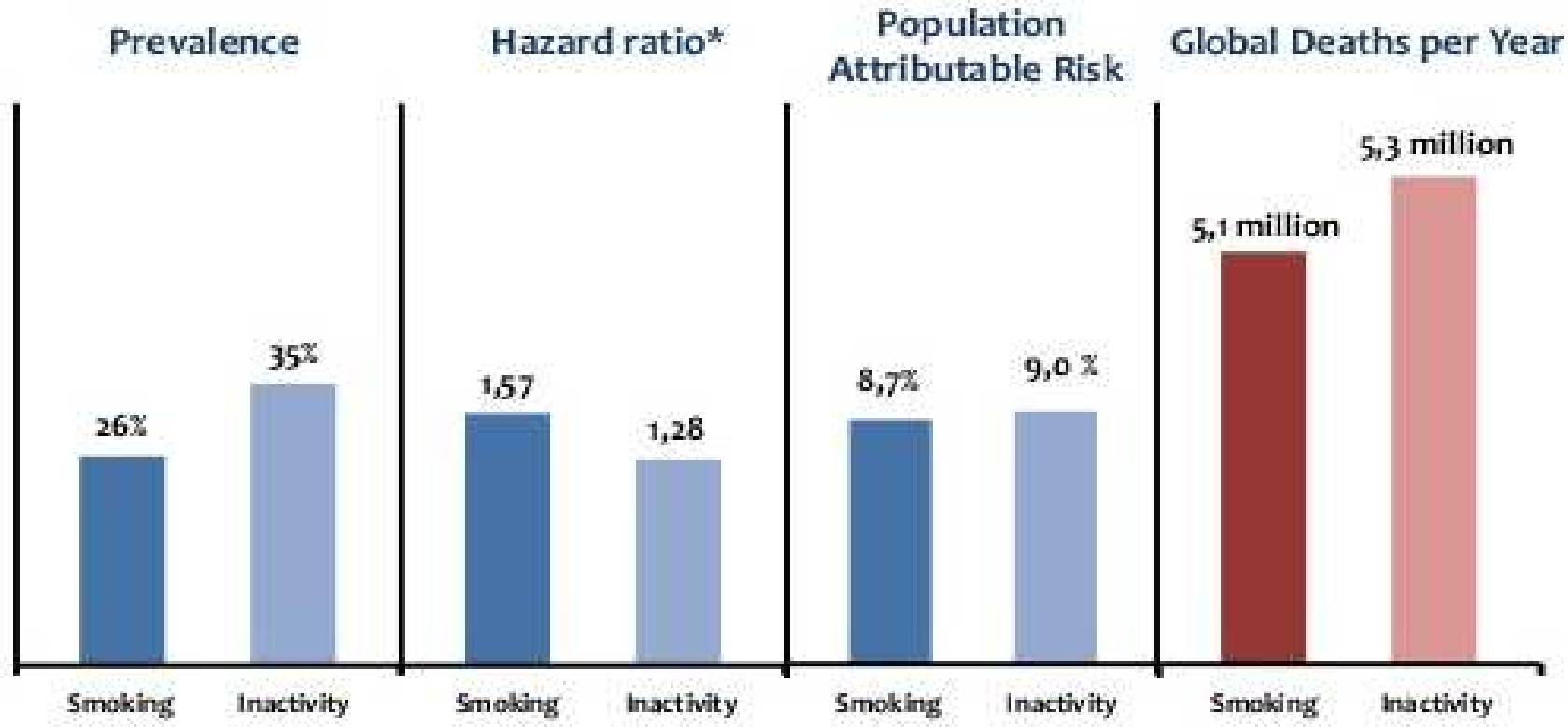
Attività fisica e prevenzione cardiovascolare

Dott. Davide Lazzeroni

Sedentary Lifestyle: the Smoking of the 21st Century?



Comparison of global burden between smoking and physical inactivity (*from meta-analyses).

Adapted from Wen CP, Wu X The Lancet 2012;380:192-3

Centro Territoriale per la Prevenzione Cardiovascolare Primaria e Secondaria

Prevenzione cardiovascolare primaria o secondaria

Presa in carico

Esecuzione di test da sforzo cardiopolmonare

Raccolta stratificatori prognostici

Prescrizione dell'attività fisica

Somministrazione attività fisica supervisionata

Affidamento al Curante

Physical exercise in cardiology

A DIAGNOSTIC TOOL

"The ST segment"

Part 1
A PROGNOSTIC TOOL

"Beyond The ST segment"

Part 2
A THERAPEUTIC TOOL

"The cardiovascular fitness"

Esercizio fisico:

uno strumento utile a fini prescrittivi e prognostici

CARDIOPULMONARY EXERCISE TESTING

FUNCTIONAL CAPACITY

VO_2 max

Prescrizione dell'attività fisica

AUTONOMIC FUNCTION

Heart rate recovery

Physical activity prescription

At least:

- 30 min/day, 5 days/week of moderate intensity (i.e. 150 min/week)
- 15 min/day, 5 days/week of vigorous intensity PA (75 min/week),

or a combination of both, performed in sessions with a duration of at least 10 min.

ESC Guidelines 2016

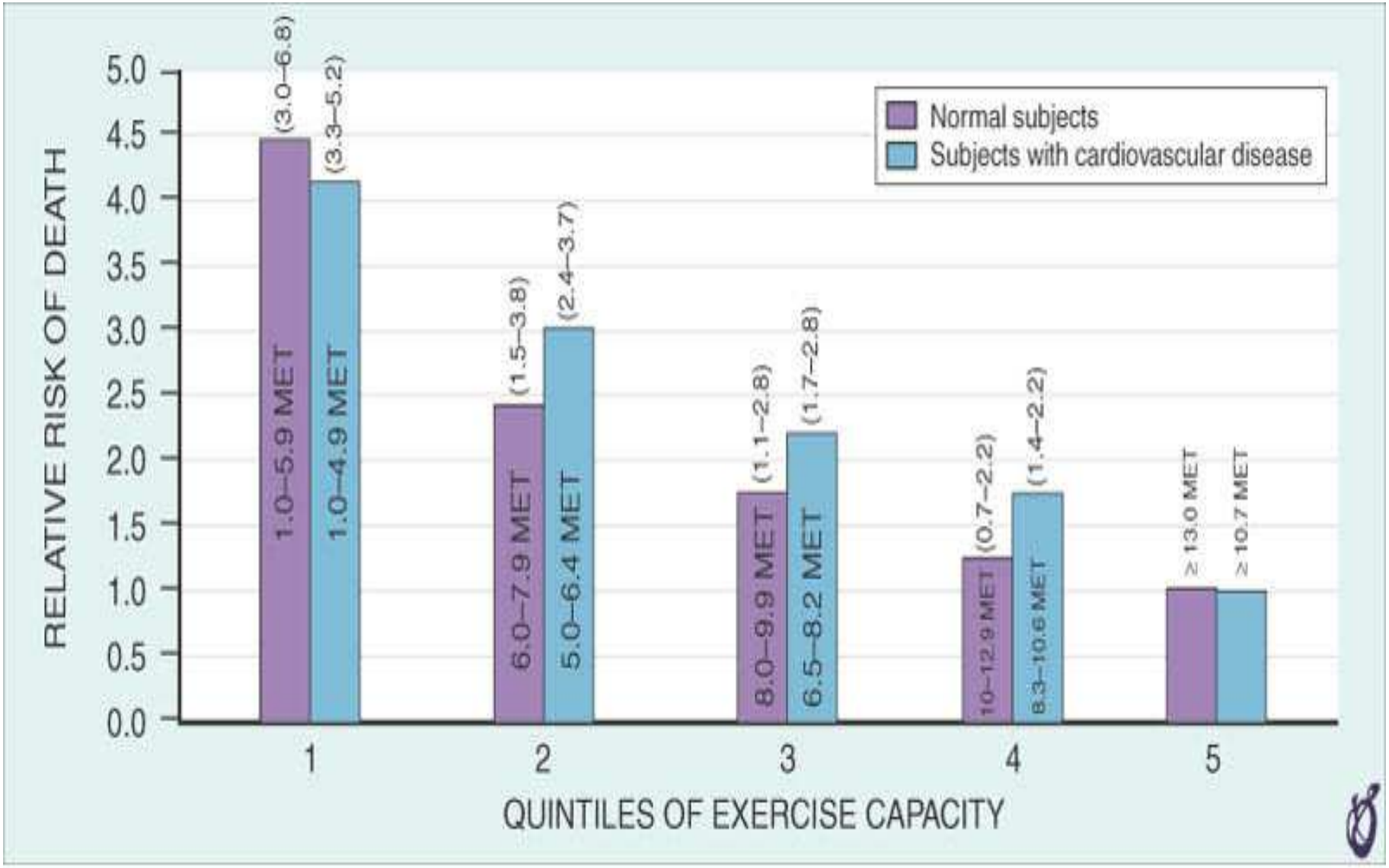
Table 7. General Guidelines for Endurance and Resistance Training

Endurance training	
Frequency	≥5 d/wk
Intensity	55%–90% maximum predicted HR* or 40%–80% $\dot{V}o_2max$ or HR reserve RPE 12–16
Modality	Walking, treadmill, cycling, etc
Duration	30–60 min

AHA Guidelines

Circulation. 2013;128:873-934;

Functional capacity and prognosis



(From Myers J, Prakash M, Froelicher V, et al: Exercise capacity and mortality among men referred for exercise testing. N Engl J Med 346:793, 2002.)

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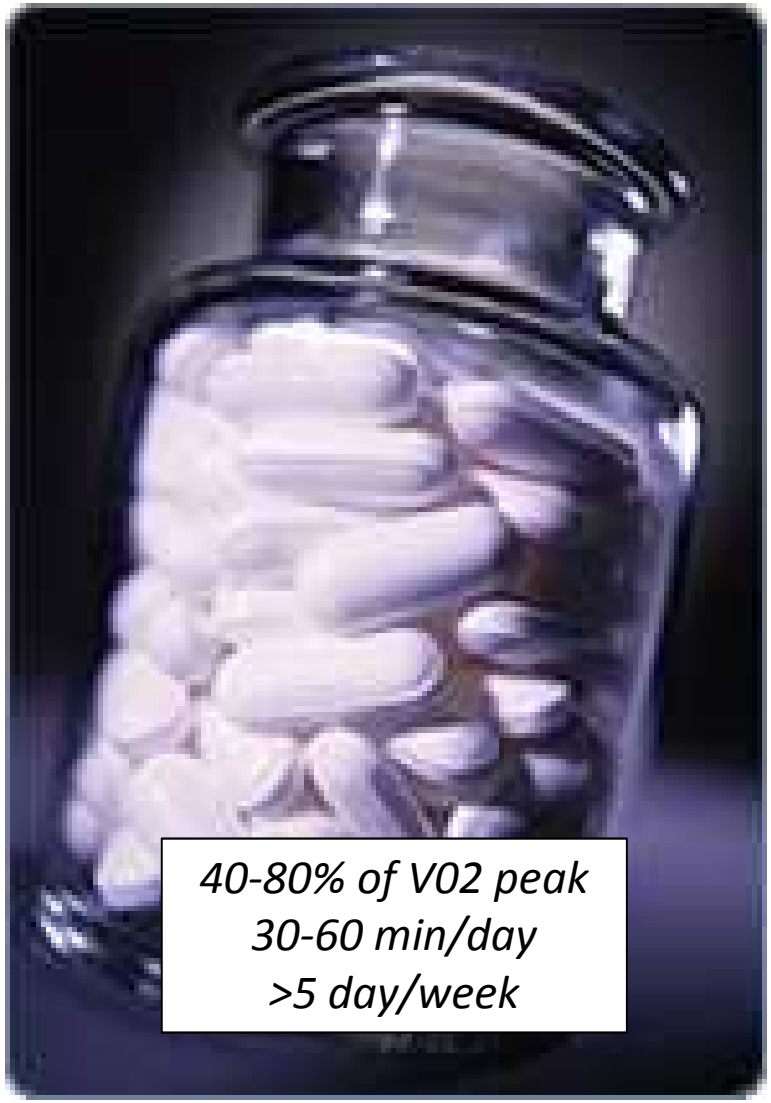
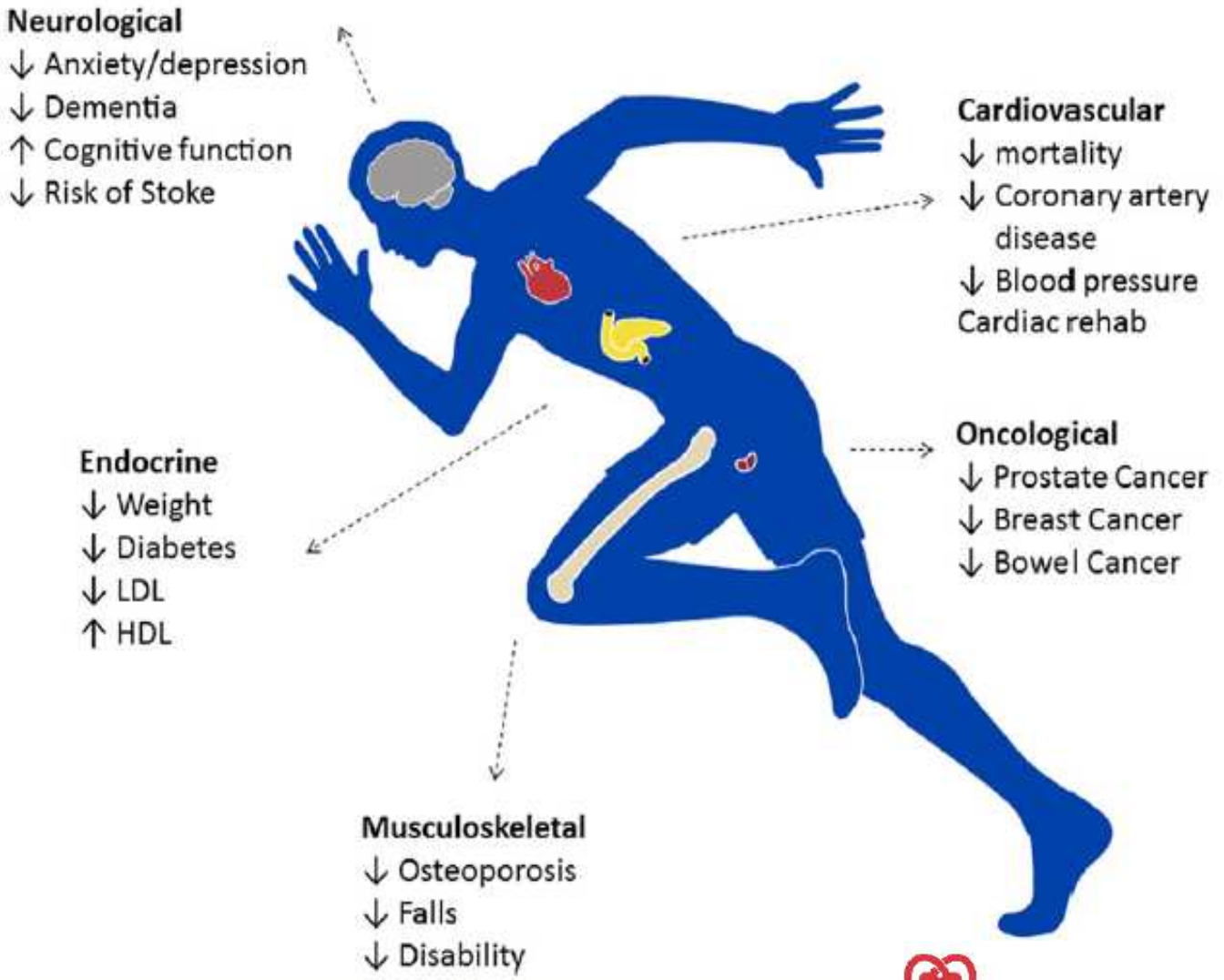
Physical exercise: a therapeutic tool



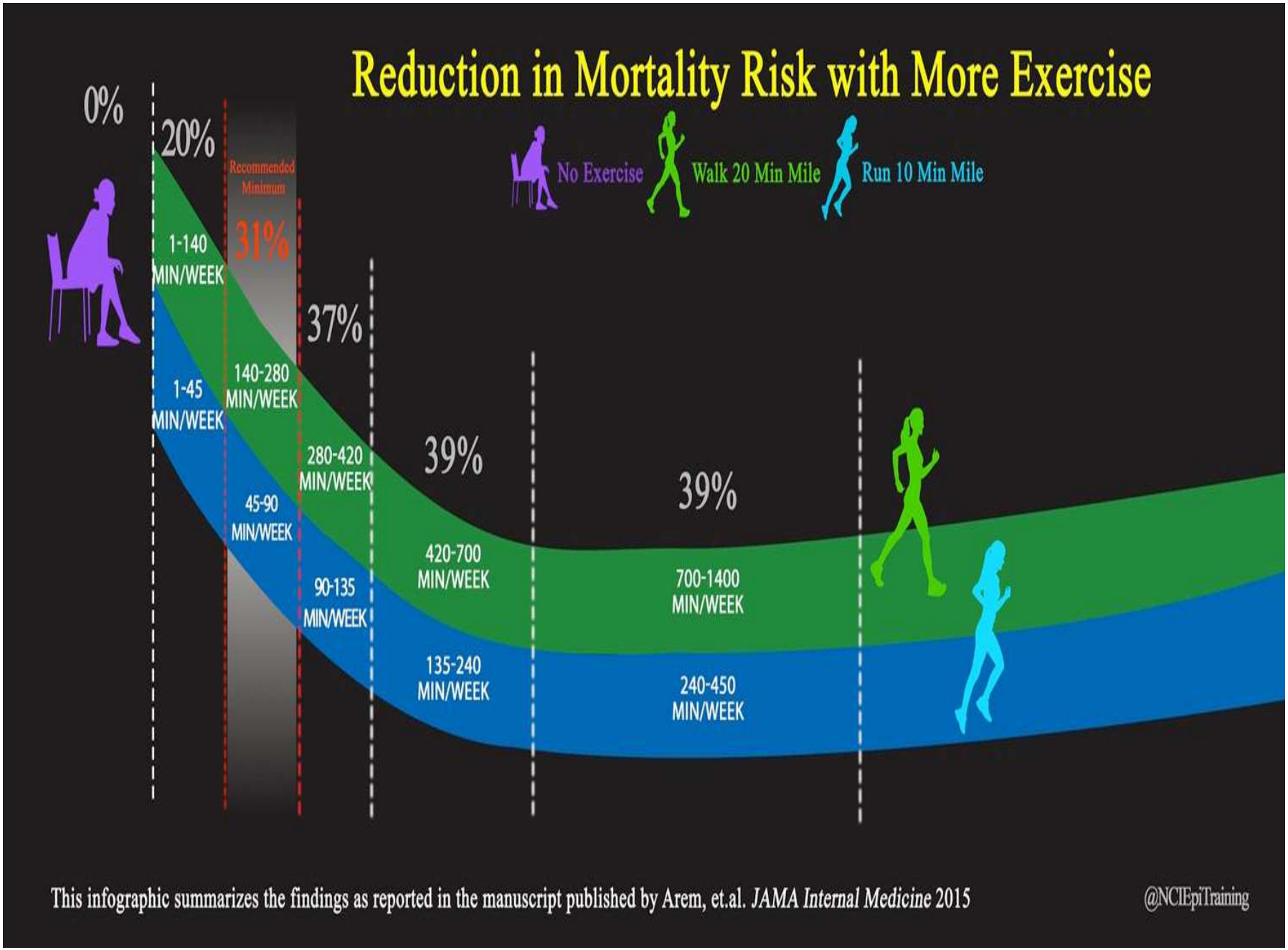
- Antiatherogenic effects
- Anti-inflammatory effects
- Effects on vascular endothelial function
- Effects on blood clotting
- Autonomic functional changes
- Anti-ischemic effects
- Antiarrhythmic effects
- Reduction in age-related disability

Circulation. 2013;128:873-934;

Physical exercise: a therapeutic tool

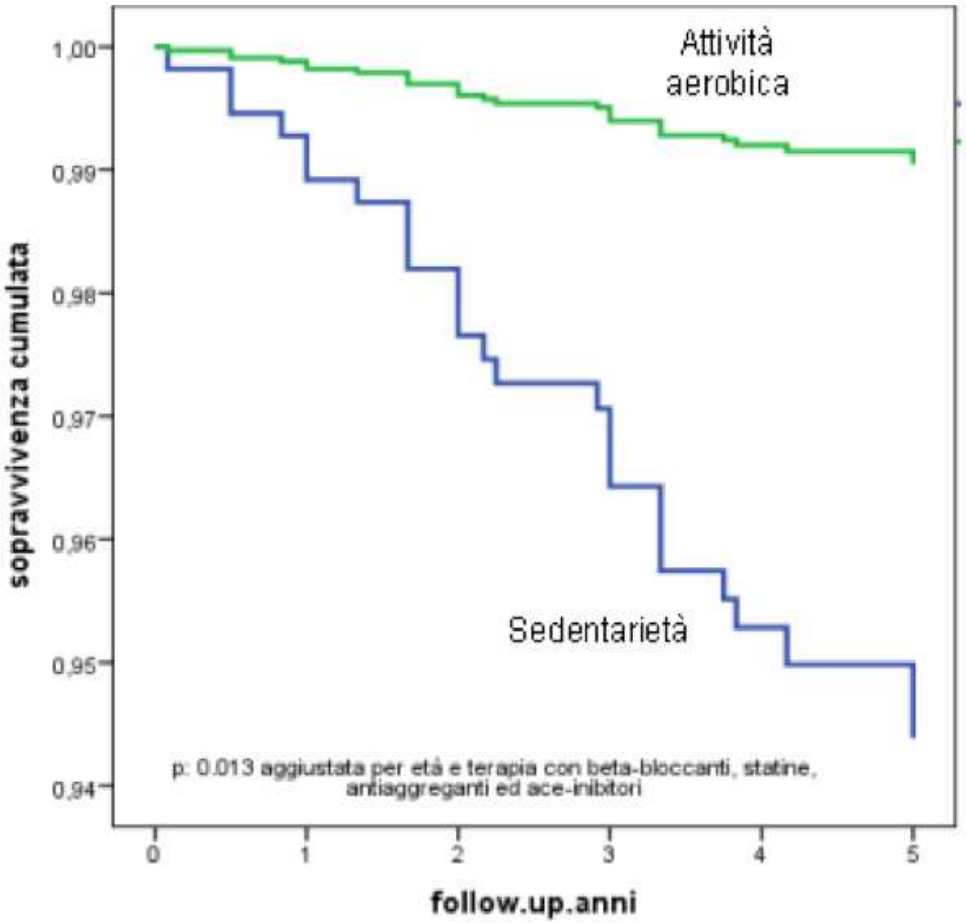


European Heart Journal (2015) **36**, 1445–1453
doi:10.1093/eurheartj/ehv090


Reduction in Mortality Risk with More Exercise
No Exercise
Walk 20 Min Mile
Run 10 Min Mile
0%
20%
Recommended Minimum
31%
37%
39%
39%
1-140 MIN/WEEK
1-45 MIN/WEEK
140-280 MIN/WEEK
280-420 MIN/WEEK
45-90 MIN/WEEK
90-135 MIN/WEEK
420-700 MIN/WEEK
135-240 MIN/WEEK
700-1400 MIN/WEEK
240-450 MIN/WEEK
This infographic summarizes the findings as reported in the manuscript published by Arem, et.al. JAMA Internal Medicine 2015
@NCIEpiTraining

Attività fisica e sopravvivenza: prevenzione secondaria

ATTIVITA' FISICA E MORTALITA' DOPO CICLO RIABILITATIVO IN PREVENZIONE CARDIOVASCOLARE SECONDARIA

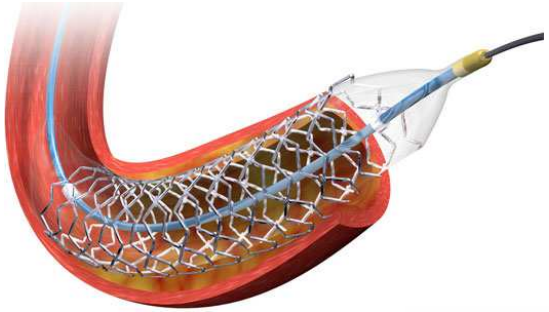


Numero pazienti totali: 1.254
Follow-up : 4.5 anni

	N	%
Attività fisica aerobica (>150 min/sett)	482	38
Sedentarietà	713	57
Attività fisica non costante	64	5

Terapia	NNT
Beta-bloccante	16
Statina	20
ACE-i	31
Antiaggregante	10
Esercizio fisico aerobico	11

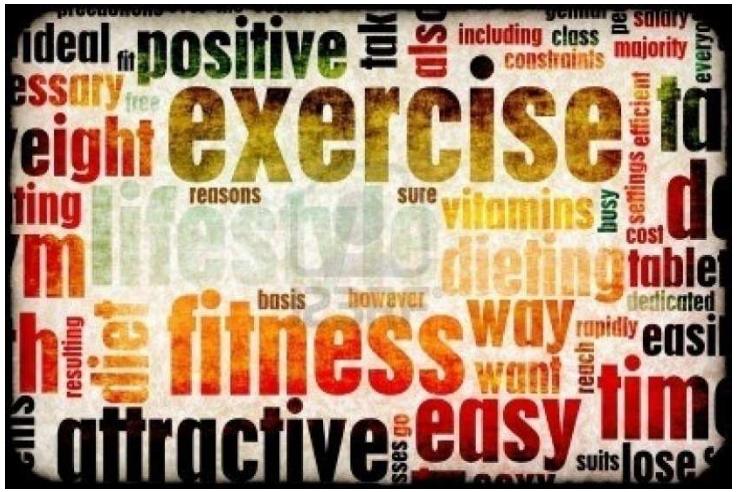
“Terapie palliative” vs “terapie curative”

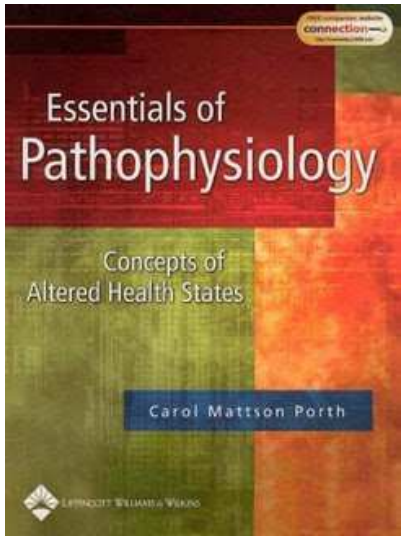


pallière dal *b. lat.* PALLIÀRE *coprire di un velo, di un mantello* da PÀLLIUM *velo, pallio* (v. q. voce).

Coprire di una scusa, come di un mantello; Coprire di belle apparenze atti non buoni.

In medicina. Guarire in apparenza; onde Palliativo dicesi un rimedio, che ha la virtù di calmare momentaneamente i più gravi sintomi del male.





Fondazione Don Carlo Gnocchi Onlus

Grazie per l'attenzione

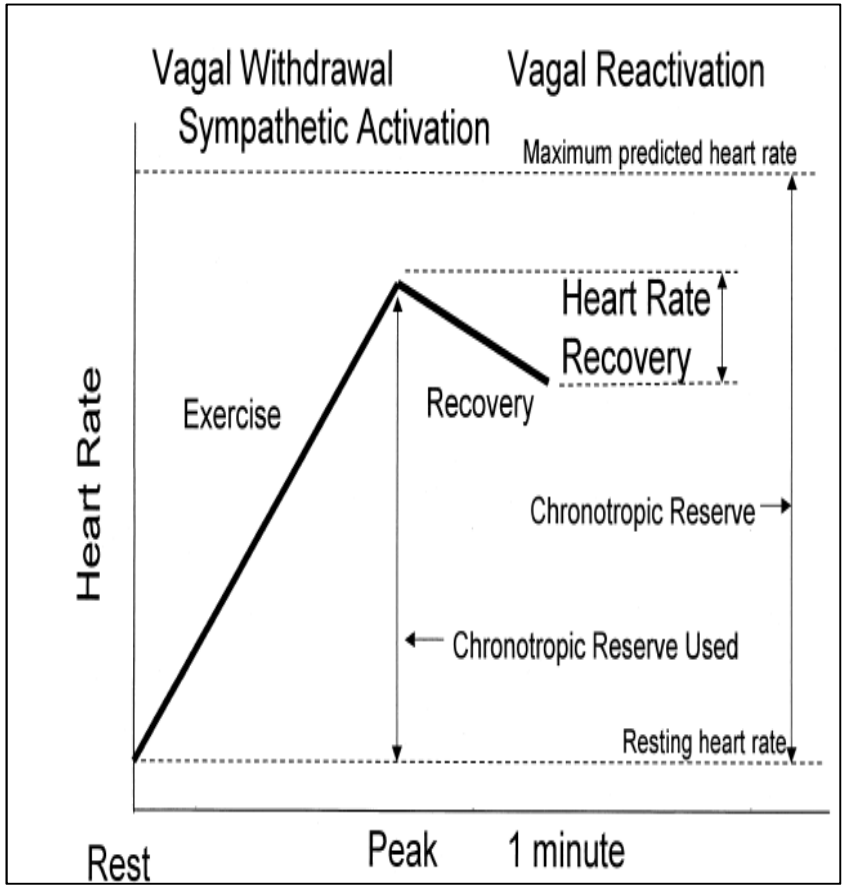
Dott. Davide Lazzeroni

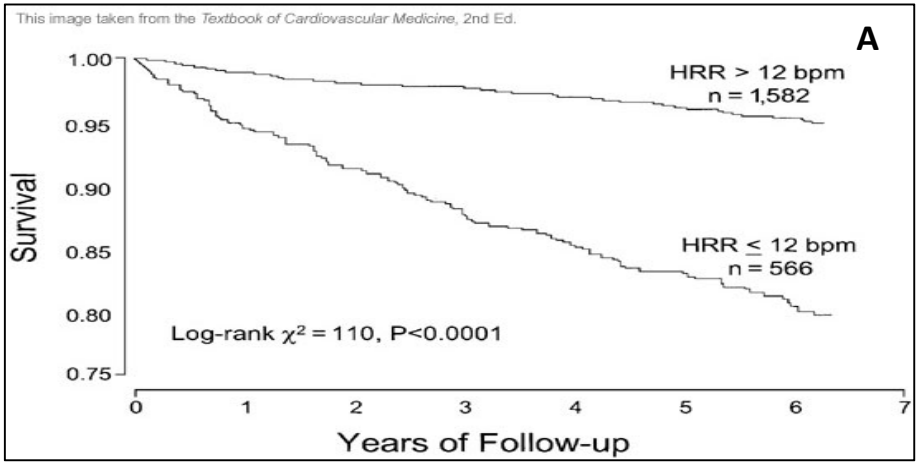
UNIVERSITÀ DEGLI STUDI DI PARMA

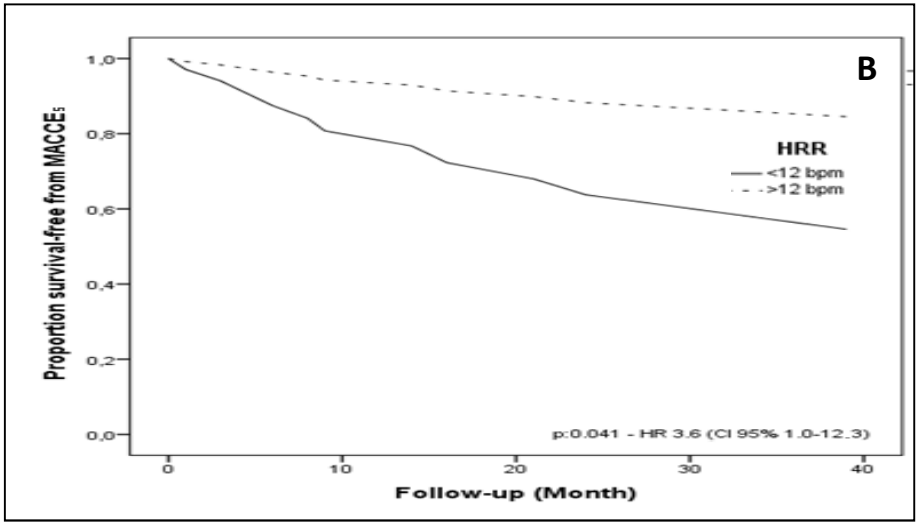
Autonomic function and prognosis

Fondazione Don Carlo Gnocchi Onlus

Heart rate recovery and prognosis after cardiac rehabilitation



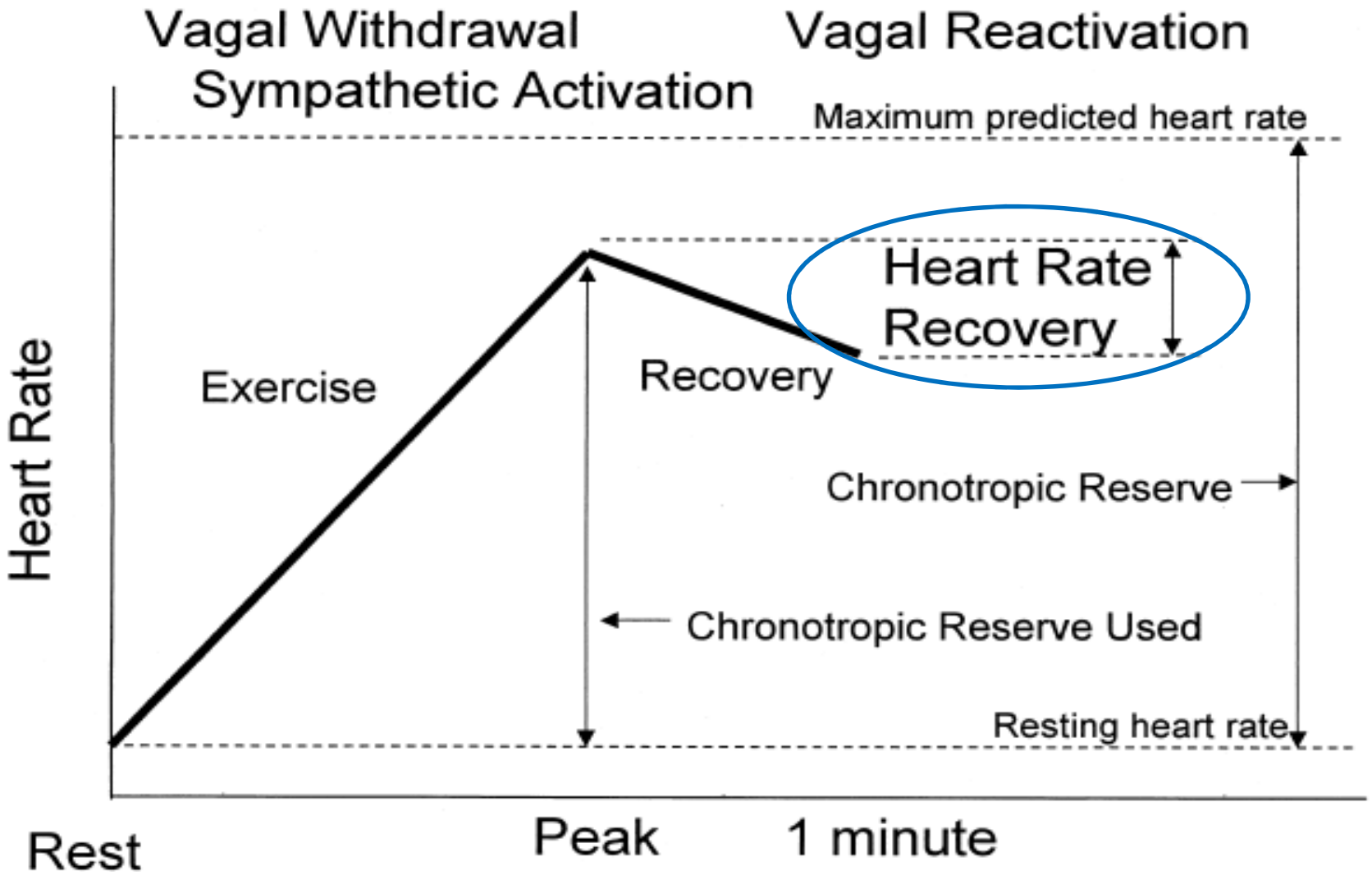




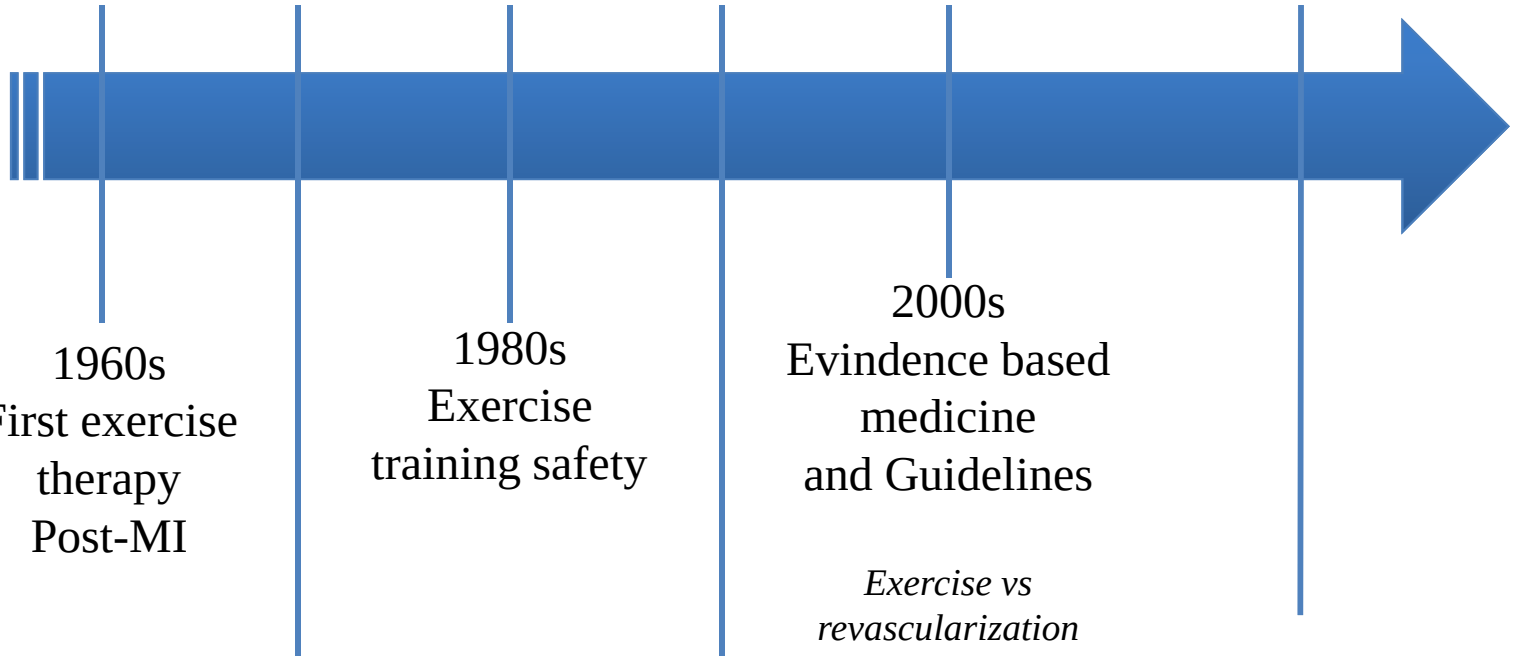
A) Jolly et al. Circulation
B) Don Gnocchi 2015 – dati non pubblicati

N=100 patients / FU: 1-3 years

CARDIOPULMONARY EXERCISE TEST: Autonomic function evaluation



Physical exercise in cardiovascular diseases: historical viewpoint



- Exercise in CV prevention
- Exercise as a diagnostic “tool”
- Modern cardiac rehabilitation
- Exercise as a prognostic “tool”

Mortalità per patologia cardiovascolare

Negli ultimi 30 anni

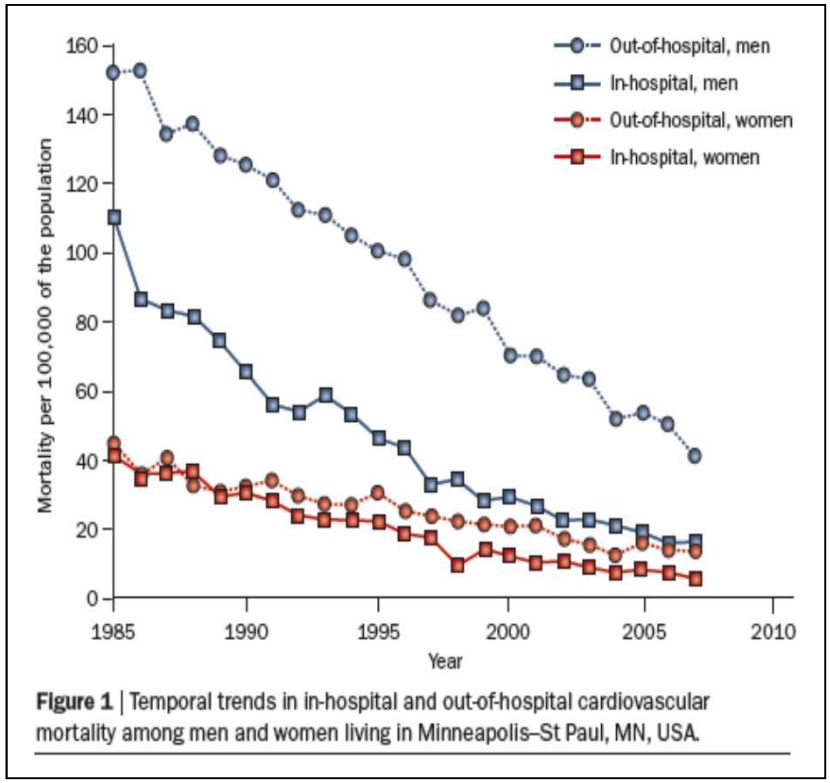


Figure 1 | Temporal trends in in-hospital and out-of-hospital cardiovascular mortality among men and women living in Minneapolis–St Paul, MN, USA.

RIDUZIONE DEI DECESSI

Nei prossimi 30 anni

Table 1. Projections of Crude CVD Prevalence (%), 2010–2030 in the United States

Year	All CVD*	Hypertension	CHD	HF	Stroke
2010	36.9	33.9	8.0	2.8	3.2
2015	37.8	34.8	8.3	3.0	3.4
2020	38.7	35.7	8.6	3.1	3.6
2025	39.7	36.5	8.9	3.3	3.8
2030	40.5	37.3	9.3	3.5	4.0
% Change	9.9	9.9	16.6	25.0	24.9

CVD indicates cardiovascular disease; CHD, coronary heart disease; HF, heart failure.

*This category includes hypertension, CHD, HF, and stroke.

AUMENTO DEGLI EVENTI

Circ 2011; 123:933-944

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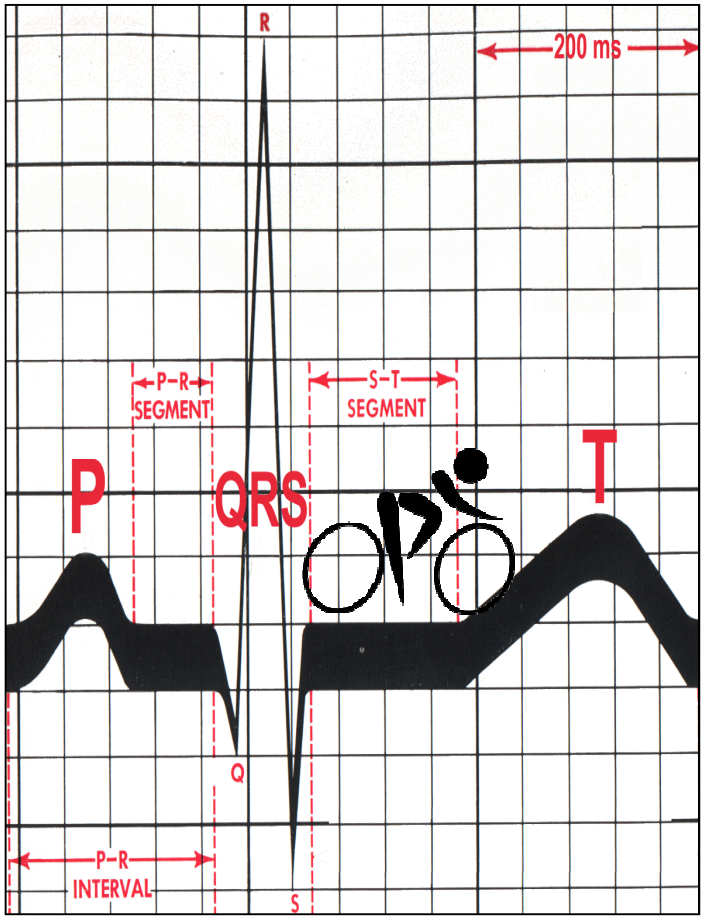
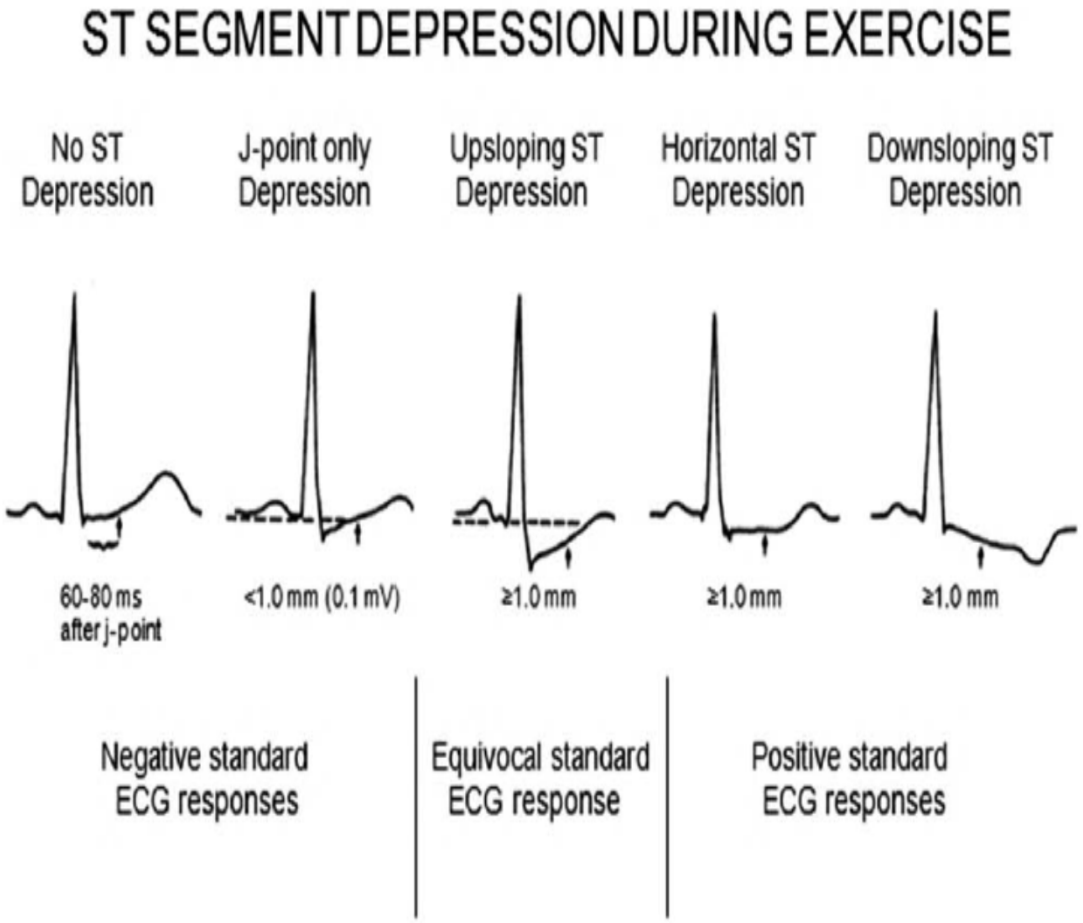
Physical exercise: a diagnostic tool





Circulation. 2013;128:873-934;

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association®
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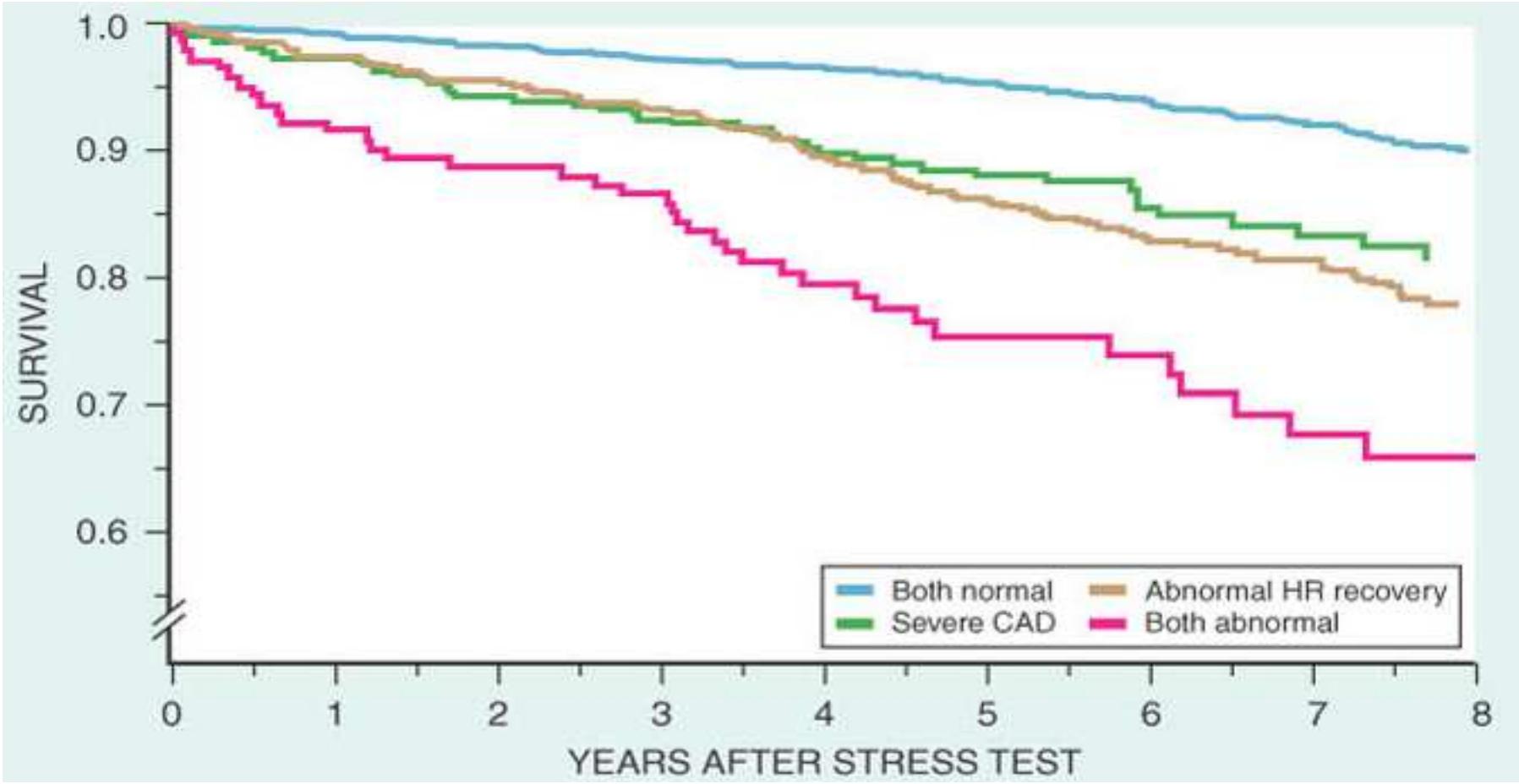
Heart Rate Recovery and Impact of Myocardial Revascularization on Long-Term Mortality

Michael S. Chen, Eugene H. Blackstone, Claire E. Pothier and Michael S. Lauer

Circulation 2004, 110:2851-2857: originally published online October 25, 2004



Percutaneous Coronary Angioplasty Compared With Exercise Training in Patients With Stable Coronary Artery Disease

A Randomized Trial

Rainer Hambrecht, MD; Claudia Walther, MD; Sven Möbius-Winkler, MD; Stephan Gielen, MD; Axel Linke, MD; Katrin Conradi, MD; Sandra Erbs, MD; Regine Kluge, MD; Kai Kendziorra, MD; Osama Sabri, MD; Peter Sick, MD; Gerhard Schuler, MD

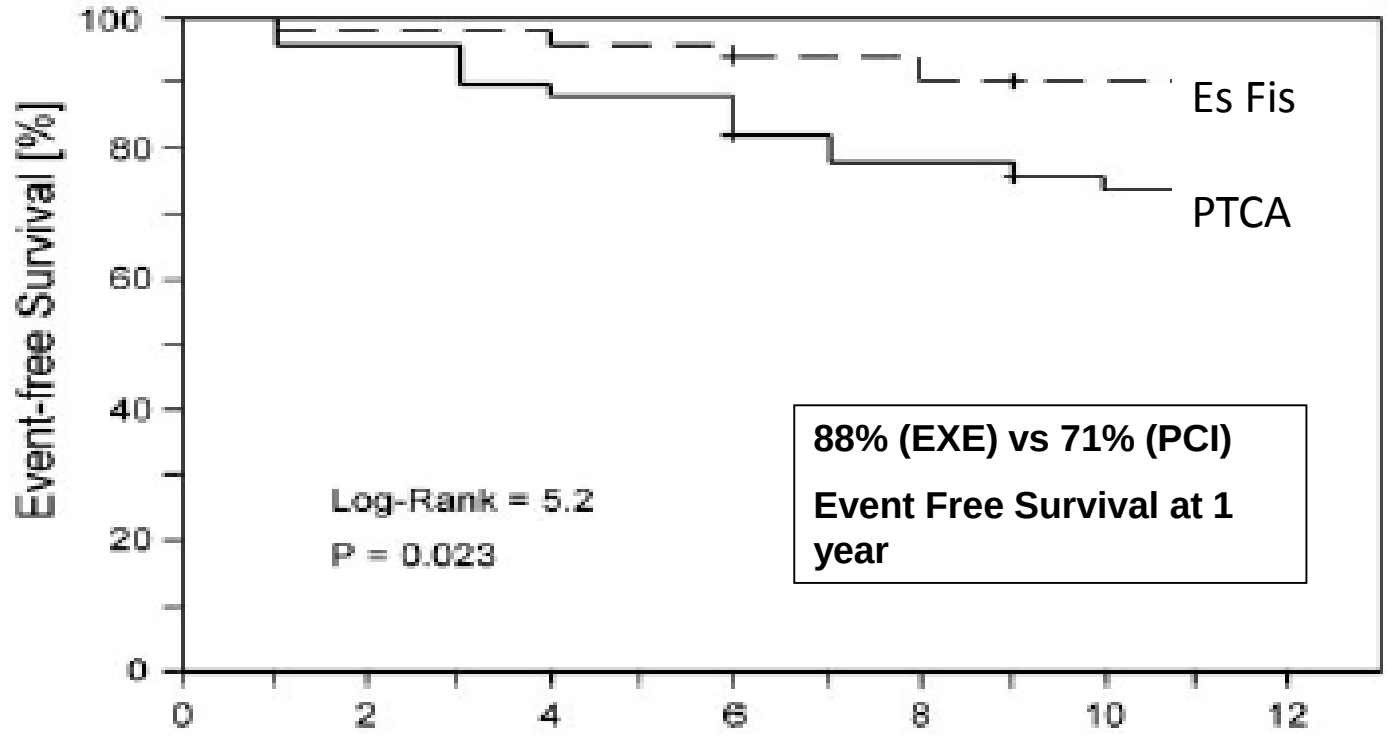
50 vs 50

Patients

--

20 min

Cyclergomter/day



88% (EXE) vs 71% (PCI)

Event Free Survival at 1 year

Circulation.2004; 109:1371-1378