to becoming exhausted from unexpected, demanding physical exertion. This definition implies that physical fitness is more than "not being sick or merely being well". Clarke (1966) opined that motor fitness is different from immunity to disease. It is a positive quality extending on a scale from death to abundant life.

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TOTAL HEALTH, FITNESS, AND WELL-BEING

Today, with an astounding number of reports about **increasing obesity rates, diseases and conditions related to being overweight** and out-of-shape, it is impossible to ignore the importance of fitness and well-being in our lives. Health professionals attribute cancer, diabetes and mental issues such as depression to deficiencies in fitness and well-being.

While concentrating on exercise and diet can help people suffering from these diseases, you shouldn't wait until you develop an illness to begin a health and fitness routine. Recent studies have identified as many as **75% of adults as overweight or obese**. Only about 26% of American adults participate in vigorous physical and/or leisure activities three or more times a week.

Obese people have a 10–50% increase in premature deaths from all causes compared to individuals with a healthy body weight. The majority of these premature deaths are attributed to **cardiovascular causes**.

However, diabetes rates are climbing in parallel with these obesity statistics. The five years between 1997 and 2002 saw a 27% increase in the number of diabetes cases. In addition, while diabetes is affecting more and more individuals, it is also affecting individuals at a younger age as well.

With the constant threat of numerous health issues caused by obesity, it is obvious that everyone should be conscious of their personal fitness and mental well-being. The only way to achieve a healthy and fit lifestyle is to make the necessary changes to your everyday life. These changes **do not have to be drastic** to begin with, and should be things you enjoy and look forward to doing. The most important thing is to make an effort at improving all areas of your personal fitness and well-being, even if changes are gradual.

As introduced at the beginning of this section of our website, there are seven key components associated with the physical and mental aspects of health, fitness and mental well-being. Each contributes to overall health and fitness in its own way. To achieve total physical health and fitness, you must be aware of and work at achieving each of the seven key components. **The seven key physical components to overall good health, fitness and mental well-being are:**

1. Cardiovascular/Aerobic Conditioning
2. Strength Training and Muscular Development
3. Stretching - Muscles, Ligaments and Tendons

4. Core Stability
5. Nutrition and Supplementation
6. Mental Rest and Relaxation
7. Sleep

Cardiovascular and Aerobic Conditioning

Beneficial aerobic activities are defined as exercises that **raise your heart rate to your target heart rate and maintain that level for a minimum of 20 minutes**. While the most important aspect of aerobic exercise is sustained cardiovascular activity, there is an optimal heart level you should target.

For a cardiovascular workout, 70–85% of your maximum heart rate is the ideal range. Your maximum heart rate will depend on your age. You can easily find this number and pick your target heart rate based on your fitness level.

Aerobic exercise has many benefits. In combination with a healthy diet, it helps you **lose weight and keep it off**, reducing all the risks associated with being overweight. It strengthens your heart so it doesn't have to beat as fast, lowers blood pressure and reduces bad cholesterol, lessening the risk of heart attack. Aerobic conditioning also **controls blood sugar**, helping to manage diabetes. For additional information related to cardiovascular and aerobic conditioning please see our top level section entitled [Cardiovascular](#).

STRENGTH TRAINING AND MUSCULAR DEVELOPMENT

Strength training is a musculoskeletal exercise type that **progressively increases the resistance muscles can overcome**. Over time, this enlarges and strengthens the muscle themselves. Strength training improves your health in several ways. More muscle mass **increases your metabolism**, helping you burn more calories. This makes it easier to control your weight. Stronger muscles reduce the risk of injury during daily activities or other exercise.

Weight training also helps bone health. **Bone density** is at its height at about age thirty. By stressing the muscles, strength training increases bone density,



which reduces the risk of developing osteoporosis and fractures.

Without regular strength training, you are probably losing muscle mass right now. **A person loses half a pound of muscle every year after age 20, if not actively training.** This rate of loss doubles after the age of 60. If you are not actively working on muscular development, you are losing the benefits associated with your metabolism and increasing the risk of injury due to strain and over-exertion.

Strength training and muscular development are critical to true health and fitness. Hence, we have dedicated an entire section of our website, [Weight Training](#), to articles related solely to these areas of physical fitness.

Stretching - Muscles, Ligaments and Tendons

Stretching is another important component of your fitness and well-being. Stretching should be done along with weight training or aerobic exercise **at least three times a week.**

In addition, stretching should be done when muscles, tendons and ligaments are properly warmed up. This means it is best to stretch just after a brief physical



warm-up routine. **You should hold each stretch for a minimum of 30 seconds and extend to the point of tension, but stop before pain.**

Stretching works by increasing the muscles', ligaments' and tendons' ability to elongate. By taking the time to stretch, and hence elongate your soft tissue, you can **increase your flexibility.**

While most exercises tend to tighten muscles, ligaments and tendons, stretching assists in keeping them flexible. This makes daily activities and exercise easier and safer. Stretching also improves your range of motion. Good range of motion makes moving limbs in their joints easier, including ones that could prevent or lessen the severity of falls or accidents.

Flexibility and the elongation of your body's soft tissue will also improve blood circulation. This, in turn, will keep your muscles, ligaments and tendons **supplied with oxygen** so that they are able to recover more quickly from workouts or injury. Finally, stretching can **relieve stress** by relaxing the tense muscles that often accompany mental tension.

CORE STABILITY

Core stabilization involves **strengthening the muscles that line your spine and make up your abdomen and pelvic floor**. These muscles help control your posture, balance and the power and efficiency with which you move.

Since it is so important to posture and balance, **many of the best exercises for core stability involve maintaining body positions**. More specifically, core strengthening typically involves placing the body in a position where the core muscles are required for the body to maintain that position for a certain time interval.



Having strong core muscles makes athletic exercise easier and safer, since power comes from the trunk of the human body and greater core stability creates smoother, more coordinated movement. Core strength training is also excellent in **correcting bad posture**. This can minimize and even prevent injuries associated with general physical activity. Finally, core strength is required for most explosive movements that are performed across most active sports.

NUTRITION

The importance of providing our bodies with the proper nutrition cannot be overstated. Simply put, the human body requires the appropriate balance of vitamins, minerals, carbohydrates, proteins and fat on a daily basis to function optimally and disease-free. In other words, **we are what we eat**.

Pune-based nutritional therapist, Dr. Vijaya Sathe, a medical doctor in Natural Medicine and founder of the Commonwealth Institute of Acupressure and Natural Medicine in London, says “give the body what it needs and the body heals itself.” Furthermore, Dr. Vijaya Sathe believes “it is the hurry and worry of modern life, compounded by improper eating habits, stress and pollution, which is telling on human health”. The food we consume, as stated by Hippocrates, “is our medicine.”

Several medical professionals believe that **virtually every illness is based on some form of nutritional deficiency**. When the human body is consistently



deprived of one or more nutrients, the human body breaks down and is more susceptible to contracting a disease or, at a lesser level, a group of unhealthy symptoms (i.e. fatigue, muscle soreness, indigestion, etc.).

However, when nutritional deficiencies are eliminated through appropriate changes through dietary intake and the addition of vitamin and mineral supplementation, the symptoms either disappeared or were severely diminished. This being said, it only makes sense that the body requires a high level of nutrients to efficiently perform the various bodily functions that are required to sustain life, ward off disease, and support proper mental function.

Consuming the appropriate nutritional foods facilitates the human body's ability to **strengthen its immune system**, hence allowing the body to perform optimally, free of disease, and at an increased level of energy. Finally, by allowing the human body to heal itself through a healthy, nutritious and fit lifestyle, the body will operate at a level that does not require the continuous use of medical drugs.

MENTAL REST AND RELAXATION

Proper rest and relaxation are important to give the mind and body time to recuperate. Like muscles that become sore due to use, the brain needs time to cool down. Without this time, function and performance decrease and complications arise. Inadequately rested muscles can lead to injury and a tired brain can create stress and confusion. Be sure you are taking enough time to **relax between activities**.



The human body cannot achieve an optimum level of health and fitness without the mind being of a centered and balanced nature. As mental rest and relaxation is one of the seven key components of good health and fitness, it is important that you become familiar with the approaches and techniques associated with balancing the mind.

For this reason, we have dedicated an entire section of our website to Yoga and another to Meditation, with articles that are solely focused on this topic.

SLEEP

Sleep is necessary for your overall health, fitness and mental well-being. Experts recommend eight hours of sleep to obtain the maximum benefits, which are many. **Lack of sleep has been proven to lower the efficiency of your immune system.** It has also been implicated in contributing to heart disease and Type 2 diabetes. Recent studies suggest that not getting enough sleep can prevent people from losing weight.



Sleep also gives your brain time to sort out the information it has collected during the day. This reduces confusion, improves memory and makes you more alert. Sleep also positively affects coordination and appearance.

BEGINNING TO INCREASE YOUR LEVEL OF FITNESS AND WELL-BEING

One easy step is to make an assessment of your current fitness level and increase your activity appropriately. The U.S. Heart, Lung, and Blood Institute recommends adults have a body mass index (BMI) of less than 24. You should also consider cardiovascular health when making your health assessment. Though it depends on many factors, **a good resting heart rate is between 60 and 80 beats per minute, and a healthy blood pressure is less than 120 over 80 mmHg.** You should seek the advice of a health professional to determine your current state of health and receive recommendations for a fitness program.

For many people who get very little exercise, adding more activity to their lives can begin with simply **walking more.** If possible, you may decide to walk to work rather than drive, or simply go for a walk in your neighborhood in the evenings. Some take up a new activity such as dancing. Those who already have a pastime such as golf may add more active elements to it, such as forgoing the use of a golf cart.

Taking a good look at your diet and bringing it within the limits of your nutritional needs is another important basic element to becoming healthier. Dietary requirements vary for people of different ages, sexes and activity levels. In general, **the USDA recommends a 2,000-calorie diet and no more than 65 grams of fat per day.** This is a good place to start, but there are many diet options to assist you with maintaining a healthy weight level. Losing even a small

amount of weight will make being active easier, and motivates people to work even harder on their health.

ADDING A FITNESS PLAN TO AN ACTIVE LIFESTYLE

Individuals who are already active will still see benefits from increasing their level of fitness and well-being. It will make the activities they already participate in easier to perform and more enjoyable. For these people, the best thing to do is to **implement a fitness plan**.

A good fitness plan takes many aspects into account. Among other things, it should involve regimented exercise, diet and nutrition, as well as time for mental and physical rest. It is recommended that you **consult fitness experts** to assist in developing a fitness plan. Fitness experts have the necessary knowledge, experience and training to appropriately evaluate your current fitness level, and thereafter make recommendations regarding your fitness routine as your fitness level progresses.

Active people and athletes need structured fitness plans because their tolerance for exercise is much greater.

They need to focus and target workouts more acutely than those just beginning to get fit. Since they are already within a healthy body weight range, cutting calories and fat is probably not the primary goal of their dietary regimens.

Consuming proper nutrition every day is the most important aspect on an active person's diet. This means eating whole, unprocessed food for the right balance of vitamins and minerals, fiber, and other essential nutrients without excess sugar and fats.



Fitness and mental well-being are too important to ignore. The benefits of an active, healthy lifestyle are undeniable. Whether you decide to increase your activity level slightly or develop and participate in a thorough fitness plan, any attention you allocate to fitness and well-being will pay off in the long run. Consult professionals to evaluate your physical condition and recommend a fitness approach that is ideal for you.

As distinguished from physical and total fitness, motor fitness is more limited in scope. It has been defined as a readiness or preparedness for performance with special regard to big muscle activities without undue fatigue. It includes the capacity of the individual to move efficiently and

with strength and force over a reasonable length of time. Motor fitness is, thus, only a limited phase of physical fitness. It is also a limited aspect of general motor ability, with emphasis placed on the underlying element of vigorous physical activity, but does not include the neuromuscular co-ordination involved in motor skills. Clarke (1987) quoted that Motor fitness, however, includes more basic physical components than those that physical fitness includes. While motor fitness includes seven components, namely muscular strength, muscular endurance, circulatory respiratory endurance, muscular power, agility, speed and flexibility, physical fitness includes only first three of these.

Motor fitness is generally judged by performance and this performance is based on a composite of many attempt to measure and, therefore, such tests are called motor fitness tests. They include at least average capacity in a wide variety of fundamental motor activities-balance, flexibility, agility, strength and endurance activities. They also include at least average skills in basic skills of running, jumping, climbing, drawling and throwing.

However, there seems to been agreement on the point regarding the elements of motor-fitness which could be entitled as follows:-

1. Strength
2. Flexibility, endurance, agility, power, speed, circulatory-respiratory endurance, etc.

On the basis of the above discussion, the present investigator included "motor fitness" instead of physical fitness and motor abilities in the present paper".

More recently several studies conducted on Olympic athletes have revealed that various sports events differ from one another not only in their skill pattern, organisation and equipment requirement but also in the requirement of an anatomical structure (body-build) of the athletes participating in it. For example Basket balers are generally tall while the weight lifters stockey, sprinters are speedy while the throwers more bulky. De Gary et.al. (1974) contents that sports events are classified on the basis of the dominant characteristics of each type of event required or developed. Therefore, participants in different game or sport activity possess or require different characteristics to be successful in that particular event. Salmela (1982) observed, though gymnastics is a technical sport in which performance is evaluated on the basis of the technique of different complicated elements on various apparatus, yet, performance of a gymnast depends on technical skills.

Gene Wetstone (1938), Cureton, (1951), Kjeldsen, (1961) Williams, (1963), Mery Brennan, (1967), Hirata, (1966), Sinning and Lindberg, (1972), Degary et. al. (1974), Falls and Humphrey, (1978), Fukashina, (1987), Singh and Debnath, (1989), and many others have conducted the studies on gymnasts either to investigate their motor abilities or motor fitness, physical, physiological or psychological factors. The factors are Height, weight, physical courage, interest and determination, muscle strength, gross motor co-ordination, flexibility, motor educability, body proportions and sizes. They mostly predicted differences of characteristics in comparison with other groups of athletes and even in comparison with population in general.

Particular studies on national and Olympic champion gymnasts have shown them to be exceptionally high in mesomorphy compared with the population compared with the population in general, and even in comparison with other groups of athletes. It would appear that certain characteristics may be advantageous for championship performance in gymnastics. Very few research workers had put their efforts to study the differences in motor fitness and its components relationship to gymnastic performance especially in case of women population. Hence, the present investigator feels the importance of motor fitness in gymnastic performance of women Gymnasts and decides to study on this project.

In the light of the fast growing realization of the importance of gymnastics its contribution to the well being of humanity in general performance in total sports and further development of the participants, especially motor fitness and its components ultimately to the well being of the nation as a whole, there is a great need to have the knowledge of personal characteristics like motor fitness of individuals who excel in the field of sports, more particularly in gymnastics. Researches done upto date have made it clear that average level of psychological, sociological, biological and physical factors, efficient coaching and conditioning are not the only factors required to become a good athlete or player, but certain particular characteristics are also important determinants for a special activity like gymnastics. Chopra (1984) has aptly pointed out that as the civilization advances human behavior, including performance and practice of particular sports, tends to be determined by the social and psychological factors including biological, physiological and physical. Hirata (1979) went to the extent of suggesting that selection of athletes be based on particular personal characteristics required to be excellent performance in a particular sport.

What has been said in the foregoing para, it comes out convincingly that those characteristics which show potential for developing high level of performance in a specific sport, must be indentified so that they may be nurtured or possessed by the individual. The present investigation is an effort in this direction as it aims at exploring motor fitness and its components in relation to the performance of women gymnasts in gymnastic skills.

Motor fitness and its components play an important role in different fields of human activity has already been well brought out. Since games and athletics, including Gymnastics provide ideal situation for challenge, competition and evaluation. The situations in which motor fitness and its components thrive there is justification for planning studies which aim at exploring the relationship of this important factor with performance in gymnastic skills, especially in case of female population.

It can be hoped that the results obtained from this investigation, will have some important implications for teachers of physical education, coaches and administrators, especially in the field of gymnastics in evolving effective and scientific criteria for selection and training of women gymnasts for maximum performance.

In the field of physical and sports, especially in gymnastics, more particularly in case of women gymnasts, there is very little research work available on Indian population regarding the relationship between personal characteristics and performance. And whatever little is available that is contradictory. The results of this study would add something new to the existing literature by clarifying the nature of relationship between performance of women gymnasts and their motor fitness and its components.

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