

**Ageing, multimorbidity and polypharmacy:
which strategies for the Third Millennium?
REPOSI-2013, Milan 25th September**

Epidemiology of a new global epidemic

*Ramon Pujol Farriols.
Past-President of EFIM*



Human Epidemics in Europe



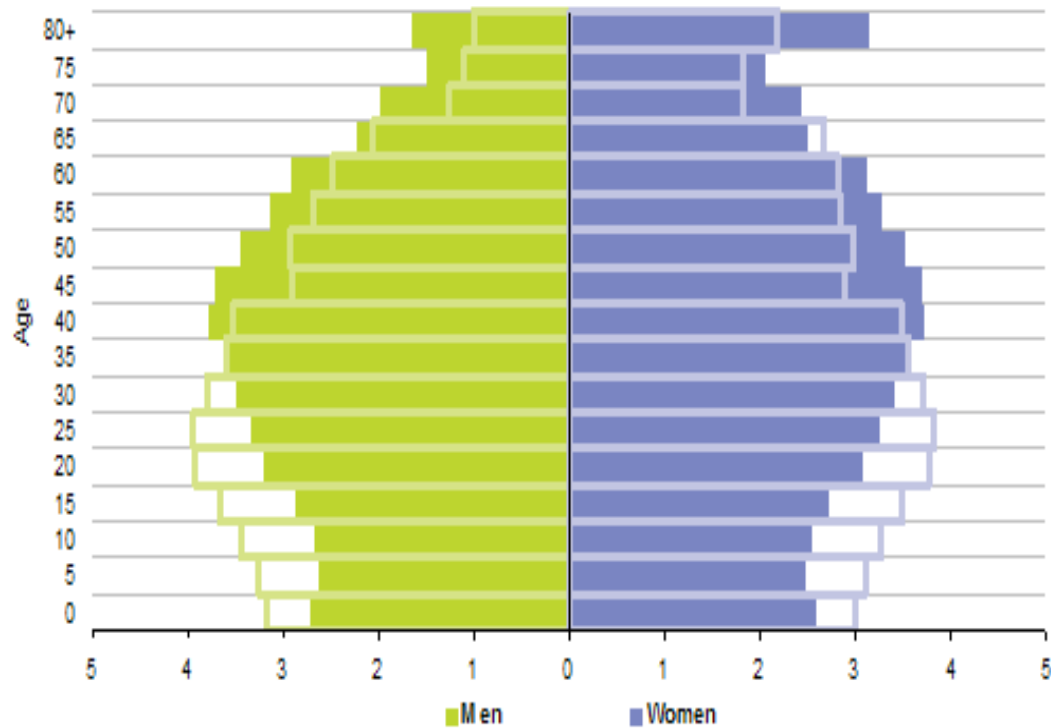
Disease	Century	Original cases
Black Death	14th	Asia
Smallpox	15th	India/Egypt ?
Cholera	15th	Mexico
AIDS	20th	Africa
Influenza A	20th	Kansas

Millions of deaths



The 'new epidemic' .

European population 1991 vs 2011

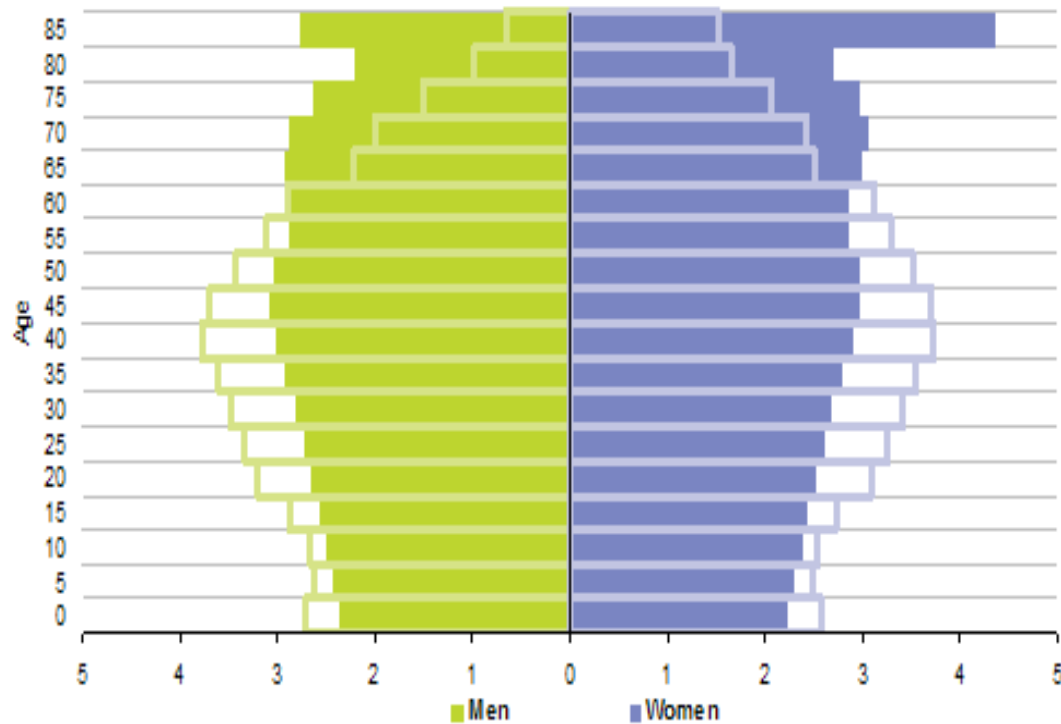


Solid colour: 2011
Bordered: 1991

(1) 2011, provisional.
Source: Eurostat (online data code: demo_pjangroup)



Evolution of the 'modern epidemic' . European population 2011 vs 2060



Solid colour: 2060

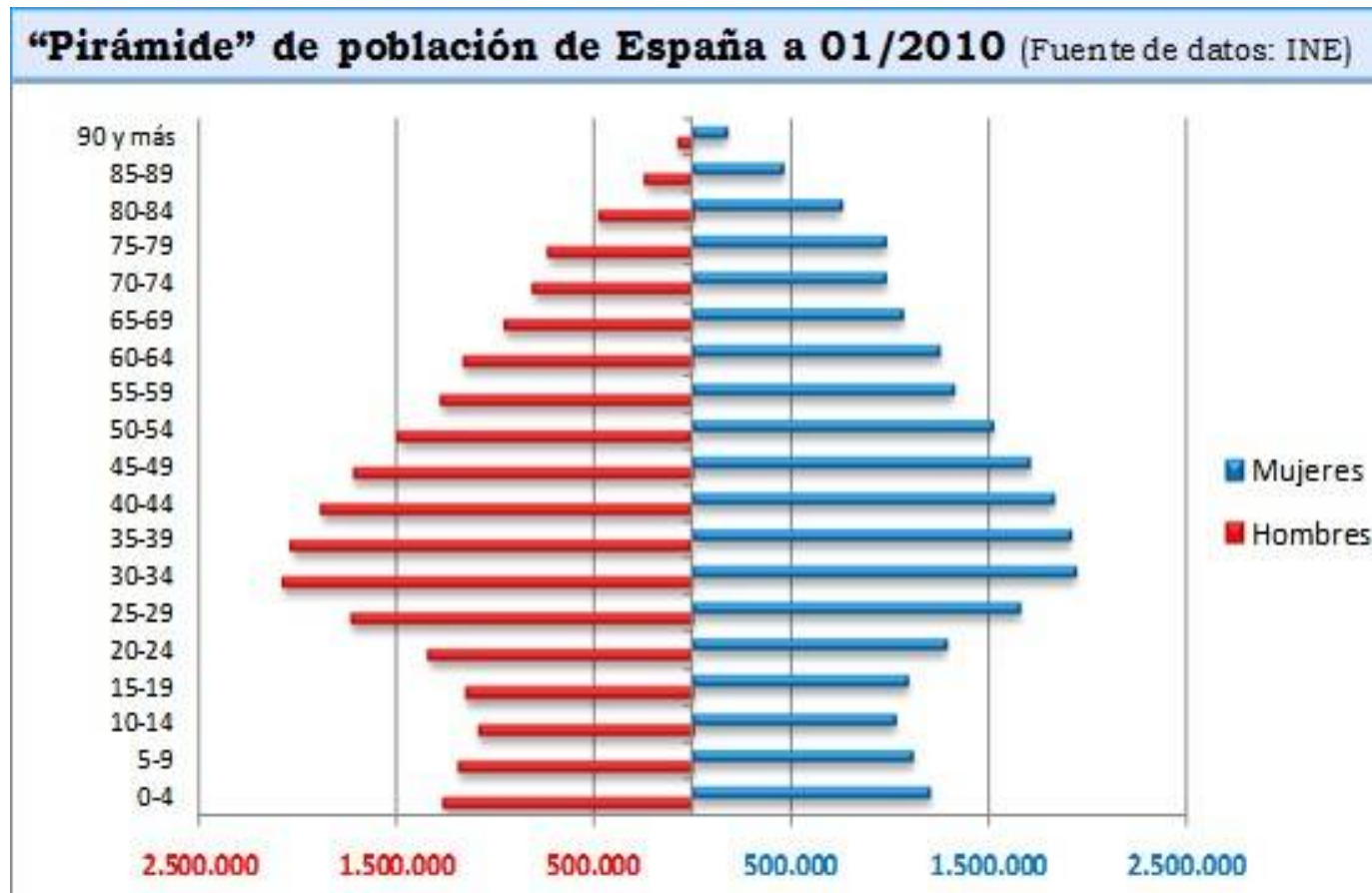
Bordered: 2011

(1) 2011, provisional; 2060 data are projections (EUROPOP2010 convergence scenario).

Source: Eurostat (online data codes: demo_pjangroup and proj_10c2150p)



Situation in Spain, 2010



Oldest-old individuals are making up an increasingly large segment of the population

Courtesy of Francesc Formiga

Impact of ageing on health

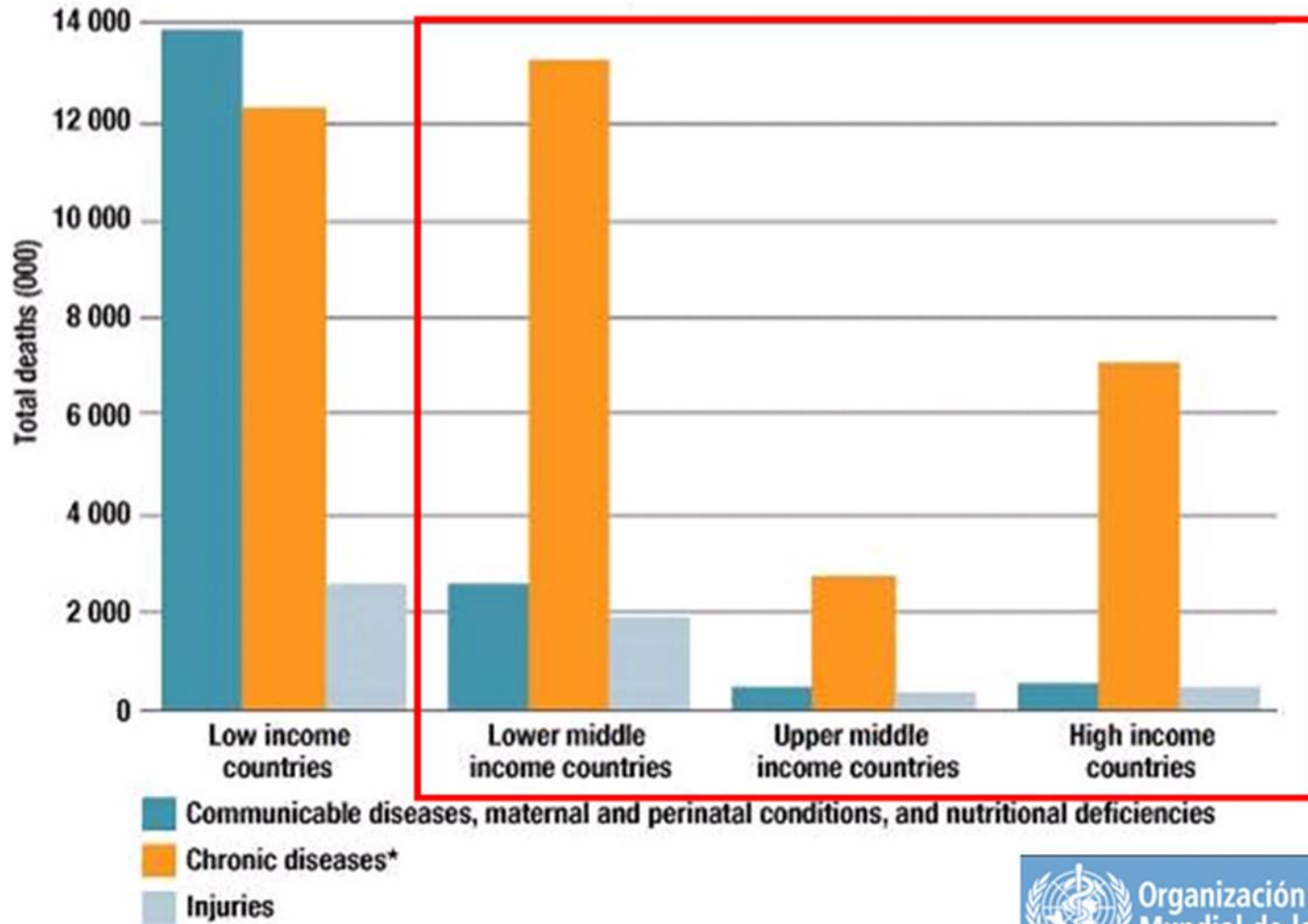
- Chronic diseases
 - Polypharmacy
- Cost of health care
- Ethical problems
- Social environment

‘An aging world is not equal to a doomed world if action is taken’

Joshua Grant, 2010

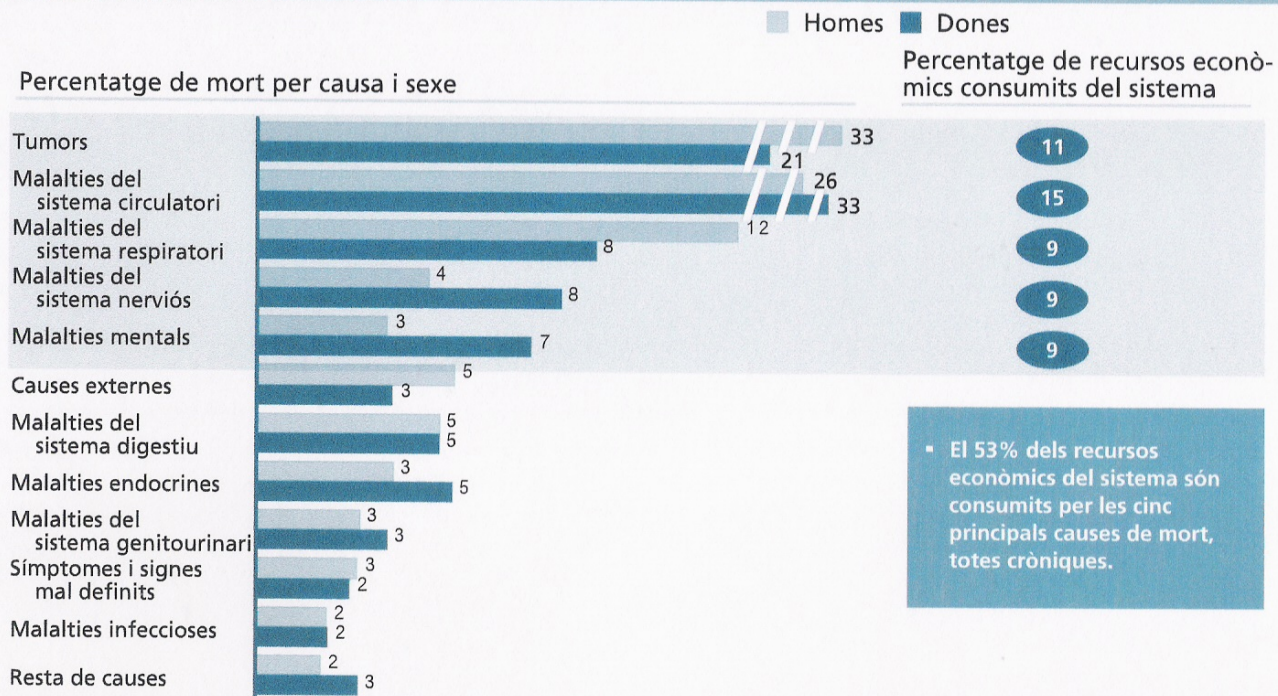


Chronic diseases around the world



Pla de Salut de Catalunya 2011-2015

Les primeres cinc malalties per mortalitat són **cròniques** i consumeixen més de la meitat dels recursos del sistema



Font: Departament de Salut, Registre de Mortalitat de Catalunya, 2009.


● La prevalença de les malalties cròniques aug-

● El 77.1% de la població de 15 anys i més (71.7%

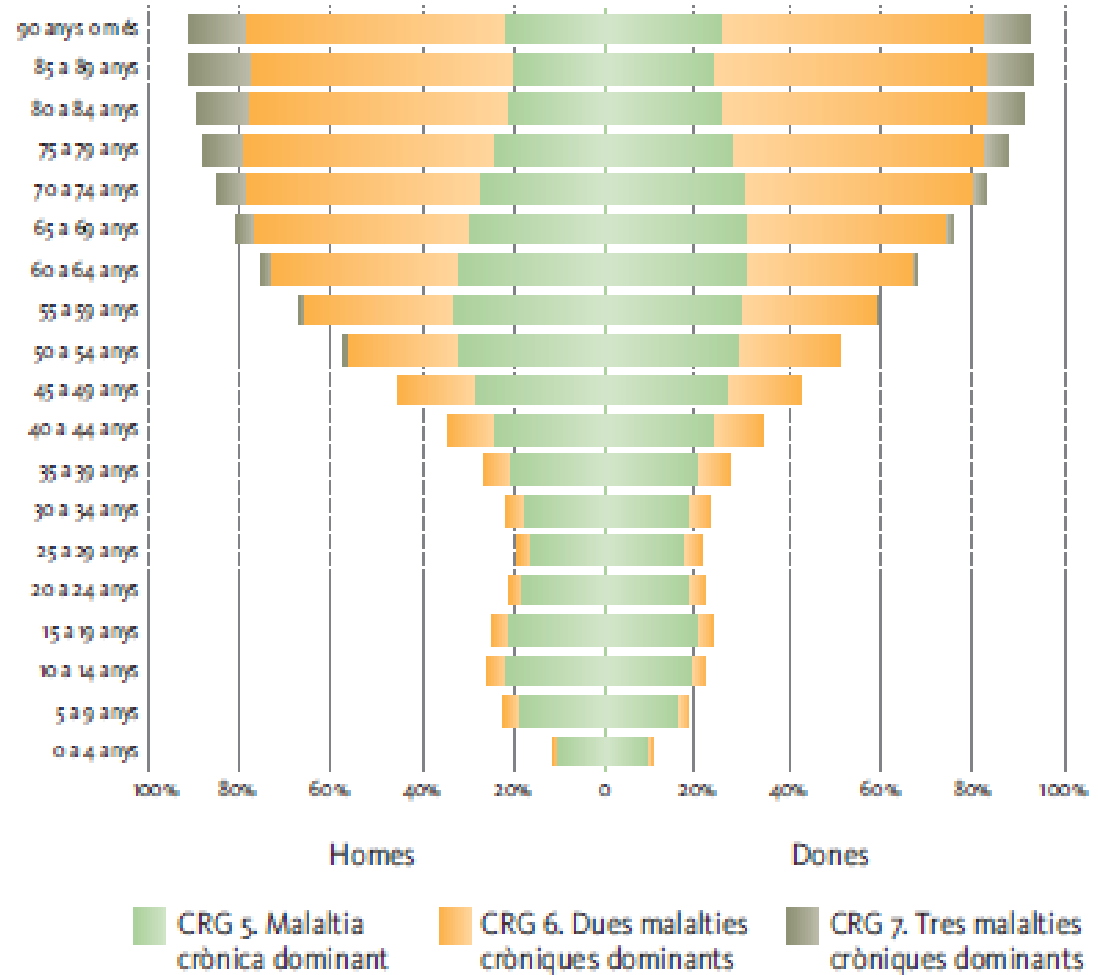


Ageing. The 'new' epidemic

ICS chronic patients, 2012

 Institut Català de la Salut

- 75% citizens of Catalonia
- 8 hospitals
- 3,700 beds
- 320 Primary Care Centres
- >39,000 employees (30% MD)



Health care consumption, 2012

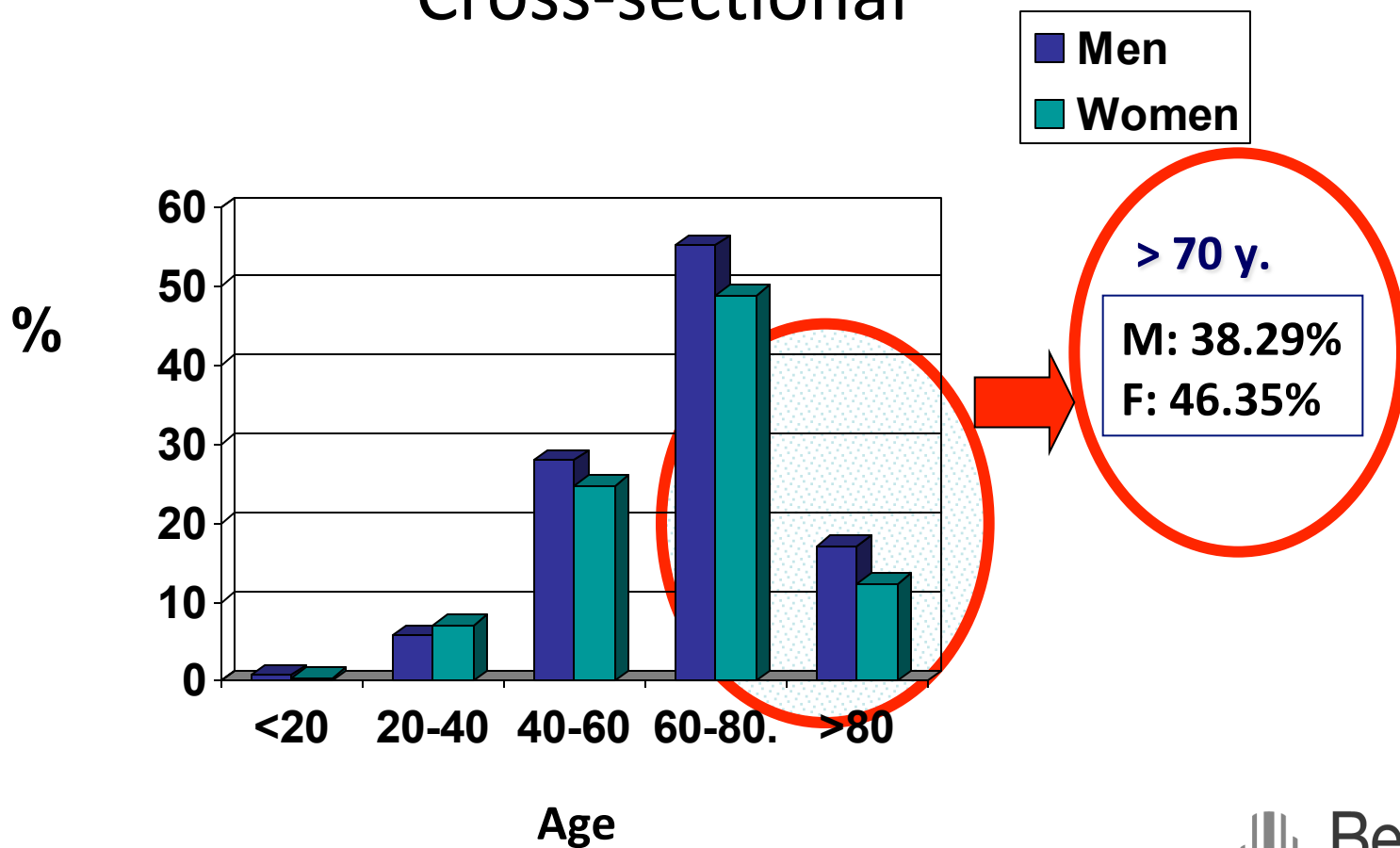


- **Chronic patients (CRG 5,6,7) ‘the big consumers’**
 - 46% of attended population
 - 86% (808 million €) of pharmaceutical cost
 - Readmission more frequent than younger patients
 - Increased stay in E.D.
 - Prolonged stay in the hospital when admitted
 - Needing a ‘post-acute’ facility after hospitalisation
 - Acute inpatient beds occupied by elderly patients →



Inpatients (12 June 2013)

Cross-sectional



Consequences of frailty *



- Functional decline in nonagenarians after a visit to an ED. *Formiga F, Vidaller A, Salazar A, Pujol R. Am J Emerg Med. 2003;21: 509.*
- Natural history of functional decline 1 year after hospital discharge in nonagenarian patients. *Formiga F, Mascaró J, Pujol R, Lopez-Soto A, Masanés F, Sacanella E. J Am Geriatr Soc. 2003; 51:1040-1.*
- Mortality and Morbidity in nonagenarian patients following hip fracture surgery. *F.Formiga, A.Lopez Soto, E. Sacanella, A.Coscojuela, S. Sisó, R. Pujol. Gerontology; 2003;49:41-*

* 'a state of increased vulnerability to stressors due to age-related declines in physiologic reserve across neuromuscular, metabolic, and immune systems' . AGS, 2004

Effects on clinical practice



Then

- **Younger patients**
- Free admission
- Acute disorders
- Admission for study & subsequent therapy
- Discharged when cured
- Subjectivity & Experience
- No worries for management outcomes (DRGs, length of stay, readmission rate)
- Paternalistic doctor-patient relationship

Now



- **Elderly patients**
- Restrictive admission criteria
- Chronicity
- Admission for Invasive Procedures & Therapies
- Early discharge
- Objectivity & Evidence
- Clinical management
- New relationship (Accountability & e-informed patients)

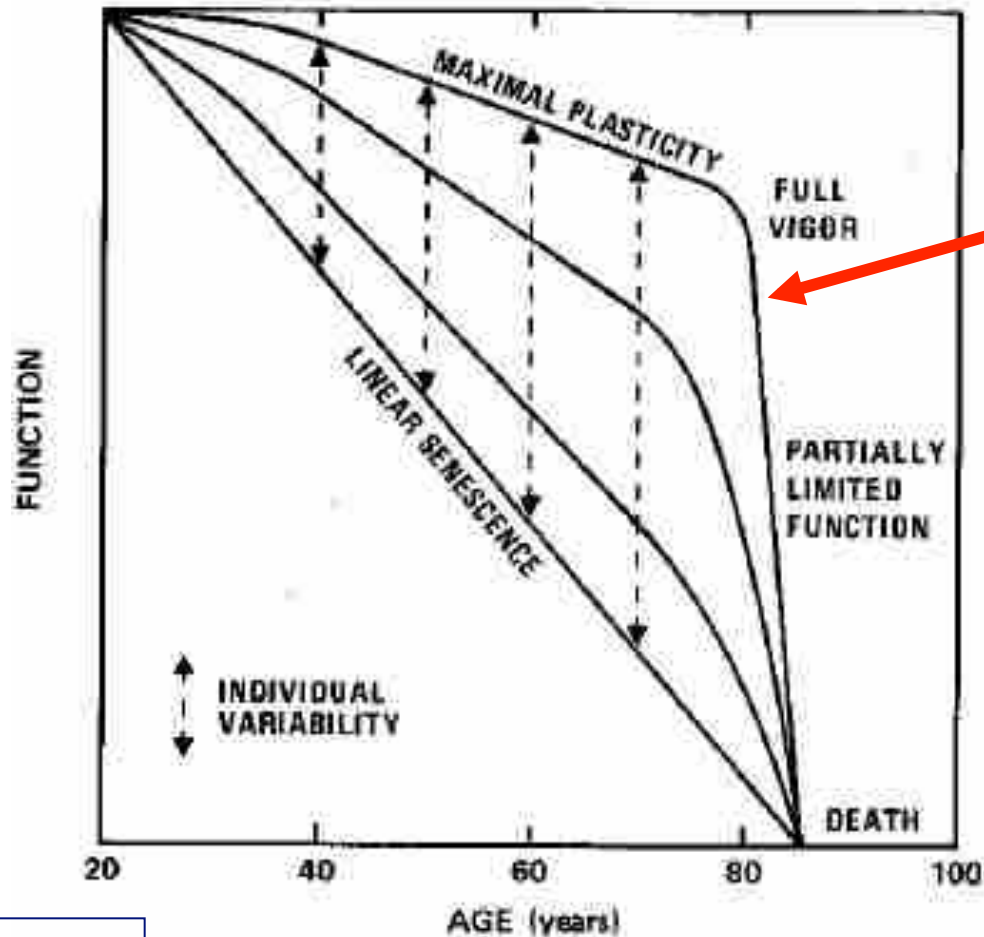
Old and new epidemics

	Infectious	Ageing
Prevention	Sanitation Vaccination	Life styles Risk factors
Management	Therapies, Health care policies	Social & community approach chronicity
Main objective	To eradicate	To avoid disability



Actions. James Fries and others.

Compression of disability



OBJECTIVE

RP Kippling, 2010



Actions. James Fries and others.

SPAIN: 6.7% of the population are dependents

- Objectives
 - To increase LEFD*
 - To increase LEGH** (2010 79.5% M, 72.9% F)
- Methods
 - Prevention & modifying Life Style

*LEFD: Disability Free Life Expectancy

**LEGH Life Expectancy in Good Health



Clinicians, we have a lot of opportunities !

- Educating patients (or citizens)
 - In daily clinical practice
 - In teaching activities (+ expert patients)
 - Preventive messages in the media
- Educating doctors
 - Medical school
 - Postgraduate training
 - Producing knowledge



Educating patients: how to age more healthily?

- Start as soon as possible !
 - Quit smoking (or never start)
 - Healthy diet
 - Ideal weight
 - Physical activity
- Be persistent !
- Talk with your doctor
- Select appropriately the information available on internet
- Join others with similar objectives



Kilian Jornet, Don Paco and others



Educating doctors

‘Training should focus on a patient-centered approach that equally emphasizes disease prevention and chronic disease management and not acute illness or worsening of a chronic disease’

Steven E. Weinberger et al. Alliance for Academic Internal Medicine Education. Redesign Task Force II. Ann Intern Med 2010;153:751-



Producing knowledge

REJ-2012-1343-ver9-Formiga_1P

REJUVENATION RESEARCH
Volume 15, Number 6, 2012
© Mary Ann Liebert, Inc.
DOI: 10.1089/rej.2012.1343

The Challenge of Maintaining Successful Aging at 87 Years Old: The Octabaix Study Two-Year Follow-Up

Francesc Formiga,^{1,3} Assumpta Ferrer,² Jesus Alburquerque,⁴ Manuel Fernández-Quevedo,¹ Cristina Royo,¹ and Ramón Pujol^{1,3} on behalf of the Octabaix Study Members*

Abstract

Preserving physical and cognitive function is crucial to successful aging. The objective of this study is to determine how many 87-year-old community-dwelling subjects continued to age successfully, according to a definition using a quantitative approach, and to assess the predictive value of certain factors evaluated 2 years previously. A total of 162 participants were assessed. Sociodemographic variables, the Barthel Index (BI), the Spanish version of the Mini-Mental State Examination (MEC), the Mini Nutritional Assessment (MNA), the Charlson Index, the Gait Rating Scale, social risk, quality of life, prevalent chronic diseases, and chronic drug prescription were collected. All subjects with scores over 90 points on the BI and above 23 points on the MEC were compared with the rest of the participants. A multiple regression analysis was performed. With the selected criteria, 90 (61.6%) community-dwelling subjects continued to age successfully. The multiple logistic regression analysis showed that the following were significantly associated with continued successful aging: A higher level of studies ($p < 0.02$, odds ratio [OR] 3.223, 95% confidence interval [CI] 1.158–8.975), better MEC scores ($p < 0.01$, OR 1.204, 95% CI 1.046–1.386) and Tinetti gait scale scores ($p < 0.01$, OR 1.433, 95% CI 1.013–2.027), and fewer chronic drug prescriptions ($p < 0.001$, OR 0.768, 95% CI 0.655–0.899). In conclusion, more than half of the individuals continued to age successfully. In subjects aged 87 years, the factors associated with continued successful aging were longer schooling, better cognition scores, lower risk of falls, and fewer chronic drug prescriptions at baseline evaluation.

Conclusions

- Ageing is a global epidemic that unfailingly will increase
- Main consequences are clearly identified
- Ageing, by itself, should not be felt as a failure: the objective is how to achieve successful ageing
- To prevent disability is the main objective
- Promoting healthy behaviours and life styles, and controlling risk factors of main chronic diseases are important strategies
- Clinicians, especially internists, should pay attention to chronic disease; young doctors should be trained accordingly and lead healthy life styles
- Citizens should be routinely educated in our clinical practice

