

Sooner or Later...?! Timely Diagnosis of Dementia

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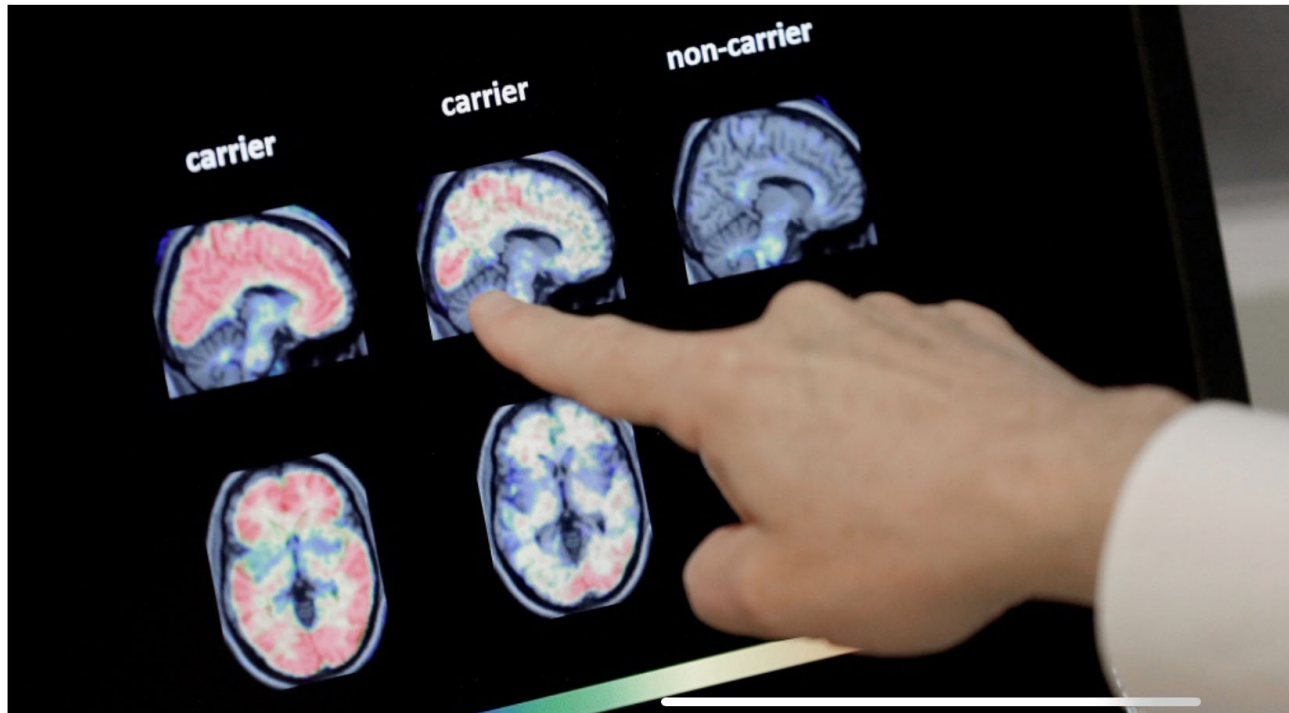
HEALTH | News

New report suggests 75 per cent of dementia cases are undiagnosed, with 'tsunami' of new diagnoses on the horizon



Alexandra Mae Jones CTVNews.ca writer
@AlexandraMaeJ | [Contact](#)

Published Monday, September 20, 2021 8:00PM EDT



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NEWSLETTER



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The yoga teacher

- ▶ 73 yrs old lady
- ▶ Yoga, pilates, gym, WI, extensive social life, drives, increasingly forgetful
- ▶ Sister diagnosed with dementia recently
- ▶ Worried about memory
- ▶ Dementia screen NAD
- ▶ MMSE 27/30 (1/3 recall, date?)
- ▶ Fully independent, no decline, copes with diaries and note keeping

Too soon?

The burning chair

- ▶ Mary, aged 82
- ▶ living alone, rented room
- ▶ few friends
- ▶ home help daily

History

- ▶ patient unaware of any problems
- ▶ seen by psychiatrist 2 years ago
 - “probable early Alzheimer's disease”
 - MMSE 25/30
- ▶ increasingly forgetful since
- ▶ living alone and coping well

History

Found by home help

- ▶ sitting in chair
- ▶ room full of smoke
- ▶ chair on fire!

History

- ▶ Not depressed
- ▶ MMSE 11 / 30

Question: “what would you do now if
the chair caught on fire
again”

Answer: “I’d probably burn to death”
(laughs)

Too late?

Dementia

ICD-10 definition

- ▶ Decline in:
 - memory
 - other cognitive abilities
 - planning
 - organising
 - problem solving
 - absence of clouding of consciousness
 - change in emotion, personality or behaviour

Symptoms...

- ▶ cognitive symptoms (100%)
- ▶ behavioural symptoms (50%)
 - agitation
 - wandering
- ▶ psychotic symptoms (50%)
 - delusions
 - hallucinations
- ▶ affective (80%)
 - depression

Dementia – different symptoms for different people

- ▶ Memory loss
- ▶ Confusion about place and time
- ▶ Impaired judgment or speaking

Dementia – different symptoms for different people

- ▶ Impaired ability to perform everyday tasks
- ▶ Affected personality, mood, and behavior

Leading types of dementia

- ▶ Alzheimer's disease
- ▶ Vascular dementia caused by stroke

Dementia

types

- ▶ Some “treatable” dementias (very rare)
- ▶ vitamin deficiency (B1, B12)
- ▶ Syphilis
- ▶ normal pressure hydrocephalus
- ▶ Hypothyroidism
- ▶ cerebral tumours (especially meningiomas)
- ▶ subdural haematoma

Dementia

differential diagnosis

- ▶ functional cognitive impairment
- ▶ Subjective forgetfulness
- ▶ depression
- ▶ delirium
- ▶ dysphasia
- ▶ learning disability

Stroke – the cause of vascular dementia

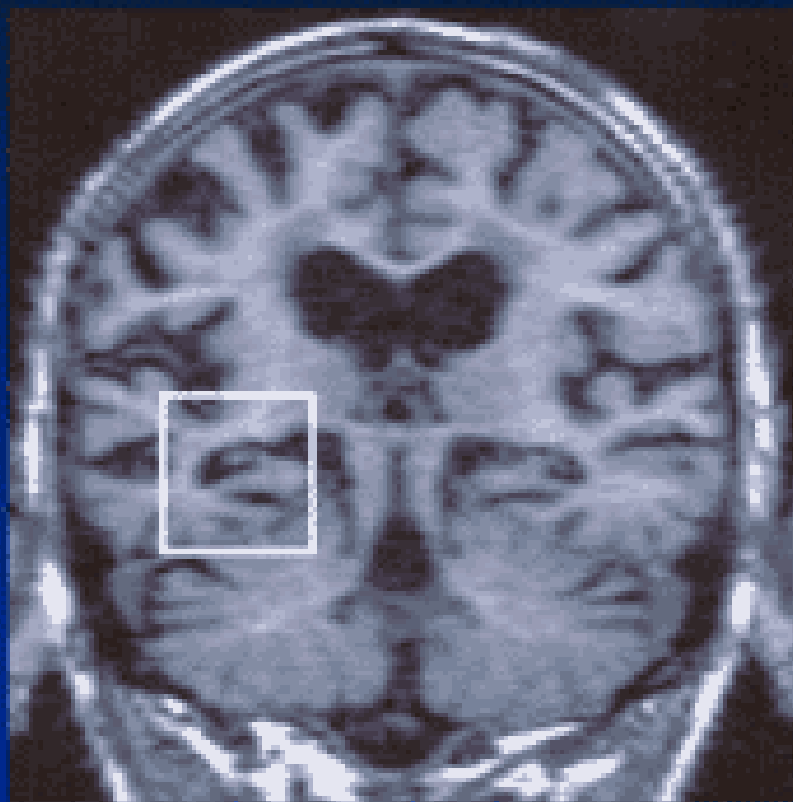
- ▶ Sudden onset
- ▶ Immediate injury
- ▶ Type of injury depends on location of stroke

Dementia diagnosis

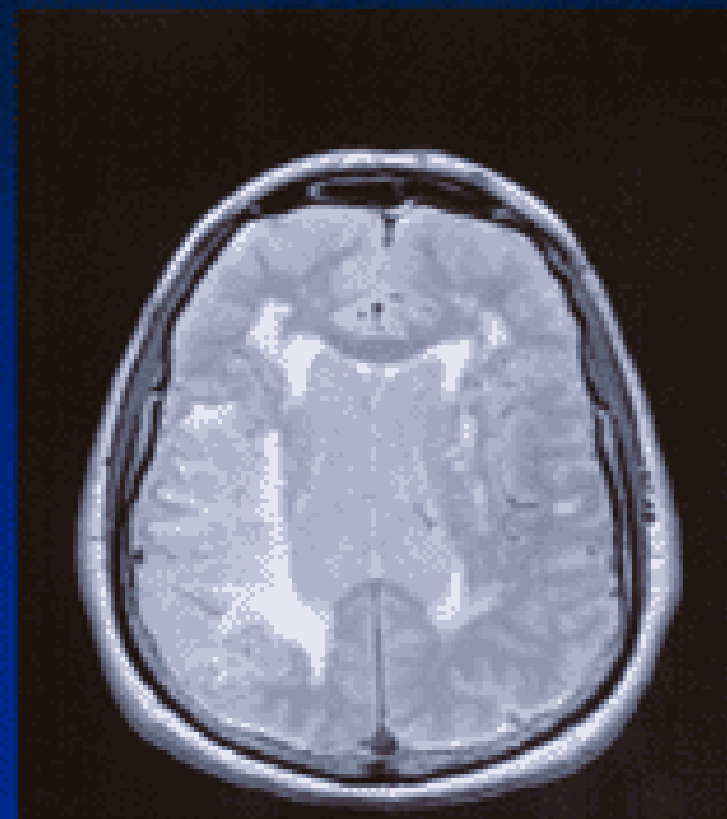
- ▶ history from patient
- ▶ informant history
- ▶ Cognitive examination
- ▶ physical assessment
- ▶ Investigations (Thyroid, B12, Folate, VDRL, Ca...)
- ▶ Neuroimaging

Cognitive Tests

- ▶ [TYM](#)
- ▶ www.tymtest.com
- ▶ [TYM Score \(Normal aver 47/50, Mild AD 33\)](#)
- ▶ [IQCODE](#)
- ▶ [IADL](#)
- ▶ [GPCOG](#)
- ▶ [RUDAS](#)
- ▶ <https://fightdementia.org.au/about-dementia/resources/culturally-appropriate-dementia-assessment-tools/rudas>

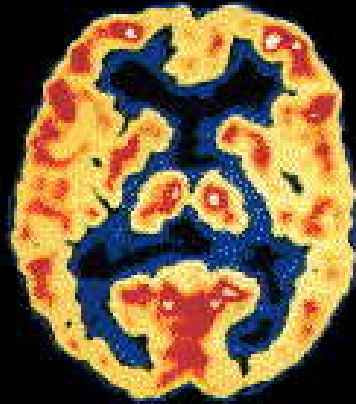


Hippocampal Atrophy

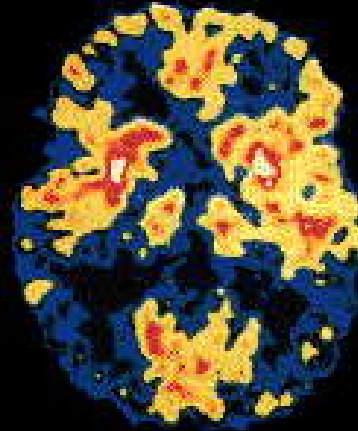


Stroke

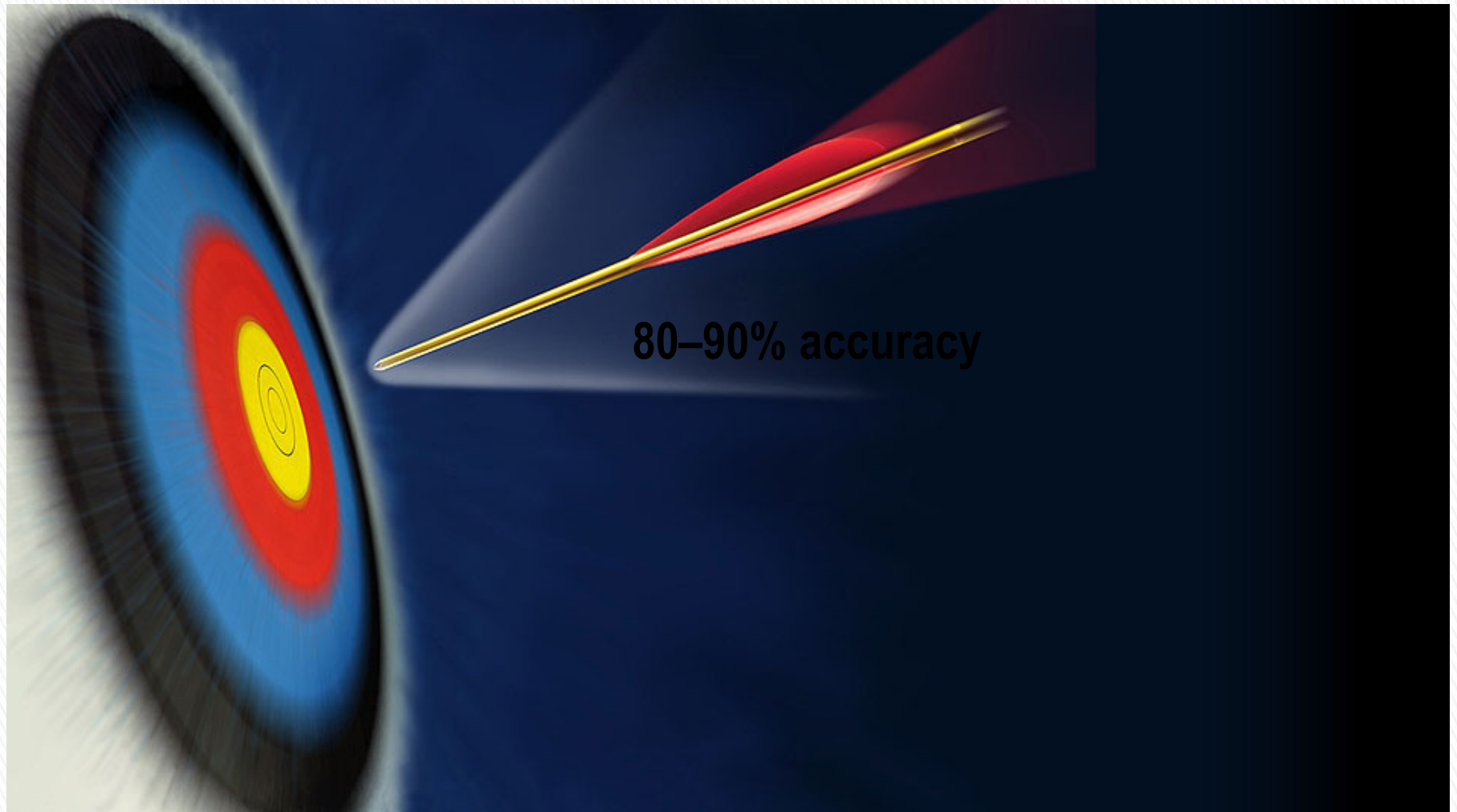
**Normal
Brain**



**Alzheimer's
Disease**



Diagnosing Alzheimer's disease

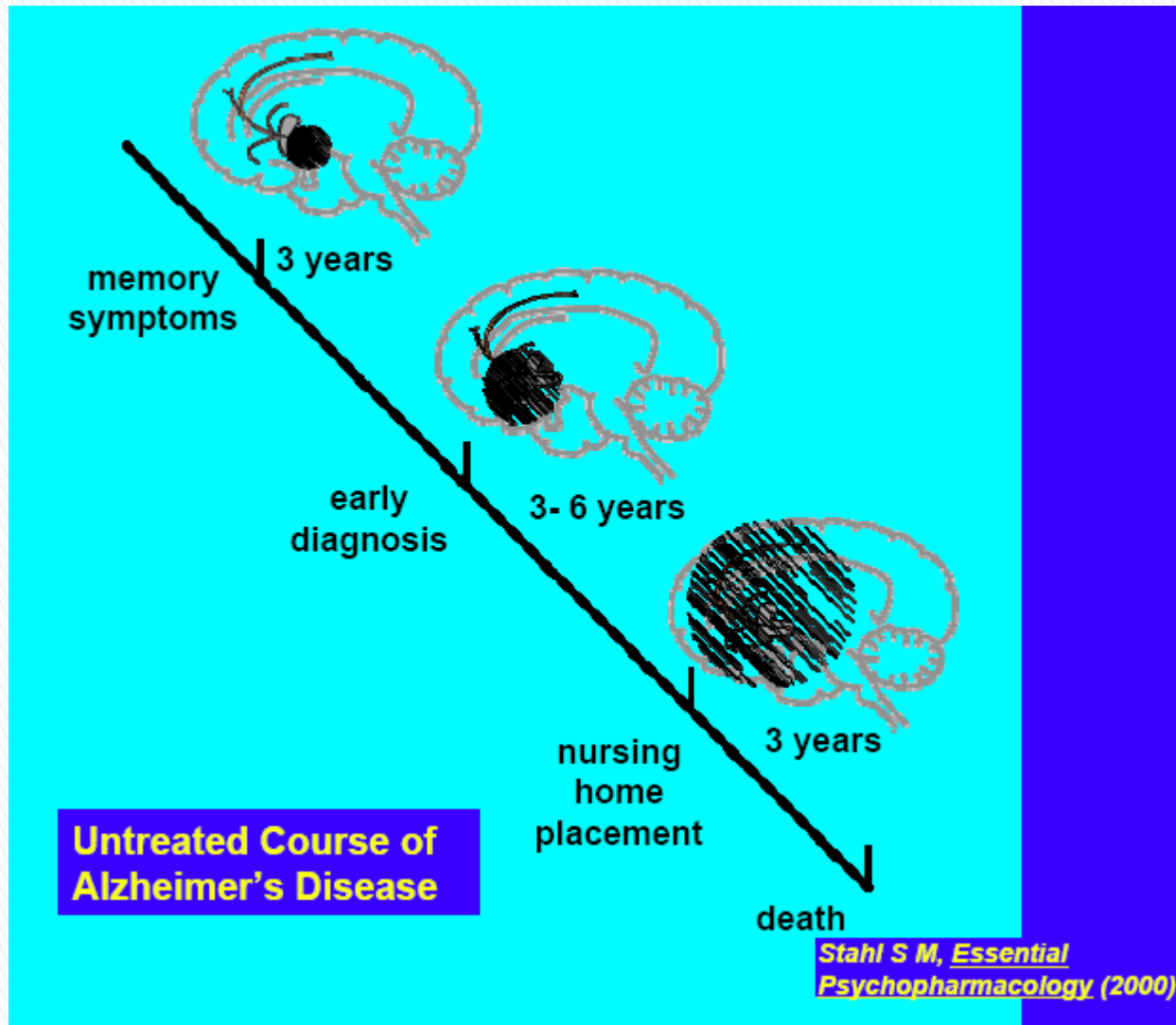


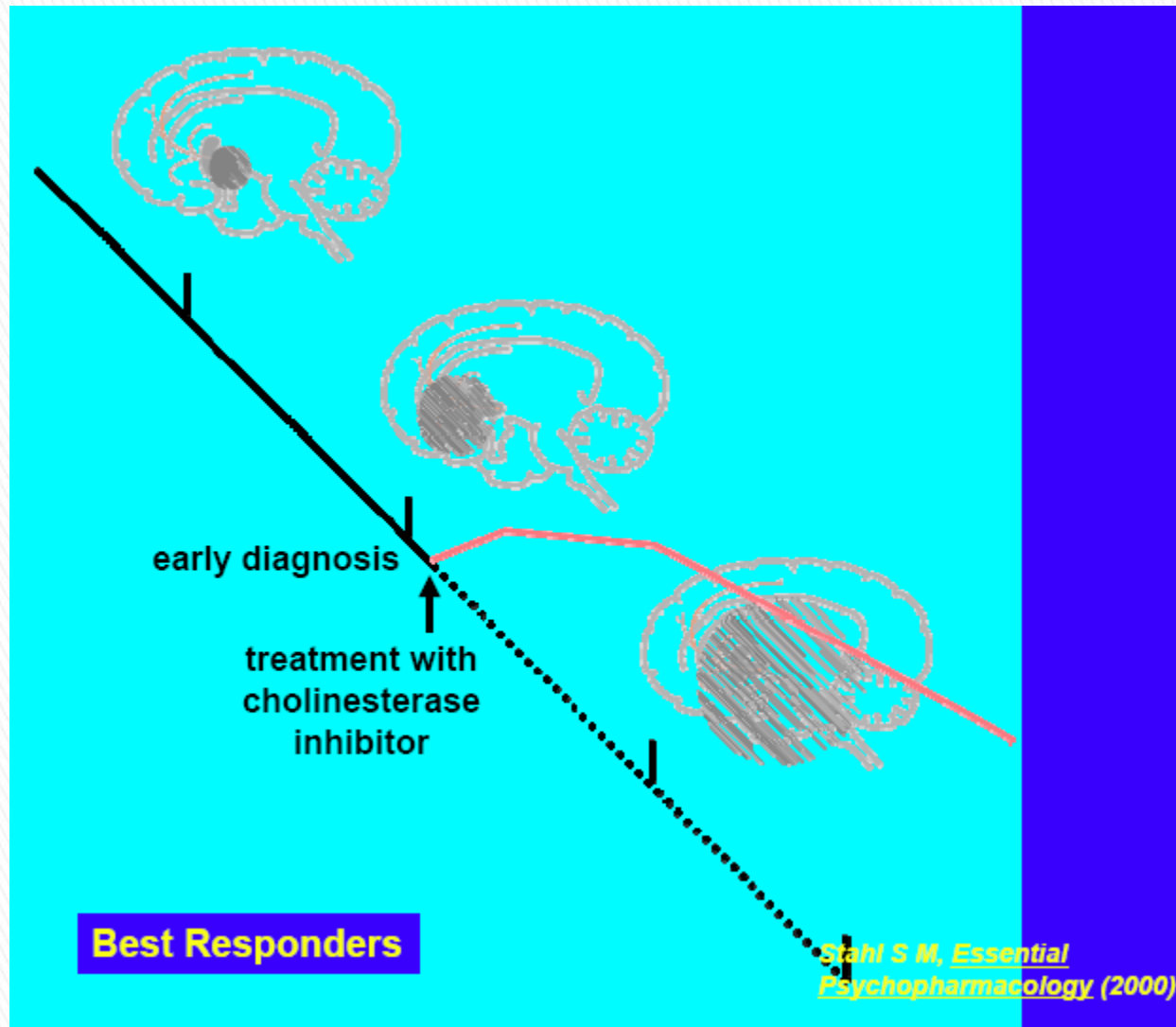
MITCHELL, A.J. AND SHIRI-FESHKI, M. (2009). RATE OF PROGRESSION OF MILD COGNITIVE IMPAIRMENT TO DEMENTIA - META-ANALYSIS OF 41 ROBUST INCEPTION COHORT STUDIES. *ACTA PSYCHIATRICA SCANDINAVICA*, 119, 252-65

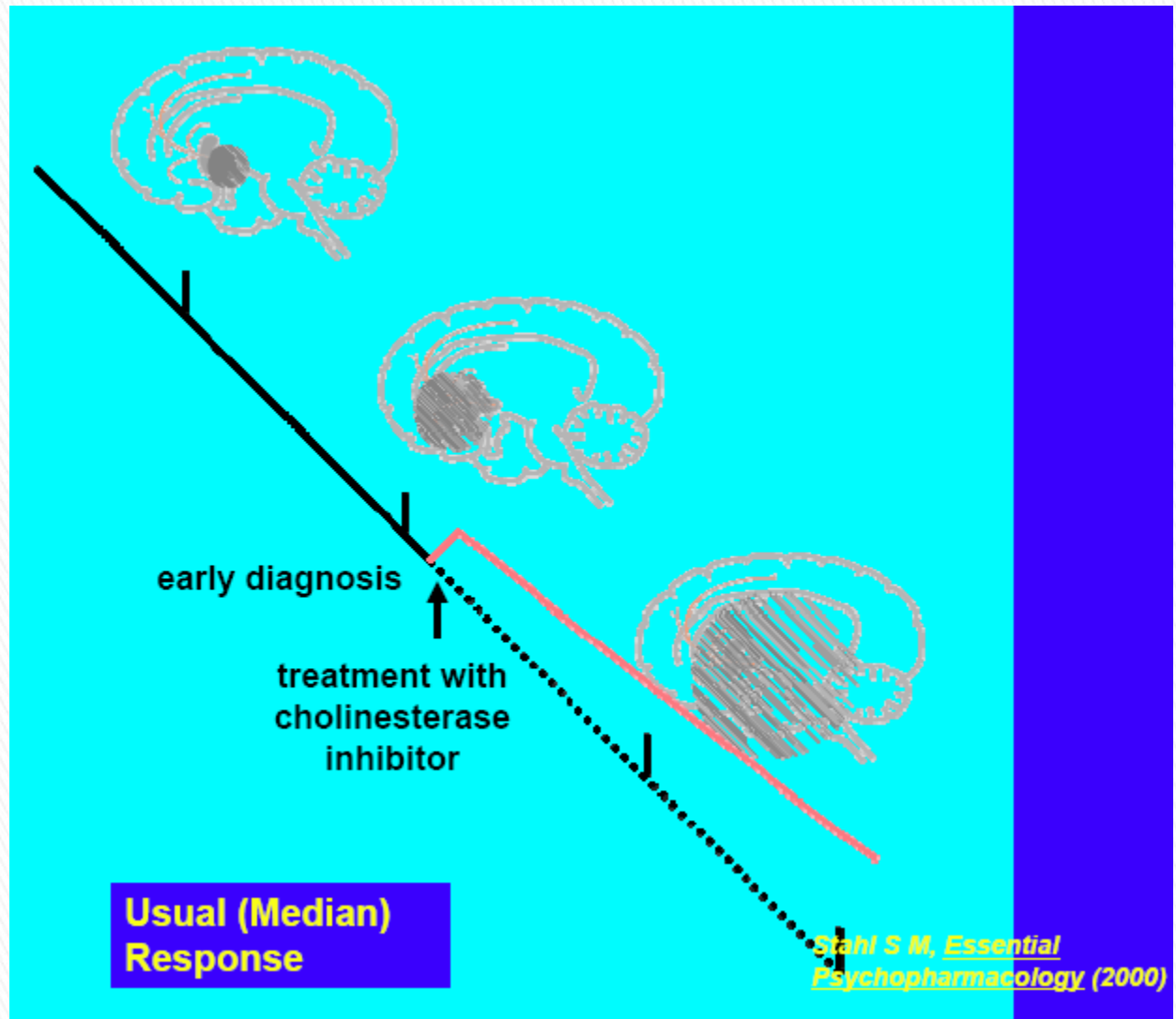
- ▶ Annual conversion rate - MCI to dementia or AD: 7%
- ▶ Annual conversion rate - MCI to vascular dementia: 2%
- ▶ Progression from MCI to dementia: <50%

Medications for Alzheimer's disease can slow decline



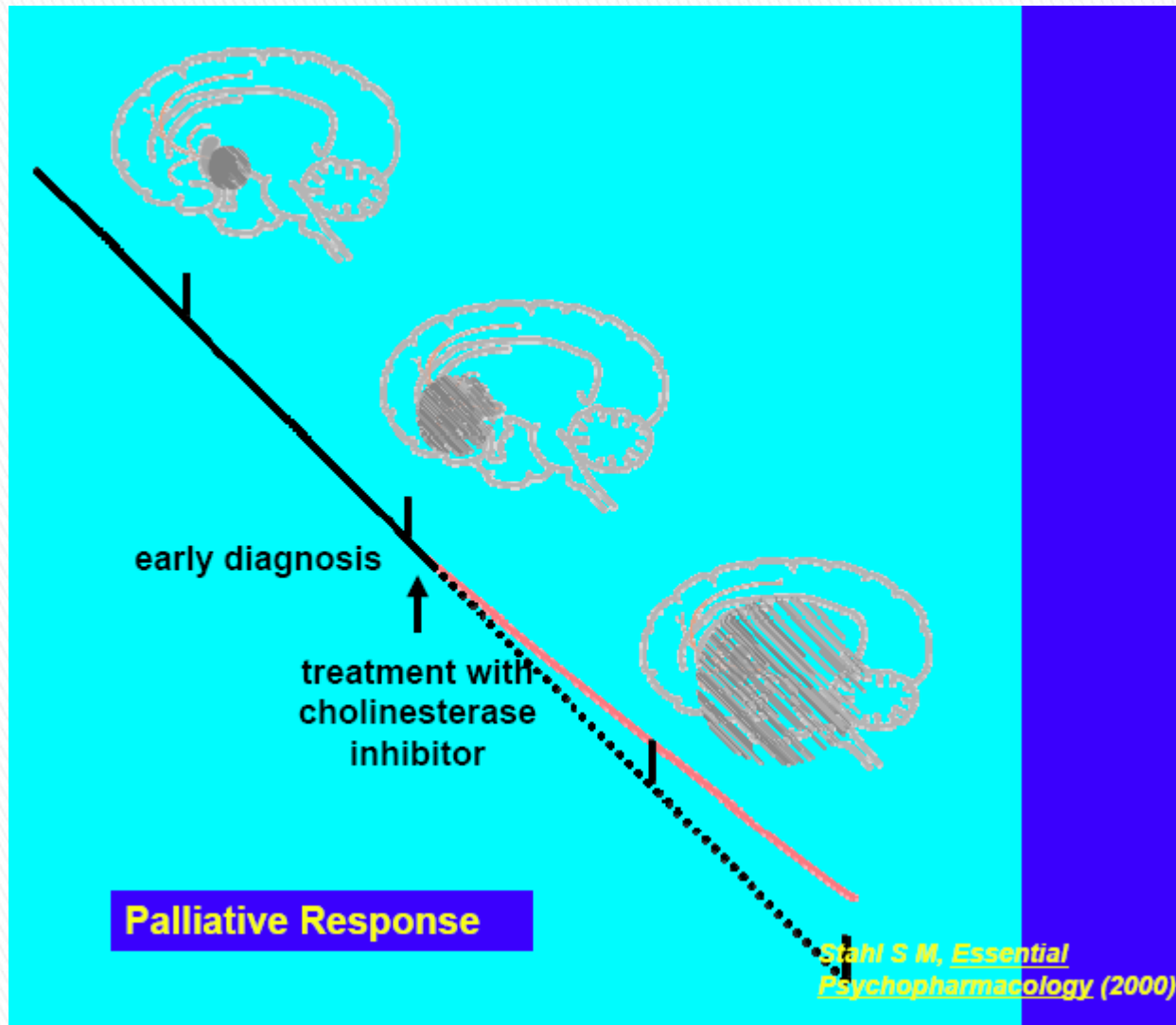






**Usual (Median)
Response**

Stahl S M, *Essential Psychopharmacology* (2000)



Numbers Needed to Treat

AChEI 4–13

Memantine 6–8

NNT compared

- ▶ COVID vaccine 141, 91, 83 depending on which one...
- ▶ <https://onlinelibrary.wiley.com/doi/10.1111/fcp.12715>
- ▶ Statins (taken for 5 years): 138 (death), 155 (stroke) 49 (MI)



NICE Update

- ▶ <https://www.nice.org.uk/guidance/cg42>

1.6.2.3 Treatment should be under the following conditions:

Prescribers should only start treatment with donepezil, galantamine, rivastigmine or memantine on the advice of a clinician who has the necessary knowledge and skills.

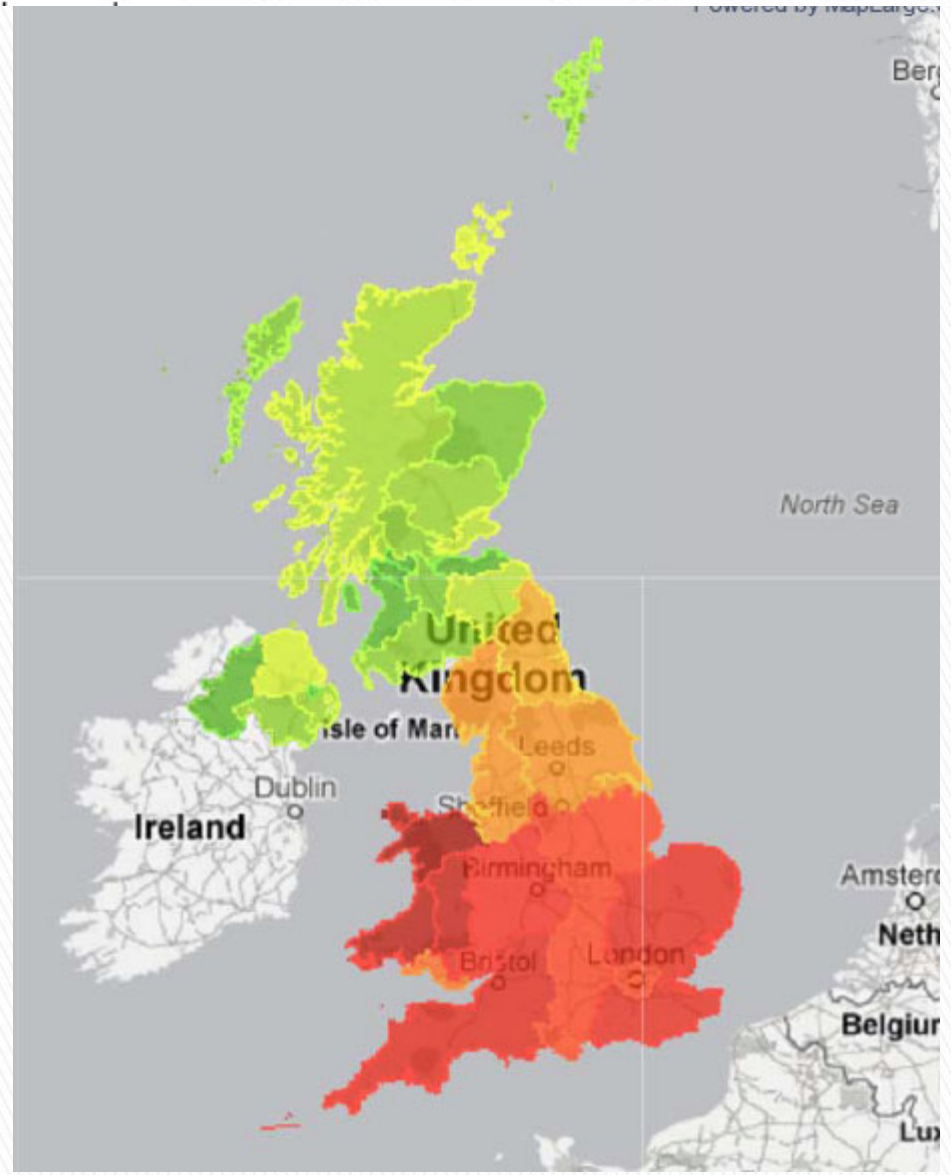
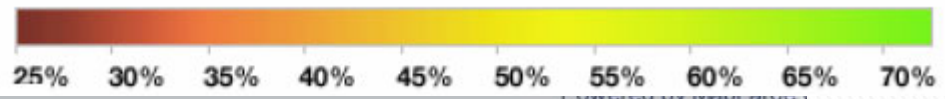
This could include:

- secondary care medical specialists such as psychiatrists, geriatricians and neurologists

- other healthcare professionals such as **GPs**, nurse consultants and advanced nurse practitioners with specialist expertise in diagnosing and treating Alzheimer's disease. **[new 2016]**

Ensure that local arrangements for prescribing, supply and treatment review follow the NICE guideline on [medicines optimisation](#) (NICE guideline NG5). **[new 2016]**

Rates of dementia diagnosis



11th Mar 2015

- ▶ 'Worried well' swamping dementia clinics with trivial memory fears such as losing the car keys are just 'absent-minded'
- ▶ Figures show four-fold increase in patients seen at memory clinics
- ▶ Led to waiting times of up to six months as clinics struggle to cope
- ▶ Experts said many patients attending clinics are simply 'absent-minded'

Functional (Psychogenic) Cognitive Disorders: A Perspective from the Neurology Clinic

Journal of Alzheimer's Disease 48 (2015) S5-S17 DOI 10.3233/JAD-150430 IOS Press S5 Review

Jon Stone,* , Suvankar Pala,, Daniel Blackburnc, Markus Reuberc, Parvez Thekkumpuratha and Alan Carson

Centre for Clinical Brain Sciences, University of Edinburgh, Western General Hospital, Crewe Rd, Edinburgh, UK

***"There are known
knowns; there are
things we know that
we know.***

***There are known
unknowns; that is to
say there are things
that, we now know we
don't know.***

***But there are also
unknown unknowns –
there are things we do
not know we don't
know."***





1 IN 3

seniors dies
with Alzheimer's or
another dementia



It kills more than

BREAST CANCER



PROSTATE CANCER

COMBINED



**MORE
THAN
6
MILLION**

Americans
are living with
Alzheimer's

Between
2000 and 2019,
deaths from
heart disease have

**DECREASED
7.3%**

while
deaths from Alzheimer's
disease have

**INCREASED
145%**

Alzheimer's and
dementia deaths have
increased

16%

during the COVID-19
pandemic



In 2021,
Alzheimer's
and other dementias
will cost the nation
\$355 BILLION



By 2050,
these costs could rise
to more than

**\$1.1
TRILLION**

**OVER
11
MILLION**

Americans provide
unpaid care for people
with Alzheimer's or
other dementias



These caregivers
provided an estimated
15.3 billion hours
valued at nearly

**\$257
BILLION**



alzheimer's 
association

- **A Report from the Nuffield Council on Bioethics**

www.nuffieldbioethics.org

BACK TO DIAGNOSIS

- ▶ ‘Early diagnosis is so important – so that I am involved in planning my future’ (Nancy McAdam, consultation respondent)
- ▶ ‘I was told very early that I have dementia. It was too early. My life would have been much easier without knowing my diagnosis’ (Ernie Allan, consultation respondent)

CORNER AND BOND (2006) IN *PPP*

- ▶ Rose diagnosed with: ‘very mild, not really dementia’.
- ▶ ‘When we were told that Rose had this dementia we were just devastated, that’s the only word for it. Our world came crashing down around us and ... we cried for days. We couldn’t bring ourselves to talk to...the kids...or anyone about it. It was too shameful for Rose’.

BENEFITS OF EARLY DIAGNOSIS

(BAMFORD *ET AL* (2004) DISCLOSING A DIAGNOSIS OF DEMENTIA: A SYSTEMATIC REVIEW. INT J GERIATR PSYCHIATRY 19: 151–69)

- ▶ relief of understanding what is happening
- ▶ opportunity to access appropriate support services (including welfare benefits)
- ▶ advantages of having time to plan
- ▶ value of developing a trusting relationship with professionals

TIMELY DIAGNOSIS

- ▶ ‘...for conveying a diagnosis to be helpful and appropriate, it must be timely, with benefits balanced against risks. Where a person stands to be distressed to the point where no benefit can be derived, then even an early diagnosis is perhaps not a timely one.’
(Alzheimer’s Society response to consultation)

Tying it all together!

- ▶ Public Health Initiative
- ▶ Screening in Primary Care
- ▶ Benchmarked services in secondary care
- ▶ Timely Diagnosis
- ▶ Information and support
- ▶ Comprehensive services



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(BAMFORD *ET AL* (2004) DISCLOSING A DIAGNOSIS OF DEMENTIA: A SYSTEMATIC REVIEW. INT J GERIATR PSYCHIATRY 19: 151–69)

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Terry Pratchett – Getting
diagnosed with dementia (Part
1 4) (SD).mp4

Dementia prevention, intervention, and care: 2020 report of the Lancet Commission

Prof Gill Livingston, MD, Jonathan Huntley, PhD, Andrew Sommerlad, PhD, Prof David Ames, MD, Prof Clive Ballard, MD, Prof Sube Banerjee, MD, Prof Carol Brayne, MD, Prof Alistair Burns, MD, Prof Jiska Cohen-Mansfield, PhD, Prof Claudia Cooper, PhD, Sergi G Costafreda, PhD, Amit Dias, MD, Prof Nick Fox, MD, Prof Laura N Gitlin, PhD, Prof Robert Howard, MD, Prof Helen C Kales, MD, Prof Mika Kivimäki, FMedSci, Prof Eric B Larson, MD, Prof Adesola Ogunniyi, MBChB, Vasiliki Orgeta, PhD, Prof Karen Ritchie, PhD, Prof Kenneth Rockwood, MD, Prof Elizabeth L Sampson, MD, Quincy Samus, PhD, Prof Lon S Schneider, MD, Prof Geir Selbæk, MD, Prof Linda Teri, PhD, Naaheed Mukadam, PhD

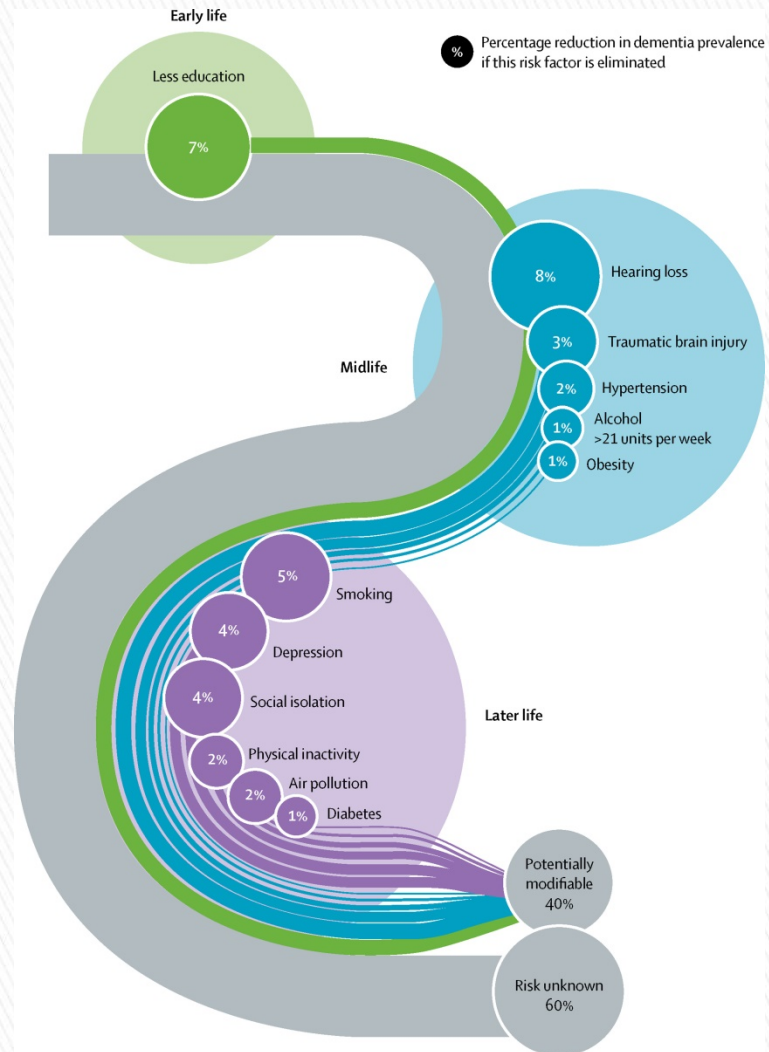
The Lancet

Volume 396 Issue 10248 Pages 413-446 (August 2020)

DOI: 10.1016/S0140-6736(20)30367-6



Figure 7



Dementia Stats



- ▶ More than 419,000 diagnosed
- ▶ 78,600 new cases per year
- ▶ 63% ♀
- ▶ 9 seniors per hour are diagnosed
- ▶ 26 hours per week care-giver time
- ▶ 8.3 Billion \$ economic cost in 2011
- ▶ 16.6 Billion \$ in 2031



A
Dementia
STRATEGY
FOR CANADA

Together We Aspire



Public Health
Agency of Canada

Agence de la santé
publique du Canada

Canada

3 National Objectives



Prevent
dementia



Advance
therapies and
find a cure



Improve the quality of
life of people living with
dementia and
caregivers

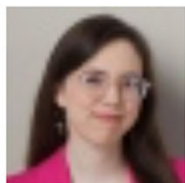


Recommendations of the 5th Canadian Consensus Conference on the diagnosis and treatment of dementia



CORONAVIRUS | News

COVID-19 could serve as a 'Trojan horse' for dementia and Alzheimer's, experts say



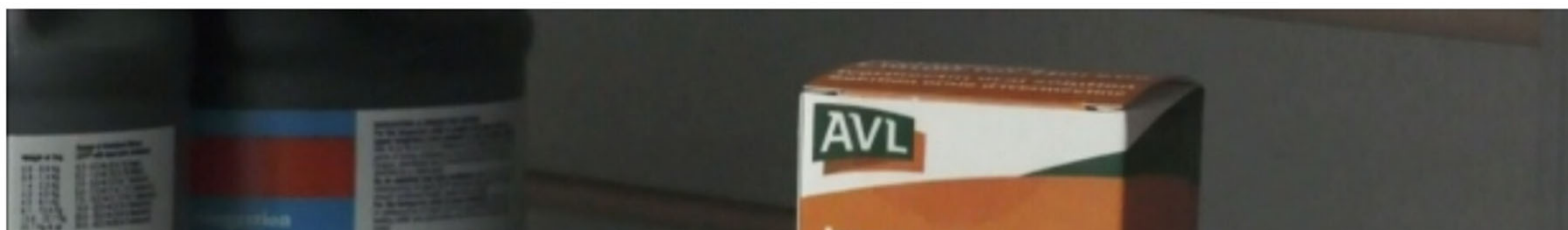
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Published Tuesday, August 31, 2021 9:04PM EDT

Last Updated Tuesday, August 31, 2021 11:25PM EDT



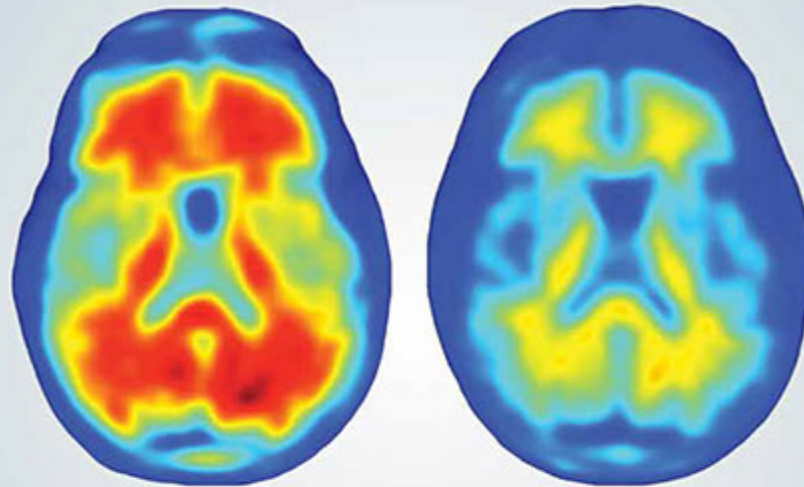
One more thing...



OUTLOOK
Science and
economy

nature

THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE



TARGETING AMYLOID

Antibody aducanumab reduces Alzheimer's
disease-associated amyloid in human brain **PAGES 36 & 50**

COMPUTING

**DNA
MEMORIES**
*Genomic technology
tackles big data*
PAGE 22

RESEARCH MISCONDUCT

**CHEATING
HAPPENS**
*Don't ignore the fraud factor
in irreproducibility*
PAGE 29

ATOMIC THEORY

**SPHERES OF
INFLUENCE**
*How John Dalton's wooden
models defined the atom*
PAGE 32

NATURE.COM/NATURE

1 September 2016 £10

Vol. 537, No. 7618



DRUG THAT DESTROYS DEMENTIA CELLS

HOW IT WORKS

1 Clumps of amyloid protein clog up brain and poison cells

2 Patient given jab packed with antibodies that find and latch on to the clumps

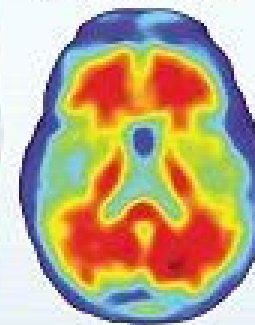
3 This alerts the immune system, which sends in cells able to break up the toxic amyloid and flush it out of the brain.

THE RESULTS

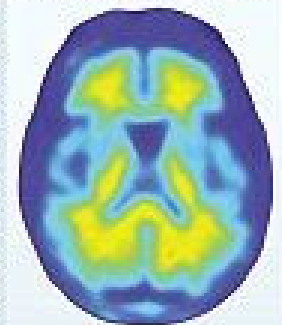
(Danger protein is shown in red)

High dose treatment

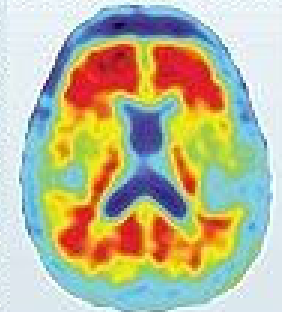
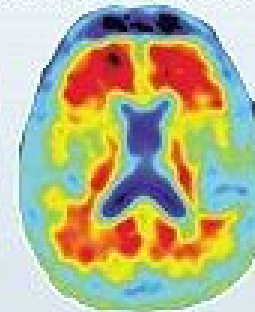
Initial scan



One year later



Placebo treatment



2021

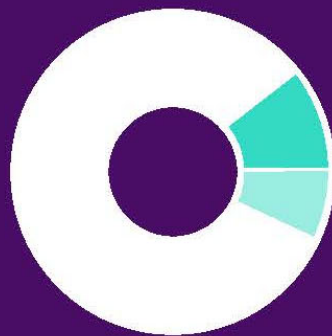
The 2021 pipeline has innovations in clinical trials that provide hope for greater success in Alzheimer's Disease treatment development



In 2021, there are

126 UNIQUE THERAPIES in **152** CLINICAL TRIALS
for Alzheimer's disease as registered on clinicaltrials.gov

Agents that target in clinical trials include



10.3% cognitive enhancement

7.1% behavioral and neuropsychiatric symptoms

82.5% disease modification

Therapies in the Pipeline

29.8% biologic therapies, mainly monoclonal antibodies (mainly given by IV infusion)

70.2% small molecule therapies (mainly taken orally)



The total number of participants required for currently recruiting trials is

38,826

Trial Participant and Study Partner Time Commitment

Participant weeks

= 2,540,014

Study partner weeks

= 2,540,014

Total weeks

= 5,080,028

PHASE 3 CLINICAL TRIALS



28
agents



41
trials

PHASE 2 CLINICAL TRIALS



74
agents



87
trials

PHASE 1 CLINICAL TRIALS



24
agents



24
trials

Questions and comments

Thank you