

# The Contributions of Physical Activity and Fitness to Optimal Health and Wellness

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## Abstract

The paper examined the role of physical activity and fitness more especially in the area of disease prevention and control by looking at the major ways by which regular physical activity and fitness contributes to optimal health and wellness. The Surgeon General's Report (1996), stressed that physical inactivity is a national problem which contributes to the burden of unnecessary illness and premature death. The emphasis is therefore on moderate physical activity and the focus on integration of physical activity into one's lifestyle which offers additional opportunities for sedentary individuals to improve their health through participation in physical activities that are enjoyable, personally meaningful and fit more easily into daily schedules. There were considerable evidence which showed that the risk of hypokinetic conditions can be greatly reduced among people who engage in regular physical activity to achieve good physical fitness. It was revealed that optimal health is more than freedom from diseases. Therefore people who regularly participate in moderate amounts of physical activity and fitness can live longer and healthier and also, physical activity and fitness not only help prevent illness and diseases, but also promote quality of life.

**Keywords:** Physical Activity, Physical Fitness, Wellness, Hypokinetic Conditions, Optimal Health.

## Introduction

At no time in our history has so much evidence been accumulated to demonstrate the health and wellness benefits of physical activity and fitness. There is no doubt that the public is becoming more aware of the importance of Physical activity and fitness programmes. Most people believe that regular exercise is important to health and well-being, but yet do not exercise at all. The recent surgeon general's report on physical activity and health is an amazing document summarizing the benefits of regular physical activity and good physical fitness. Healthy people 2010, the national health goals that take us into the twenty-first century, emphasizes physical activity as one of the key healthy lifestyles contributing to optimal health, wellness and fitness. Leading a physically active lifestyle can help to prevent disease and positively contribute to health and well-being.

Physical activity practiced on a regular basis is associated with a great amount of physical, psychological and physiological benefits (Boule, N. G. 1993) and plays an exceptional role in preventing a variety of illness. A large amount of the population are aware of the benefits of regular physical activity in conjunction with a healthy life style, but also that physical inactivity and low fitness levels are one of the main problems of worldwide health. However, there is still a high prevalence of sedentary habits (Kuiet al 2006; Nieman, 1997), both in childhood and adolescence (Trost and Loprinzi, 2008). Olubayo-Fatiregun Ayodele and Olorunisola (2014), stated that regular physical activity and exercise are critically significant for the health, fitness and well-being of people.

There are three major ways in which regular physical activity and good fitness contribute to optimal health and wellness.

First, they can aid in disease/illness prevention. There is considerable evidence that the risk of hypokinetic conditions can be greatly reduced among people who do regular physical activity and achieve good physical fitness. Virtually all chronic disease that plague the society are considered to be hypokinetic, though some are related more to inactivity than others. Nearly three-quarters of all deaths among those of 18 years and others are as a result of chronic diseases.

Leading public health officials have suggested that physical activity is related to the health of peoples. It directly reduces the risk for several major chronic diseases; and also stimulates positive changes with respect to other risk factors for these diseases. Physical activity may produce the shortcut for the control of chronic diseases, much like immunization controlled infectious diseases.

Secondly, physical activity and fitness can be a significant contributor to disease/illness treatment. Even with the best disease-prevention practices, some people will become ill. Regular exercise and good fitness have been shown to be effective in alleviating symptoms and aiding rehabilitation after illness for such hypokinetic conditions as diabetes, heart attack, backpain and others.

Finally, physical activity and fitness are methods of health and wellness promotion. They contribute to quality living associated with wellness, the positive component of good health. In these process, they aided in meeting many of the nation's health goals for the 2010.

### **Physical Activity and Good Health**

People who do regular physical activity can reduce their risk of death, regardless of the cause. Active people increase their life expectancy by two years compared to those who are inactive ([www.mhhe.com](http://www.mhhe.com)). Sedentary people experience a twenty percent (20%) to two-fold increase in early death compared to active people. Haskell (1995), that increasing physical activity among the adult population would do wonders for the health of the nation because there are so many sedentary people who could benefit from active lifestyles. He notes that physical inactivity, in combination with poor eating patterns, ranked with alcohol and tobacco use as among the leading preventable contributors to death for adults. If adults who lead sedentary lives would adopt to a more active lifestyle, there would be enormous benefit to public's health and to individual well-being.

Researchers have documented the benefits of regular physical activity for a healthy life. For example, Allender, Hutchinson and Foster, (2008) opined that regular physical activity reduces the risk of hypertension, heart disease, diabetes, and some cancers. Also, Economos, Hildebrant, and Ityatt, (2008) are of the opinion that engaging in regular physical activity improves psychosocial health and decreases stress. Regular physical activity is clearly effective in the secondary prevention of cardiovascular disease and effective in attenuating the risk of premature death among men and women.

### **Regular Physical Activity and Inherited Risk**

Some people with a family history of disease may conclude that there is nothing they can do because their heredity works against them. There is no doubt that heredity significantly affects risk of early death from hypokinetic diseases. Studies have suggested that active people are less likely to die early than inactive people with similar genes ([www.acsm.org](http://www.acsm.org)). This suggests that long-term adherence to physical activity can overcome other risk factors such as heredity- at least for some people.

### **Physical Activity and Cardiovascular Diseases**

There are many forms of cardiovascular disease (CVD), some are classified as coronary heart disease (CHD) because they affect the heart muscle and the blood vessels inside the heart. Coronary occlusion (heart attack) is a type of CHD. Atherosclerosis and arteriosclerosis are two conditions that increase risk of heart risk of coronary heart disease or those in active versus inactive occupations ([www.cdc.gov](http://www.cdc.gov)). Studies also indicate that adults who expend a significant number of calories per week in strenuous sports and other activities have reduced risk of coronary heart disease. In fact, improving activity levels is among the best ways to reduce the risk of heart disease among adults. The American Heart Association, (2005) after carefully examining some research literatures concluded that sedentary lifestyle is a risk factor of heart disease comparable to high blood pressure, high blood pressure, high blood cholesterol, obesity, and cigarette smoke. After reviewing hundreds of studies on exercise and heart disease, the surgeon General's Report on Physical Activity and Health, (1996) concluded that "physical inactivity is causally linked to atherosclerosis and coronary heart disease". A recent research summary indicates that the effects of physical activity on blood pressure are more dramatic than previously thought and are independent of age, body fatness, and other factors. Inactive, less-fit individuals have a 30 to 50 percent greater chance of being hypertensive than active, fit people. Regular physical activity can also be one effective method of reducing blood pressure for those with hypertension. Physical inactivity in middle age is associated with risk of attack and are also considered to be types of CHD though, it is really a symptom of poor circulation.

Hypertension (high blood pressure), stroke (brain attack, peripheral vascular disease, and congestive heart failure) are other forms of CVD. Inactivity relates in some way to each of these types of disease. In the United States, coronary heart disease accounts for approximately 32 percent of all premature deaths. Stroke accounts for an additional 8.6 percent. Men are more likely to suffer from heart disease than women. African American Hispanic, and Native American populations are at higher than-normal risk. Heart disease and stroke death rates are higher in automated societies ([www.stroke.org](http://www.stroke.org)).

### **Evidence to show that physical inactivity is a primary risk factor for Coronary Heart Disease (CHD)**

Much of the research relating inactivity to heart disease has come from occupational studies that show a high incidence of heart disease in people involved only in sedentary work. Even with the limitations inherent in these types of studies, the findings of more or more occupational studies present convincing evidence that the inactive individual has an increased risk of coronary heart disease. A study summarizing all of the important occupational studies shows a 90 percent reduced risk of coronary heart disease for those in active versus inactive occupations ([www.cdc.gov](http://www.cdc.gov)).

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### **Physical Activity and the Healthy Heart**

There is evidence to show that regular physical activity will increase the ability of the heart muscle to pump blood as well as oxygen ([www.amhrt.org](http://www.amhrt.org)). A fit heart muscle can handle extra demands placed on it. Through regular exercise, the heart muscle gets stronger, contracts more forcefully, and therefore pumps more blood with each beat. This results in a slower heart rate (especially during physical activity), and greater heart efficiency. The heart is just like any other muscle. It must be exercised regularly to stay fit. The fit heart has open, clear arteries free of atherosclerosis.

The hypothetical "normal" resting heart rate is said to be 72 beats per minute (bpm). However, resting rates of 50 to 85 bpm are not uncommon. People who regularly do physical activity will typically have lower resting heart rates than people who do no regular activity. Some endurance athletes have heart rates in the 30 and 40 bpm range. This is not considered unhealthy or abnormal. While resting rate is not considered to be a good measure of health or fitness; decreases in individual heart rate following training reflect positive adaptations. Low heart rates in response to a standard amount of physical activity are a good indicator of fitness.

### **Physical activity and Atherosclerosis**

Atherosclerosis is a condition that contributes to heart attack, stroke, hypertension, angina pectoris, and peripheral vascular diseases. Deposits on the walls of arteries restrict blood flow and oxygen supply to the tissues. Atherosclerosis of the coronary arteries, the vessels that supply the heart muscle with oxygen, is particularly harmful, if these arteries become narrowed, the blood supply to the heart muscle is diminished, and angina pectoris may occur. Atherosclerosis increases the risk of heart attack because a fibrous clot is more likely to obstruct a narrowed artery than a healthy open one. Atherosclerosis which begins early in life is the result of a systematic buildup of deposits in an arterial wall.

Evidence that regular physical activity can help prevent atherosclerosis is found in [www.mhhe.com](http://www.mhhe.com). In one of the theories, it was found that regular exercise can reduce blood lipid levels, including LDL-C (the cholesterol core of LDL). Individuals who do regular physical activity have higher HDL levels, lower TC/HDL-C ratios, and therefore less risk of heart disease.

Fibrin is a sticky, threadlike substance in the blood that is important to the clotting process. Platelets are another type of cell involved in blood conglutination. The blood conglutination theory suggests that fibrin and platelets may be involved in the development of atherosclerosis. Specifically, blood conglutants may deposit at the site of an injury on the wall of an artery, contributing to the process of plaque buildup or atherosclerosis. Exercise has been shown to reduce fibrin levels in the blood. The breakdown of fibrin resulting from regular exercise seems to reduce platelet adhesiveness and the concentration of platelets in the blood. This, in turn, is thought to reduce the risk of atherosclerosis development.

### **Physical Activity and Heart Attack**

Heart attack is the most prevalent and serious of all cardiovascular diseases. A heart attack occurs when a coronary artery is blocked. A clot or thrombus is the most common cause; reducing or cutting off blood flow and oxygen to the heart muscle. If coronary artery that is blocked supplies a major portion of the heart muscle, death will occur within minutes. Occlusions of lesser arteries may result in angina pectoris or a nonfatal heart attack. People who perform regular sports and physical activity have half the risk of a first heart attack compared to those who are sedentary. Possible reasons are less atherosclerosis, greater diameter of arteries, and less chance of a clot forming.

There is evidence that regular exercise can improve coronary circulation and thus reduce the chances of a heart attack or dying from one. Within the heart, there are many tiny branches extending from the major coronary arteries. All these vessels supply blood to the heart muscle. Healthy arteries can supply blood to any region of the heart as it is needed. Active people are likely to have greater blood-carrying in these vessels, probably because the vessels are larger and more elastic. Also, the active person may have a more profuse distribution of arteries within the heart muscle which results in greater blood flow. A few studies, one of such, as (McGinnis and Lee, 2000) show that physical activity may promote the growth of "extra" blood vessels, which

are thought to open up to provide the heart muscle with the necessary blood and oxygen when the oxygen supply is diminished, as in a heart attack. Blood flow from extra blood vessels is referred to as coronary collateral circulation.

Improved coronary circulation may provide protection against a heart attack because a larger artery would require more atherosclerosis to occlude. In addition, the development of collateral blood vessels supplying the heart may diminish the effects of a heart attack if one does occur. These extra (or collateral) blood vessels may take over the function of regular blood vessels during a heart attack.

### **Physical Activity and Hypokinetic Conditions**

Cancer is the second leading cause of death in the world today ([www.mhhe.com](http://www.mhhe.com)). According to the American cancer society, (2000) cancer is a group of diseases characterized by uncontrollable growth and the spread of abnormal cells. Several cancers are considered hypokinetic. Adequate data are now available to document the relationship of inactivity to colon cancer. Inactive people have a 50 to 250 percent greater risk of getting colon cancer than active people. Consistent findings also suggest that rectal cancer is also associated with inactivity. The relationship between fitness, exercise, and other forms of cancer is not yet fully understood. One possible reason why regular exercises have a reduced risk of colon/rectal cancer (the second most common cause of cancer deaths among males) is the faster intestinal transit time.

Several studies have suggested that fit people who regularly perform physical activity have increased protection against reproductive system and breast cancers. In another study it was found, that there was a one-third reduction in risk of breast cancer among those who do at least four hours of leisure physical activity each week as compared to those who are less active. People who do heavy manual labour have an even greater reduction in risk. In fact, non-athletes have been found to have a greater risk of breast cancer than athletes. On the other hand, a recent study of Harvard graduates failed to find a strong link between activity and breast cancer. Researchers who have shown a relationship between activity and breast cancer hypothesize that regular activity in youth may delay the onset of menstruation and reduce the life long exposure to estrogen. This suggests a hormonal link between physical activity and breast cancer. For those who have cancer, there is evidence that physical activity can help them lead more fulfilling and productive lives.

### **Physical Activity and Type II Diabetes**

Physical activity plays an important role in the management and treatment of Type II diabetes, by helping young people keep body fat levels in the healthy range and helping the body regulate blood sugar levels more effectively. Diabetes is a group of diseases that results when there is too much sugar in the blood. It occurs when the body does not make enough use of insulin effectively leading to a host of health problems and damage to the eyes, kidneys, nerves, heart and blood vessels.

Diabetes is the seventh leading cause of death among people over 40. It accounts for at least 10 percent of all short-term hospital stays and has a major impact on health-care costs in Western society. By itself, exercise is not an effective treatment for Type I (Insulin-dependent) diabetes. Campaigne (1998) states that people who perform regular physical activity are less likely to suffer from Type II (non-insulin-dependent, adult-onset) diabetes than sedentary people. For people with Type II diabetes, regular physical activity can help reduce body fatness, decrease insulin resistance, improve insulin sensitivity, and improve the body's ability to clear sugar from the blood in a reasonable time. All of these factors contribute to controlling the disease. With sound nutritional habits and proper medication, physical activity can be useful in the management of both types of diabetes.

### **Maintaining a healthy body weight and avoiding the various health conditions associated with obesity**

Obesity, as well as lesser degree of fatness, is not a disease state in itself, but is a hypokinetic condition associated with a multitude of far-reaching complications. Obesity is associated with serious organic impairments, shortened life span, psychological maladjustment, poor relationships with peers especially among children, awkward physical movement, and lack of achievement in athletic activities. Obesity can be both a cause and an effect of physical inactivity. People who are over fat have a higher risk of respiratory infections; are prone to developing high blood pressure, arteriosclerosis; and disorders of the circulatory and respiratory systems' and have a greater than normal risk of some forms of cancer. The symptoms of adult-onset diabetes are associated with excessive fitness. Because physical activity, together with sound nutritional management is an effective means of lowering body fat, it can be helpful in reducing the risk of those conditions associated with fatness and obesity.

### **Physical Activity and Aging**

Approximately 30 percent of adults age 70 and over have difficulty with one or more activities of daily living (Osness, 1998). Women have more limitations than men, and low-income groups have more limitations than

higher income groups. Nearly half get no assistance with the activity in which they are limited.

The inability to function effectively as you grow older is associated with lack of fitness and inactive lifestyles. This loss of function is sometimes referred to as “acquired aging” as opposed to “time-dependent aging”. Because so many people experience limitations in daily activities and often find it difficult to get assistance, it is especially important for older people to stay active and fit.

In Africa, Asia, and South America, where older adults maintain an active lifestyle, individuals do not acquire many of the characteristics commonly associated with aging in North America (US, Department of Health and Human Services, 1996).

This report indicates that, in general, older adults become much less active than younger adults. Losses in muscle fitness are associated with loss of balance, greater risk of falling, and less ability to function independently. Though the amount of activity performed must be adapted as people grow older.

### Conclusion

It can be deduced from this paper that people who do regular physical activity can reduce their risk of death, regardless of the cause and that active people increase their life expectancy by two years compared to those who are inactive. It was also established that sedentary people experience a 20 percent to two-fold increase in early death compared to active people. Physical activity is also seen to be associated with better and more restful sleep. Other benefits of regular physical activity is increased self-esteem, improvement in fitness and appearance, self-confidence esteem. The ability to regulate behaviour and perform new tasks can also promote higher self-esteem.

Appropriate and regular physical activity and fitness programmes also helps to mitigate the negative consequences of excess weight, by reducing the risk of cardiovascular diseases, obesity, hypertension etc.

It should be clear, that physical fitness is much more than being well or being sick, just as health is an essential quality of good life.

In conclusion, the benefits of physical activity in late years are beginning to be understood. Along with appropriate diet, exercise appears to be a key factor in controlling the effects of aging.

Participating in physical activities has been linked with reduction in tension, reduced state of anxiety, depression thus enhancing sense of wellness and reduction rate in both developed and underdeveloped nations of the world. There is an overwhelming amount of scientific evidence on the positive effects of sports and physical activity as part of a healthy lifestyle. The positive effects of engaging in regular physical activity are particularly apparent in the prevention of several chronic diseases as previously stated to include cardiovascular disease, Diabetes, Cancer, Hypertension, Depression, Obesity, Stress and Osteoporosis.

### Recommendations

- i. City wide campaigns that incorporates many different components of physical activities should be encouraged by the government.
- ii. Access to places or physical activity such as facilities and building should be provided or people to use.
- iii. Most physical activity should be moderate-intensity aerobic activity such as walking, running, skipping and biking.

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