IX CURSO DE VERANO DE OSALAN-INSTITUTO VASCO DE SEGURIDAD Y SALUD LABORALES:
"ENVEJECIMIENTO Y PREVENCIÓN DE RIESGOS LABORALES"
(Donostia-San Sebastián, Palacio de Miramar, 11 y 12 de julio de 2019)

# Trabajo, edad y salud, nuevas y viejas evidencias

Fernando G. Benavides
Centro de Investigación en Salud Laboral
Universidad Pompeu Fabra

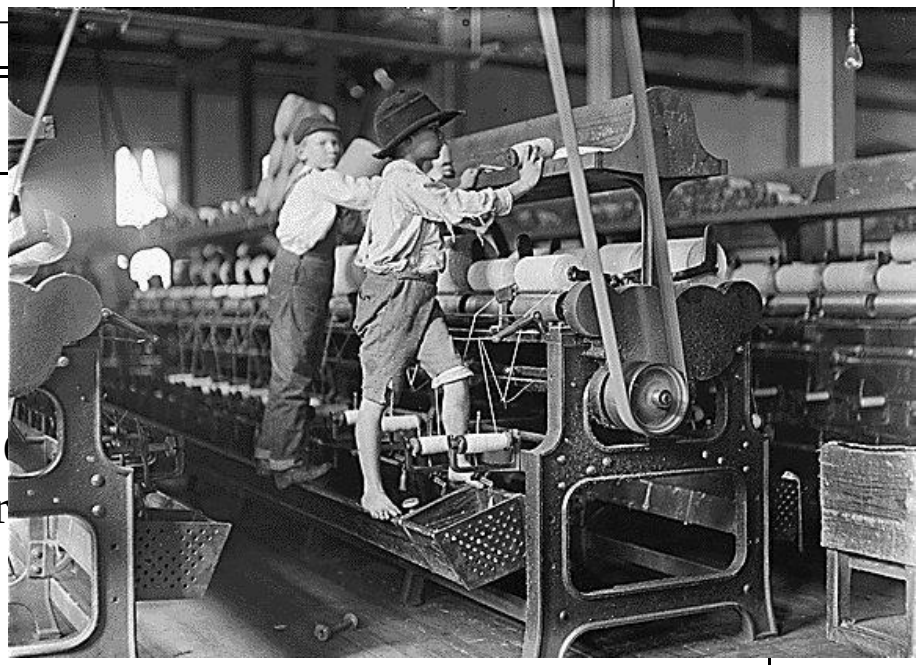
OSALAN
Laneko Segurtasun eta Osasunerako Euskal Erakundea
Instituto Vasco de Seguridad y Salud Laborales

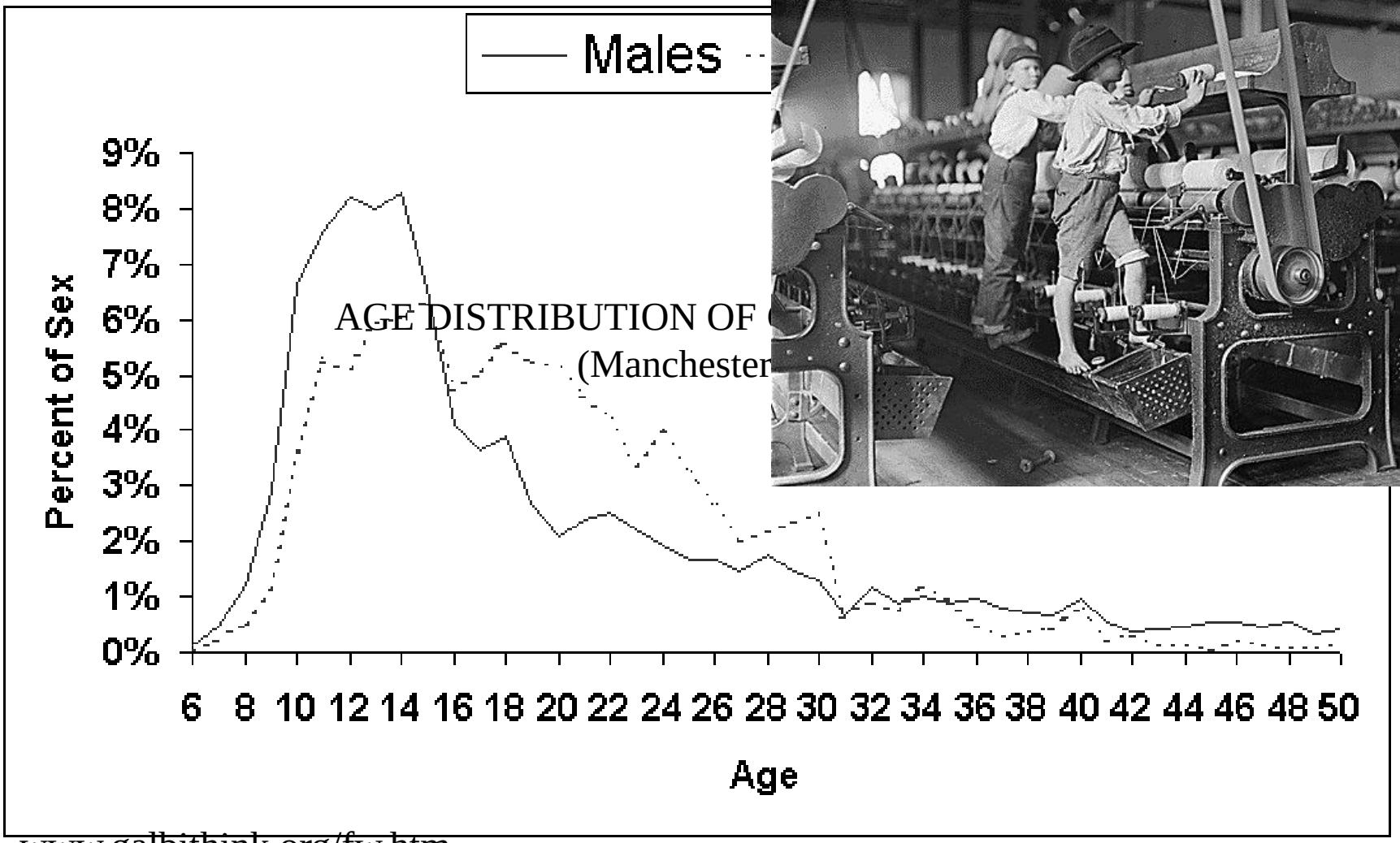
EUSKO JAURLARITZA
GOBIERNO VASCO

upf. Universitat Pompeu Fabra Barcelona

CISAL
Center for Research in Occupational Health

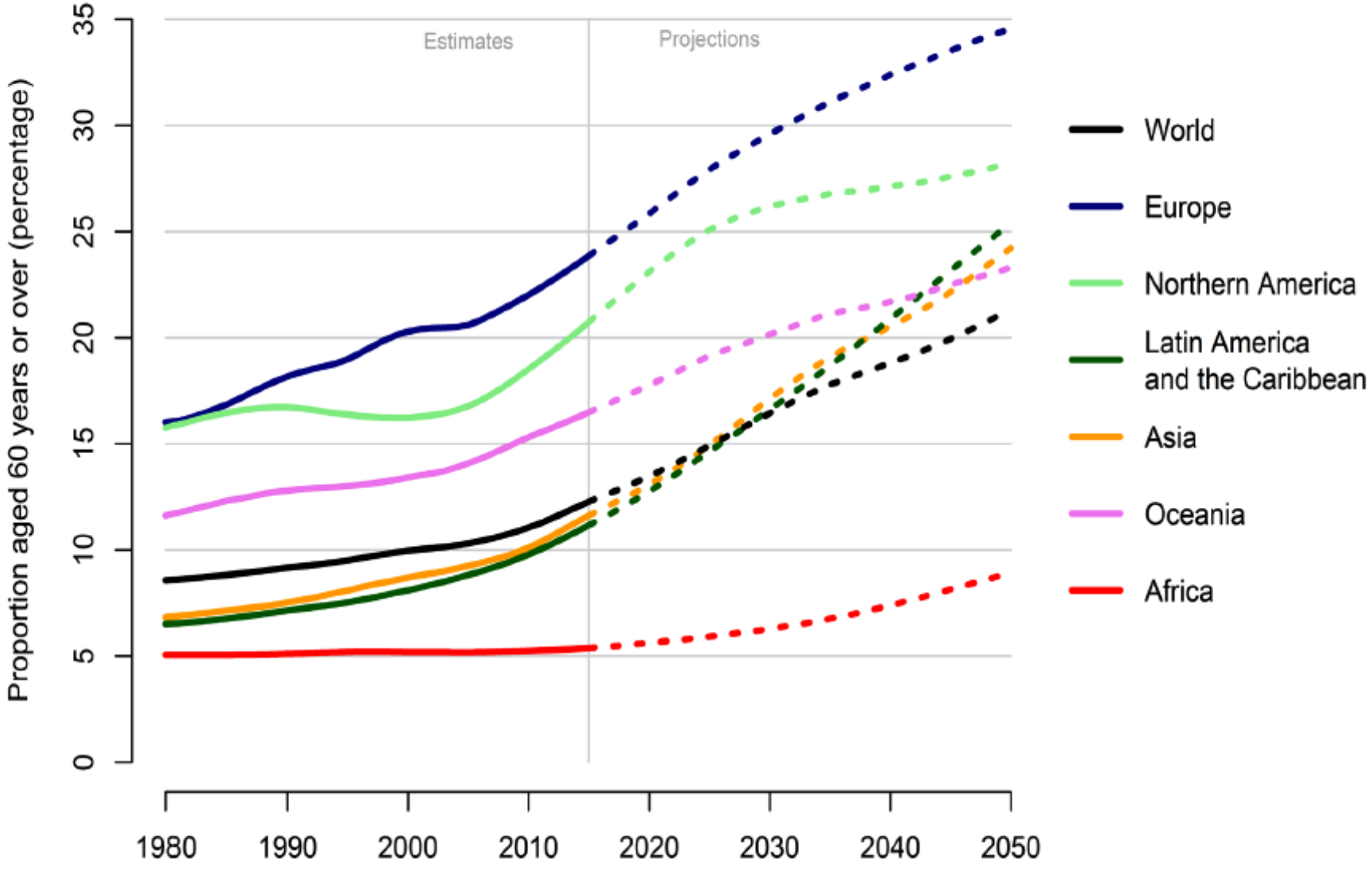
AGE DISTRIBUTION OF COTTON WORKERS
(Manchester, 1818)





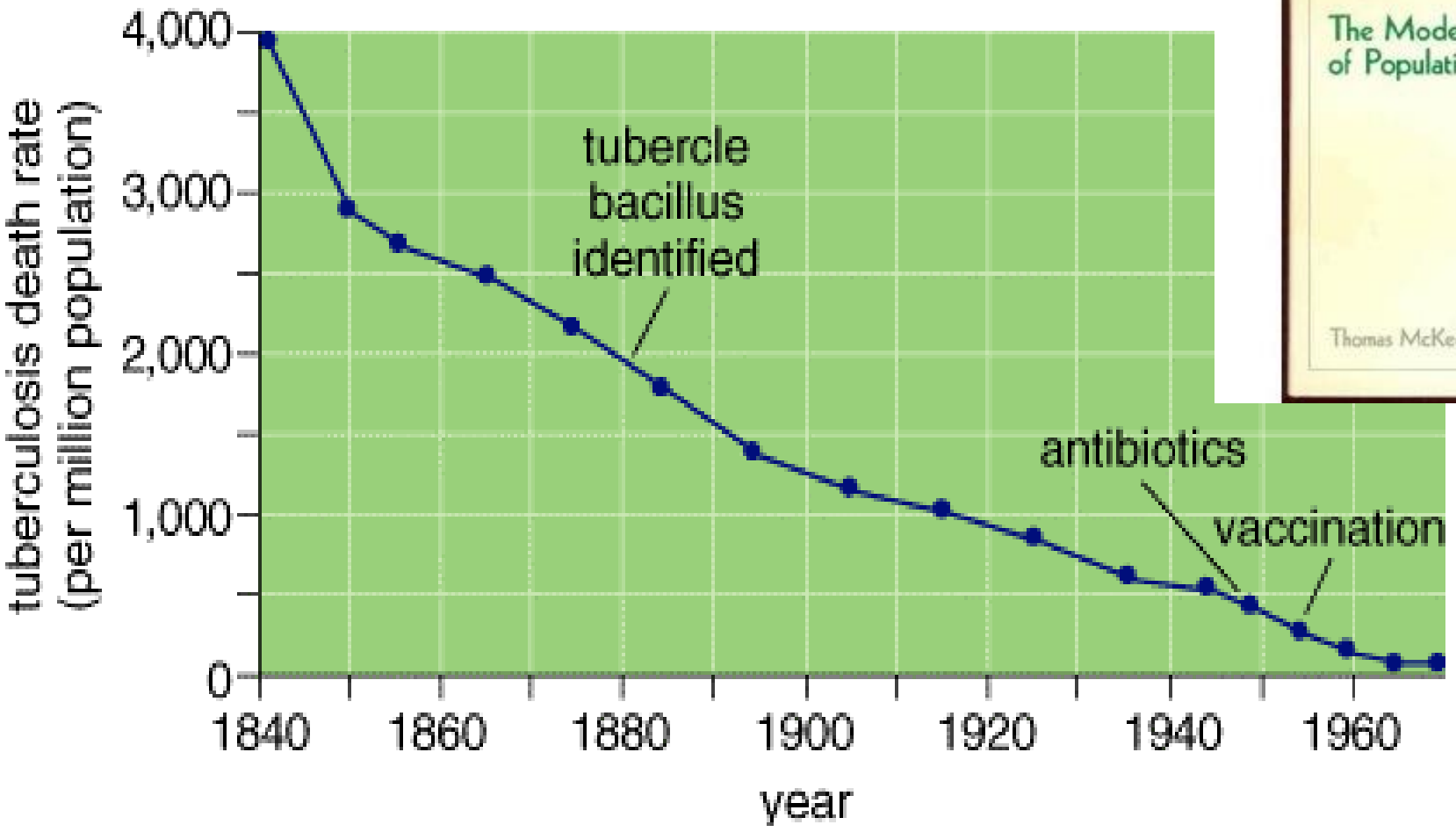

www.galbithink.org/fw.htm

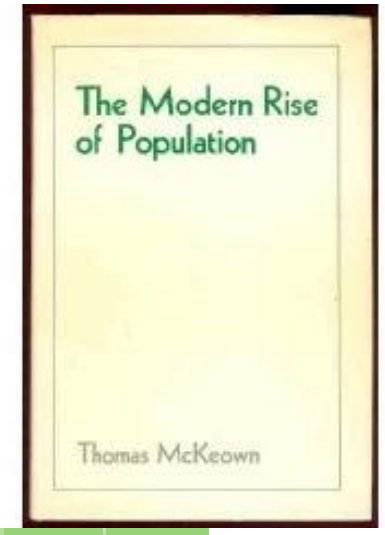
Percentage of population aged 60 years or over by region, from 1980 to 2050.




Data source: United Nations (2017). World Population Prospects: the 2017 Revision.

# Descenso de la mortalidad por Tuberculosis en Inglaterra y Gales, 1840-1970




Thomas McKeown's epidemiological research on the decline of respiratory tuberculosis in England and Wales revealed a stunning fact: Although medicine was credited with defeating the disease, more than 90% of the decline in mortality rates had taken place before antibiotics or a vaccine became available, suggesting that social and economic change had done most of the work (Source: *American Scientist*, Nov-Dec 2001).

Political conditions and life expectancy in Europe, 1900–2008

J.P. Mackenbach / Social Science & Medicine 82 (2013) 134–146

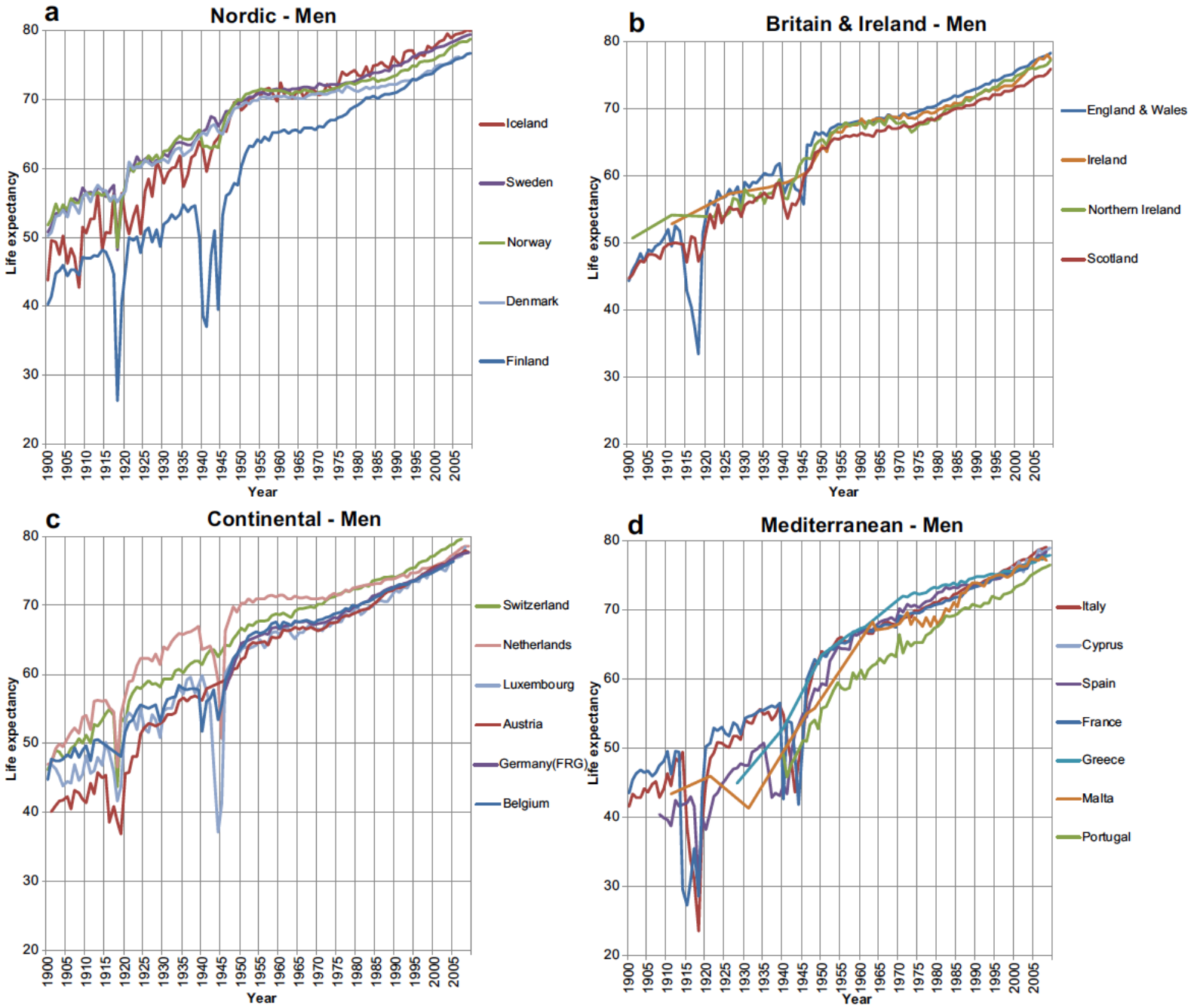



**Fig. 1.** Trends in life expectancy in Europe, men 1900–2008. a. Nordic countries. b. Britain and Ireland. c. Continental countries. d. Mediterranean countries. e. Western Balkans. f. Central and Eastern countries g. (former) Soviet Union. Sources: see text.

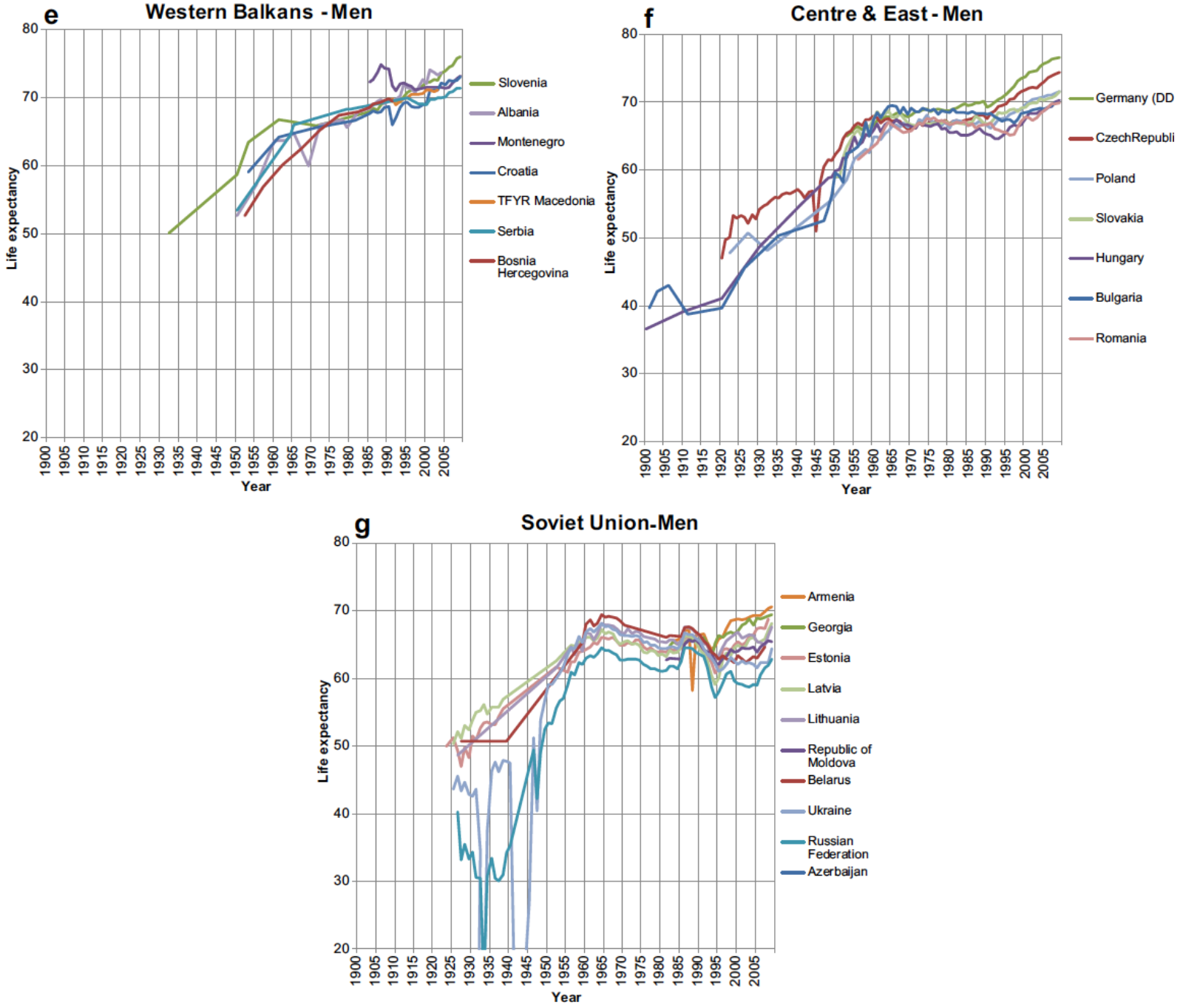
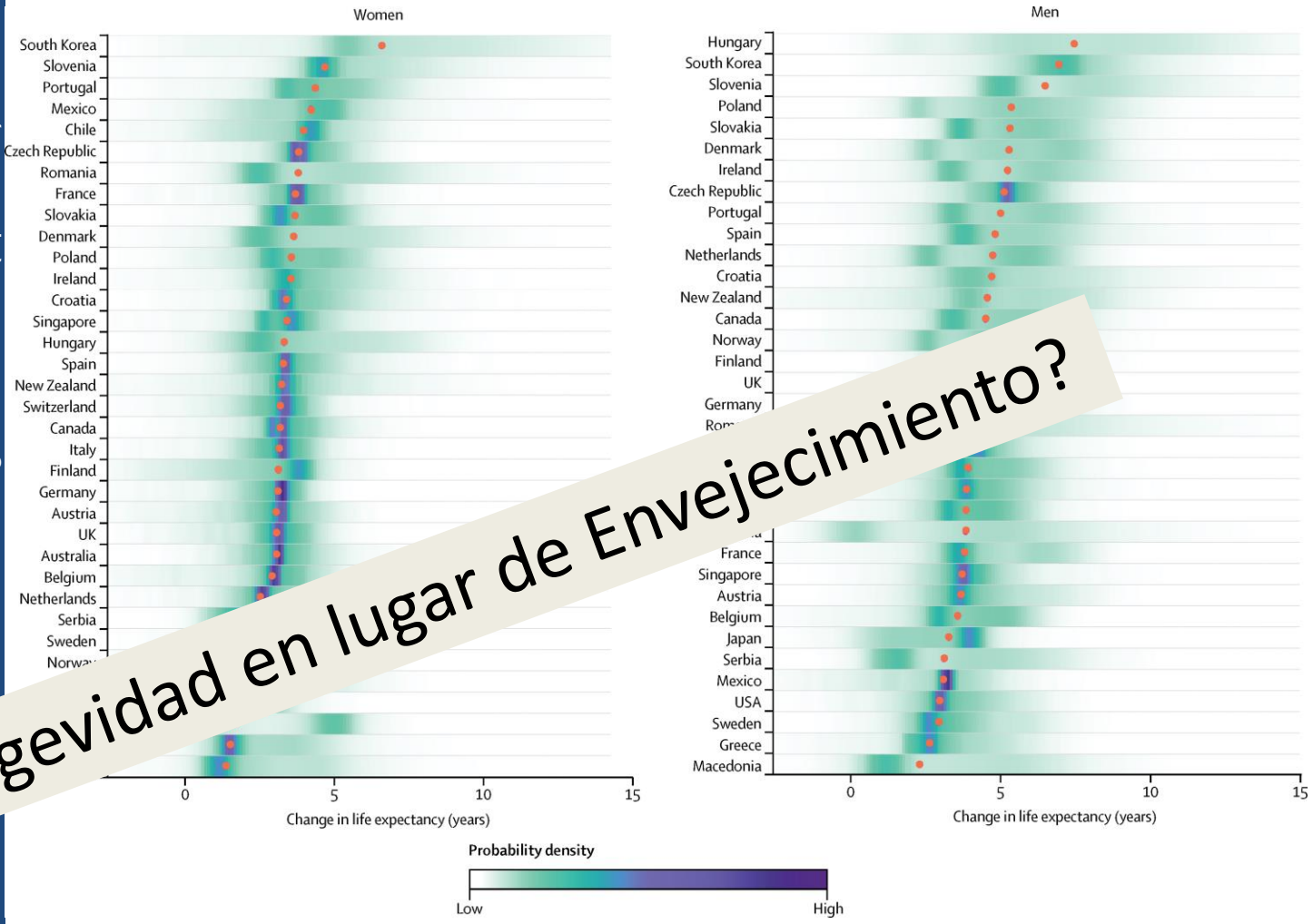



**Fig. 1.** (*continued*).

# Future life expectancy in 35 industrialised countries: projections with a Bayesian model ensemble

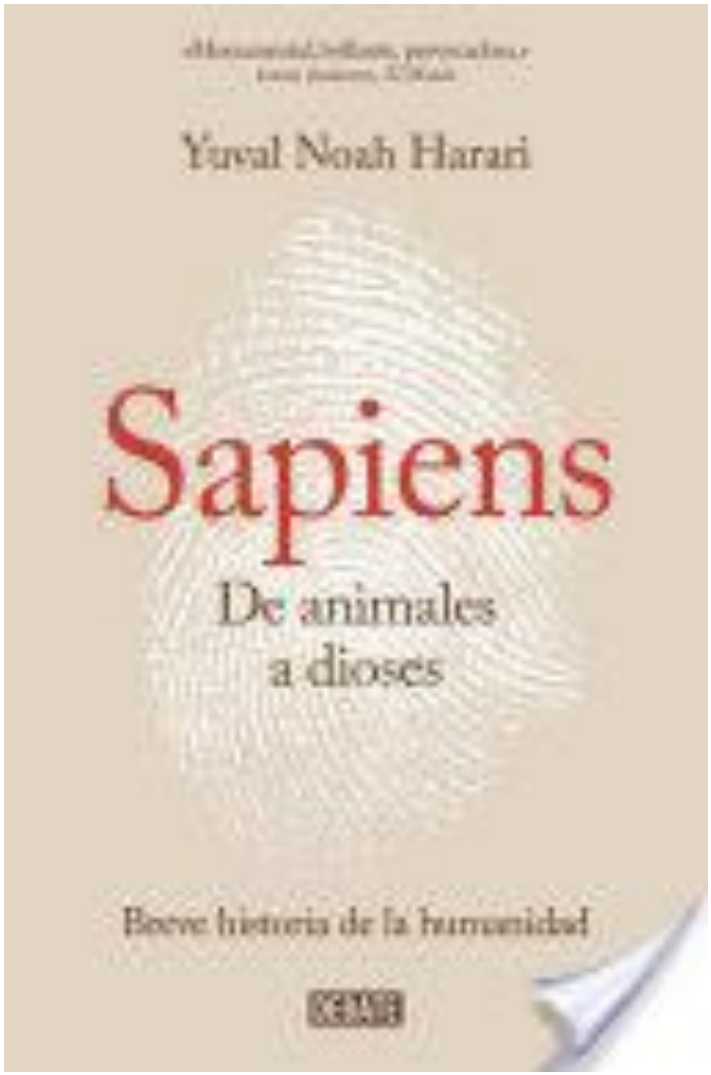
Vasilis Kontis, PhD, James E Bennett, PhD, Colin D Mathers, PhD, Guangquan Li, PhD, [illegible] Foreman, PhD, Prof Majid Ezzati, FMedSci

*The Lancet*
[illegible], Issue 10076, Pages 1323-1335 (April 2017)



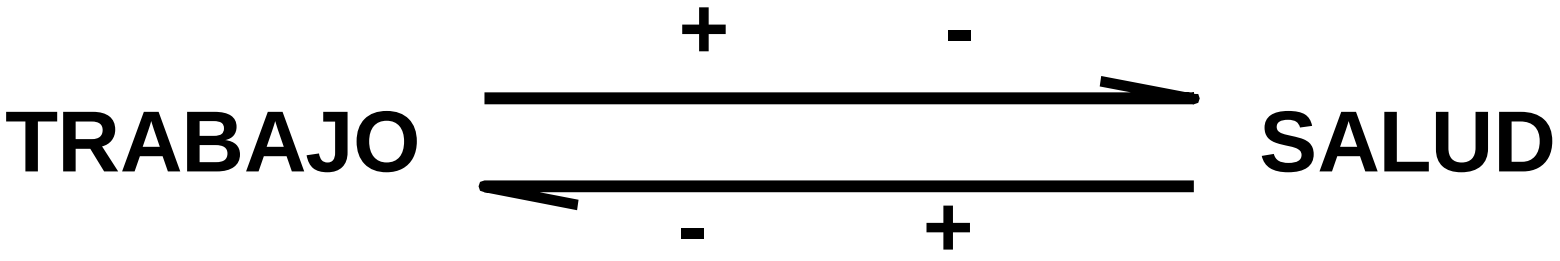

¿Longevidad en lugar de Envejecimiento?

**Interpretation** There is more than a 50% probability that by 2030, national female life expectancy will break the 90 year barrier, a level that was deemed unattainable by some at the turn of the 21st century. Our projections show continued increases in longevity, and the need for careful planning for health and social services and pensions.


Yuval Noah Harari
Sapiens
De animales a dioses
Breve historia de la humanidad


COMISIÓN MUNDIAL
SOBRE EL FUTURO DEL TRABAJO
Trabajar para un futuro más prometedor
Organización Internacional del Trabajo
1919-2019

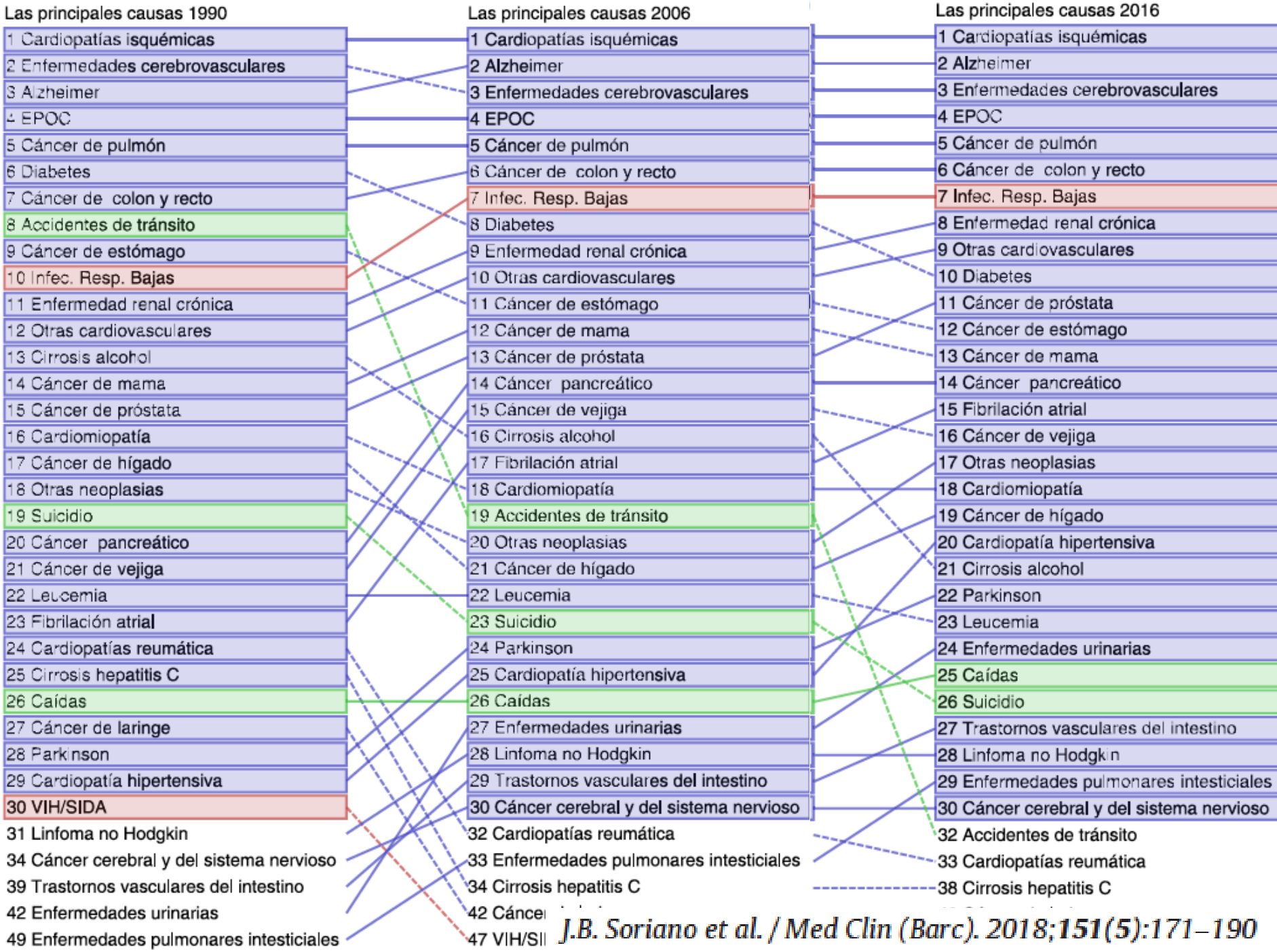
# Una doble mirada sobre la compleja relación entre trabajo y salud




# De lo que sabemos… (más o menos)

- Con la edad se incrementa la prevalencia de enfermedades crónicas
  - Acumula la exposición a riesgos laborales
  - Aumenta la susceptibilidad a lesiones y enfermedades
  - Facilita la manifestación de enfermedades con largo periodo de latencia

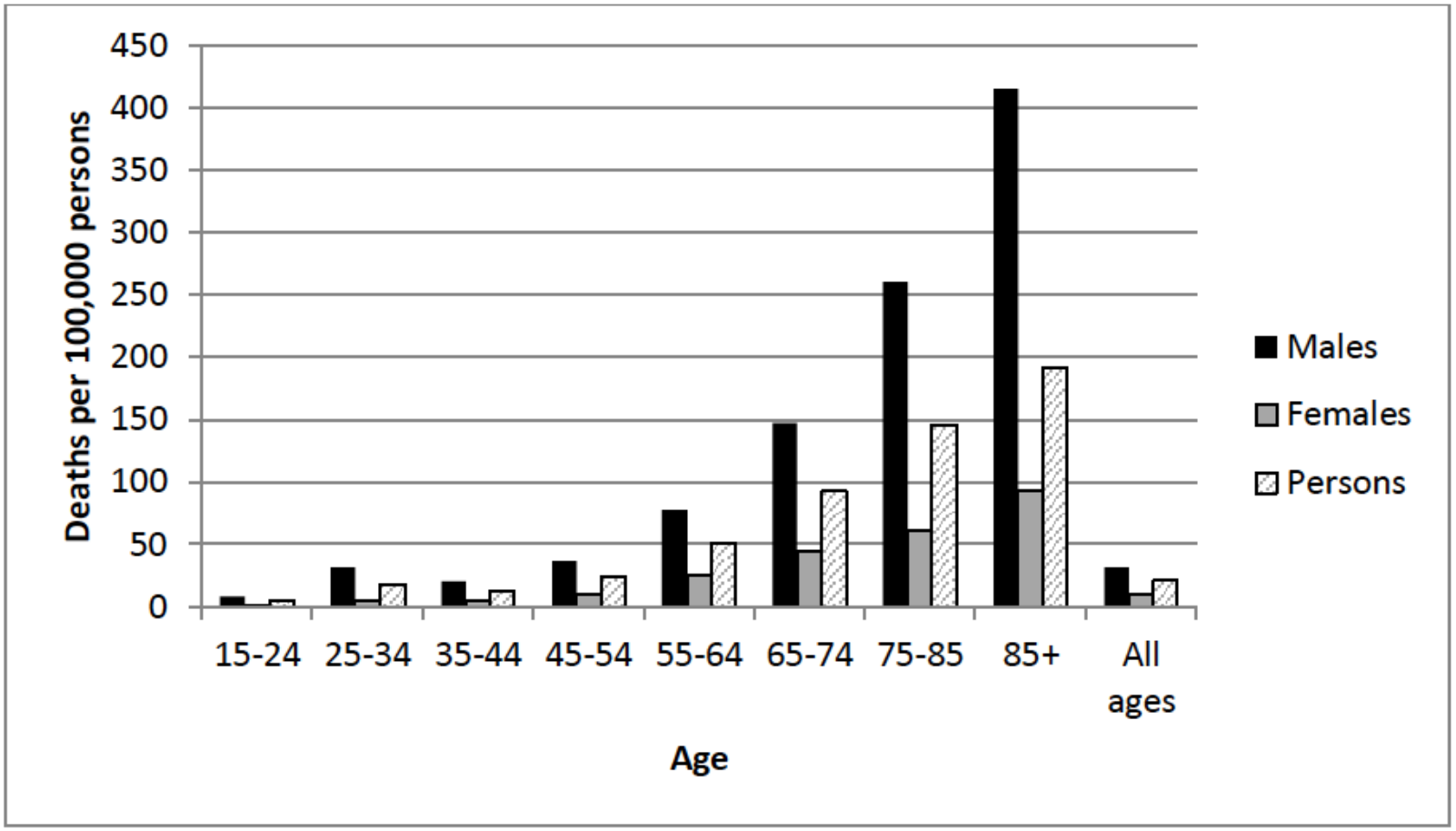
- Con la edad se seleccionan las personas que trabajan entre los sanos, saliendo las que tiene problemas de salud *(sesgo del trabajador sano)*




*J.B. Soriano et al. / Med Clin (Barc). 2018;151(5):171–190*

**Figure 1** **Occupation-attributable deaths and DALYs, by age and sex, 2016 (per 100,000 persons)**

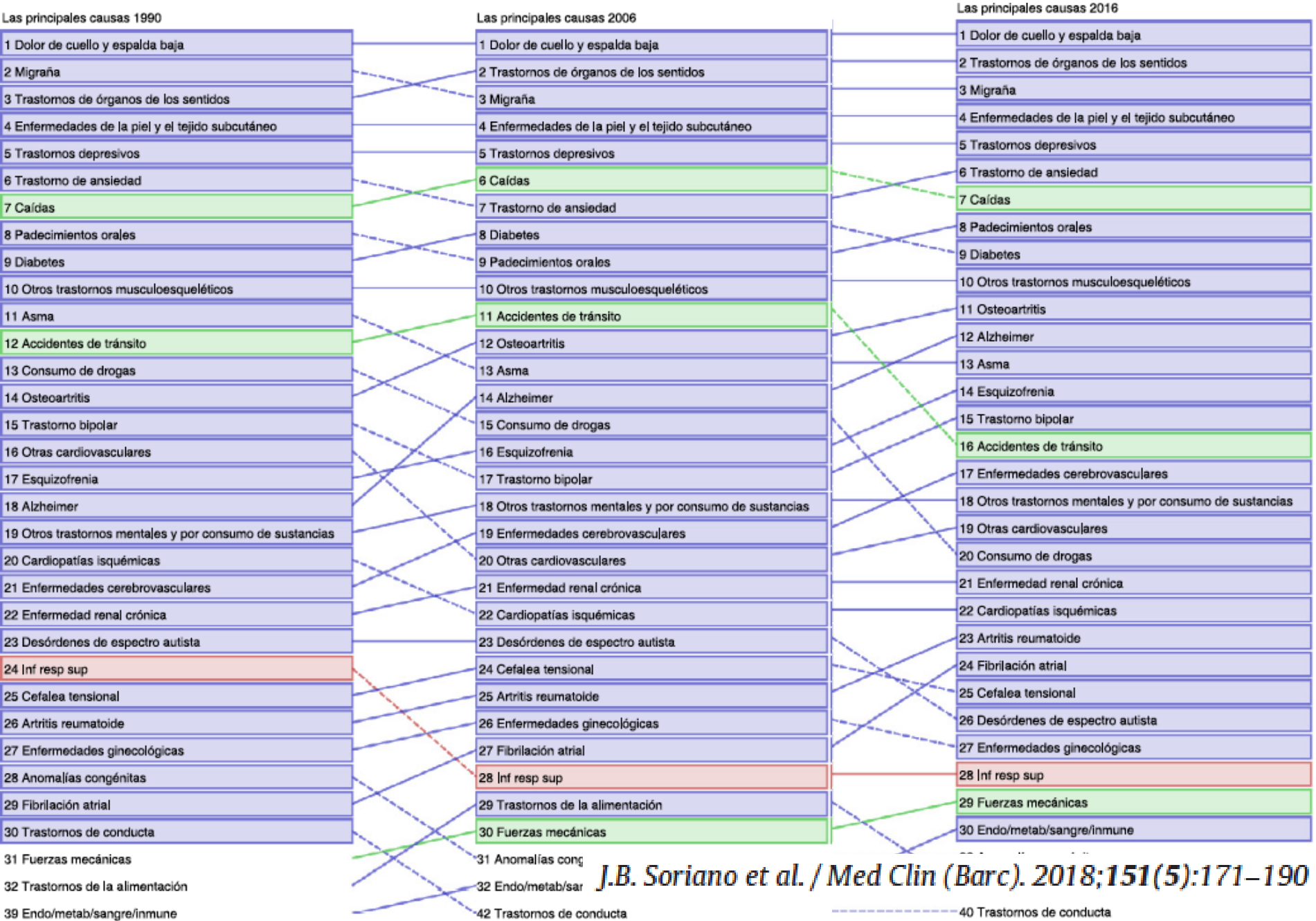
**Figure 1a** **Deaths by age and sex (per 100,000 persons)**




Global and regional burden of disease and injury in 2016 arising from occupational exposures: a systematic analysis for the Global Burden of Disease Study 2016

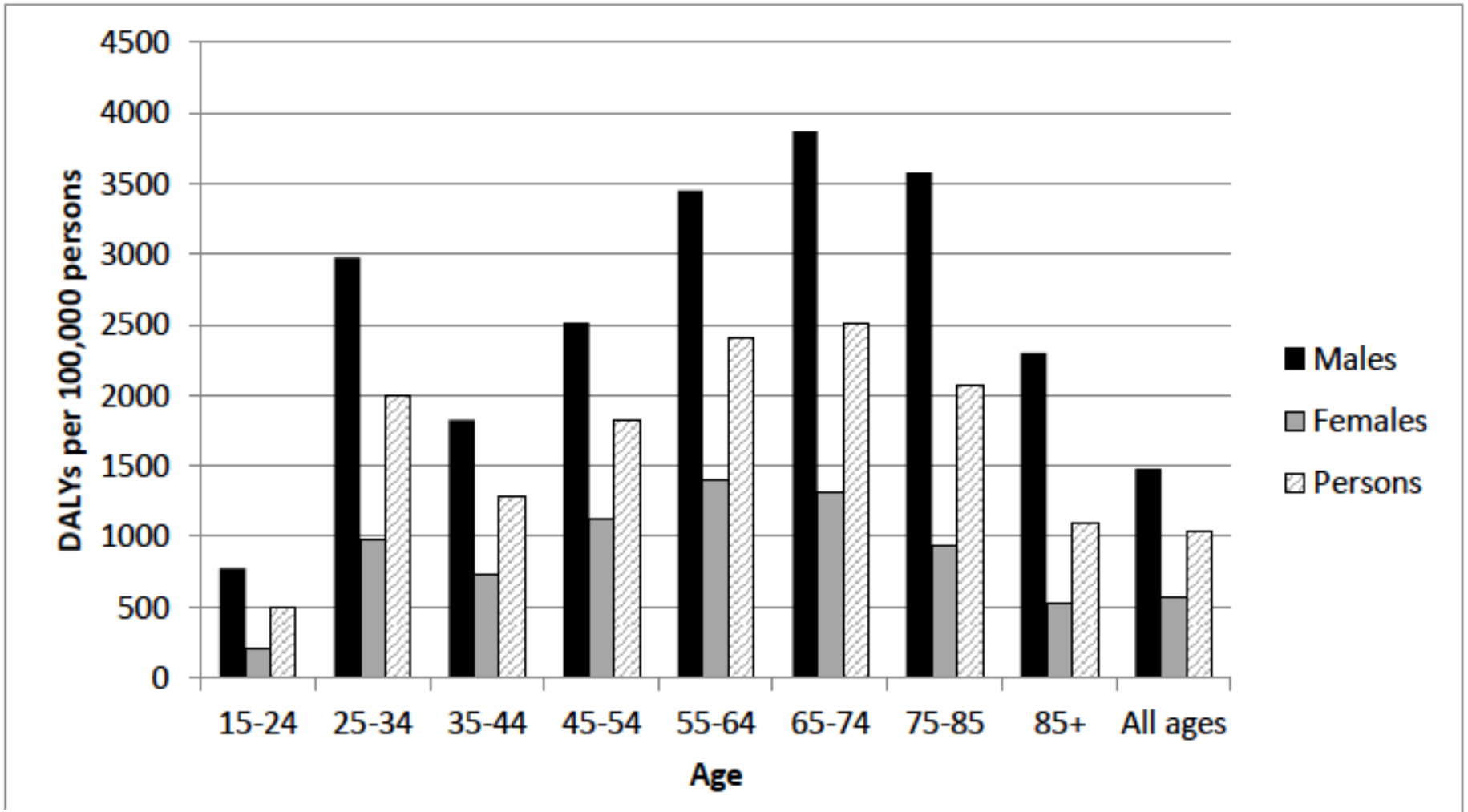
GBD 2016 occupational risk factors collaborators

# Principales causas de tasa de años de vida ajustados por discapacidad



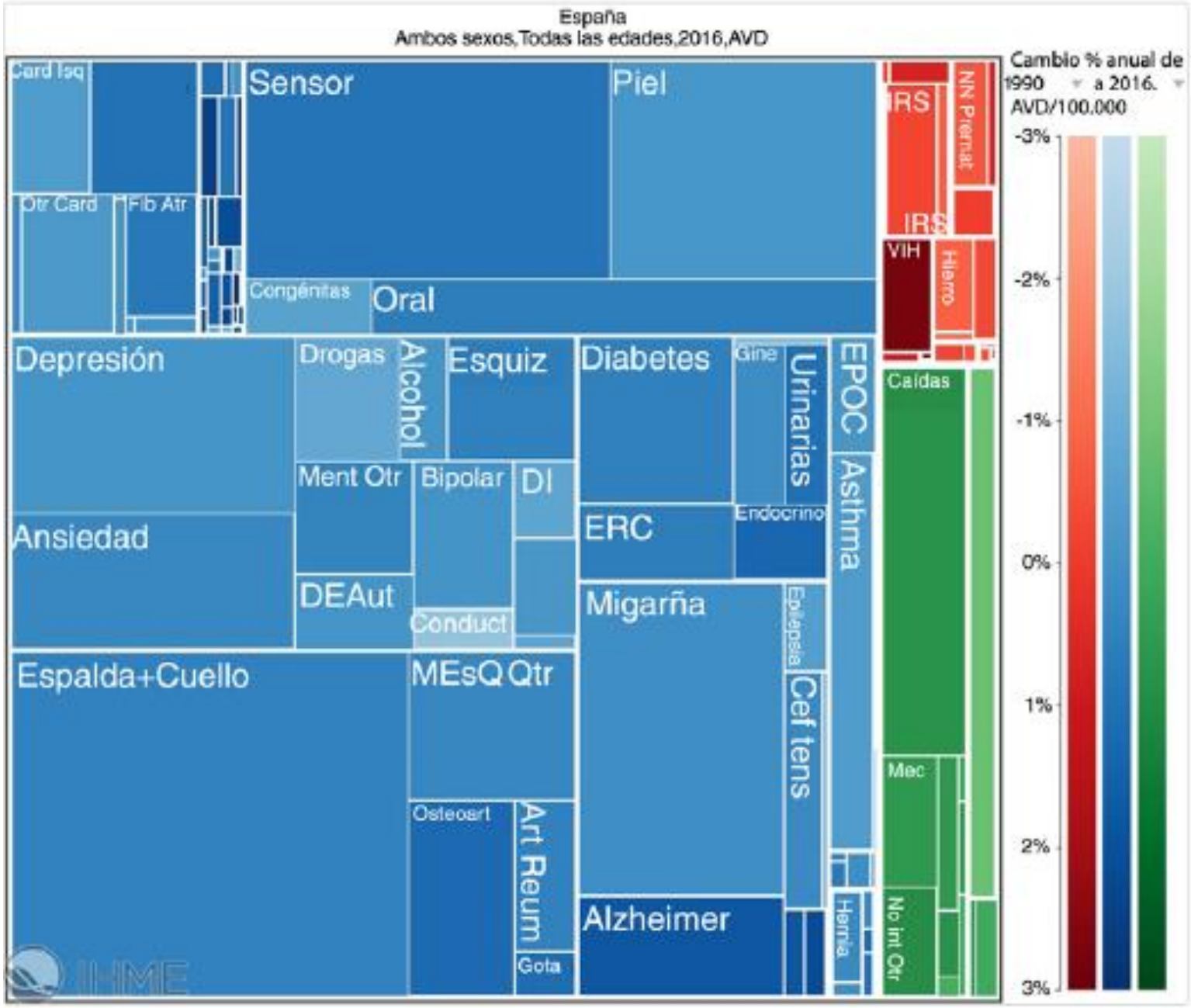

*J.B. Soriano et al. / Med Clin (Barc). 2018;151(5):171–190*

**Figure 1b DALYs by age and sex (per 100,000 persons)**




Global and regional burden of disease and injury in 2016 arising from occupational exposures: a systematic analysis for the Global Burden of Disease Study 2016

GBD 2016 occupational risk factors collaborators




*J.B. Soriano et al. / Med Clin (Barc). 2018;**151(5)**:171–190*

# De lo que no, o apenas, sabemos…

Las personas con problemas de salud crónico tienen más probabilidad de sufrir una incapacidad laboral (temporal y permanente) y salir anticipadamente del mercado de trabajo.

Mi hipótesis es que esto depende, en gran medida (no únicamente), de las condiciones de trabajo y de empleo.

# Unos ejemplos hipotéticos-reales

Juan, de 55 años, mecánico especialista en un taller de reparación de coches, diagnosticado de diabetes desde hace 20 años, fue despedido de su empresa hace dos años, y hace tres meses encontró un empleo en una franquicia de reparaciones rápidas, con jornada rotatoria incluido fines de semanas y un salario menor que el que tenía. Hace una semana sufrió una complicación vascular y la especialista le han recomendado que vaya a su médico de cabecera para la incapacidad temporal….

María, de 48 años, lleva 15 trabajando en una empresa de limpieza que ha sido vendida y comprada varias veces y cada vez las condiciones son más duras, y el salario es el mismo desde hace 10 años, y debido a su artrosis de rodillas su médica de cabecera le ha certificado una incapacidad temporal ….

# Incapacidad laboral

## Clasificación

**Pronóstico**

Temporal

Permanente

- Parcial
- Total
- Absoluta
- Gran invalidez

**Etiología**

Común Laboral

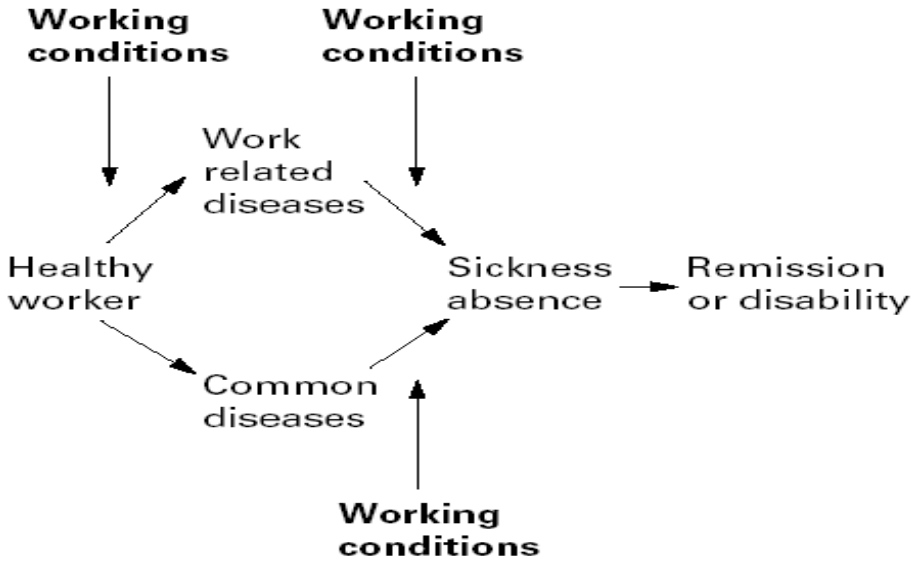
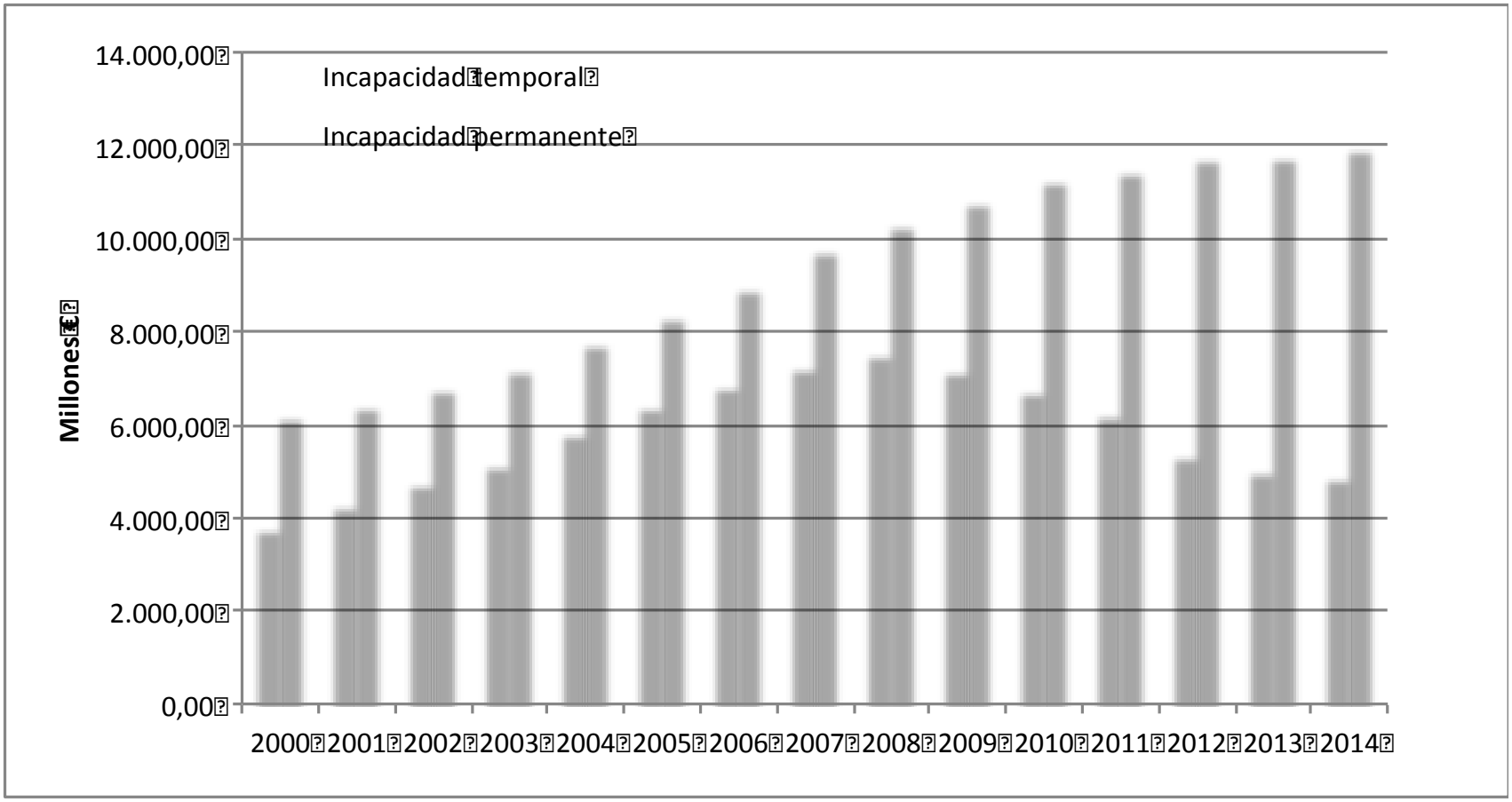



*Figure 1 Simplified theoretical model of natural history of sickness absence.*

*J Epidemiol Community Health* 2001;55:368

FERNANDO G BENAVIDES
JOAN BENACH
*Occupational Health Research Unit, Department of Experimental Sciences and Health, Universitat Pompeu Fabra, Barcelona, Spain*
SALVADOR MONCADA
*Occupational Health Unit, CCOO Trade Union, Barcelona*

Evolución del gasto en prestaciones de la Seguridad Social por incapacidades laborales (en millones de euros). España, 2000-2014.

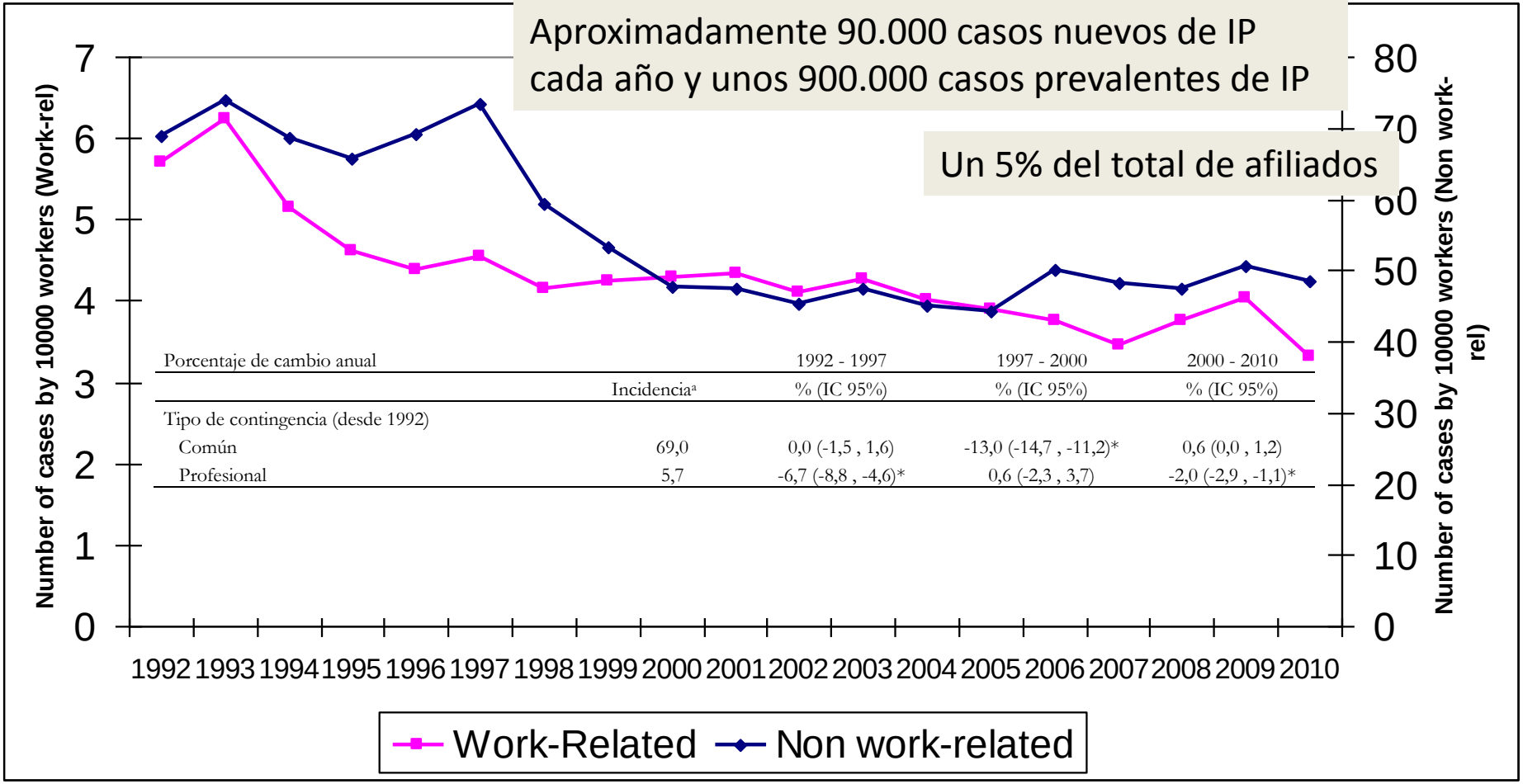


# TENDENCIA TEMPORAL DE LA INCAPACIDAD LABORAL PERMANENTE EN ESPAÑA (1992-2010) (*)

Xavier Duran (1), José Miguel Martínez (1,2) y Fernando G. Benavides (1,2).

Aproximadamente 90.000 casos nuevos de IP cada año y unos 900.000 casos prevalentes de IP

Un 5% del total de afiliados




| Porcentaje de cambio anual | | 1992 - 1997 | 1997 - 2000 | 2000 - 2010 |
|---|---|---|---|---|
| | Incidencia[a] | % (IC 95%) | % (IC 95%) | % (IC 95%) |
| Tipo de contingencia (desde 1992) | | | | |
| Común | 69,0 | 0,0 (-1,5 , 1,6) | -13,0 (-14,7 , -11,2)* | 0,6 (0,0 , 1,2) |
| Profesional | 5,7 | -6,7 (-8,8 , -4,6)* | 0,6 (-2,3 , 3,7) | -2,0 (-2,9 , -1,1)* |

Rev Esp Salud Pública 2012; 86: 533-542.

# Occupational Diseases Compensated in the Basque Country (Spain) From 1990 to 2008

**Montserrat García Gómez, MD, PhD,[1]* Félix Urbaneja Arrúe, MD,[2] Steven Markowitz, MD,[3] Rosario Castañeda López, MD,[1] and Patricia López Menduiña, MD[1]**

**TABLE II.** Annual Incidence Rates Per 100,000 Workers of Occupational Diseases by Cause, Gender, Age, and Sick Leave Status, Basque Country, 1990–2008

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Incidence (per 100,000) | 47.5 | 55.8 | 54.8 | 62.7 | 83.4 | 98.0 | 126.4 | 149.3 | 177.5 | 229.1 | 253.3 | 290.5 | 341.1 | 341.8 | 303.1 | 339.2 | 330.9 | 254.4 | 277.5 |
| Age (years) | | | | | | | | | | | | | | | | | | | |
| 16–19 | 44.9 | 0.0 | 10.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 377.4 | 409.2 | 382.7 | 587.0 | 475.1 | 347.2 | 270.8 | 285.7 | 118.4 | 81.1 |
| 20–24 | 24.9 | 45.3 | 20.7 | 42.0 | 39.8 | 40.5 | 40.1 | 23.6 | 0.0 | 258.5 | 280.1 | 288.5 | 425.3 | 454.4 | 314.0 | 311.7 | 255.0 | 171.0 | 137.1 |
| 25–54 | 49.2 | 51.2 | 57.5 | 61.5 | 89.3 | 101.2 | 130.5 | 156.3 | 188.5 | 213.1 | 240.3 | 278.1 | 327.5 | 322.6 | 299.9 | 335.4 | 324.0 | 244.7 | 265.3 |
| 55 and over | 53.8 | 107.2 | 67.3 | 91.3 | 78.6 | 126.5 | 167.1 | 208.3 | 248.7 | 326.4 | 332.2 | 393.0 | 367.5 | 408.2 | 319.2 | 386.6 | 419.5 | 345.2 | 432.2 |

Description of potential years of working life lost due to non-work related permanent disability. Description by demographic and occupational characteristics

| | Cases | Years | PD age* | $P_{25}$ | $P_{50}$ | $P_{75}$ |
|---|---|---|---|---|---|---|
| Gender | | | | | | |
| Men | 7,775 | 88,028.38 | 53.46 | 3.77 | 8.80 | 16.69 |
| Women | 4,037 | 52,445.37 | 51.05 | 5.07 | 11.29 | 19.46 |
| Occupation | | | | | | |
| Skilled non-manual | 1,006 | 10,503.74 | 55.26 | 3.84 | 8.55 | 15.34 |
| Skilled manual | 5,411 | 60,420.83 | 53.30 | 3.96 | 8.96 | 16.34 |
| Unskilled non-manual | 2,950 | 37,411.02 | 51.36 | 4.54 | 10.59 | 19.38 |
| Unskilled manual | 2,445 | 32,138.16 | 51.15 | 4.33 | 10.43 | 20.29 |
| Number of contracts | | | | | | |
| 1 | 6,865 | 73,348.37 | 54.08 | 3.85 | 8.66 | 15.56 |
| 2 | 2,014 | 24,849.06 | 51.70 | 4.24 | 9.88 | 18.67 |
| 3 or more | 2,933 | 42,276.33 | 49.10 | 4.86 | 12.45 | 22.31 |
| Activity (first digits of NACE) | | | | | | |
| Agriculture, fisheries and extractive industries | 91 | 1,040.68 | 53.03 | 2.81 | 8.34 | 18.31 |
| Manufacturing | 2,424 | 26,934.07 | 53.86 | 4.57 | 8.88 | 15.68 |
| Production and distribution of energy | 157 | 1,944.47 | 51.43 | 4.13 | 11.00 | 18.47 |
| Building | 2,138 | 24,839.24 | 52.97 | 3.35 | 8.82 | 17.60 |
| Commerce | 1,488 | 19,976.63 | 50.52 | 4.44 | 10.44 | 21.26 |
| Catering trade, transport and telecommunications | 1,458 | 17,266.36 | 51.85 | 3.89 | 9.67 | 18.25 |
| Financial intermediation | 162 | 2,066.64 | 52.93 | 8.07 | 11.66 | 16.13 |
| Real estate activities | 1,311 | 16,670.72 | 51.21 | 4.25 | 10.92 | 19.62 |
| Public administration | 918 | 9,663.08 | 54.37 | 3.45 | 8.33 | 15.91 |
| Education, health activities, community service and activities at home | 1,665 | 20,071.87 | 52.65 | 4.75 | 10.03 | 17.88 |
| Total | 11,812 | 140,473.75 | 52.63 | 4.14 | 9.55 | 17.75 |

*Median age at the beginning of permanent disability (PD); $P_{25}$: percentile 25; $P_{50}$: median; $P_{75}$: percentile 75. NACE: Statistical Classification of economic activities in the European Communities.

Table 2

Difference in median numberof potential years of working life lost due to non-work related permanent disability. Spain, from 2004 to 2009

| | MDc (CI 95%) | MDa (CI 95%) |
|---|---|---|
| Gender | | |
| Man | 0 | 0 |
| Woman | 2.49 (2.01, 2.97) | 2.22 (1.76, 2.67) |
| Occupation | | |
| Skilled non-manual | 0 | 0 |
| Skilled manual | 0.41 (−0.33, 1.15) | 0.65 (−0.11, 1.42) |
| Unskilled non-manual | 2.04 (1.26, 2.83) | 1.6 (0.84, 2.37) |
| Unskilled manual | 1.88 (1.08, 2.69) | 1.06 (0.24, 1.88) |
| Number of contracts | | |
| 1 | 0 | 0 |
| 2 | 1.22 (0.64, 1.8) | 1.34 (0.81, 1.87) |
| 3 or more | 3.78 (3.28, 4.29) | 4.22 (3.74, 4.7) |

MD: Median difference: c: Crude; a: adjusted; CI 95%: Confidence interval at 95%.

# Labor market situation after an episode of sickness absence due to malignant neoplasia. Evidence from a Spanish cohort

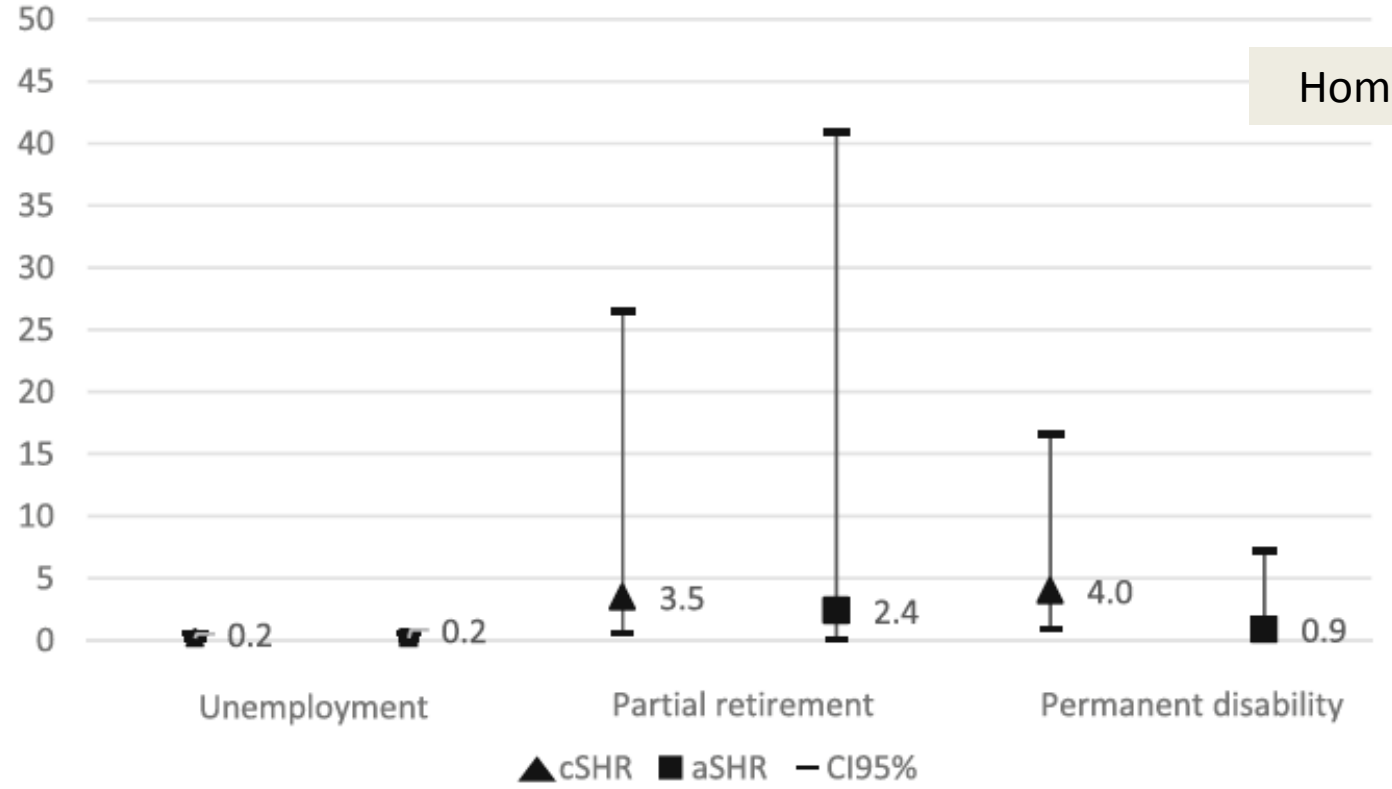



**Fig. 2** Risk to exit the labor market in the year following a sickness absence episode due to malignant neoplasm among men. Reference category: other non-malignant pathologies (i.e.; cardiovascular diseases, musculoskeletal and mental disorders, and injuries); cSHR: crude Sub-Hazard Ratio; aSHR: adjusted Sub-Hazard Ratio for age (unemployment and permanent disability), type of contract, occupation category, economic activity, annual median salary and duration of the sickness absence episode

Lear-Claveras *et al. BMC Public Health* (2019)

# Labor market situation after an episode of sickness absence due to malignant neoplasia. Evidence from a Spanish cohort

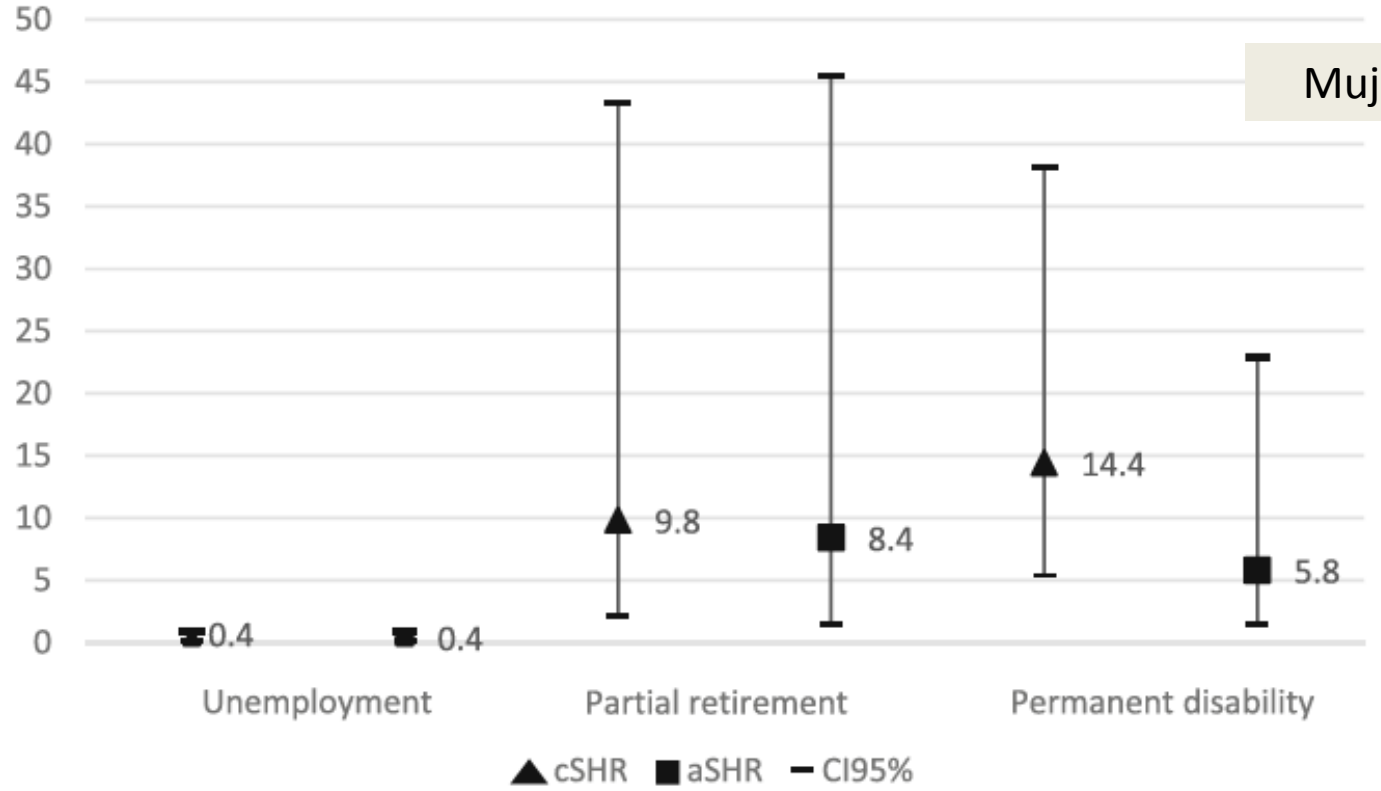
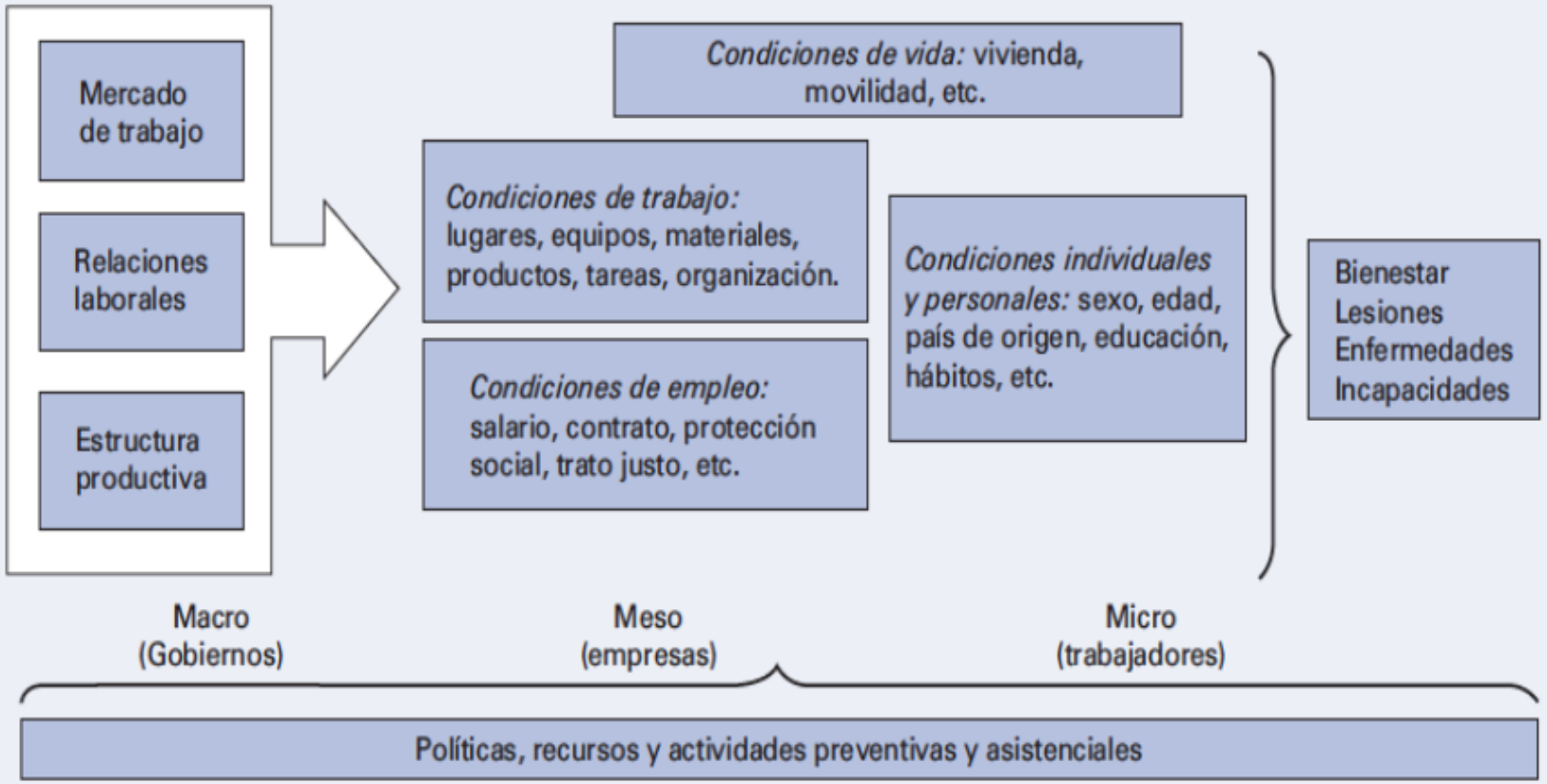



**Fig. 1** Risk to exit the labor market in the year following a sickness absence episode due to malignant neoplasm among women. Reference category: other non-malignant pathologies (i.e.; cardiovascular diseases, musculoskeletal and mental disorders, and injuries); cSHR: crude Sub-Hazard Ratio; aSHR: adjusted Sub-Hazard Ratio for age (unemployment and permanent disability), type of contract, occupation category, economic activity, annual median salary and duration of the sickness absence episode

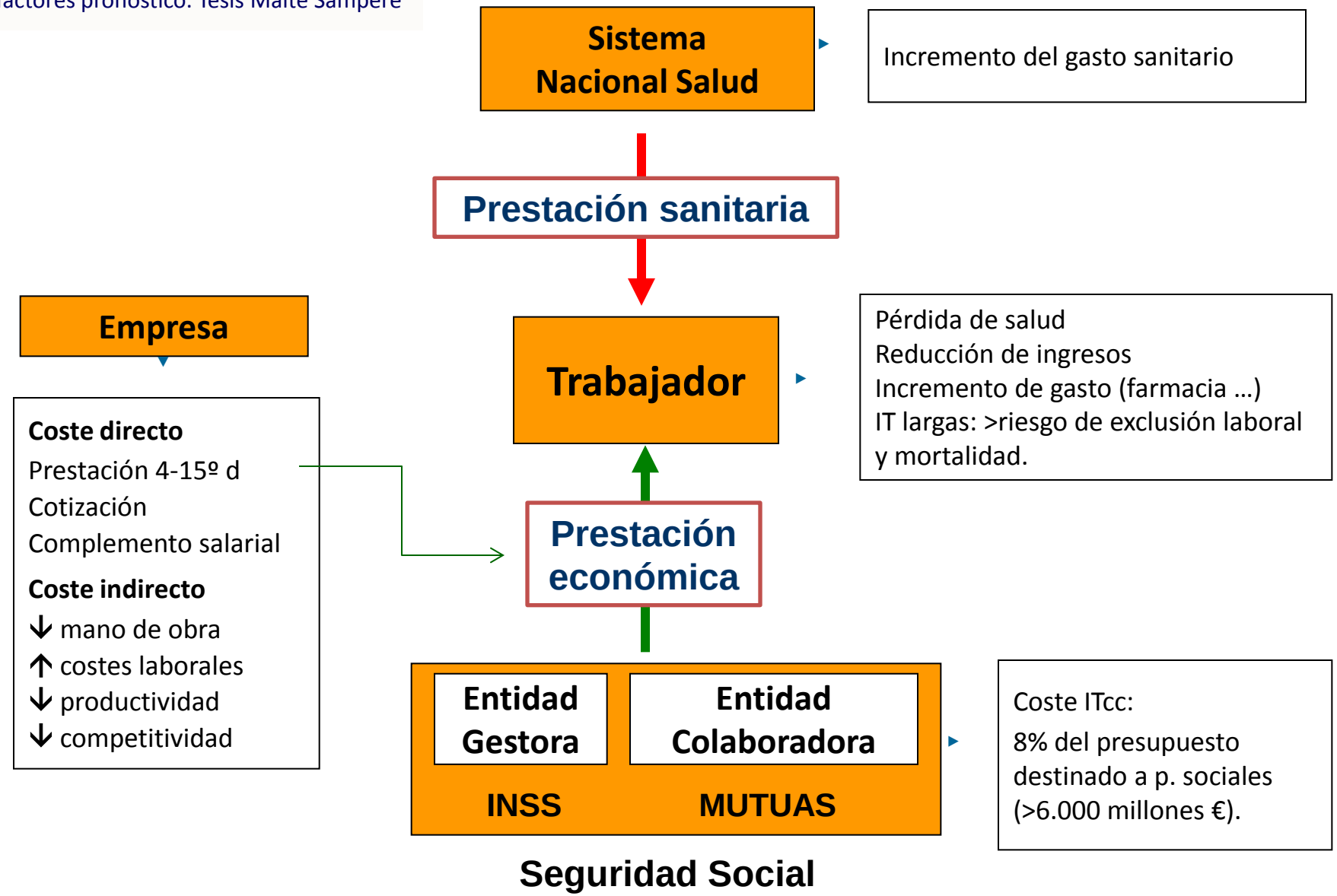
Lear-Claveras *et al. BMC Public Health* (2019)

# Modelo causal en salud laboral

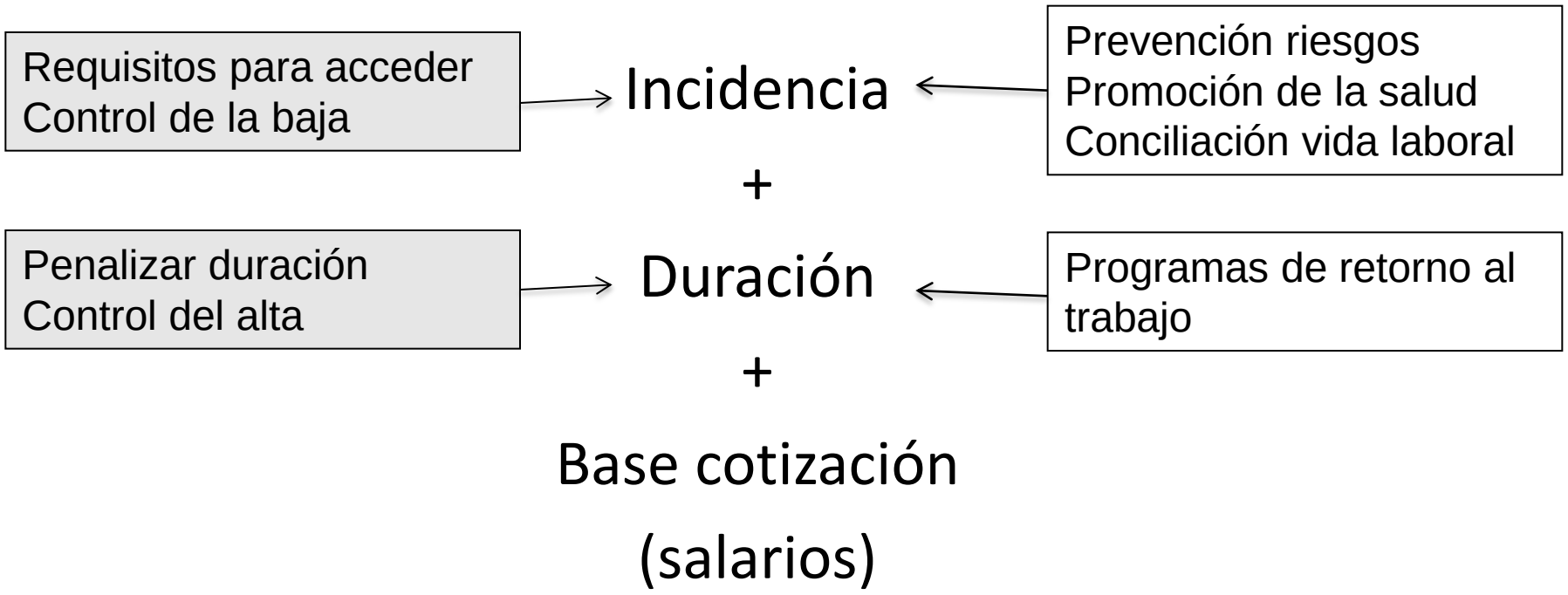



Benavides FG, García AM, Ruiz Frutos-Carlos. Capítulo 1. La salud y sus determinantes. En: Salud Laboral: conceptos y técnicas para la prevención de riesgos laborales, 4ª edición. Barcelona: Elsevier, Masson 2014: 3-15.

Reincorporación al trabajo después de un episodio de incapacidad temporal por contingencia común de larga duración. Análisis de los factores pronóstico. Tesis Maite Sampere

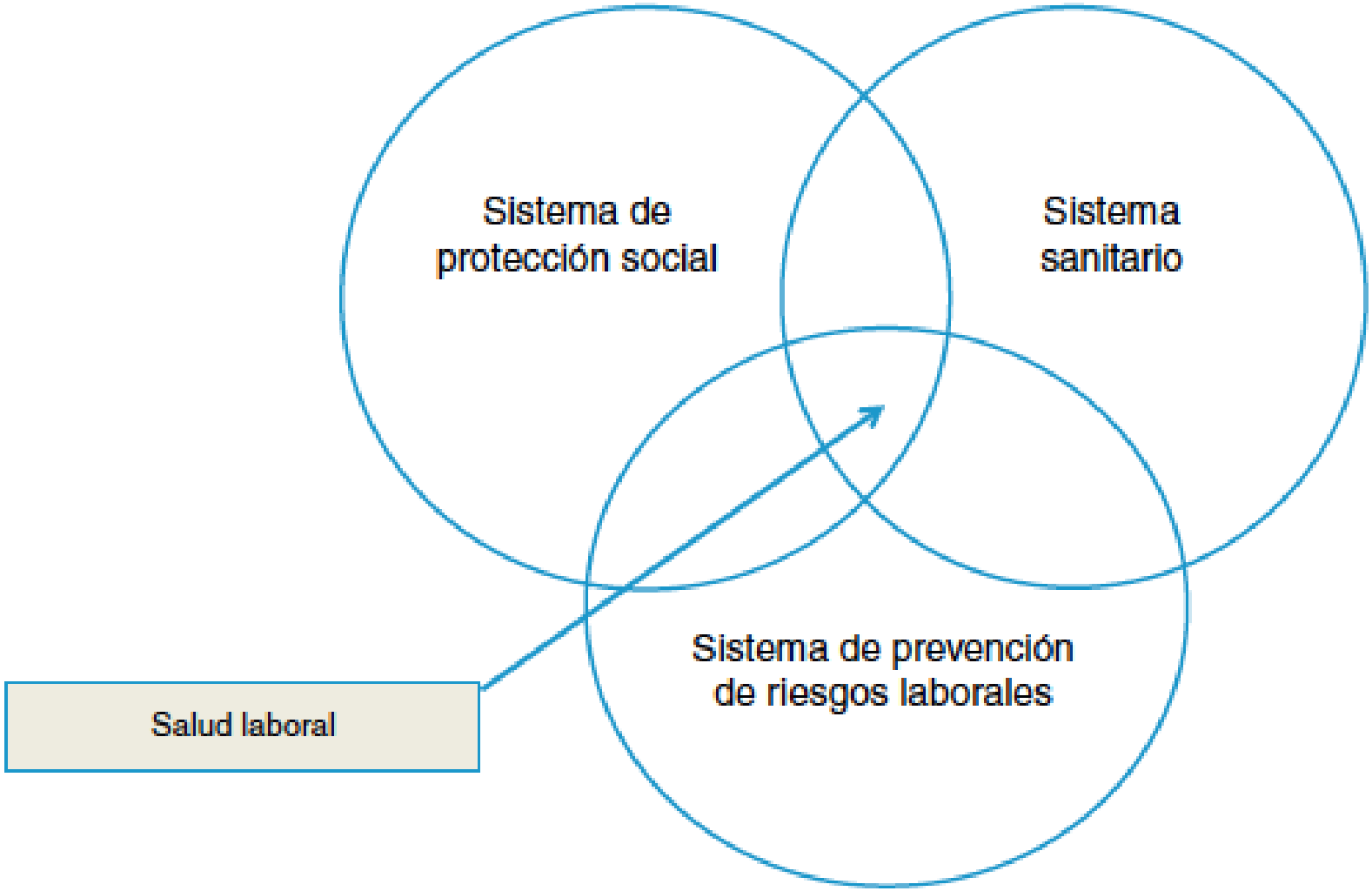


# Gestión de la Incapacidad laboral




LO QUE SE HACE

LO QUE ESTÁ POR HACER


Sistema de protección social
Sistema sanitario
Sistema de prevención de riesgos laborales
Salud laboral

Apostar por una longevidad laboral saludable es una condición necesaria para las sostenibilidad del sistema productivo y de los sistemas de protección social, para ello no basta con el incre[illegible]e la edad de jubilació[illegible]

Eskerrik asko!

El Roto, El País

upf. Universitat Pompeu Fabra Barcelona

CISAL