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An evaluation of the effectiveness of exercise training-based cardiac rehabilitation to improve aerobic fitness

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Nearly 2.4 million Canadians currently live with heart disease. The current standard of care is participation in exercise-based cardiac rehabilitation (EBCR). Improving aerobic fitness reduces the severity of symptoms and improves prognosis. However, almost 50% of patients enrolled in EBCR display either minor increases or reductions in aerobic fitness as measured by $\dot{V}O_{2peak}$, suggesting that half of these patients see no improvements in their quality of life. Maximal aerobic tests used to identify $\dot{V}O_{2peak}$ are often symptom-limited in heart disease populations, leading to an underestimation of true aerobic capacity. There are two submaximal metabolic boundaries that occur during incremental exercise, the lactate threshold and respiratory compensation point. Improving these thresholds results in improvements in activities of daily living and may be an effective way to predict response to EBCR without the use of maximal aerobic testing, while establishing new guidelines to widen the range of patients who benefit from EBCR.