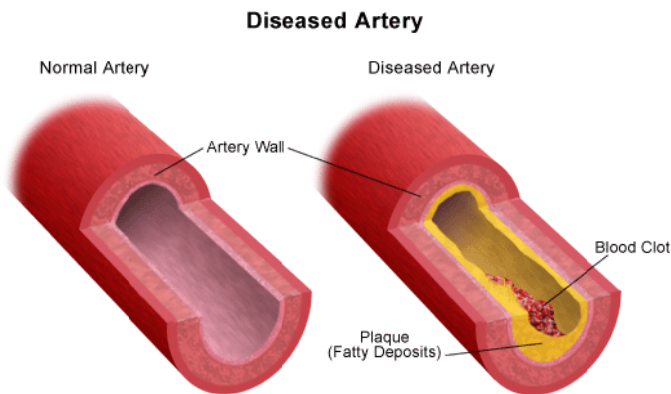


HOW DOES LOWERING LDL CHOLESTEROL LOWER HEART ATTACK RISK?

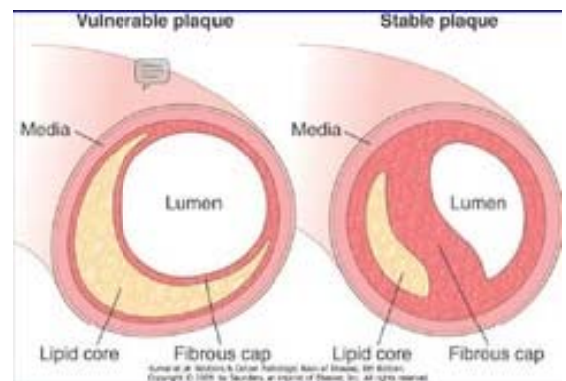
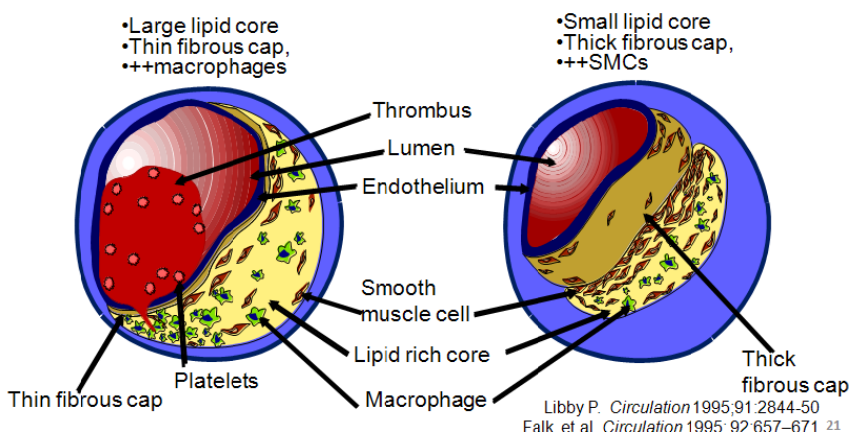
The coronary arteries are the “fuel supply” to the heart muscle and provide blood for heart muscle contraction. Coronary artery disease is the process of cholesterol buildup within the walls of the coronary arteries. The heart attack occurs when a coronary artery becomes closed and oxygen rich blood can no longer get through to feed the heart muscle. The closure is caused by the buildup of cholesterol or more commonly when the cholesterol buildup (plaque) ruptures and a blood clot forms and blocks the artery.

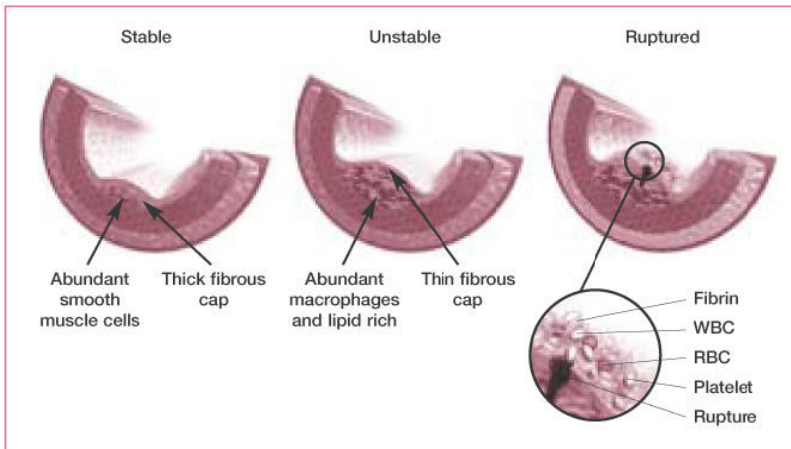


Sometimes plaque builds up slowly and as the artery gradually becomes narrow, other blood vessels develop to supply blood to the heart muscle. When narrowing of a coronary artery is severe, however, a patient is likely to have chest pain, shortness of breath, or other symptoms, and warnings of trouble. Treatment may include angioplasty or coronary artery bypass surgery.

There are times when cholesterol plaque may not cause much narrowing of the coronary artery and consequently the patient has no symptoms or warning signs. If the plaque has a large lipid (fatty) core and a thin fibrous cap, it may be very unstable and prone to cracking or rupturing.

que





When the thin fibrous cap is damaged, the substances from the fatty lipid core that enter the bloodstream cause the blood to clot. The combination of the plaque and clot together can completely close off the coronary artery and cause a sudden heart attack or sudden death.

Researchers believe that lowering LDL cholesterol decreases the size of the lipid

core in plaque and therefore changes the consistency of the plaque. These changes which include thickening of the fibrous cap make the plaque stable and less likely to rupture or cause heart attack.

The figure below depicts the development of atherosclerosis over time. Note that the process begins very early in life and progresses over time. Many individuals experience symptoms of heart disease as early as the third or fourth decade of life. More typically, symptoms of coronary disease and major events occur later in life.

