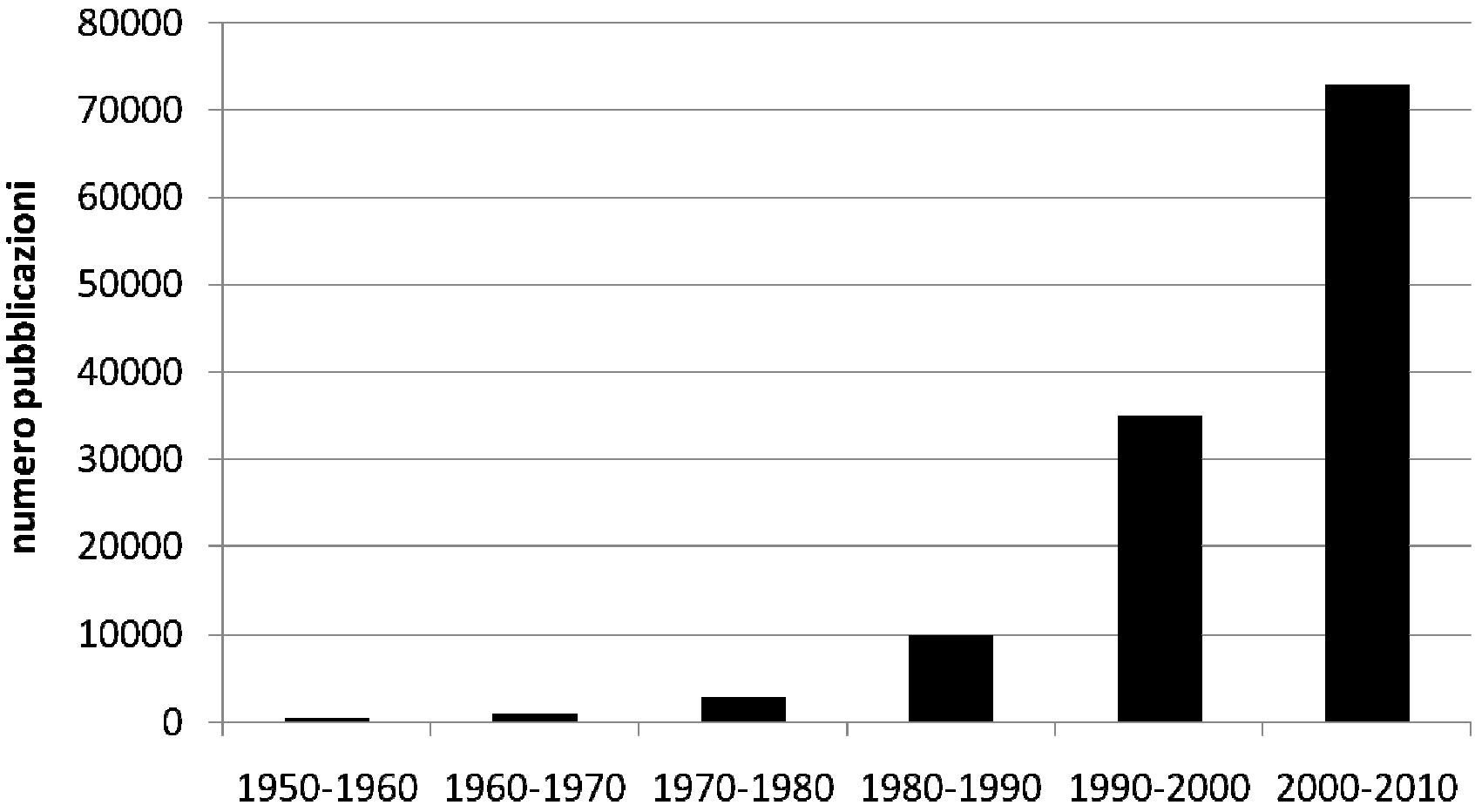
La Sarcopenia: definizioni, patogenesi e trattamento.

(Ferrara, 19/10/2013)

«L’esercizio fisico per la prevenzione e la terapia della Sarcopenia»

G. Grazzi. Università di Ferrara

Parole chiave: Esercizio/attività fisica e malattie cardiovascolari



Courtesy Prof. S. Blair, University of South Carolina

Role of exercise in treating Chronic Diseases

Improved autonomic function	Headley, 2012; Malfatto, 2005; European Association of Cardiovascular Prevention Rehabilitation Committee for Science, 2010
Increased peak $\dot{V}O_2$	Belardinelli, 1999; Garber, 2011; European Association of Cardiovascular Prevention Rehabilitation Committee for Science, 2010; Headley, 2012; Kobashigawa, 1999
Favorable clotting factors (increased fibrinolysis and decreased coagulability)	El-Sayed, 2004; Kokkinos, 2010
Decreased inflammation	Balducci, 2012; Kokkinos, 2010; Milani, 2004
Improved vasodilation/constriction	Gielen, 2001; Hambrecht, 2003
Improved myocardial perfusion	Gielen, 2001
Slowing or regression of CAD	Gielen, 2001; Ornish, 1990; Ornish, 1998
Blood lipid profile	Balducci, 2012; Kokkinos, 2010
Additional benefits of exercise training for health-related fitness	
Increased muscle mass—decreased muscle wasting	Balducci, 2012; Garber, 2011; Peterson, 2011; Peterson, 2010; Peterson, 2011; Ratamess, 2009
Increased bone mineral density	Gomez-Cabello, 2012; Guadalupe-Grau, 2009
Reduced depression and anxiety	Dunn, 2005; Mota-Pereira, 2011
Increased muscle strength	Ferreira, 2012; Peterson, 2004; Peterson, 2005; Peterson, 2010; Rhea, 2003
Improved glucose metabolism	Black, 2010; Hansen, 2012; Miller, 1994; Miller, 1984
Improved insulin sensitivity	Black, 2010; Hansen, 2012; Miller, 1994; Miller, 1984
HbA1c	Avery, 2012; Balducci, 2012

Weiler AA, *Nasca* 2013

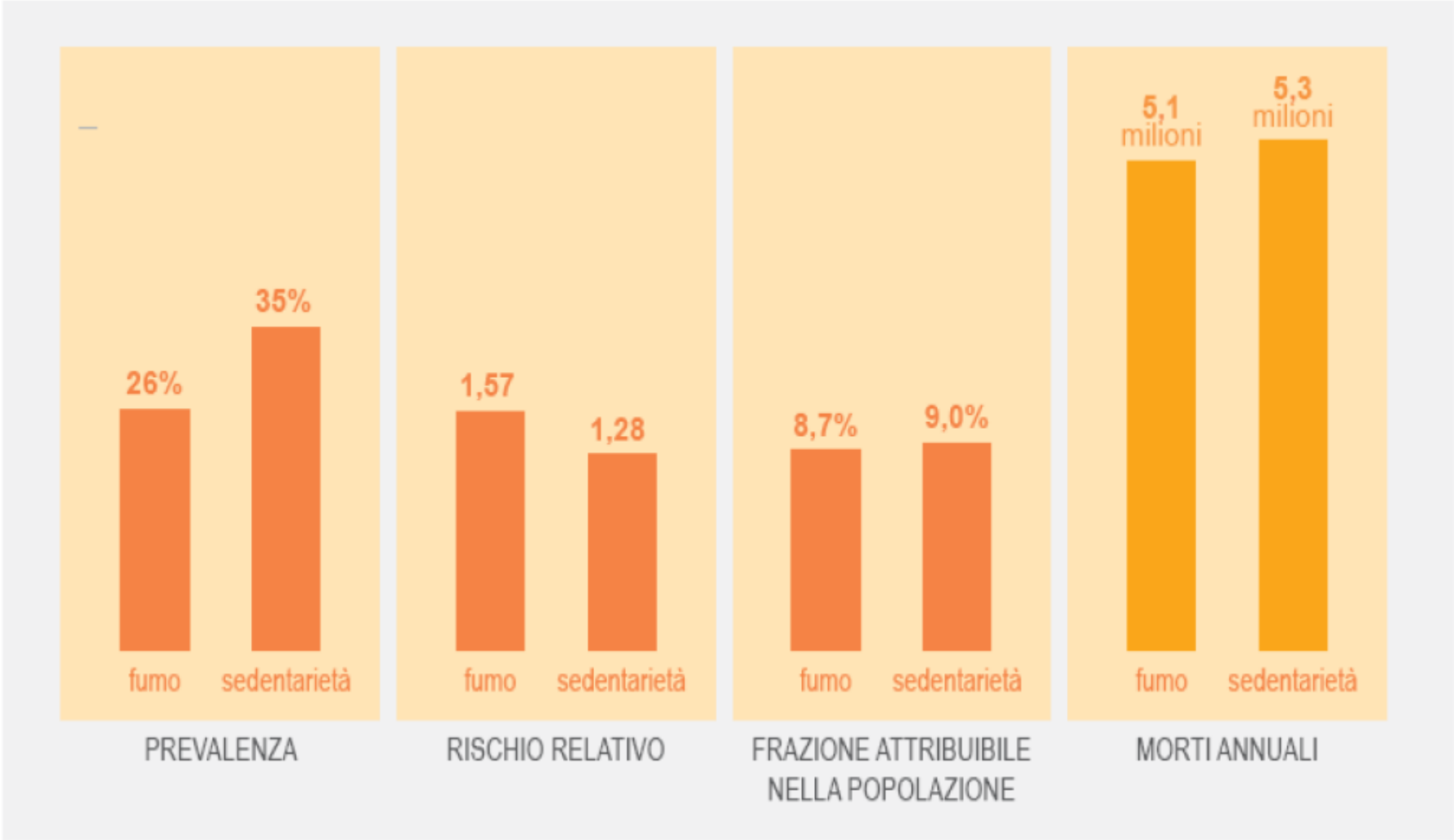
Raccomandazione / Evidenza

Stop Fumo	I	B
PA < 140/90	I	B
LDL < 100	I	A
HbA1C < 7%	I	B
Attività fisica	**I**	**B**

AHA/ACC Guidelines for Secondary Prevention for Patients with Coronary and Other Atherosclerotic Vascular Disease: 2006 Update.
Circulation 2006/*J Am Coll Cardiol* 2006

European Heart Journal (2010) **31**, 1967–1976
doi:10.1093/eurheartj/ehq236

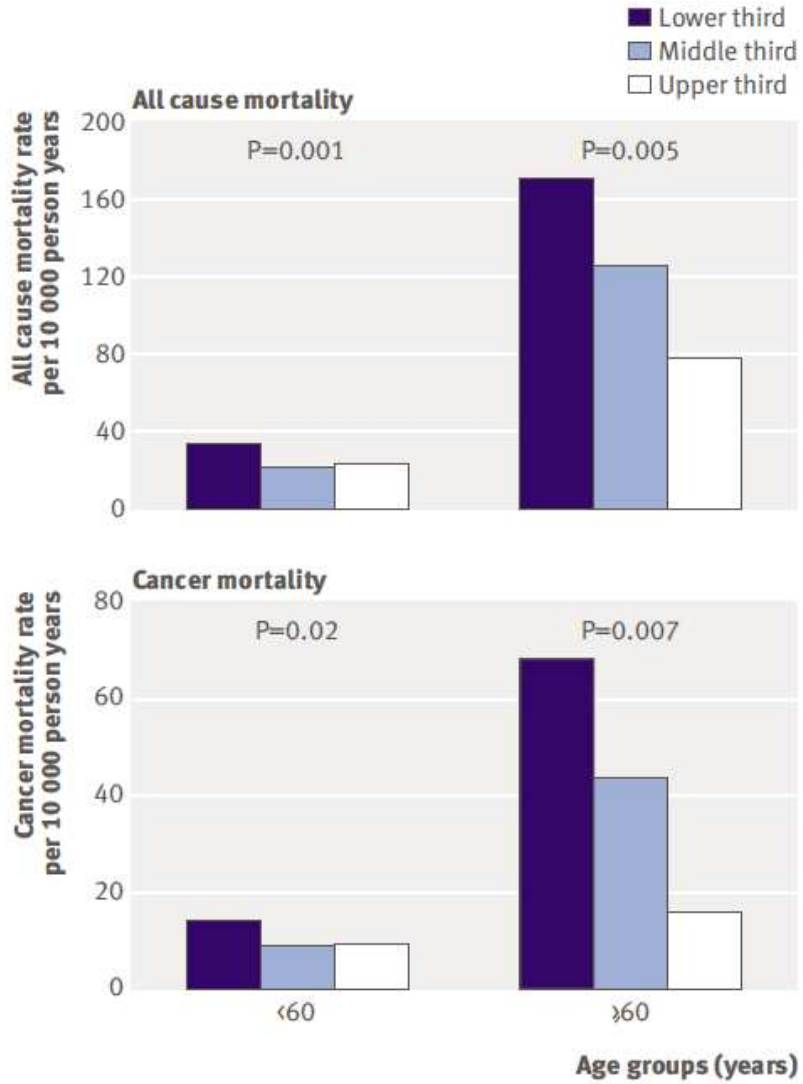
Fattore di rischio sedentarietà



Wen CP et al. Lancet 2012

Forza muscolare e sopravvivenza

effetto dell'età

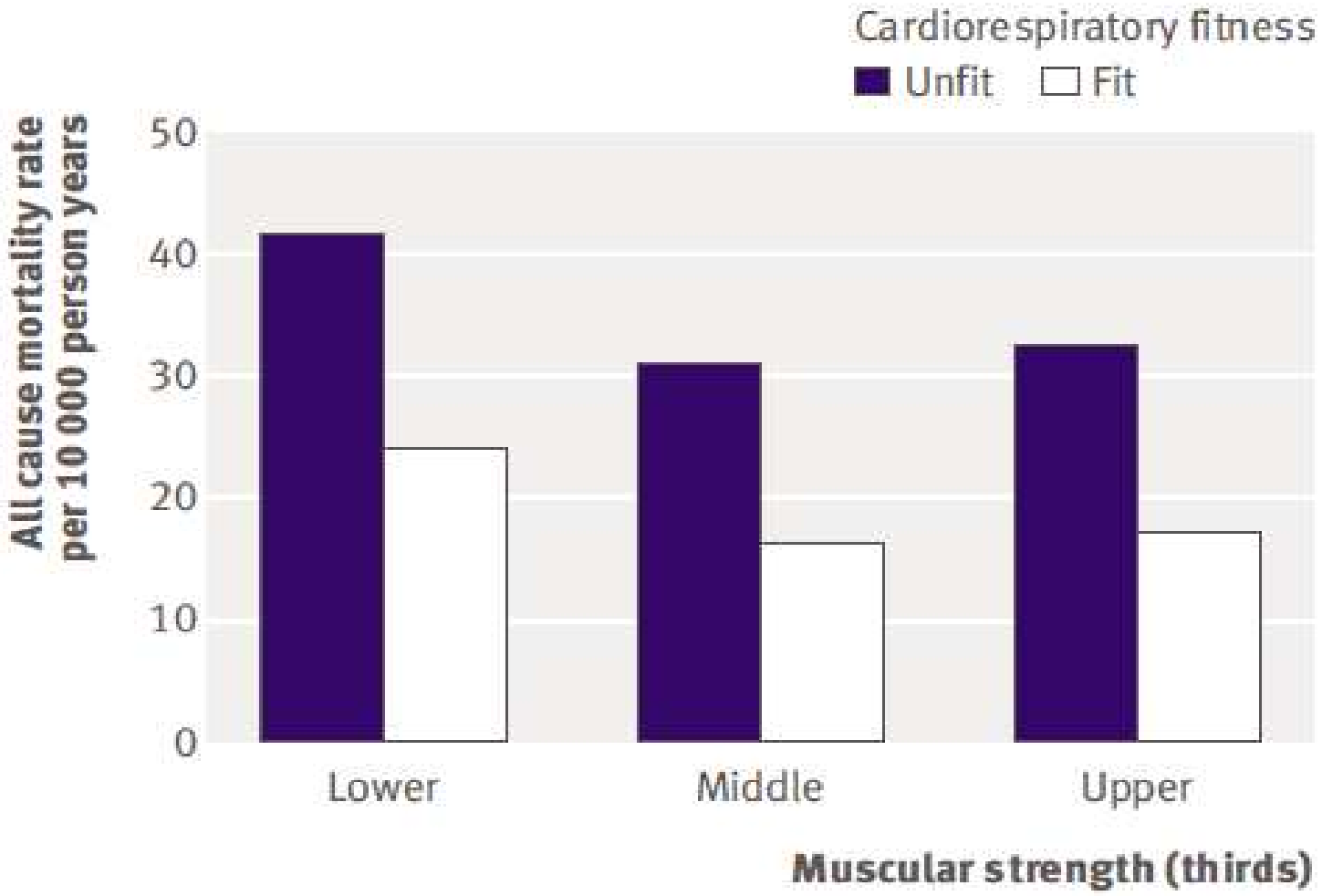


ACLS study
n=8762
age=20-80
follow-up medio=19 a.

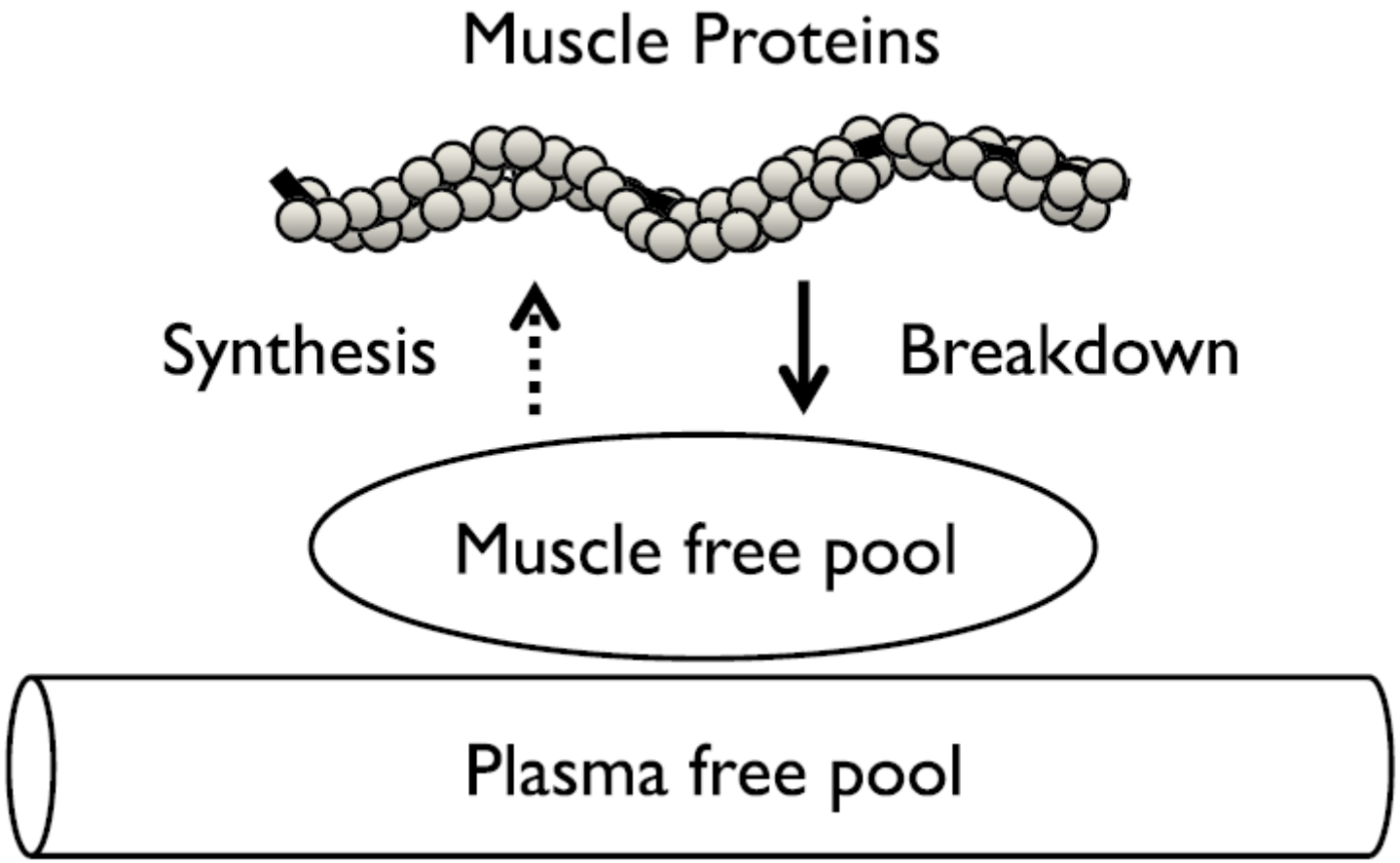
Ruiz JR et al. *BMJ* 2008

Forza muscolare e sopravvivenza

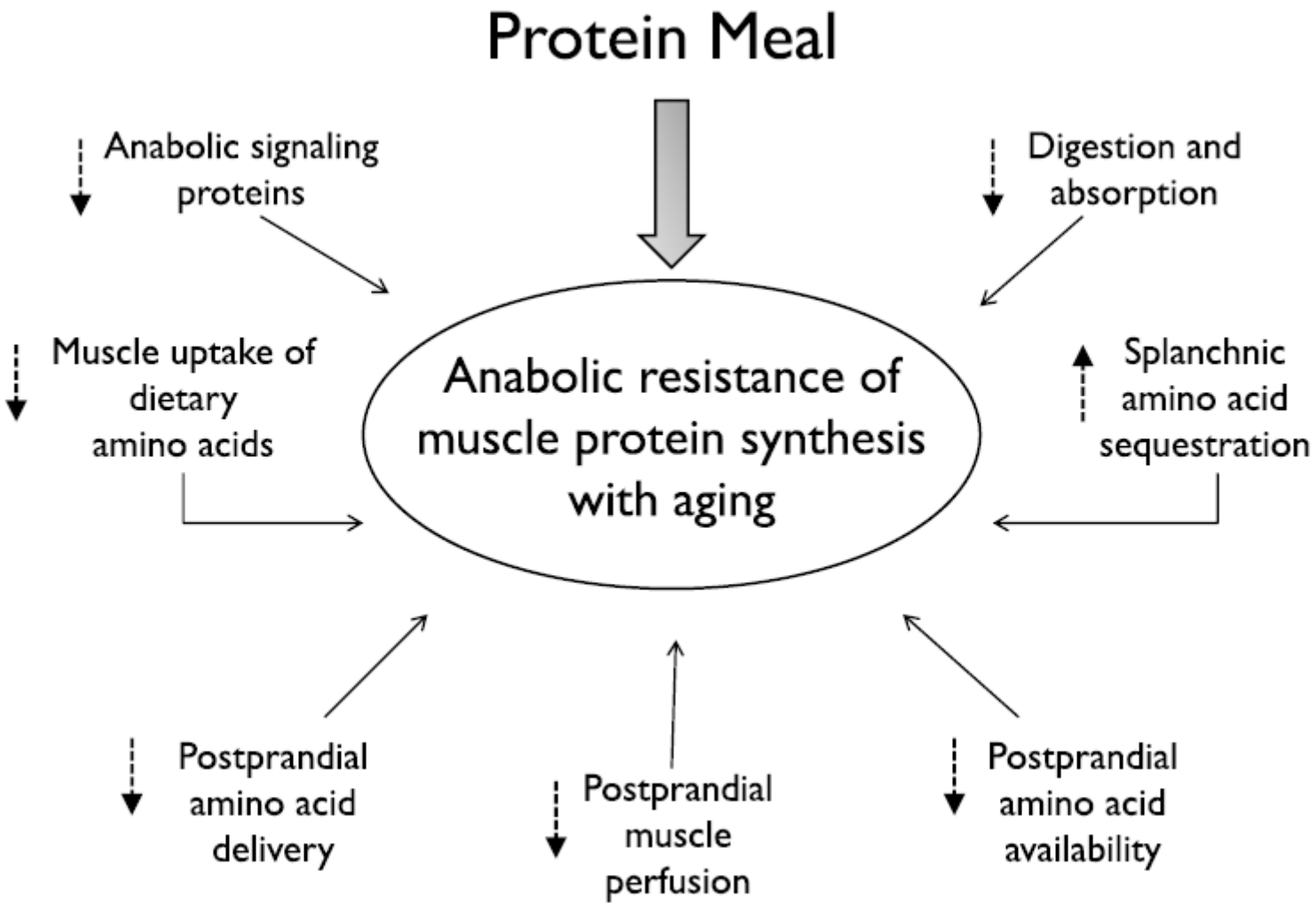
effetto della funzionalità cardiocircolatoria



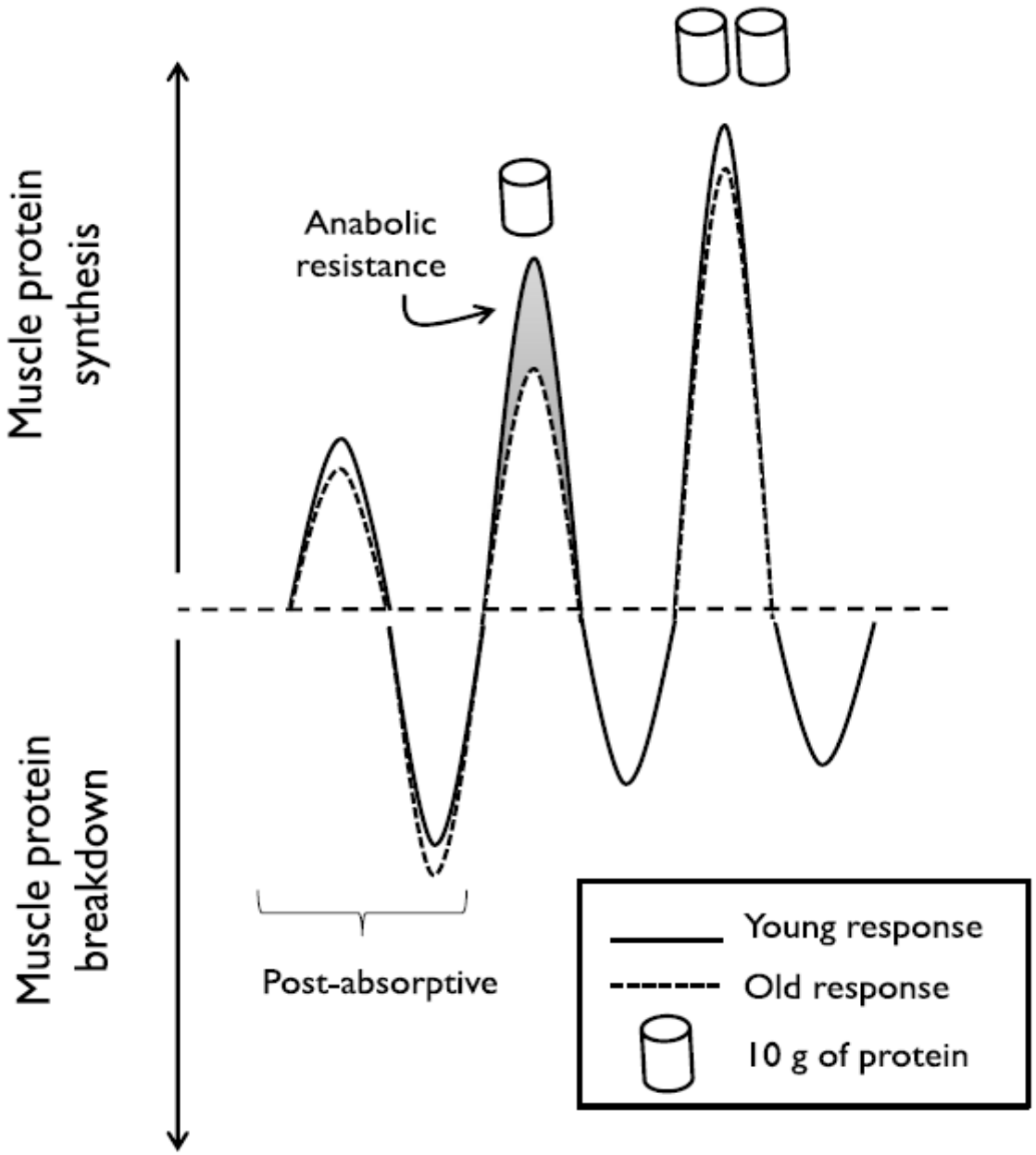
Ruiz JR et al. *BMJ* 2008



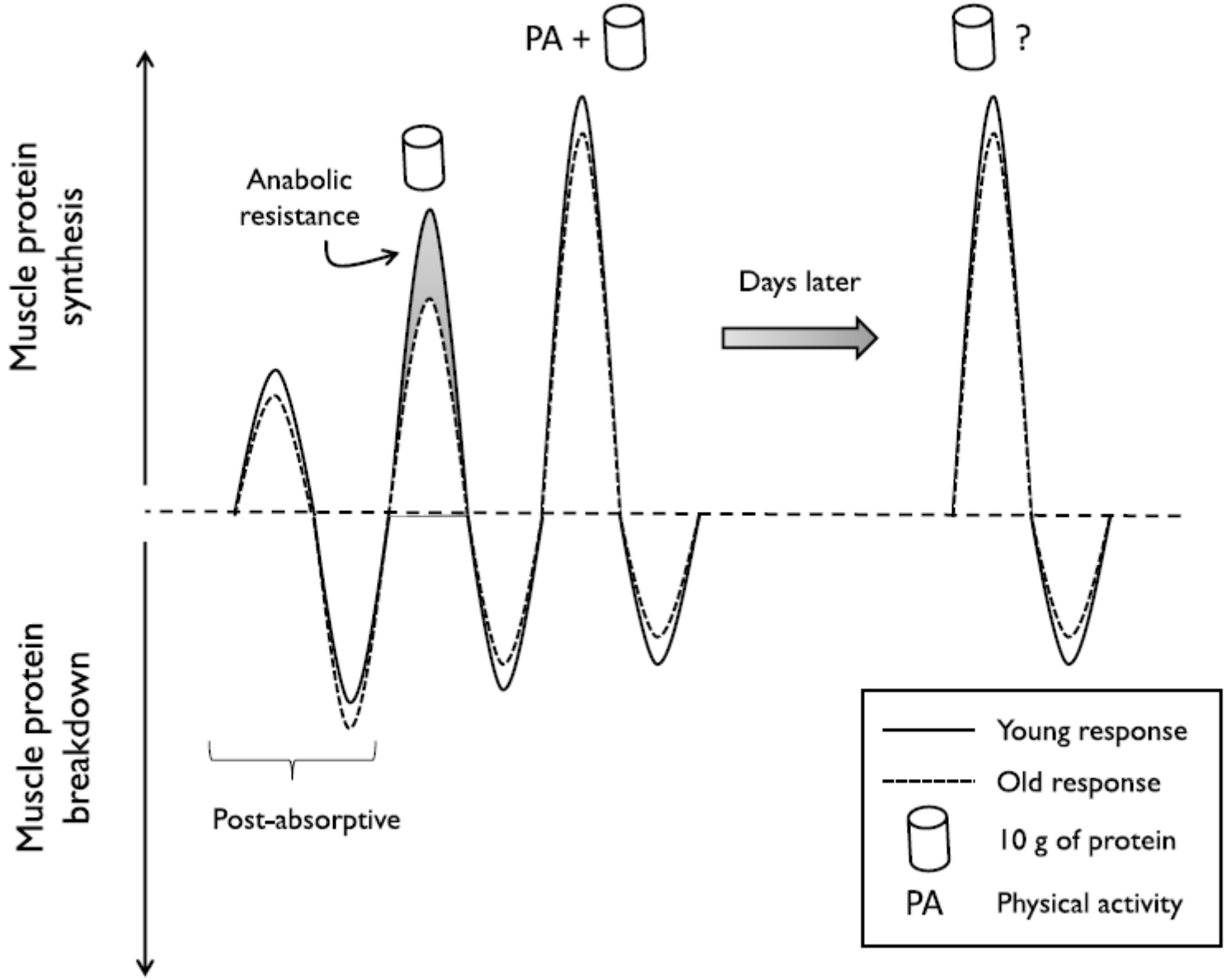
Burd NA, et al. *Exerc Sport Sci Rev*, 2013



Burd NA, et al. *Exerc Sport Sci Rev*, 2013



Burd NA, et al. *Exerc Sport Sci Rev*, 2013

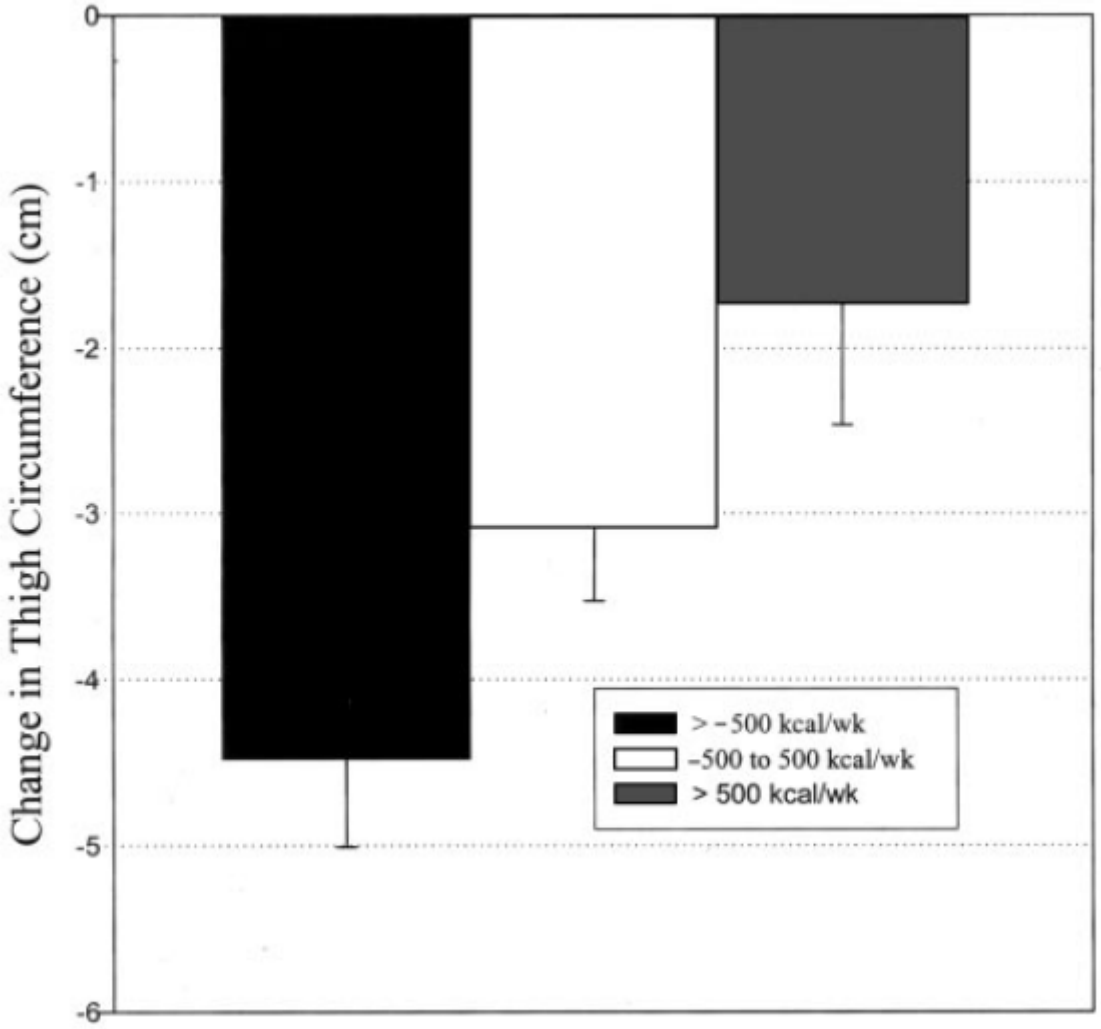


Burd NA, et al. *Exerc Sport Sci Rev*, 2013

Exercise to Reduce Cardiovascular Risk — How Much Is Enough?

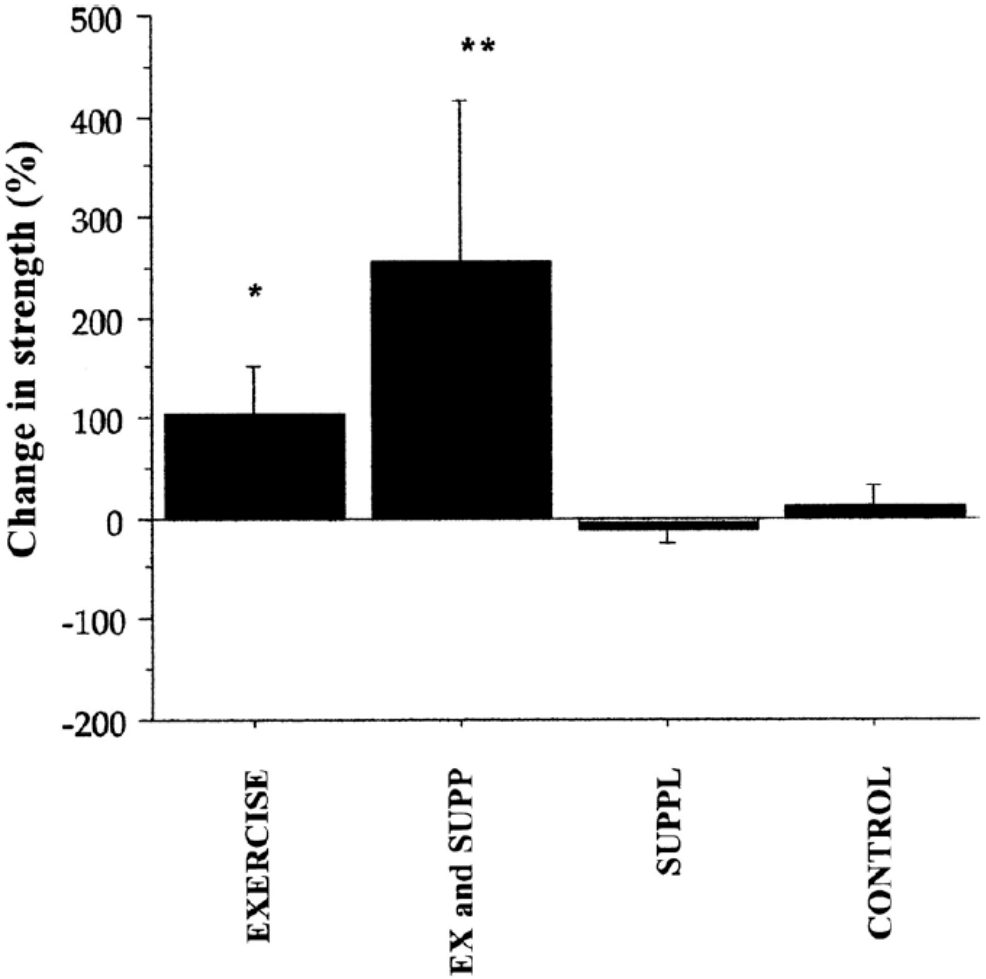
Tall AR, *N Engl J Med*, 2002

Anthropometric assessment of 10-y changes in body composition in the elderly[1–4]



Hughes VA, *Am J Clin Nutr,* 2004

Allenamento della forza in anziani fragili



Fiatarone MAF, *AJP-EM*, 1999.

Aerobic Exercise Overcomes the Age-Related Insulin Resistance of Muscle Protein Metabolism by Improving Endothelial Function and Akt/Mammalian Target of Rapamycin Signaling

- **45-min walk, 70% heart rate max**

Fujita S, *Diabetes,* 2007

ORIGINAL CONTRIBUTION

Gait Speed and Survival

… Gait speed, also often termed *walking speed*, has been shown to be **associated with survival**… and has been shown to **reflect health and functional status**. Gait speed has been **recommended as a potentially useful clinical indicator** of well-being…

Studenski S. et al. 2011, *JAMA*. 305(1):50-58

BMJ

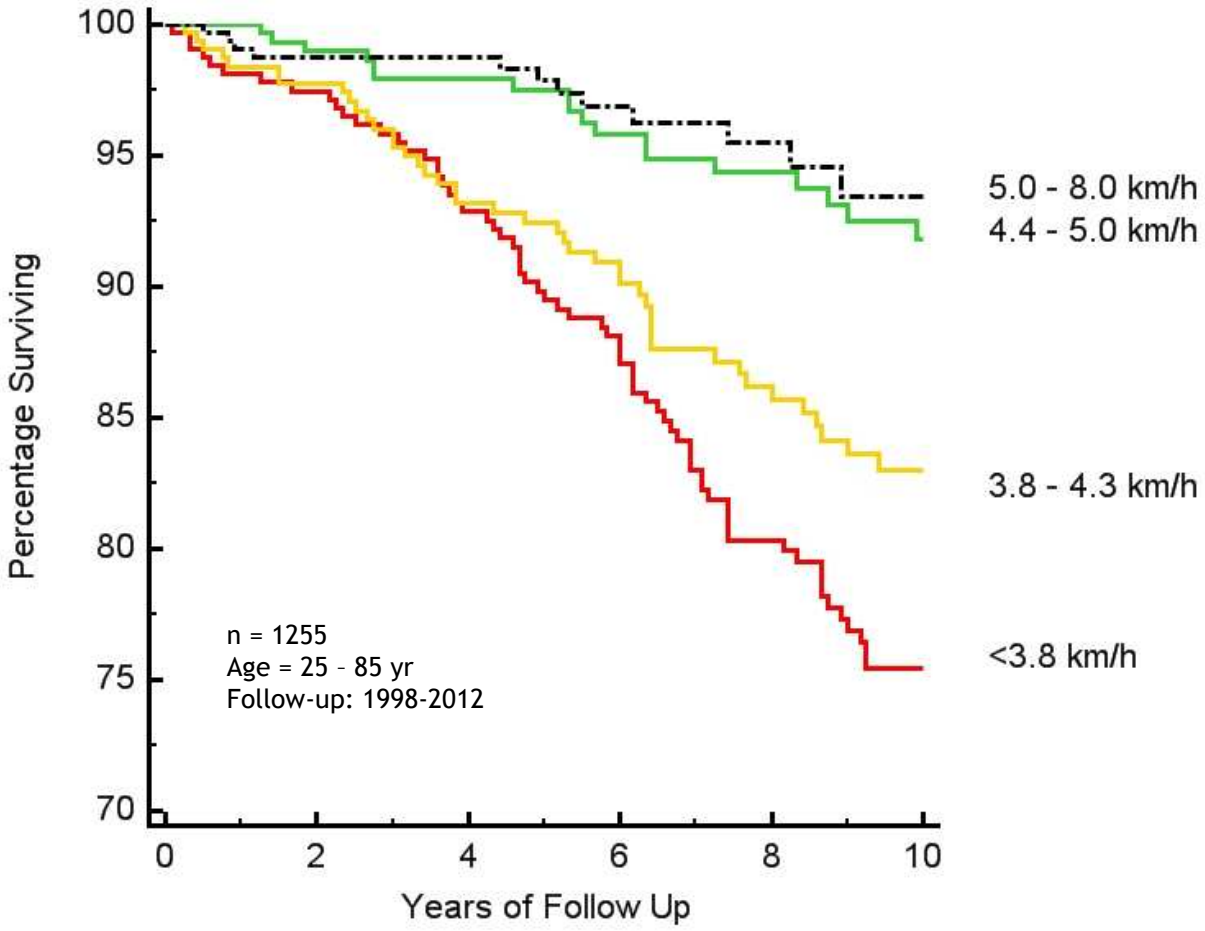
BMJ 2011;343:d7679 doi: 10.1136/bmj.d7679 (Published 15 December 2011)

RESEARCH

How fast does the Grim Reaper walk? Receiver operating characteristics curve analysis in healthy men aged 70 and over

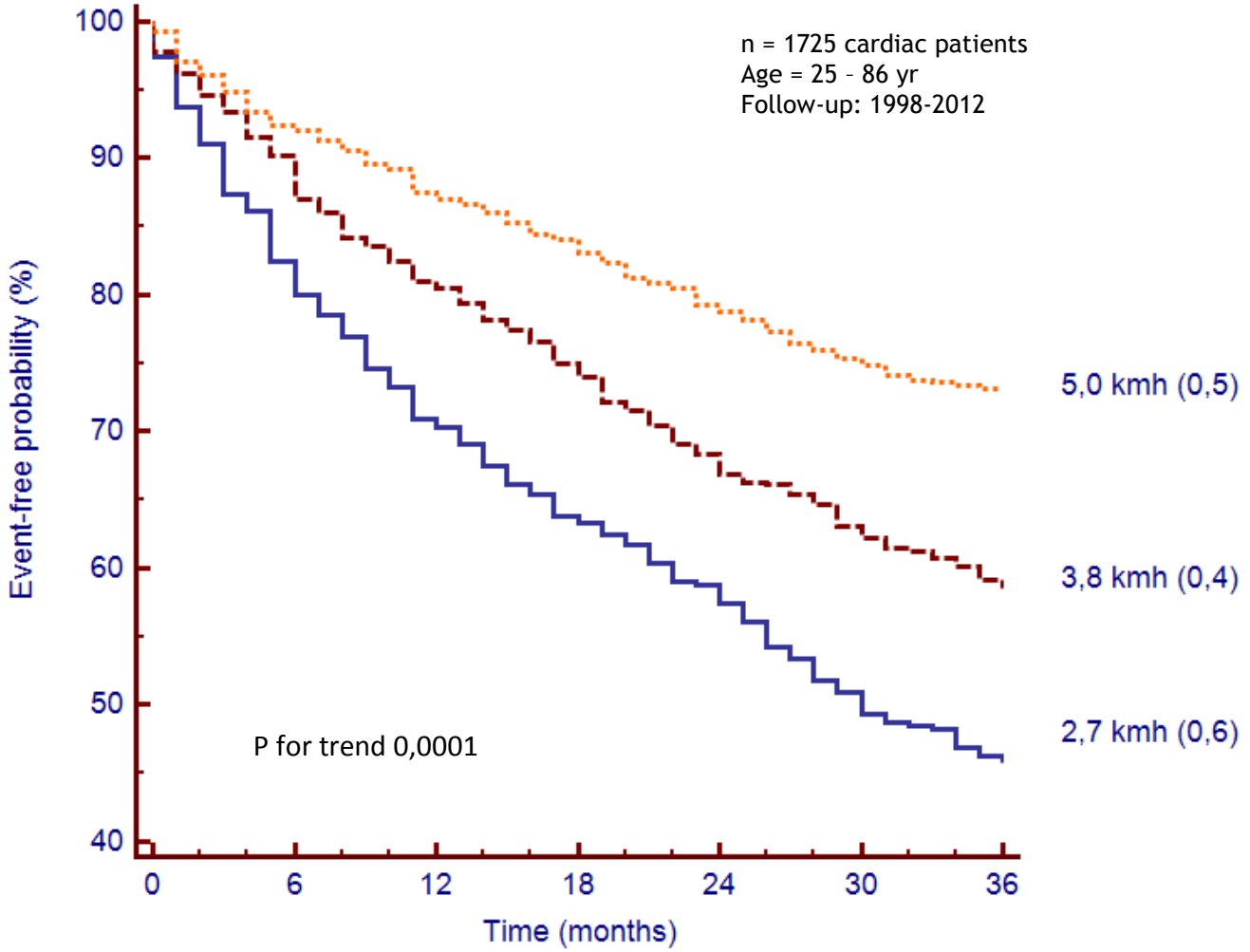
Stanaway FF et al. *BMJ* 2011.

Moderate walking and 10-yr overall mortality

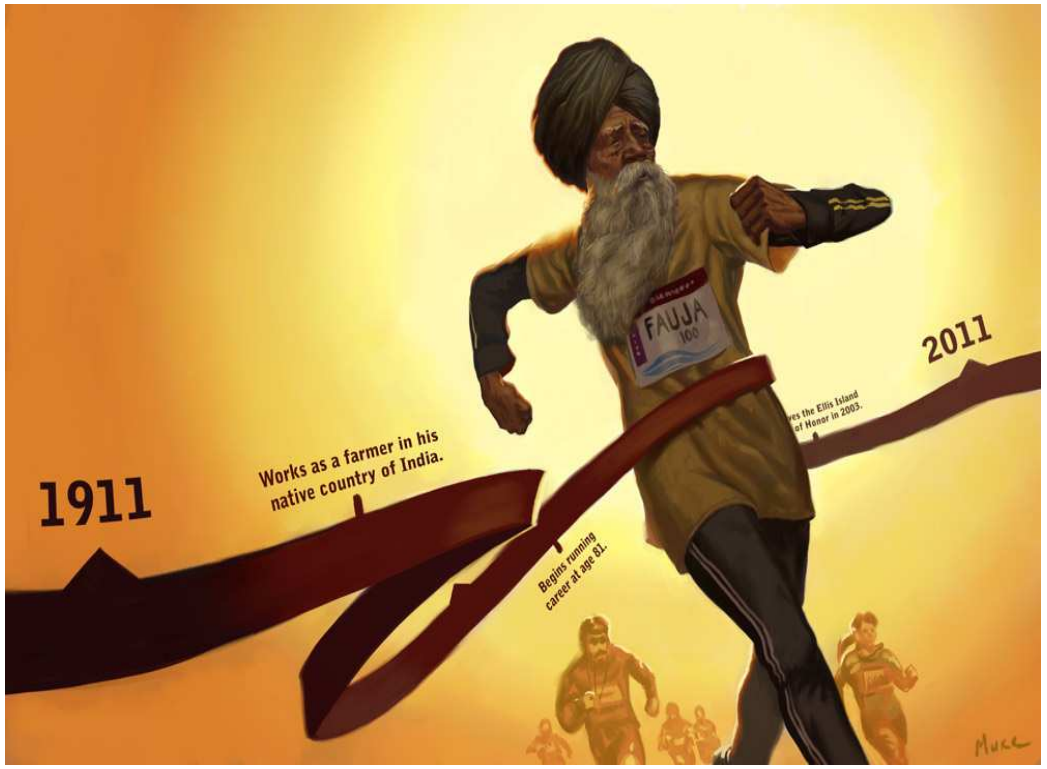


Chiaranda G. et al, *BMJ* 2013, in press

Moderate walking and 3-yr all-cause rehospitalization



Grazzi G. et al, 2013, ahead of pub



Mail Online

World's oldest marathon runner finally hangs up his trainers aged 101 after completing a 10km race in a sprightly 92 minutes

Fauja Singh ran first marathon aged 89 and has run all over the world. He took up running to overcome depression after death of his wife and son.


Vittel