GUIDE TO KEEP YOUR HEART HEALTHY

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SIMPLY EXPLAINED FOR
PREVENTING & REVERSING HEART DISEASE

INDEX

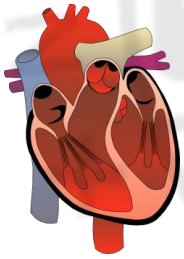
Did you know that every year in India, more than 14, 00,000 people die of cardiovascular causes such as heart attacks and brain strokes? And that more than half of them are diabetics or hypertensives?

Yes. Studies show that 7 out of 10 diabetics die of cardiovascular diseases like heart attacks and strokes. Also, 50% of heart failure cases and 37% of stroke victims are hypertensives !

WHAT IS A CARDIVASCULAR DISEASE?

The heart supplies blood to all the organs of the body including itself through its arteries. When there is some damage in one of the arteries of the heart or when the heart itself does not function normally. it could interrupt the blood supply to various parts of the body. This condition is called cardiovascular disease (CVD). **Heart attacks and strokes** are the two most dreaded CVDs.

A **heart attack** is the result of a sudden drastic decrease in the blood supply to the heart muscles usually because a clot has blocked one of the arteries supplying blood to the heart. This means that enough oxygen does not reach that part of the heart, which is then damaged.



If treated on time, the damage does not prevent the heart from functioning normally again. However, once a heart attack occurs, it usually makes the heart more vulnerable to attacks in future.

A **stroke** occurs due to a sudden disturbance in the blood supply to the brain. This happens either due to a clot in the blood vessel (artery) or when a blood vessel breaks which interrupts the blood flow to the brain. A stroke or train attack' kills the brain cells in the immediate area.

When the brain cells die, control of abilities, which that area of the brain once controlled, are lost. This includes functions such as speech, movement and memory.

ARE YOU AT RISK...?

Yes! Especially if you suffer from high blood pressure or diabetes!

LET'S TAKE A LOOK AT WHY HIGH BLOOD PRESSURE AND DIABETES PUTS YOU AT RISK...

- ## High blood pressure

  High blood pressure or hypertension increases the pressure of blood flow through the blood vessels (arteries). This pressure will eventually damage the inner lining of the arteries making it easy for fatty deposits to build up in them that in turn leads to atherosclerosis or thickening of the arteries.

  Thickened arteries will cause problems in blood flow to various organs in the body including the heart and the brain. Thus increasing the risk of a heart attack or stroke.

- ## Diabetes

  Insulin is important in the body's ability to utilise blood sugar. High blood sugar levels or diabetes occurs when the body is unable to produce enough insulin or when it does not use up the insulin properly.

  As blood sugar levels rise, fat levels in the blood also raise, which increases the risk of **atherosclerosis.**

Besides diabetes and high blood pressure, if you suffer from any other risk factors, your chances of getting a heart attack or stroke are actually multiplied.

LET'S TAKE A LOOK AT THE OTHER RISK FACTORS

- **High blood cholesterol**

Cholesterol is a fatty substance in the blood that the body makes on its own, but it can also take it from the fats present in the foods. High levels of cholesterol in the blood can lead to the build up of plaque on the inside of the arteries. Plaque is formed from cholesterol, cellular waste, calcium and a substance called fibrin. Over a period of time, plaque may partially or totally block the blood's flow to various organs in the body including the heart and the brain, thus increasing the risk of a heart attack or stroke.

- **Medical history of stroke or heart attack**

People who have already had a stroke or a heart attack are at a higher risk of having another one. Risk also increases if someone in the family (a blood relative) has had an attack or a stroke.

- **Bad diet and excess weight**

Too much salt in the diet can be harmful. Though salt helps maintain the water balance in the body, too much of it can cause fluid build up or high blood pressure, which multiplies CVD risks. Too much of fried food also contributes to high blood cholesterol levels. People who are ■ overweight are also at higher risks of developing blood pressure and diabetes. Needless to say, these conditions increase the risk of CVD.

- **Smoking**

Smoking increases CVD risks as it is known to raise blood pressure, damage blood vessel walls, speed up the clogging of arteries by deposits and make the heart work harder. Also, cigarette smoke contains carbon monoxide, which reduces the oxygen carrying capacity of blood.

2-MINUTE CV RISK ASSESSMENT

- Are you over 55 years of age? ❑Yes ❑No
- Are you overweight for your height? ❑Yes ❑No
  (Refer to the Ideal Height-Weight Chart)
- Do you have a family history of high BP or diabetes? ❑Yes ❑No
  Do you have high blood pressure? ❑Yes ❑No
  (Normal blood pressure levels: 120/80 mm Hg)
- Do you have diabetes? ❑Yes ❑No
  (Normal fasting blood sugar levels:100 mg/dl)
- Do you have high blood cholesterol levels? ❑ Yes ❑No
  (Normal blood cholesterol levels: <200 mg/dl)
- Have you had a heart attack or a stroke? ❑ Yes ❑No
- Do you smoke? ❑ Yes ❑No
- Do you have more than three alcoholic drinks a week? ❑ Yes ❑No
- Does your diet comprise fried and spicy food? ❑ Yes ❑No
- Do you feel very stressed out? ❑Yes ❑No

Show this test to your doctor who will assess and help you manage your cardiovascular risks.

Remember, regular medical check-ups and proper attention to controlling the risk factors will help you prevent a heart attack or a stroke!

7 STEPS TO PREVENTING HEART DISEASE

Did you know you can reduce your risk of heart disease simply by reducing your risk factors? Here's how:

✓ QUIT SMOKING

- A smoker's risk of heart attack is more than twice that of non-smokers. If you smoke, quit now.

✓ CONTROL YOUR CHOLESTEROL

- As your LDL cholesterol level increases, so does your risk for coronary artery disease. You can lower your LDL cholesterol by limiting dietary fat, getting regular exercise and when necessary, using medication (as advised by your Doctor).

✓ LOWER HIGH BLOOD PRESSURE

- You can have high blood pressure and not know it, which puts you at risk for stroke, heart attack, kidney failure and congestive heart failure. With your doctor's help, high blood pressure can be treated with medication and changes in lifestyle.

✓ GET ACTIVE

- Even modest levels of low-intensity physical activity play a significant role in preventing heart and blood vessel disease if done regularly and long term.

✓ LOSE WEIGHT

- People who have excess body fat are more likely to develop heart disease.

✓ CONTROL DIABETES

- If you have the disease, tight control of glucose levels, exercise and a healthy diet can keep you from developing complications down the road.

✓ RELAX

- Your individual response to stress may be a contributing factor to heart disease. Lower your stress level with lifestyle changes, including exercise and relaxation techniques.

HOW TO MANAGE STRESS

To understand this, let us first understand -***What is STRESS.?***

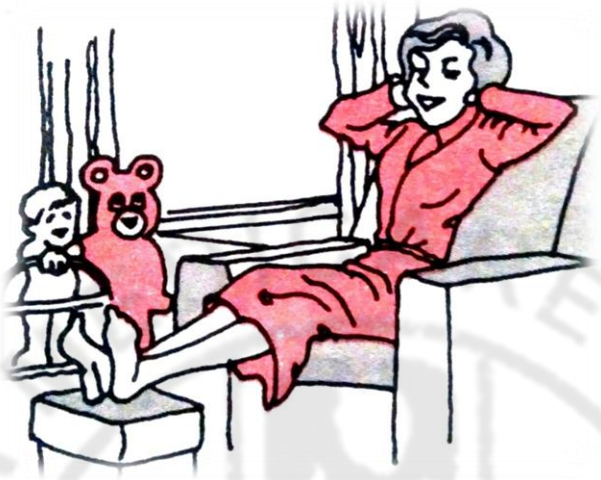
Stress is nothing but the body's reaction to change. it can be reaction to a physical stimuli or emotional stimuli. It is not necessarily a negative phenomenon. Positive stress keeps us on our toes and enhances our performance. However, stress can also be negative and this type hampers our ability to work efficiently and relax in here are times when you may feel a state of continually being high-strung. This is particularly true in our current day environment where our lifestyles have turned hectic. When stress becomes a permanent affair it begins to affect our health So where is the solution? Each individual has to learn to manage stress and use it as a positive force in their life .The following passages are meant to give you a few tips to help you achieve this.

FIND SOLUTIONS TO YOUR PROBLEMS

One of the best methods of managing stress is to find out the situations in life that make you TENSE. While it is not possible for us to control every situation occurring in our life, there are many whereby, being creative we can particularly make some of them disappear.

MANAGE CHANGE

If you have just taken up a new job or if you have been just blessed with a new born ... Great! But remember not to let these things come in the way of enjoying the things that you normally enjoyed. You can still spend some time going out for a walk or a movie with your wife and share some lighter moments with your friends.



AVOID RUSH

Imagine the stress you will undergo trying to reach office on time and getting caught in the midst of the peak hour office goer's rush. Try this for a change.

- ✓ Share a car with your friends and travel together
- ✓ Start early and beat the rush
- ✓ Take the public transport

DO NOT HESITATE TO ASK FOR HELP !!!!

There is no substitute to having a close friend or relation with whom one can share their joys and sorrows and sometimes even "Let some steam off". This is

particularly true when the strength of your emotion is so strong that it is difficult for you to manage it alone.

LEARN TO RELAX

Positive stress coupled with relaxation is a good method to enhance performance. So let us assimilate some simple relaxation techniques.

BREATHE DEEPLY

Sit with your hands on your stomach inhale deeply, filling your lungs with air. Now exhale slowly through the pursed lips till you feel the lungs are completely empty. Repeat this 3-4 times.

TAKE REGULAR BREAKS

Do not try to do everything at one time. However Hard one tries, you cannot be "Everything to Everybody". Prioritize your work and decide for yourself what needs to be attended immediately. Get that out of the way before attempting the task which is relatively less important. This will reduce the pressure on performance considerably.

MEDITATE

Down through the ages meditation has been practiced to cleanse the mind of the various polluting factors. Practice sitting in a chair in a room with a straight back and crossed feet. Gaze at an imaginary spot on the wall opposite to you and concentrate all your energies on it. After 10-15 minutes you will feel much better.

PERFORM STRETCHING EXERCISES

Ever seen a cat stretch ? Well stretching is one of the most basic techniques of releasing muscle tension in the animal kingdom. We humans are no exception. When under stress perform some stretching exercise. The neck, back, arms and legs in particular benefit. By dropping your body on your lap and allowing your head to droop you could even stretch out sitting in your chair in the office.

POSITIVE THINKING

There is no substitute to 'Positive thinking" When you think positive you develop the confidence to take on the challenges of the world and thereby are able to take on stress as a positive challenge. Besides a positive frame of mind start thinking well. This means rest, good healthy food, exercise and relaxation.

CHOLESTEROL - THE HEART OF THE PROBLEM

What is cholesterol ..?

Cholesterol is a fatty substance found in animal fats, oils, milk. Yolk of egg, liver and kidneys Cholesterol is also manufactured by your liver. Cholesterol in the right quantity is not harmful for your body. In fact it has many vital functions in your body like formation of certain hormones and necessary tissues.

When does Cholesterol become your Enemy?

While we need some fat in the body, the problem arises from **TOO MUCH OF THE WRONG KIND OF FAT.**

The cholesterol in our body is in many forms. 'HDL' cholesterol is the "friendly" cholesterol which prevents hardening of arteries and thus protects your heart. It removes excess of cholesterol from the blood before it can deposit on artery walls. 'LDL' cholesterol is the "bad" cholesterol, as it narrows blood vessels and damages your heart. For a healthy heart it is desirable to have a blood LDL to HDL ratio of 2:1.

Act Before it is too late!

It is necessary for you to modify the so-called RISK FACTORS which predispose you to developing angina, which eventually may lead to a life-threatening heart attack. You can very well modify some of these important risk factors.

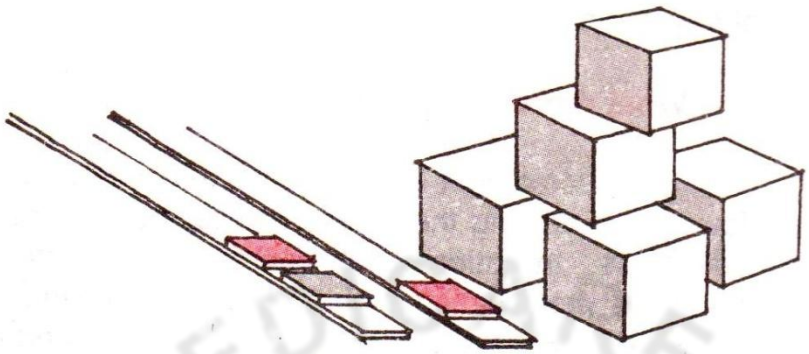
1. **SMOKING :** Smokers carry a 3-6 fold greater risk of developing a heart attack than a non-smoker. Smoking causes injury to the walls of your arteries allowing cholesterol and other substances to gradually narrow the arteries.

2. **OBESITY :** Fat deposits causing body weight to be 20% more than ideal weight constitutes obesity. Obese people usually have excess of harmful cholesterol.

3. **EXERCISE & STRESS :** Modern lifestyle is often associated with lower levels of physical activity. Exercise reduces blood cholesterol levels and slows down the process of atherosclerosis. A regular exercise program also decreases body weight and promotes mental relaxation. However, begin exercise very gradually, under the guidance of your doctor.

4. **HIGH BLOOD PRESSURE:** Increase in blood pressure can damage the delicate inner lining of arteries. This allows the excess cholesterol to creep into the walls of the arteries and thus causes narrowing of blood vessels.

5. **DIABETES:** Diabetes is a disease in which the body does not utilize sugar properly. Diabetes causes damage to the arteries and increases the rate of atherosclerosis (hardening of arteries).



6. **ALCOHOL:** Regular intake of more than moderate quantities of alcohol leads to fat accumulation and increase in body weight.

Thus, in obese individuals, alcoholics, smokers or those suffering from high blood pressure or diabetes, narrowing of coronary arteries occurs due to deposition of cholesterol. Thus, controlling the levels of cholesterol becomes the most important step in reducing the risk of developing a heart attack.

What more can you do?

The secret of a healthy heart ultimately boils down to controlling the whims and fancies of one's taste buds. In patients with increased cholesterol levels, diet modification should aim at reducing intake of SATURATED FATS and CHOLESTEROL and to eliminate excess calories.

SATURATED FATS obtained from food raise cholesterol levels and are harmful, whereas POLYUNSATURATED FATS are beneficial since they lower the body cholesterol. MONOUNSATURATED FATS do not alter the cholesterol levels in the body. Foods obtained from animal origin such as fatty meat, organ meat, egg yolk, etc., are rich in saturated fats. You should therefore keep away from such food items.

BLOOD PRESSURE CONTROL

Blood pressure is the force exerted by the blood on the walls of the blood vessels while flowing through them. In each one of us therefore blood flows with some pressure; the normal blood pressure. The normal blood pressure of an individual is 120mm of mercury (when the heart is contracted) and 80mm of mercury (when the heart is relaxed) & is expressed as 120/80 mm of Hg (Mercury). When the blood pressure is consistently (upon repeated examination) over 140/90 mm of Hg the person is said to be hypertensive.

Elevated blood pressure increases the risk of Heart attack and Stroke. Moreover high blood pressure cannot be detected until it is measured. After the age of 35 therefore, it is advisable to get the blood pressure checked atleast once in 6 months. Headache, fatigue & dizziness are some of the indications of elevated blood pressure.

Although high blood pressure is one of the greatest risk factors for heart disease, it is also the most easily controlled. So control your blood pressure and stay away from heart problems.

HOW DO I KEEP A CHECK ON MY BLOOD PRESSURE?

The best way to control high blood pressure is to measure it regularly to keep a track, by following your doctor's advice and by taking the help of your family members and friends.

Regular check-up helps in identifying how your body responds to the surrounding conditions. Moreover it -also tells you whether the routine you follow has worked or not.

The doctor is the best judge He may ask you to cut down on salt because increase in the consumption of salt means increased blood pressure due to increased fluid retention. Instead of adding salt to your food you can try seasoning it with spices and lemon.

Weight reduction - If you are overweight then it is advisable to reduce your weight suitably in proportion to your height. Eating highly fatty/oily foods, lot of eggs, meat and sweets providing high calories should be deliberately avoided Your treatment may include changing your diet, exercising regularly and taking the medication regularly.

Involving your family members - This is one of the best way to ensure that you do not drift away from your routine. You can tell your wife, kids, parents to remind you of your medicines, diet, exercise etc.

Your wife can prove to be your best partner for exercise. You can also join her in experimenting with some low-salt dishes. Remember your family considers you as one of the most important members of the family and it is important for you to maintain your health for them.

Exercise - when done regularly is the best way of staying fit. If you have never exercised before then it is advisable to consult your doctor as to what type of exercise shall best suit your needs. Aerobic exercises especially those performed in fresh air like walking, jogging, cycling, swimming, rhythmic dancing etc. are excellent forthe heart. In addition to this some stretching and yoga would be ideal, provided they are done/learnt under expert guidance. Atleast 20 - 30 min. of exercise daily is a must. Regular exercise helps by relaxing the body and the mind. Moreover exercise also makes the heart stronger and improves the oxygenation of blood. If you are overweight then it will help in reducing the extra fats by increasing the fat metabolism. Sound sleep and greater stamina are also the benefits of regular exercise.

There's no let-up on medicines - If your blood pressure is controlled with diet and exercise then you are the lucky one. But if your doctor has advised to take any medication for controlling hypertension then there should be no let-up on the dosage schedule. Following a particular dosage pattern for medicines, especially when they are to be taken for a long period of time is advisable. Sometimes you may experience certain strange effects with the prescribed medication. Do not stop the medicines on your own, but consult your doctor. He may explain as to why it is happening or may recommend some change. In order to be sure about whether you have taken your medicine at the suggested time, keep a track by designing a table which is to be ticked every time you take the dose. You can even fix up the time after certain activity like breakfast or after toothbrush (if the medicine is to be taken before eating). If you are taking certain medicines along with the ones for hypertension then do not forget to ask the doctor.

How do I know where I am ?

Here are a few Do's and Dont's to be followed to keep your blood pressure under control.

- Do check you blood pressure regularly.
- Do maintain the correct height weight ratio.
- Do not add salt to your food.
- Do consume a diet low in fats.
- Do exercise regularly for 20-30 min.
- Do not smoke.
- Do take your medicines regularly and follow your doctor's advice about diet & exercise.

Get set.... now that you have the tips, follow them and live a life free from worries and heart trouble. Remember only you can be your heart's best friend so give your heart the best you can and the best will come to you.

ANGINA AND YOU

What is it ? Angina is a feeling of intense, gripping pain in the chest extending upto the left arm, shoulder, neck or the jaws. It is mostly precipitated due to excessive stress or emotional disturbance. It lasts for a few minutes and lessens with rest.

What causes angina?

The heart in order to work efficiently needs a lot of oxygen and nourishment. This oxygen and nourishment is provided to the heart by two arteries viz. the coronary arteries. When these coronary arteries are unable to supply the required quantity of blood to the heart muscle, may be due to some blockade the body/heart reacts to the situation in the form of a severe/strangulating pain called as angina. The commonest cause of blockade in the coronary arteries is due to the gradual deposition of fatty substances on the inner walls of the blood vessels. These deposits over a period of time narrow the lumen of the artery and if allowed to continue may someday completely block the passage for blood flow. This disorder where a lot of fat deposition on the arterial walls takes place thereby reducing their lumen and elasticity is called **atherosclerosis.**

The important risk factors identified for atherosclerosis are

- ✓ High blood pressure
- ✓ Diabetes mellitus
- ✓ High blood cholesterol
- ✓ Smoking
- ✓ Obesity

Age, sex and family history are also important predisposing factors for angina.

Angina is thus a warning bell which tells us that more attention needs to be given to the heart and that our lifestyle needs to be changed in order to cope with the ailing heart.

Is angina and heart attack one and the same ?

No! In angina the blood flow to the heart muscle is reduced temporarily because the coronary arteries have narrowed. During a heart attack the blood flow to some part of the heart muscle, suddenly and permanently stops due to complete blockade of coronary artery resulting in the death of that part of the heart muscle. An anginal attack may not cause such a permanent damage which the heart attack does. Very likely a person suffering from angina may not even face a heart attack throughout his lifetime although the risk of getting a heart attack is certainly higher.

How is angina diagnosed ?

- ✓ Angina is usually detected from the symptoms that you narrate to the doctor.
- ✓ Further the doctor may measure your blood pressure and take an Electrocardiogram (ECG) to assess the heart function.
- ✓ If the physical examination and ECG turn out to be normal then the doctor would go in for a STRESS TEST. This test reveals whether your heart gets sufficient oxygen when its requirement, during physical activity goes up or you precipitate an anginal attack
- ✓ He may also get your blood examined to find out whether the glucose and cholesterol levels are increased.

Medication in Angina

The drug treatment in angina can be divided into two types.

- ✓ Drugs to be taken on precipitation of anginal attack
- ✓ Drugs to be taken for prevention of anginal attack

The drugs used for controlling anginal attack that has precipitated are called as short acting nitrates. These include

- Nitroglycerin sub-lingual tablets
- Nitroglycerin buccal spray

These nitrates are quickly absorbed into the blood stream and relieve the anginal pain by increasing the blood flow and reducing the workload on heart. The drugs used for prevention of angina constitute

- ✓ The long acting nitrates
- ✓ Beta blockers
- ✓ Calcium channel blockers
- ✓ Aspirin

The long acting nitrates : These are the oldest drugs still in use for the treatment of angina. They are available in different strengths and dosage forms. Depending upon your requirement of nitrates the doctor may prescribe to you eithe r tablets, capsules or a body patch. Whatever form of nitrate your doctor has prescribed to you always use it exactly as you have been instructed. Do not discontinue the medicine in the event of side effects without prior consultation with your doctor.

Beta blockers : They reduce the heart's oxygen demand by reducing the heart rate, blood pressure and the force of contraction.

Calcium channel blockers : They also act by lowering the heart's requirement for oxygen. They relax and dilate the arteries and thus reduce the blood pressure.

Aspirin : It does not play a direct role in the treatment of angina but helps prevent it to some extent by disallowing the blood cells to stick to the fatty deposits in the arteries. This helps in preventing the formation of clots which could further hamper the blood flow to the heart.

What's more ?

The doctor may carry out one of the following procedures to identify what best can be done for your heart.

Echocardiogram - ECG

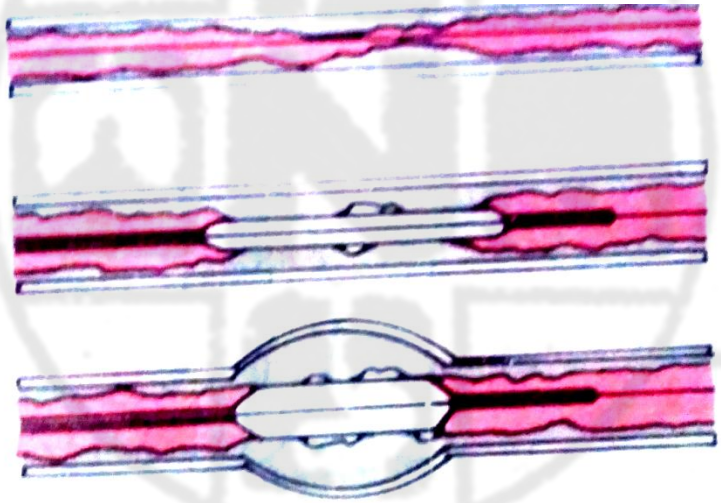
An echocardiogram shows the movement and structure of your heart muscle. The principle used in this technique is that sound waves bounce off the heart and are converted into a picture on the screen. This procedure can be carried out both when you are resting or while performing an exercise. This is done to find out whether your heart beats normally during exercise and whether your coronary arteries can meet your heart's increased requirement for blood.

Angiography

Angiography allows your doctor to view the inside of your coronary arteries to find any blockages. The procedure is carried out by passing a long thin tube called as a catheter through an artery in your groin or arm and guiding it into the heart. Then, a radio opaque fluid is injected through the catheter in your heart. This allows x-ray to show clear photos of the inside of both the coronary arteries as well as the heart Based on the findings of these tests the doctor can judge the severity of angina and will recommend to you the necessary drug treatment and/or surgical procedure you would be required to undergo.

Surgical procedures

If medication alone is not of any use in relieving the anginal pain then the doctor may opt for a surgical procedure which would be best suited for treating your coronary artery disease.



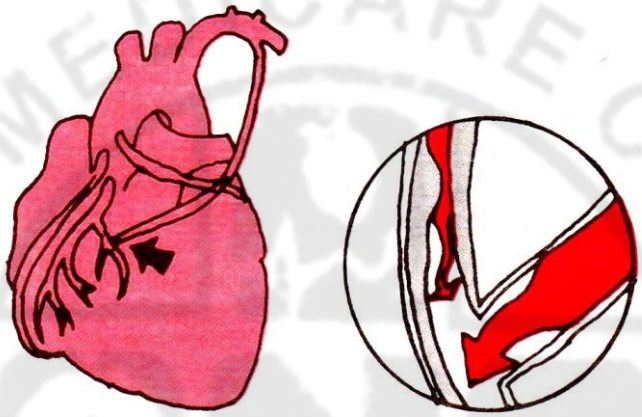
Angioplasty

Angioplasty opens up the coronary arteries by pressing the plaque (fatty deposits on the inside of the arteries) against the artery wall. A catheter with a small balloon at the tip is inserted through an artery in the groin or arm. The catheter is then moved to the clogged artery in the heart. The balloon is inflated and

deflated several times to push the plaque against the artery wall. This opens up the artery walls thus allowing more amount of blood to be supplied to the heart. The catheter and the balloon can then be taken out.

Bypass surgery

The word bypass itself is suggestive of the procedure, where a new route is created to bypass the clogged coronary artery. This is done by taking a part of a blood vessel from either the leg or chest and sewing it on the coronary artery before and after the blocked area. Through this new route blood can now flow to the heart muscle bypassing the clogged part of the coronary artery.



Other surgical procedures

Atherectomy : In this procedure plaque is removed from the walls of the arteries by using a special catheter. Similarly laser catheters are used to clear clogged arteries by using high-intensity light beams.

Stents : These are devices that are placed permanently inside the artery to keep it open.

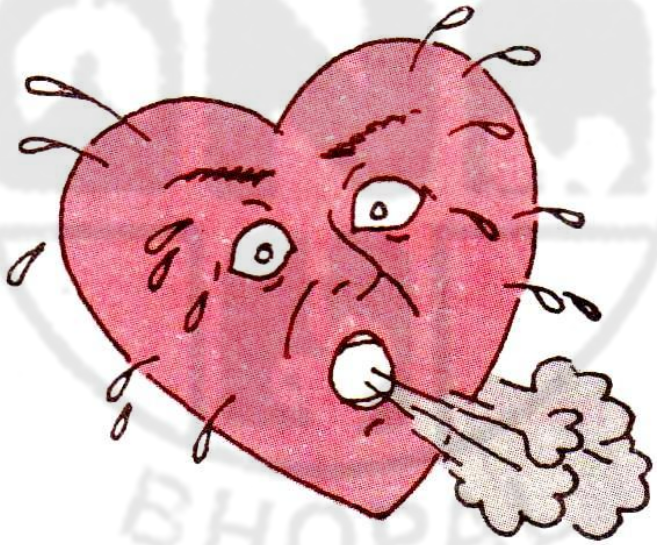
Work for a healthy heart : Treatment for angina will not help in taking care of coronary heart disease. To prevent yourself from going from bad to worse, you must make some changes in your style of living. For this first you will have to

identify your risk factors and then take some steps accordingly. Therefore now once you have decided that you shall follow a certain plan , then stick to it because it is only regular physical activity that will keep your heart healthy.

CONGESTIVE HEART FAILURE

What is Congestive Heart Failure ?

Due to the weakening of the heart muscles, their capacity to pump blood to all parts of the body decreases. This leads to the accumulation of a small portion of blood in the left ventricle. Thus every time the heart beats a small amount Of blood is left in the left ventricle, leading to congestion. When the heart is full of this unpumped blood there is no room for newly oxygenated blood to enter the left ventricle. Atthis time the heart suddenly stops functioning.



How does it develop ?

Since this problem is due to the weakening of the heart muscles we shall find out the conditions which could lead to this.

* One most potential culprit is Coronary Artery Disease. Due to the deposition of fat on the inner walls of the coronary arteries the blood supply to the heart muscles is lessened. Over a period of time the heart muscles weaken due to lack of blood supply and their ability to pump blood completely from the left ventricle, decreases.

* If your heart muscles are infected and develop some disease which affects their ability to pump blood efficiently it is called as **Cardiomyopathy** and may be caused by alcohol abuse or certain toxic drugs The incidence of this is very rare.

* Hypertension is also a major contributing factor. In hypertensive patients the heart has to work harder to pump the blood, over a period of time this causes enlargement of the chambers of the heart and weakens the heart muscles.

* Heart attack also weakens the heart muscles as it damages part of the heart muscle thereby putting additional workload on the remaining musculature.

* Diabetes mellitus increases the incidence of coronary artery disease and congestive heart disease.

*Chronic kidney failure is another important cause for development of CHF as it causes retention of water which puts additional workload on the heart muscles.

What are the signs and symptoms ?

The typical signs and symptoms that you would experience are

- ✓ feeling weak or tired upon usual exertion
- ✓ shortness of breath or sudden cough upon exertion
- ✓ swelling on the feet
- ✓ difficulty in breathing upon lying down
- ✓ frequent urination
- ✓ sudden instances of dizziness
- ✓ disturbance in sleep due to coughing and shortness of breath

How does a doctor diagnose CHF ?

The doctor can diagnose your problem by using one or more of the following techniques.

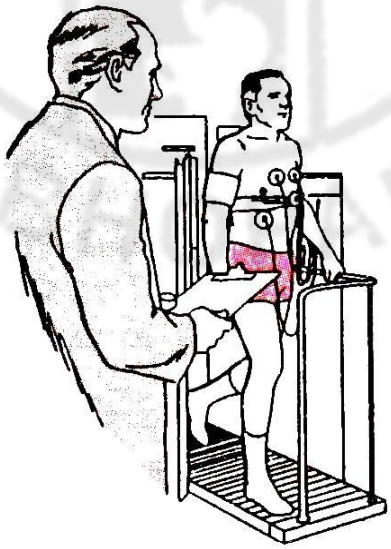
- He will ask you about your previous health record and your family history. This will help him to know whether you are likely to suffer from heart problems by virtue of heredity.

Electrocardiogram helps in finding out how your heart is functioning and whether the heart is getting proper blood supply.

Echocardiogram shows whether the heart is enlarged, how well does the heart pump, whether the heart wall is thickened etc.

Stress test helps in identifying the heart's response to exercise which is helpful in detecting coronary artery disease.

And several other methods to identify abnormal heart beats, weakened areas of the heart, blockages in the coronary arteries.



What is the treatment ?

The treatment is divided into two types viz.

1. Personal health care i.e. regular physical activity,healthy food habits, weight control/reduction, sufficient rest, etc.

2. Medicines - These include the following

Vasodilators dilate the blood vessels and thus reduce the blood pressure. The workload on heart is thus lowered hence it can pump more blood. Some of the common drugs are hydrallazine. Currently the most accepted drugs are the ACE inhibitors due to their benefits.

Diuretics help in relieving you from the excess fluid that is accumulated in the body which increases the workload on heart.

Digitalis is cardioprotective in nature and helps in restoring the force of contraction of the heart muscle. Digitalis also helps in an irregular heartbeat.

Anticoagulants, are although not directly for CHF but they help in preventing the formation of blood clots which may lead to heart attack etc.

Ant arrhythmic agents help in regularizing the irregular heart beat thereby reducing the workload on heart.

What could be the emergencies and what should my family members do ?

In the event of Cardiac arrest there is sudden drop in blood supply to the brain which leads to unconcsiousness, absence of heart beat, gasps and absence of pulsation in large arteries.

Recognizing the signs of cardiopulmonary arrest, providing effective artificial respiration (CPR - Cardio Pulmonary Resuscitation), stabilizing the patient and transferring him to an appropriate cardiac care centre should take care of the emergency.

What is CPR ?

Cardio Pulmonary Resuscitation is a technique whereby you maintain patient's breathing through artificial respiration and blood flow by external chest compression.

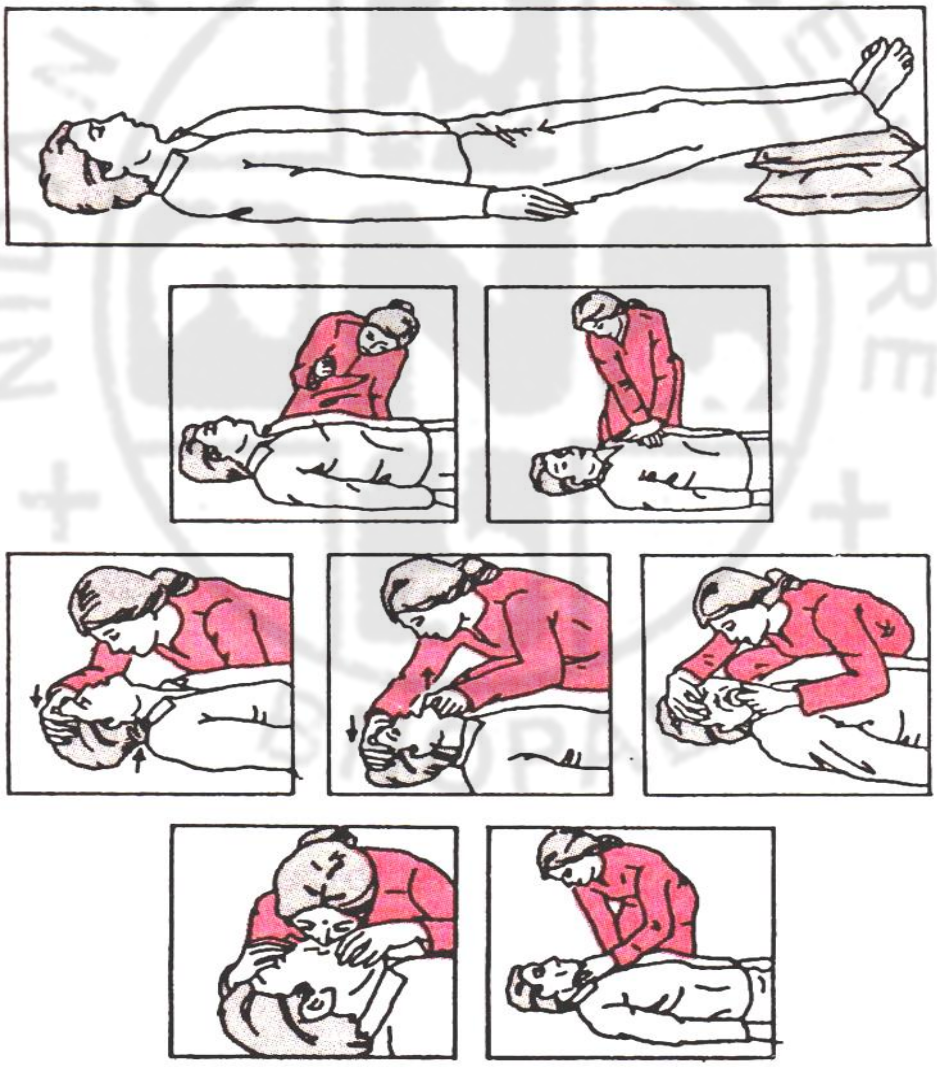
How to perform CPR ?

Place the patient on his back on a hard flat surface.

Keep the legs raised (Fig.1).

Give one or two sharp and forceful blows with the closed fist on the middle of the chest (Fig.2).

This will help to restore effective beating of the heart.



Start compressing the heart externally as shown in (fig.3) at the rate of 80-100 compressions per minute in the following manner.

Place yourself in a kneeling position by the side of the patient lying flat on the hard surface.

Place the heel of one hand over the lower part of the breast bone just above the abdomen. Keeping the arms straight, place the heel of the other hand over the first to reinforce the downward pushing action.

Without bending the arms, depress the breast bone about 2 +/- 1/2 inches.

After this release the pressure suddenly to allow the breast bone to recoil upwards (in order to fill the heart with blood).

Simultaneously with external compression, commence mouth-to-mouth respiration.Tilt the head backwards and lift the back of the neck (Fig.4).

Pull the lower jaw to displace the tongue forward (Fig.5).

Open the mouth and use your fingers to clear the food, fluid, vomit, artificial dentures etc. (Fig.6).

All these steps will help in opening up the airway passages. Look, listen and feel for breathing.

If the patient does not start breathing, start mouth-to-mouth respiration. Pinch the nostrils, seal the patient's open mouth with your own and deliver rapid mouth-to-mouth breaths (Fig.7).

Observe for chest expansion and presence of pulse continue mouth-to-mouth respiration at the rate of one every 5 seconds (Fig.8).

If only one person is present, 2 lung inflations alternated with 15 chest compressions at a rate of 80-100 per minute should be carried out. If an assistant is available, one should deliver chest compression at a rate of 80-100 per minute while the other ventilates the patient at slow ventilatory breaths lasting for 1 to 1 & 1/2 seconds, once every 5th compression.

Cardiac compression along with artificial ventilation should be carried out rhythmically, regularly and sincerely until effective spontaneous breathing is re-established.

A few precautions should be taken while performing CPR.

A) Do not exert pressure on the top of the abdomen as this can harm the liver.

B) Pressure should be exerted only with the heel. See that the fingers are lifted and do not touch the ribs.

C) The compression should be smooth, regular, uninterrupted with 50% of the cycle for compression and remaining 50% for relaxation.

Continue CPR for 3 to 4 minutes until the patient has stabilized and transfer the patient to a cardiac care centre.

What should be my routine now that I am diagnosed as a CHF patient?

If you follow the guidelines given here in or those given to you by your doctor then your heart won't stop you from doing many things that you enjoy.

Take your medicines regularly This is very important as it is very essential to maintain constant drug levels in the blood to get maximum protection against any impending heart problem. Do not discontinue your medicines under any circumstance unless your doctor has asked you to do so.

You can make use of some simple techniques to help you take the medicines on time like

- ✓ using a pill box
- ✓ clubbing it up with some inevitable activity of the day
- ✓ asking your wife or children to remind you
- ✓ fixing up a time of taking the medicines

Have a balanced diet

Do pot over eat. Have small meals 5 to 6 times a day. This will help in keeping a check on your weight. Avoid eating too much of salt. This would take some time, but it will be worth your effort for the longer life of your heart. Eat slowly do not rush through your meals. Have a short stroll after your meals, it will help in improving your digestion. Eat more of green and leafy vegetables, fresh fruits and salads and reduce the intake of sweets, meat, eggs etc. Drink lot of water so that the kidneys remain flushed.

Learn to Relax

This is the best way to keep away from all worries and tensions. Involve yourself in your hobbies whenever you find time. This will give you a break from the routine. Spend more time with your family. Try and create a clear demarcation in your office life and your personal life. Devote time for yourself and you can make your heart much more healthy than what it is.

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