

Il Centro Territoriale per la Prevenzione Cardiovascolare Primaria e Secondaria

Lorenzo Brambilla

Direttore Sanitario
Cardiologo
Centro Santa Maria ai Servi
Fondazione Don Gnocchi PR

Il Centro Territoriale per la Prevenzione Cardiovascolare Primaria e Secondaria

1. Autorizzazione 13.08.2015
2. Accredimento RER
3. Day Service Ambulatoriale tipo 2
 - Scompenso cardiaco
 - Cardiopatia Ischemica
 - Arteriopatia Extracardiaca (rischio CV)
 - Inquadramento del soggetto ad elevato rischio CV prospettico

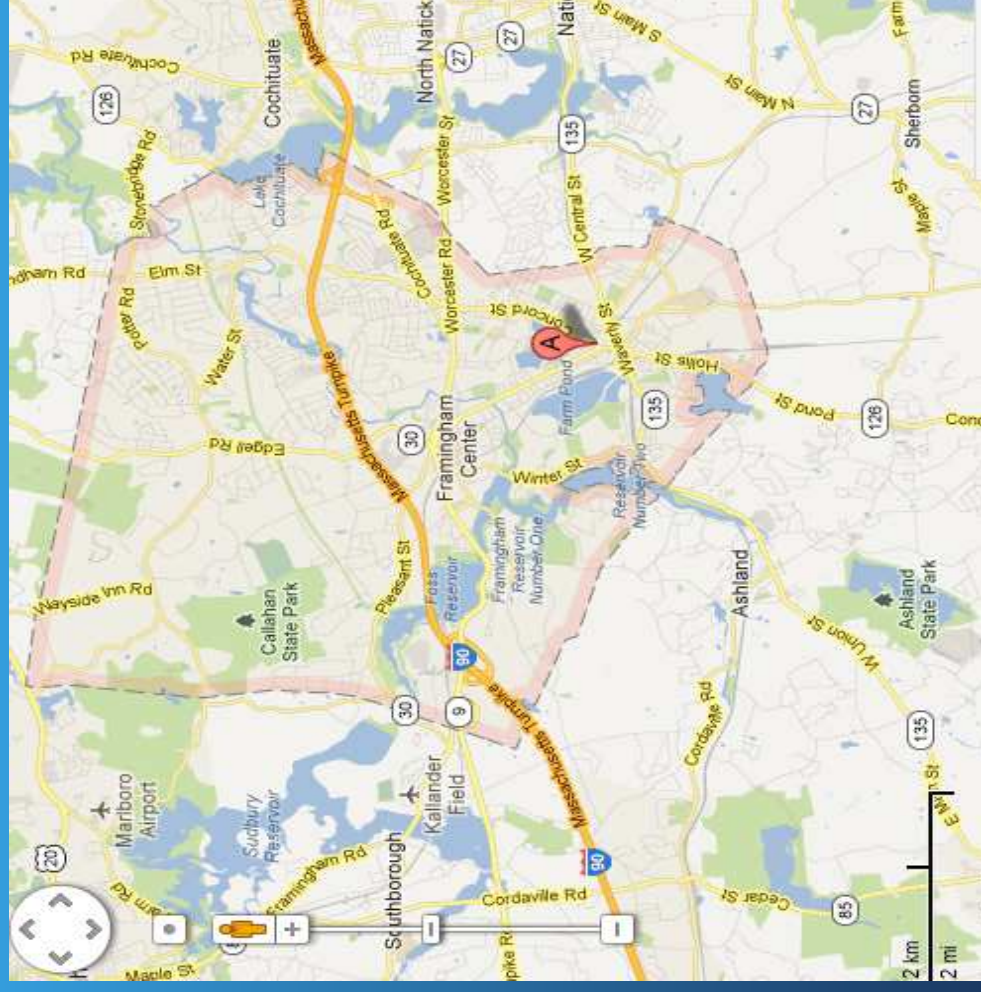
AMERICAN JOURNAL OF PUBLIC HEALTH *March, 1951*

Epidemiological Approaches to Heart Disease: The Framingham Study*

THOMAS R. DAWBER, M.D., GILCIN F. MEADORS, M.D.,
M.P.H., AND FELIX E. MOORE, JR.
*National Heart Institute, National Institutes of Health, Public Health Service,
Federal Security Agency, Washington, D. C.*

in setting up the study in that state, and after consideration of a number of possible areas the Town of Framingham was selected. Framingham, lying [redacted] center of [redacted] population, and is almost independent of Boston from the standpoint of providing suburban residence for the city. As is true of New

ment installed. A [redacted] including the examining physicians; a clinic nurse; x-ray, electrocardiography and laboratory technicians; statisticians; and interviewing and administrative clerks; a health educator; and visiting consultants in the fields of cardiology, electrocardiography, roentgenology, pathology, and biochemistry.



FRAMINGHAM HEART STUDY

A Project of the National Heart, Lung and Blood Institute and Boston University

Cardiovascular Disease (30-year risk)

(based on Pencina, D'Agostino, Larson, Massaro, Vasan. 'Predicting the 30-Year Risk of Cardiovascular Disease: The Framingham Heart Study', Circulation 2009)

Outcome

"Hard" CVD (coronary death, myocardial infarction, stroke), "general" CVD (coronary death, myocardial infarction, coronary insufficiency, angina, ischemic stroke, hemorrhagic stroke, transient ischemic attack, peripheral artery disease, heart failure)

Duration of follow-up

Maximum of 35 years, 30-year risk prediction

Risk Score Calculator

We acknowledge Mr. Aaron Vaneps and the Mayo Clinic Cardiovascular Health Clinic who provided the interactive risk calculator.

30 Year Risk Factors

Sex: ☒ Male ☐ Female

Systolic BP:

Age:

Diabetes: ☐

Smoker: ☐

Treated Hypertension: ☐

Total Cholesterol:

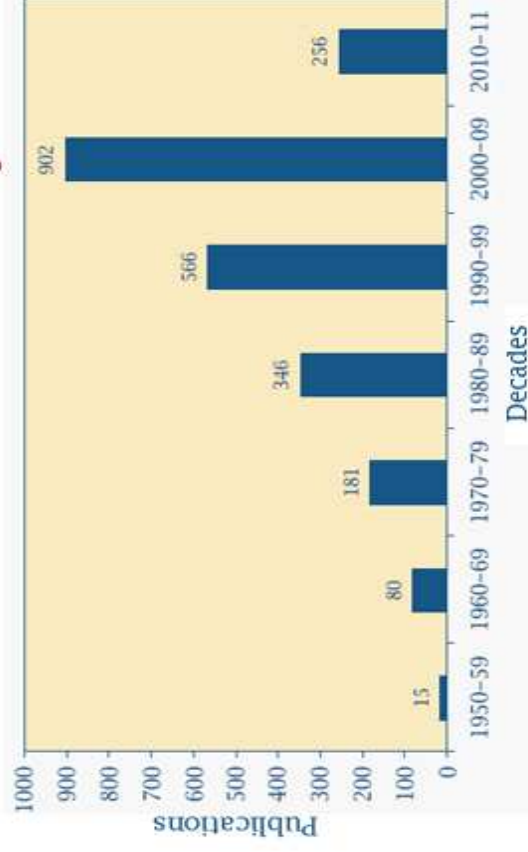
HDL Cholesterol:

BMI:

Framingham Heart Study Bibliography

Since 1951 investigators have published research results based on Framingham Heart Study data in peer review medical journals. These articles are listed here in the Framingham Heart Study bibliography in reverse chronological order and are updated annually. Abstracts of many of the articles can be accessed through PubMed via the link at the end of each entry.

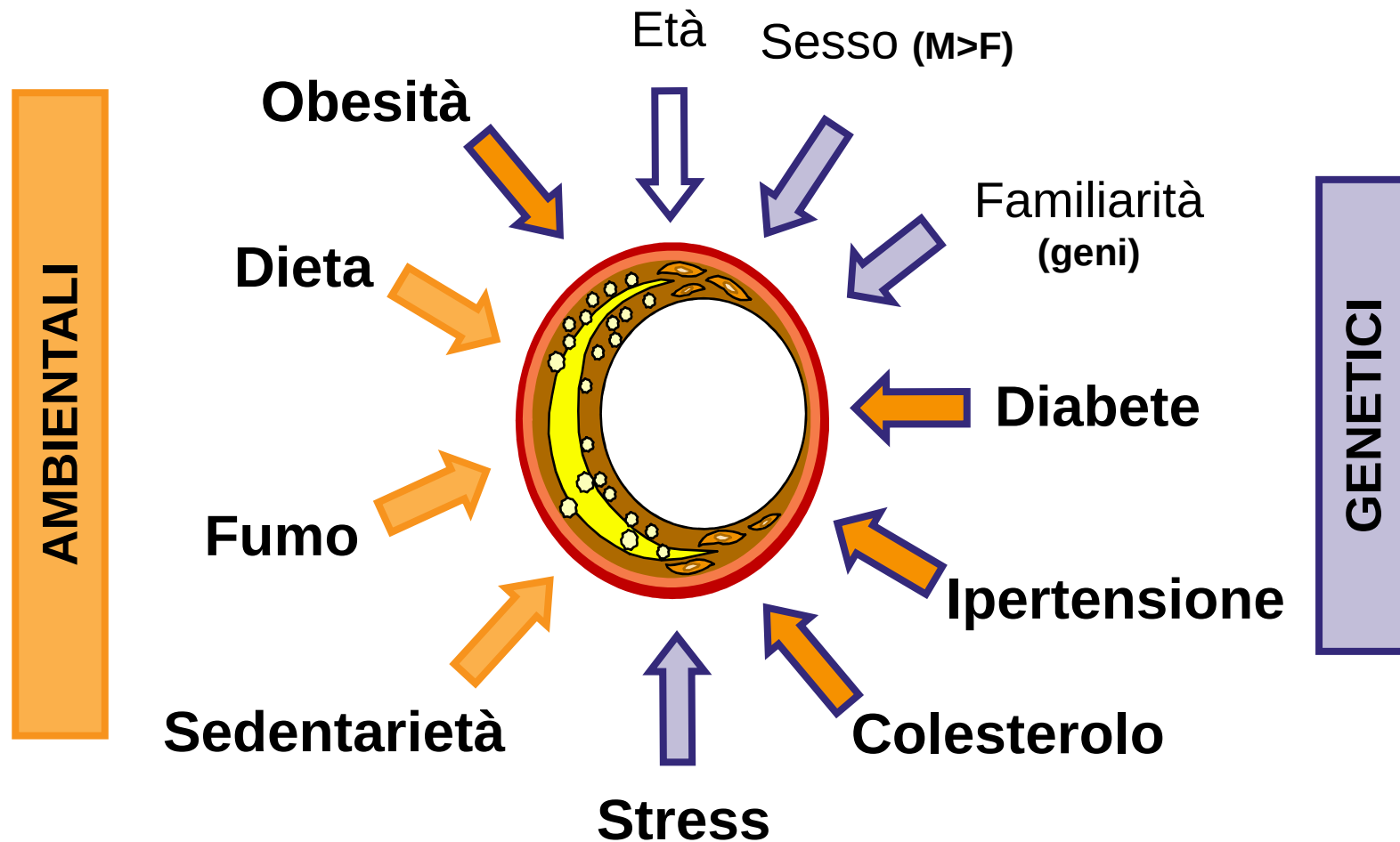
Articles Published Per Decade Based on Framingham Data



Total articles published 1950 through 2011 = 2,346

Le Basi della Prevenzione Cardiovascolare

(Interheart e Interstroke)



Il Centro Territoriale per la Prevenzione Cardiovascolare Primaria e Secondaria

1. Autorizzazione 13.08.2015
2. Accredimento RER
3. Day Service Ambulatoriale tipo 2
 - **Scompenso cardiaco**
 - Cardiopatia Ischemica
 - Arteriopatia Extracardiaca (rischio CV)
 - Inquadramento del soggetto ad elevato rischio CV prospettico

HEART FAILURE

LE DIMENSIONI DEL PROBLEMA A PARMA

Gruppo di Lavoro Multidisciplinare 2007
Aziende Sanitarie della Provincia di Parma

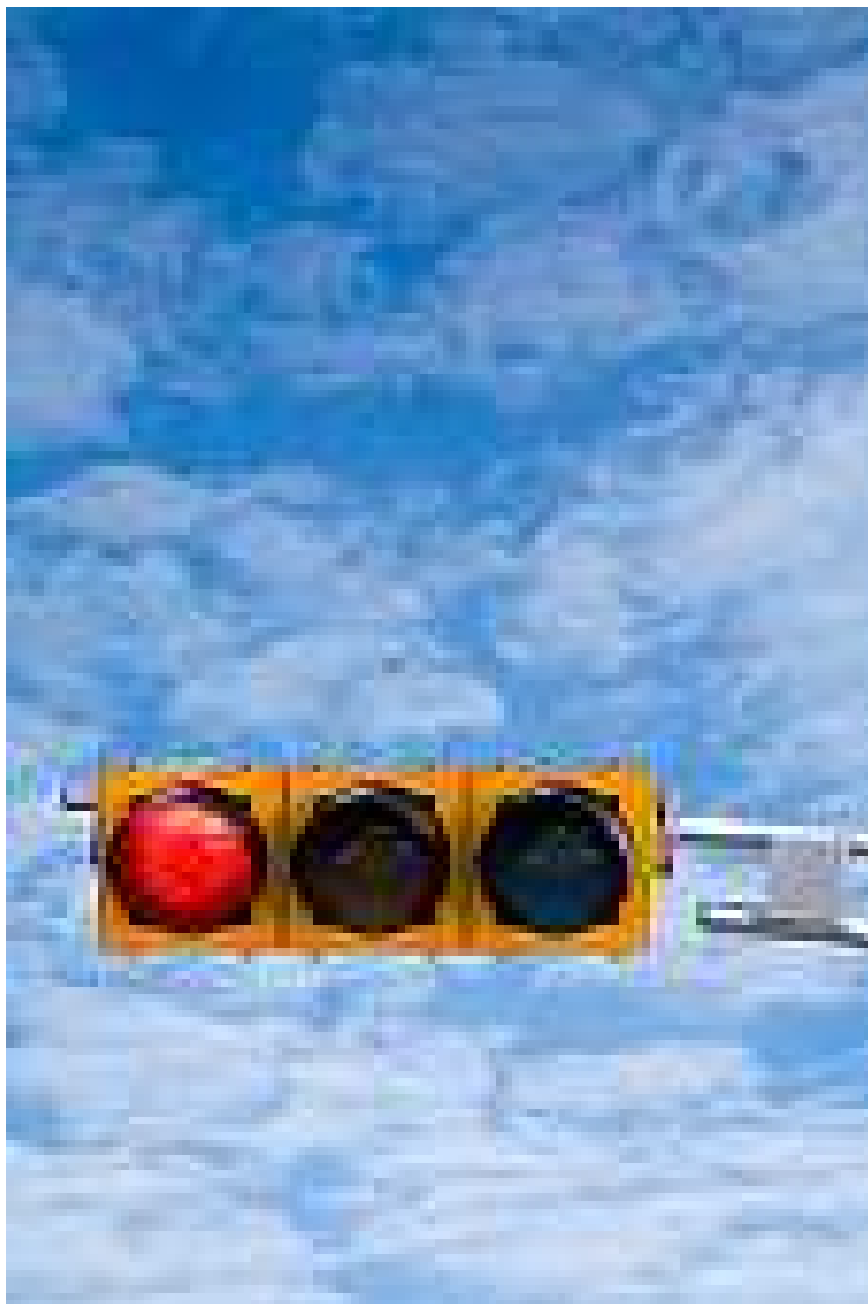
N. RICOVERI TOTALI		
	2002	2006
PARMA	2422	2725
RER	25877	27002

Parma + 12.5%, RER +5%

HEART FAILURE

ACUTE CLINICAL PRESENTATION

Destabilizzazione di scompenso cronico	70%
De novo HF (Crisi ipertensiva / EPA)	25%
Shock cardiogeno	5%



CONSIDERAZIONI

- .Prevenzione**
- .Riacutizzazioni**
- .Gestione Cronica**

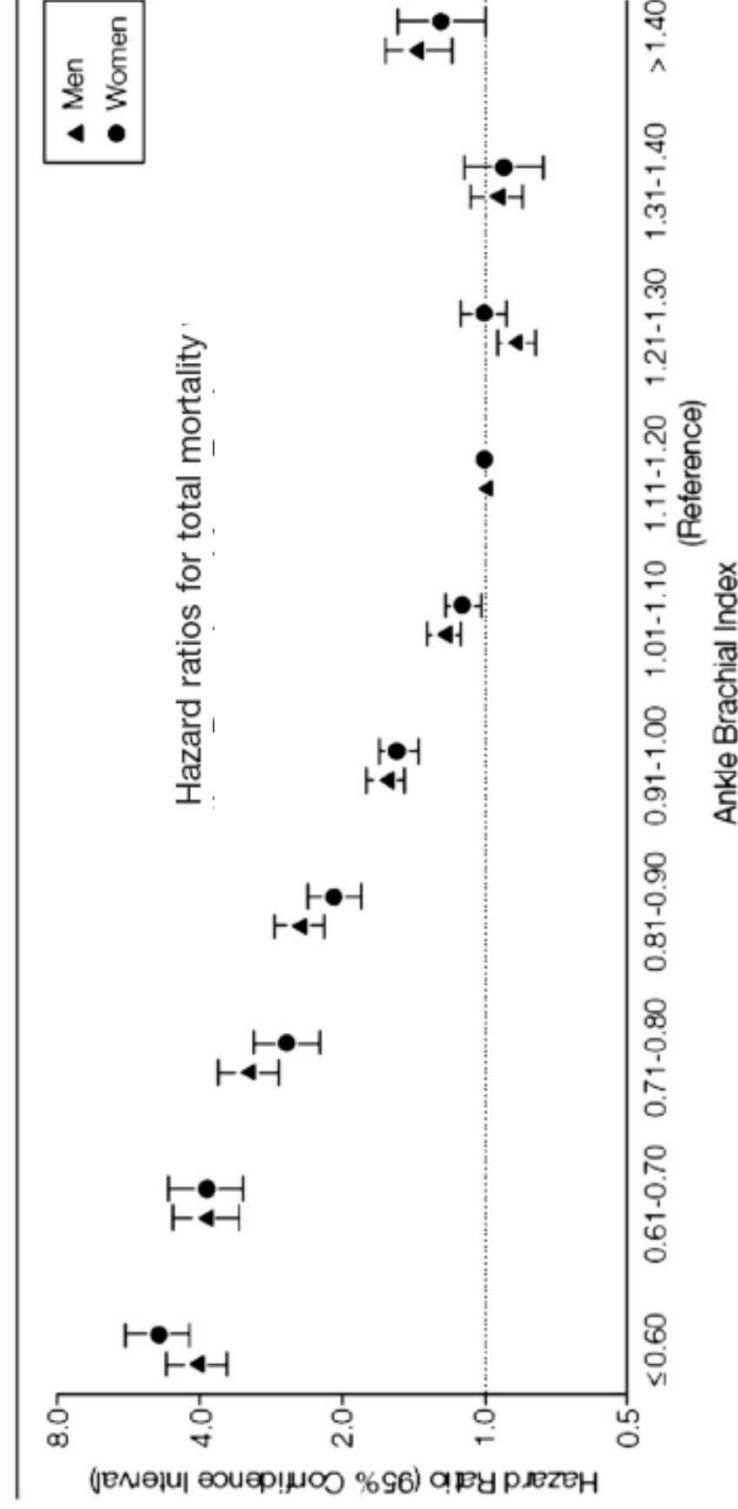
Il Centro Territoriale per la Prevenzione Cardiovascolare Primaria e Secondaria

1. Autorizzazione 13.08.2015
2. Accredimento RER
3. Day Service Ambulatoriale tipo 2
 - Scompenso cardiaco
 - Cardiopatia Ischemica
 - **Arteriopatia Extracardiaca (rischio CV)**
 - Inquadramento del soggetto ad elevato rischio CV prospettico

Measurement and Interpretation of the Ankle-Brachial Index : A Scientific Statement From the American Heart Association

Victor Aboyans, Michael H. Criqui, Pierre Abraham, Matthew A. Allison, Mark A. Creager, Curt Diehm, F. Gerry R. Fowkes, William R. Hiatt, Björn Jönsson, Philippe Lacroix, Benoît Marin, Mary M. McDermott, Lars Norgren, Reena L. Pande, Pierre-Marie Preux, H.E. (Jelle) Stoffers and Diane Treat-Jacobson

Circulation. 2012;126:2890-2909; originally published online November 16, 2012;



QUARTERLY FOCUS ISSUE: PREVENTION/OUTCOMES

Prediction of Cardiovascular Events and All-Cause Mortality With Arterial Stiffness

A Systematic Review and Meta-Analysis

Charalambos Vlachopoulos, MD, Konstantinos Aznaouridis, MD, Christodoulos Stefanadis, MD

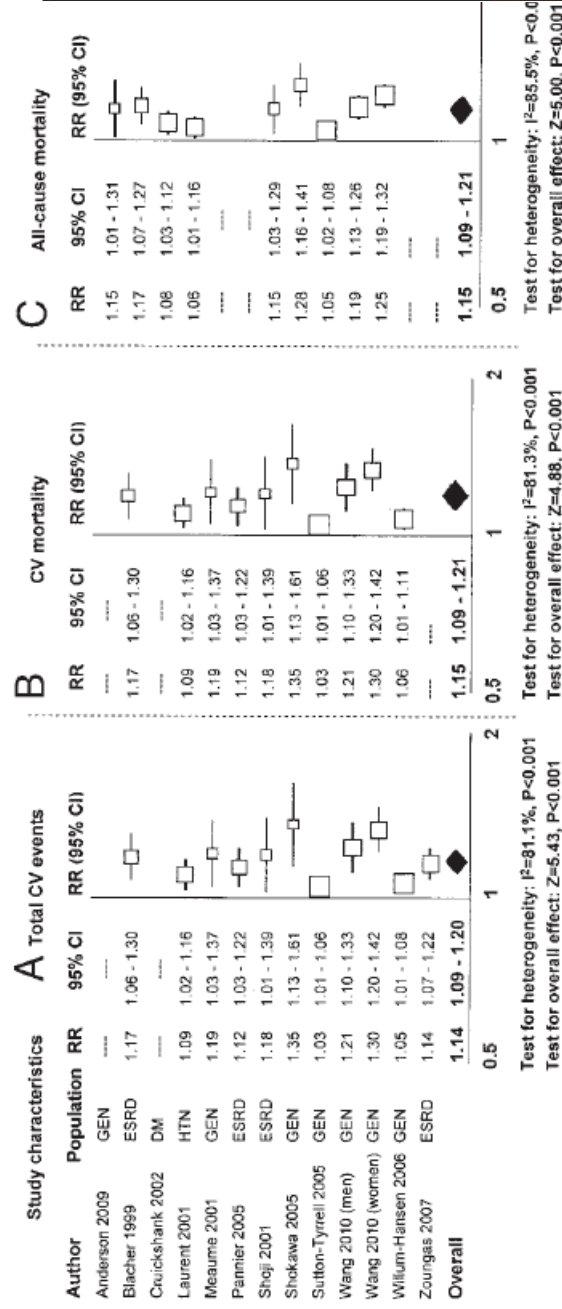


Figure 3 RR and 95% CI for a 1-m/s Increase in Aortic PWV and Clinical Events

RR and 95% CI for a 1-m/s increase in aortic PWV and total CV events (A), CV mortality (B), and all-cause mortality (C). Studies are listed alphabetically. Symbols and abbreviations as in Figure 2.

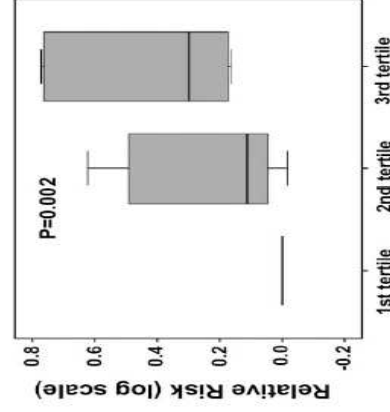


Figure 1

Box and Whisker Plot of Pooled Relative Risk (Log) of Clinical Events by Tertiles of Aortic Pulse Wave Velocity From 6 Studies

Data from 6 studies (8,13,19,23,25,28). The center line of the box denotes the median value, the extremes of the box, the interquartile range, and the bars, the upper and lower limits of 95% of the data, p value by Friedman test.

Il Centro Territoriale per la Prevenzione Cardiovascolare Primaria e Secondaria

1. Autorizzazione 13.08.2015
2. Accreditamento RER
3. Day Service Ambulatoriale tipo 2
 - Scompenso cardiaco
 - **Cardiopatia Ischemica**
 - Arteriopatia Extracardiaca (rischio CV)
 - Inquadramento del soggetto ad elevato rischio CV prospettico

MODIFICAZIONE DELLA **EPIDEMIOLOGIA** DELLE SCA

Progressiva **riduzione** della mortalità
intraospedaliera

Incremento mortalità e morbidità
post-ospedaliera

RETE STRUTTURATA DEL POST-ACUTO

OSPEDALE PER ACUTI

CENTRI RIABILITAZIONE

CARDIOLOGIA TERRITORIALE

MMG

DOMANDA ANNUALE E OFFERTA DI CARDIORIABILITAZIONE

145.000 SCA

(dati SDO 2011)

135.000 HF

(dati AGENAS 2012)

46.000 CCH

60.000 pz in degenza CR

(dati ISYDE 2013)

5 : 1

ACCESSO ALLA CARDIO-RIABILITAZIONE

Appropriata indicazione

Priorità dell'indicazione

**Stratificazione del rischio residuo
individuale post-SCA**

CRITERI VALUTATIVI

Grado di Complessità Clinico-Assistenziale

(rischio clinico legato all'evento indice, rischio cardiovascolare residuo, comorbidità, complicanze presenti)

**Entità della disabilità e presenza di margine
di recupero funzionale**

STRATIFICAZIONE DEL RISCHIO

PAZIENTI AD ELEVATO RISCHIO CLINICO:

scompenso cardiaco e/o disfunzione VSX

- FE<40% oppure
- Rimodellamento VSX post-infartuale
- Estesa asinergia parietale (compromissione meccanica ventricolare).
- Pattern restrittivo di riempimento diastolico
- Insufficienza mitralica ischemica

Diretta correlazione con prognosi negativa e priorità
al ricovero riabilitativo degenziale

STRATIFICAZIONE DEL RISCHIO

PAZIENTI AD ELEVATO RISCHIO TROMBOTICO

si tratta di pazienti con malattia **multivasale**,
specie se con **rivascolarizzazione incompleta**,
mancata rivascolarizzazione/riperfusione, anatomia
coronarica **non nota**, diabete, IRC, **arteriopatia**
periferica / aterosclerosi extracardiaca,
pregressi IMA

Down-grading setting assistenziale (**DH**, amb)

STRATIFICAZIONE DEL RISCHIO

PAZIENTI A RISCHIO RESIDUO PIU' BASSO

**Pazienti stabili, sottoposti precocemente
ed efficacemente a PCI ,
età <70 anni, senza HF e disfunzione VSX**

**Prognosi a distanza più favorevole,
setting ambulatoriale**

COSTI COMPLESSIVI ASSISTENZA POST-SCA

OSSERVATORIO ARNO “Cardiovascolare”

- | | |
|------------------------------|-------|
| 1. Re-ospedalizzazioni | (85%) |
| 2. Spesa farmaceutica | (11%) |
| 3. Assistenza specialistica | (4%) |

OTTICA DI CONTROLLO DI GESTIONE

VERO RISPARMIO

1. **Evitare** Re-ospedalizzazioni
2. Promuovere la **Rete** di Assistenza Territoriale
3. Usare i **farmaci** efficaci

Il Centro Territoriale per la Prevenzione Cardiovascolare Primaria e Secondaria

Percorso DSA

- **Pacchetto Base**
- **Prestazioni Aggiuntive**
- **Valutazione diagnostico terapeutica**
- **Stratificazione Prognostica**
- **Capacità Funzionale**
- **Prescrizione Esercizio Fisico Individuale**

Prestazioni

Valutazione diagnostico terapeutica/Stratificazione Prognostica

- Visita cardiologica + ECG
- Anamnesi (fattori di rischio CV, stress, OSAS, diario alimentare, attività fisica, abitudine al fumo, ecc...)
- Laboratorio Ecografia (cuore, TSA, vasi periferici, aorta, eco da sforzo).
- Analisi FC e PA
- Laboratorio Analisi del SNA
- ABI - PWV
- OSAS
- Visita fisiatrica, neurologica se necessario

Prestazioni

Capacità Funzionale/Prescrizione Esercizio Fisico Individuale

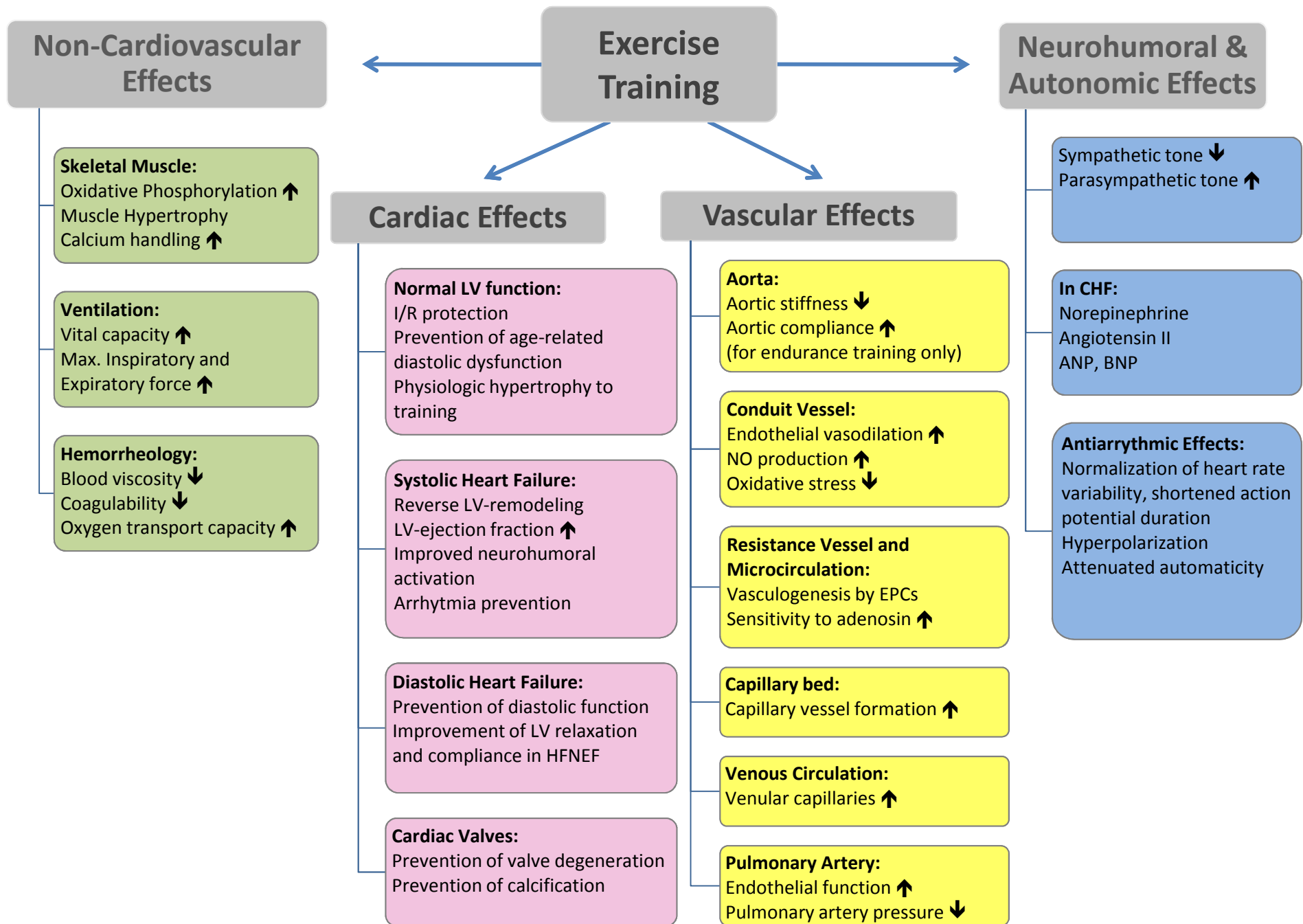
Six Minute Walking Test

Test ergometrico (cyclette, treadmill)

CPX

Seduta supervisionata di training

Consulto Finale



TRAINING FISICO come TERAPIA

- **Re-Ospedalizzazioni**
- **Mortalità**

Cardiac Rehabilitation and Survival in Older Coronary Patients

Jose A. Suaya, MD, PhD,* William B. Stason, MD, MSCI,* Philip A. Ades, MD,†
Sharon-Lise T. Normand, PhD,‡ Donald S. Shepard, PhD*
Waltham and Boston, Massachusetts; and Burlington, Vermont

Objectives

This study assessed the effects of cardiac rehabilitation (CR) on survival in a large cohort of older coronary patients.

Background

Randomized controlled trials and meta-analyses have shown that CR improves survival. However, trial participants have been predominantly middle-aged, low- or moderate-risk, white men.

Methods

The population consisted of 601,099 U.S. Medicare beneficiaries who were hospitalized for coronary conditions or cardiac revascularization procedures. One- to 5-year mortality rates were examined in CR users and nonusers using Medicare claims and 3 analytic techniques: propensity-based matching, regression modeling, and instrumental variables. The first method used 70,040 matched pairs, and the other 2 techniques used the entire cohort.

Results

Only 12.2% of the cohort used CR, and those users averaged 24 sessions. Each technique showed significantly lower ($p < 0.001$) 1- to 5-year mortality rates in CR users than nonusers. Five-year mortality relative reductions were 34% in propensity-based matching, 26% from regression modeling, and 21% with instrumental variables. Mortality reductions extended to all demographic and clinical subgroups including patients with acute myocardial infarctions, those receiving revascularization procedures, and those with congestive heart failure. The CR users with 25 or more sessions were 19% relatively less likely to die over 5 years than matched CR users with 24 or fewer sessions ($p < 0.001$).

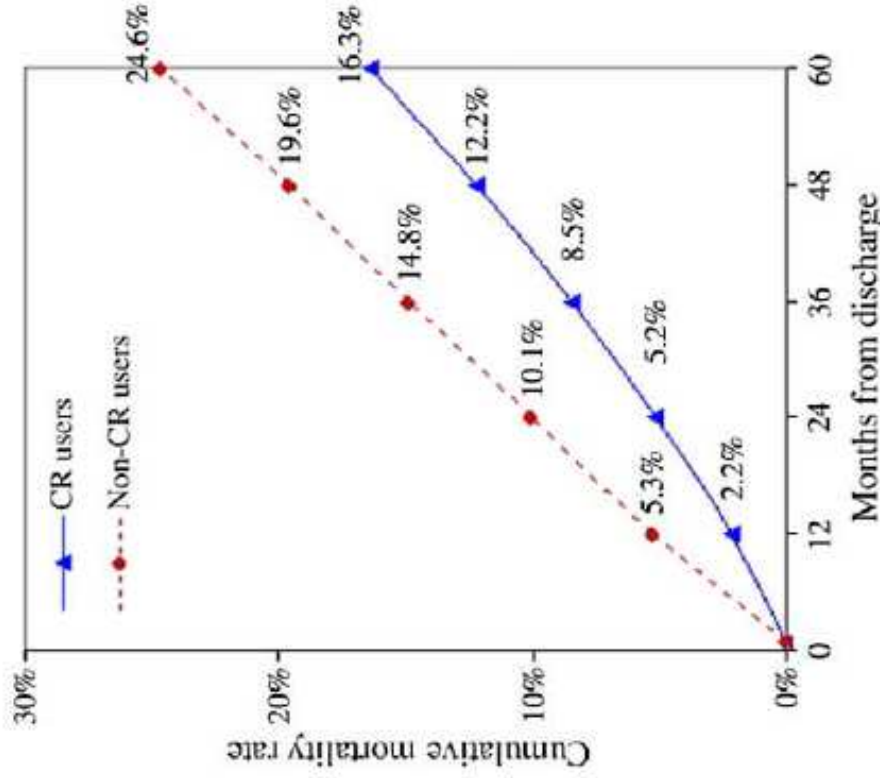
Conclusions

Mortality rates were 21% to 34% lower in CR users than nonusers in this socioeconomically and clinically diverse, older population after extensive analyses to control for potential confounding. These results are of similar magnitude to those observed in published randomized controlled trials and meta-analyses in younger, more selected populations. (J Am Coll Cardiol 2009;54:25–33) © 2009 by the American College of Cardiology Foundation

Cardiac Rehabilitation and Survival in Older Coronary Patients

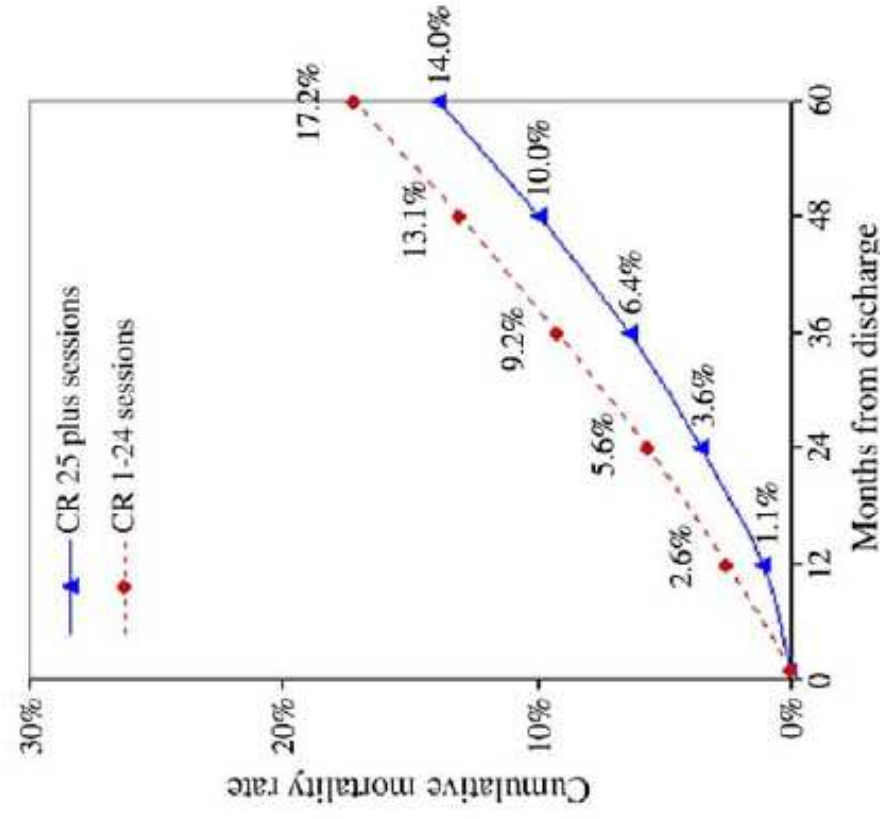
A

CR users vs. Non-CR users



B

CR high-users vs. CR low-users



Cardiac Rehabilitation and Survival in Older Coronary Patients

Table 4 One- and 5-Year Benefit of CR Use by Analytic Technique

Mortality Rates*	Observation (N = 601,099)	Propensity-Based Matching (70,040 Pairs)	Regression Modeling (N = 601,099)	Instrumental Variables (N = 601,099)
1 yr				
CR use	2.2%	2.2%	4.8%	6.0%
Nonuse	11.6%	5.3%	10.9%	10.6%
Absolute difference†	9.4%	3.1%	6.1%	4.6%
Relative reduction‡	81.0%	58.5%	56.0%	43.4%
5 yrs				
CR use	16.4%	16.3%	28.1%	29.8%
Nonuse	39.9%	24.6%	38.0%	37.8%
Absolute difference†	23.5%	8.3%	9.9%	8.0%
Relative reduction‡	58.9%	33.7%	26.1%	21.2%

- **NNT = 12**
- **Low use of CR: 12.2% in coronary artery disease**
- **All race, sex, age, AMI, CABG, PCI , including patients with coexisting CHF.**

PCI 2011 AHA GUIDELINES

Class I (Level of evidence A)

“**Physician referral** may be the most powerful predictor of **patient participation** in a cardiac rehabilitation program ”



Rischio veramente alto

1. Very high risk

Subjects with any of the following:

- Documented CVD by invasive or non-invasive testing (such as coronary angiography, nuclear imaging, stress echocardiography, carotid plaque on ultrasound), previous myocardial infarction, ACS, coronary revascularization (PCI, CABG), and other arterial revascularization procedures, ischaemic stroke, peripheral artery disease (PAD).
- Diabetes mellitus (type 1 or type 2) with one or more CV risk factors and/or target organ damage (such as microalbuminuria: 30–300 mg/24 h).
- Severe chronic kidney disease (CKD) ($\text{GFR} < 30 \text{ mL/min/1.73 m}^2$).
- A calculated SCORE $\geq 10\%$.



Il Centro Territoriale per la Prevenzione Cardiovascolare Primaria e Secondaria

Prof. Paolo Coruzzi

Prestazioni

Valutazione diagnostico terapeutica/Stratificazione Prognostica

- Visita cardiologica + ECG
- Anamnesi (fattori di rischio CV, stress, OSAS, diario alimentare, attività fisica, abitudine al fumo, ecc...)
- Laboratorio Ecografia (cuore, TSA, vasi periferici, aorta, eco da sforzo).
- Analisi FC e PA
- Laboratorio Analisi del SNA
- ABI - PWV
- OSAS
- Visita fisiatrica, neurologica se necessario

Prestazioni

Capacità Funzionale/Prescrizione Esercizio Fisico Individuale

Six Minute Walking Test

Test ergometrico (cyclette, treadmill)

CPX

Seduta supervisionata di training

Consulto Finale