PHYSICAL ACTIVITY: THE WONDER DRUG

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Life is like riding a bicycle—in order to keep your balance, you must keep moving.
(Albert Einstein)

Physical activities are everyday activities that get your body moving such as gardening, walking the dog and taking the stairs instead of the elevator. Technically speaking, physical activity can be broadly defined as body movement that is produced by skeletal muscles and expends energy. When discussing the health benefits, it is advisable to divide physical activity into two categories: Baseline physical activity that refers to light daily activities such as standing, walking slowly and lifting light-weight objects. Health enhancing physical activity is the activity that when added to baseline activity produces important health benefits.

Although the two commonly-used terms “physical activity” and “exercise” are used synonymously, exercise differs from PA as it is a form of physical activity that is planned, structured and done to improve at least one aspect of physical fitness that is, strength, flexibility or aerobic endurance.

It seems relevant here to describe two other commonly used terms regarding physical activity and exercise: aerobic and non-aerobic.

Aerobic means “living or occurring in the presence of oxygen” and refers to the exercise that requires the body to utilize oxygen to create energy like walking, jogging or swimming.

Anaerobic exercise means “without oxygen” and refers to the exercise in which the body creates energy without extra oxygen, i.e. the body relies on its natural chemicals to create energy like strength training, functional training, or eccentric training.

Beneficial Effects of Physical Activity:

The health benefits of physical activity are so many that health care providers often call exercises the "miracle" or "wonder" drug—pointing to the wide variety of proven benefits that it provides.

Regular physical activity improves health-related physical fitness. Staying physically active and exercising regularly can produce long-term health benefits and even improve health for some older people who already have diseases and disabilities. That’s why health providers often advise older adults to be as active as possible. In fact, being physically active on a regular basis is one of the healthiest things we can do for ourselves. And if we could only combine regular activity with two other wonderful things, namely healthy diet and abstinence from smoking, their combined contribution in prolonging life and maintaining excellent health is just unmatchable.

Conversely lack of physical activity produces long term adverse effects on heath. It is not only that you lose beneficial effects of physical activity but you actually invite many health problems. For example
studies show that low levels of physical activity are associated with up to 52% increase in overall mortality, double the mortality from heart disease and a 29% increase in mortality from cancer.

According to the U.S. Surgeon General's Report on Physical Activity and Health, inactive people are nearly twice as likely to develop heart disease as those who are more active. Lack of physical activity also can lead to more visits to the doctor, more hospitalizations, and more use of medicines for a variety of illnesses.

According to the World Health Organization, lack of physical activity contributes to approximately 17% of heart disease and diabetes, 12% of falls in the elderly, and 10% of breast cancer and colon cancer.

**Effects on Individual body Systems**

**Effect on Weight**

Regular physical activity is the best way to keep your weight at the medically desirable level. In fact if you are a person who does exercise on a regular basis, you always have the tool handy to readily correct any weight gain that may occur incidentally: do proportionately more intense activity and burn out any extra calories!

**Cardiovascular System**

The beneficial effects of exercise on the cardiovascular system are well documented. There is a direct relation between physical inactivity and cardiovascular mortality. Conversely, physical inactivity is a recognized risk factor for heart disease.

There are a number of ways exercise benefits heart and blood circulation. The benefits include preventing atherosclerosis (hardening of arteries), lowering high blood pressure, maintaining cholesterol and fat at the desirable levels, preventing inflammation in the arteries and helping weight loss in the obese. Research work carried out over the past five or six decades has consistently proved that physical activity and abstinence from high-fat foods are the two never-failing means of maintaining overall cardiovascular fitness at its optimum level. Physical activity also lowers risk of stroke.

**Fighting the Free Radicals**

You might have heard about free radicals which are widely recognized for their dual roles as both deleterious and beneficial. The deleterious effect is that they may damage the healthy body cells. Free radicals are a subset of reactive oxygen species (ROS) and are produced in the body as byproducts of certain biochemical processes normally occurring in the body. Regular physical exercise delays the accumulation of free radical-mediated cell damage by improving the antioxidative protective mechanisms in different body organs, especially the all-important heart muscles.

**Fighting Aging and Chronic Diseases**

Abundant amount of research carried out over decades has consistently established that staying physically active on a permanent basis can undoubtedly prevent or delay many diseases and disabilities.
Exercise is not only the best means of preventing diseases, but also a very effective way of treating many chronic conditions. Many studies show that people with high blood pressure, arthritis, heart disease, or diabetes can benefit a lot from regular exercise. Exercise also helps prevent almost all problems of aging, like maintaining a steady gait, overcoming balance problems or difficulty walking, and preventing untoward postural changes of old age.

**Treats Depression, Manages Stress**

Regular, moderate physical activity can help manage stress, improve mood and help reduce feelings of depression. A review of studies stretching back to 1981 concluded that regular exercise can improve mood in people with mild to moderate depression.

Regular physical activity can help you fall asleep faster and deepen your sleep. (This doesn’t mean to say that you should exercise too close to bedtime, or you may be too energized to fall asleep.) According to a 2005 study, exercise is the most recommended alternative to sleeping pills for resolving insomnia.

A study carried out on 156 diagnosed cases of depression divided men and women into three groups. One group took part in an aerobic exercise program, another took anti-depressant medication, and a third did both. A re-evaluation of participants after 4 months showed that depression had eased in all three groups. About 60%–70% of the people in all three groups could no longer be classed as having major depression. This suggested that for those who need or wish to avoid drugs, exercise might be an acceptable substitute for antidepressant drugs. Though antidepressant medicines can bring about a swifter response, you can avoid medication and its side effects just by adhering to regular exercise.

Another study published in 2005 found that walking fast for about 35 minutes a day five times a week or 60 minutes a day three times a week had a significant influence on mild to moderate depression symptoms.

**Endorphins**

Endorphins are a group of hormones secreted within the brain and nervous system, and having a number functions including relief of pain and mood elevation. Exercise enhances body releases of endorphins and their level remains elevated for several days after exercise, having a long lasting positive impact on mood and self-esteem. In brief, exercise:

- Reduce stress
- Allays anxiety and depression
- Elevates self-esteem
- Improves sleep
Brain Function

Studies also suggest that exercise improves cognitive functions (i.e. general mental faculties) such as the ability to shift quickly between tasks, plan an activity, and ignore irrelevant information. Physical activity boosts up mental function possibly by:

a. Increasing blood and oxygen supply
b. Increasing supply of growth factors which contribute to form new brain cells
c. Increasing the secretion of biochemical substances called neurotransmitters enhancing overall brain functioning

Boosts Up Energy

Exercise makes the heart pump at a faster rate, pushing more blood than at rest and supplying more oxygen to your tissues, which boosts the body’s overall energy level. When the most vital organs of heart and lungs work more efficiently, all body organs get optimally vitalized and you get abundant energy to go about your daily activities.

Improved Sex Life

Regular physical activity can lead to enhanced arousal for women. And men who exercise regularly are less likely to have problems with erectile dysfunction than are men who don’t.

Immune system

Experimental evidence suggests that moderate exercise has a very beneficial effect on the human immune system, rendering the body better-equipped to fight all diseases including infections, allergies and cancers. Moderate exercise has been associated with a 29% decreased incidence of upper respiratory infections.

Last But Not The Least

PLEASE NOTE: If you've been sedentary for a long time, are overweight, have a high risk of coronary heart disease or some other chronic health problem, see your doctor for a medical evaluation before beginning a physical activity program.
American Heart Association summarizes the benefits of physical activity as below:

- Improves blood circulation, which reduces the risk of heart disease
- Keeps weight under control
- Helps in the battle to quit smoking
- Improves blood cholesterol levels
- Prevents and manages high blood pressure
- Prevents bone loss
- Boosts energy level
- Helps manage stress
- Releases tension
- Promotes enthusiasm and optimism
- Counters anxiety and depression
- Helps you fall asleep faster and sleep more soundly
- Improves self-image
- Increases muscle strength, increasing the ability to do other physical activities
- Provides a way to share an activity with family and friends
- Reduces coronary heart disease in women by 30-40 percent
- Reduces risk of stroke by 20 percent in moderately active people and by 27 percent in highly active ones
- Establishes good heart-healthy habits in children and counters the conditions (obesity, high blood pressure, poor cholesterol levels, poor lifestyle habits, etc.) that lead to heart attack and stroke later in life
- Helps delay or prevent chronic illnesses and diseases associated with aging and maintains quality of life and independence longer for seniors
US Department of Health and Human Resources Guidelines for physical activity

US Department of Health and Human Resources issued national physical activity guidelines, the 2008 Physical Activity Guidelines for Americans. They are listed below:

- All adults should avoid inactivity. Some physical activity is better than none, and adults who participate in any amount of physical activity gain some health benefits.
- For substantial health benefits, adults should do at least 150 minutes (2.5 hours) per week of moderate intensity aerobic activity or 75 minutes/week of vigorous intensity aerobic activity or an equivalent combination of both.
- Aerobic activity should be performed in episodes lasting at least 10 minutes and should be spread throughout the week.
- For additional and more extensive health benefits, adults should increase their aerobic physical activity to 300 minutes (5 hours) a week of moderate intensity of 150 minutes (2.5 hours) of vigorous activity or an equivalent combination of moderate and vigorous-intensity activity.
- Adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days/week, as these activities provide additional health benefits.


As a general rule, aim for at least 30 minutes of physical activity every day. You may need more if you have some other concern like losing weight.
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