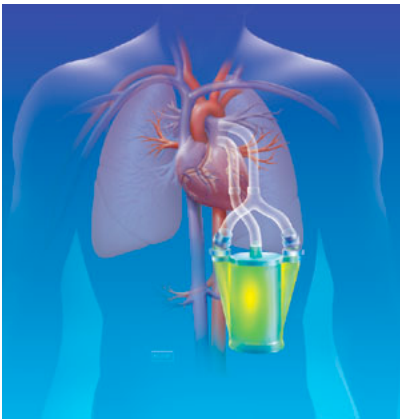


MC3 Artificial Lung (Biolung)

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Biolung is a device designed to fully support the respiratory needs of adult patients as a bridge to lung transplantation or lung recovery. Lung is used for carrying both the oxygenated and deoxygenated blood. Some type of chronic disease that affect lungs are pulmonary fibrosis and emphysema.



The Total Artificial Lung (TAL), manufactured by MC3, Inc., is about the size of a soda can. It could someday sustain those who require a lung transplant but must wait for an available organ.

Pulmonary Fibrosis involves scarring of the lung. Gradually, the air sacs of the lungs become replaced by fibrotic tissue. When the scar forms, the tissue becomes thicker causing an irreversible loss of the tissue's ability to transfer oxygen into the bloodstream according to pulmonary fibrosis's website. While emedicine health described Emphysema as a long-term, progressive disease of the lung that primarily causes shortness of breath. In people with emphysema, the lung tissues necessary to support the physical shape and function of the lung are destroyed.

Over 130 million Americans have lung diseases and more than 20 percent of them

die from this disease because they needed transplantation of living human lung while patient waited for donor – recipient matches and during this long process most disease carriers die.

MC3 artificial lung technologies are being carried out at the University of Michigan. A research carried out in 2003 by their college of Engineering, conducted two programs: The total Artificial Lung; which is referring to Biolung and Total Liquid Ventilation.

Biolung has a size of a soda can. This device will be connected to the right ventricle of the heart. It will depend on the heart to send blood through the lung, where it releases carbon dioxide and take in oxygen as it flows through the arrays of microfibers. Biolung then passes oxygen rich blood into the left atrium and then to the rest of the body.

The team working on this device is currently finding solution to the optimal shape of fiber arrays; distance between the fiber and the number of fiber needed within the artificial lung. MC3 goal on this product is to develop an artificial lung that will replace lungs of patient who has this disease. While researchers estimate that with the device, annually lung transplant would subsequently increase from some 1,500 to several thousand.

Reference:

1. www.mc3corp.com/artificial-lung-overview.html
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3. www.pulmonaryfibrosis.org/ipf.htm
4. www.emedicinehealth.com/emphysema/article_em.htm