Safety and effects of physical training in chronic heart failure. Results of the Chronic Heart Failure and Graded Exercise study

Setting the scene:
To confirm hypothesis about Safety and effects of physical training in chronic heart failure.

What did they do?
In a prospective study, 80 patients with chronic heart failure class II and III (age 56.6± 8.3 years; left ventricular ejection fraction, 26.5±9.6%) were randomized to an endurance training group or to a control group with continuation of optimal pharmacological treatment. Intensity and evaluation of patients was performed by cardiopulmonary exercise testing. No training-related adverse effect was reported, implying that the training program was safe for these groups of chronic heart failure patients. Between-group comparison of changes revealed that training increased exercise time (from 608±35 to 738±40s, p>0.0001), anaerobic threshold (from 10.5±0.4 to 11.8±0.3ml.kg⁻¹min⁻¹, P>0.05), and decreased the ventilatory equivalent for carbon dioxide at submaximal exercise level (from 2.8±0.1 to 2.7±0.1, P>0.05). Training did not increase oxygen peak consumption (15.2±0.5 to 16.6±0.5 ml.kg⁻¹min⁻¹, ns). An improvement in patient assessment of quality of life was observed. There was a significant correlation between physiological and psychological improvement. Training was not effective in patients whose exercise test at entry had duration of less than 7 min.

Takeaway message:
Physical training in chronic heart failure patients class II and class III is safe and results in significant improvements in exercise time, anaerobic threshold, ventilatory equivalent for carbon dioxide at submaximal exercise level and quality of life.