

# Cardiologia Riabilitativa

## Un approccio multidisciplinare

AHA/AACVPR Scientific Statement

### Core Components of Cardiac Rehabilitation/ Secondary Prevention Programs: 2007 Update

A Scientific Statement From the American Heart Association  
Exercise, Cardiac Rehabilitation, and Prevention Committee,  
the Council on Clinical Cardiology; the Councils on Cardiovascular Nursing,  
Epidemiology and Prevention, and Nutrition, Physical Activity, and Metabolism;  
and the American Association of Cardiovascular and Pulmonary Rehabilitation

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Follow up per mantenimento  
dei risultati a distanza

Stabilizzazione clinica

Intervento educazionale  
sui fattori di rischio

Stratificazione prognostica  
Valutazione funzionale

Training fisico

Counseling attività  
fisica

Counseling  
dietetico/nutrizionale

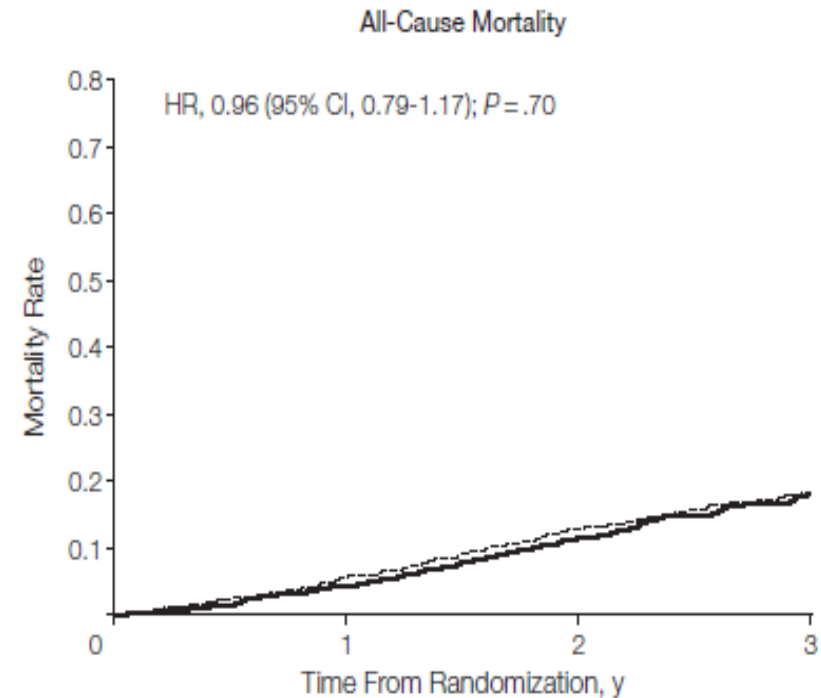
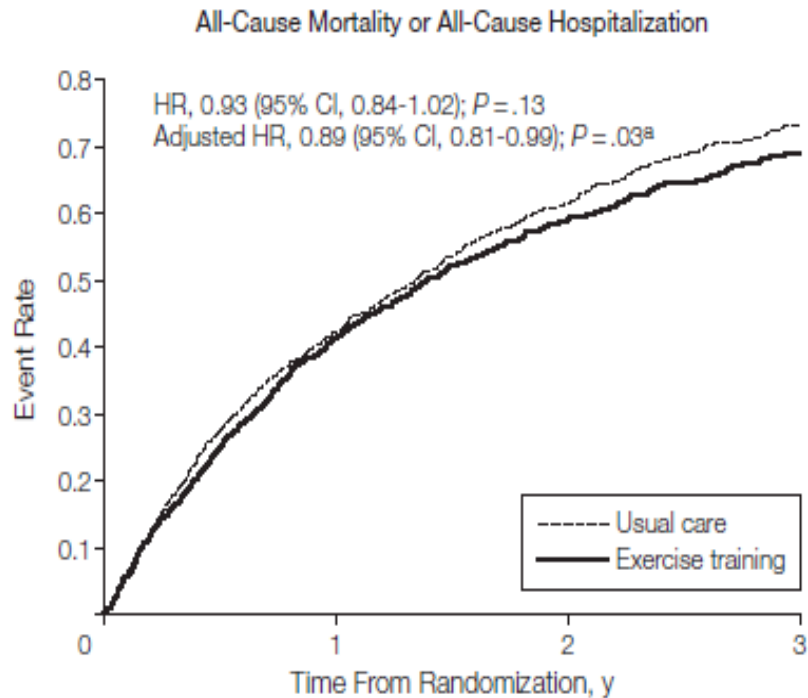
Valutazione ed intervento  
psicologico

Circulation 2007; 115: 2675-2682

# Efficacy and Safety of Exercise Training in Patients With CHF

## HF-ACTION Randomized Controlled Trial

2331 medically stable outpatients with heart failure and reduced LVEF  
36 supervised sessions followed by home-based training, or usual care alone  
2 years follow up



## Exercise-based rehabilitation for heart failure (Review)

Taylor RS, Sagar VA, Davies EJ, Briscoe S, Coats AJS, Dalal H, Lough F, Rees K, Singh S

**33 trials with 4740 patients with chronic heart failure and NYHA class II and III.**

**Borderline reduction in mortality in trials with >one year of follow-up (RR 0.88; 95% CI 0.75 to 1.02)**

**Reduced hospitalisation rate (RR 0.75; 95% CI 0.62 to 0.92)**

**Improved Quality of life (mean: -5.8 points; 95% CI -9.2 to -2.4)**

## 2016 European Guidelines on cardiovascular disease prevention in clinical practice

### Recommendations for specialized prevention programmes

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>	Ref <sup>c</sup>
Participation in a CR programme for patients hospitalized for an acute coronary event or revascularization, and for patients with HF, is recommended to improve patient outcomes.	I	A	555, 556
Preventive programmes for therapy optimisation, adherence and risk factor management are recommended for stable patients with CVD to reduce disease recurrence.	I	B	557–560
Methods to increase referral to and uptake of CR should be considered such as electronic prompts or automatic referrals, referral and liaison visits, structured follow-up by physicians, nurses or therapists, and early starts to programmes after discharge.	IIa	B	557, 558
Nurses and allied health professional led programmes should be considered to deliver CVD prevention across healthcare settings.	IIa	B	550–552, 561

## 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

### Recommendations for exercise, multidisciplinary management and monitoring of patients with heart failure

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>	Ref <sup>c</sup>
It is recommended that regular aerobic exercise is encouraged in patients with HF to improve functional capacity and symptoms.	I	A	321, 618–621
It is recommended that regular aerobic exercise is encouraged in stable patients with HFrEF to reduce the risk of HF hospitalization.	I	A	618, 619
It is recommended that patients with HF are enrolled in a multidisciplinary care management programme to reduce the risk of HF hospitalization and mortality.	I	A	622–625
Referral to primary care for long-term follow-up may be considered for stable HF patients who are on optimal therapy to monitor for effectiveness of treatment, disease progression and patient adherence.	IIb	B	626, 627
Monitoring of pulmonary artery pressures using a wireless implantable haemodynamic monitoring system (CardioMems) may be considered in symptomatic patients with HF with previous HF hospitalization in order to reduce the risk of recurrent HF hospitalization.	IIb	B	628, 629
Multiparameter monitoring based on ICD (IN-TIME approach) may be considered in symptomatic patients with HFrEF (LVEF ≤35%) in order to improve clinical outcomes.	IIb	B	630

# Cardiologia Riabilitativa in Italia

## Rapporto offerta/fabbisogni

Fabbisogno considerando  
**75%** dei dimessi

**250.000**

2012

SCA dimesse = 145.000

Operati in CCH = 50.000

Scompensi dimessi = 135.000

Offerta ipotizzando il  
**100%** delle strutture

**135.000**





# Home-based cardiac rehabilitation improves quality of life, aerobic capacity, and readmission rates in patients with chronic heart failure

Yan-Wen Chen, MS<sup>a</sup>, Chi-Yen Wang, MD<sup>b</sup>, Yuan-Hui Lai, MS<sup>b,c</sup>, Ying-Chieh Liao, MD<sup>b,d</sup>, Yan-Kai Wen, MS<sup>a</sup>, Shin-Tsu Chang, MD, MS, PhD<sup>a,e,\*</sup>, Jin-Long Huang, MD, PhD<sup>b,d,\*</sup>, Tsu-Juey Wu, MD, PhD<sup>b,d</sup>

**Results:** Patients enrolled in the home-based cardiac rehabilitation programs displayed statistically significant improvement in  $\dot{V}O_2$  peak ( $18.2 \pm 4.1$  vs  $20.9 \pm 6.6$  mL/kg/min,  $P = .02$ ), maximal 6-Minute Walking Distance (6MWD) ( $421 \pm 90$  vs  $462 \pm 74$  m,  $P = .03$ ), anaerobic threshold ( $12.4 \pm 2.5$  vs  $13.4 \pm 2.6$  mL/kg/min,  $P = .005$ ), and QOL. In summary, patients receiving home-based cardiac rehabilitation experienced a 14.2% increase in  $\dot{V}O_2$  peak, a 37% increase in QOL score, and an improvement of 41 m on the 6MWD test. The 90-day readmission rate for patients reduced to 5% from 14% after receiving cardiac rehabilitation.

Medicine (2018) 97:4(e9629)

# Exercise-based rehabilitation for heart failure: systematic review and meta-analysis

Viral A Sagar,<sup>1</sup> Edward J Davies,<sup>2</sup> Simon Briscoe,<sup>3</sup> Andrew J S Coats,<sup>4</sup> Hasnain M Dalal,<sup>5</sup> Fiona Lough,<sup>6</sup> Karen Rees,<sup>7</sup> Sally Singh,<sup>8</sup> Rod S Taylor<sup>9</sup>

**Improvements in hospitalization and QOL with exercise-based CR appear to be consistent across patients regardless of CR programme characteristics and *may reduce mortality* in the longer term**

**Table 4** Univariate metaregression results

	All-cause mortality p Value	All hospitalisations p Value	MLWHF p Value	All HRQoL outcomes p Value
Type of rehabilitation (exercise only vs comprehensive)	0.76	0.77	0.23	0.28
Type of exercise (aerobic training alone vs aerobic plus resistance training)	0.74	0.56	0.28	0.54
Exercise dose (number of weeks×number of sessions/week×average duration of session in hours)	0.15	0.80	0.15	0.28
Exercise setting (hospital only, home only, both hospital and home)	0.23	0.11	0.85	0.23
Single versus multicentre	0.94	0.70	0.14	0.01
Publication date	0.54	0.54	0.46	0.60
Risk of bias*	0.40	0.57	0.04	0.08

\*'Low' risk of bias trial: absence of bias in >5 out 8 of risk of bias items vs 'high' risk of trial: absence of bias in <5 out 8 items. HRQoL, health-related quality of life; MLWHF, Minnesota Living with Heart Failure questionnaire.