



## Congenital Heart Disease and Extracorporeal Membrane Oxygenation

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### DESCRIPTION

Mechanical circulatory assistance (MCS) is a critical treatment for patients with serious heart disease or respiratory failure. Extracorporeal film oxygenation (ECMO) and ventricular assist devices are the two main types of MCS used in the paediatric population (VAD). These modalities have varied but unmistakable roles in the management of paediatric patients with serious cardiopulmonary differences. The development of the first film oxygenator by George Clowes in 1957, and the subsequent merger into paediatric cardiopulmonary detour (CPB) by Dorson and partners, led to the use of ECMO to provide circulatory support. Baffes et al. accounted for the first successful use of ECMO in a long time with inborn coronary disease undergoing heart medical procedure in 1970.

For the next nearly two decades, ECMO was used sparingly and only in specific habitats, with varying degrees of success. The Extracorporeal Life Support Organization (ELSO), founded in 1989, took into consideration the examination of ECMO-related data across various habitats. This assisted in the improvement of agreement rules for the use of ECMO in various populations. These advancements, when combined with ongoing ECMO innovation, resulted in significant improvements in ECMO usage, horribleness, and mortality. The use of ECMO in children with innate coronary disease will be examined in this article.

The uses of ECMO have expanded as a result of advancements in ECMO technology, institutional experience, and standardisation of purpose. These include the treatment of severe severe respiratory distress, as well as the use as a supplement to transplantation or support during the treatment of chronic lung infections such as cystic fibrosis. While the details and results for this specific sign are beyond the scope of this audit article, standard choice rules and board practises should be followed. ECMO is used to help patients with cardiovascular or cardiorespiratory failure associated with pre-employable hemodynamic flimsiness, post-usable low heart yield condition (LCOS), and failure to wean from CPB in children with inherent

coronary disease (CHD). Fast venoarterial (VA) ECMO during cardiopulmonary revival [extracorporeal cardiopulmonary revival (ECPR)] has recently resulted in improved endurance, particularly in paediatric patients. The focus of this study will be on the use of ECMO in paediatric and neonatal patients with innate coronary disease.

ECMO cannulation should be viewed as a temporary support or a necessary evil in the paediatric patient with CHD, rather than an objective or long-term treatment. In patients with CHD and heart failure, there are four general approaches to ECMO cannulation.

When a patient is suspected of having reversible hidden pathology and recovery of cardiovascular function is expected, ECMO can be used as a scaffold (temporary assistance) to recovery.

Mechanical circulatory support has evolved in recent years to become an important treatment for children who are resistant to conventional medical treatment. Extracorporeal film oxygenation can now be delivered quickly and effectively to help critically ill patients with cardiopulmonary failure due to a variety of causes. Because of advances in innovation and methods, the field has filled to some extent, but it has also progressed in its ability to effectively treat these patients. It's comforting to know that the mortality rate for paediatric patients on ECMO support remains high, and that among those who can safely separate, some won't make it until release, while others will continue to be troubled by complications accumulated while fundamentally sick on mechanical assistance.

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### CONFLICT OF INTEREST

We have no conflict of interests to disclose and the manuscript has been read and approved by all named authors.

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