



What's New in Screening for Heart Disease?

How Early Is Early?

While some people may show signs of an impending heart attack, others may experience a sudden cardiac occurrence even without any symptoms. **Dr Lim Ing Haan**, cardiologist at Mount Elizabeth Hospital, highlights the importance of screening and the types of screening available to help prevent and reduce occurrences of heart attacks.

With an increasingly stressful and sedentary lifestyle, heart disease is the leading cause of death globally and is projected to remain so. It could also be a silent killer in apparently healthy people who are asymptomatic.

According to Dr Lim Ing Haan, screening is recommended for asymptomatic men aged 45 to 75 years, and asymptomatic women aged 55 to 75 years. Identification of early atherosclerosis (a condition where the artery wall thickens due to the accumulation of fatty substances like cholesterol) helps motivate individuals to take preventive measures.

In a hospital review of adults aged below 65 who are hospitalised for acute heart attack, only 25 per cent satisfied guidelines to be started on medications if they have had prior screening.

Thus, early screening for heart disease should go beyond basic screening for high blood pressure, high cholesterol, diabetes and obesity. It should include screening for atherosclerosis of the heart and neck arteries. Dr Lim explains that the main idea is to treat the disease itself and not just the risk factors.

Also, those with no evidence of atherosclerosis can be reassured with a peace of mind, whereas those with atherosclerosis can be selectively targeted to prevent a heart attack or stroke.

There is good evidence that undergoing a Computed Tomography (CT) Scan, measuring the coronary calcium score, or going through a carotid ultrasound can help identify those with high risk of cardiovascular disease.

"The main problem that we face is that these tests may identify heart diseases but may not influence behaviour. The physician can help with the diagnosis and prescription of appropriate treatment but the key to compliance to treatment rests entirely in the patient's hands," says Dr Lim.

What is a CT coronary angiogram?

CT coronary angiogram is a procedure using a multi-slice CT scanner to produce coronary artery images. Speed is extremely important in the ability to "freeze" the heart with images. Since the heart is a rapidly moving structure, the only way to produce images of structures within the organ is for the scanning to occur as fast as or close enough to our heart beats.

New generation CT machines can now perform 64, 128 or even 320 slices per minute. Mount Elizabeth Hospital is equipped with the latest 320-slice CT scanner that performs 320 slices per minute.

Performing CT coronary angiogram and its risks

In this procedure, intravenous dye containing iodine is used. For people with kidney disease or diabetes, kidney function may be temporarily affected. In the newer machines, radiation exposure is much less in a Methoxyisobutyl Isonitrite (MIBI) scan or a Cardiac Positron Emission Tomography (PET) scan. The entire CT scan can be performed when a patient holds in a single breath. While in contrast, the MIBI scan takes up to four hours to perform and the Cardiac PET can take up to half an hour. The cardiac CT is also a more accurate test than stress-testing, stress-echocardiography (ECG), or a stress-MIBI scan.

Calcium score technique

Calcium scoring is a technique where the extent of calcification in the coronary arteries is measured and scored. There is a direct correlation between the extent of calcium in the coronary arteries and the risk of a future cardiac event. For example, a calcium score of more than 400 is considered severe and it would be necessary to take steps to prevent further advancement of atherosclerosis and plaque formation. The higher the calcium score, the likelihood of having severe stenosis (narrowing of blood vessels or valves) is higher as well.

Carotid ultrasound

Your carotid arteries are two large blood vessels in your neck that supply blood to the brain. Carotid artery disease screening (or carotid ultrasound) is a simple, non-invasive and painless test to measure the Carotid Intima Media Thickness. During the test, you will be asked to lie on your back. After applying gel to your neck, a probe is used to detect images and to measure the blood flow through the carotid arteries. Doppler ultrasound technology is used to measure the amount of plaque and the speed of blood flow. Dr Lim advises that anyone over the age of 50 years, or for those at risk of stroke and irregular heart rate over the age of 40 years, is recommended to undergo carotid ultrasound screening.

Early detection of heart diseases, especially for those at risk, greatly improves your chances of preventing heart attacks. Don't wait until it is too late.

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