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Perspective

# A Brief Note on Artificial Heart

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## DESCRIPTION

When a heart failure is so severe that no other treatment works, then a patient can be saved if a heart transplant is considered. People undergo heart transplants for a variety of reasons, the most common of which are: Cardiomyopathy (dilated cardiomyopathy) is a condition in which a cardiac attack has left you with severe coronary artery disease and scarred heart tissue; Heart defects present from birth or many other reasons. A heart surgeon replaces damaged or diseased heart ventricle with an artificial heart implanted in chest. A device that replaces the heart is known as a Total Artificial Heart (TAH). Artificial hearts are commonly used to bridge the interval between heart transplantation and permanent replacement in cases where a heart transplant (from a deceased human or, experimentally, from a deceased genetically altered pig) is not possible. A mechanical heart or Ventricular Assist Device (VAD; for either one or both of the ventricles, the heart's lower chambers), which can also be a permanent solution, and the intra-aortic balloon pump, both of which are meant to support a failing heart, are not the same as an artificial heart. It is also different from as cardiopulmonary bypass machine, which is an external device that helps the heart and lungs work together for a few hours at a time, usually during cardiac surgery. It is also separate from a ventilator, which is used to assist failing lungs, and Extra Corporeal Membrane Oxygenation (ECMO), which, unlike the bypass machine, is used to support patients with both poor heart and lung function for days or weeks. The artificial heart is powered by a small unit outside the body that maintains its pounding at a constant rate. The gadget and a driveline coupled to the TAH exit from body through the skin of stomach (abdomen). The majority of persons who receive a whole artificial heart are in the process of receiving a heart transplant. Artificial heart transplants are advantageous in keeping patients hearts beating while waiting for a transplant. The following are some of the primary advantages of ventricular support devices and artificial heart transplants: The implants or devices are made of materials that are usually not rejected by the body; Unlike a donor heart, which has a waiting list, the devices are ready to use right away; Patients with heart failure can benefit from them since they can improve their quality of life. A fully artificial heart is only a temporary fix until a transplant is possible. Total artificial heart surgery is a difficult procedure. It is really possible that the treatment will take up to nine hours. The operation is carried out by a group of heart surgeons and other specialists. Throughout the surgery, patients will be under anaesthesia (completely sleeping). Patients breathing, heart rate, blood pressure, and other vital indicators are all monitored by doctors and nurses. While under anesthesia, a ventilator helps them breathe. During the operation, a heart-lung bypass machine maintains blood flowing throughout the patient's body. Patient will be tied up to the machine until the mechanical heart is implanted and it starts pumping. These temporary devices can save the patient some time until a donor heart becomes available. Many clinical laboratories are working hard on this field for development. Making an artificial heart is a surely difficult task with most responsibility.

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