

# CORONARY ARTERY DISEASE

## WHAT IS CORONARY ARTERY DISEASE?

Coronary artery disease is a progressive thickening of the walls of the blood vessels due to atherosclerosis (deposits of cholesterol, fats and calcium). The thickened wall causes the vessel to narrow, thus decreasing blood flow to the heart muscle. This process can be compared to rust and sludge buildup in plumbing.

## WHAT CAUSES CORONARY ARTERY DISEASE?

Some causes (risk factors) have been identified and associated with coronary artery disease. They are classified as changeable or unchangeable risk factors.

### Changeable

- Cigarette smoking
- High blood pressure
- High cholesterol
- High glucose levels
- Obesity
- Lack of regular exercise
- Stress

### Unchangeable

- Family history or coronary artery disease
- Gender (males are more prone)
- Age
- Diabetes



**NONOBSTRUCTED**



**OBSTRUCTED**

During your stay in the hospital, you will learn ways to reduce the risk of further coronary artery disease by focusing on the changeable risk factors. In addition, if your cholesterol or triglyceride levels (fats in the blood) are high, you may be approached by the Johns Hopkins Preventative Cardiology group. They help by giving advice on how to lower fats in the diet, screening other family members (siblings and children), and provide education on other risk factors to prevent the progression of coronary artery disease.

## WHAT ARE THE SYMPTOMS OF CORONARY ARTERY DISEASE?

The major symptom of coronary artery disease is angina. Angina occurs due to decreased oxygen to the heart muscle. Everyone can experience angina in a different way. It may be felt as chest pain or pressure that radiates to the neck, jaw or arms; shortness of breath; or indigestion. Usually angina is brought on by exercise, stress or excitement, exposure to the cold, or after eating a heavy meal when the heart must work harder. Angina can occur at rest, which may indicate more serious disease.

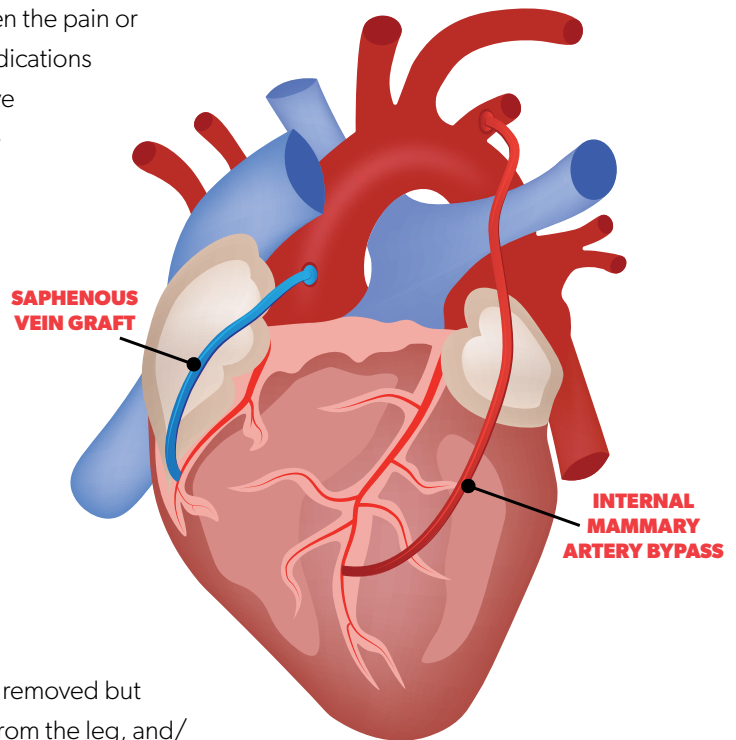
Women frequently have different signs of coronary disease than men. They may only notice increasing fatigue, decreasing activity tolerance or toothaches. These can be as serious as angina.

If the blood flow is severely restricted to an area of the heart muscle, a heart attack (myocardial infarction) may result, which is the death of a portion of the heart muscle. The pain associated with heart attack, unlike that of angina, is not relieved with nitroglycerin and rest.

## WHY HEART SURGERY?

Your doctor recommends heart surgery when the pain or other symptoms are not manageable by medications and lifestyle changes alone. Or, you may have critical narrowing in vessels that diminish the blood flow to a large portion of the heart muscle, placing you at risk for a disabling heart attack.

The surgeon must bypass the obstruction in the artery since it cannot be dissolved or removed. Bypassing the blockages will supply the necessary oxygen, thereby relieving angina and increasing the function of the heart.



## HOW ARE THE BLOCKAGES IN THE CORONARY ARTERY BYPASSED?

The blockages in the coronary artery are not removed but will be bypassed using the saphenous vein from the leg, and/or the internal mammary artery from the chest. The saphenous vein is removed from the leg, and one end of the saphenous vein graft is sewn to the largest artery in the body (aorta) and the other end is sewn past the obstruction into the coronary artery. The internal mammary artery is freed at one end in the chest and sewn past the obstruction into the coronary artery. Either graft reroutes the flow of oxygen-rich blood to the heart muscle. These procedures can be compared to a road detour.

If you have a stent in place in the vessels bypassed, the stents are not removed.

## WILL MY CHEST MUSCLE FUNCTION WITHOUT THE INTERNAL MAMMARY ARTERY?

Removing the internal mammary artery for use in the heart's circulation has not been shown to cause any injury to the chest muscles. Some patients may experience numbness of the chest that lessens with time but may not disappear entirely.

## WILL MY LEG(S) FUNCTION PROPERLY WITHOUT THE SAPHENOUS VEIN?

Removal of the saphenous vein will not hinder normal circulation in the leg(s). The blood that previously flowed through the saphenous vein will change its course of travel. This is known as "collateral circulation." Following surgery, there may be some swelling in your leg(s) but this will decrease in time.

