

## Protocol of Cardiac Rehabilitation in Congenital Heart Disease

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### Introduction:

Cardiac Rehabilitation Programs (CRP) are therapeutic tools recommended by the World Health Organization for over 40 years. In patients with congenital heart disease (CHD) they must be understood as a multidisciplinary project (pediatric cardiologists, rehabilitator, physiotherapist, psychologist and nutritionist). This is our protocol.

### Objectives:

1.To ensure the practice of physical activity (PA) in a safe environment and under supervision. 2.To value the cardiac patient in an integral way, evaluating the mental and physical aspect. 3.Reintegrate the child and family into society. 4.Modify risk factors. 5.Improve self-esteem and learn to live with its limitations.

### Patients and Methods:

Inclusion Criteria: CHD of sufficient severity to restrict the PA of the child, due to either limitations imposed by the children themselves or by their environment (doctors, parents, teachers). Ages between 6-17 years. Clinical, electrical and hemodynamic stability. Pathological cardiopulmonary exercise test (CPET) with peak/maximum VO<sub>2</sub> <85% predicted. Ability to travel twice a week to the Hospital during the training phase (TP). Signed informed consent. Exclusion criteria: Clinical, electrical or hemodynamic instability. Physical or psychic disability that prevents the performance of the CRP. Documented pathological response to exercise: severe arrhythmias, ST segment alterations, driving blocks with exercise, hypertensive response, hypotension or desaturation <80%. Withdrawal of informed consent.

Place: CR gym (monitoring systems, telemetry and medical cart).

Individualized risk stratification according to the results of complementary tests and clinical history.

Calculation of the cardiac training frequency (CTF): individualized according to the CPET, incremental limited by symptoms; treadmill; analysis of data with Wasserman method. It will be estimated from the heart rate in the first ventilatory threshold.

Training program: Frequency (2 times/week); Duration (12 weeks, 60 minutes/session); Intensity (CTF and Borg Scale); Specificity (individualized); Phases: recording of constants, warm-up, respiratory physiotherapy, TP (aerobic), cooling. To ensure adherence to the CRP and life habits, two visits will be scheduled at 6 and 12 months.

### Conclusion:

The CRP in CHD constitute a safe therapy with a positive impact on the quality of life and must be approached in an integral manner, encompassing PA and health education with the aim of better prognosis in medium and long term.