



By: Doma Daniella
(1986.08.22.)



How to protect our heart

We often say that our heart is aching or that somebody has broken our heart... Actually, the heart can not ache, since there are no sensory nerves in it. However, if you have any kinds of pain in your chest, it usually refers to some heart problems. You have to take these symptoms seriously because these illnesses are very harmful to your health and in some cases they can be even fatal.



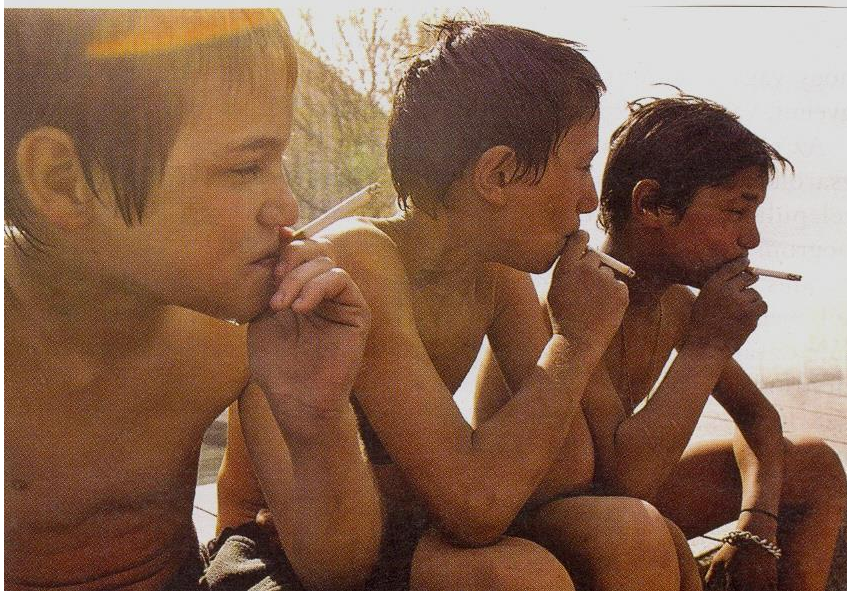
Heart disease accounts for almost 1/3 of all deaths in the Western countries. Disorders of the heart and circulation are many and varied. Here are some short descriptions of the most common heart-related illnesses in a nutshell :

- **Coronary Artery Disease:** it is caused by Artherosclerosis (the thickening of the internal lining of the blood vessels). Its exact cause is uncertain but some certain factors are linked to it, e.g. diabetes, kidney failure (also a complication), heavy cigarette smoking, obesity, lack of exercise and excessive amount of fat in a diet. The most common complications are shock, heart failure, heart attack and angina.
- **Angina:** it's a kind of discomfort due to Coronary Heart Disease. It includes pressure or pain in the chest, arms or even jaws. Angina characteristically appears when you are active and fades when you stop activity and rest. You can recognize angina if you know that it occurs whenever you're abnormally active or excited and disappears when you calm down. Additional symptoms are difficulty in breathing, sweating, nausea and dizziness.
- **Shock:** its symptoms are sweating, faintness, nausea, panting, rapid pulse rate and pale cold and moist skin. The person in shock becomes drowsy and confused and may also lose consciousness as the blood supply to the brain falls. Untreated shock leads to death because the body cannot recover on its own. Since the brain can function for only a few minutes without oxygen, prolonged shock can cause brain damage even if you otherwise recover physically. The kidneys are also affected quickly by lack of blood. The chances for recovery from hypovolemic shock are fairly good if the underlying cause is dealt with immediately. But other types of shock are more likely to be fatal. People who are in shock cannot do anything at all for themselves, so professional medical aid is needed right away.
- **Hypertension:** (also known as high blood pressure) Normal blood pressure is less than 140mm when the heart is contracting (systolic pressure) and less than 90mm when it is relaxed (diastolic pressure). Higher pressure causes damage to the arteries and capillaries; in the kidneys it leads to kidney failure; in the brain it leads to strokes, and in the heart to either Coronary Artery Disease, direct weakening of the heart muscle or both. It also can force more cholesterol compounds into the wall of the blood vessels, leading to plaque buildup. High blood pressure is particularly dangerous when combined with the vessel-damaging effects of cigarette smoking, or in the presence of high blood levels of cholesterol. Once heart disease is present, the continued high blood pressure means the heart must work harder to pump blood against the increased resistance and is more likely to develop ischemia, which is the temporary damage to living cells because of insufficient blood supply.

- **Heart failure:** In heart failure, the pumping action of your heart becomes inefficient, either because your heart muscle is weakened by disease or because there is a mechanical fault in the valves that control the flow of blood. Its main symptom is breathlessness (especially in the evenings when you are tired). Because it may be hard to breathe when you lie down, you may need to sleep with several pillows under your head. Difficult breathing may be accompanied by wheezing. Bad attacks usually last no more than an hour, but the experience can be very disturbing. To prevent it, get plenty of rest to conserve energy. You should also cut down on your daily intake of salt, because salt leads to fluid retention in your body.
- **Heart attack:** The most common type of a heart attack is caused by a thrombosis (blockage) of one of the coronary arteries by a thrombus (blood clot). This cuts off the blood supply to one region of the heart muscle. Lack of an adequate blood supply damages the deprived tissue. Its main symptom is a crushing pain in the centre of the chest but the pain may also appear in your neck, jaw, arms and stomach. The pain may be continuous, or it may last only for a few minutes then fade away and return. A heart attack is a medical emergency so if you have these symptoms, call the emergency immediately. While waiting for assistance, keep the person who is having the heart attack warm and calm. Do not leave him alone because a comforting presence is invaluable.

However, these illnesses are rather serious, they can be prevented by doing regular exercises, giving up smoking, following a healthy diet and trying to live a more balanced life. Well, it is easy to say all these things but for someone who is a heavy smoker or has a sedentary job they may seem impracticable, a kind of „mission impossible”. Nevertheless, they also should at least try these simple methods I’d like to list in the followings.





Physicians have long been intrigued by why cigarette smoking increases the risk of cardiovascular (heart-related) disease. Do cigarettes do their damage through the products that are drawn into the lungs or through the products that are absorbed into the lining of the mouth?

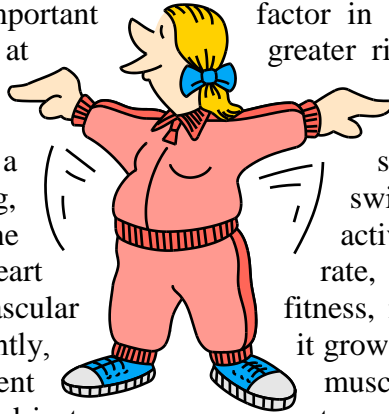
Cigarettes are made up of a multitude of products such as tar and nicotine, and cigarette smoke consists of a dozen harmful gases (e.g. nitrogen oxide and carbon monoxide). Nicotine is an addictive plant compound, which produces a variety of changes in the body. It stimulates the release of powerful hormones (e.g. adrenalin), which in turn stimulate the cardiovascular system. After a few puffs the smoker's heart begins pounding an extra 15-25 beats per minute and it also elevates blood pressure by as much as 20mm of mercury. The combination of a faster heart rate and higher blood pressure causes the heart to work harder. When it works harder it needs more oxygen but the trouble is that carbon monoxide reduces the oxygen supply. Because of certain chemical properties, carbon monoxide binds to the red blood cells more efficiently than oxygen. Thus, less oxygen is carried by the red blood cells to the cells of the body. Carbon monoxide also slows down the release of the remaining oxygen to the tissues. This may be one of the reasons why some smokers seem to have less energy and feel winded more often. In a sense they are not receiving an adequate oxygen supply throughout their bodies.



(Cigar and pipe smokers do not seem to have the same high risk for heart attacks as cigarette smokers, probably because they don't inhale the smoke.)

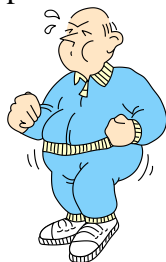
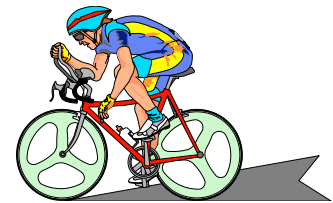
It has been proved that not only direct smokers are endangered but also those who inhale other people's smoke (e.g. at the workplace or at home). So remember that if you smoke, it is not only your health that you jeopardize but also the health of your friends, relatives and everyone in your surrounding. Since heavy smokers have a substantially higher frequency of heart attacks than non-smokers, it's worth giving up smoking.

Regular exercise is also an important factor in preventing the illnesses above. Physically inactive people are at a greater risk of developing heart disease than active people. If an exercise program is to be followed the best kind of exercise is one that uses the large muscles of the body in a steady contraction – relaxation pattern (e.g. running, walking, swimming, biking). It is true that some decline in activity is normal as people age. Thus, the ability to raise the heart rate, which is the single most important aspect of cardiovascular fitness, normally decreases with age. If you don't use a muscle frequently, it grows flabby. If you also gain weight muscles and a muscular structure like the heart has to work extra hard just to maintain its normal output. This often can be compensated for by a proper conditioning program. There are four major types of dynamic exercise that are recommended:



factor in preventing the illnesses above. greater risk of developing heart disease than active people. If an exercise program is to be followed the best kind of exercise is one that uses the large muscles of the body in a steady contraction – relaxation pattern (e.g. running, walking, swimming, biking). It is true that some decline in activity is normal as people age. Thus, the ability to raise the heart rate, which is the single most important aspect of cardiovascular fitness, normally decreases with age. If you don't use a muscle frequently, it grows flabby. If you also gain weight muscles and a muscular structure like the heart has to work extra hard just to maintain its normal output. This often can be compensated for by a proper conditioning program. There are four major types of dynamic exercise that are recommended:

1. **Swimming** is the best from the orthopedic point of view because it causes no wear and tear on joints and ligaments. But it requires an access to a pool year round.
2. **Cycling** is a good exercise but, for many individuals in urban settings it causes logistic problems. These problems can be solved with an indoor, stationary bicycle positioned in front of a television set or a stereo amplifier just to fight the boredom factor.
3. **Jogging** has been popular for several years because even urban dwellers have some access to parks or indoor running tracks. While professional tracks are the best for the legs, asphalt surfaces are also fine. (Note that concrete is too hard and grass may hide potentially dangerous stones, holes, etc.)



4. **Walking** is an excellent substitute. Walk to work, if possible; take stairs rather than elevators; go for walks in the morning or evening! The problem with walking is that most of us don't regard it as an exercise and don't do it regularly enough. But for many individuals it can serve very well as the prime conditioning vehicle. (Note that if possible, wear always comfortable shoes with soft soles.)

The three elements to the cardiovascular conditioning program are sometimes called the exercise prescriptions. They are *intensity*, *duration* and *frequency*. Start with periods that last about 15 minutes and work up to 30 minutes or more. Three or four sessions per week will suffice. In intensity the goal is to eventually exercise at a heart rate that is about 75% of the maximal expected for someone in your age. (Note that stopping exercise for three weeks for any reason undoes all your efforts, but one can start again. Cutting back to once a week has the same negative effect.) Try to find a partner because it is easier to get used to frequency together!

How fit are you?

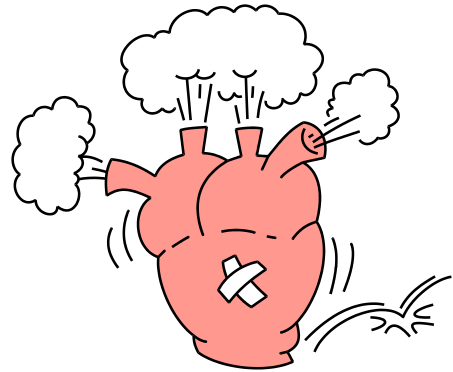
Choose a bottom stair or any fixed platform about 20cm high. Step onto it with one foot, bring up the other, and then step back down onto the floor. Repeat it 24 times a minute for three minutes. But do not continue the exercise if you begin to feel unpleasantly out of breath, dizzy or in any way uncomfortable. Stop after 3 minutes and wait for exactly one minute. Then count your heartbeats by counting your pulse over the next 15 seconds and read off your fitness rating on the table below.

	MEN		WOMEN		Fitness rating
	Under 45 years	Over 45 years	Under 45 years	Over 45 years	
Pulses (heart-beats) counted in 15 seconds	Below 18	Below 19	Below 20	Below 21	Excellent
	18–20	19–21	20–22	21–23	Good
	21–25	22–26	23–28	24–29	Average
	Above 25	Above 26	Above 28	Above 29	Poor

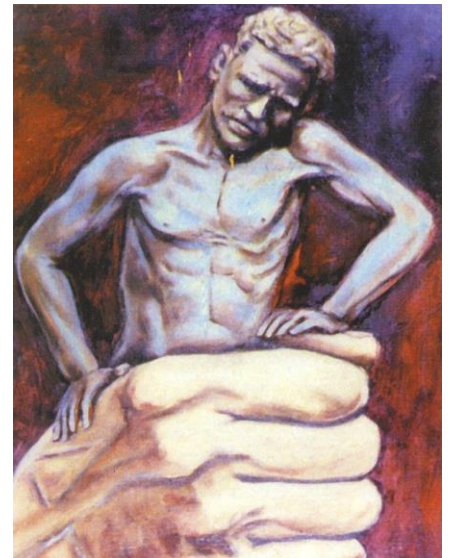


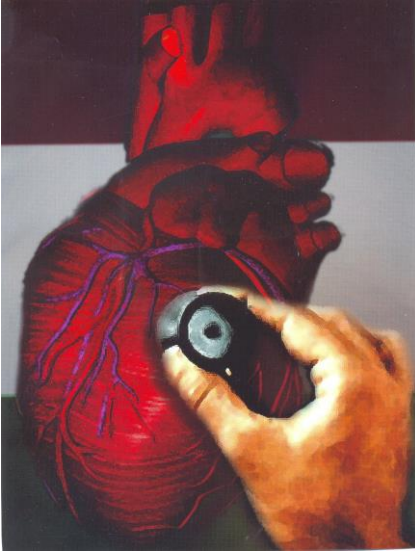
There is no formula to explain how stress leads to the development of the obstruction in the blood vessel, but we know that the cholesterol level in humans can be influenced by stressful circumstances. Students' cholesterol levels are higher before exams, for example. How a person reacts to the stressful pressures and tensions of everyday life is the key to understanding how stress influences cardiovascular disease. Those people who respond to stress with a greater release of certain hormones, body chemicals and nervous system commands increase the chance of causing injury to their heart and blood vessels. But many investigators believe that it is not the pressure that matters, it's how the individual reacts to it.

In the movies and on television it often seems that a heart attack usually occurs to a 60-year-old overworked ambitious businessman who has just flown into a rage at one of his colleagues or during a heated argument with a family member. In real life, however, (according to a study) most attacks occur when the patient is involved in everyday/mundane activities such as sitting, resting, sleeping, reading etc. rather than during highly emotional outbursts.



Mental relaxation techniques have been developed, but even simple things like enjoying one's work and free time can be helpful to release stress. When simple measures fail, stress reduction techniques are available, either in courses or with individual therapists. However, there are no clear evidences of in which ways does stress harm our health, the bottom line is that reducing the effects of mental and physical stress are worthwhile goals in the fight against heart disease. It is very important that if you feel the stress on you is substantial, you should recognize the crisis and ask for help from a community mental health agency. When you talk about your problems with someone (even in „Hot lines“) it will help to find a solution. However, in serious cases it's necessary to get medical treatment!

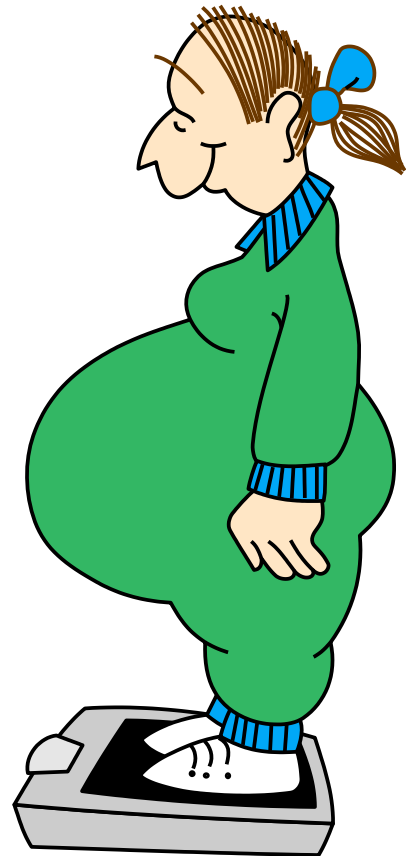




High blood cholesterol levels and obesity are also risk factors for Coronary Artery Disease. The heart and lungs have to work excessively when a person is obese. (25% of problems associated with heart disease are related to a person being overweight; hypertension is twice as common in obese people as in slender people.) Many people who have successfully overcome their weight problem realise that they just don't eat as much as they used to even after their „dieting period”. In this diet moderation is the key. Good, healthful eating does not mean that your favourite food needs to be deleted from your plate forever!

How to control your weight:

1. Make a list of when and where you eat and be aware if you eat because of your emotional state (mainly if you eat peanuts, ice cream or crackers)!
2. Eat only when hungry and only until full. If you are particularly hungry, try to eat something small and wait 20 minutes before consuming more food, because the brain does not get a message of fullness from the stomach until after a delay.
3. Try to eat only when you are sitting down and don't participate in any other activity while you are eating.
4. Try to make your cupboards and refrigerator temptation proof. If you have leftover food, put them in the back of the refrigerator while vegetables and yoghurts should occupy the proud position in front. Put junk food in the back of the cupboard, because when fresh fruits are more accessible, it is more likely that you choose them rather than chips or other junk food.
5. Spend less time in the kitchen. There's less temptation and you have to be really conscious of wanting to eat if you have to walk from another room in the house.
6. Try to spend less time with watching television or doing nothing. If you have some task, that will divert your thoughts from eating.
7. Avoid fast food restaurants. Eat something warm at least once a day and eat it as slowly as you can.
8. Avoid processed food and canned soups.
9. Try using herbs and spices (e.g. garlic, onions, mustard or lemons) instead of salt. Use unsalted margarine and avoid putting a salt shaker on the table. To flavour soups and sauces, use sherry or wine instead of salt (By cooking for at least 30 minutes, the alcohol evaporates but the flavour remains).



Unfortunately, food is used with children both as punishment and as a reward. Children often equate mothers' loving feelings with food. Thus, they often overeat because they are being rewarded or are substituting food for their mothers' affection. Most of us have a built-in mechanism that indicates when we're full and thus have no more need to eat. If we teach ourselves to listen to this advice, we learn to control ourselves and no one needs to be obese.

But how can you discover whether you're overweight or not? It is more simple than you'd think! You can easily calculate your BMI (Body Mass Index) with the method below:

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m}^2\text{)}}$$

(E.g. if you're 160cm tall and 70kg, then your BMI is 70 over 1.6², so it's 27,3.)

- Under 25: normal
- 25-30: overweight
- over 30: obese

