

PATIENT INFORMATION **ATHEROSCLEROSIS**

WHAT IS ATHEROSCLEROSIS?

Atherosclerosis is a condition caused by cholesterol build up and inflammation in your arteries. This leads to lesions in your arteries called plaques. These plaques are made up of excess cholesterol, other fats, and inflammatory cells in the artery wall). These plaques can lead to narrowing of your arteries and cause symptoms from decreased blood flow such as chest pain (angina) or pain in your legs (claudication). In addition these plaques can sometimes suddenly become unstable and rupture, leading to heart attacks and strokes. Atherosclerosis can be a progressive disease.

HOW WAS I DIAGNOSED?

You may have been diagnosed with atherosclerosis by your doctor in a number of ways:

- Clinical history: prior angioplasty, cardiac bypass surgery, carotid surgery
- Clinical presentation: heart attack, angina, or stroke
- Physical examination: bruit (noise heard over artery) or absent pulses
- Noninvasive test: ECG, stress test, ultrasound study
- Invasive test: angiogram showing narrowings or obstructions

WHAT CAN HAPPEN?

Individuals that have developed atherosclerosis are 5 to 7 times more likely than the general population to have a cardiac or vascular (blood vessel) event. Having atherosclerosis means you are at higher risk for developing a heart attack or stroke. While your symptoms may have been improved or eliminated with medications, balloon/stent procedures, or bypass surgery, you are still at risk for future events. Plaques in your arteries that right now are mild and not causing you a current problems can, without proper treatment, suddenly become unstable leading to a stroke or heart attack. Once you have developed atherosclerosis you remain at increased risk for the rest of your life. Fortunately there are medications you can take and lifestyle changes you can make that can dramatically lower your risk.

WHAT CAN I DO TO TREAT ATHEROSCLEROSIS?

The progression of atherosclerosis can be halted and in some cases even reversed.

There are four types of medications that have been shown to save your life if you have atherosclerosis. By taking this combination of medications regularly, you can dramatically lower your risk of a heart attack, stroke, heart failure, needing angioplasty or bypass surgery, or having to come back into the hospital. It has been estimated that together these medications can reduce your risk of having a heart attack or stroke by 70 to 80%.

In addition to the medications there are important lifestyle changes that can lower your risk.

WHAT ARE THE LIFE SAVING MEDICATIONS?

- Aspirin Works by inhibiting platelets (tiny parts of cells that play a role in clotting) in the blood and preventing blood clots from forming in the arteries.
- Beta blockers Protects the heart and blood vessels from damage. Although these medications lower heart rate and blood pressure, they benefit individuals who start off with normal blood pressures and heart rates.
- ACE inhibitors Protects the heart and blood vessels from damage. Although these medications lower blood pressure, they benefit individuals who start off with normal blood pressures.
- Statins Reduces bad cholesterol and inflammation in the arteries thus preventing the build of plaques in the arteries and preventing existing plaques from rupturing. Although these medications lower cholesterol levels, they also benefit individuals who start off with normal or low cholesterol levels.

There may be certain conditions that you have or other reasons why you may not be receiving one or more of these medications. You should check with your doctor so you can understand what those reasons are if you are not receiving all four of these medications. There are other medications you may receive to control symptoms or for other purposes. The four type of medications above, however, are the only ones currently proven to save lives.

How Do I Know If I Am Being Treated With The Life Saving Medications?

At UCLA we use a program called CHAMP (Cardiovascular Hospitalization Atherosclerosis Management Program) to assist your doctors and nurses in initiating these life saving medications. Chances are that you have already been started on these medications, but you should make sure. Use the tracking sheet on the last page. You should ask your doctor, nurse, or pharmacist about your medications. The purpose, action, dose, and major side effects of each medication prescribed should be explained to you. Ask for a written medication sheet and a medication schedule.

Beta blockers include: metoprolol (lopressor, toprol xl), atenolol (tenormin), propranolol (inderal), and carvedilol (coreg)

ACE inhibitors include: captopril (capoten), enalapril (vasotec), lisinopril (prinivil, zestril), ramipril (altace), quinapril (accupril), benazepril (lotensin), trandolapril (mavik), moexipril (univasc), and perinopril (aceon)

Statins include: simvastatin (zocor), pravastatin (pravachol), atorvastatin (lipitor), lovastatin (mevacor), fluvastatin (lescol), and cerivastatin (baycol).

WHAT ARE THE LIFESTYLE CHANGES I NEED TO MAKE?

Exercise

Once approved by your doctor, you should begin a regular exercise program. In general you should aim for exercising for a minimum of 30 to 60 minutes 3 to 4 times weekly, supplemented by an increase in daily activities. Good ways for you to get exercise include walking, jogging, cycling, or other aerobic activity. You should also try things such as walking during breaks at work, taking the stairs instead of the elevator, and parking your car a little farther away. After a heart attack or bypass surgery you may benefit from a supervised exercise in a cardiac rehabilitation program. Talk to your doctor about what would be best for you to do.

The phone number for the UCLA Cardiac Rehabilitation Program is (310) 825-0014

Diet

You should start a diet that is low in fat, saturated fat, and cholesterol and that helps you maintain a normal weight. The American Heart Association diet is recommended. This diet contains <30% of calories from fat and <7% saturated fat, and < 200 mg a day

of cholesterol. There are a number of guides and cookbooks that can help you get started.

Stop Smoking

If you smoke, you must stop. Continued smoking once you have atherosclerosis makes you 5 times more likely to have a heart attack, stroke, and die. If you quit, however, your risk goes down dramatically, even in a few days. There are lots of things that your doctor can do to help you quit such as providing nicotine replacement therapy, a medication called Zyban that decreases the craving for smoking, and formal smoking cessation programs. Your family should help you by making sure any family members that smoke also quit.

Other Things

If you have high blood pressure, you want to make sure your blood pressure is well controlled. If you have diabetes, you want to make sure your blood sugar is well controlled. If you are overweight, you want to lose weight to get to your ideal body weight.

These things may seem hard to do and they are. You may not succeed on your first try. Work closely with your doctors and nurses and don't give up.

WHAT ELSE DO I NEED TO KNOW?

There are essential values that you should know about yourself and continue to follow. Below are the goal values which you should work with your doctor to achieve.

- LDL-cholesterol < 100 mg/dl
- HDL-cholesterol > 45 mg/dl
- Blood Pressure < 140/90 mmHg

The first is your LDL cholesterol level (low density lipoprotein, the so called "bad" cholesterol). Prior to treatment this value may range from 70 to over 200 mg/dl. The goal for all patients with atherosclerosis is to have a LDL cholesterol < 100 mg/dl and to keep it there. Your LDL level is measured with a blood test called a lipid panel. Being told your total cholesterol level is normal is not enough. Many individuals with normal total cholesterol levels have a LDL-cholesterol level that is above 100 mg/dl. Diet and exercise can be helpful to lower cholesterol but over 90% of patients will require statin medications to get and keep their LDL below 100 mg/dl. Some individuals mistakenly

believe that they can stop their medications once their LDL level is at goal. This is not the case because your LDL levels will rise again and you will be again at increased risk.

So know your LDL and make sure you get it and keep it is below 100 mg/dl. Keep a record of your LDL cholesterol levels and track you progress.

The second essential value is your blood pressure. This is measured during each doctor's office visit with a blood pressure cuff. This is also something you can check at home. The goal for the systolic blood pressure (top number) is < 140 mmHg. The goal for the diastolic blood pressure (bottom number) is < 90 mmHg. Patients with diabetes, heart failure, or renal failure may need to achieve an even lower blood pressure. If you have high blood pressure that is not well controlled your risk of heart attack, stroke, heart failure, and kidney failure is elevated. Fortunately, medications such as ACE inhibitors and beta blockers can help you control your blood pressure.

There are other lipid values that may be followed such as your HDL (high density lipoprotein, good cholesterol) and triglycerides. The goal for your HDL is > 45 mg/dl. Exercise, statins, other cholesterol medications, and alcohol can raise your HDL. If you have diabetes you will need to closely follow your blood sugar values.

WHAT IS MY FOLLOW-UP?

You should make sure that you have appointments scheduled with your doctors before you leave the hospital. Don't miss your appointments or if you do make sure to reschedule. Continuation of the medications targeting your underlying atherosclerotic disease process can markedly improve how well you do. It is important that you follow-up with your doctor and continue to use of the beneficial therapies that were started while you were in the hospital. One of the major reasons patients have another heart attack or stroke or need repeat catheterization, angioplasty, or bypass surgery is that they did not continue to take their heart medications.

Your LDL, HDL, and BP need to be monitored. There are other blood tests that are also important.

- Follow your doctor's advice
- Take your medications the way you should
- Exercise, eat a healthy diet, keep a healthy body weight
- Keep your doctor's appointments
- Keep a record of your LDL, HDL, and blood pressure readings

Since you have atherosclerosis, members of your family may also be at higher risk. It is important for them to see their doctor to determine what can be done to lower their risk.

WHAT SHOULD I DO IF I DEVELOP SYMPTOMS?

Symptoms of chest pain, shortness of breath, dizziness, weakness, trouble speaking, or numbness lasting more than 1 to 2 minutes should prompt you to stop your activities and sit down. If you are having chest pain and have nitroglycerin, place a NTG tablet under the tongue. This may be repeated at five minute intervals. If symptoms persist after 10 minutes you should seek transportation to the nearest hospital Emergency Department either by ambulance or the fastest available transport (i.e. call 911). Take one dose of aspirin 325 mg and chew, unless allergic or previously advised not to take aspirin. Don't delay seeking medical attention if you can not get through to your doctor right away. If your symptoms are severe call 911 first.

Don't ignore the warning signs of a heart attack or stroke. Have an immediate plan of action prepared in advance. Prompt medical attention can make the difference between life and death

HOW CAN I LEARN MORE?

Talk to your doctor, nurse, or health care professional. Or call your local American Heart Association at (800) 242-8721.

The American Heart Association also has a web site you can visit at www.americanheart.org. There is a program called "One Of a Kind". One Of A Kind is a personalized health management program. This program was developed by the American Heart Association to help you live a healthier life. It works by giving you information that's tailored to your own health and lifestyle needs. You can use this information to develop new healthier habits and lower your risk.

The UCLA Healthcare system also has a web site with lots of helpful information you can visit at www.healthcare.ucla.edu.

UCLA Cardiovascular Hospitalization Atherosclerosis Management Program: CHAMP
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ATHEROSCLEROSIS PATIENT TRACKING SHEET

Review with your doctor and nurse

Life Saving Medications

			Medication	Dose	If not, why not
Aspirin	yes	no	_____	_____	_____
Beta blocker	yes	no	_____	_____	_____
ACE inhibitor	yes	no	_____	_____	_____
Statin	yes	no	_____	_____	_____

Lifestyle Changes

Your goal

Exercise	Exercise minimum of 30-60 minutes, 3-4 times a week Cardiac rehabilitation program: yes no
Diet	AHA diet low in fat and cholesterol. Maintain healthy weight
Smoking	If you smoke, stop completely. Nicotine replacement: yes no Zyban: yes no

Essential Values

	Your starting value	Your goal (continue life long)
LDL-cholesterol	_____	LDL < 100 mg/dl
HDL-cholesterol	_____	HDL > 45 mg/dl
Blood pressure	_____	BP < 140/90 mmHg

UCLA CHAMP