

Dementia Research

Developing Research Impact

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Overview

- The current scenario
- What the research tells us
- Research, Policy and Practice

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(1) The current scenario

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The Present

820,000 people in the UK are living with dementia; risk increases with age from 1 in 20 at 65+ to 1 in 3 people at 90+ years

(Alzheimer Research Trust UK 2010; PMS Report 2012)

Many more people have Mild Cognitive Impairment; estimates vary up to 16% of the population over 65 (1.65m) and it is highly associated with an increased risk of dementia

(Petersen et al 2010)

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The Future

This current figure of 820,000 is forecast to increase to 1,735,000 by 2051

Annual conversion rates of MCI to dementia range from 10% to 15% per year in clinical samples but in community-based studies are often substantially lower (3.8%-6.3% per year)

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The Cost

UK: £23 billion annually ¹

Globally: \$604 billion annually (1%GDP) ²

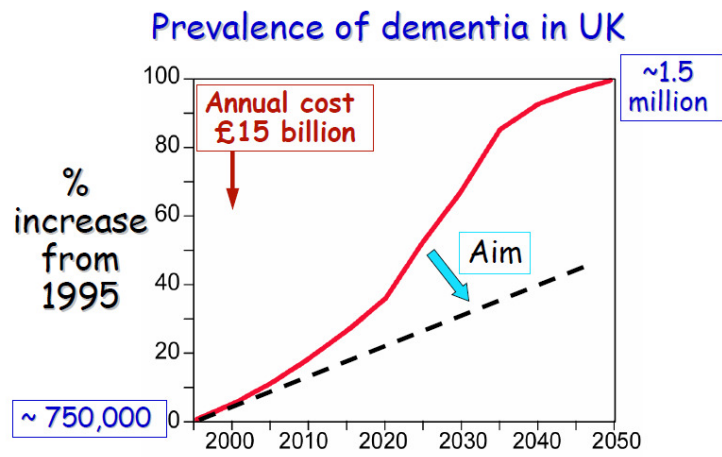
Projected to rise by 85% by 2030 ³

1. Alzheimers Research Trust 2010
2. World Alzheimers Report 2010
3. World Alzheimers Report 2010

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The Vision



Mezler 1997; Lowin 2001

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(2) What the research tells us

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Mild Cognitive Impairment The Disconnected Mind project

- Genetic factors account for approximately 24% of the variation in changes in cognitive ability from childhood to old age.

Published in *Nature* (2012)

- The integrity of the brain's white matter and thinking skills are linked.

Published in *Molecular Psychiatry* (2012)

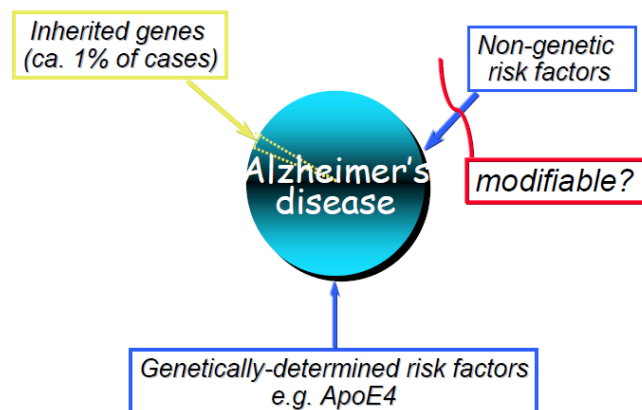
- Physical activity is good for cognitive function

Published in *Psychology and Aging* (2012)

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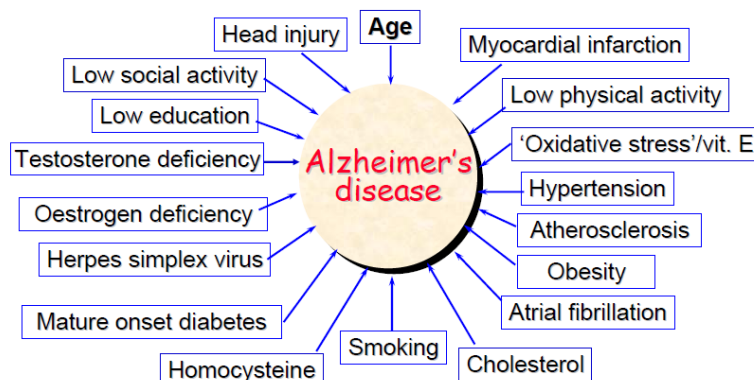
What causes Alzheimer's disease?



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Postulated non-genetic risk factors for Alzheimer's disease



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Interactions between genetic and non-genetic risk factors for AD

- Some non-genetic risk factors appear to exert their effects only in people with a particular genetic profile
- **Smoking** may be a *risk factor* only in those without ApoE4
- Education may be *protective* only in those with ApoE4
- **Exercise** may be *protective* only in those without ApoE4

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Dementia – An Illustration of the Risks

If you are in mid-life (45-55) and....

- You are hypertensive (BP>140/90) the risk ...is **doubled**
- You are hyper-cholesterolemic (>5 mmol/l) the risk...is **doubled**
- You are obese (BMI>30) the risk of dementia post 65 is **doubled**

If you have all 3 conditions (ca. 1 million people in the UK) then you are **six times at risk**

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(3) Research, Policy and Practice The Transition

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Knowledge Transfer

"the exchange, synthesis and ethically-sound application of knowledge - within a complex system of interactions among researchers and users - to accelerate the capture of the benefits of research"

Canadian Institute of Health Research
2010

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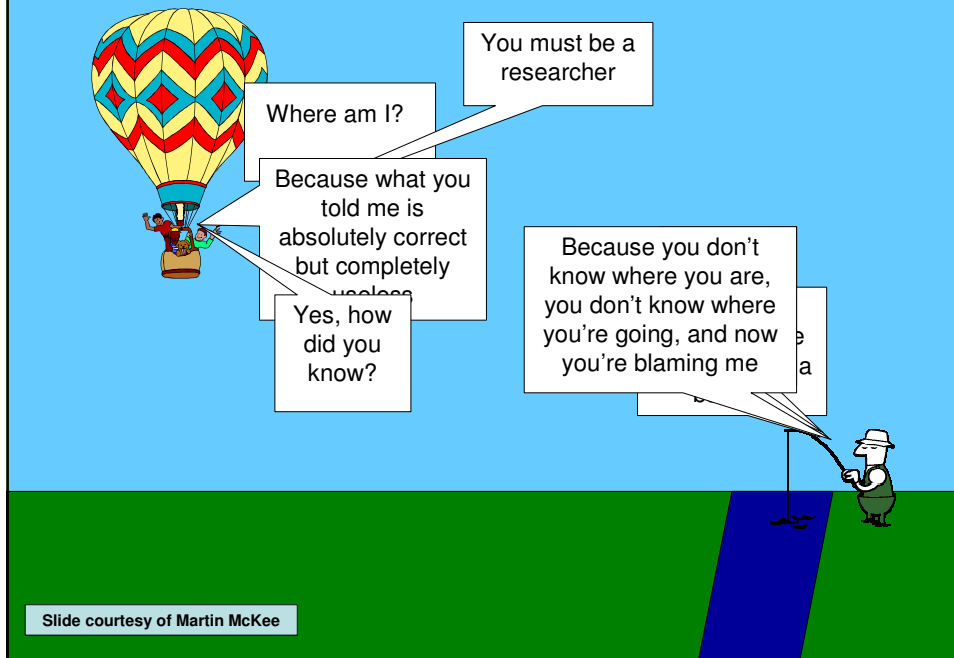
The WHO/Age UK KT Model



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Climate and Context for Research Use: The Trust Problem



Climate and Context for Research Use

- National Strategy on Dementia
- Ministerial Summit on Dementia Research
- Ministerial Advisory Group on Dementia Research
- Coalition Programme of Government
- NIHR/ESRC Calls for Dementia Research
- The Dementia Challenge

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Linkage and Exchange Efforts The Ministerial Advisory Group

Five sub-groups

- Agreeing priorities in research – care, cause, cure
- Raising public awareness for dementia research
- Securing available funding for dementia research
- Developing better ways of working in research
- Improving the translation of research

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Knowledge Creation The Price of Research

(UK 2010)

- Current spend on all sector R&D.....£26,362m
- Current spend on Health Research.....£ 7,350m
- Current spend on Cancer Research.....£ 590m
- Current spend on Heart Disease Research.....£ 169m
- Current spend on Dementia Research.....£ 50m

“If you think research is expensive – try disease”

Mary Lasker, philanthropist

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Knowledge Creation Priorities for Research

1. Further preclinical research to understand **disease mechanisms** and progression to identify new targets and approaches for therapeutic development.
2. The exploitation of **longitudinal population studies** to identify the risk and protective factors relating to dementia.
3. Wider recruitment of **research participants**, both to study the 'prodromal' phase in advance of clinical presentation with dementia and to allow demarcation of the various dementia subtypes for more effective targeting and evaluation of interventions.
4. The refinement and promotion of **public health strategies** for the prevention of dementia.
5. Further research into behavioural and psychological symptoms in order to provide more effective management of **challenging behaviour** and improved quality of life.
6. The promotion of research in general hospitals and care homes to improve the management of co-morbidities and the physical health of patients with dementia, and provide an evidence-base for **more effective care delivery**.

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Push Efforts

Five themes

- **Strengthen collaboration and co-ordination**
- **Embed research in treatment and care**
- **Grow capacity & capability**
- **Harness existing resources**
- **Engage the public**

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Pull Efforts

Public Involvement and Engagement

- **Charitable involvement**
- **Training needs (eg 'Your Story Matters')**
- **Public on involvement in research**
 - eg
 - **User Register (DeNDRoN/ASoc/NHS)**
 - **Webinars**
 - **World Alzheimer's Day**
 - **Campaigns**

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Conclusions

- **Progress is steady but slow**
- **Our understanding of cause is quite advanced**
- **Increased volume of research is likely to improve prevention, yield a cure and improve care**
- **Increased emphasis on knowledge transfer is required, using the new WHO model**

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