Messaging the message

(who?, what?, where?, when?, why?)

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Alzheimer's Disease International

The global voice on dementia

World Alzheimer Report 2014

Dementia and Risk Reduction

AN ANALYSIS OF PROTECTIVE AND MODIFIABLE FACTORS

Global Observatory for Ageing and Dementia Care

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The message
(modifiable risk factors for dementia)

Exposure	Period
Education	Early life
Hypertension	Midlife
Diabetes	Mid- to late-life
Smoking	Mid- to late-life

Messaging the message

- **Dementia is a preventable condition**
- **Myth-busting**
  - It's an inevitable, normal part of ageing
  - There is nothing that we can do
- **Dementia is everybody's business**
  - never too early… (brain health promotion)
  - never too late… (dementia prevention)

Dementia is a preventable condition

- Not widely understood or accepted
- Needs to be integrated and mainstreamed within emerging global health NCD prevention agendas e.g ‘25 by 25’
  - Tobacco control, salt, alcohol, inactivity, CVRF management
  - Current focus is on ‘premature’ mortality
  - Older people marginalised
  - Actual societal benefit may be much wider and greater
  - Global societal cost of dementia = $600bn

It's never too early….
(brain health promotion)

- Education
  - As a source of cognitive/ brain reserve
  - As 'education for life'
  - Benefits with every additional level from primary > tertiary (and beyond?)
- Upstream determinants of adult cardiovascular risk
  - Poverty, inequality
  - Foetal nutrition/ childhood obesity
  - 'Habits of a lifetime'
    - Diet
    - Exercise
    - Smoking initiation

It’s never too late….
(dementia prevention)

- Evidence on smoking, diabetes
- There may be additional benefits from multicomponent interventions for high CVD risk groups
  - FINGER trial
  - Polypill?
- Older people not prioritised in NCD prevention…

…despite equivalent or greater health benefits

- Concerns about dementia may be a powerful motivator for behavioural change
- NB - social learning theory – older people as authoritative communicators

Can prevention help to reduce the burden of dementia?

Exposure	Meta-analysed RR - association with AD	Population attributable risk fraction (PARF%)
Diabetes	**1.46 (1.20-1.77)**	**2.9%**
Midlife hypertension	**1.61 (1.16-2.24)**	**5.1%**
Midlife obesity	**1.60 (1.34-1.92)**	**2.0%**
Physical inactivity	**1.82 (1.19-2.78)**	**12.7%**
Smoking	**1.59 (1.15-2.20)**	**13.9%**
Depression	**1.65 (1.42-1.92)**	**7.6%**
Low education	**1.59 (1.35-1.86)**	**19.1%**
COMBINED TOTAL		**28.2%**

(Norton et al 2014)

10% reduction in risk exposure – (8.3% reduction)

25% reduction in risk exposure – (15.3% reduction

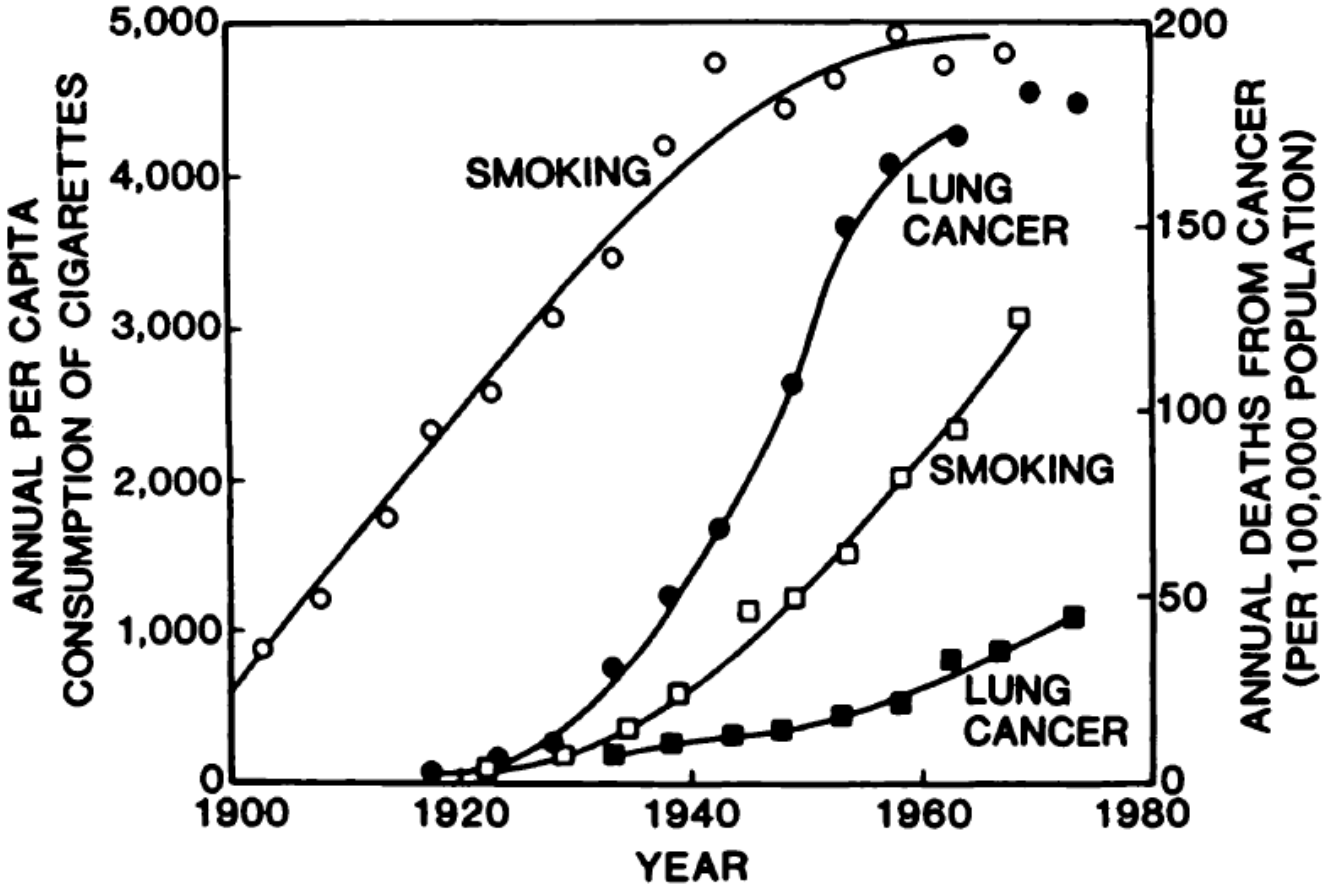

Chart 4. Trends in smoking prevalence and lung cancer, British males and females. The data for this chart are for England and Wales. In men, smoking (○) began to increase at the beginning of the 20th century, but the corresponding trend in deaths from lung cancer (●) did not begin until after 1920. In women, smoking (□) began later, and the increase in lung cancer deaths in women (■) has only appeared recently. Redrawn with permission from the paper of Cairns (4).

Monitoring progress

- Cardiovascular health is improving in many developed countries
  - Less smoking, declining BP and cholesterol
  - Increased physical activity
  - Prevalence of obesity and diabetes is increasing
  - Falling incidence of heart disease and stroke
- Better education

- Natural experiment
  - Track change in risk factor profile
  - Predicted vs. observed change in dementia incidence
  - Attribute change in incidence to individual risk factors

A two-decade comparison of prevalence of dementia in individuals aged 65 years and older from three geographical areas of England: results of the Cognitive Function and Ageing Study I and II

Fiona E Matthews, Antony Arthur, Linda E Barnes, John Bond, Carol Jagger, Louise Robinson, Carol Brayne, on behalf of the Medical Research Council Cognitive Function and Ageing Collaboration

Summary

Background The prevalence of dementia is of interest worldwide. Contemporary estimates are needed to plan for future care provision, but much evidence is decades old. We aimed to investigate whether the prevalence of dementia had changed in the past two decades by repeating the same approach and diagnostic methods as used in the Medical Research Council Cognitive Function and Ageing Study (MRC CFAS) in three of the original study areas in England.

Methods Between 1989 and 1994, MRC CFAS investigators did baseline interviews in populations aged 65 years and older in six geographically defined areas in England and Wales. A two stage process, with screening followed by diagnostic assessment, was used to obtain data for algorithmic diagnoses (geriatric mental state–automated geriatric examination for computer assisted taxonomy), which were then used to estimate dementia prevalence. Data from three of these areas—Cambridgeshire, Newcastle, and Nottingham—were selected for CFAS I. Between 2008 and

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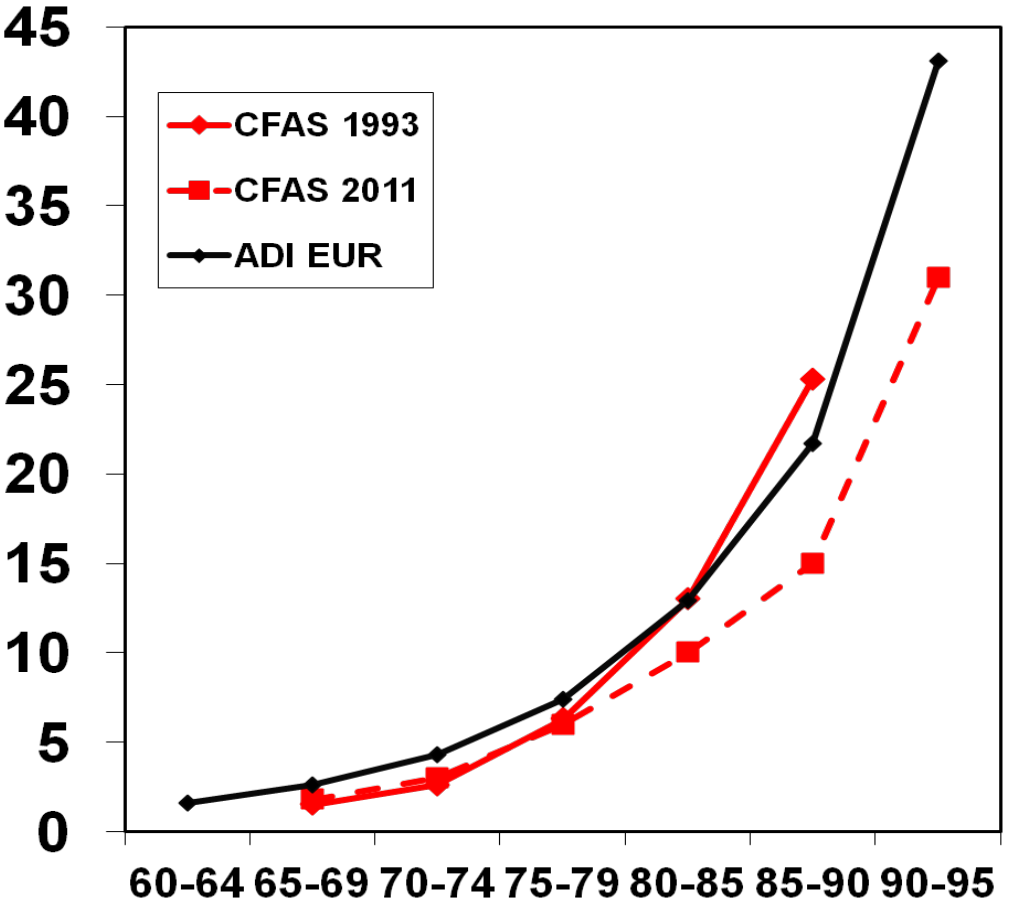
MRC Biostatistics Unit, Cambridge Institute of Public

Prevalence may already be falling in HIC… e.g MRC CFAS (England) 1993-2011



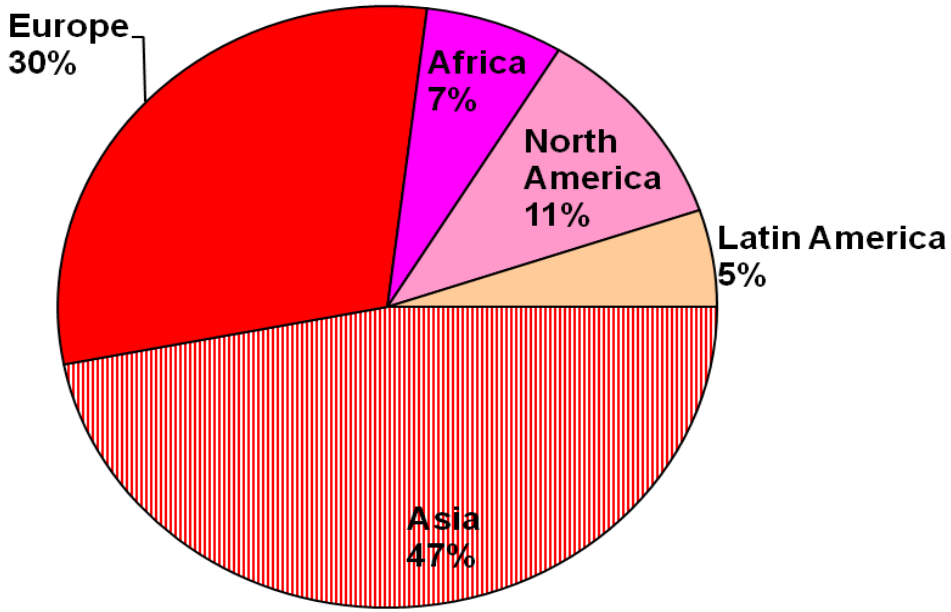
Standardised prevalence
1993 - 8.3%
2011 - 6.5%

Prevalence of dementia nearly **one third lower** in 2011 compared with 1993

OR 0.7 (0.6-0.9)

Matthews et al, Lancet 2013

Global Distribution of Incident Dementia (7.7 million new cases per year)

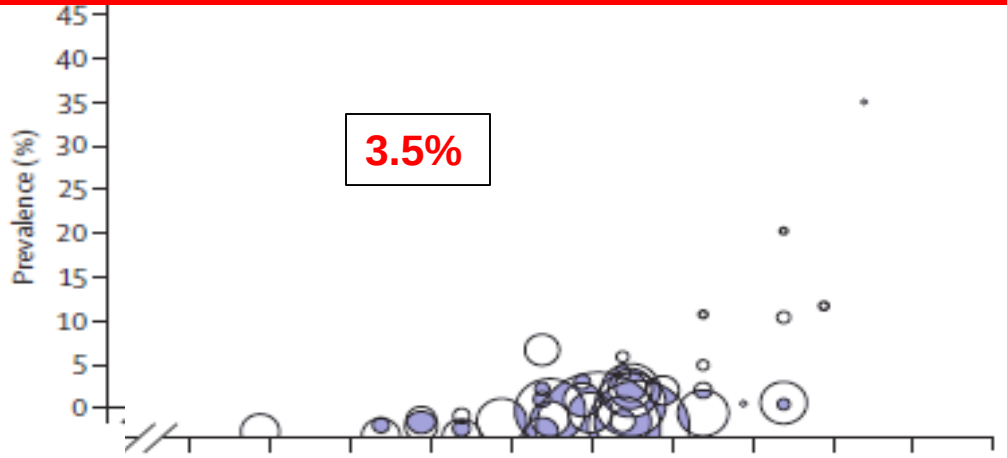


One new case every 4 seconds!

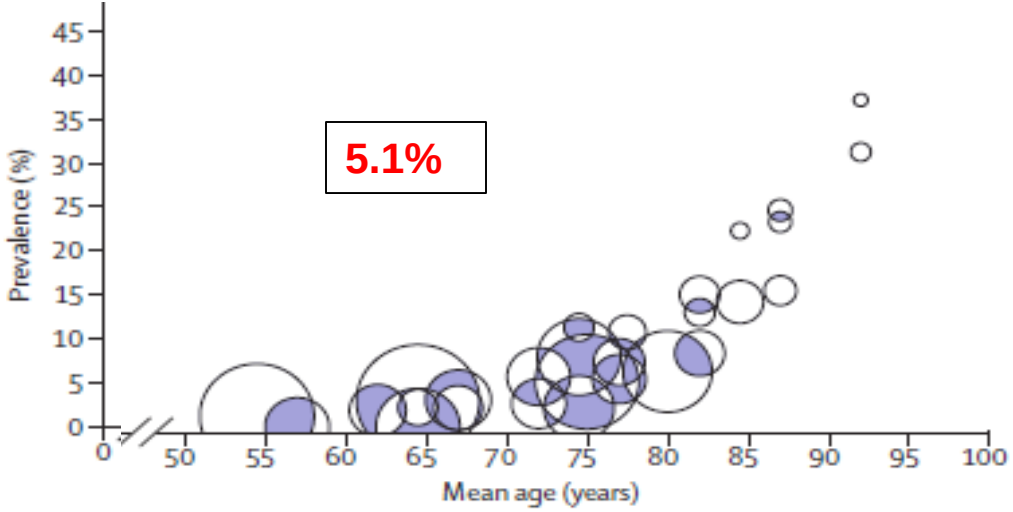
WHO Report 2012 – Dementia a Public Health Priority

Increasing prevalence of dementia in China?

1990



2010

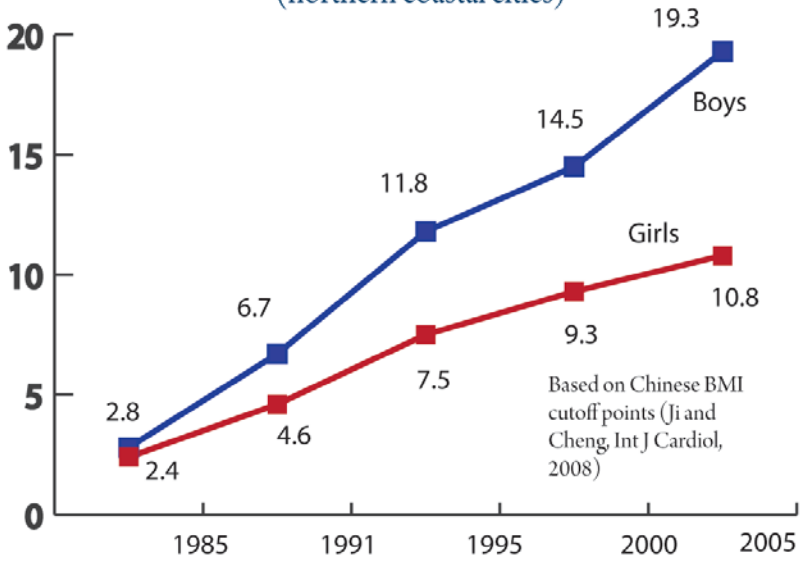


The prevalence of dementia in China 1990-2010

Chen et al, Lancet 2013

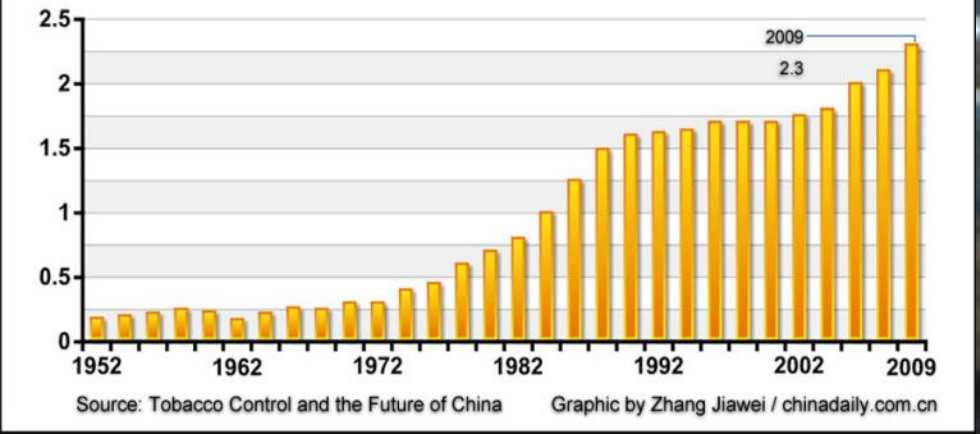
46% increase 1990-2010

China: Trends in the overweight and obesity prevalence among school children
(northern coastal cities)



Cigarette consumption in China

Trillion



Source: Tobacco Control and the Future of China

Graphic by Zhang Jiawei / chinadaily.com.cn

An index of the quality of public healthcare – detection and control of hypertension

	Detection	Control	Detected and controlled
Good			
Peru (rural)	97%	93%	90%
Peru (urban)	93%	78%	73%
Puerto Rico	91%	65%	58%
Moderate			
Mexico (urban)	80%	55%	44%
Venezuela	83%	50%	42%
DR	82%	48%	39%
Mexico (rural)	73%	52%	38%
China (urban)	79%	45%	36%
Poor			
S Africa	82%	32%	24%
Cuba	70%	34%	24%
India (rural)	43%	43%	18%
India (urban)	44%	37%	16%
China (rural)	51%	5%	3%

Prince et al, Journal of Hypertension, 2011