Actividad Fisica y Enf Crónicas

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Universidad de los Andes – Fundación Sta. Fe de Bogotá

Contribution of risk factors to achieving the 25 × 25 non-communicable disease mortality reduction target: a modelling study

Cardiovascular & Respiratory Disease, Cáncer, Diabetes

37 million premature deaths in 15 years

Risk Factors:

Physical Inactivity
Tobacco
Malnutrition
Alcohol

THE LANCET May 3; 2014

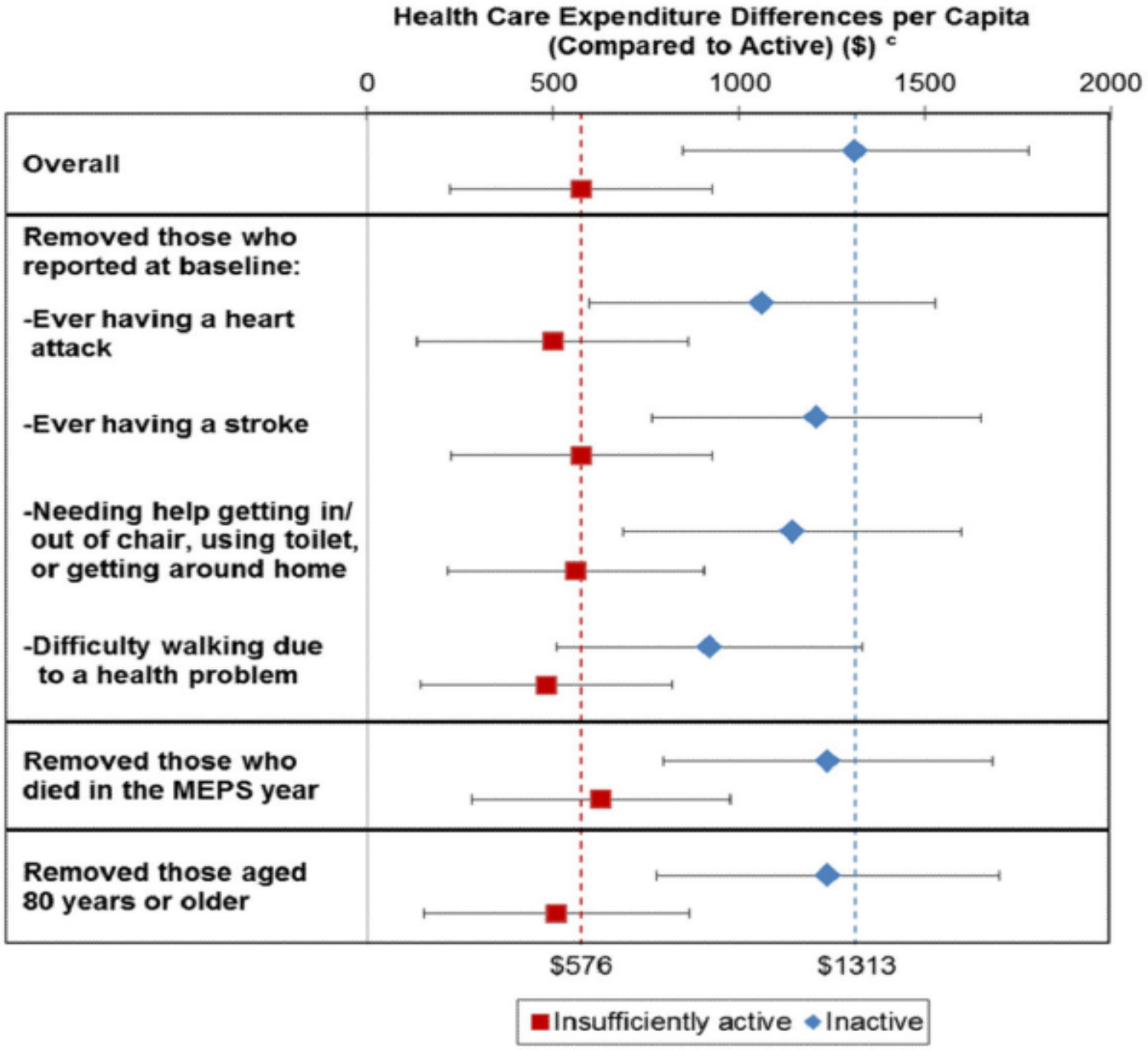
Inadequate Physical Activity and Health Care Expenditures in the United States

Susan A. Carlson[a,b,*], **Janet E. Fulton**[a], **Michael Pratt**[a,c], **Zhou Yang**[b], and **E. Kathleen Adams**[b]

an econometric model. Overall, 11.1% (95% CI: 7.3, 14.9) of aggregate health care expenditures were associated with inadequate physical activity (i.e., inactive and insufficiently active levels).

La inactividad física se asoció a un 11% de gasto adicional en salud.

Prog Cardiovasc Dis. 2015 ; 57(4): 315–323.



Prog Cardiovasc Dis. 2015 ; 57(4): 315–323.

Modeling The Economic And Health Impact Of Increasing Children's Physical Activity In The United States

Conclusion

ty, demonstrated that the possible savings substantially outweigh published costs of physical activity interventions, and identified the key drivers of these savings. These numbers under-

"…los **ahorros** superan sustancialmente los **costos…**"

US Endocrinology

Volume 9 • Issue 1 • Summer 2013 • Extract

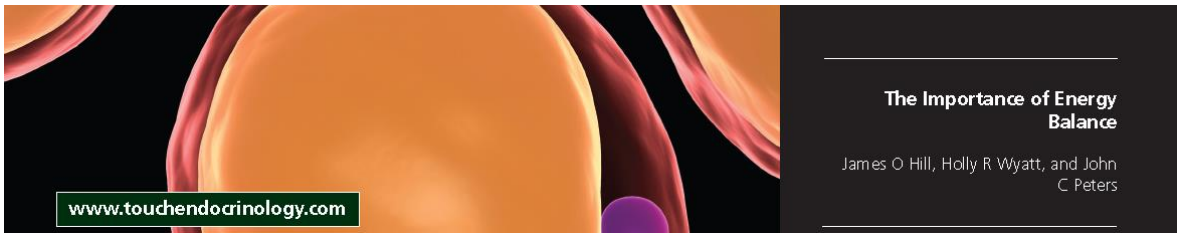
What is Causing the Worldwide Rise in Body Weight?

Robin P Shook, PhD,[1] Steven N Blair, PED,[2] John Duperly, MD, PhD,[3] Gregory A Hand, PhD, MPH,[4] Sandra M Matsudo, MD, PhD[5] and Joanne L Slavin, PhD, RD[6]

The Importance of Energy Balance

James O Hill, PhD, Holly R Wyatt, MD and John C Peters, PhD

Anschutz Health & Wellness Center, University of Colorado, Aurora, CO



Physical Inactivity

↓

Visceral fat accumulation

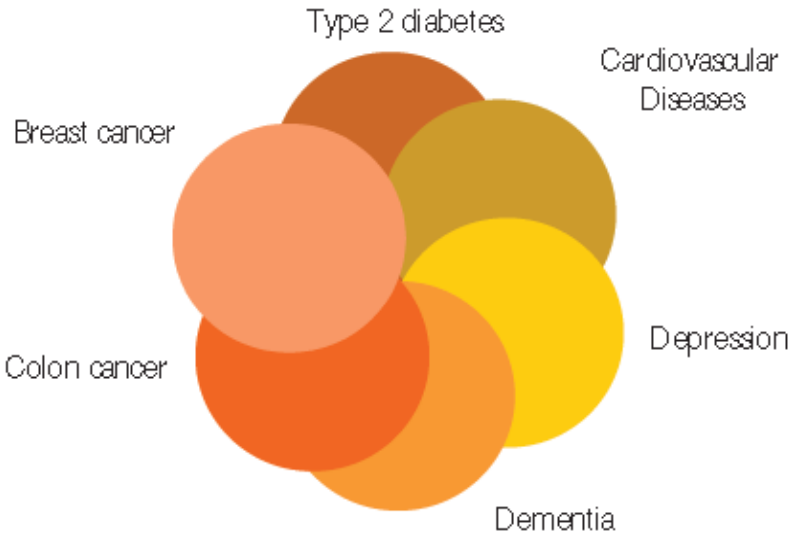
↓

Chronic Systemic Inflammation

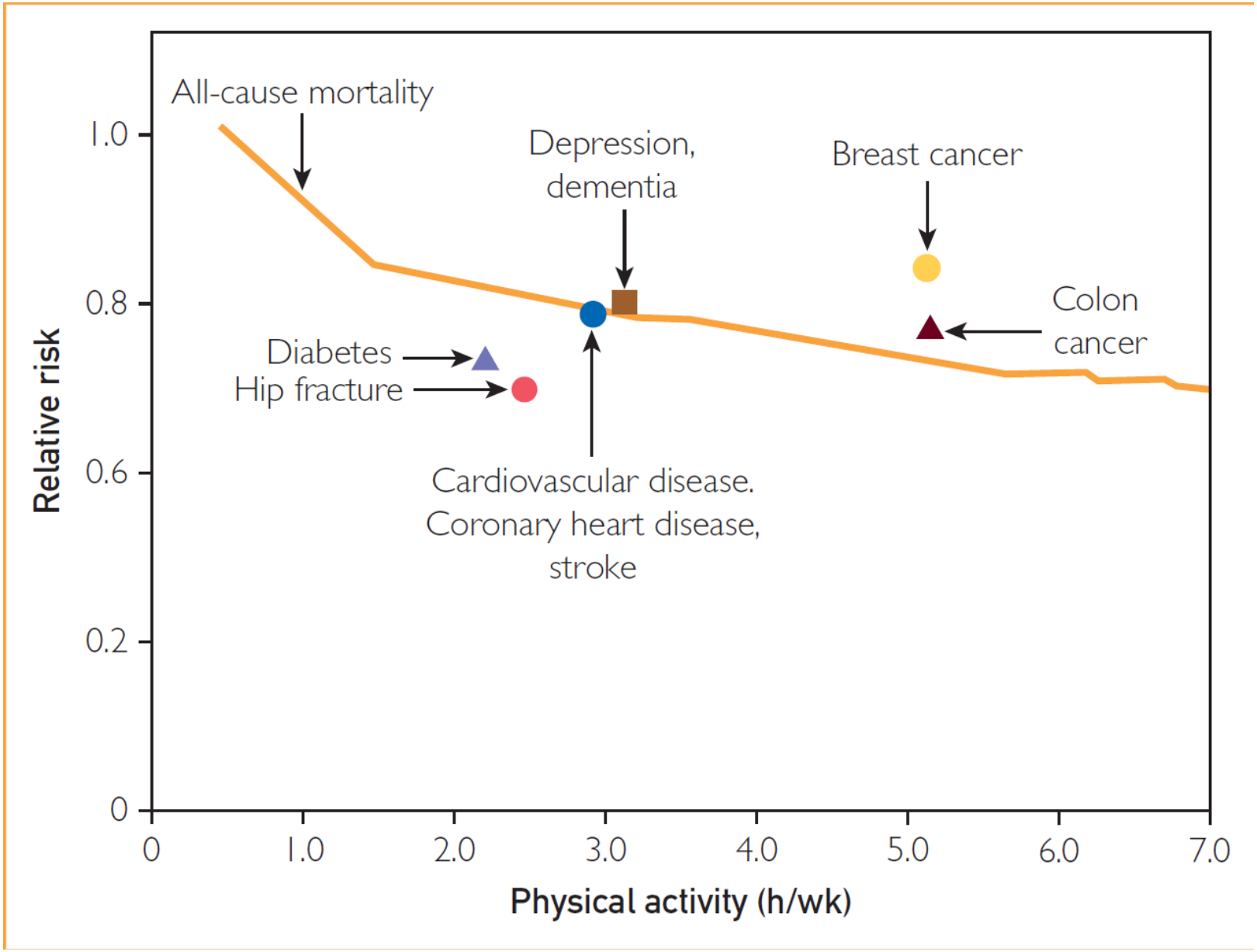
↓

Insulin Resistance, Atherosclerosis, Neurodegeneration, Tumour growth

↓



Physical Activity Promotion in the Health Care System



Ilkka M. Vuori, MD, PhD; Carl J. Lavie, MD; and Steven N. Blair, PED Mayo Clin Proc. 2013;88(12):1446-1461

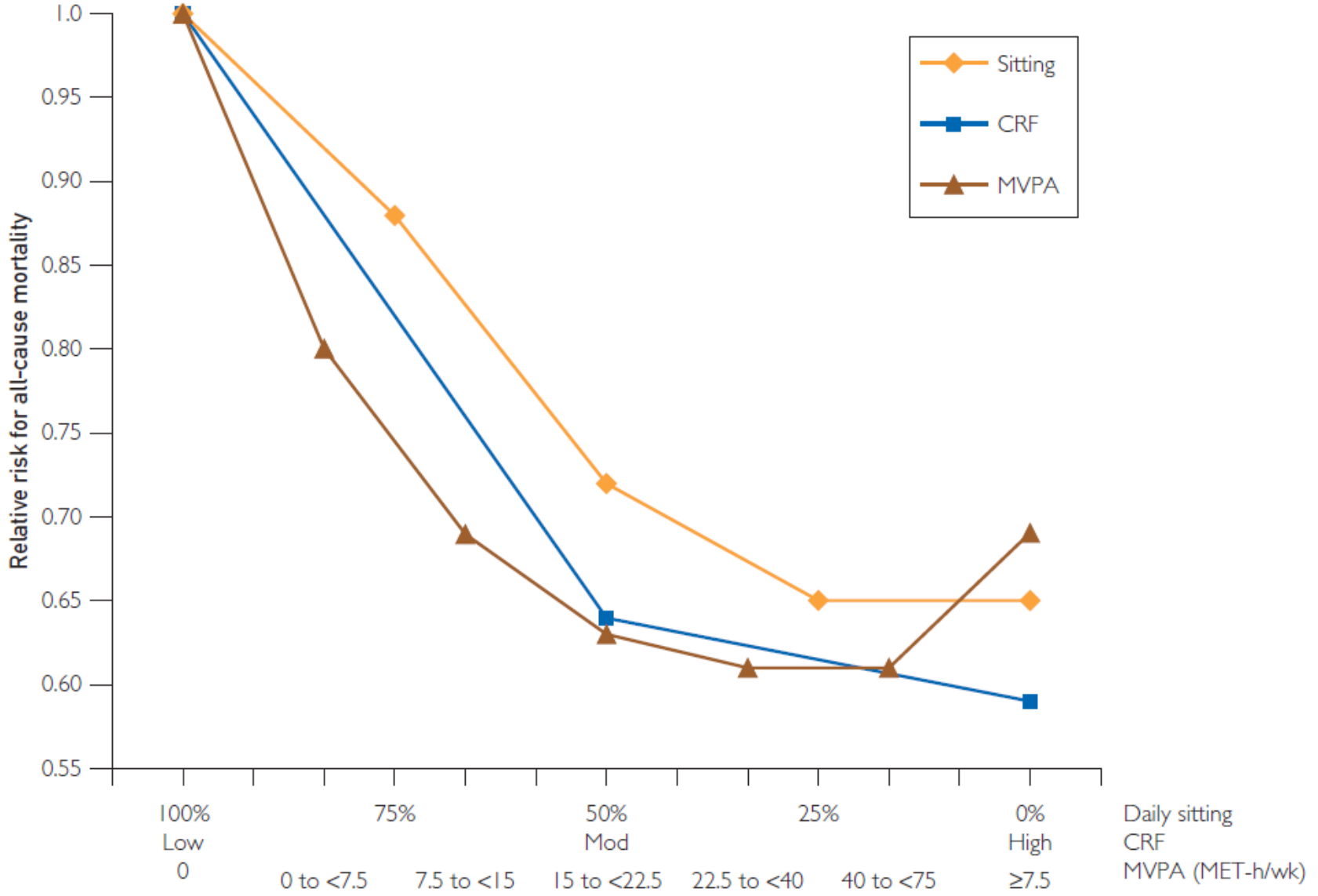


FIGURE 2. Relative risks for all-cause mortality associated with daily sitting among 17,103 men and women followed up for a mean of 12.0 years,[15] cardiorespiratory fitness (CRF) from a meta-analysis of 102,980 participants from 33 published studies,[25] and moderate to vigorous physical activity (MVPA) among 661,137 men and women from 6 cohort studies followed up for a median of 14.2 years.[21] Relative risks are from models that include a variety of covariates as described in the original studies.

ORIGINAL ARTICLE

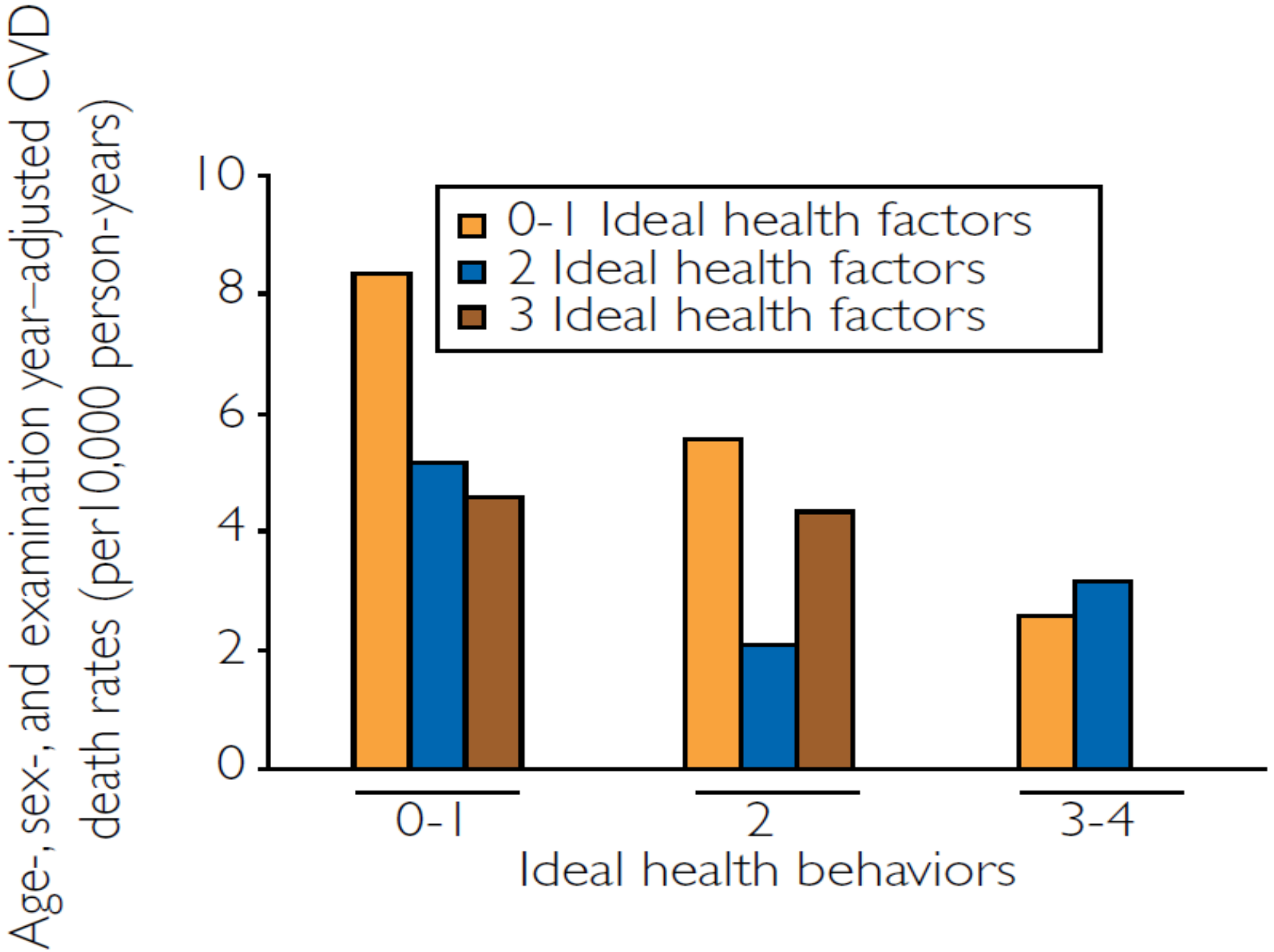
MAYO CLINIC

Ideal Cardiovascular Health and Mortality: Aerobics Center Longitudinal Study

Enrique G. Artero, PhD; Vanesa España-Romero, PhD; Duck-chul Lee, PhD; Xuemei Sui, MD, MPH, PhD; Timothy S. Church, MD, MPH, PhD; Carl J. Lavie, MD; and Steven N. Blair, PED

TABLE 1. Definition of Poor, Intermediate, and Ideal Levels for Each Metric of Cardiovascular Health in the ACLS[a,b]

Metric	Poor	Intermediate	Ideal
Smoking	Current	Former	Never
Body mass index, kg/m^2	≥30	25-29.9	18.5-24.9
Physical activity, MET-min/wk	0	1-499	≥500
Healthy diet score, No. of components	0-1	2	3-4
Total cholesterol, mg/dL	≥240	200-239	<200[c]
Blood pressure, mm Hg	SBP ≥140 or DBP ≥90	SBP 120-139 or DBP 80-89	SBP <120 and DBP <80[d]
Fasting plasma glucose, mg/dL	≥126	100-125	<100[e]



Mayo Clin Proc. 2012 October; 87(10): 944–952.

ORIGINAL INVESTIGATION

Lifestyle Risk Factors and New-Onset Diabetes Mellitus in Older Adults

The Cardiovascular Health Study

Dariush Mozaffarian, MD, DrPH; Aruna Kamineni, MPH; Mercedes Carnethon, PhD; Luc Djoussé, MD, ScD; Kenneth J. Mukamal, MD; David Siscovick, MD, MPH

"…9 de 10 casos de Diabetes, prevenibles con estilo de vida saludable…"

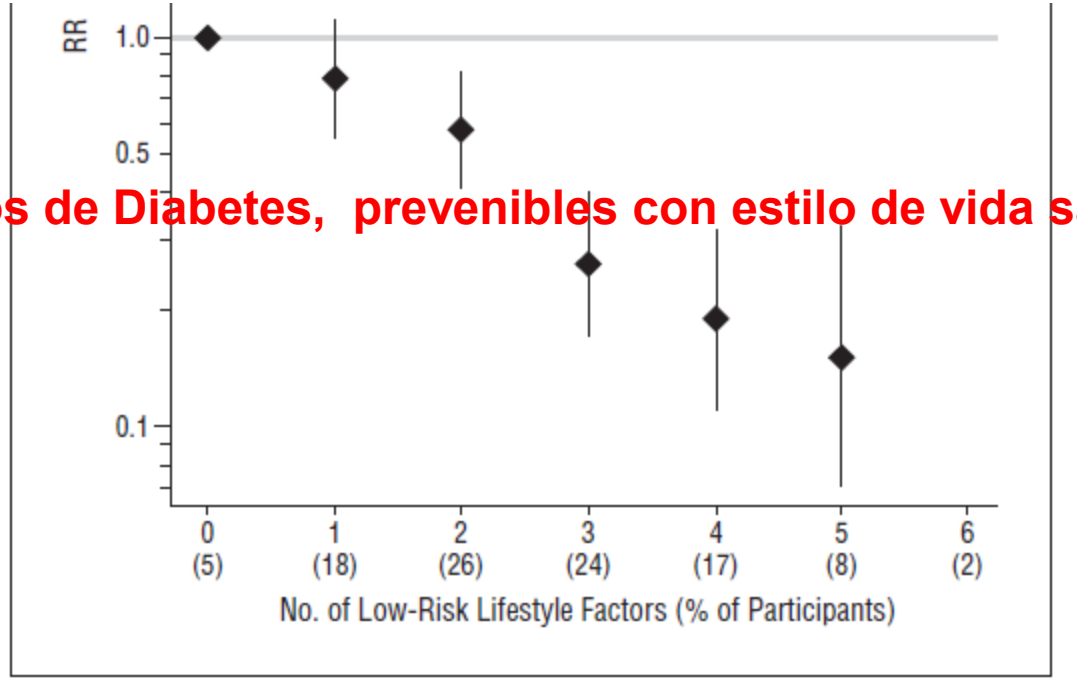
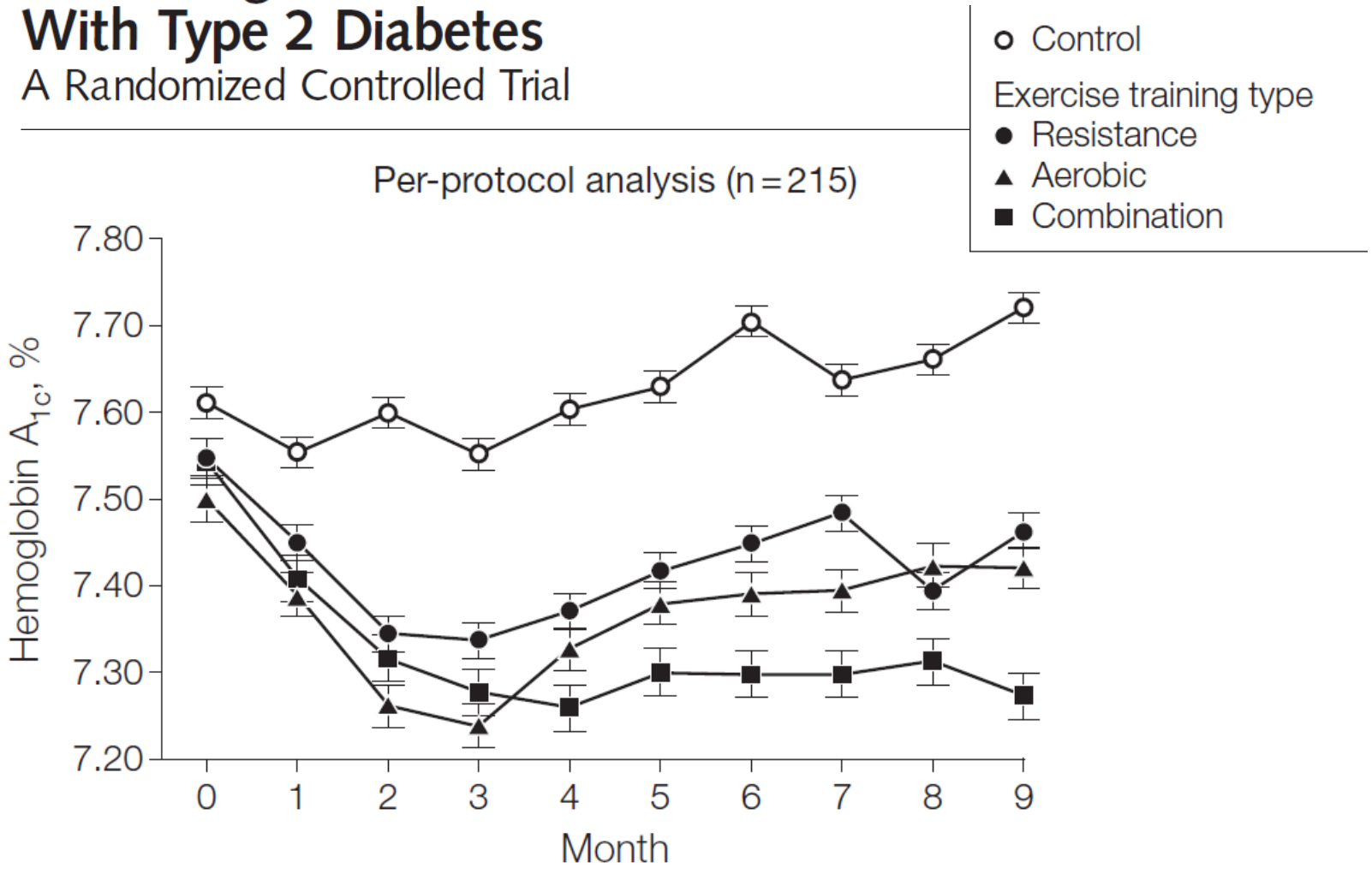


Figure 1. Relative risk (RR) of incident diabetes mellitus according to the number of low-risk lifestyle factors among 4883 older adults from 1989 to

Arch Intern Med. 2009;169(8):798-807

Effects of Aerobic and Resistance Training on Hemoglobin A_{1c} Levels in Patients With Type 2 Diabetes

A Randomized Controlled Trial



JAMA, November 24, 2010—Vol 304, No. 20

Physical activity advice only or structured exercise training and association with HbA1c levels in type 2 diabetes: a systematic review and meta-analysis

DATA SYNTHESIS: Of 4191 articles retrieved, **47 RCTs (8538 patients)** were included. Pooled mean differences in **HbA(1c)** levels between intervention and control groups were calculated using a random-effects model.

CONCLUSIONS: Structured exercise training (aerobic exercise, resistance training, or both) is associated with HbA(1c) reduction in patients with DM2.

Structured exercise training of >150 min/week is associated with greater HbA(1c) declines. Physical activity advice is associated with lower HbA(1c), but only when combined with dietary advice.

JAMA. 2011 May 4;305(17):1790-9

Ejercicio & Ateroesclerosis

- Regulación Endotelial
- Resistencia a la Insulina
- Regulaciòn autonòmica (TA y FC)
- SIMPATICO (TA y FC—
- LDL pequeñas, HDL 2, TG
- Inflamación crónica
- Hemostasis favorable (?)

Circulation 2001,103: 327-334

REVIEW ARTICLE

Physical Activity and Mortality in Individuals With Diabetes Mellitus

A Prospective Study and Meta-analysis

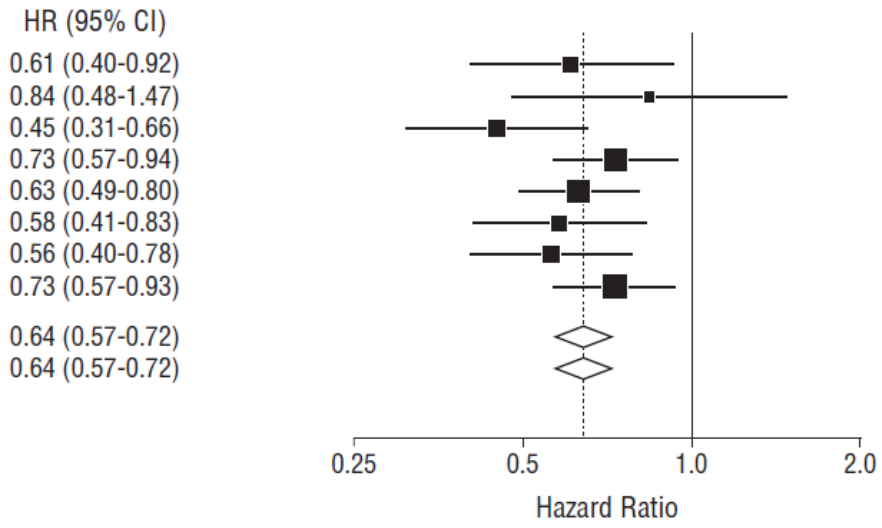
Conclusions: Higher levels of PA were associated with lower mortality risk in individuals with diabetes. Even those undertaking moderate amounts of activity were at appreciably lower risk for early death compared with inactive persons. These findings provide empirical evi-

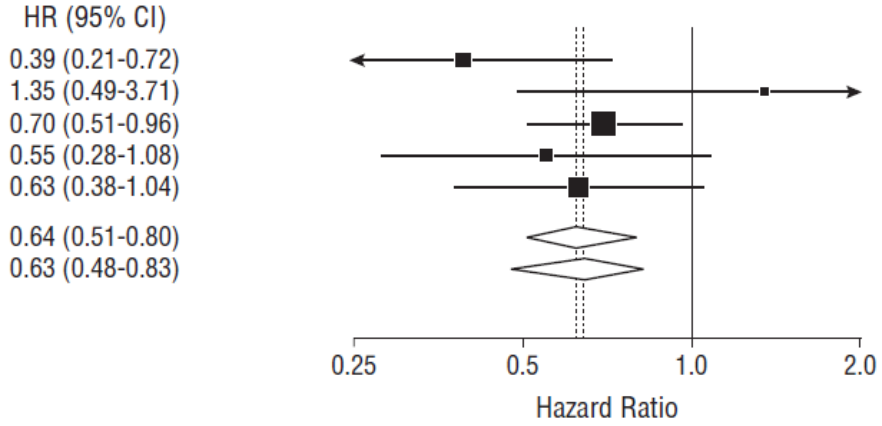
Arch Intern Med. 2012;172(17):1285-1295.

Physical Activity and Mortality in Individuals With Diabetes Mellitus

A Prospective Study and Meta-analysis

Arch Intern Med. 2012;172(17):1285-1295.





Don't worry, be happy: cross-sectional associations between physical activity and happiness in 15 European countries

Conclusions

In conclusion, our results demonstrate for the first time that happiness is associated with physical activity participation across multiple countries. This study adds impetus to a

Richards *et al. BMC Public Health* (2015) 15:53

Effects of physical exercise programme on happiness among older people

"Se puede concluir que el programa de actividad física tuvo un efecto positivo en la felicidad de los adultos mayores."

J Psychiatr Ment Health Nurs. 2015 Feb;22(1):47-57

Physical Exercise as a Preventive or Disease-Modifying Treatment of Dementia and Brain Aging

"A rapidly growing literature strongly suggests that exercise, specifically aerobic exercise, may attenuate cognitive impairment and reduce dementia risk"

- Inducción de Factores Neurotróficos Protectores
- Mitigación de Enf. Macro/Micro Vascular

***Mayo Clin Proc*. 2011;86(9):876-884**

Exercise training increases mitochondrial biogenesis in the brain.

J Appl Physiol October 2011 111:(4)

Does vigorous exercise have a neuroprotective effect in Parkinson disease?

. *Neurology*® 2011;77:288-294

Facilitated physical activity as a treatment for depressed adults: randomised controlled trial

BMJ 2012;344:e2758 (

CLINICS 2012;67(6):653-659 DOI:10.6061/clinics/2012(06)17

REVIEW

Is exercise an alternative treatment for chronic insomnia?

Asociación Inversa entre Actividad Fisica & Salud Mental

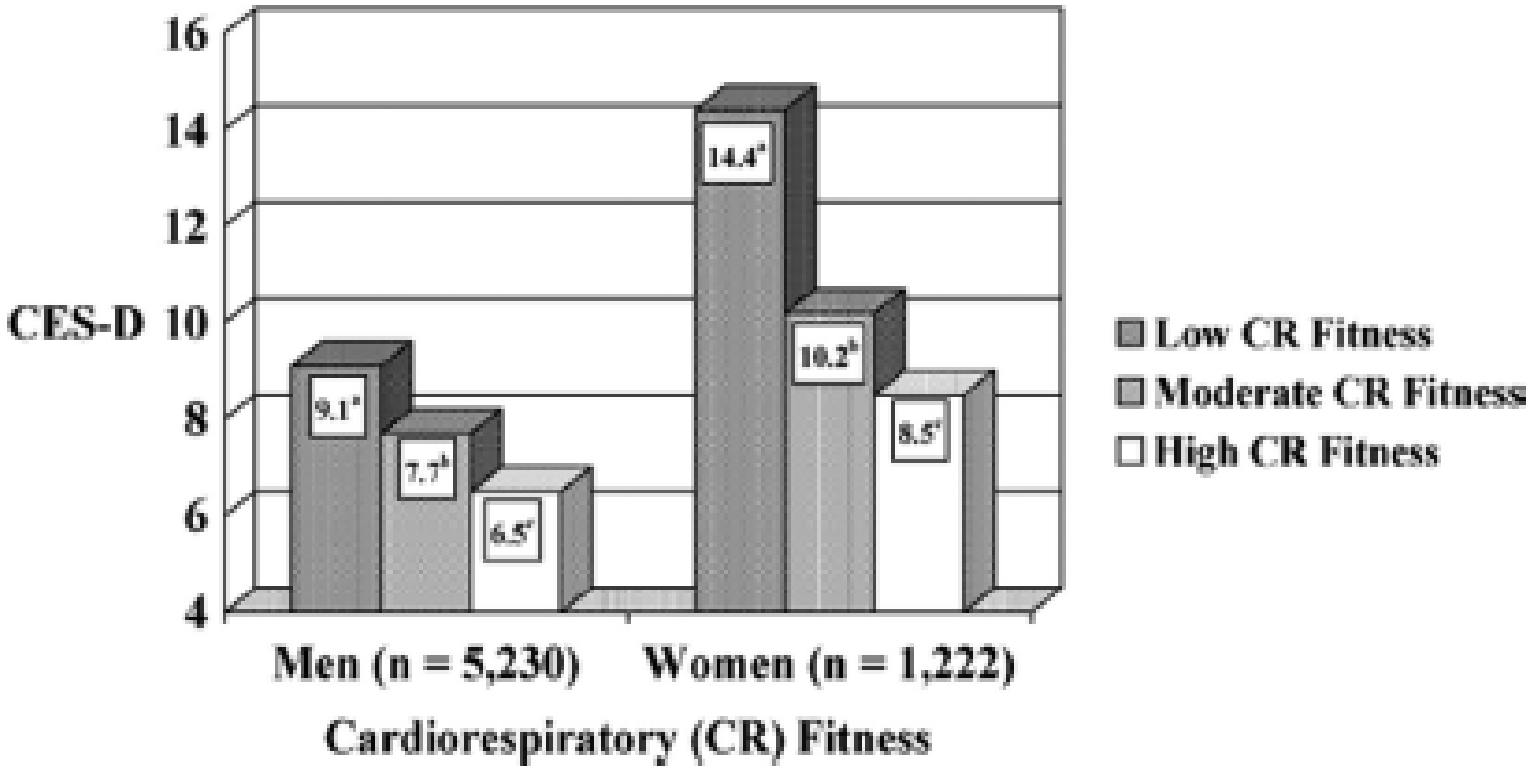


FIGURE 1—Mean scores for depressive symptoms by CR fitness level, adjusted for age, BMI, and years of participation. Superscripts indicate significant differences between CR fitness groups (all *P* values <0.005).

Med. Sci. Sports Exerc., Vol. 38, No. 1, pp. 173–178, 2006

Asociación Inversa entre Actividad Fisica & Salud Mental

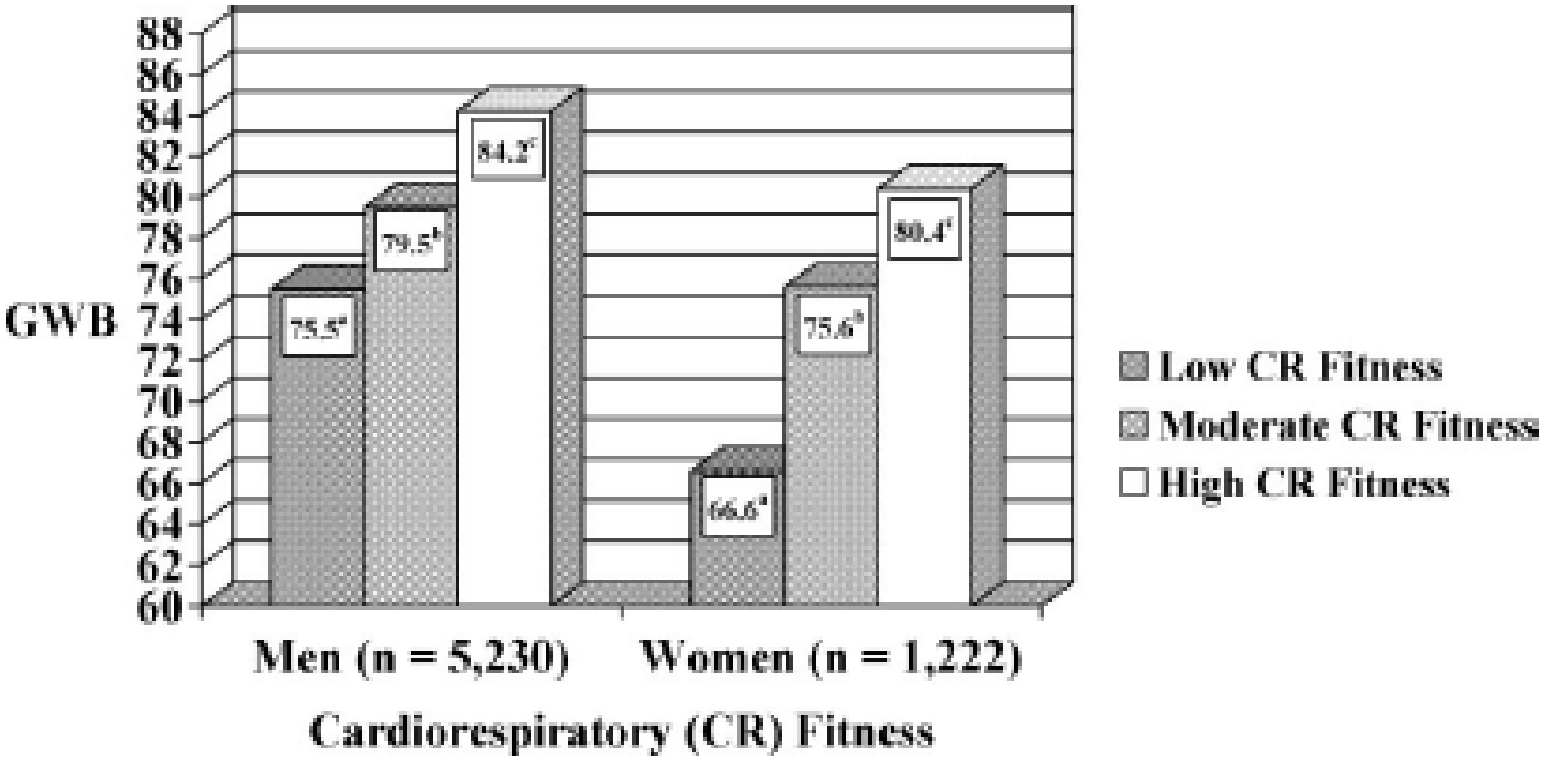


FIGURE 3—Mean scores for emotional well-being by CR fitness level, adjusted for age, BMI, and years of participation. Superscripts indicate significant differences between CR fitness groups (all *P* values <0.0001).

Med. Sci. Sports Exerc., Vol. 38, No. 1, pp. 173–178, 2006

BDI: Beck Depression Inventory
POMS: Profile of Mood States

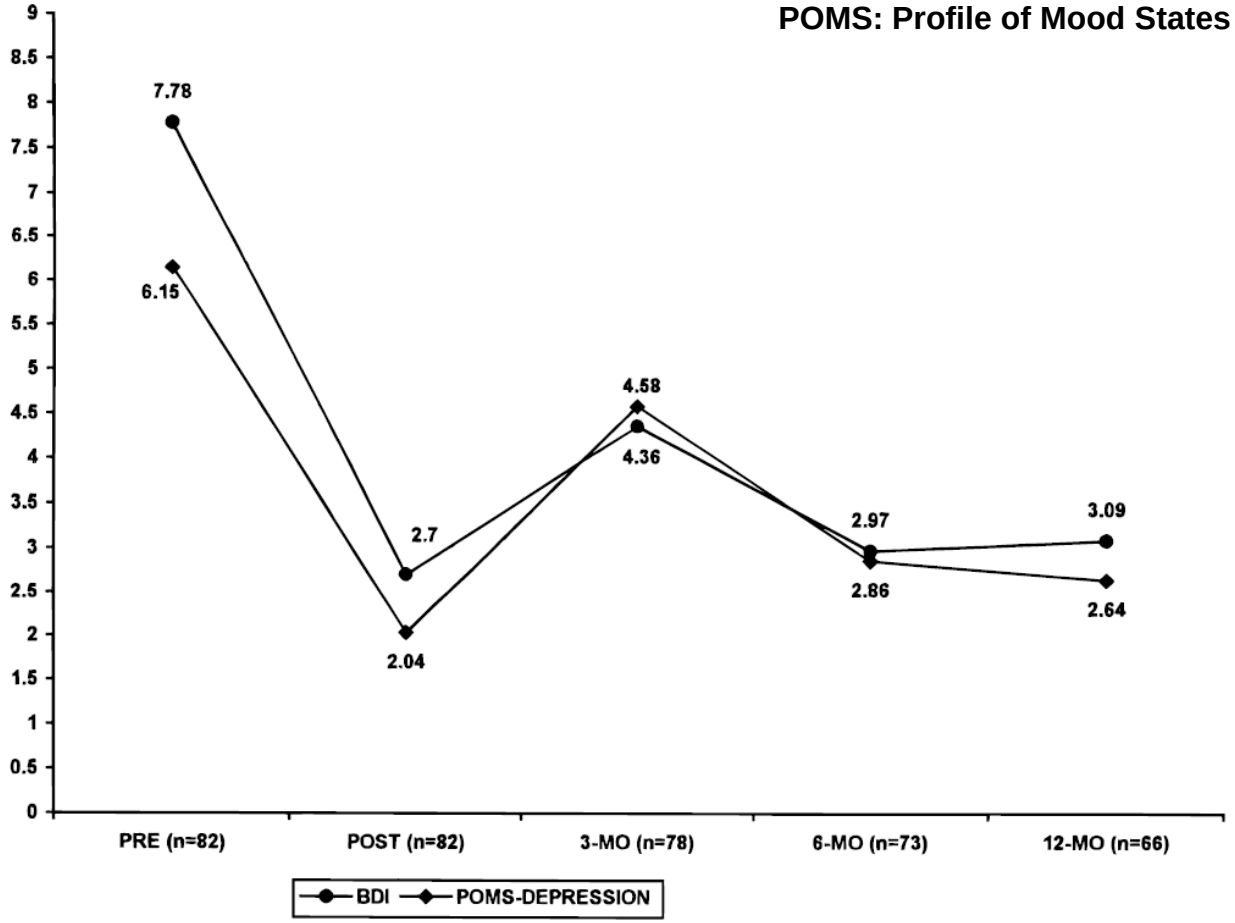


FIG. 2. Mean scores for depression measures across the follow-up time period.

DiLorenzo TM, Bargman EP**, Long-term effects of aerobic exercise on psychological outcomes,** Preventive Medicine 28**,** 75–85 (1999)

POMS: Profile of Mood States
STAI-State-Trait Anxiety Inventory
TSCS: Tennessee Self-Concept Scale

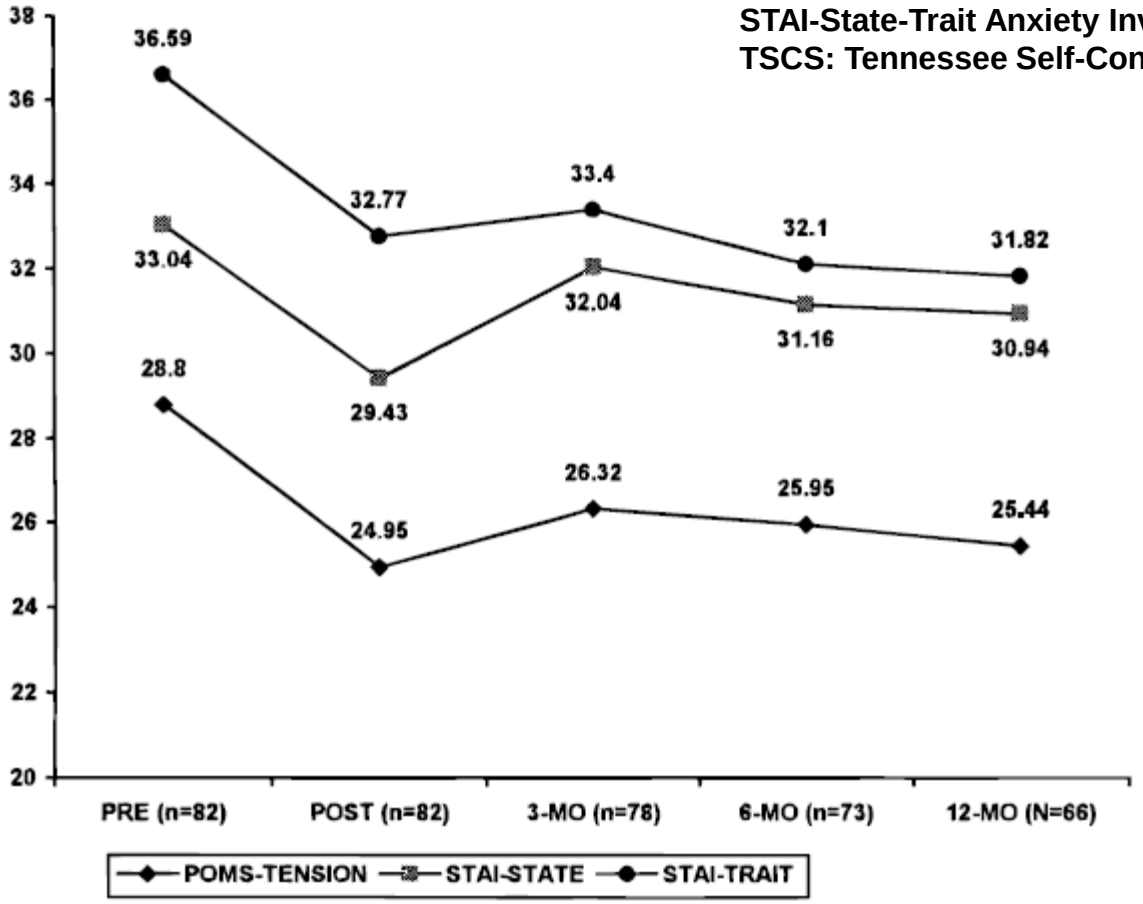


FIG. 3. Mean scores for anxiety measures across the follow-up time period.

DiLorenzo TM, Bargman EP**, Long-term effects of aerobic exercise on psychological outcomes,** Preventive Medicine 28**,** 75–85 (1999)

THE LANCET

July, 2016 www.thelancet.com

Physical Activity 2016: Progress and Challenges

"We urge all sectors of government and society to take immediate, bold actions to help make active living a more desired, affordable, and accessible choice for all population groups."

Marco conceptual para escalar intervenciones en Actividad Fisica

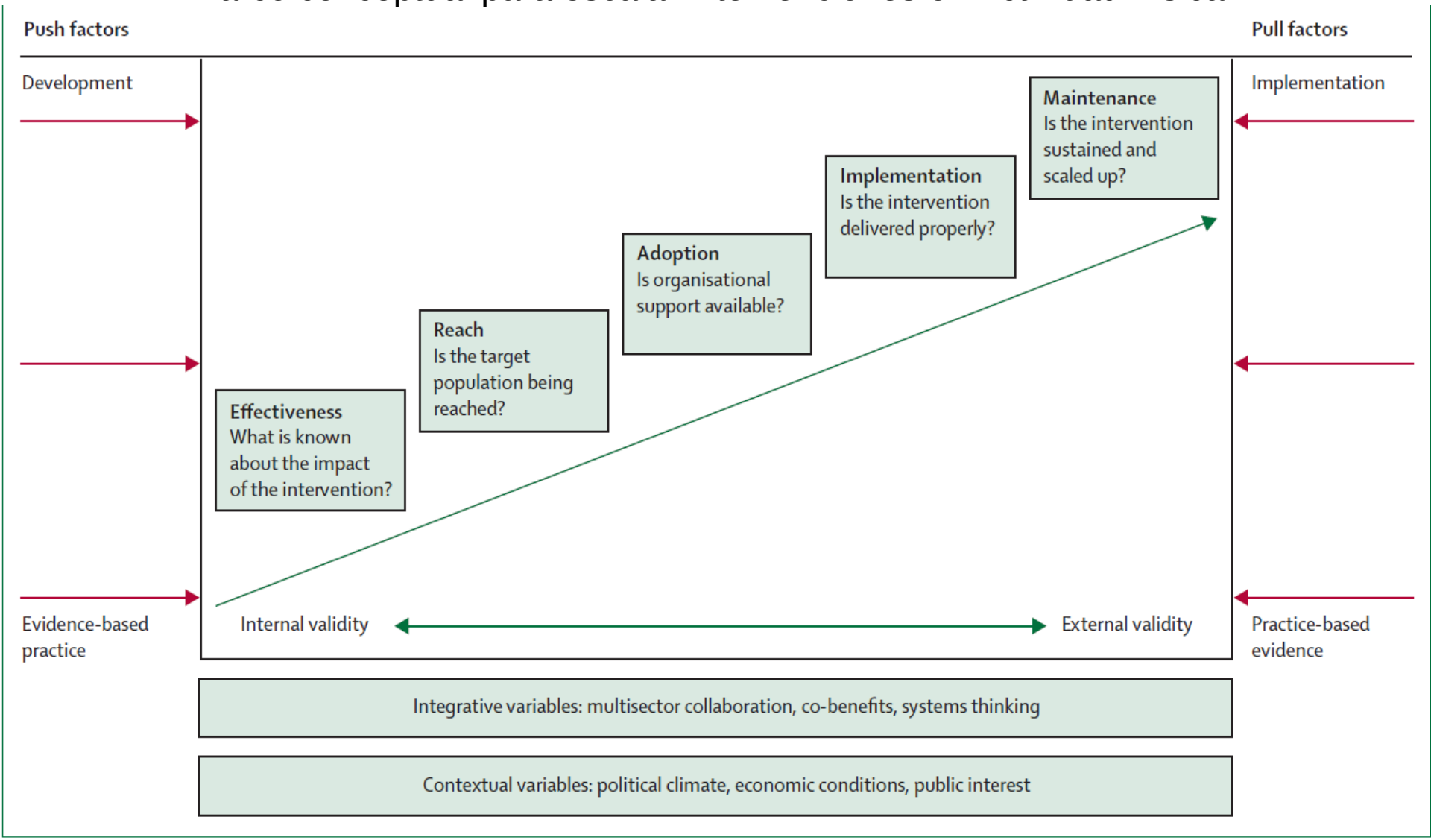


Figure 3: **Framework for scaling up physical activity interventions**

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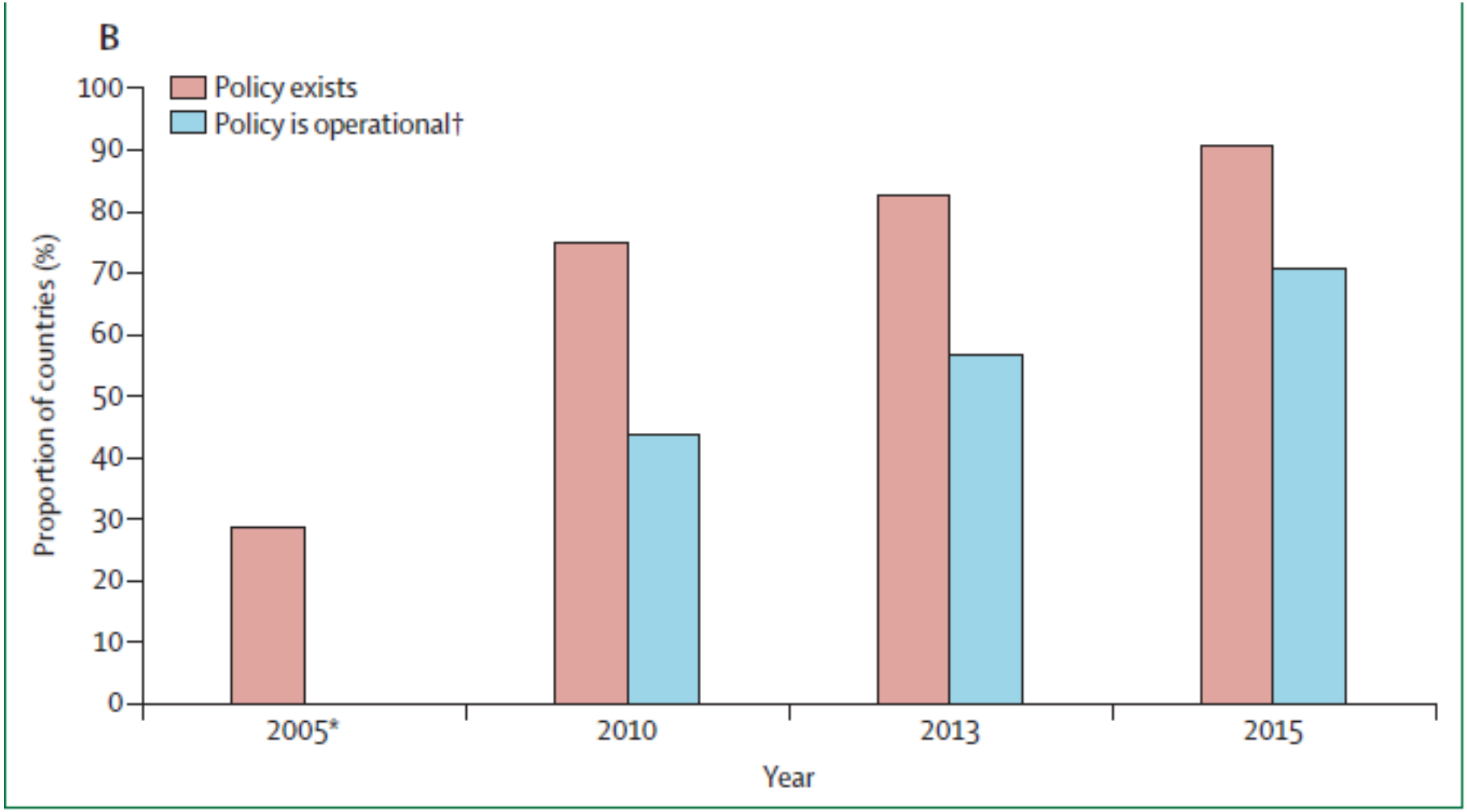
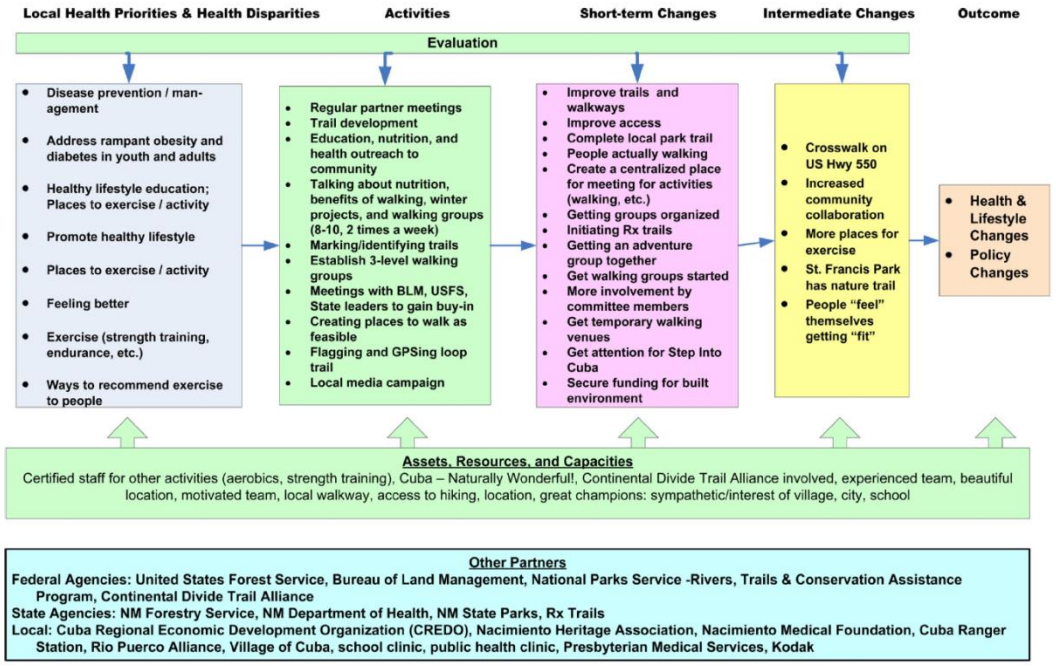


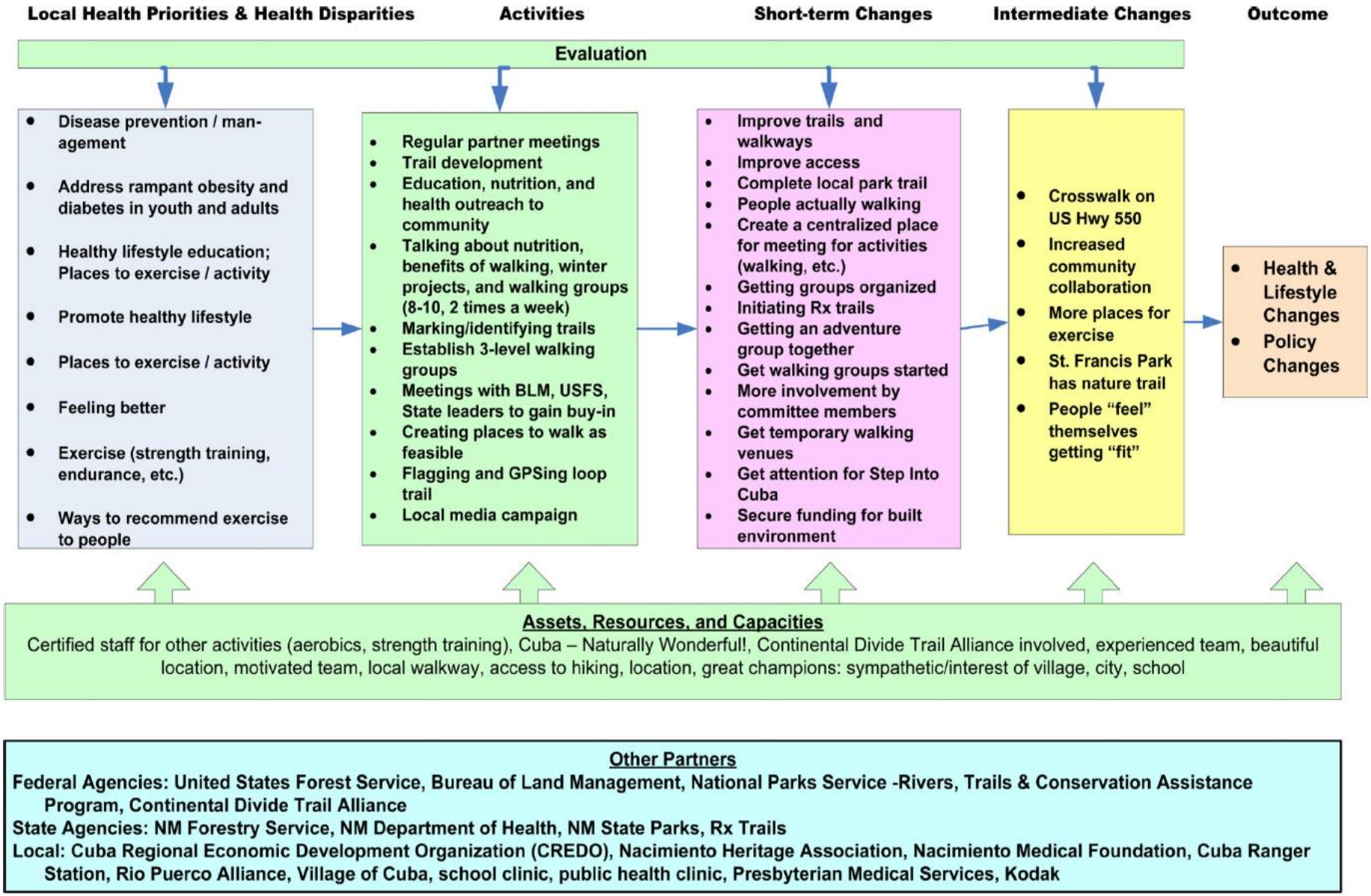
Figure 2: **Progress on national physical activity policies**

Implementing Physical Activity Recommendations in a Tri-ethnic Rural Community through a Community-University Partnership

Sally M. Davis, PhD[1], Theresa Cruz, PhD[1], Julia Meredith Hess, PhD[2], Richard Kozoll, MD, MPH[3], and Janet Page-Reeves, PhD[4]



Prog Community Health Partnersh. 2017 ; 11(2): 149–159.



Other Partners

Federal Agencies: United States Forest Service, Bureau of Land Management, National Parks Service -Rivers, Trails & Conservation Assistance Program, Continental Divide Trail Alliance

State Agencies: NM Forestry Service, NM Department of Health, NM State Parks, Rx Trails

Local: Cuba Regional Economic Development Organization (CREDO), Nacimiento Heritage Association, Nacimiento Medical Foundation, Cuba Ranger Station, Rio Puerco Alliance, Village of Cuba, school clinic, public health clinic, Presbyterian Medical Services, Kodak

JOHN DUPERLY

MEDICINA INTERNA - PHD MEDICINA DEL DEPORTE

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Una guía para recomendar actividad física a cada paciente

John Duperly, MD, PhD
Felipe Lobelo, MD, PhD

de la ediciones U
LEO

John Duperly es director del Centro Regional de Exercise is Medicine® (EIM®) América Latina. Es especialista en Medicina Interna y PhD en Medicina del Deporte, miembro institucional de la Fundación Santa Fe de Bogotá y profesor asociado de la Facultad de Medicina de la Universidad de Los Andes. Es representante del Presidente de la República de Colombia ante el Consejo Nacional del Deporte, la Recreación, la Actividad Física y el Aprovechamiento del Tiempo Libre.

Felipe Lobelo es profesor asociado del Departamento de Salud Global de la Escuela de Salud Pública de la Universidad de Emory y vicepresidente del Comité de Actividad Física de la Asociación Americana del Corazón (AHA). Es autor de más de 60 publicaciones científicas y miembro de la junta asesora de la iniciativa global EIM® del Colegio Americano de Medicina del Deporte (ACSM), del cual es director de su Centro Global de Investigación y Colaboración.