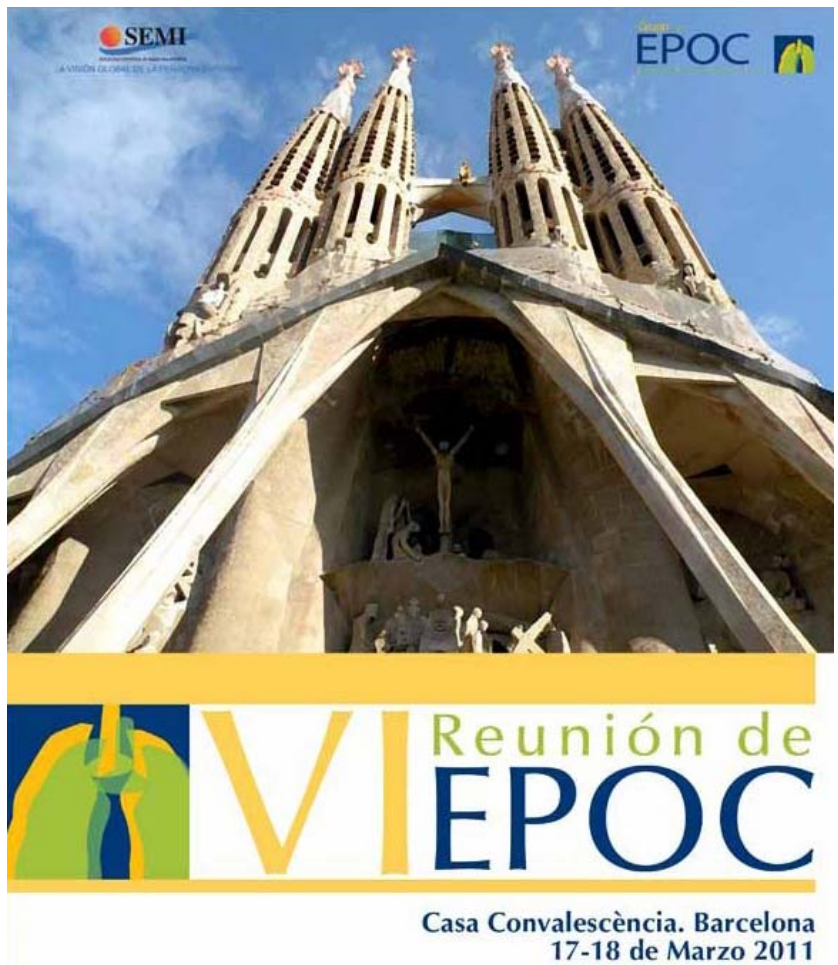
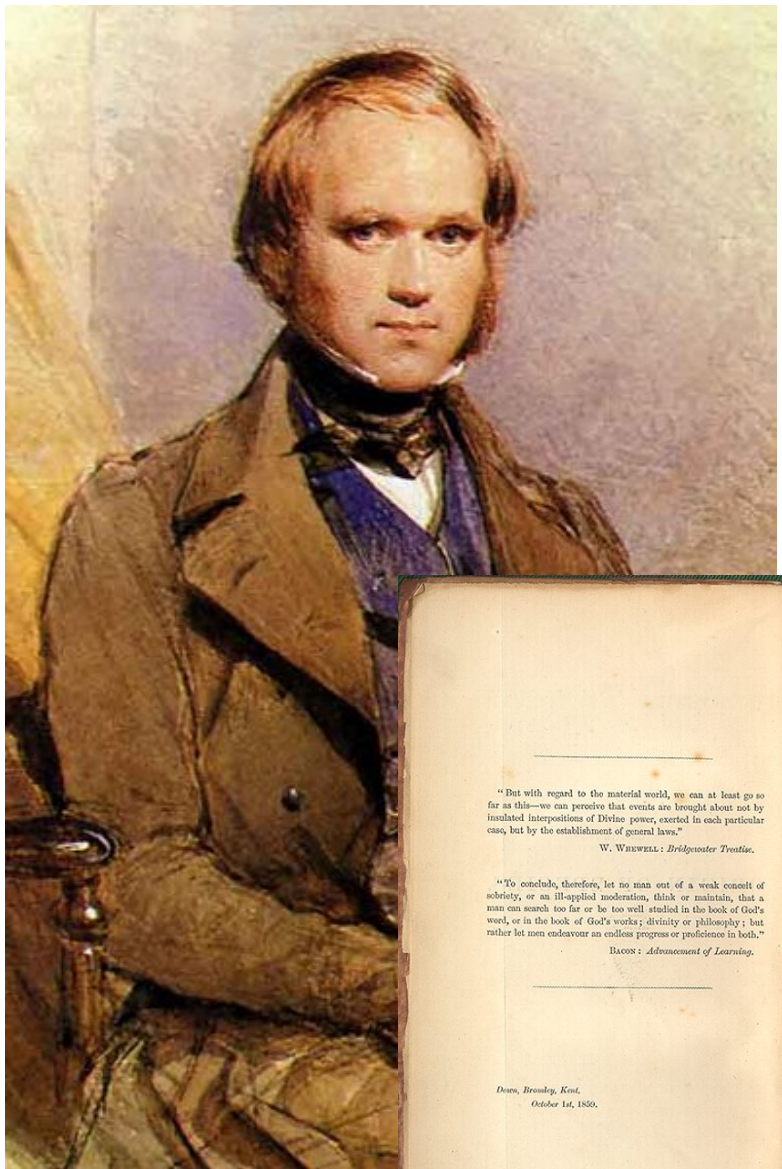
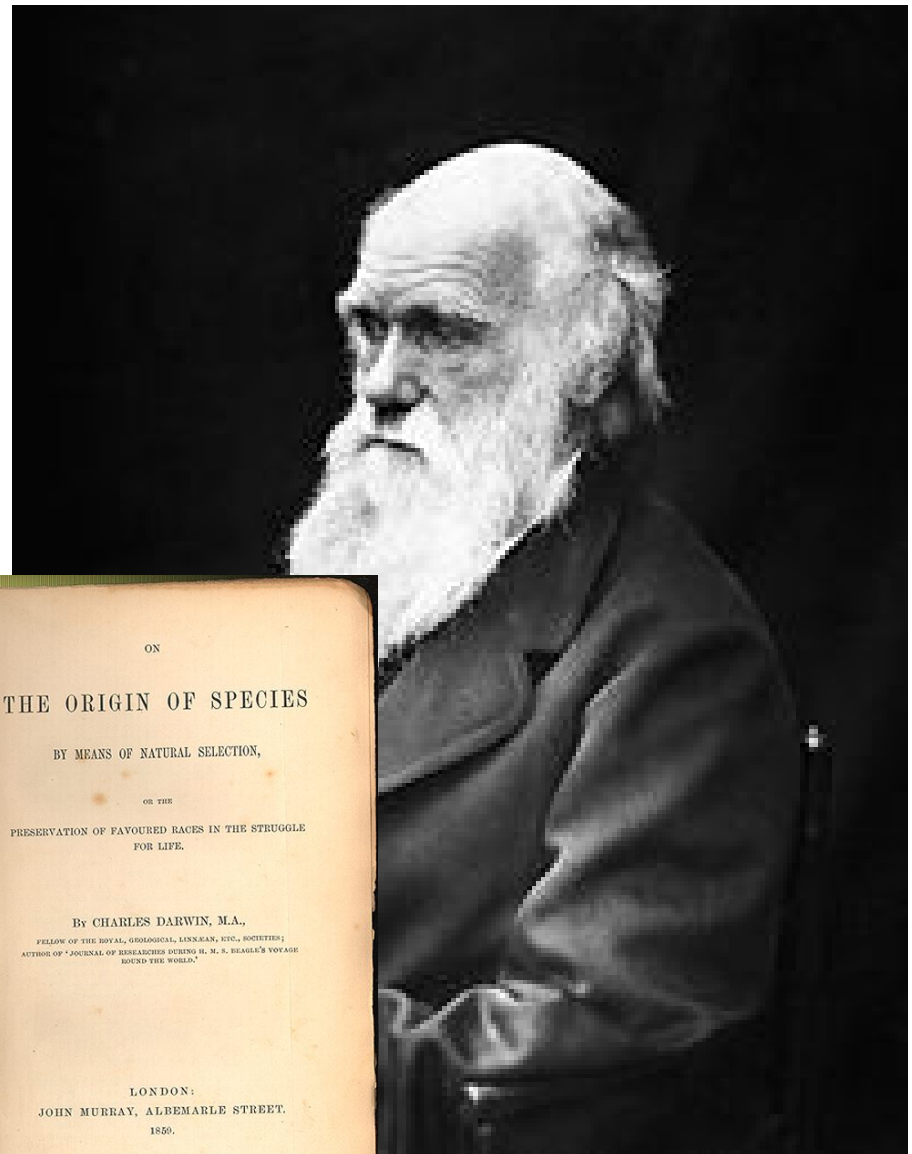
¿Ha cambiado la EPOC en los últimos años?

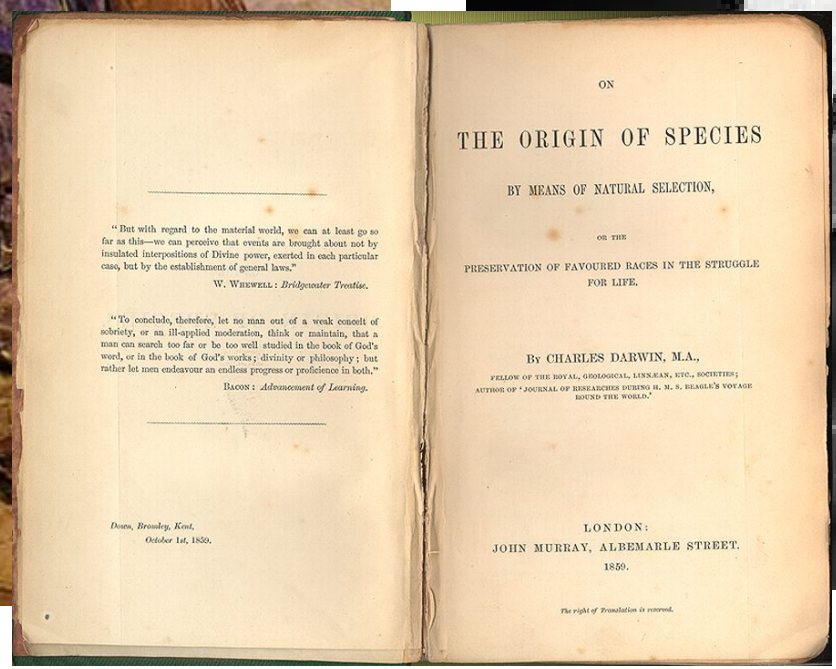
Joan B Soriano
Director, Programa de Epidemiología e Investigación Clínica
Fundación Caubet-CIMERA
Bunyola, Illes Balears



Viernes 18 de marzo 2011
10:00-11:00







"But with regard to the material world, we can at least go so far as this—we can perceive that events are brought about not by insulated interpositions of Divine power, exerted in each particular case, but by the establishment of general laws."

W. Whewell: *Bridgewater Treatise.*

"To conclude, therefore, let no man out of a weak conceit of sobriety, or an ill-applied moderation, think or maintain, that a man can search too far or be too well studied in the book of God's word, or in the book of God's works; divinity or philosophy; but rather let men endeavour an endless progress or proficience in both."

Bacon: *Advancement of Learning.*

Down, Bromley, Kent,
October 1st, 1859.

ON

THE ORIGIN OF SPECIES

BY MEANS OF NATURAL SELECTION,

OR THE

PRESERVATION OF FAVOURED RACES IN THE STRUGGLE FOR LIFE.

By CHARLES DARWIN, M.A.,

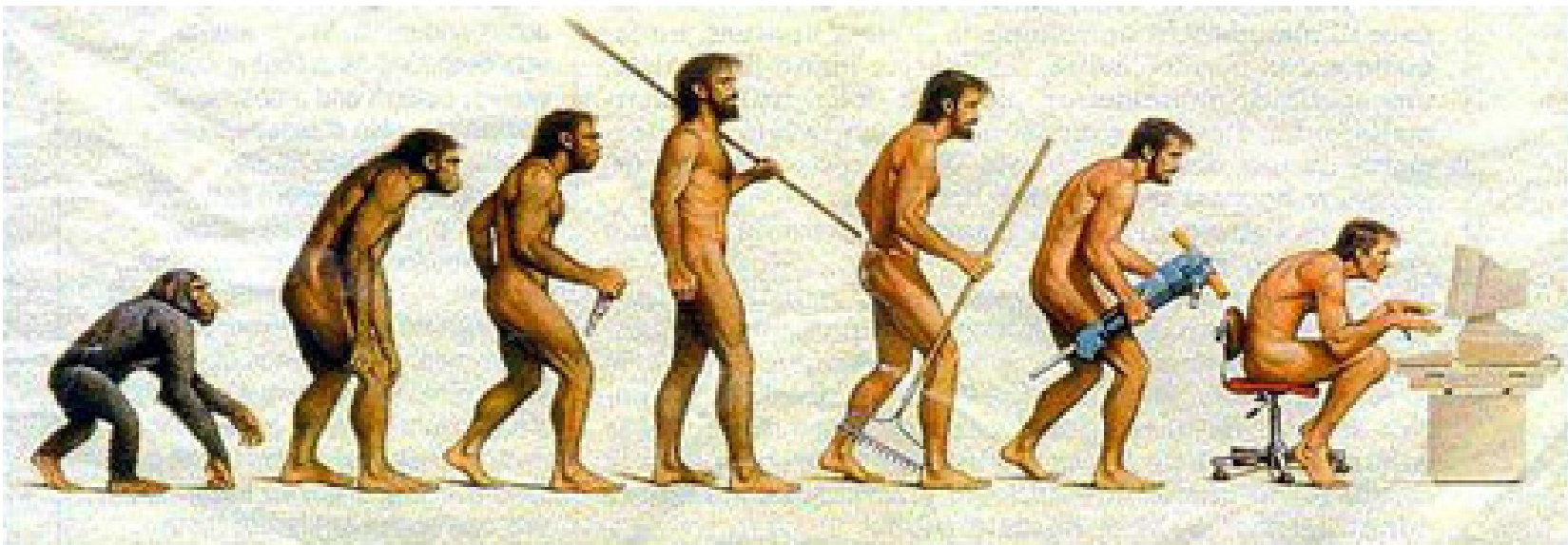
FELLOW OF THE ROYAL, GEOLOGICAL, LINNÆAN, ETC., SOCIETIES;
AUTHOR OF 'JOURNAL OF RESEARCHES DURING H. M. S. BEAGLE'S VOYAGE ROUND THE WORLD.'

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1859.

¿Ha cambiado la EPOC?

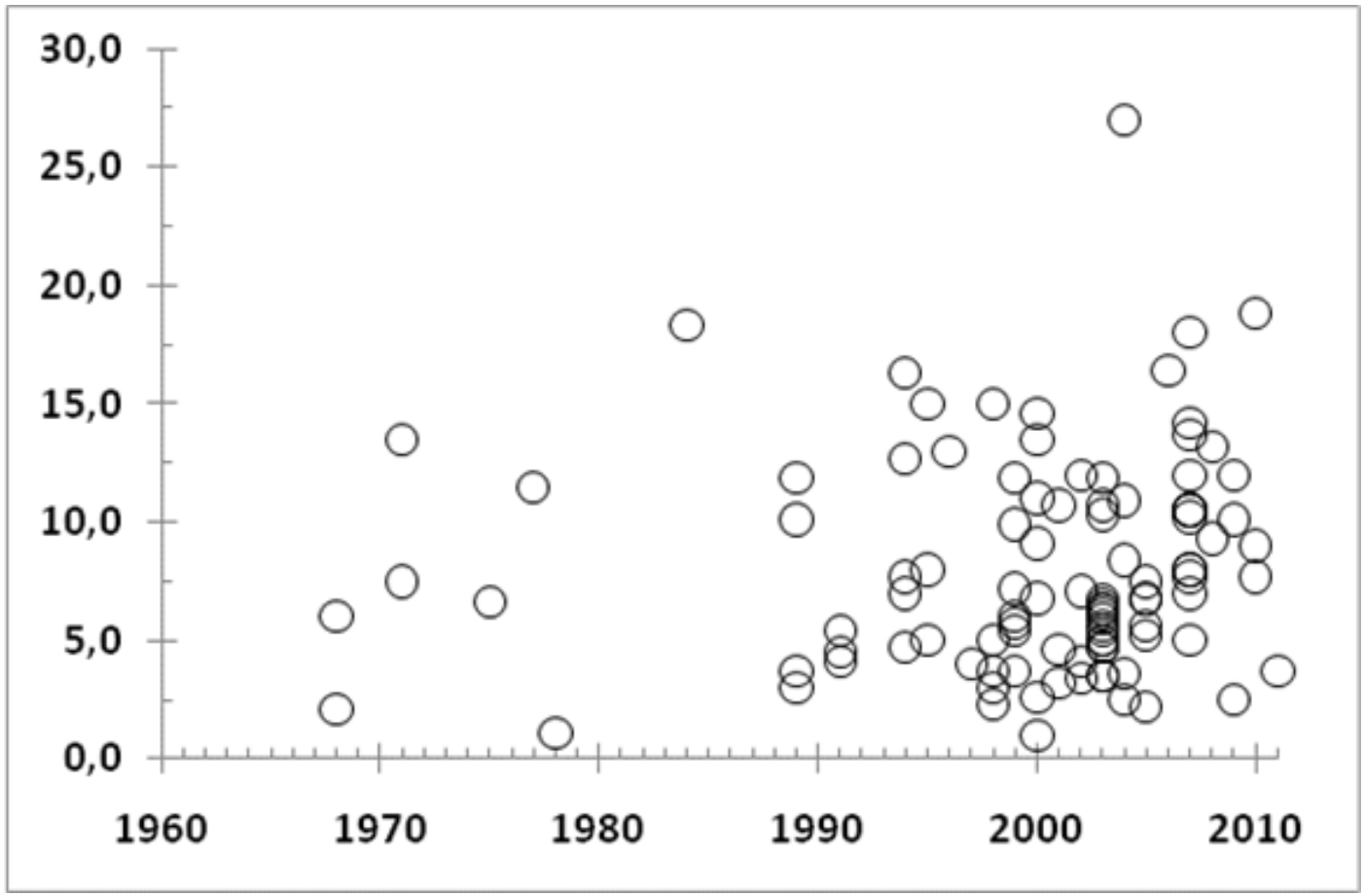
- Epidemiología
- Factores de Riesgo
- Presentación Clínica

¿Ha cambiado la Epidemiología de la EPOC?



Estudios de Prevalencia de EPOC, por año

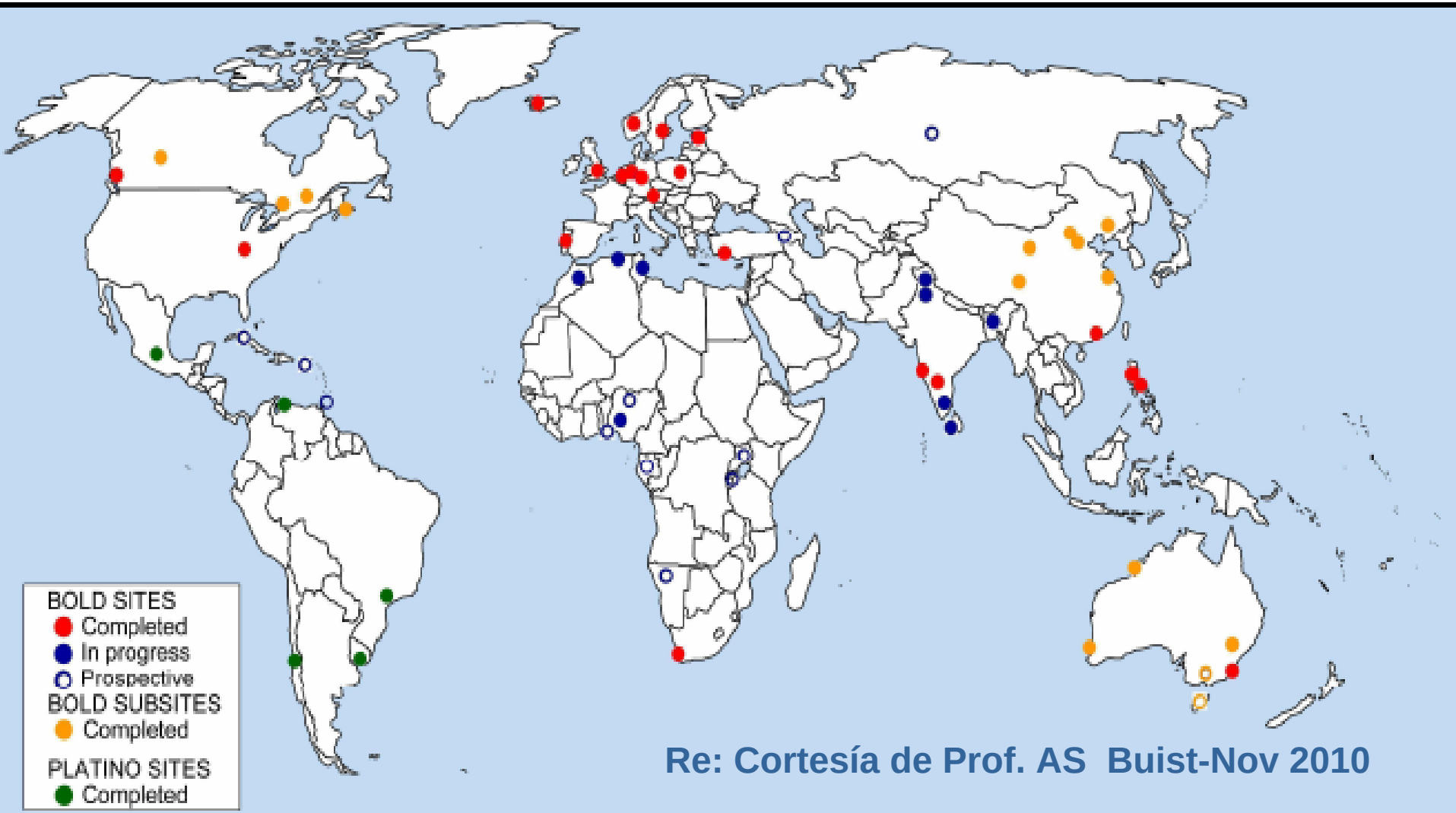
106 estimaciones de prevalencia. Correspondientes a 78 estudios en 50 años



Soriano JB, Rodríguez-Roisin R. *PATS 2011 (in press).*

BOLD Sites Update:
Completed, in Progress & Prospective

www.boldstudy.org



Re: Cortesía de Prof. AS Buist-Nov 2010

Eur Respir J 2010; 36: 995–1001
DOI: 10.1183/09031936.00012610

PERSPECTIVE

Prioritised research agenda for prevention and control of chronic respiratory diseases

J. Bousquet, J. Kiley, E.D. Bateman, G. Viegi, A.A. Cruz, N. Khaltaev, N. Aït Khaled, C.E. Baena-Cagnani, M.L. Barreto, N. Billo, G.W. Canonica, K-H. Carlsen, N. Chavannes, A. Chuchalin, J. Drazen, L.M. Fabbri, M.W. Gerbase, M. Humbert, G. Joos, M.R. Masjedi, S. Makino, K. Rabe, T. To and L. Zhi

"Hay 210 millones de personas con EPOC en el Mundo…"

- **1,1 billones**
- **400 millones**
- **300 millones**
- **210 millones**
- **>100 millones**
- **>50 millones**

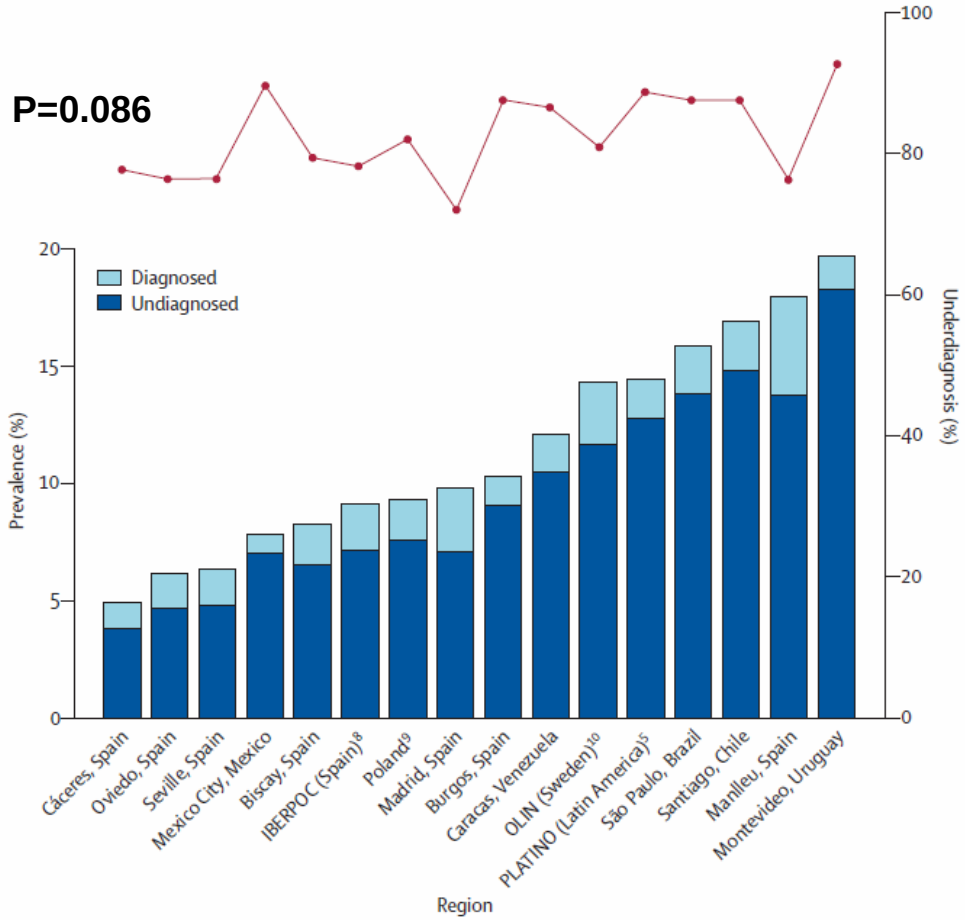
- **Fumadores**
- **Rinitis (excl. asma)**
- **Asma**
- **EPOC**
- **Trastornos del sueño**
- **Otras Enf. Resp. Cr.**

Bousquet J, et al. ERJ 2010.

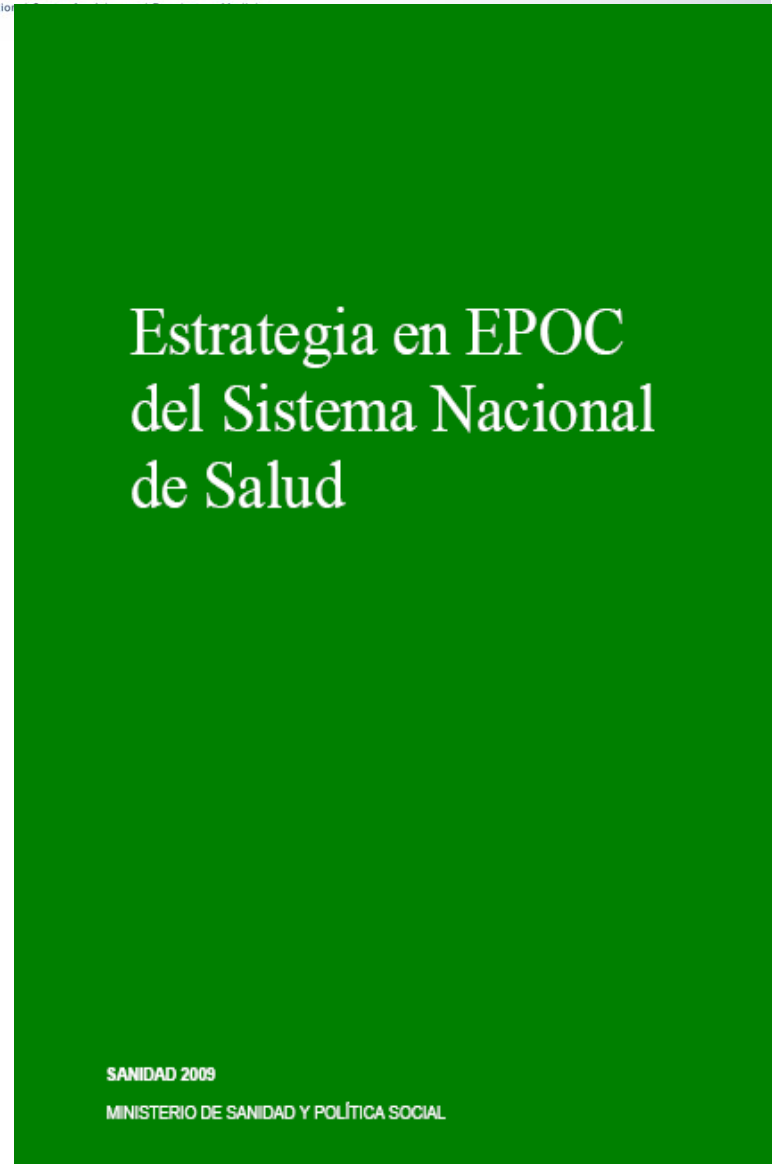
EPOC e infradiagnóstico

Screening for and early detection of chronic obstructive pulmonary disease

Joan B Soriano, Jan Zielinski, David Price



Soriano JB, Zielinski J, Price D. Lancet 2009.



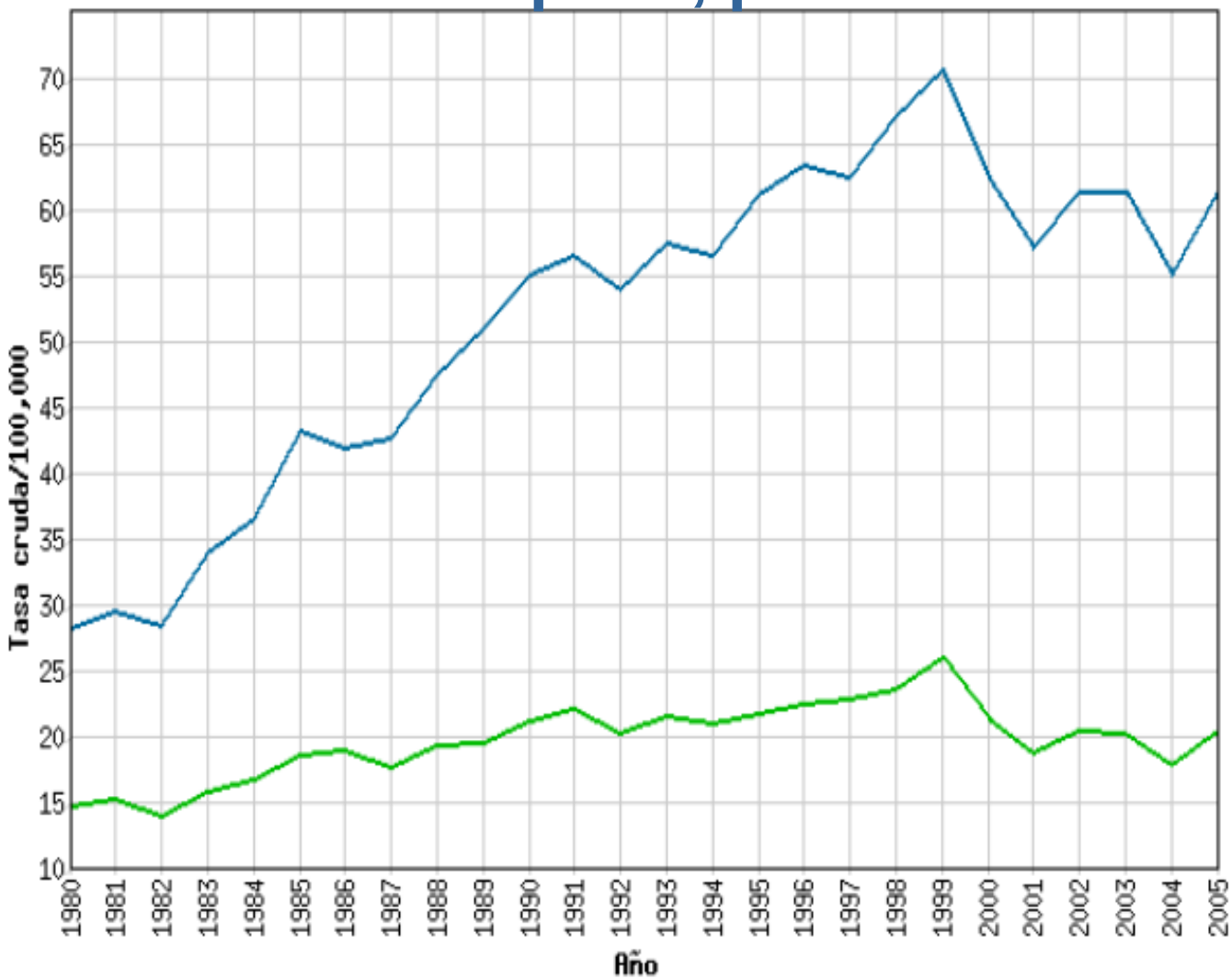
Coordinador científico
Julio Ancochea Bermúdez

Estrategia en EPOC del Sistema Nacional de Salud

Aprobada por el Consejo Interterritorial del Sistema Nacional de Salud el 3 de junio de 2009

SANIDAD 2009
MINISTERIO DE SANIDAD Y POLÍTICA SOCIAL

Tendencias de la mortalidad por EPOC en España, por sexo



Hombres

Mujeres

La EPOC mata cada año a 18 mil personas en España…

Figura 3. Mapa de mortalidad por comunidades autónomas en el año 2006. Tasa ajustada a la población europea/100.000. Hombres

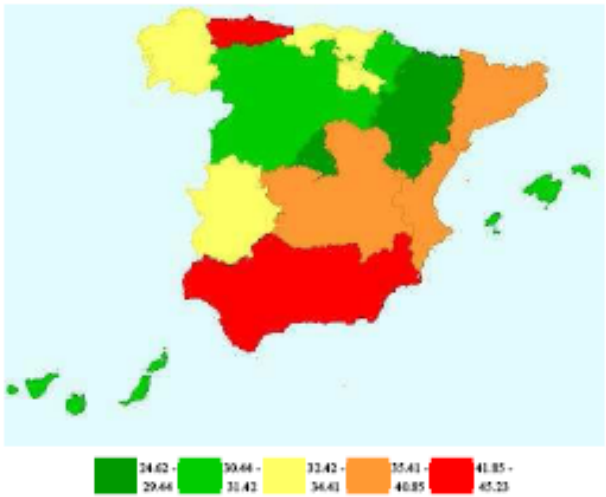
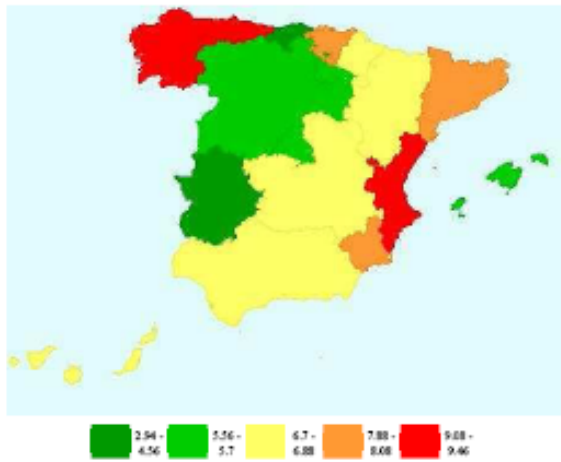
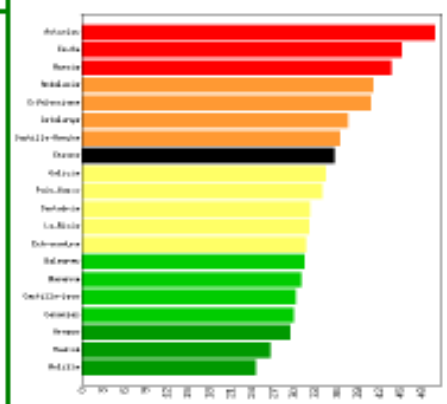


Figura 4. Mapa de mortalidad por comunidades autónomas en el año 2006. Tasa ajustada a la población europea/100.000. Mujeres



COMUNIDAD AUTÓNOMA	EPOC
Asturias	50.01
Ceuta	45.23
Murcia	43.76
Andalucía	41.18
C.Valenciana	40.85
Cataluña	37.68
Castilla-Mancha	36.53
España	35.66
Galicia	34.41
País Vasco	33.96
Cantabria	32.25
La Rioja	32.09
Extremadura	31.62
Baleares	31.42
Navarra	31.05
Castilla-León	30.22
Canarias	30.01
Aragón	29.44
Madrid	26.67
Melilla	24.62

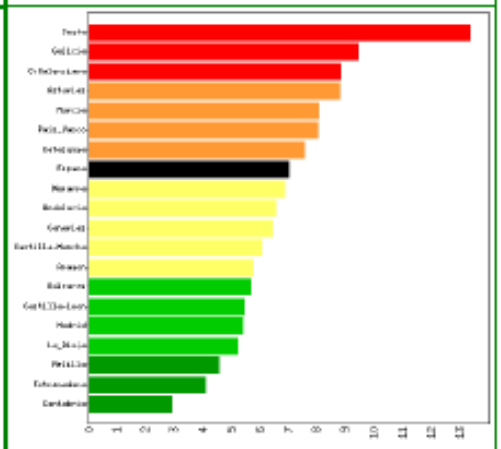
GRÁFICA DE BARRAS



Fuente: Centro Nacional de Epidemiología. Servidor Raziel. Disponible en http://193.146.50.130/raziel.php

COMUNIDAD AUTÓNOMA	(EPOC)
Ceuta	13.39
Galicia	9.46
C.Valenciana	8.85
Asturias	8.84
Murcia	8.08
País Vasco	8.06
Cataluña	7.58
España	7
Navarra	6.88
Andalucía	6.59
Canarias	6.46
Castilla-Mancha	6.07
Aragón	5.79
Baleares	5.7
Castilla-León	5.46
Madrid	5.42
La Rioja	5.25
Melilla	4.56
Extremadura	4.11
Cantabria	2.94

GRÁFICA DE BARRAS



Fuente: Centro Nacional de Epidemiología. Servidor Raziel. Disponible en http://193.146.50.130/raziel.php

Estrategia Nacional de EPOC 2009.

9.1% in 1997 (IBERPOC) 10.2% in 2007 (EPI-SCAN)

Geographic Variations in Prevalence and Underdiagnosis of COPD*

Results of the IBERPOC Multicentre Epidemiological Study

Victor Sobradillo Peña, MD; Marc Miravitlles, MD; Rafael Gabriel, MD; Carlos A. Jiménez-Ruiz, MD; Carlos Villasante, MD; Juan Fernando Masa, MD; José Luis Viejo, MD; and Lorenzo Fernández-Fau, MD

Objectives: To ascertain the prevalence, diagnostic level, and treatment of COPD in Spain through a multicenter study comprising seven different geographic areas.
Design and participants: This is an epidemiologic, multicenter, population-based study conducted in seven areas of Spain. A total of 4,035 men and women (age range, 40 to 69 years) who were randomly selected from a target population of 236,412 subjects participated in the study.
Interventions: Eligible subjects answered the European Commission for Steel and Coal questionnaire. Spirometry was performed, followed by a bronchodilator test when bronchial obstruction was present.
Results: The prevalence of COPD was 9.1% (95% confidence interval [CI], 8.1 to 10.2%), 15% in smokers (95% CI, 12.8 to 17.1%), 12.8% in ex-smokers (95% CI, 10.7 to 14.8%), and 4.1% in nonsmokers (95% CI, 3.3 to 5.1%). The prevalence in men was 14.3% (95% CI, 12.8 to 15.9%) and 3.9% in women (95% CI, 3.1 to 4.8%). Marked differences were observed between sexes in smoking; the percentage of nonsmokers was 23% in men and 76.3% in women ($p < 0.0001$). The prevalence of COPD varied among the areas, ranging from 4.9% (95% CI, 3.2 to 7.0%) in the area of the lowest prevalence to 18% (95% CI, 14.8 to 21.2%) in the area of the highest. There was no previous diagnosis of COPD in 78.2% of cases (284 of 363). Only 49.3% of patients with severe COPD, 11.8% of patients with moderate COPD, and 10% of patients with mild COPD were receiving some kind of treatment for COPD. Multivariate analysis showed that individuals had a higher probability of having received a previous diagnosis of COPD if they lived in urban areas, were of male gender, were > 60 years old, had higher educational levels, had > 15 pack-year smoking history, or had symptoms of chronic bronchitis.
Conclusions: COPD is a very frequent disease in Spain, and presents significant geographic variations and a very low level of previous diagnosis and treatment, even in the most advanced cases.

(CHEST 2000; 118:981–989)

Prevalence of COPD in Spain: impact of undiagnosed COPD on quality of life and daily life activities

M Miravitlles,[1] J B Soriano,[2] F García-Río,[3] L Muñoz,[4] E Duran-Tauleria,[5] G Sanchez,[6] V Sobradillo,[7] J Ancochea[8]

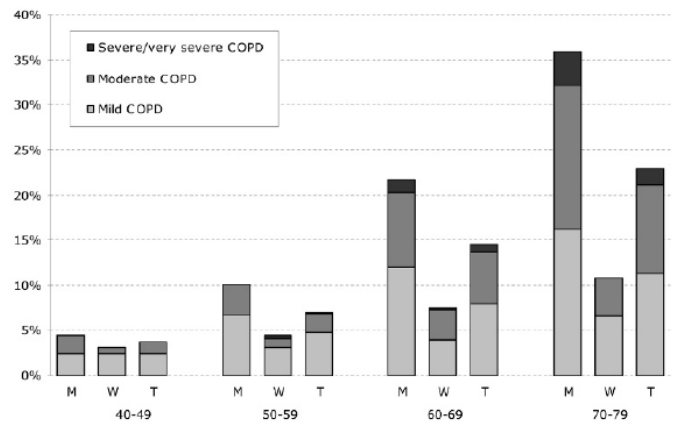


Figure 1 Chronic obstructive pulmonary disease (COPD) prevalence (postbronchodilator FEV_1/FVC (forced expiratory volume in 1 s/forced vital capacity) <0.70) and GOLD (Global Initiative for Chronic Obstructive Lung Disease) severity stages by gender and age group. M, men; W, women; T, total.

Dr M Miravitlles, Servei de Pneumologia, Hospital Clínic, Villarroel 170, 08036 Barcelona, Spain; marcm@separas

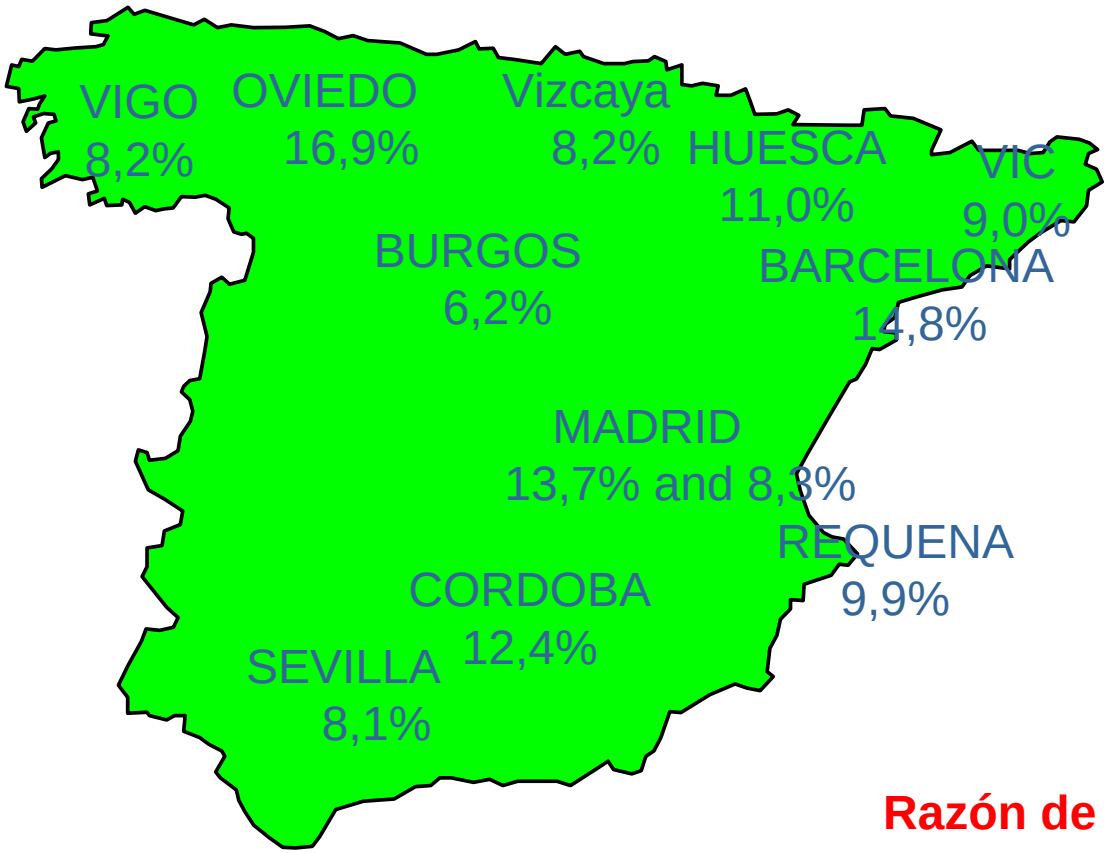
Received 23 February 2009
Accepted 10 June 2009
Published Online First
23 June 2009

compared with undiagnosed subjects. However, even patients with undiagnosed COPD stage I+ already showed impairment in HRQL and in some aspects of ADL compared with participants without COPD.
Conclusions: The prevalence of COPD in individuals between 40 and 80 years of age in Spain is 10.2% and increases with age, tobacco consumption and lower educational levels. The rate of diagnosised COPD is very high and undiagnosed individuals with COPD already have a significant impairment in HRQL and ADL.

The protocol of the EPI-SCAN study has been published elsewhere.[4] Briefly, it was a multicentre, cross-sectional, population-based, observational study conducted in 11 sites in 10 cities in Spain (Barcelona, Burgos, Córdoba, Huesca, Madrid (two areas), Requena, Sevilla, Oviedo, Vic and Vigo) representing different geographic, climatic and socio-economic regions. A priori sample size calculation estimated that assuming an expected prevalence of 12% derived from a previous study, and considering the different COPD criteria used in both surveys,[4] with a precision of ±1 and with

Sobradillo-Peña V, et al. Chest 2000. Miravitlles M, et al. Thorax 2009.

EPI-SCAN 2007



PREVALENCIA GLOBAL: **10,2%**

40 a 80 años

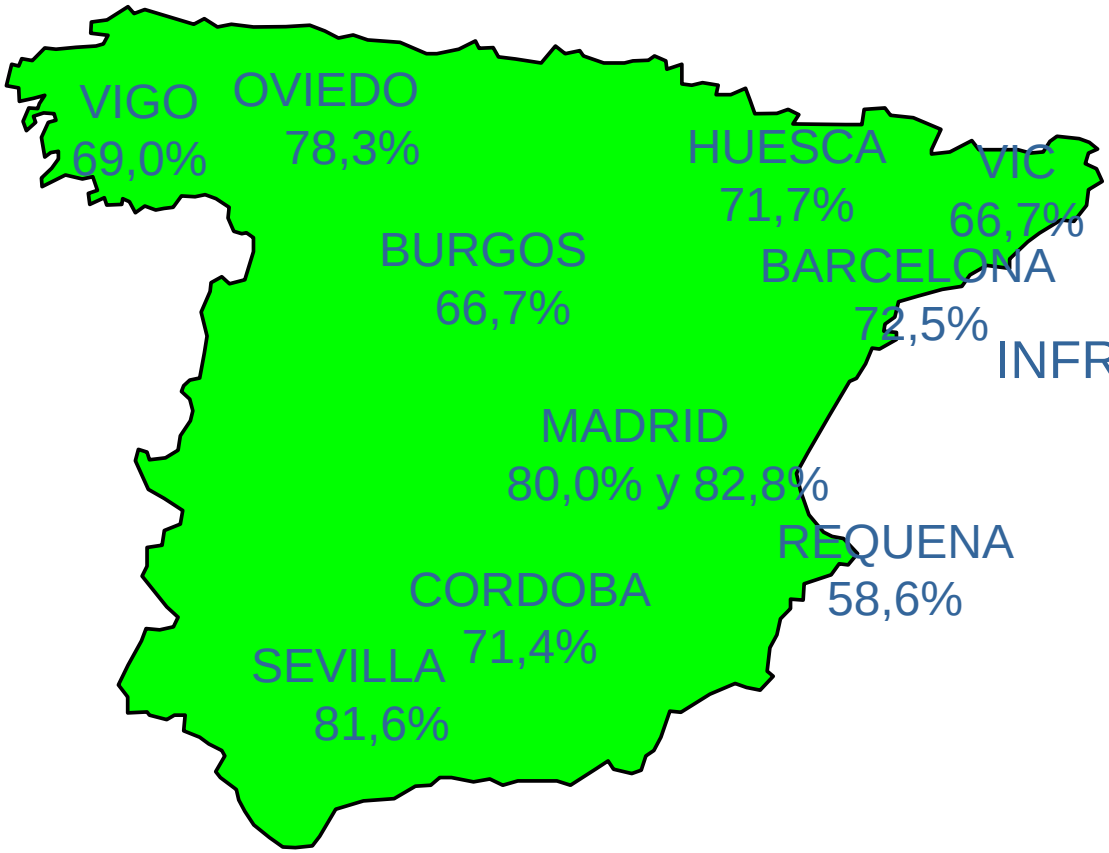
HOMBRES 15,1%
(13,5-16,8)

MUJERES 5,7%
(4,7-6,7)

Razón de Prevalencias entre áreas
= 2,7 veces

Miravitlles M, et al. Thorax 2009.

EPI-SCAN 2007



INFRA-DX GLOBAL DE EPOC

40 a 80 años : **73,1%**

Razón de InfraDiagnóstico entre áreas

= 1,57 veces

Soriano JB, et al. Arch Bronconeumol 2010.

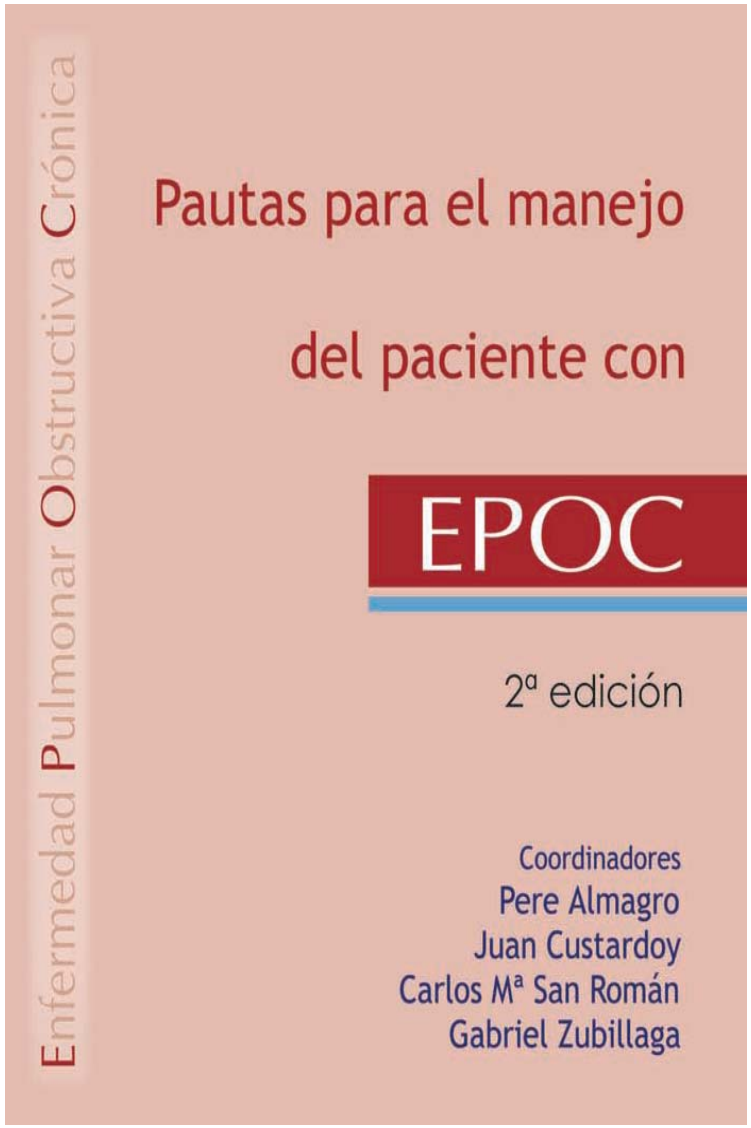


Tabla 1 DEFINICIÓN Y ESTADIAJE FUNCIONAL DE EPOC

	GOLD (2008)	ATS/ERS (2004)	SEPAR/ALAT (2007)	NICE (2004)
Definición de EPOC	$FEV_1/FVC < 0,7$ postbronco-dilatación	$FEV_1/FVC < 0,7$ postbronco-dilatación	$FEV_1/FVC < 0,7$ postbronco-dilatación (por debajo del LIN en personas > de 60 años)	$FEV_1/FVC < 0,7$ prebroncodila-tación y según $FEV_1 < 80\%$
Clasificación de EPOC según (FEV_1 %)				
Ligera	>80%	>80%	>80%	50-80%
Moderada	79-50%	50-80%	50-80%	30-49%
Grave	49-30%	30-50%	30-50%	<30%
Muy grave	<30% o <50% con insuficiencia respiratoria	<30%	< 30% o < 50% con insuficiencia respiratoria	

GOLD: Grupo de iniciativa global de la enfermedad pulmonar obstructiva. ATS: Sociedad Americana del Tórax. ERS: Sociedad Europea de Respiratorio. SEPAR: Sociedad Española de Neumología y Cirugía Torácica. ALAT: Sociedad Torácica Latinoamericana. LIN: Límite inferior de lo normal. NICE: Instituto nacional de excelencia clínica. EPOC: Enfermedad pulmonar obstructiva crónica. FEV_1: Volumen espiratorio forzado en un segundo. CVF: Capacidad vital forzada.

Por tanto, ¿qué debemos hacer los internistas?

Cuando un problema es tan complejo, lo que hay que hacer con vistas a la práctica clínica diaria es simplificarlo y, a mi criterio, asumir el tabaquismo como factor fundamental en la etiología de la EPOC, ya que cumple todos los postulados de causalidad y, a pesar de sus limitaciones, defender los viejos

The Finnish Action Programme: Resultados interinos a los 6 años

Chronic bronchitis and chronic obstructive pulmonary disease. The Finnish Action Programme, interim report

A. Pietinalho[a,*], V.L. Kinnula[b], A.R.A. Sovijärvi[c], S. Vilkman[d], O. Säynäjäkangas[e], K. Liippo[f], E. Kontula[a], L.A. Laitinen[g]

[a]*Filha (Finnish Lung Health Association), Sibeliuksenkatu 11 A 1, FI-00250 Helsinki, Finland*
[b]*Department of Pulmonary Medicine, University of Helsinki and Helsinki University Hospital, Box 34, FI-00029 HUS, Finland*
[c]*Department of Clinical Physiology, University of Helsinki and Helsinki University Hospital, Box 34, FI-00029 HUS, Finland*
[d]*Department of Pulmonary Medicine, Porvoo Hospital, Sairaalatie 1, FI-06200 Porvoo, Finland*
[e]*Department of Pulmonary Medicine, Lapland Central Hospital, Box 8041, FI-96101 Rovaniemi, Finland*
[f]*Department of Pulmonary Medicine, Turku University Hospital, Alvar Aallon tie 275, FI-21540 Preitilä, Finland*
[g]*University of Helsinki, Box 63, FI-00014 Helsinki, Finland*

¿Han cambiado los factores de riesgo de la EPOC?

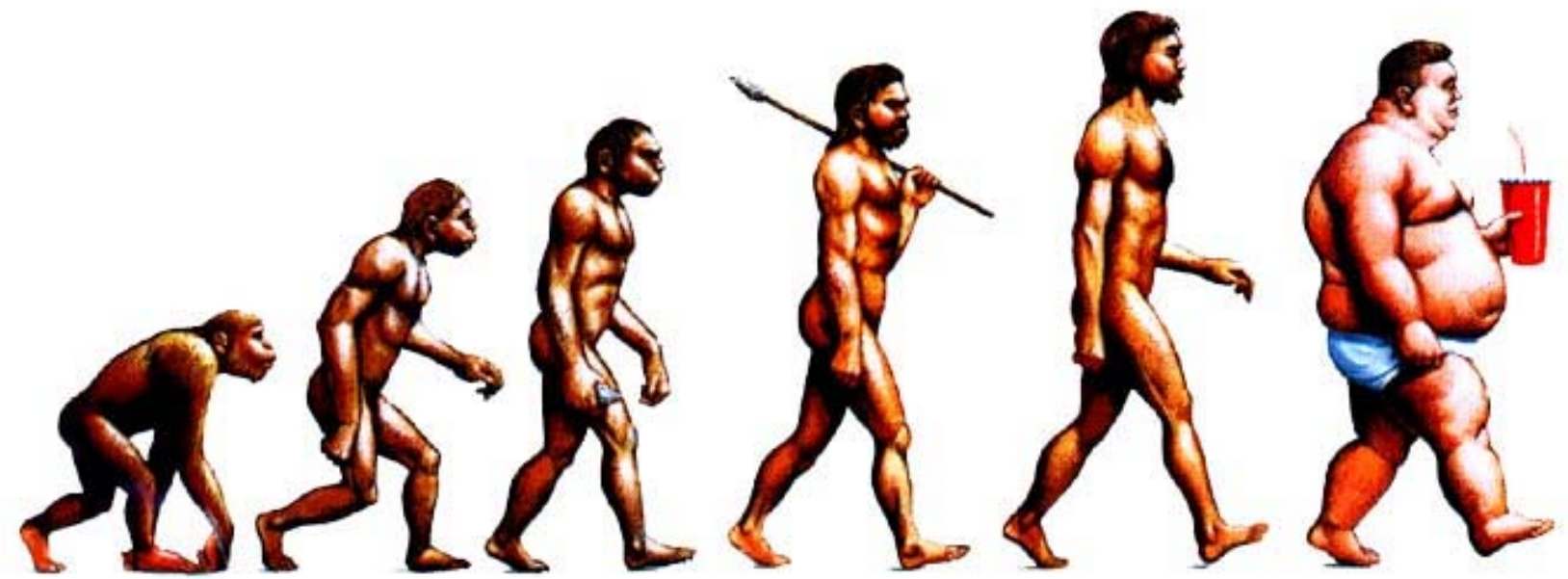
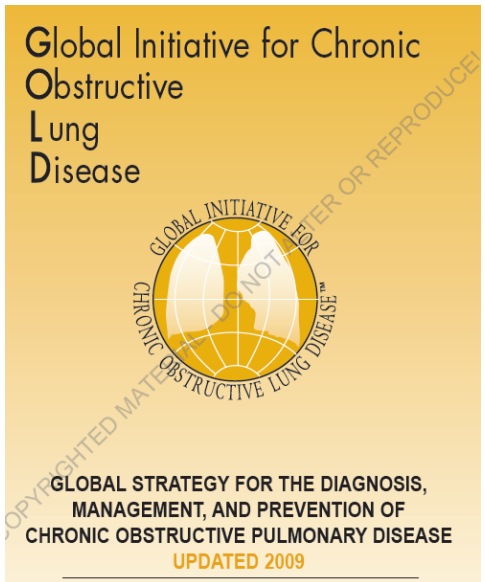


Figure 3-1. Risk Factors for COPD.

Genes
Exposure to particles
- Tobacco smoke
- Occupational dusts, organic and inorganic
- Indoor air pollution from heating and cooking with bio-mass in poorly vented dwellings
- Outdoor air pollution

Lung Growth and Development
Oxidative stress
Gender
Age
Respiratory infections
Previous tuberculosis
Socioeconomic status
Nutrition
Comorbidities



GOLD (2009 update), p 16

EQUIPP

EUROPE QUITTING: PROGRESS AND PATHWAYS

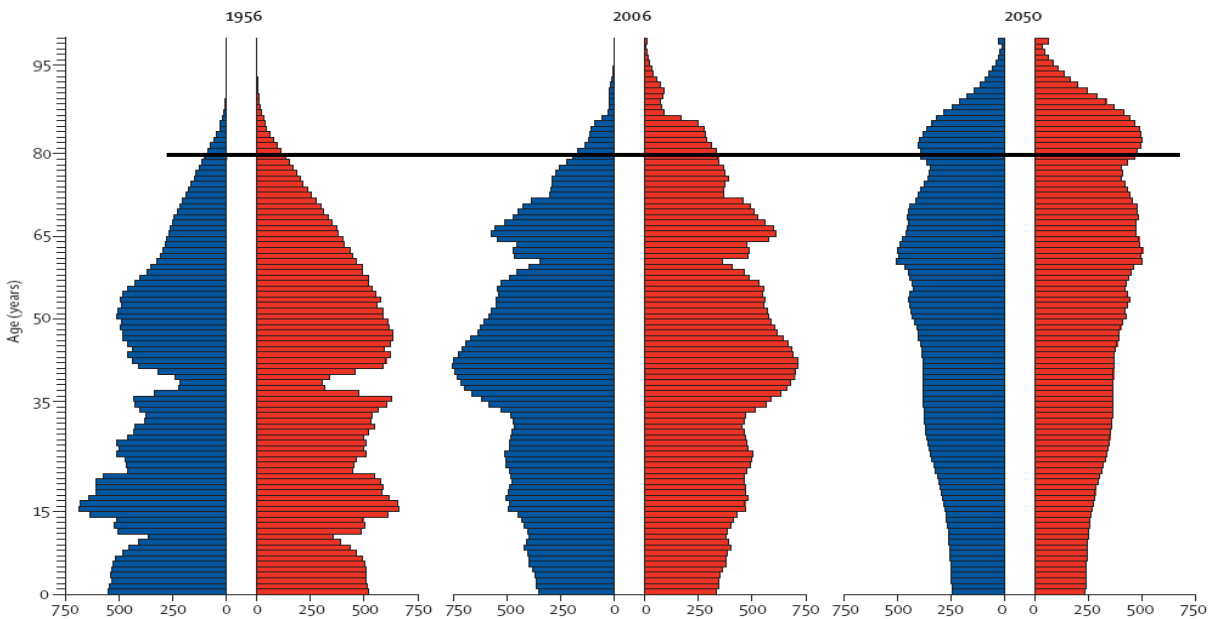
00.01 EQUIPP

CONTENTS

Ageing populations: the challenges ahead

Kaare Christensen, Gabriele Doblhammer, Roland Rau, James W Vaupel

If the pace of increase in life expectancy in developed countries over the past two centuries continues through the 21st century, [redacted] in France, Germany, Italy, the UK, the USA, Canada, Japan, and other countries with long life expectancies [redacted] Although trends differ between countries, populations of nearly all such countries are ageing as a result of low fertility, low immigration, and long lives. A key question is: are increases in life expectancy accompanied by a concurrent postponement of functional limitations and disability? The answer is still open, but research suggests that ageing processes are modifiable and that [redacted] This finding, together with technological and medical development and redistribution of work, will be important for our chances to meet the challenges of ageing populations.



Lancet 2009; 374: 1196–208

80 years

Christensen K, et al. Lancet 2009.

Centenarios en España

- **Actualmente, 7.200 españoles superan los 100 años**
- **Andalucía lidera la lista con 1.018.**
- **Allí vivió la persona más longeva hasta la fecha de todo el país, una mujer que falleció a los 114 años...**

EL PAIS 14 marzo 2011.
[LEONCIA GONZÁLEZ, 101 AÑOS]

COPD—more than just tobacco smoke

On Sept 12–16, Vienna hosts the European Respiratory Society's annual congress, the largest in pulmonary medicine in the world. As a prelude to the meeting, *The Lancet* today is devoted to chronic obstructive pulmonary disease (COPD). WHO estimates that 210 million people have COPD worldwide. This number could be higher because many people with COPD often do not seek medical help until the disease worsens. COPD is now an umbrella term to cover emphysema and chronic bronchitis, among others, all of which used to be considered separate conditions. The disease is the fourth leading cause of death in the world, but by 2030 it is expected to be the third, behind ischaemic heart disease and cerebrovascular disease.

With such a high burden, emphasis on better diagnosis, management, and identification of at-risk groups must be achieved. In today's issue, Joan Soriano and colleagues review spirometry, the mainstay of diagnosis. They call for better screening with spirometry, because early detection correlates with better outcomes. Spirometry is also used to classify COPD into four subgroups—mild, moderate, severe, and very severe. This classification helps guide the type of treatment options offered. For most patients, longacting inhaled β_2 agonists, inhaled antimuscarinics, and inhaled corticosteroids in differing combinations are the foundation of effective management. Treatment with the anti-inflammatory phosphodiesterase-4 inhibitor roflumilast is presented in two randomised trials from Peter Calverley's group. The overall findings of the two studies suggest that there is benefit to patients with COPD, with a reduction in exacerbations, and improvement in lung function, when roflumilast is combined with a longacting bronchodilator or longacting inhaled antimuscarinics.

For a long time COPD has been thought of as a smokers' disease, and not without reason. Those who smoke damage their lungs and create the pathophysiological environment for this disease. However, as Holger Schünemann points out in a Comment in today's issue, a worldwide ban on tobacco would indeed benefit health substantially both at the population and individual level—yet the world is not ready for such a bold ban. Sundeep Salvi and Barnes explore the aetiology of COPD and highlight the need for greater focus on risk factors other than smoking. They argue that smoking is not the biggest risk factor for COPD, and that this has been reported as early as 1963. Interest in COPD in non-smokers has increased in the past 5 years, although smoking has still remained the emphasis of most research. The Global initiative for chronic Obstructive Lung Disease (GOLD) points out in its guidelines that COPD is caused by "Tobacco smoke, occupational dusts and chemicals, indoor air pollution and outdoor air pollution", putting these inhalation exposures under one blanket. Salvi and Barnes take this further, listing indoor air pollution from biomass fuel, pulmonary tuberculosis, chronic asthma, and socioeconomic status as additional risk factors in the development of COPD. Previous evidence suggests that occupational exposure to different compounds can lead to long-term severe sequelae in the respiratory system (eg, asbestos and mesothelioma); therefore, it is not a great leap to think that occupational exposures are also important risk factors for COPD.

In parts of Africa tuberculosis is synonymous with HIV and therefore a diagnosis of either carries a large stigma. If patients with tuberculosis have an increased risk of COPD, could this population be under-represented in this continent? Will patients who have symptoms not present to health-care providers for fear of a diagnosis of tuberculosis, when in fact it is COPD? Education and increased awareness could be an answer for some of these patients, as well as an increased effort to destigmatise the association of tuberculosis and HIV by those health-care professionals working within this community.

Chronic asthma is also of interest because it carries a greater risk of developing COPD than that caused by smoking. If asthma development is on the increase around the world, COPD incidence is likely to increase as well, perhaps even more so than the current predictions. Biomass fuel (coal, wood, and charcoal) has an exposed population of 3 billion, compared with 1 billion for those exposed to tobacco—making such fuel an important target in COPD prevention. This problem is not just one for developing countries. Even if over half of those who have COPD are non-smokers, the battle against smoking and health promotion to quit smoking should continue. However, the identification and education of those who are at risk from other inhalation exposures, both at home and at work, especially in developing countries, also needs to become a priority. ■ *The Lancet*

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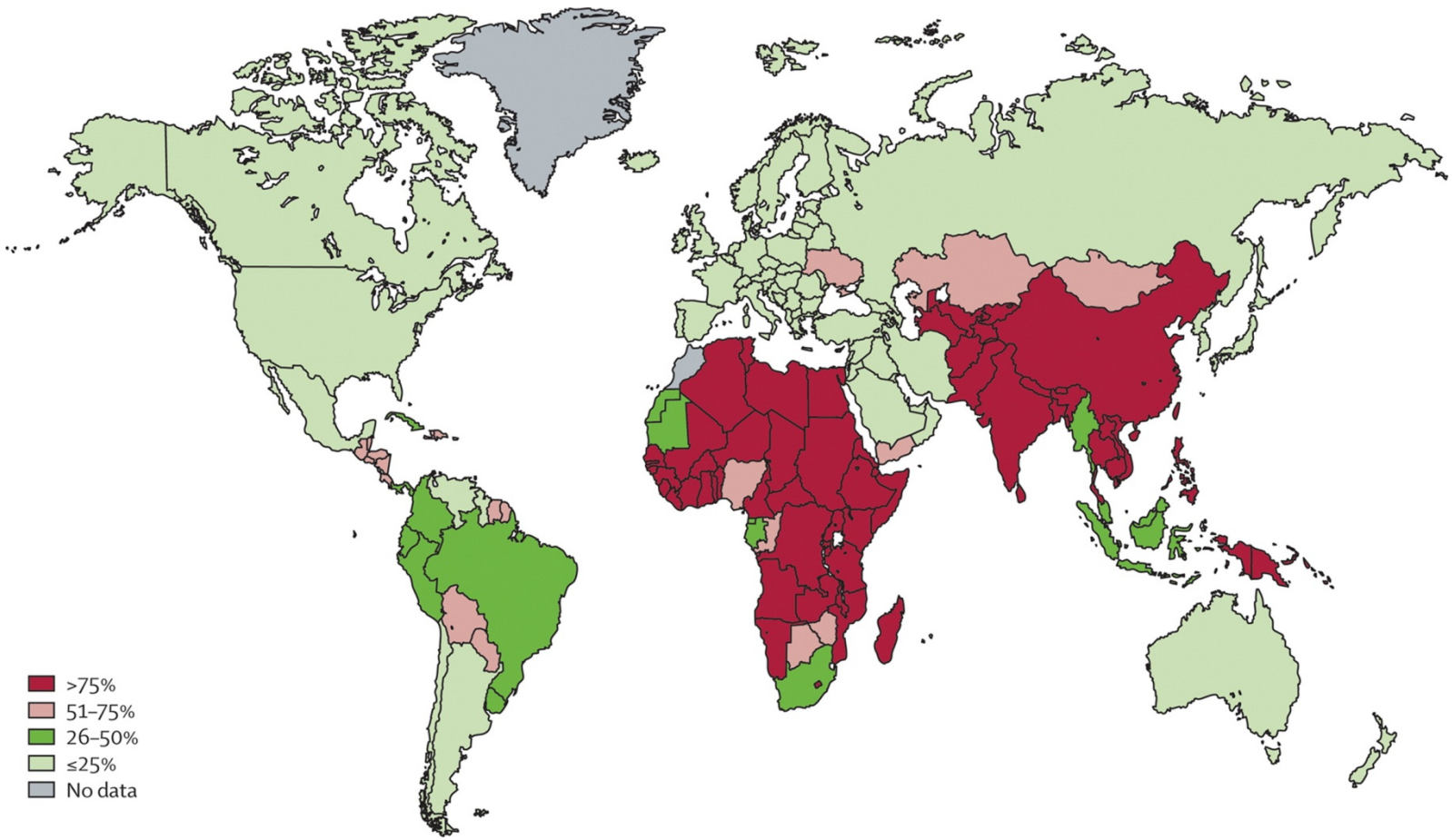
See Comment page 667
See Articles pages 685 and 695
See Review pages 721 and 733

For GOLD see http://www.goldcopd.com/Guidelineitem.asp?l1=2&l2=1&intId=2003

Proporción de pacientes EPOC que no son fumadores



Salvi S, Barnes PJ. Lancet 2009.

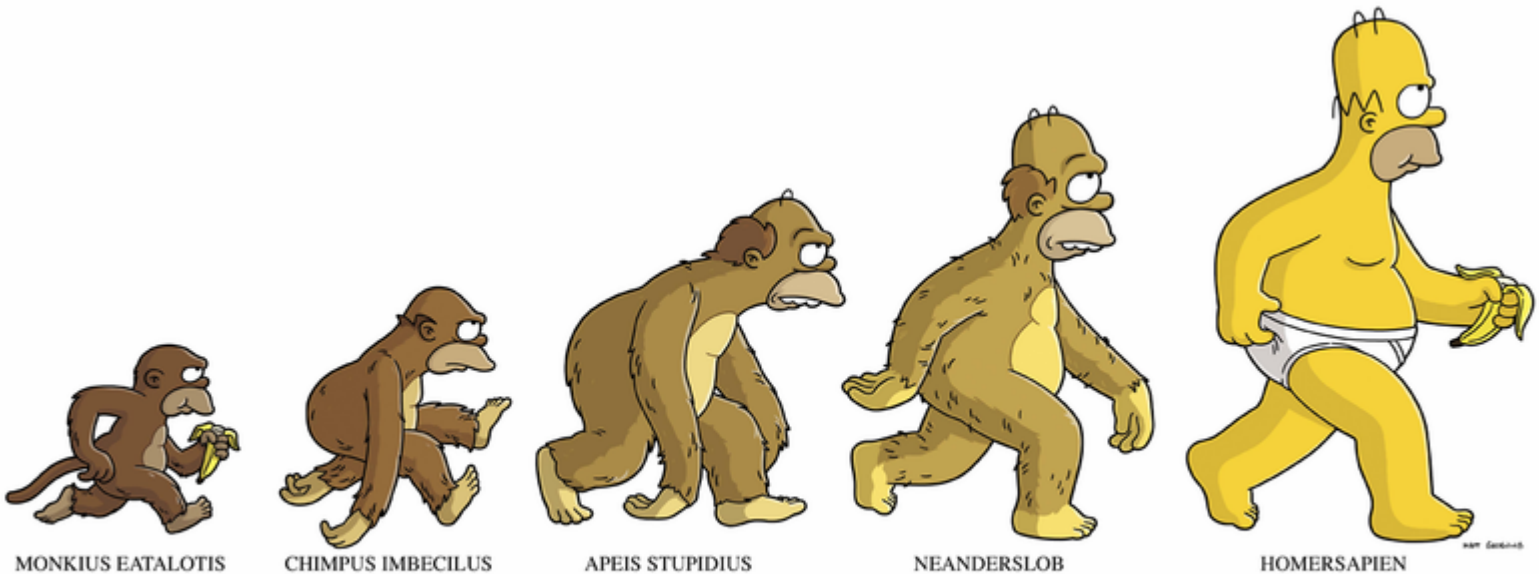
No-Fumador

Fumador

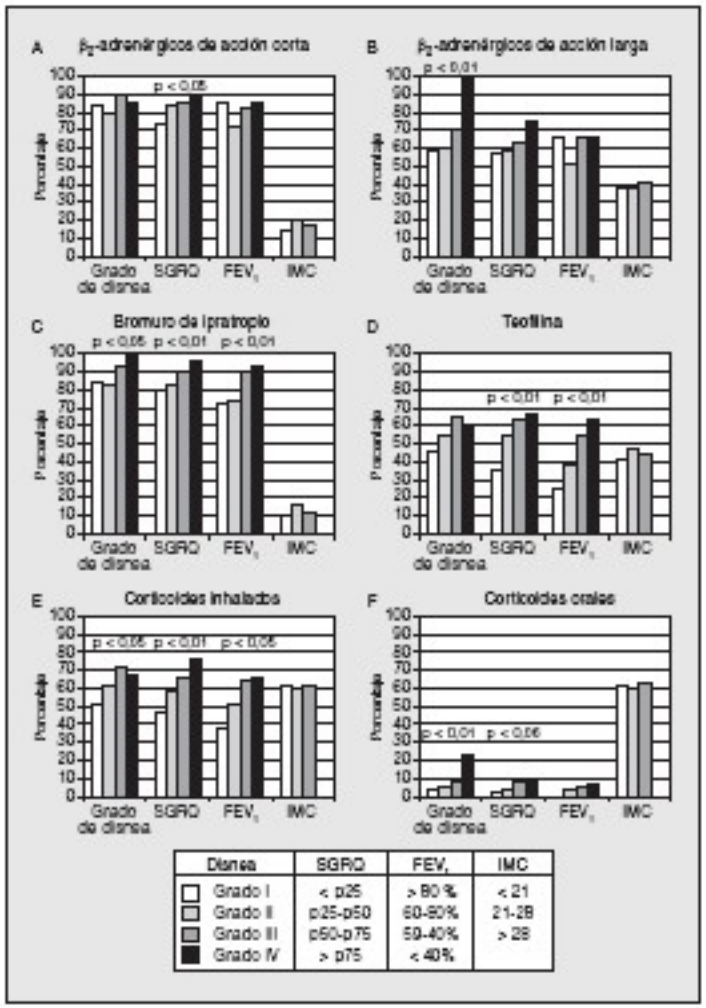
"…Smoking causes over 90% of COPD and lung cancer."

4th US Surgeon's General Report (US Dept of H); 2004

¿Ha cambiado la presentación clínica de la EPOC?



Estudio IDENTEPOC



de Miguel Díez J, et al. Arch Bronconeumol 2005.

ESTUDIO VICE

TABLA 3
Tratamiento farmacológico de la enfermedad pulmonar obstructiva crónica según el nivel asistencial en 2005

	Atención Primaria	Neumología	p-valor
Tratamientos no farmacológicos			
Consejo antitabaco	24,3%	23,2%	0,41
Tratamiento deshabituación del tabaco	4,1%	4,4%	0,66
Oxigenoterapia	7,9%	15,0%	0,00
Rehabilitación	10,2%	9,4%	0,41
Otros	11,2%	10,9%	0,78
Tratamientos farmacológicos			
Broncodilatadores	72,9%	80,0%	0,00
Beta2 agonistas de vida corta	26,5%	29,9%	0,01
Beta2 agonistas de vida larga	22,6%	27%	0,00
Anticolinérgicos de vida corta	16,2%	18,5%	0,06
Anticolinérgicos de vida larga	41%	50,3%	0,00
Teofilinas	21,4%	20,0%	0,29
Corticoides	19,9%	19,3%	0,68
Inhalados	15,8%	16,6%	0,53
Sistémicos	7,7%	5,2%	0,00
Combinaciones fijas	57,2%	60,3%	0,05
Anticolinérgicos y beta2	7,2%	7,3%	0,93
Beta2 AL y corticoides inhalados	54,4%	58,3%	0,02
Otros	58,2%	56,9%	0,43

AL: acción larga.

Martin Centeno A, et al. Invest Clin Farmacol 2005.

ORIGINALES

TABLA 2
Características de las poblaciones de ambos estudios

	IDENTEPOC	VICE
Número de pacientes	898	9.405
Edad (años)	67,7 ± 9,7	67,8 ± 9,8
Varones	94,90%	79,9%
IMC (kg/m²)	27,4 ± 4,7	27,7 ± 4,9
Tabaquismo		
Ex fumador	73,4%	61,4%
Fumador activo	19,1%	22,6%
No fumador	7,5%	16%
FEV_1 (%)	44,3 ± 15,2	55,11 ± 14,31
FEV_1/FVC	0,51 ± 0,11	0,61 ± 0,14
Puntuación total media SGRQ	47,3 ± 20,7	47,3 ± 20,7
Disnea		
Grado I	27,40%	46%
Grado II	41,5%	24,9%
Grado III	28,4%	11,1%
Grado IV	2,7%	3,4%
Gravedad		
Leve	20,10%	33,8%
Moderada	42,10%	49,3%
Grave	37,80%	16,8%

FEV_1: volumen espiratorio forzado en el primer segundo; FVC: capacidad vital forzada; IMC: índice de masa corporal.

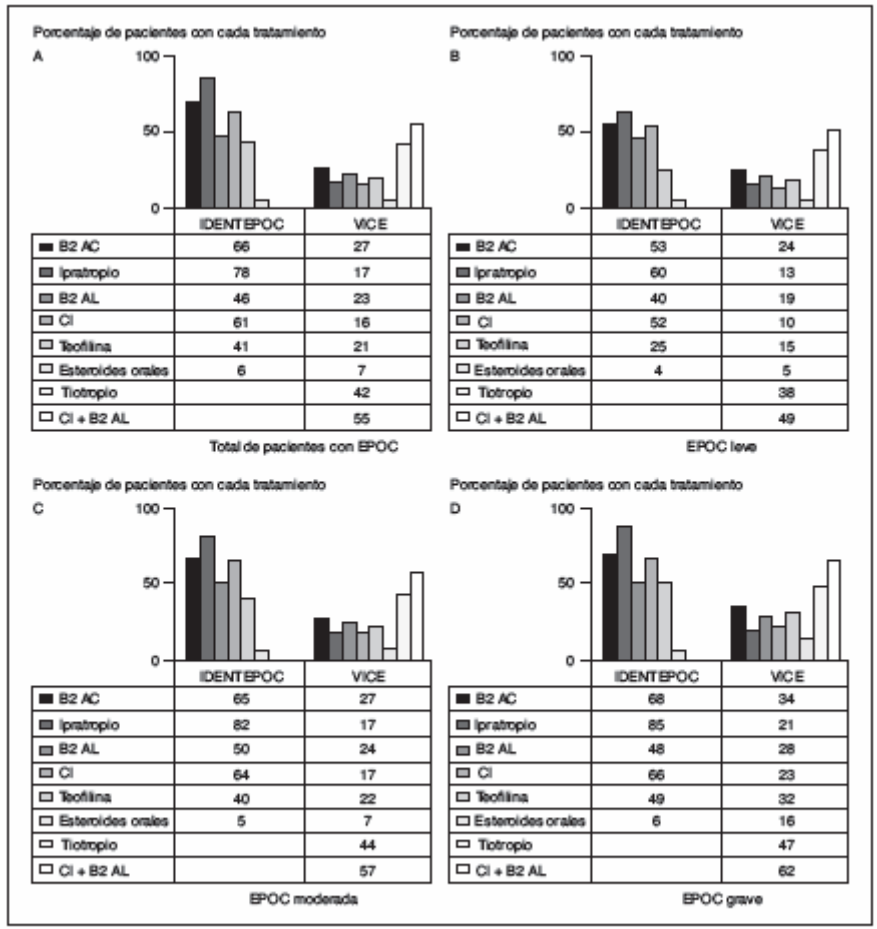


Fig. 1. Prescripción farmacológica en los estudios IDENTEPOC y VICE estratificando la gravedad de la enfermedad pulmonar obstructiva crónica (EPOC) por el volumen máximo espirado en el primer segundo de una aspiración forzada. A) Todos los pacientes. B) EPOC leve C) EPOC moderada D) EPOC grave (ver texto). B2 AC: beta2 agonistas de acción corta; B2 AL: beta2 agonistas de acción larga. CI: corticoides inhalados.

Izquierdo Alonso JL. Rev Clin Esp 2008.

Comorbidity and gender-related differences in patients hospitalized for COPD. The ECCO study

P. Almagro [a,*], F. López García [b], FJ. Cabrera [c], L. Montero [d], D. Morchón [e], J. Díez [f], JB. Soriano [g], GRUPO EPOC DE LA SOCIEDAD ESPAÑOLA DE MEDICINA INTERNA

Table 1 Baseline sociodemographic and clinical characteristics of the 398 participants, by gender.

Variable	Men $N = 353$ (89%)	Women $N = 45$ (11%)	Total	P
Age, mean (SD)	73.9 (8.8)	72.8 (9.3)	73.7 (8.9)	0.4
Age groups, *n* (%)				0.76
<60 years	24 (6.8%)	5 (11.1%)	29 (7.3%)	
60–70 years	68 (19.3%)	8 (17.8%)	76 (19.1%)	
70–80 years	165 (46.7%)	21 (46.7%)	186 (46.7%)	
>80 years	96 (27.2%)	11 (24.4%)	107 (26.9%)	
Smoking, *n* (%)				0.001
Smoker	60 (17%)	8 (17.8%)	68 (17.1%)	
Ex-smoker	279 (79%)	9 (20%)	288 (72.4%)	
Non-smoker	14 (4%)	28 (62.2%)	42 (10.6%)	
Packs/year, mean (SD)[a]	49.2 (31.9)	42.8 (33)	57.2 (27.3)	0.39
BMI, mean (SD)	26.9 (5.2)	26.9 (5)	27 (5.2)	0.9

Almagro P, et al. Respir Med 2010.

Phenotypic Heterogeneity of Chronic Obstructive Pulmonary Disease

Judith Garcia-Aymerich,[a,b,c,d] Àlvar Agustí,[c,e] Joan A. Barberà,[f] José Belda,[g] Eva Farrero,[h] Antoni Ferrer,[i] Jaume Ferrer,[j] Juan B. Gáldiz,[k] Joaquim Gea,[l,m,n] Federico P. Gómez,[f] Eduard Monsó,[o] Josep Morera,[p] Josep Roca,[f] Jaume Sauleda,[c,e] and Josep M. Antó,[a,b,c,d,*] on behalf of the Working Group on the Phenotypic Characerization and Outcome of Chronic Obstructive Pulmonary Disease (PAC-COPD)

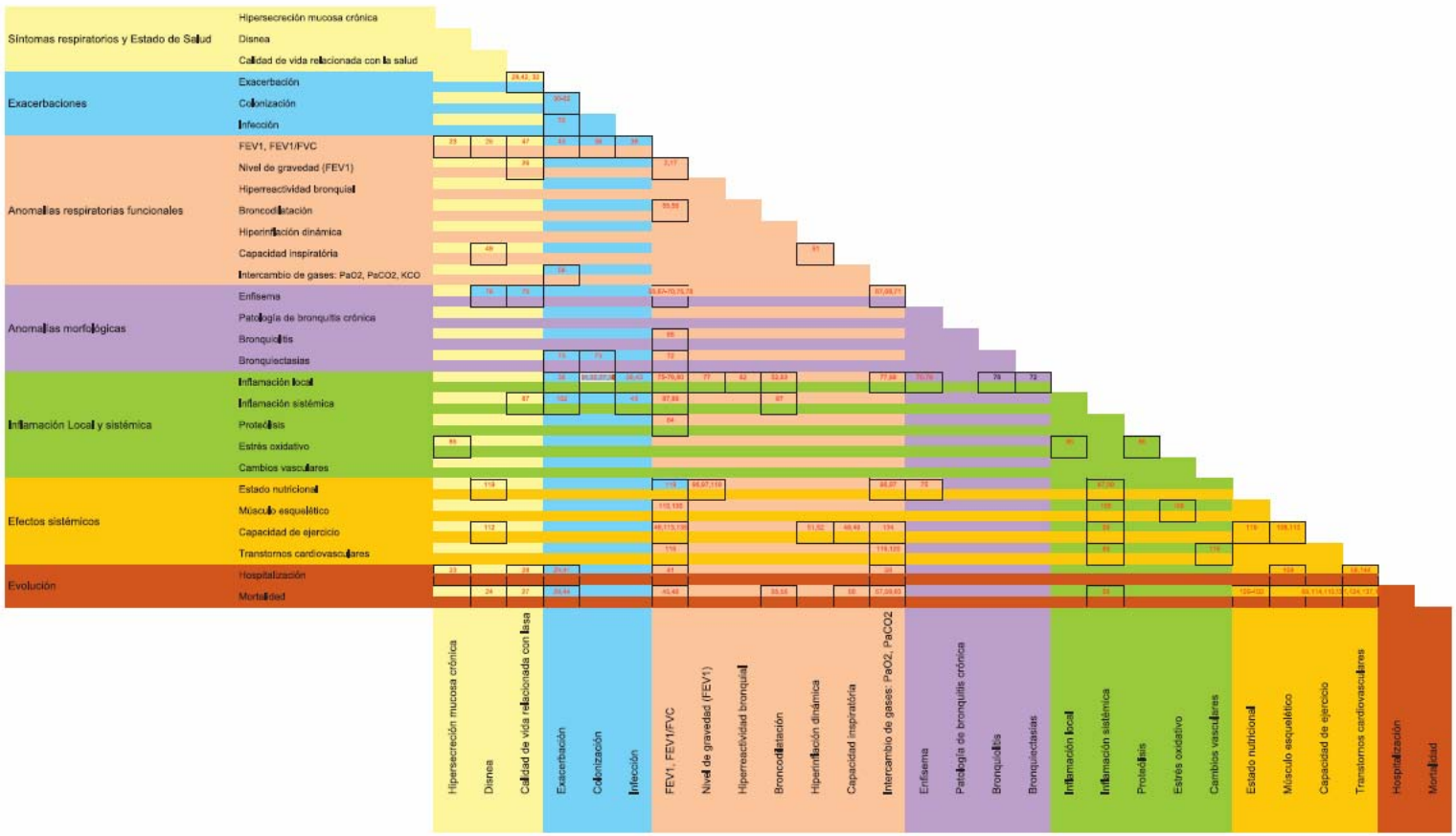


Figura 1. Matriz fenotípica multidimensional de EPOC. Cada celda incluye las referencias bibliográficas más relevantes sobre la interrelación de los rasgos fenotípicos interseccionados. FEV_1: volumen espiratorio forzado en el primer segundo; FVC: capacidad vital forzada; DLCO: difusión alveolar de monóxido de carbono corregida para el volumen alveolar; $PaCO_2$: presión arterial de anhídrido carbónico; PaO_2: presión arterial de oxígeno.

Garcia-Aymerich J, et al. Arch Bronconeumol 2009.

Índices multi-componente de EPOC

BODE:	**IMC, Espirometría, Disnea y Prueba de la marcha**
mBODE:	**IMC, Espirometría, Disnea y VO_2**
e-BODE:	**BODE + Exacerbaciones**
BODE-x :	**IMC, Espirometría, Disnea y Exacerbaciones**
BOD:	**IMC, Espirometría y Disnea**
ADO:	**Edad, Disnea y FEV_1**
CPI:	**Enfermedad cardiovascular, FEV_1, Edad, Sexo, IMC y Exacerbaciones**
SAFE:	**Enfermedad cardiovascular, FEV_1 y Prueba de la marcha)**
DOSE:	**Disnea, Tabaquismo, FEV_1 y Exacerbaciones**

...

EPOC: las cuestiones pendientes

A corto plazo	(i) Alcanzar un consenso sobre una definición universal de EPOC, las exacerbaciones de la EPOC y los factores de riesgo para las exacerbaciones, y abordar las deficiencias en nuestro conocimiento para entender los mecanismos de las exacerbaciones
	(ii) Proponer resultados esenciales referidos por los pacientes (Patient reported outcomes o PROs) que sean aceptables a nivel internacional
	(iii) Estimar (y monitorizar anualmente) el número de países con acceso a espirometría, medicamentos esenciales para los trastornos respiratorios crónicos su atención adecuada
A medio plazo	(iv) Realizar más encuestas para evaluar la prevalencia de EPOC, los factores de riesgo y comorbilidades (enfermedades cardiovasculares, cáncer y diabetes) en estudios de base poblacional
A largo plazo	(v) Evaluar los beneficios del tratamiento en ambos EPOC y todas las enfermedades no transmisibles en el tratamiento de las enfermedades individuales, en los OPI, los resultados de salud específicos y generales, así como de los costes.

Bousquet J, et al. Eur Respir J 2010.

Fórmulas ganadoras en EPOC

- Nuevas perspectivas y visiones más globales y globalizadas
- Favorecer un mayor intercambio de ideas
- y la estrecha colaboración de Medicina Interna y Neumología con los médicos de Atención Primaria

Soriano JB. “EPOC en Perspectiva”. En Actualización en EPOC. Ed.: Martin-Escudero JC 2011 (en prensa).

CONCLUSIONES:

En la EPOC, ¿han cambiado …

- **su distribución?** **SÍ**
- **sus factores de riesgo?** **No,probablemente**
- **su presentación clínica?** **Sí, probablemente**