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# Heart To Heart Talk

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## Heart Bypass

### What is Heart Bypass?

Heart Bypass (or, Coronary Bypass) Surgery is an operation that re-routes blood circulation, using (Saphenous) Veins from the leg and/or (Internal Mammary) Arteries behind the breastbone as “ new pipes” through which blood is carried around the blocked coronary arteries to the muscles of the heart that are not receiving enough blood because of obstruction.

### What is this surgery done for?

Coronary Bypass is done for patients who have chest (heart) pains (angina pectoris) that are resistant to medications, and who have been found to have significant blockages in the coronary arteries by a dye test called Coronary Angiogram, also known as Heart Catheterization.

### Are all chest pains angina pectoris?

No, not all chest pains are heart pains. Other conditions that can cause chest pains include muscles aches, skeletal pains, referred pains from pinched nerve in the neck, lung conditions, and many others. But since angina pectoris could lead to a heart attack, or even sudden death, any chest pains must be taken seriously and investigated without delay.

### How about a normal EKG?

Just like many other medical tests, a Resting EKG with negative finding does not totally eliminate the presence of blockages in the coronary arteries. Sometimes, we hear of someone dropping dead who had normal EKG a few days or so before the fatal event. Resting EKG (taken while the person is lying on his back) is helpful only if the findings are positive or abnormal. The more accurate test is a Stress Test (Treadmill EKG), where electrocardiogram is taken while the patient walks on a treadmill. The stress challenges the heart to reveal any abnormality, if present, which, at rest, will not be evident. It is just like a car engine: if only on idle, it may not reveal any problem, but when the car runs, the engine is challenged by the stress and starts to knock, if there is a problem.

## **Besides angina pectoris, what are the other symptoms?**

**Heart attack or coronary artery blockage could have other symptoms that the classical or usual chest pains. Other less obvious symptoms include any of the following: feeling of indigestion, chest tightness, pains or tightness at the front base of the neck, pains and or numbness of either arms, upper back pains, dizziness, generalized weakness. If any one of these symptoms occurs, coronary blockage or impending heart attack should be suspected and ruled out. This is especially true when physical exertion, or stress, or exposure to cold temperature brings about the chest discomfort and any of those symptoms above. The prudent thing to do is to see your family physician or cardiologist promptly.**

## **What causes the blockage of coronary arteries?**

**There are many factors that contribute to the formation of arteriosclerosis (hardening of the arteries of the heart or any part of the body), which lead to obstruction of these arteries. Smoking, eating red meat, eggs, high cholesterol foods, obesity, lack of daily exercise, inability to manage stress, heredity, impaired cholesterol metabolism, uncontrolled hypertension and/or diabetes mellitus.**

## **How much role does heredity have?**

**Contrary to the popular belief, heredity plays a less major role than lifestyle and environment. Children of parents who had coronary heart diseases will not necessarily have significant coronary problems if they did not live and misbehave (self-abuse) like their parents did. If they live a healthier lifestyle, these children (as medical studies have shown) “will not inherit” their parents heart problems. At least, we now know that these children are not inevitably “doomed” to have the same fate as their parents. Statistics show that only 2 out of a hundred persons have a genetic defect that causes abnormal cholesterol metabolism leading to coronary heart disease. The rest of us (the 98%) do not really have a good excuse to have coronary artery blockages or a heart attack.**

## **What is the effect of a blocked artery?**

**Arteries carry blood to muscles and other tissues. Blockage in an artery cuts off circulation. The blood it carries is unable to reach the muscles and other tissues beyond the obstruction, all of which depend on essential blood supply for their nutrition and oxygen. Example: if the artery in the leg is totally blocked by hardening of the artery or by a blood clot, the affected leg and foot will suffer from ischemia (lack of blood) and the muscles and tissues in the leg are damaged. The same harmful effect happens to the heart when coronary arteries get obstructed.**

## **If the Stress Test is positive, what then?**

**If the Stress Test is positive, it is a very strong indication that coronary arteries are stenosed (blocked) and that the heart muscles are suffering. In this situation, the next step is coronary angiogram (heart catheterization) to confirm with 100% certainty the location, nature and severity of the blockages. This will also help the cardiologist in deciding whether an angioplasty (opening the blockage with a balloon that is inflated within the narrowed and tight channel of the artery) or coronary bypass surgery is the best mode of treatment.**

## **How cardiac catheterization done?**

**Heart cath is done by numbing the groin and inserting a spaghetti-like tubing into the femoral (groin) artery. This catheter is pushed all the way up to the aorta (major artery in the chest that is connected to the heart) under X-Ray fluoroscopic visualization and video filming. The tip is inserted in the opening of the left and right coronary arteries, which are at the base of the aorta. X-Ray dye is injected into the two coronary arteries, one at a time, and video filming continues. The blockages are dramatically revealed this way, all captured in dynamic motion on films. This film will serve as a roadmap for the cardiologist (if angioplasty is to be done) or to the cardiac surgeon (if coronary bypass is to be performed). This dye test is the “supreme court” of heart tests, one that will “make the final ruling” as to the presence or absence of blockages, their location, nature and severity.**

## **Are there blockages that cannot be bypassed?**

**Yes, arteries that are blocked all the way to the tip cannot be bypassed. Beyond the area of obstruction, there must be an open channel, to which the end of the new vein or artery graft is connected, so blood can be re-routed into this open channel. If the blocked artery is obstructed in its entire length, there is no opening to hook up the new vein or artery graft into, and there is no channel to accept the flow of blood. In the same manner, if you were driving on a highway and there is an accident ahead, blocking the highway, you make a detour and go beyond the blockage and go back to the highway to continue to your destination. However, if the entire highway is blocked for miles and miles down, your taking a detour through a side street will only be met by the obstruction beyond and you will not be able to get back into the highway.**

## **Is Coronary Bypass safe?**

**In trained and experienced hands, coronary bypass surgery is safe and effective. Today, this surgical procedure is one of the most commonly performed surgery in the United States and all over the world. Since its introduction in the mid 60s, heart bypass has**

**saved hundreds of thousands of lives and tremendously improved the quality and longevity of patients. It has also brought back to the main stream of life majority of these patients, who would otherwise be dead or having heart attacks or intractable debilitating chest pains, or a sensation of an impending doom. One of the medical wonders of the last third of the 20<sup>th</sup> century was the introduction of coronary bypass surgery.**

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