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## CARDIOVASCULAR DISEASES AND THE USE OF NEW TECHNOLOGIES

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## ABOUT ARTICLE

**Key words:** Cardiovascular system, blood, disease. **Abstract:** Diseases of the cardiovascular system - diseases of the heart, arteries and veins. They are many and varied. Some of these diseases (rheumatism, myocarditis, etc.) damage the heart, some damage arteries (atherosclerosis) or veins (e.g., thrombophlebitis), others damage the entire cardiovascular system (hypertension).

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## INTRODUCTION

Cardiovascular disease remains the leading cause of disability and death worldwide. According to the World Health Organization, 56 percent of all deaths are due to cardiovascular disease. In Europe, cardiovascular disease kills 4.3 million (48%) people a year.

According to the State Statistics Committee, 62.1% of deaths in the Republic of Uzbekistan in January-June 2019 were caused by diseases of the circulatory system.

Cardiovascular diseases are inextricably linked to lifestyle and risk factors. While many risk factors are controlled by lifestyle changes, some (hypertension, dyslipidemia, and diabetes mellitus) can be corrected by medication.

Professor Lee Sang-chul from the Seoul Samsung Medical Center Clinic in South Korea recently visited Tashkent for patients with cardiovascular diseases and those who want to undergo prophylaxis against this type of disease. He took part in the show.

During the show, the professor provided information on the types of heart disease, dangerous conditions and symptoms in the circulatory system, as well as his advice on the prevention of the listed problems.

Professor Lee also gave advice on heart disease and modern treatments at the Himedi Counseling Center in Tashkent. Here are some of them:

Cardiomyopathy is a disease associated with primary myocardial damage - cardiovascular disease, arterial hypertension, the presence of systemic and functional changes in the heart muscle in the absence of acquired and congenital heart defects.

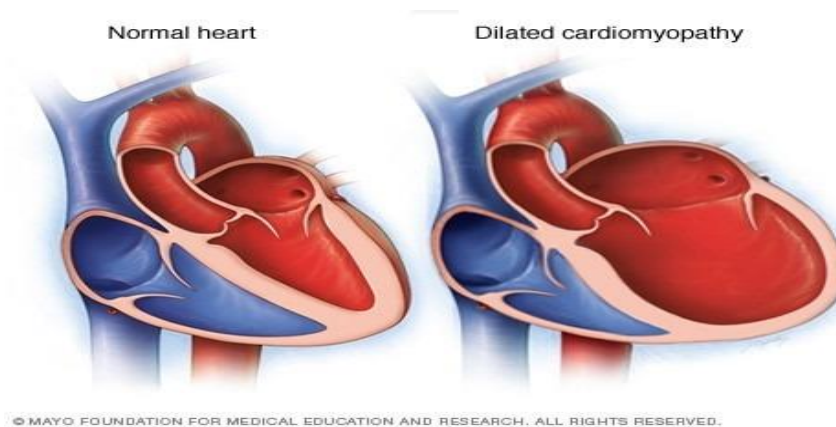
The original causes of the occurrence and development of cardiomyopathy have not yet been determined. There are a number of factors that contribute to the development of this disease: heredity,

adverse environmental effects, viral infections, autoimmune diseases, endocrinological diseases, exposure to allergens, alcoholism, cardiac pathology, and others.

In the early stages, cardiomyopathy is usually asymptomatic. The patient may experience the following symptoms: pain in the heart area, severe fatigue, general weakness, severe heaviness in the right lower ribs, shortness of breath, shortness of breath, and other similar symptoms.

Treatment of cardiomyopathy depends on the type:

- Hypertrophic cardiomyopathy is a thickening of the heart muscle and, as a result, impaired circulatory function of the heart. Medications are prescribed by doctors, but septal myectomy surgery is recommended when there is a risk. As a result of the operation, the thickened heart muscle shrinks and normal blood circulation is restored.
- Dilated cardiomyopathy is a condition in which the main blood chamber of the heart, the left ventricle, dilates, preventing the heart from pumping blood completely.

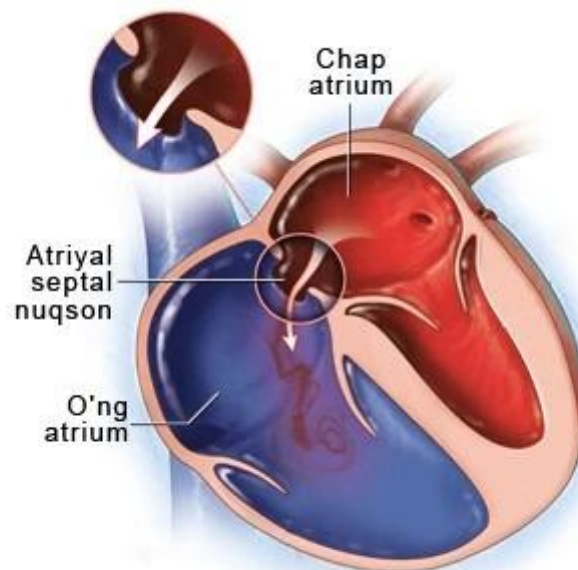


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- In restrictive cardiomyopathy, the heart muscle stiffens and their elasticity decreases. As a result, the heart does not expand and the heart does not fill with enough blood during the heartbeat.

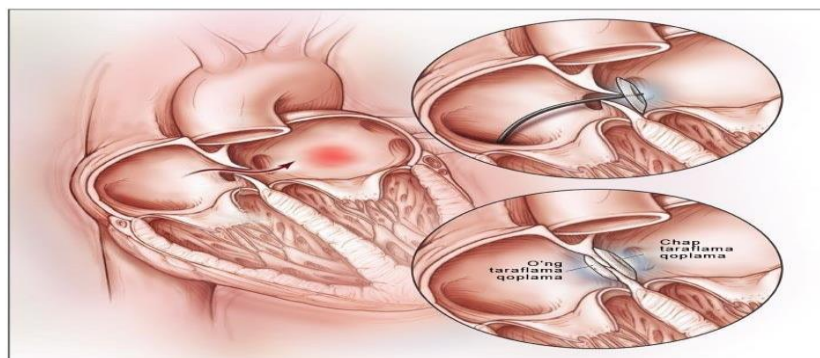
An electronic heart pacemaker that generates impulses for a slow heartbeat, a defibrillator for a very unstable beating heart, an auxiliary ventricular implant for a heart with impaired blood flow function as a solution to improve the patient's condition in a variety of situations, especially when medication can be advised - that was emphasized by the doctor.

A defect in the wall between the heart valves is a permanent defect, defect, or change in the anatomical structure of the heart that interferes with normal blood flow. It is one of the most common congenital heart defects in children over 3 years of age. In this case, there is a hole (s) in the interdispheric septum (wall) that separates the right and left atria of the heart. The presence of this hole causes pathological blood flow from the left atrium to the right and can lead to heart and lung problems in the future.

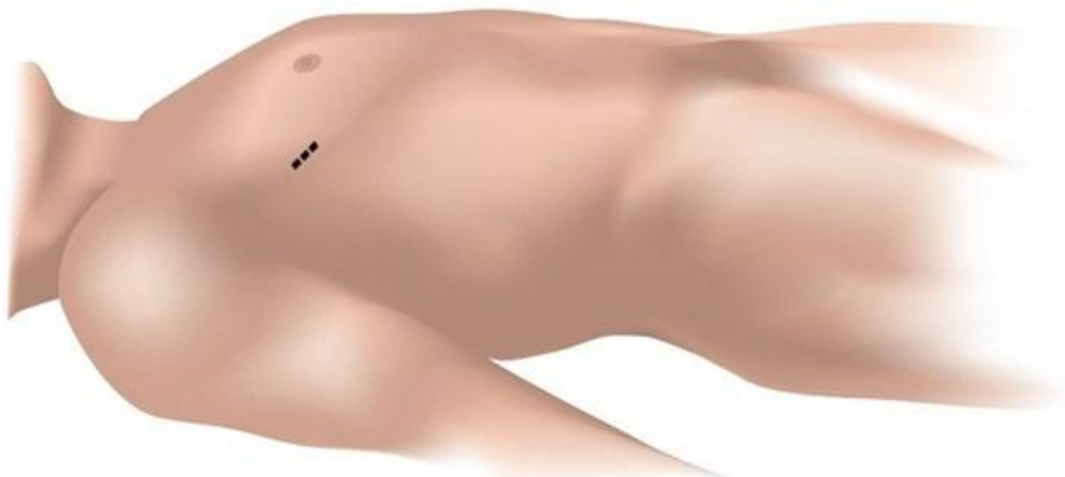


The main method of diagnosing the disease is echocardiography, which provides detailed information about the defect, the condition of the heart, and so on.

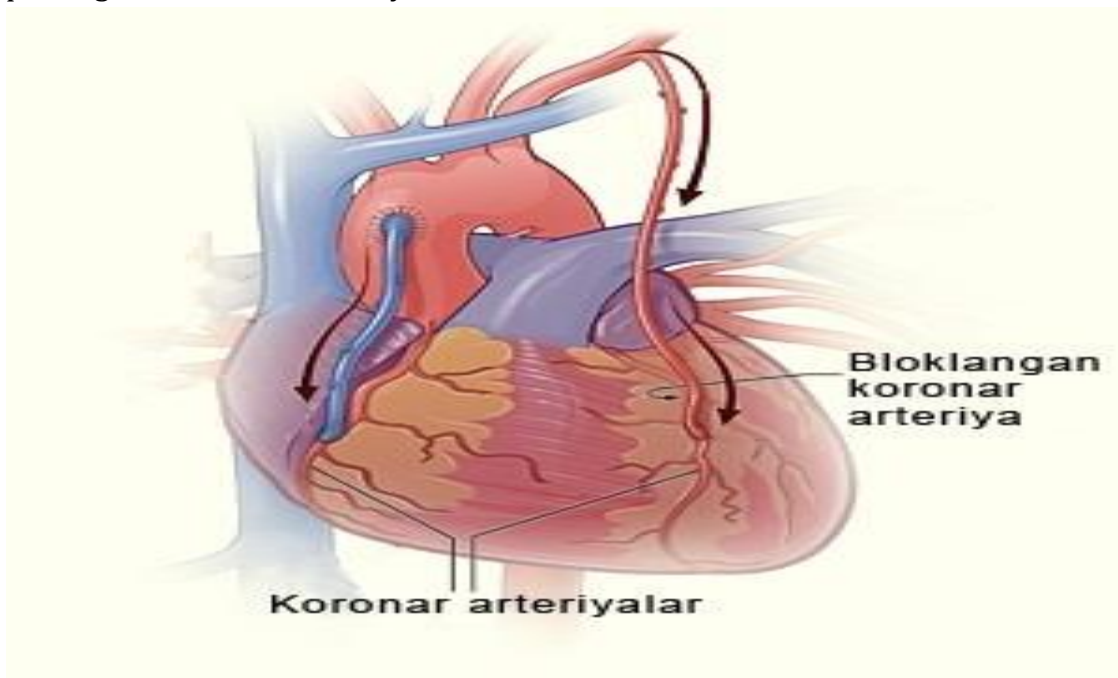
The modern method of treatment of the disease is the endovascular method. A long tube-shaped catheter is inserted into the heart through the femoral vein and the defect is closed using a special coating.



If the defect is large, minimally invasive surgery may be recommended. The operation can be performed with a 4-6 cm incision in the right side of the patient's chest.

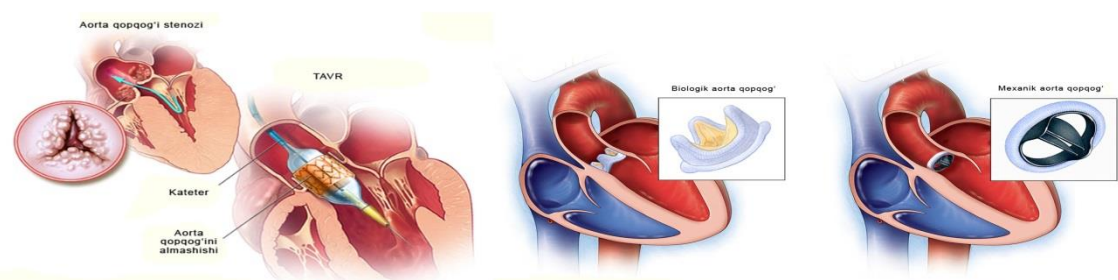


Coronary artery bypass grafting - This technique is used to restore blood flow to blocked or severely narrowed coronary arteries. The essence of the method is that the surgeon creates a "shunt" (spare vessel) bypassing the blocked coronary arteries to restore blood flow.



As a shunt, a blood vessel transplanted from the patient’s leg area is used. This type of surgery restores proper blood flow to the patient.

Transcatheter aortic valve replacement (TAVR) is usually recommended in patients diagnosed with severe aortic stenosis. When blood is pumped from the heart to the body, the aortic valve opens, and when it does not open and close properly, the patient is diagnosed with aortic stenosis. As a treatment for this disease, it is recommended to replace the worn and narrowed aortic valve, which causes a violation of normal blood flow in the body. Transcatheter aortic valve replacement is sometimes referred to as transcatheter aortic valve implantation (TAVI)



TAVR is a minimally invasive surgical procedure in which a tubular catheter is inserted into the heart through a large blood vessel in the leg or through a small incision in the chest and the implant is placed in place of an old aortic valve. The old aortic valve is removed after the implant. The new implant will start working immediately.

The decision to treat aortic stenosis with TAVR is made for each person after consultation with a multidisciplinary team of cardiologists and surgeons.

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