EXERCISE AND YOUR HEART : A GUIDE TO PHYSICAL FITNESS

Coronary heart disease remains a leading cause of death and disability in India for both men and women. Preventing coronary heart disease remains the leading challenge to biomedical researchers and public health workers today. On the average, almost three to five Indians will suffer a heart attack every minute of the day, adding up to almost one and a half million attacks each year.

Do we get enough exercise from our daily activities?

Most of us get little vigorous exercise at work or during leisure hours. Today, only a few jobs require vigorous physical activity. People usually ride in cars or buses and watch TV during their free time rather than be physically active.

Evidence suggests that even low- to moderate-intensity activities can have both short- and long-term benefits. If done daily, they help lower your risk of heart disease. Such activities include pleasure walking, stair climbing, gardening, moderate to heavy housework, dancing and home exercise. More vigorous exercise can help improve fitness of the heart and lungs, which can provide even more consistent benefits for lowering heart disease risk.

Benefits of regular physical activity

These are the benefits often experienced by people who get regular physical activity.

Feeling better

Regular physical activity -

- gives you more energy
- helps in coping with stress
- improves your self-image
- increases resistance to fatigue
- helps counter anxiety and depression
- helps you to relax and feel less tense
- improves the ability to fall asleep quickly and sleep well
- provides an easy way to share an activity with friends or family and an opportunity to meet new friends

Looking better

Regular physical activity

- tones your muscles
- burns off calories to help lose extra pounds or helps you stay at your desirable weight
- helps control your appetite

You need to burn off 3,500 calories more than you take in to lose 1 pound. If you want to lose weight, regular physical activity can help you in either of two ways.

First, you can eat your usual amount of calories, but be more active. For example: A 200-pound person who keeps on eating the same amount of calories, but decides to walk briskly each day for 1 1/2 miles will lose about 14 pounds in 1 year. Or second, you can eat fewer calories and be more active. This is an even better way to lose weight.

About three-fourths of the energy you burn every day comes from what your body uses for its basic needs, such as sleeping, breathing, digesting food and reclining. A person burns up only a small amount of calories with daily activities such as sitting. Any physical activity in addition to what you normally do will burn up extra calories.

The average calories spent per hour by a 65kg person are listed below. (A lighter person burns fewer calories; a heavier person burns more.) Since exact calorie figures are not available for most activities, the figures below are averaged from several sources and show the relative vigor of the activities.

Activity	**Calories burned**
Bicycling 6 mph	240 cals./hr.
Bicycling 12 mph	410 cals./hr.
Cross-country skiing	700 cals./hr.
Jogging 5 $^{1/2}$mph	740 cals./hr.
Jogging 7 mph	920 cals./hr.
Jumping rope	750 cals./hr.
Running in place	650 cals./hr.
Running 10 mph	1280 cals./hr.
Swimming 25 yds/min.	275 cals./hr.
Swimming 50 yds/min.	500 cats./hr.
Tennis-singles	400 cals./hr.
Walking 2 mph	240 cals./hr.
Walking 3 mph	320 cals./hr.
Walking 4$^{1/2}$ mph	440 cals./hr.

The calories spent in a particular activity vary in proportion to one's body weight. For example, a 45kg person burns 1/3 fewer calories, so you would multiply the number of calories by 0.7. For a 85kg person, multiply by 1.3.

Working harder or faster for a given activity will only slightly increase the calories spent. A better way to burn up more calories is to increase the time spent on your activity.

Working better

Regular physical activity -

- helps you to be more productive at work
- increases your capacity for physical work
- builds stamina for other physical activities
- increases muscle strength
- helps your heart and lungs work more efficiently

Consider the benefits of a well-conditioned heart:

In 1 minute with 45 to 50 beats, the heart of a well-conditioned person pumps the same amount of blood as an inactive person's heart pumps in 70 to 75 beats. Compared to the well-conditioned heart, the average heart pumps up to 36,000 more times per day, 13 million more times per year.

Can physical activity reduce the chances of getting a heart attack?

Yes! Various studies have shown that physical inactivity is a risk factor for heart disease. Overall, the results show heart disease is almost twice as likely to develop in inactive people than in those who are more active. Regular physical activity (even mild to moderate exercise) can help reduce risk of heart disease. In fact, burning calories through physical activity may help lose weight or stay at your desirable weight - which also helps lower risk of heart disease. The best exercises to strengthen your heart and lungs are the aerobic ones like brisk walking, jogging, cycling and swimming.

Coronary artery disease is the major cause of heart disease and heart attack in America. It develops when cholesterol deposits build up in the (coronary arteries). Eventually one or more of the major coronary arteries may become blocked - either by the buildup of deposits or by a blood clot forming in the artery's narrowed passageway. The result is a heart attack.

We know that there are several factors that can increase your risk for developing coronary artery disease - and thus the chances for a heart attack. Fortunately, many of these risk factors can be reduced or eliminated.

The risk factors for heart disease that you can do something about are:

Cigarette Smoking, High Blood Pressure, High Blood Cholesterol, Physical Inactivity

and Obesity. The more risk factors you have, the greater your risk for heart disease and heart attack.

Cigarette Smoking. Heavy smokers are two to four times more likely to have a heart attack than nonsmokers. The heart attack death rate among all smokers is 70 percent greater than among nonsmokers. People who are active regularly are more likely to cut down or stop cigarette smoking.

High Blood Pressure. The higher your blood pressure, the greater your risk of developing heart disease or stroke. A blood pressure of 140/90 mmHg (millimeters of mercury) or greater is generally classified as high blood pressure. Regular physical activity, even of moderate intensity, can help reduce high blood pressure in some people. This type of activity may also help prevent high blood pressure.

High Blood Cholesterol. A blood cholesterol level of 240 mg/dl (milligrams per decaliter) or above is high and increases your risk of heart disease. A total blood cholesterol of under 200 mg/dl is desirable and usually puts you at a lower risk of heart disease.

Cholesterol in the blood is transported by different types of particles. One of these particles is a protein called high density lipoprotein or HIDL. HIDL has been called "good" cholesterol because research has shown that high levels of HIDL are linked with a lower risk of coronary artery disease. Regular moderate-to-vigorous physical activity is linked with increased HIDL levels.

Physical Inactivity. The lack of physical activity increases your risk for developing heart disease. Even persons who have had a heart attack can increase their chances of survival if they change their habits to include regular physical activity. It can help control blood lipids, diabetes and obesity as well as help to lower blood pressure. Also, physical activity of the right intensity, frequency and duration can increase the fitness of your heart and lungs - which may help protect you against heart disease even it you have other risk factors.

Obesity. Excess weight may increase your risk of developing high blood pressure, high blood cholesterol and diabetes. Regular physical activity can help you maintain your desirable body weight. People at their desirable weight are less likely to develop diabetes. And, exercise may also decrease a diabetic person's need for insulin.

Remember that even if you are active, you should not ignore other risk factors. Reduce or eliminate any risk factors you can to lower your chances of having a heart attack.

Tips for your heart's health:

- **Stay physically active.**
- **Stop smoking and avoid other people's smoke if possible.**

- **Control high blood pressure and high blood cholesterol.**
- **Cut down on total fats, saturated fats, cholesterol and salt in your diet.**

- **Reduce weight if overweight.**

Are there any risks in exercising?

Muscles and joints

The most common risk in exercising is injury to the muscles and joints. This usually happens from exercising too hard or for too long - particularly if a person has been inactive for some time. However, most of these injuries can be prevented or easily treated .

Heat exhaustion and heat stroke

If precautions are not taken during hot, humid days, heat exhaustion or heat stroke can occur - although they are fairly rare. Heat stroke is the more serious of the two. Their symptoms are similar:

Heat exhaustion	**Heat stroke**
dizziness	Dizziness
headache	Headache
nausea	Nausea
confusion	Thirst
body temperature below normal	muscle cramps
	sweating stops
	high body temperature

The last two symptoms of heat stroke are important to know. If the body temperature becomes dangerously high, it can be a serious problem.

Both heat exhaustion and heat stroke can be avoided if you drink enough liquids to replace those lost during exercise.

Heart problems

In some cases, people have died while exercising. Most of these deaths are caused

by overexertion in people who already had heart conditions. In people under age 30, these heart conditions are usually congenital heart defects (heart defects present at birth). In people over age 40, the heart condition is usually coronary artery disease (the buildup of deposits of fats in the heart's blood vessels). Many of these deaths have been preceded by warning signs such as chest pain, lightheartedness, fainting and extreme breathlessness. These are symptoms that should not be ignored and should be brought to the attention of a doctor immediately.

Some of the deaths that occur during exercise are not caused by the physical effort itself. Death can occur at any time and during any kind of activity - eating, sleeping, sifting. This does not necessarily mean that a particular activity caused the death - only that the two events happened at the same time.

No research studies have shown that physically active people are more likely to have sudden, fatal heart attacks than inactive people. In fact, a number of studies have shown a reduced risk of sudden death for people who are physically active.

Exercising too hard is not beneficial for anyone, however, and is especially strenuous for out-of-shape, middle-aged and older persons. It is very important for these people to follow a gradual and sound exercise program.

If you consider the time your body may have been out of shape, it is only natural that it will take time to get it back into good condition. A gradual approach will help you maximize your benefits and minimize your risks.