

# Cholesterol and your Heart

Public Information Pamphlets



## **CHOLESTEROL AND YOUR HEART**

***Cholesterol is naturally present in the body and is an essential substance. It is only when levels of Cholesterol rise in blood that it becomes harmful for the body leading to Angina and Heart Attacks. High Cholesterol can also lead to Stroke and may cause damage to the blood vessels of the legs. This pamphlet aims at creating public awareness about Cholesterol and the ways to lower it in blood.***

### ***Do you know what "Cholesterol" is?***

Cholesterol is an oily substance, which is essential for the body cells and helps in the synthesis of many other chemicals in the body. Cholesterol in the blood comes from two sources. It is produced in the liver and it also comes from food that we consume. Cholesterol is transported in blood in the form of special particles called "Lipoproteins". 80% of the Cholesterol in the blood is carried in the form of a lipoprotein called "***LDL***". ***This is the undesirable kind of Cholesterol*** and should be lowered. 20% of the Cholesterol is carried in the blood in the form of a lipoprotein called "***HDL***" ***this is the useful kind of Cholesterol*** as it helps clear the cholesterol from the tissues. Higher levels of HDL are desirable.

### ***Do you know why Cholesterol increases in the blood?***

Cholesterol increases in blood as a result of two reasons: Excess in the diet and an inherent tendency of the body to produce Cholesterol.

### ***Do you know of the connection between high Cholesterol and Heart Attack?***

A certain amount of Cholesterol is essential for life, however when it gets elevated it is deposited in the walls of the blood vessels, which get thickened. When the vessels to the heart get affected in this way, blood supply to the muscles of the heart is interrupted and the muscle may get damaged. Depending upon how severe the blockade is Angina or Heart Attack could result. For this reason high "Cholesterol" is one of the major causes of a Heart Attack. Cholesterol also gets deposited in the walls of the other arteries leading to many other diseases, such as Stroke.

### ***Do you know WHEN you should be most worried about a high Cholesterol level?***

All the major risk factors for a Heart Attack have an additive effect, so if you only have high Cholesterol your risk is not so high as compared to the situation in which you have a high blood Cholesterol as well as, for example, high Blood Pressure. The risk is even higher if you have three risk factors for example the combination of high blood Cholesterol, high Blood Pressure and smoking, and so on. *For detailed information on the risks of a Heart Attack see the Heartfile Public Information Pamphlet on "Prevent a Heart Attack"*

YOU should have your blood Cholesterol checked if

- Your parents, brothers and sisters or other members of the immediate family have had heart disease or have died suddenly, especially if at a younger age.
- If you have other risk factors for Heart Attack such as high Blood Pressure and Diabetes or if you smoke.
- If you are in the habit of eating food rich in fats and meats.
- If you have had a Heart Attack yourself.

### ***Do you know at what level blood Cholesterol is said to be high?***

"Normal" and "Abnormal" Cholesterol levels differ from one person to another depending upon how many other "risk factors" you have for the development of a Heart Attack or whether you have already suffered from a Heart attack / Angina or not.

*It is for your doctor to decide whether your cholesterol level is high or not depending upon the number of risk factors you have, and whether it should be treated with medicines. It is however a good idea for all adults to follow a low Cholesterol diet.*

Triglyceride is another lipid substance, about which it was previously thought that raised levels of this do not harm the heart. However it is now known that high Triglyceride levels are also harmful for the heart.

### ***Do you know of the ways to reduce the blood Cholesterol level?***

High blood Cholesterol is a result of the combination of a Cholesterol rich diet and genetic factors. The initial treatment of high blood Cholesterol should always begin with modification of diet. In most cases diet alone will lower blood Cholesterol. Even in the event that Cholesterol lowering medicines are required, diet control should continue.

### ***Do you know about the "Fats" in your diet?***

In order to understand a Cholesterol low diet and its principles it is important to understand the "*Cholesterol and fat in the diet relationship*"

### ***Visible and Hidden fat in the Diet***

There are two types of fat in the food:

***Visible fat:*** ghee, desi ghee, oils and butter.

***Hidden fats:*** Most of the fat that we take is hidden in the food, for example red meat (beef) contains 9% fat, and nuts (e.g., peanuts) contain half of their weight in

fats. Full cream milk and even half skimmed milk, products made with such milk, cakes, pastries, biscuits contains a substantial amount of fat, whereas egg contains a tremendous amount of fat. All this fat, in addition to raising the Cholesterol level in the blood, is also very fattening because it also contributes to the same number of calories.

### ***Know about "saturated" and "unsaturated Fats" in the diet***

The building blocks of fats are called "fatty acids" and depending upon their chemical structures they can be described as "saturated" or "unsaturated"

**Saturated fats:** Are the undesirable kind of fats which raise your blood cholesterol level and should be **avoided** examples are:

- Animal fat such as "charbi"
- Fats that are solid at room temperature (e.g. banaspati ghee, desi ghee, butter, hard margarine)
- Dairy products such as "balai", full cream milk, semi skimmed milk and products made with such milk
- Fats from meat. Red meats (beef and mutton) and organ meats (kidney, liver brain etc.) are very rich in saturated fat. White meat (chicken) contains much less saturated fat, fish is free from it
- Unspecified cooking oils and coconut oil is high in saturated fats.
- Cheddar cheese

**Unsaturated fats:** Are better than saturated fats and can be taken in **moderation**.

(Unsaturated fats can be Polyunsaturated or monounsaturated)

- Oils, that are liquid at room temperature, are polyunsaturated e.g.; corn oil, sunflower oil, safflower, canola oil and vegetable oil. (an exception

to the rule is coconut oil which is very high in saturated fats and should be avoided)

- Olive oil is monounsaturated and is the best for the heart. It raises the level of HDL Cholesterol in blood, which is the protective kind of Cholesterol.
- Fish contains heart protective mono unsaturated fats.
- Margarine especially soft Margarine is high in Polyunsaturates whereas hard Margarine has a higher content of saturated fats and should be avoided.

In order to be able to lower your LDL Cholesterol and raise the level of protective HDL Cholesterol in your blood you should avoid the foods that are rich in saturated fats and take unsaturated fats in moderation only. A notable exception to this rule is the use of fish and olive oil, which are actually protective for the heart. These recommendations are a generally healthy trend for all adults to follow and especially so for those who have high levels of Cholesterol in their blood. However it is for your doctor to decide whether you should be put on Cholesterol lowering medication or not.

### ***Preparation of Low Cholesterol food.***

- When you choose to eat meat always remember that fish is better than chicken, chicken is better than mutton, and mutton is better than beef.
- When cooking meat, skim off ALL the fat and cut meat into very small pieces.
- Whenever you choose to eat meat it is better to eat it curried with vegetables or dal and with a lot of gravy so that the amount of meat that you eat is as little as possible.
- Meat "Tikkas" should be avoided. "charbi" however must not be eaten with them.
- Avoid meat dishes like "Bhuna gosht" which contain meat and very little else.

- Classical eastern delicacies such as "Siri-Pai" and "Nihari" are very rich in animal fat and Cholesterol. Do not eat them more than a couple of times a year.
- Brain masala contains 10 times the amount of Cholesterol than does beef, avoid it at any cost.
- Taka-Tak or Khata-Khat contain organ meats, which again are very rich in Cholesterol.
- Always use Polyunsaturated oils for cooking and use as little of them as possible. When using oils do not heat them over and over again as this will denature the oil and make it more harmful.
- Remember that it is always better to use certain techniques of cooking in which the minimum possible fat is used. Currying and frying consume a lot of oil. Barbecuing, grilling or steaming (dam) on the other hand can be fat free ways of cooking. Contrary to popular belief eastern main dishes which includes vegetable and dal can be cooked very well by steaming techniques.
- When cooking chips cut them very thick so that they absorb less oil
- Restaurant selection of food is seldom healthy, ask if they have a low cholesterol menu.
- Removal of balai from milk just after it has come to a boil does not make it free of fat. In order to make it so let milk stand in the refrigerator over night after boiling so that all the cream can be removed and it is as near as possible to skimmed milk.
- Eat plenty of fruits and vegetables as they give a feeling of satisfaction and you may indirectly cut down on your fat intake.

### ***Low Cholesterol Breakfast Tips***

- For breakfast avoid "balai", home made butter, commercial butter and hard margarine. Instead take very little of soft margarine spread if you must.

- Egg yolk is very high in Cholesterol and should be restricted. On the other hand egg white is free of Cholesterol and can be taken every day. Egg white Omelettes are not only delicious but also very wholesome.
- Avoid the trend of having "parathas" with "desi ghee" and if you must, have them very occasionally and cook them in the smallest possible quantity of polyunsaturated oil. Oil should be added over the paratha and not inside the dough.
- While eating Cheese remember that Cheddar has much more Cholesterol than does Cottage cheese.

### ***Do you know how long you will be on a fat lowering diet?***

It is generally healthy for all to be on a fat lowering diet beyond a certain age. Fat lowering dietary instructions however should be strictly adhered to if you have risk factors for angina and heart attack. It is even more important if you have more than one risk factor.

For people who suffer from Angina and or have had a Heart Attack, it is important to strictly adhere to the Cholesterol lowering diet whether Cholesterol level in the blood is high or not. In such patients with high Cholesterol levels in the blood, the doctor will usually give a trial of diet modification for 3 months failing which medicines will be given. A Cholesterol lowering diet must continue even when Cholesterol lowering medicines are given.

### ***About Cholesterol lowering medication?***

It is now proven without doubt that lowering your lipid levels (fats in the blood) will reduce your risk of developing a heart attack. There are lipid-lowering medicines that will lower Cholesterol only and there are others that will lower Triglycerides and others that will reduce both. You will be prescribed the drug that suits your needs the best and your doctor will decide that. **Do**



***not start lipid-lowering drugs on your own.*** Like all medicines, this medication is not free from side effects, but these are usually very rare, not very harmful and can be detected very easily so that the medication can be altered. Blood cholesterol lowering treatment in this respect is no worse and probably safer than treatment for many other conditions, such as high blood pressure, diabetes, arthritis and angina. The important principle is that treatment should not be undertaken lightly for any medical condition and that the benefits must clearly outweigh the disadvantages of such treatment.

***It is important that even if you are given this treatment you should maintain your Cholesterol lowering diet in order to get the full advantages of treatment!***

***Cholesterol lowering medication should not be regarded as a substitute for diet, nor is it a substitute for stopping smoking!***

***The drugs that are used for Cholesterol lowering are:***

***Statins:*** This group of drugs decreases the blood Cholesterol levels. The group includes Fluvastatin, Pravastatin, Simvastatin, Lovastatin Atrovastatin etc (they come under different trade names). They are in the form of tablets and are taken as a single dose each evening, with or after food.

***Fibrates:*** This group is used when both the Cholesterol and Triglycerides are high in blood, but primarily reduce Triglycerides. They are in the form of capsules and tablets and this group includes Bezafibrate, Ciprofibrate, Fenfibrate, Gemfibrosal etc. They should not be taken if you are also on Statin therapy except under strict medical supervision and the treatment must be started under

caution if you are also on anticoagulants (blood thinning medicine other than Aspirin)

***Bile acid binding agents:*** These drugs mainly lower blood cholesterol and are usually in the form of powders contained in sachets and must be well soaked in fruit juice or water before they are taken. They are usually taken before or during a meal.

***Niacin:*** This drug is used in patients with high blood cholesterol and triglyceride levels. Although it is very effective it has a number of minor but troublesome side effects such that it can not be easily tolerated and thus not widely used.

***Other drugs and combinations:***

Many other drugs are also used but they are not widely available. For some patients a combination of drugs is used as one agent alone does not lower Cholesterol level sufficiently.

***A high blood cholesterol level in the adult is a combination of an inherent tendency and the consumption of an unhealthy diet rich in saturated fats. As high cholesterol levels are a major risk factor for the development of Angina and Heart Attack, its early detection specially in those who have any of the other risk factors for Coronary artery disease is very important so that prompt measures in the form of dietary modification and medication can be undertaken. Your awareness in this regard will protect you if you are willing to do your part!***

*The guidelines described in this booklet are meant for adults. A low fat diet may in fact be harmful for children. These recommendations are not intended as a substitute for the advice your doctor may give you based on his knowledge of your particular illness.*

## **Heartfile *Public information pamphlets***

***No 1 - Prevent a Heart Attack***

***No 2 - Symptoms of Heart Disease***

***No 3 - All about High Blood Pressure***

***No 4 - Smoking and your Heart***

***No 5 - Cholesterol and your Heart***

***No 6 - Food and your Heart***

*Heart disease is one of the biggest killers' worldwide, with a particularly high prevalence in the IndoPak Subcontinent. Heartfile is a non profit organisation fighting heart disease in Pakistan and aims to extend this service to the rest of the developing world. We rely entirely on voluntary contributions to carry out our work and your help in this connection will be greatly appreciated.*

***Public Information Pamphlets***

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