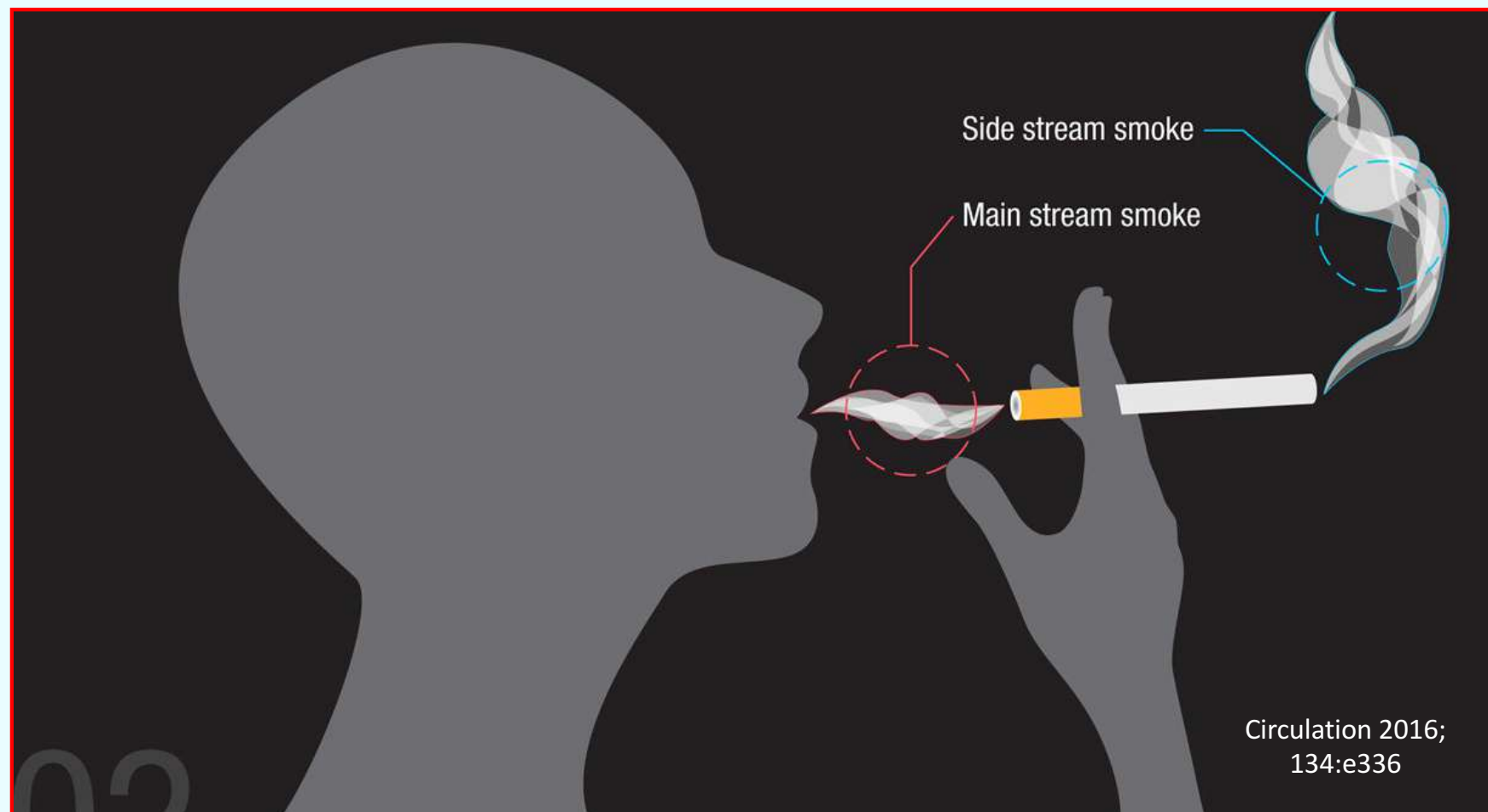
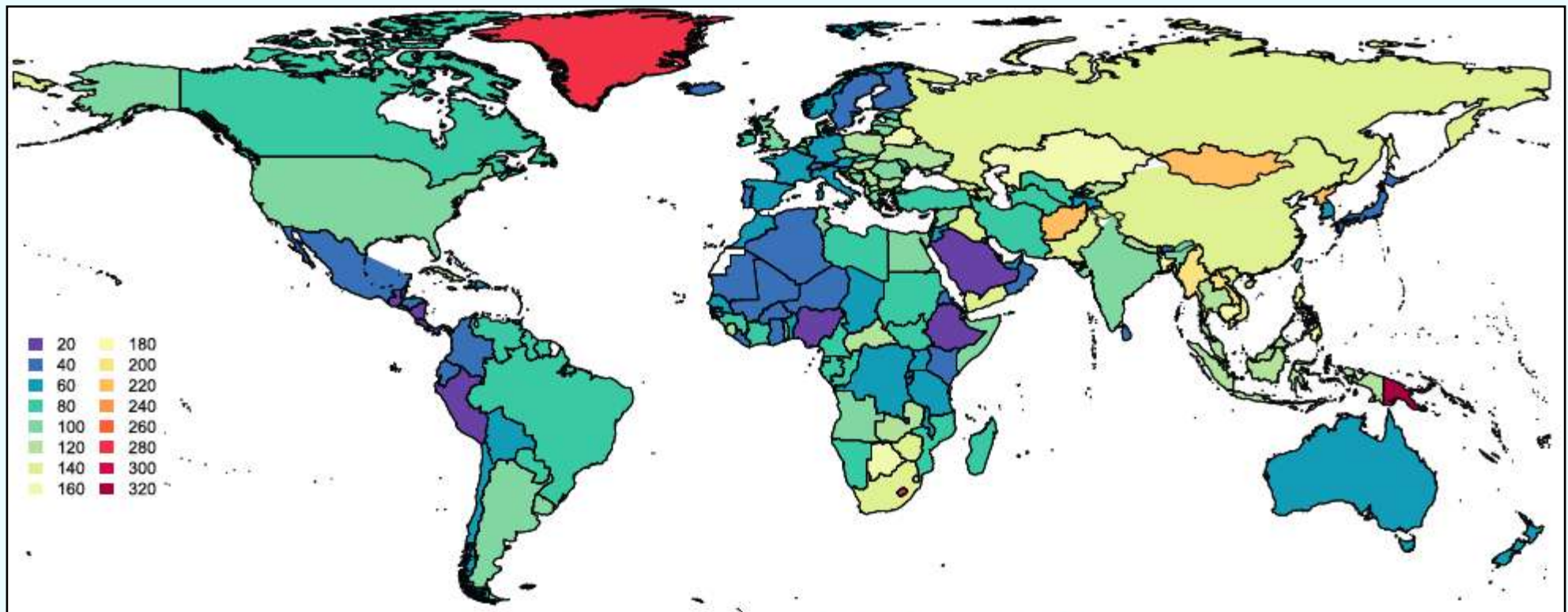


Tabaquismo y enfermedad cardiovascular



Francisco Javier Chorro Gascó
Departamento de Medicina. Universidad de Valencia. Servicio de Cardiología. Hospital
Clínico Universitario de Valencia. INCLIVA.

Age-standardized global mortality rates attributable to tobacco per 100 000, both sexes, 2015.



TOBACCO THREATENS US ALL



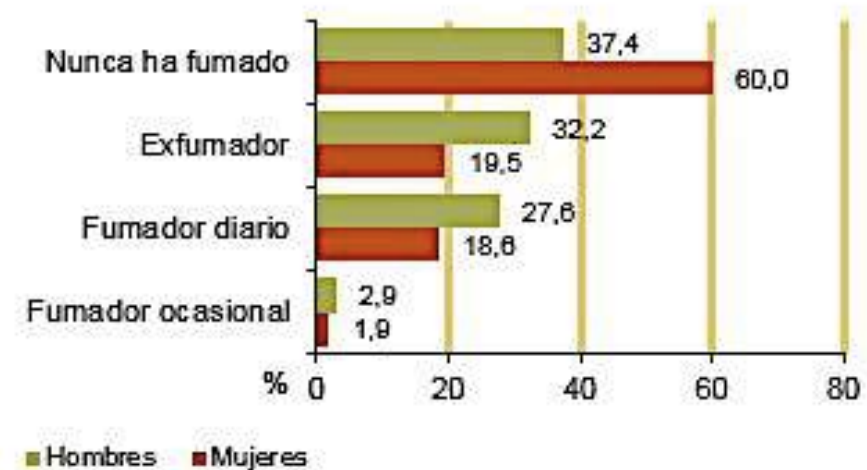
SAY NO TO TOBACCO

**PROTECT HEALTH,
REDUCE POVERTY AND
PROMOTE DEVELOPMENT**

World Health Organization | FCTC | WHO | SUSTAINABLE GOALS

31MAY#WORLDNOTOBACCO#DAY #NoTobacco

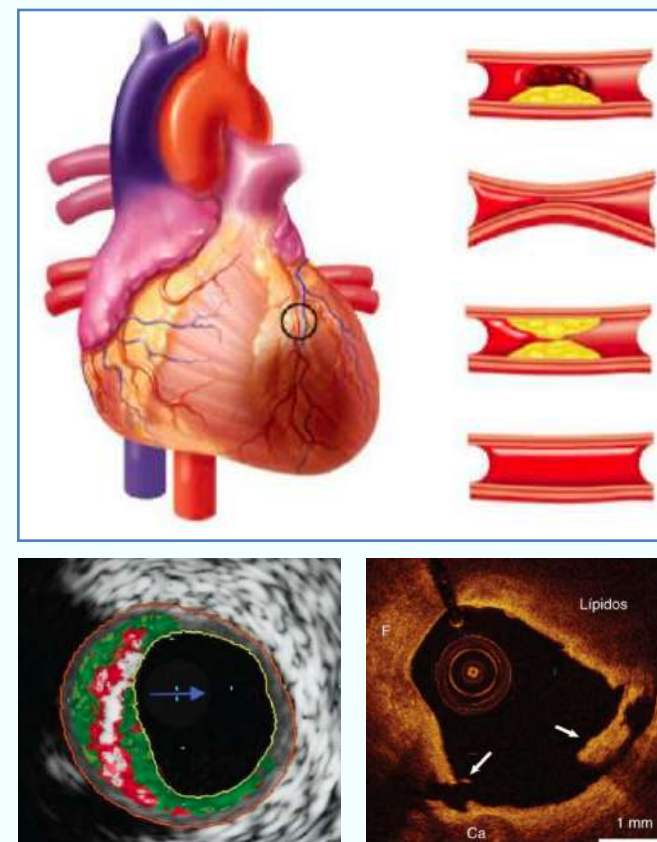
Consumo de tabaco. 2014



Fuente: Encuesta Europea de Salud en España 2014. INE

PRINCIPALES ENFERMEDADES CARDIOVASCULARES

- Cardiopatía isquémica
- Ictus (isquémico o hemorrágico)
- Fibrilación auricular
- Arteriopatía periférica
- Aneurisma aórtico
- Miocardiopatías y miocarditis
- Cardiopatía hipertensiva
- Insuficiencia cardíaca
- Endocarditis
- Cardiopatía reumática



Braunwald's Heart Disease 2016

JAMA Cardiol. 2018;3(5):375-389.

The State of US Health, 1990-2016

Burden of Diseases, Injuries, and Risk Factors Among US States

- The leading causes of DALYs in the United States for 1990 and 2016 were ischemic heart disease and lung cancer.
- The third leading cause in 1990 was low back pain, and the third leading cause in 2016 was chronic obstructive pulmonary disease.
- In 2016, each of the following 6 risks individually accounted for more than 5% of risk-attributable DALYs:
 - Tobacco consumption,
 - High body mass index (BMI),
 - Poor diet,
 - Alcohol
 - Drug use,
 - High fasting plasma glucose
 - High blood pressure
- The top risk factors in terms of attributable DALYs were due to 1 of the 3 following causes: tobacco consumption, high BMI, or alcohol and drug use.

Leading causes of DALYs, 1990

1 Ischemic heart disease
2 Lung cancer ^a
3 Low back pain
4 COPD
5 Motor vehicle road injury
6 Diabetes
7 Major depression
8 Other musculoskeletal
9 Migraine
10 Ischemic stroke
11 Opioid use disorders
12 Alzheimer disease
13 HIV/AIDS other ^b
14 Anxiety disorders
15 Neonatal preterm birth
16 Colorectal cancer
17 Neck pain
18 Breast cancer
19 Lower respiratory infection
20 Intracerebral hemorrhage
21 Falls
22 Age-related hearing loss
23 Acne vulgaris
24 Self-harm by firearm
25 Violence by firearm
26 Alcohol use disorders
28 Self-harm by other means
31 Osteoarthritis
38 Diabetes CKD ^c

Leading causes of DALYs, 2016

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2 Lung cancer ^a
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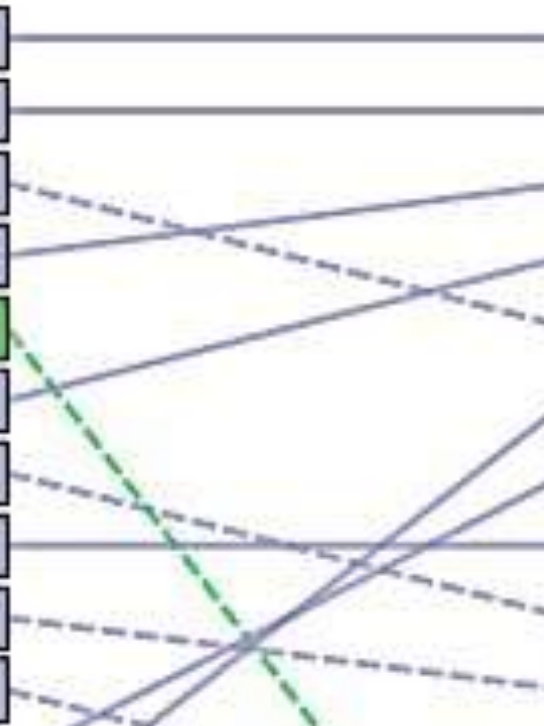
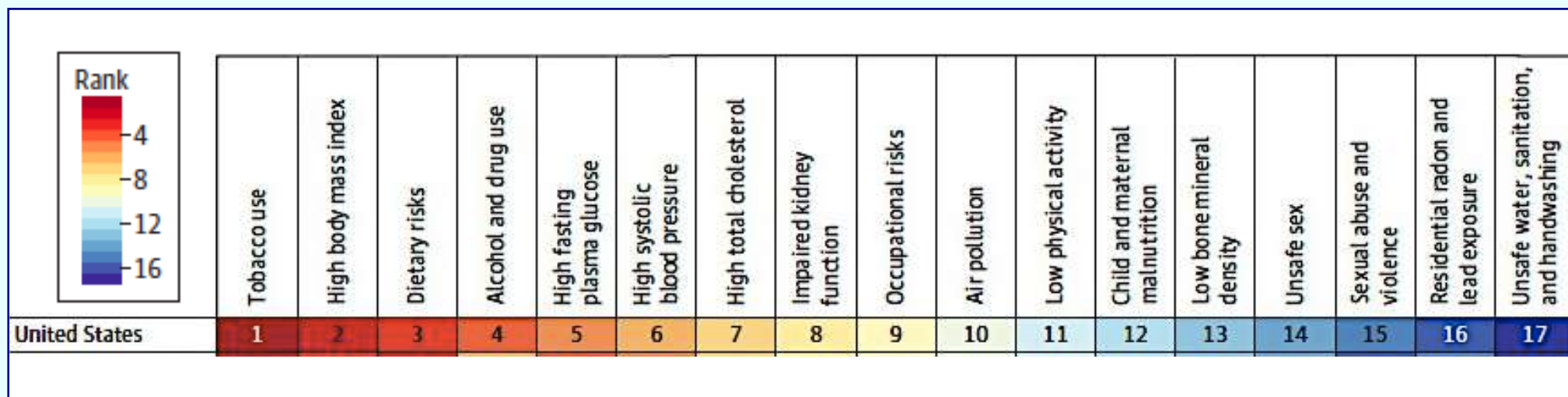


Figure 10. Ranking of Risk Factors in 2016 for the United States Overall, the 50 States, and the District of Columbia According to the Number of Disability-Adjusted Life-Years Related to Each Risk Factor



A Risk factors and related deaths

Risk factors

Dietary risks
Tobacco use
High systolic blood pressure
High body mass index
High fasting plasma glucose
High total cholesterol
Impaired kidney function
Alcohol and drug use
Air pollution
Low physical activity

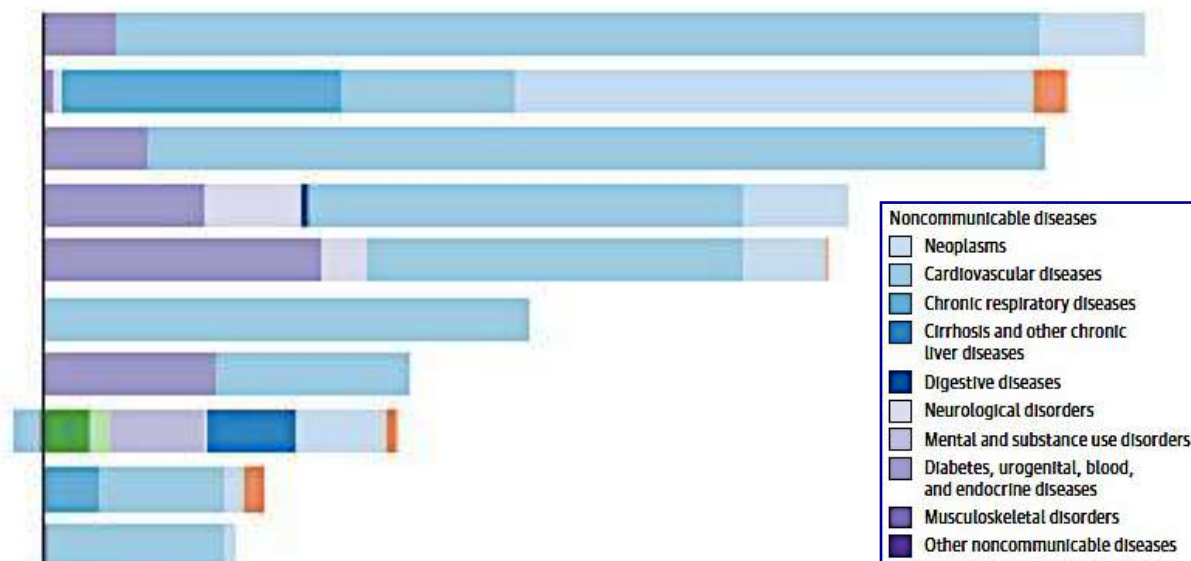
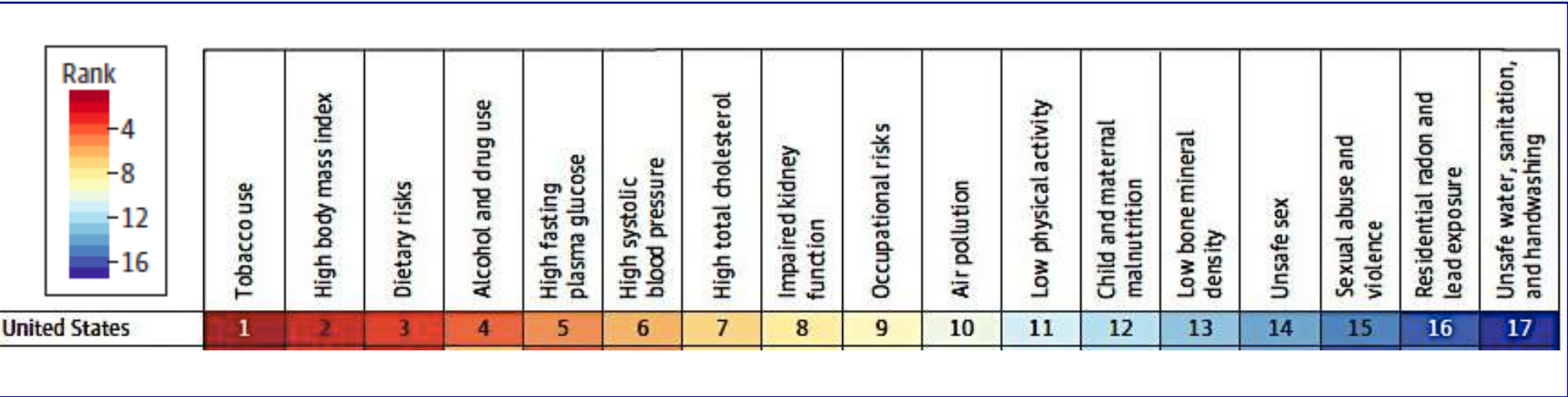


Figure 10. Ranking of Risk Factors in 2016 for the United States Overall, the 50 States, and the District of Columbia According to the Number of Disability-Adjusted Life-Years Related to Each Risk Factor



B Risk factors as a percentage of disability-adjusted life-years

Risk factors

- Tobacco use
- High body mass index
- Dietary risks
- Alcohol and drug use
- High fasting plasma glucose
- High systolic blood pressure
- High total cholesterol
- Impaired kidney function
- Occupational risks
- Air pollution

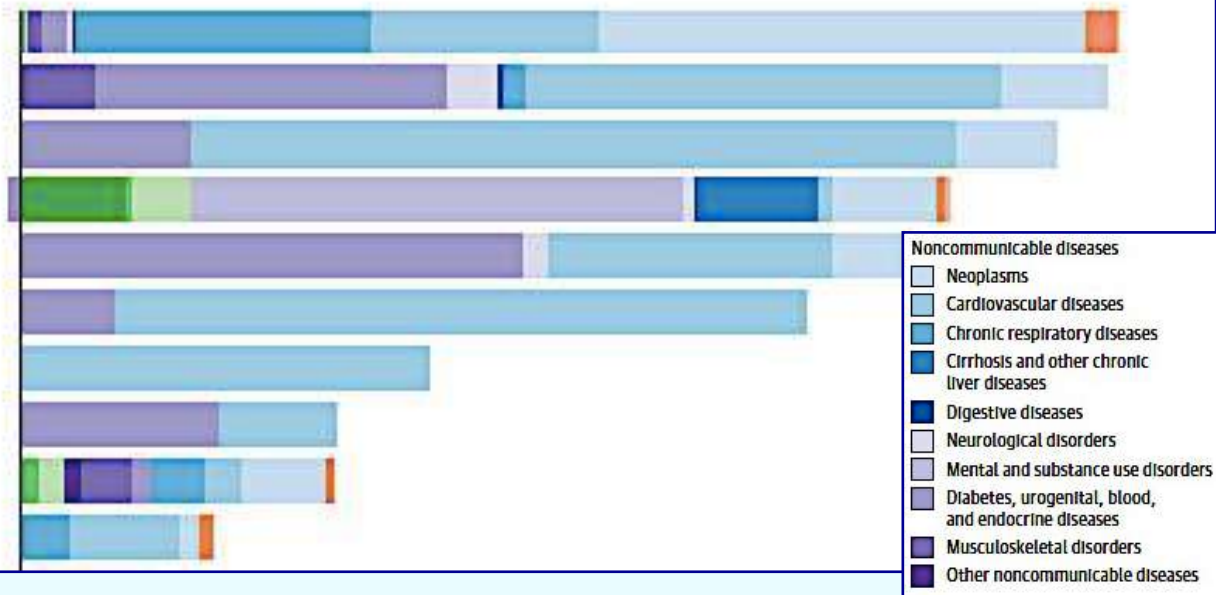
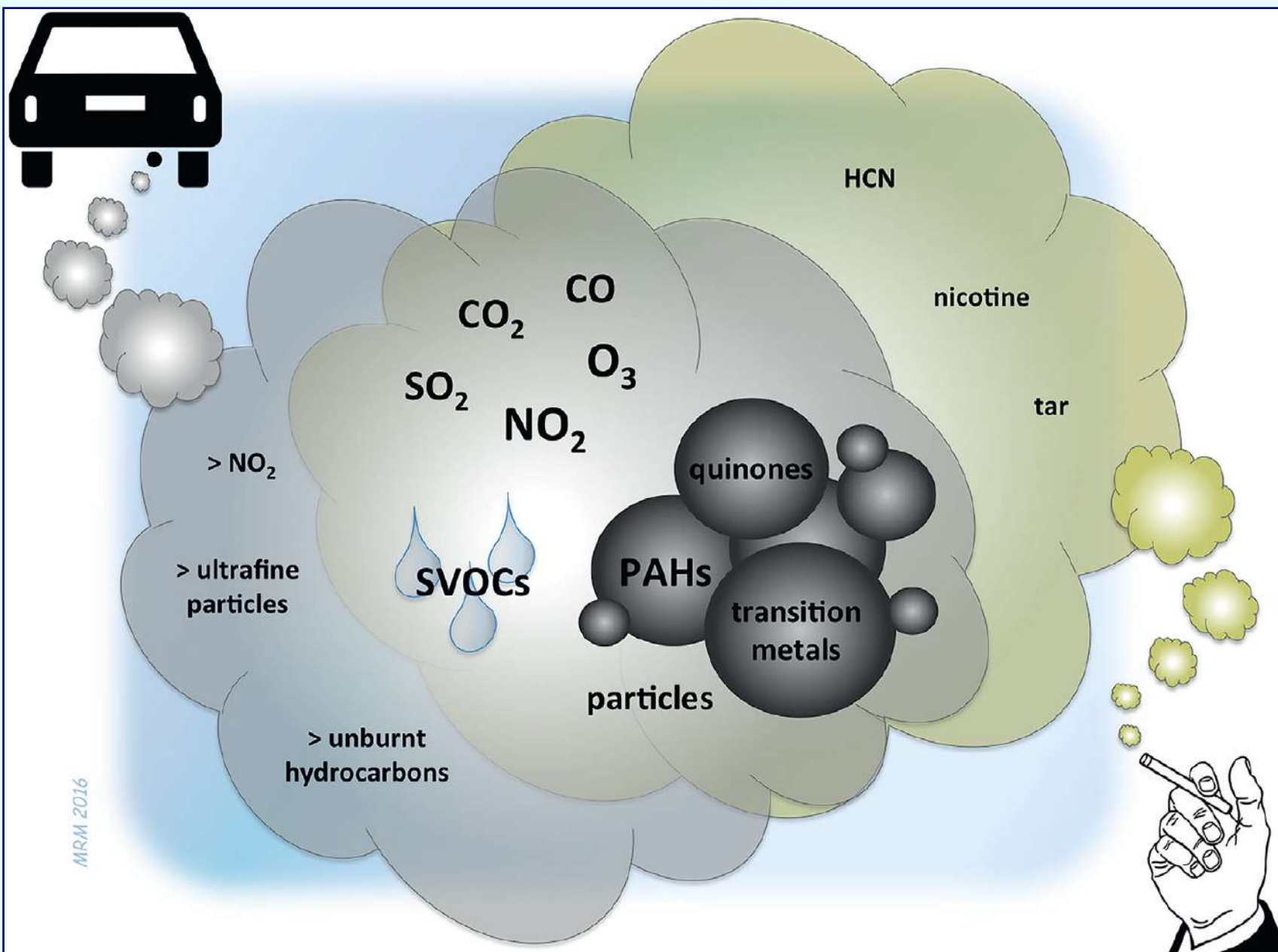
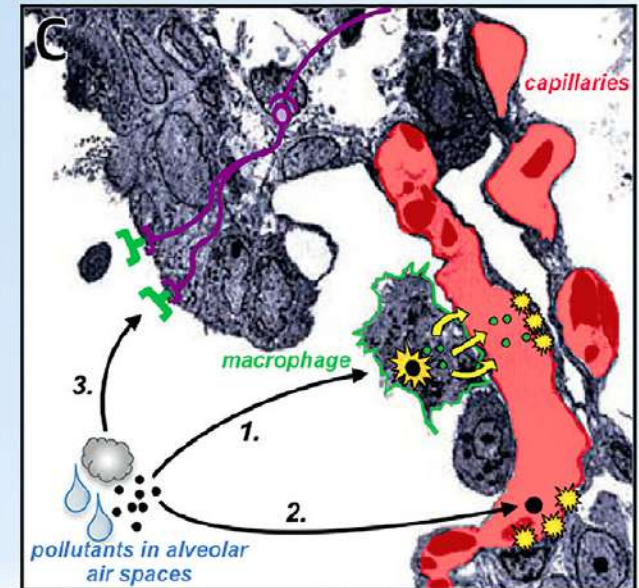
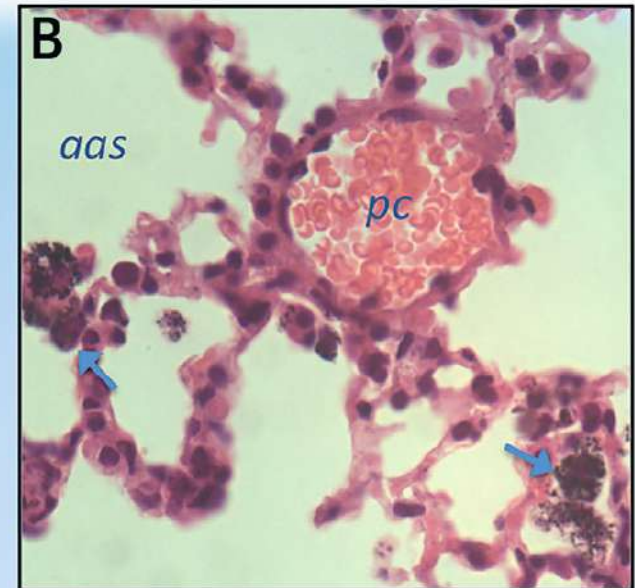
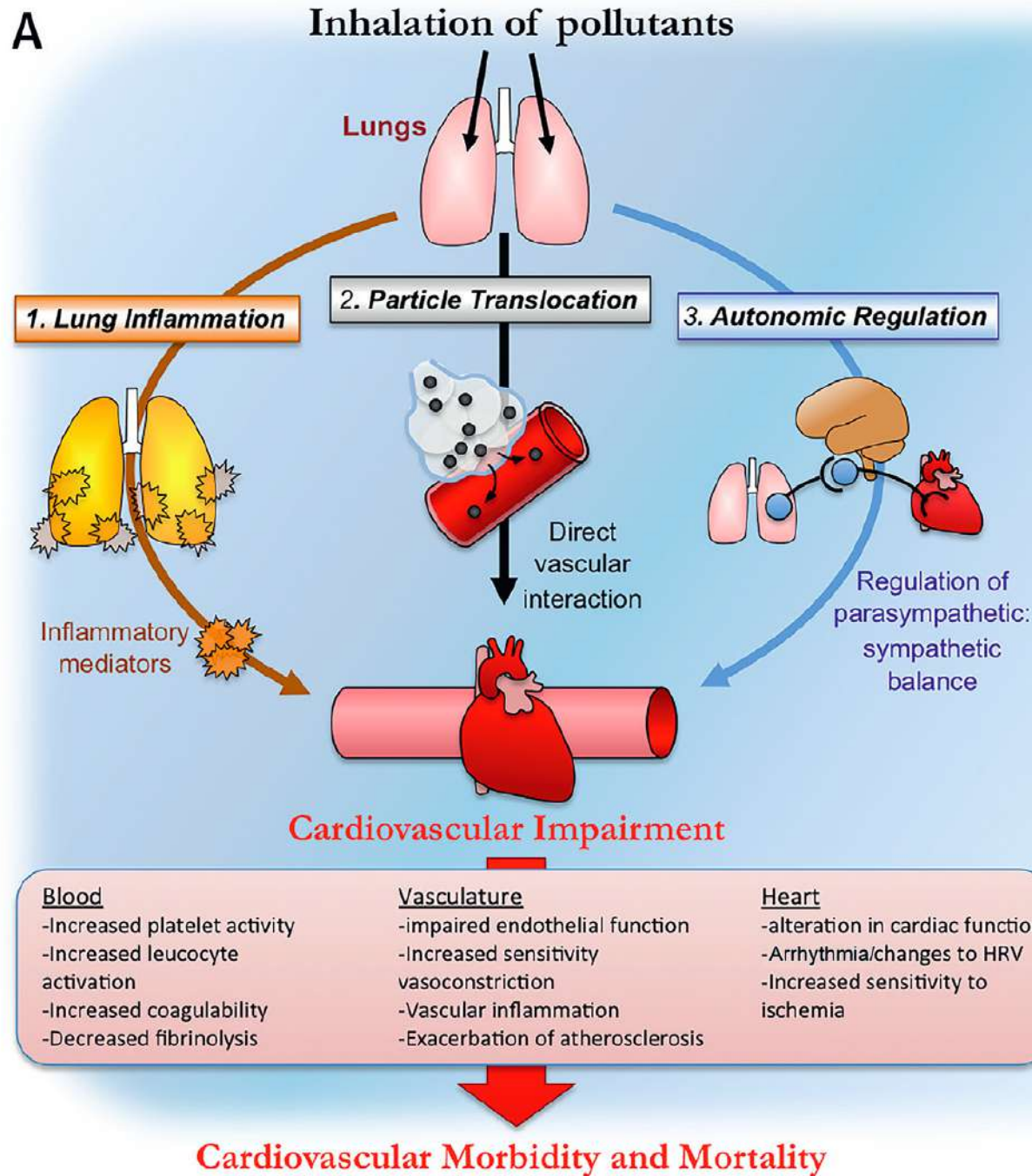




FIGURA 42-2 Riesgo de muerte de los fumadores que siguen fumando y de los que abandonan según la edad en el momento del abandono. (Tomado de Jha P, Ramasundarahettige C, Landsman V, et al: 21st-century hazards of smoking and benefits of cessation in the United States. *N Engl J Med* 368:341, 2013.)

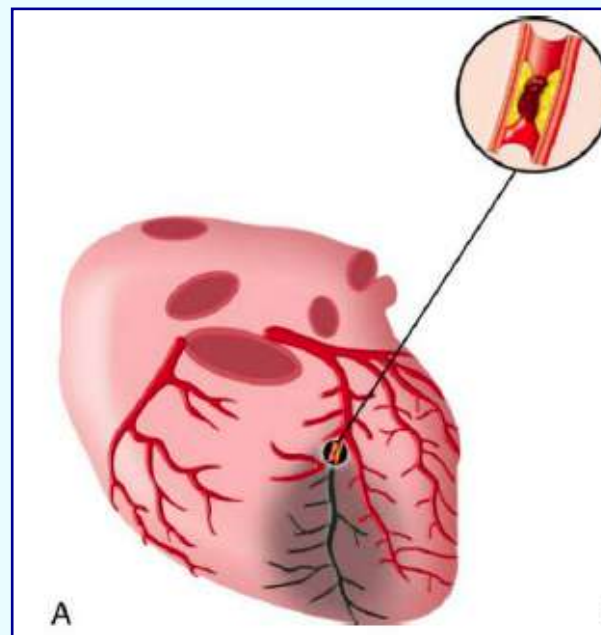
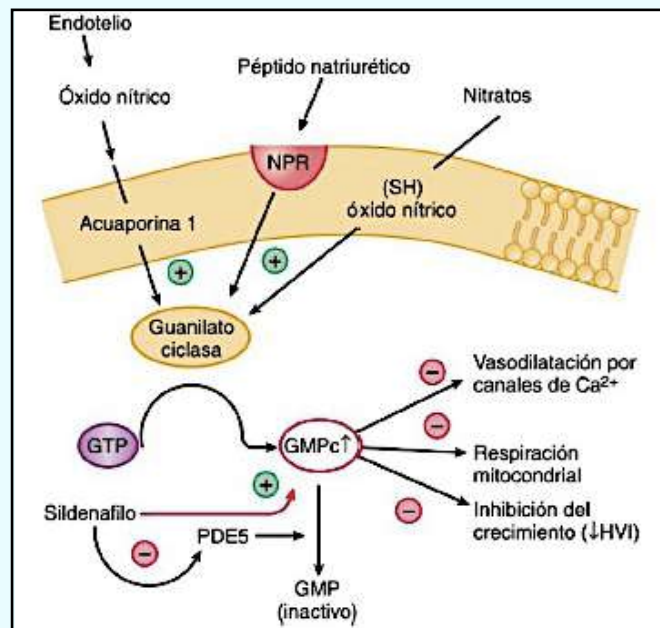
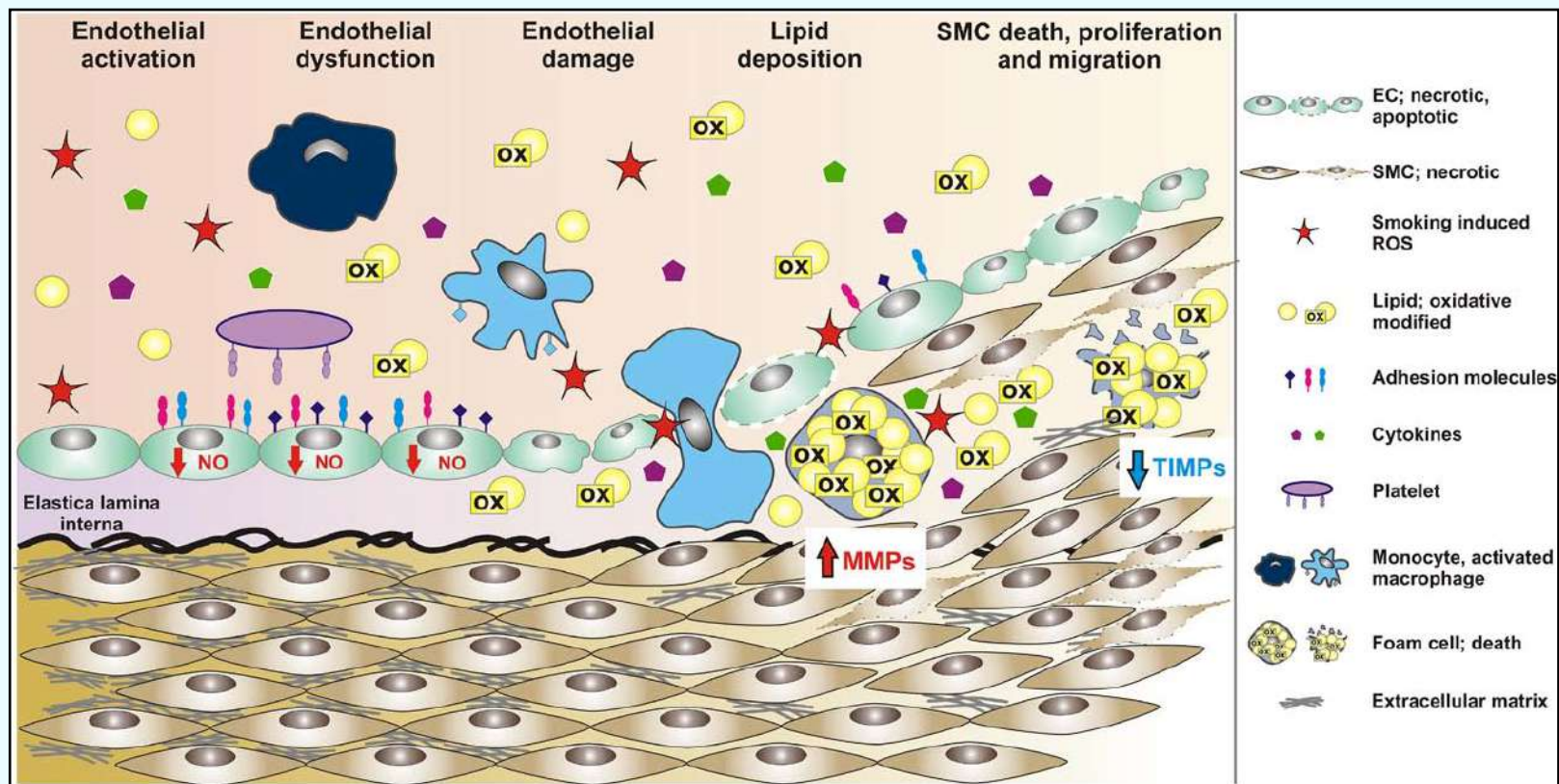




MRM 2016

EFFECTOS CARDIOVASCULARES DEL TABACO (1)

- Aumento del tono simpático y de la TA
- Reducción del aporte de O₂ al miocardio
- Potenciación de la oxidación del colesterol LDL
- Deterioro de la vasodilatación arterial coronaria dependiente del endotelio y de la neovascularización
- Disfunción de la síntesis de ON
- Alteración de la hemostasia, la inflamación, y la agregación plaquetar
- Alteración de la fibrinólisis y de los efectos anti-trombóticos derivados del endotelio (desequilibrio protrombótico)
- Resistencia a la insulina



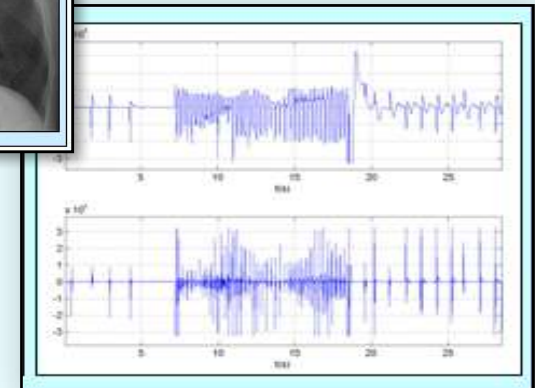
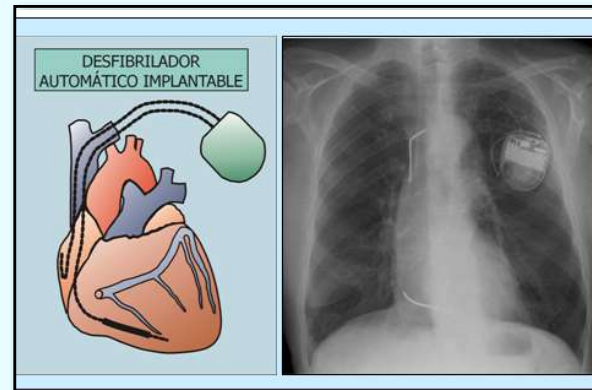
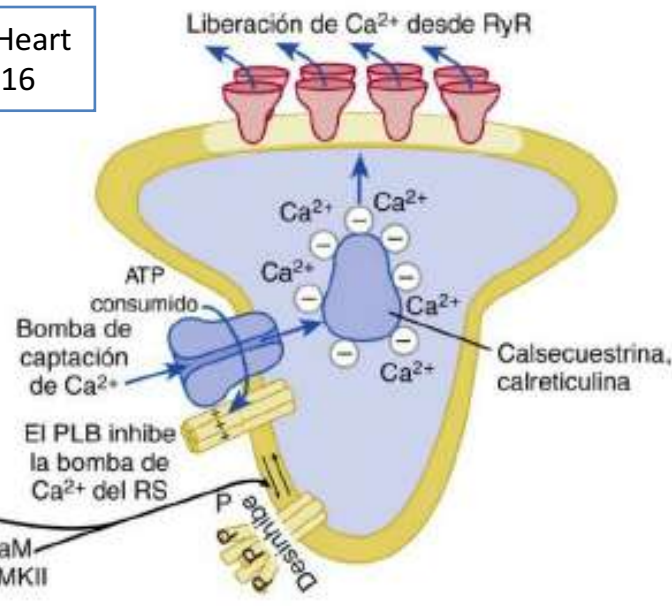
Arterioscler Thromb Vasc
Biol. 2014;34:509-515

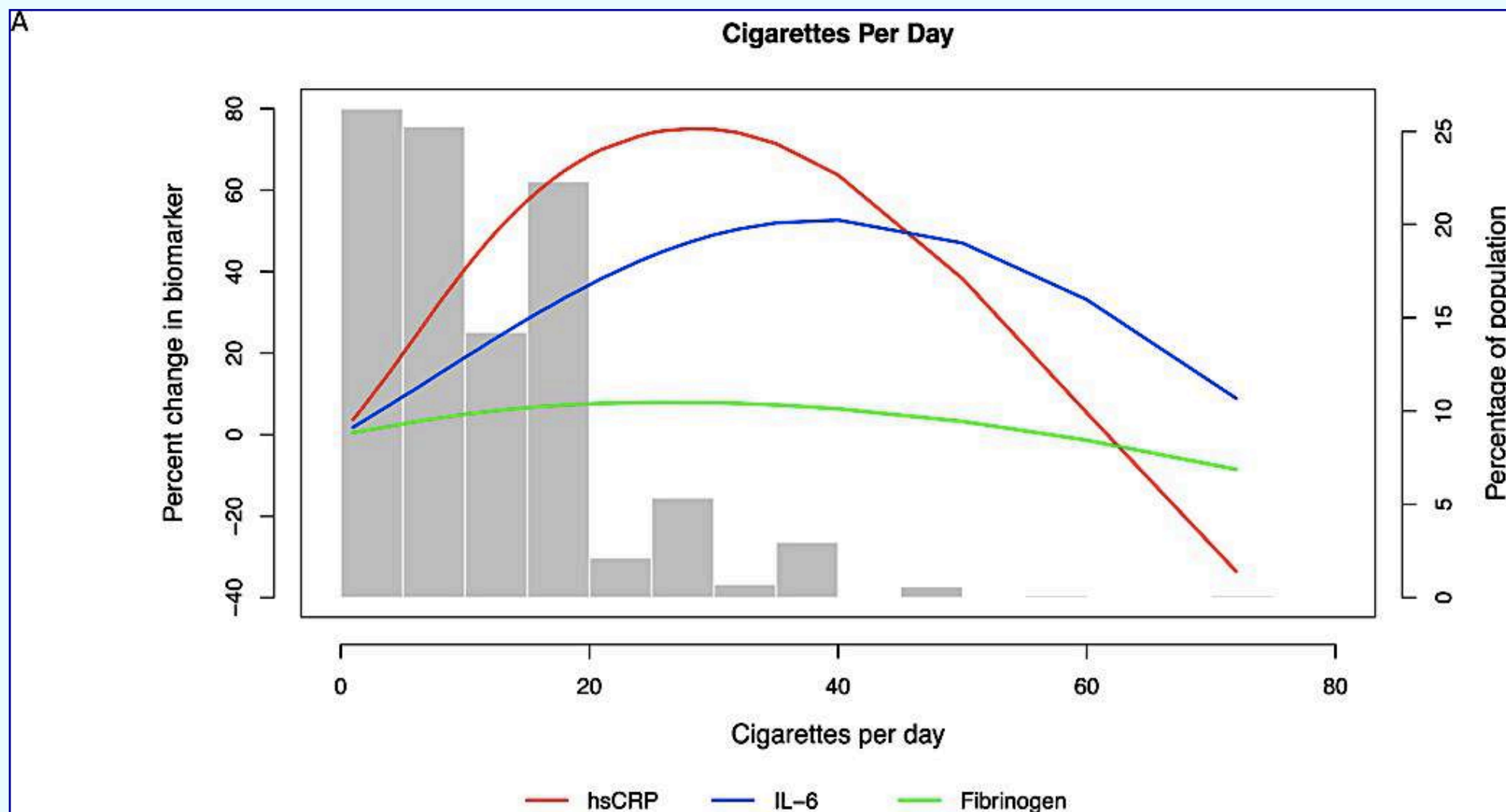
Braunwald's Heart Disease 2016

EFECTOS CARDIOVASCULARES DEL TABACO (2)

- Aumento de la incidencia de arritmias auriculares (FA) y ventriculares
 - Aumento de la actividad del SN simpático
 - Aumento de la fibrosis
- Aumento de descargas (apropiadas e inapropiadas) de DAI
- Aumento del riesgo de muerte súbita

Braunwald's Heart
Disease 2016



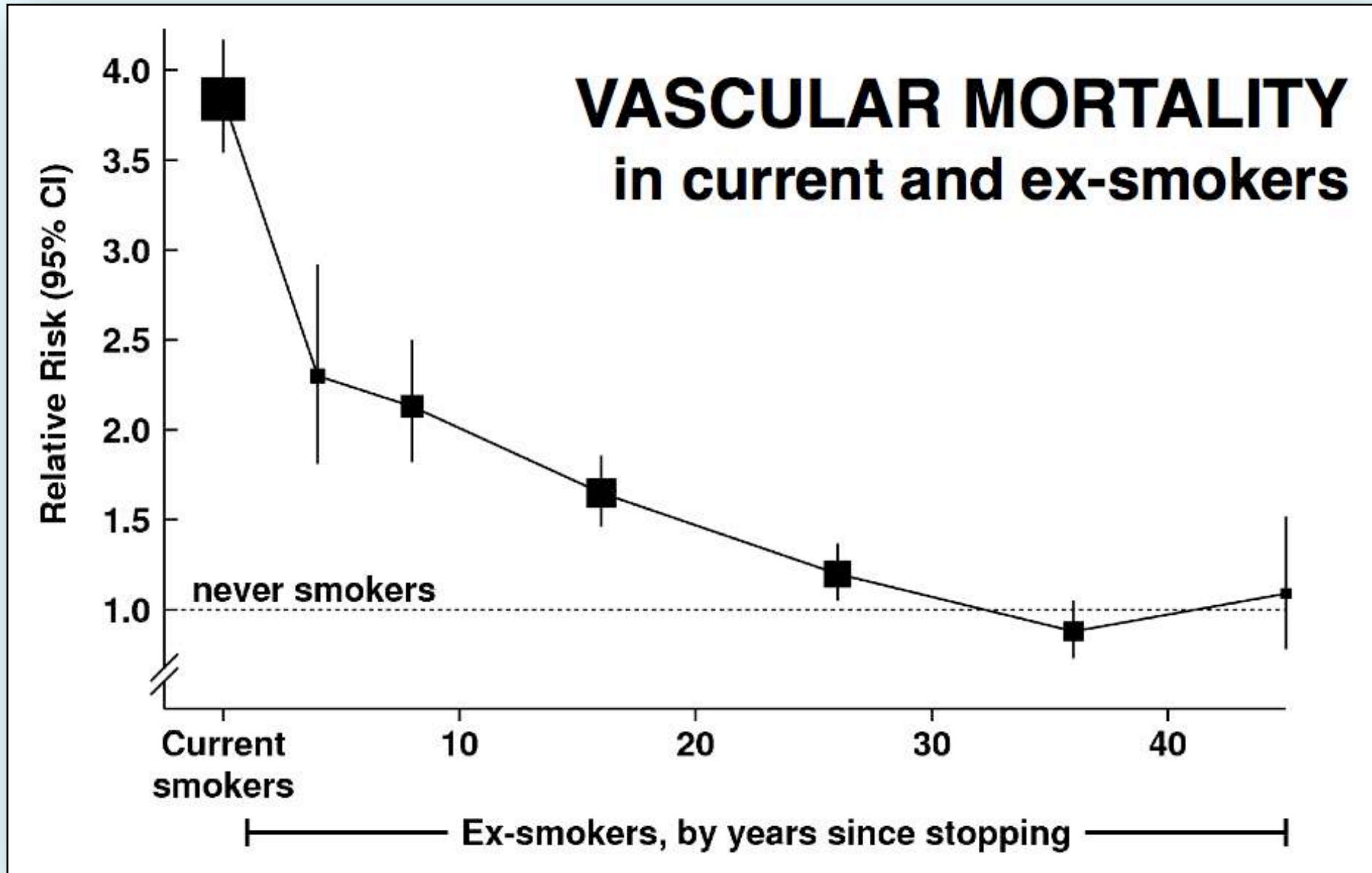


Efectos beneficiosos de la supresión del hábito tabáquico

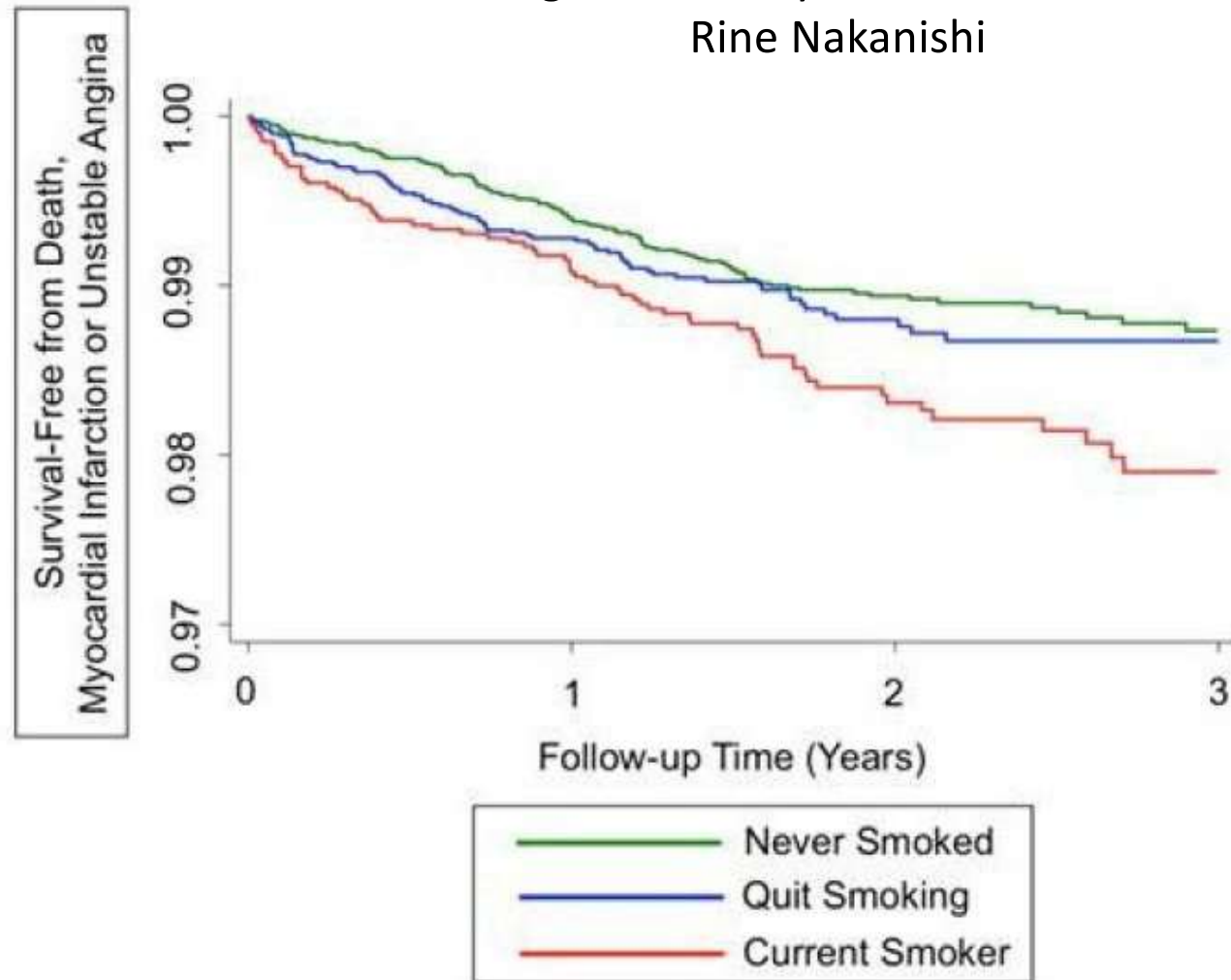
- Reducción de eventos cardiovasculares
- Disminución de la mortalidad global, post-infarto
- Reducción de ictus, enfermedad aórtica y enfermedad arterial periférica
- Legislación antitabaco:
 - Disminución de hospitalizaciones por IAM, de muertes por enf. coronaria, de accidentes cerebrovasculares, y de hospitalizaciones por cardiopatía isquémica.

The million women study: Tabaco y Mortalidad Vascular

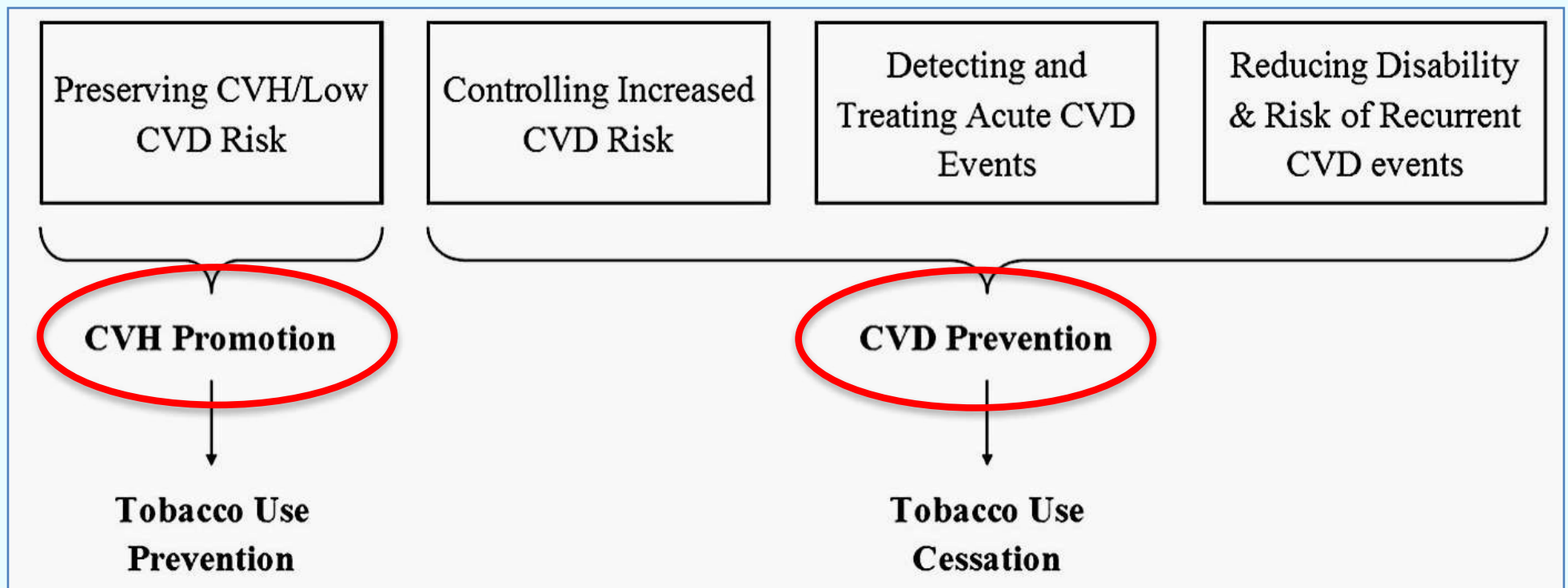
Beral V, 1996-2006; Peto R. ESC 09



ESC Congress 2013 by Dr James K. Min and Dr
Rine Nakanishi



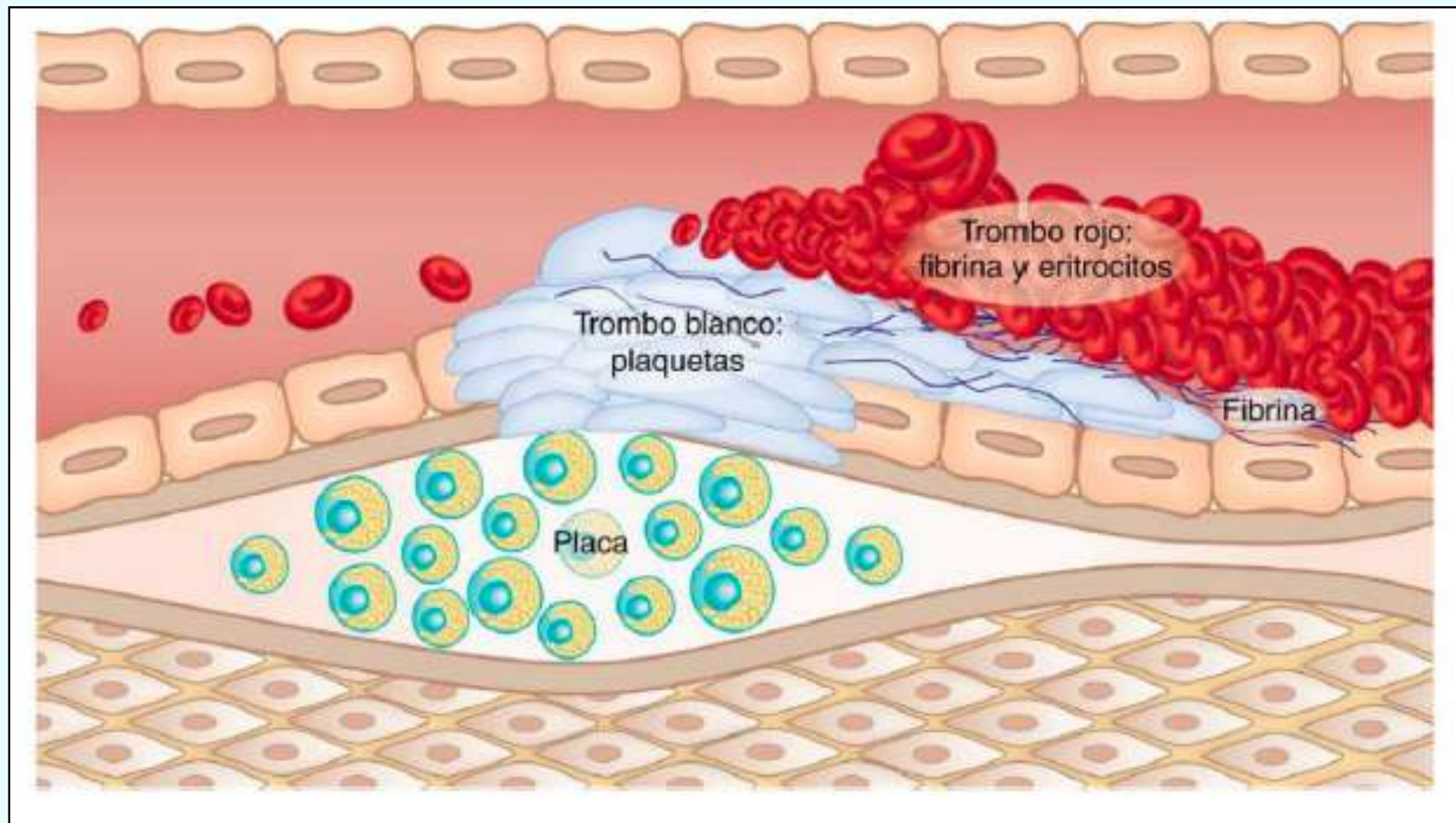
The prospective CONFIRM (Coronary CT Evaluation for Clinical Outcomes: An International Multicenter Study) registry of 13,372 patients from 9 countries in Europe, North America and East Asia examined the risk of major adverse cardiac events in 2,853 active smokers, 3,175 past smokers and 7,344 never smokers.

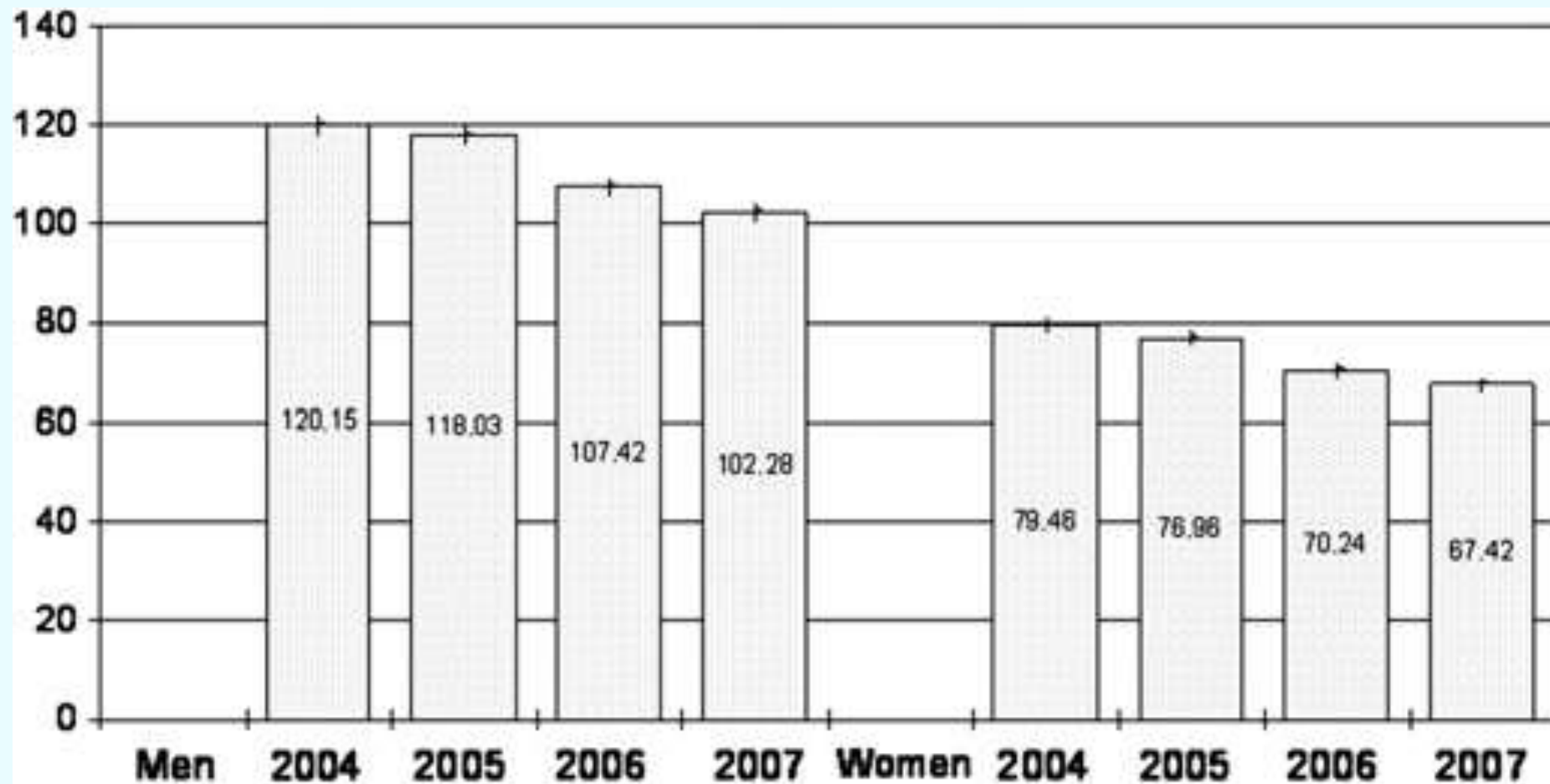


Prev Med. 2016 December ; 93: 189.

PREVENCIÓN SECUNDARIA

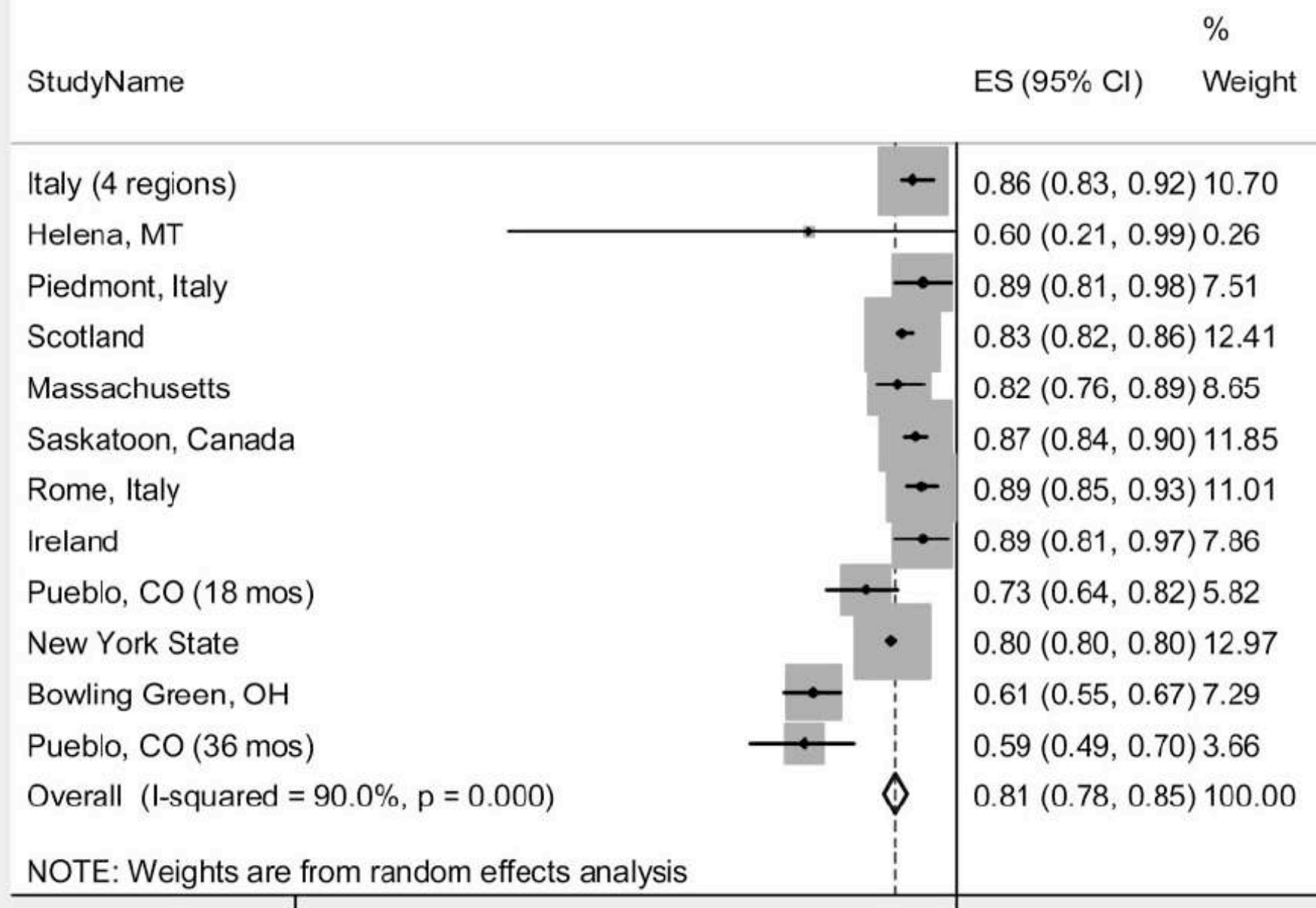
- Incremento de resultados adversos tras angioplastia (SYNTAX, HORIZONS-AMI, PLATO) (factor de riesgo de trombosis intra "stent").
- Incremento de complicaciones y resultados adversos tras cirugía coronaria y arterial periférica





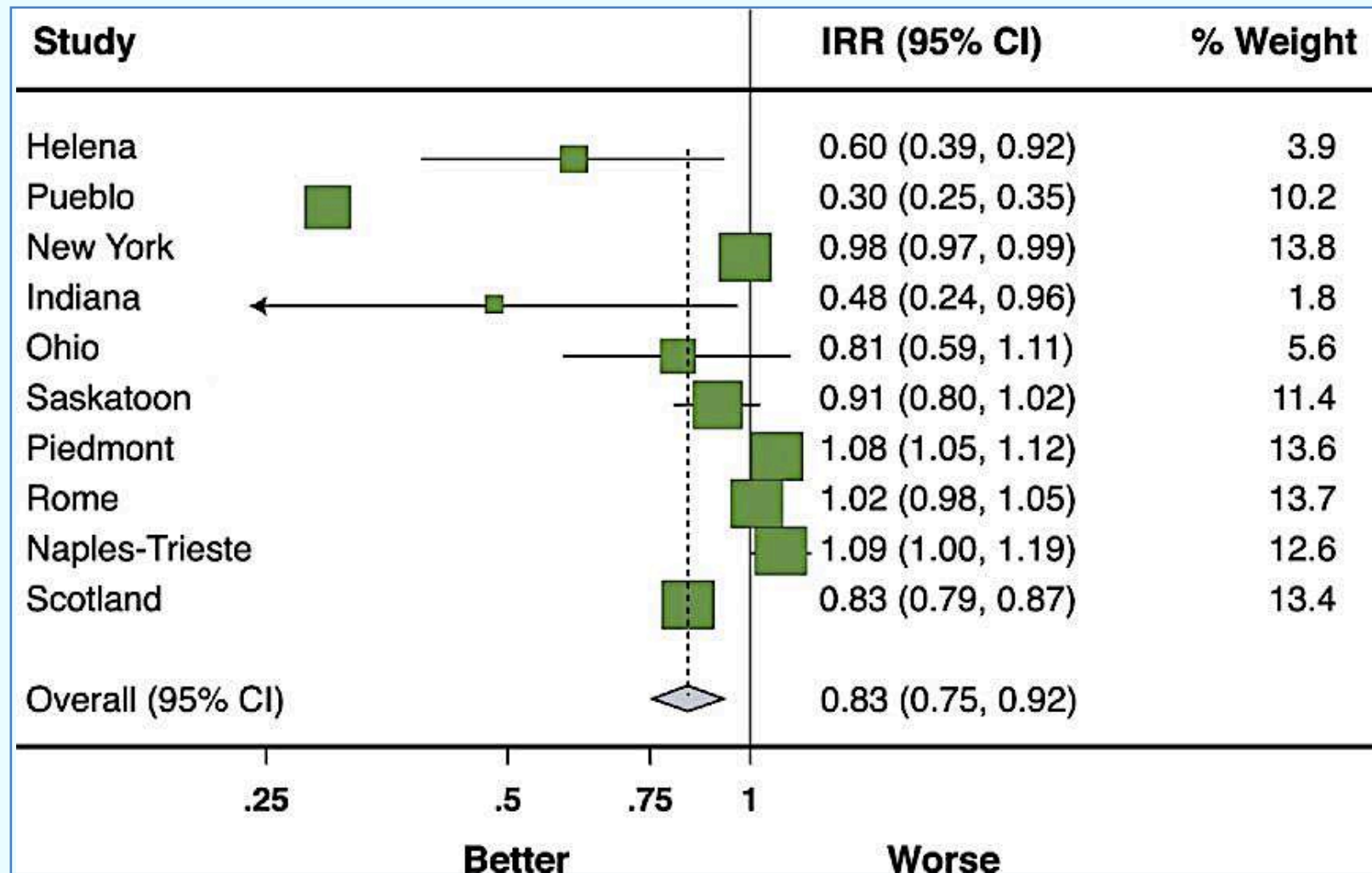
Evolution of annual adjusted mortality rates (per 100 000 population) due to acute myocardial infarction and 95% CIs, by sex, before and after the enforcement of regulatory changes in January 2006 (Spain, 2004-2007).

Legislación restrictiva e IAM en la Comunidad. Metanálisis **Lightwood JM, Glantz S, *Circulation* 2009;120:1373-9**



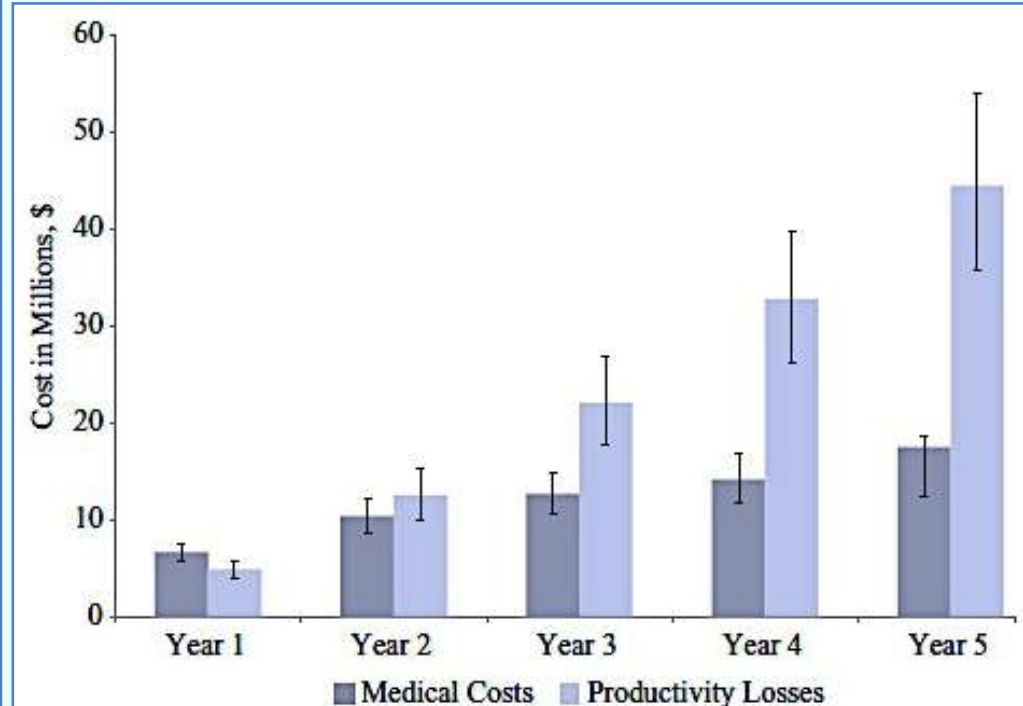
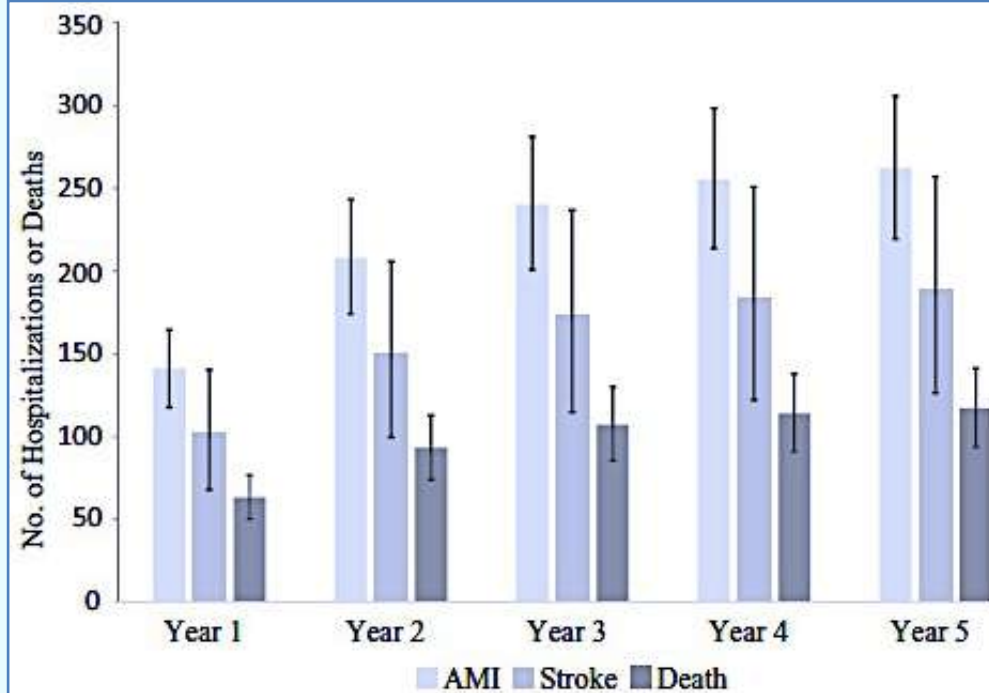
Effects of Community Smoking Bans on Incident Acute Myocardial Infarction (Person-Year Approach)

Meta-analysis results for 11 studies in 10 geographic locations. CI confidence interval; IRR incidence rate ratio.



Reducing Smoking in the US Federal Workforce: 5-Year Health and Economic Impacts From Improved Cardiovascular Disease Outcomes

Public Health Reports
2017, Vol. 132(6) 646-653



Conclusion

Reducing the number of smokers in the federal workforce would improve the cardiovascular health of employees through fewer hospitalizations and deaths attributed to myocardial infarction and stroke, as well as decrease medical costs, productivity losses from premature death, and missed workdays. The federal government can leverage tobacco-free policies and promote current federal employee tobacco cessation benefits to encourage employees to quit smoking.

CONCLUSIONES

El tabaquismo:

- Aumenta el tono simpático y la tensión arterial
- Reduce el aporte de O₂ al miocardio
- Potencia la oxidación del colesterol LDL
- Deteriora la vasodilatación arterial coronaria dependiente del endotelio y la neovascularización
- Altera la hemostasia, la inflamación y la agregación plaquetar (desequilibrio protrombótico)
- Aumenta la resistencia a la insulina
- Aumenta la incidencia de arritmias auriculares (FA) y ventriculares
- Aumenta la fibrosis miocárdica
- Aumenta el riesgo de muerte súbita

CONCLUSIONES

- El tabaquismo se encuentra entre los principales factores de riesgo asociados a incapacidad y muerte (se asocia a cancer, enfermedades cardiovasculares y enfermedad pulmonar crónica, entre otras enfermedades).
- La implementación de políticas adecuadas para evitar la exposición al tabaco disminuye la morbimortalidad por enfermedades cardiovasculares.
- Es necesario potenciar las terapias individuales contra el hábito tabáquico desarrollando tratamientos y programas para prevenir el inicio del hábito tabáquico y favorecer el cese del consumo.