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Novel Remotely-Monitored Home-Based Cardiac Physical Activity Program Using Real-Time Data for Patients with Fontan Circulation

The idea of exercise prescription in patients born with a heart defect is an evolving practice. More attention has been placed on how exercise and physical activity can improve overall health and quality of life. The selected patients were born with a heart defect requiring a series of complex surgeries during the first 3-5 years of life, resulting in one functional pumping chamber for the heart. Because of the severity of their defect, these patients most likely avoid exercise or participate minimally. Cardiac rehabilitation is common for patients with coronary artery heart disease but has not been established for patients born with a heart defect. There are two common barriers to participation in these programs. The first is limited access to qualified centers. The second is teenagers and young adults have unique schedules and schooling priorities that make it difficult to attend in-person rehabilitation programs. Advancements in fitness and monitoring technology have allowed for increased options for home-based programs which provide remote counseling and monitoring of activity. Our aim in this research is to provide remotely monitored home exercise programs to teenagers and young adults who have had surgery resulting in one functional pumping chamber for the heart. As a comprehensive care center, we believe in the importance of providing well-rounded care that focuses on both long- and short-term quality of life. We will be using iPad software which allows for secure two-way messaging between patients and clinicians to deliver weekly exercise prescriptions and report exercise session data. We predict this could create a shift in the standard of care with a focus on exercise as a treatment for patients born with a complex heart defect.