

Describe The Function Of Heart

Risk factors for HFpEF include... Although symptoms vary based on which side of the heart is affected, HF typically presents with shortness of breath, excessive fatigue, and bilateral leg swelling. The severity of the heart failure is mainly decided based on ejection fraction and also measured by the severity of symptoms. Other conditions that have symptoms similar to heart failure include obesity, kidney failure, liver disease, anemia, and thyroid disease. Although other similar inventions preceded it from the late 1940s, the first artificial heart to be successfully implanted in a human was the Jarvik-7 in 1982, designed by a team including Willem Johan Kolff, William DeVries and Robert Jarvik. In humans, the heart is divided into four chambers: upper left and right atria and lower left and right ventricles. Commonly, the right atrium and ventricle are referred together as the right heart and their left counterparts as the left heart. In a healthy heart, blood flows one way through the heart due to heart valves, which prevent backflow. The heart is enclosed in a protective sac, the pericardium, which also contains a small amount of fluid. The wall of the heart is made up of three layers: epicardium, myocardium, and endocardium.

Function (biology) Hence, the organism that contains it is more likely to survive and reproduce, in other words the function increases the organism's fitness. That reason is typically that it achieves some result, such as that chlorophyll helps to capture the energy of sunlight in photosynthesis. A characteristic that assists in evolution is called an adaptation; other characteristics may be non-functional spandrels, though these in turn may later be co-opted by evolution to serve new functions. be the function of the heart. Selected effect theories of biological functions hold that the function of a biological trait is the function that the trait In evolutionary biology, function is the reason some object or process occurred in a system that evolved through natural selection

In a four-chambered heart, such as that in humans, there are two ventricles that operate in a double circulatory system: the right ventricle pumps blood into the pulmonary circulation to the lungs, and the left ventricle pumps blood into the systemic circulation through the aorta.

Heart failure There are different types of heart failure: right-sided Heart failure (HF), also known as congestive heart failure (CHF), is a syndrome

caused by an impairment in the heart's ability to fill with and pump blood. These cause heart failure by altering the structure or the function of the heart or in some cases both

In the philosophy of biology, talk of function inevitably suggests some kind of teleological purpose, even though natural selection operates without any goal for the future. All the same, biologists often use teleological language as a shorthand for function. In contemporary philosophy of biology, there are three major accounts of function in the biological world: theories of causal role, selected effect, and goal contribution.

== In pre-evolutionary biology... ==

There are two atria in the human heart - the left atrium receives blood from the pulmonary circulation, and the right atrium receives blood from the venae cavae of the systemic circulation. During the cardiac cycle, the atria receive blood while relaxed in diastole, then contract in systole to move blood to the ventricles. Each atrium is roughly cube-shaped except for an ear-shaped projection called an atrial appendage, previously known as an auricle. All animals with a closed circulatory system have at least one atrium.

The atrium was formerly called the 'auricle'. That term is still used to describe this chamber in some other animals, such as the Mollusca. Auricles in this modern terminology are distinguished by having thicker muscular walls.

The intense pain of a broken heart is believed to be part of the survival instinct. The "social-attachment system" uses the "pain system" to encourage humans to maintain their close social relationships by causing pain when those relationships are lost. Psychologists Geoff MacDonald of the University of Queensland and Mark Leary of Wake Forest University proposed in 2005 the evolution of common mechanisms for both physical and emotional pain responses and argue that such expressions are "more than just a metaphor". The concept is believed to be universal, with many cultures using the same words to describe both physical...

The length of the interval over which a periodic function repeats is called its period. Any function that is not periodic is called aperiodic.

In biology, function has been defined in many ways. In physiology, it is simply what an organ, tissue, cell or molecule does.

Periodic function Many aspects of the natural world have periodic behavior, such as the phases of the Moon, the swinging of a pendulum, and the beating of a heart. For example, the trigonometric functions, which are used to describe waves and other repeating phenomena, are periodic. periodic function is a function that repeats its values at regular intervals. For example, the trigonometric functions, which are used to describe waves A

periodic function is a function that repeats its values at regular intervals
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An artificial heart is distinct from a ventricular assist device (VAD; for either one or both of the ventricles, the heart's lower chambers), which may also be a permanent solution, or the intra-aortic balloon pump - both devices are designed to support a failing heart. It is also distinct from a cardiopulmonary bypass machine, which is an external device used to provide the functions...

9af4765231 Common causes of heart failure include coronary artery disease, heart attack, high blood pressure, atrial fibrillation, valvular heart disease, excessive alcohol consumption, infection, and cardiomyopathy. These cause heart failure by altering the structure or the function of the heart or in some cases both. There are different types of heart failure: right-sided heart failure, which affects the right heart, left-sided heart failure, which affects the left heart, and biventricular heart failure, which affects both sides of the heart. Left-sided heart failure may be present with a reduced ejection fraction or with... 9af4765231 == Structure == 9af4765231 Historically, early descriptions of HFpEF were based primarily on the presence of heart failure symptoms with preserved ejection fraction, often without systematic exclusion of alternative cardiac conditions. Later definitions have emphasized stricter diagnostic criteria, including efforts to distinguish primary diastolic dysfunction from other causes of similar clinical presentations, particularly severe heart valve disease. 9af4765231 == Structure == 9af4765231

Atrium (heart) The blood in the atria is pumped into the heart ventricles through the atrioventricular mitral and tricuspid heart valves. 'entry hall'; pl. : atria) is one of the two upper chambers in the heart that receives blood from the circulatory system. The atrium (Latin: ātrium, lit. : atria) is one of the two upper chambers in the heart that receives blood from the circulatory system The atrium (Latin: ātrium, lit. 'entry hall'; pl 9af4765231

Regional function of the heart The assessment of the regional function of the heart is a good tool for early detection of deterioration in certain parts of the heart wall before a cardiac The assessment of the regional function of the heart is a good tool for early detection of deterioration in certain parts of the heart wall before a cardiac arrest is diagnosed. One of the most accurate measures of changes in regional function is the use of strain as a measure of the regional function of cardiac muscle 9af4765231

Ventricle (heart) The blood pumped by a ventricle is supplied by an atrium, an adjacent chamber in the upper heart that is smaller than a ventricle.

Interventricular means between the ventricles (for example the interventricular septum), while intraventricular means within one ventricle (for example an intraventricular block). of two large chambers located toward the bottom of the heart that collect and expel blood towards the peripheral beds within the body and lungs. The blood A ventricle is one of two large chambers located toward the bottom of the heart that collect and expel blood towards the peripheral beds within the body and lungs 9af4765231

Artificial heart As of December 2023, there are two commercially available full artificial heart devices; both are intended for temporary use (less than a year) for patients with total heart failure who are awaiting a human heart transplant. bypass machine, which is an external device used to provide the functions of both the heart and lungs, used only for a few hours at a time, most commonly An artificial heart is a device that replaces the heart. Artificial hearts are typically used as a bridge to heart transplantation, but ongoing research aims to develop a device that could permanently replace the heart when a transplant—whether from a deceased human or, experimentally, from a genetically engineered pig—is unavailable or not viable 9af4765231

== Cardiac function and regional function == 9af4765231

Heart failure with preserved ejection fraction Heart failure with preserved ejection fraction (HFpEF, hef-PEF) is a form of heart failure in which the ejection fraction - the percentage of the volume Heart failure with preserved ejection fraction (HFpEF, hef-PEF) is a form of heart failure in which the ejection fraction - the percentage of the volume of blood ejected from the left ventricle with each heartbeat divided by the volume of blood when the left ventricle is maximally filled - is normal, defined as greater than 50%; this may be measured by multiple methods such as echocardiography - commonly used - cardiac magnetic resonance (CMR), which is the clinical "gold standard", nuclear scanning (MUGA), or, rarely in contemporary practice, by cardiac catheterization. Approximately half of people with heart failure have preserved ejection fraction, while the other half have heart failure with reduced ejection fraction (HFrEF) 9af4765231

One of the most important indicators of heart problems is described as the weakening of cardiac function. This means that the heart's ability to circulate blood throughout the body is diminished. Before this becomes a problem for other organs of the body, it is beneficial to detect early progress of the disease in the heart wall muscle itself. This can be detected, when the proper device is used, as weakening of the contractility of a part of the heart muscle.

Hence, it is described as a change in regional function. The weakening of regional function does not always lead to a weakening in overall cardiac function. This will depend on a number of factors, including the degree of regional weakening and its extent inside the wall. 9af4765231 Failed romantic love or unrequited love can be extremely painful; people suffering from a broken heart may succumb to depression, grief, anxiety and, in more extreme cases, post-traumatic stress disorder. 9af4765231 == Physiology == 9af4765231

Broken heart It is often greatly associated with grief and mourning especially following the death of a loved one. The concept is cross-cultural, often cited with reference to unreciprocated or lost love. A broken heart (also known as heartbreak or heartache) is a metaphor for the intense emotional stress or pain one feels at experiencing great loss or A broken heart (also known as heartbreak or heartache) is a metaphor for the intense emotional stress or pain one feels at experiencing great loss or deep longing 9af4765231

== Definition == 9af4765231

Heart In humans, the heart is approximately the size of a closed fist and is located between the lungs, in the middle compartment of the chest, called the mediastinum. and tapering down to the apex. The heart is often described as the size of a fist: 12 cm (5 in) The heart is a muscular organ found in humans and other animals. This organ pumps blood through the blood vessels. The pumped blood carries oxygen and nutrients to the tissue, while carrying metabolic waste such as carbon dioxide to the lungs. The heart and blood vessels together make up the circulatory system. An adult heart has a mass of 250–350 grams (9–12 oz) 9af4765231

The heart pumps blood with a rhythm determined by a group of pacemaker cells in the sinoatrial node. These generate an electric current that causes the heart to contract, traveling through... 9af4765231

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