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Resident Characteristics & Assessments
Cholesterol

Understanding Cholesterol

Cholesterol. You hear the word all the time. But what does it really mean, and why should you care? Cholesterol is a waxy, fat-like substance found in the bloodstream and in cells throughout the body. Because it often has negative connotations, it may surprise you to know that cholesterol is not inherently 'bad'. In fact, this naturally occurring substance plays a critical role in the formation of cell membranes and the manufacture of hormones. But you only need a small amount of cholesterol to carry out these functions, so when too much cholesterol is present in your body, it becomes a health risk. To understand this more fully, let's look at how cholesterol works. Cholesterol doesn't dissolve in the blood stream. Instead, it is transported in and out of cells by carriers called low-density lipoproteins, or LDL, and high-density lipoproteins, or HDL. When the amount of cholesterol in the blood stream increases, the body needs to create additional lipoproteins to transport them. LDL is known as 'bad' cholesterol, because too much of it results in plaque build-up on the arterial walls. This condition, known as atherosclerosis, hardens and clogs the arteries, which can lead to a heart attack or stroke. HDL, on the other hand, has been dubbed 'good cholesterol', because it aids in removing cholesterol from the body, carrying it away from the arteries to the liver where, it's passed out of the body. Determining your cholesterol level can be done with a simple blood test. The 'normal level' of cholesterol for any individual varies depending upon their age, weight, and sex. Typically, though, an LDL level above 160 is considered high. Similarly, an HDL level below 40 is usually too low. Both high LDL levels and low HDL levels can put you at risk for plaque buildup. About 75 percent of the cholesterol in the blood is made by your liver and other cells in your body. The other 25 percent comes from the food you eat. Cholesterol is found in animal products like meat, eggs, poultry, and liver, which is a particularly high source. This is why eating less saturated fat from animals is a good first step toward lowering your cholesterol to a healthy level. Because high cholesterol can be a big risk factor for both heart disease and stroke, managing your levels is an important part of a healthy lifestyle. If you think you may have high cholesterol, or if you have a family history of the condition, please see your doctor for a test.

Consequences of High Cholesterol

High cholesterol is a key risk factor in heart disease, which is the biggest killer in America today. Cholesterol is a fat-like substance that is produced naturally by the body and is also ingested from food. While some cholesterol is needed for many bodily functions, having too much can pose a serious risk to your health. Cholesterol is 'carried' through the body by cells called lipoproteins. There are two types of lipoproteins: low-density, or LDL, and high-density, or HDL. HDL aids in shuttling excess cholesterol out of the body and, for this reason, is known as 'good' cholesterol. On the other hand, LDL, or 'bad' cholesterol, can significantly increase your chances of developing coronary artery disease or of having a heart attack or a stroke. Let's take a closer look at the process through which excess LDL can lead to these serious consequences. When someone has high cholesterol, it can lead to a buildup of fatty plaque along the walls of the body's arteries. This process is called atherosclerosis and has different consequences depending on which artery is affected. When atherosclerosis occurs in the coronary arteries leading to the heart, the flow of vital, oxygen-rich blood to the heart is restricted. This is called coronary artery disease, a condition suffered by seven million American adults. The earliest symptoms of coronary artery disease are usually shortness of breath and chest pain, which is called angina. Episodes of angina most commonly occur after physical exertion, when the heart's need for oxygen is increased beyond what can be provided by the restricted blood flow. Sometimes, the build-up of plaque is so severe that the arties become completely blocked, cutting off blood flow to the heart. This causes the death of heart muscle cells, which is called a heart attack. The symptoms of a heart attack differ for everyone, but many people describe the pain they've experienced as radiating outwards and leading to the back, throat, or jaw.

Severe pain in the left arm is another commonly reported symptom. A distinct shortage of breath, weakness and dizziness are also signs that you may be experiencing a heart attack and should seek emergency medical assistance. Atherosclerosis can affect the arteries leading to the brain, too, which can result in a stroke. A person suffering a stroke will often report losing sensation or feeling weak in one side of their body. Sudden dizziness or loss of coordination, and difficulty speaking or comprehending are also signs of stroke. Coronary artery disease, stroke and heart attack can all result in death, so it is important to take steps to keep your cholesterol at a normal level. If you're worried about your cholesterol, or if you have a family history of high cholesterol, please make an appointment with your doctor.

SUBSTANCES THAT LOWER CHOLESTEROL

If you're among the eighteen percent of Americans with high cholesterol, you might be wondering: Is there a quick cure? Unfortunately, there is no magic food or pill that will immediately reduce your cholesterol levels. While the best way to lower cholesterol is to cut out saturated fats, there are a number of substances that may help speed up the process. Decreasing LDL levels can be as easy as eating more soluble fiber. Just five to ten milligrams a day can lower LDL by 5 percent. Soluble fiber works in two ways. First, it fills you up, eliminating the desire to eat saturated fats. In addition, fiber binds with cholesterol so that it's excreted more readily from the body. The best sources of soluble fiber include oats, barley, legumes, apples, prunes, carrots and broccoli. You may not have heard of them, but plant stanol esters, which are obtained from soybeans and pine trees, are another cholesterol-lowering tool. Because plant stanols are similar in chemical structure to cholesterol, they help block the absorption of the substance. Stanols can be found as an additive in margarine, orange juice and dressings, or as a dietary supplement. A more controversial heart-helper is a moderate intake of alcohol. Studies have shown that consuming one drink per day can lower heart attack risk by up to 45 percent. That's because alcohol's effect suppresses the formation of blood clots which can lead to heart attacks or strokes. Moderate drinking also raises levels of the good cholesterol, HDL, by about 10 percent. Experts caution that the benefits of drinking alcohol must be weighed against the known hazards of having too much. If you don't drink already, it is not recommended to begin doing so for your heart's sake. If you're a fish-lover, your cholesterol levels may thank you. Studies have shown that fish oil, which is rich in omega-3 fatty acids, helps protect the linings of the arteries. Get the maximum benefits of fish by enjoying the cold-water varieties, such as salmon, trout and herring. Another great cholesterol-fighting food is soy, and not just because it can replace animal fats in the diet. Soy may actually prevent the oxidation of LDL, a process that leads to the buildup of plaque in the arteries. You've probably heard of Vitamin B3, or niacin, but did you know that it is often used to regulate cholesterol levels? A daily dose of niacin can lower bad LDL cholesterol by up to 20 percent while raising good HDL cholesterol by as much as 35 percent. Niacin is available as a supplement and with a prescription. Because of possible side effects, do not use this vitamin to lower cholesterol without the supervision of your doctor. There's no magic cure for high LDL cholesterol, but these foods and supplements have been known to help. Remember to talk to your health care practitioner before starting a new diet or supplement plan.

LOW-CHOLESTEROL LIFESTYLE

Whether you're in the eighteen percent of Americans with high cholesterol or not, you can benefit from living a low-cholesterol lifestyle. A low-cholesterol lifestyle involves making conscious decisions to eat, play and live in a way that will help to lower your levels of harmful LDL cholesterol. Cholesterol is a fatty substance that is found in the body. Some cholesterol is necessary for basic functions, but here's the catch: the body usually makes all the cholesterol it needs. With this in mind, it makes sense to lower your intake of fats. In fact, it's best to limit total fat intake to less than 30 percent of your daily calories. All fats aren't created equal though, and fall into different categories: saturated, unsaturated, and trans-fatty acids. Saturated fat is found primarily in foods from animals, like beef, eggs, milk and cheese. Because saturated fat is the main dietary cause of high blood cholesterol, it is best to limit it to less than 7 percent of your daily calories. The unsaturated fats are found in many fish, nuts, seeds and plant oils. They should make up about half of your daily fat intake. Perhaps the worst fats are the

trans-fatty acids and hydrogenated fats. Trace amounts of these are found in animal products. They are also formed during the process of hydrogenation, which is how margarine, shortening and cooking oils are made. Understanding and limiting your intake of fats is an important step toward a cholesterol-friendly diet, but it's essential to increase your fiber, too. Consuming 25 to 30 milligrams of fiber-rich foods like fruits, vegetables and whole-grains daily can help lower LDL cholesterol. A healthier diet is a great start, and exercise can make your program even more efficient. Aim for thirty minutes at least three times a week. While physical activity is not known to impact bad LDL cholesterol, it does increase the level of HDL, or good cholesterol, lowering the risk of heart disease. And finally, one of the most important things you can do to lower your cholesterol levels is to stop smoking, or to decrease the amount of time you spend around smokers. Smoking is a double blow. It lowers levels of HDL cholesterol and makes your body resistant to heart-healthy exercise. High LDL cholesterol is bad news, but lowering your cholesterol can help. Remember to see your doctor before you begin a new exercise or diet program.

REGULATING CHOLESTEROL WITH MEDICATION

If you suffer from recurrent problems with your cholesterol levels, your doctor may recommend medication. How will your physician decide what's right for you? When prescribing a medication to regulate your cholesterol levels, your doctor will consider your medical history, age, lifestyle and, most importantly, your specific cholesterol problems. There are two types of cholesterol medication: one that lowers levels of bad LDL cholesterol and one that increases the amount of good HDL cholesterol in the body. Both can result in a reduced risk of heart attacks and strokes. The most commonly prescribed, and most effective, LDL-lowering medications are in a class of drugs called statins. Stains include drugs commonly prescribed drugs like Lipitor. Statins work by inhibiting the enzyme which controls the rate of cholesterol production in the body. The result is often a decrease in LDL cholesterol by 20 to 60 percent. Statins are usually taken with the evening meal, or at bedtime. These medications are extremely well tolerated and side effects are rare. Another form of medication that lowers LDL cholesterol is bile acid sequestrants, which are marketed under the brand names like Questran, and Colestipol. Bile acid sequestrants bind with cholesterol-containing bile acids in the intestine. This causes more bile acid to be released in the stool, lowering LDL cholesterol levels by up to 15 percent. Cholesterol absorption inhibitors, like ezetimibe, or Zeita, work by blocking the absorption of cholesterol from the intestines. These drugs are about as effective as the bile acid sequestrants in lowering LDL cholesterol. Both cholesterol absorption inhibitors and bile acid sequestrants may be more effective at lowering LDL cholesterol when combined with a statin. If low levels of the good cholesterol, HDL, are the problem, your doctor may turn to a medication like niacin, more commonly known as Vitamin B3. The average American diet contains just 15 to 30 milligrams of Vitamin B3 daily. Using niacin for cholesterol, however, involves much higher doses-up to 3 grams per day. Niocin acid is available both as a prescription and as an over-the-counter medication. It can raise HDL cholesterol by up to 35 percent, but even the OTC version should be used under a doctor's supervision. Not all people with high cholesterol require medication. In most cases, your doctor will recommend lifestyle changes, like a low-fat diet, daily exercise and smoking cessation, as a first recourse. However, if your cholesterol levels don't fall with these measures in about three months, your doctor may prescribe one, or a combination, of these medications. Cholesterol medications can be a great defense against high LDL cholesterol and low HDL cholesterol. However, you should always take medications exactly as prescribed by your doctor.

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Dr. Brian P. Kessler has been the Medical Director of Spine and Sports Medicine since 2000. He received his Bachelor's Degree from Emory University and his MD from St. George's University School of Medicine. Dr. Kessler completed his medical internship in General Surgery at Easton Hospital, in Easton, Pennsylvania. His residency in General Surgery was accomplished at Lincoln Hospital Medical Center, a Level One Trauma Center in the Bronx. Dr. Kessler handled spine, orthopedic and head trauma while serving as a Surgical House Physician at seven New York City area hospitals and trauma centers, including Wyckoff Heights Hospital, King's County Medical Center, and the Elmhurst Hospital Center, a teaching affiliate of the Mount Sinai Hospital in New York City. Combining the skill of running a topnotch medical practice in New York City with depth of experience in orthopedics and trauma of the spine and head, Dr. Kessler works hard to be an excellent physician who understands the importance of maintaining good health.