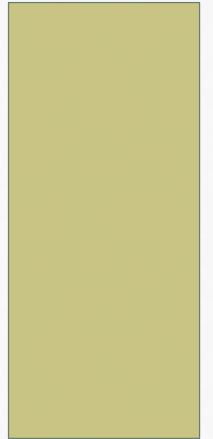


DEMENTIA

DR CHARLOTTE GREENWAY



WHAT IS DEMENTIA?

850,000

people are estimated to be living with dementia in the UK.

1 in 3

people born in the UK this year will develop dementia in their lifetime.



24% of men and 35% of women born in 2015 will develop dementia in their lifetime.

24.6 million

people in the UK – 38% of the population – know a family member or close friend living with dementia.

5.2%

of people over the age of 60 are living with dementia globally.

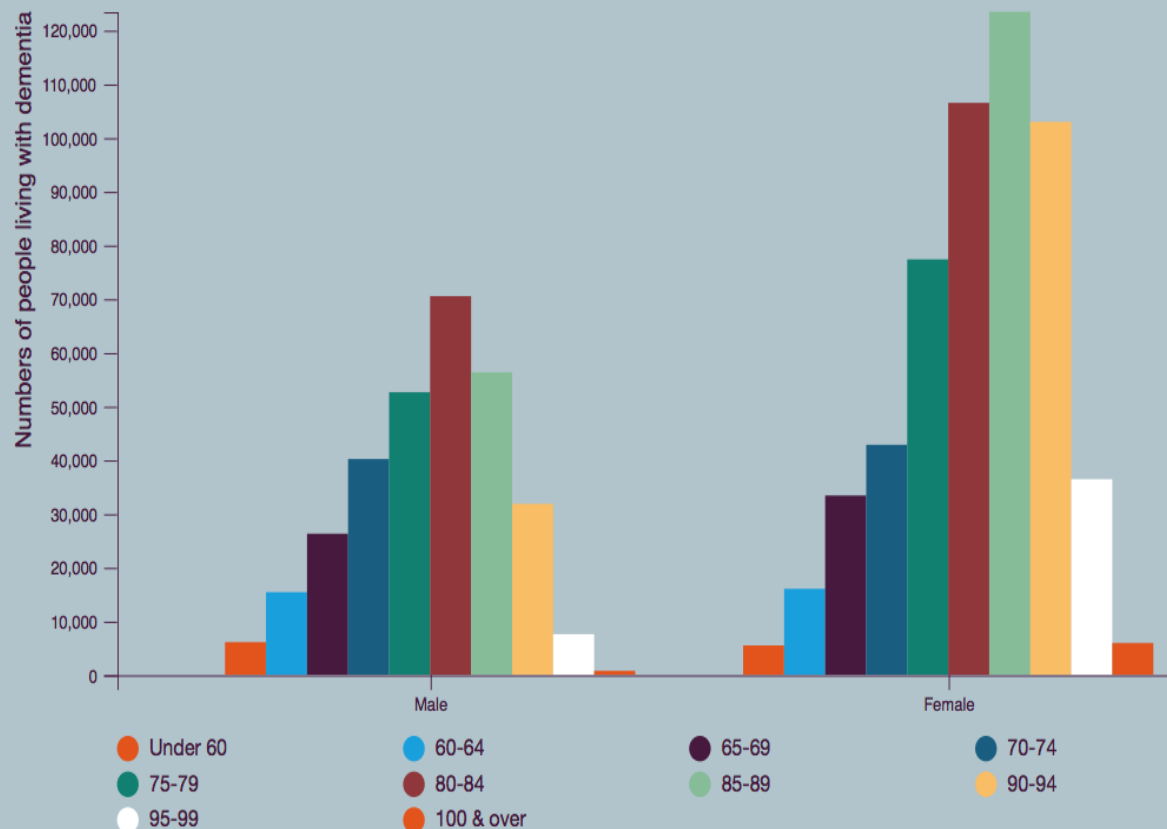
209,600

The number of new cases of dementia a year in the UK.

One in 14

people over 65 have dementia in the UK and one in 79 of the whole population.





The majority of dementia costs per year are due to **informal care at £11.6bn (44.2%)**, with social care costing £10.3bn (39.0%) and healthcare costs £4.3bn (16.4%). **The total cost is over £26bn.**

1/4

of hospital beds are occupied by people living with dementia who are over 65.



Lifestyle changes to improve cardiovascular health can reduce the risk of dementia.



Around a third of a person's risk of developing Alzheimer's disease may be due to modifiable lifestyle factors.

ATTITUDES TO DEMENTIA



39% of people under 60 years and **52%** of people 60 years and above said that **Alzheimer's is the disease they are most concerned about**. It is the most feared disease for people 60 years and above.

49%

of people are worried that they would be seen as mad after a diagnosis of dementia and **56% of people put off seeking a diagnosis** for up to a year or more.

24.6 million

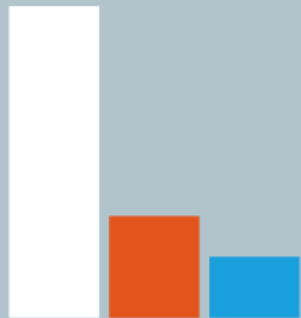
people in the UK – **38% of the population** – know a family member or close friend living with dementia.

1.5 million people

in the UK, including **both people living with dementia and their carers**, would benefit from new dementia treatments.

3/4

of people are unaware that they can affect their risk of developing dementia



46% of people think dementia mostly affects older people, 15% think dementia affects only old people and 9% of people think dementia can also affect younger people.



23% of people identified dementia as caused by brain disease or degeneration and 46% identified it as loss of memory.



40% of people would adopt a healthier lifestyle to reduce their risk of developing dementia.

3/4

of people didn't think that giving up smoking could reduce your risk of developing dementia.



85% of people want to stay at home as long as possible after a diagnosis of dementia, 47% think they would be able to.

42%

of people believe that once a person living with dementia stops recognising loved ones, they don't benefit from spending time with them.



68% of people feel isolated following a diagnosis of dementia.

SOME COMMON TYPES OF DEMENTIA



VASCULAR DEMENTIA

Some people have both vascular dementia and Alzheimer's disease – often called 'mixed dementia'.

Memory loss, disorientation and problems with communication.

Triggered by blockages to the blood vessels (Vascular system) in the brain.

Not enough blood and oxygen reach the nerve cells so they die.

Areas of the brain tissue that have died in this way are called infarcts, so vascular dementia is also called multi-infarct dementia.

RISK FACTORS - smoking, high blood pressure (known as hypertension), high cholesterol, type 2 diabetes, obesity and heart problems.

FRONTO-TEMPORAL DEMENTIA & PICKS

Damage is usually focused in the front part of the brain.

Personality and behaviour are initially more effected than memory.

Pick's Disease is the older name for what is now known as a variant of Fronto-temporal Dementia.

Typically the onset occurs between the ages of 40 and 70.

https://www.youtube.com/watch?v=EH_SdNjhkvE8

➤ **Behavioural changes** such as, impulsivity, obsession i.e. over eating or eating one type of food, rudeness/impatience, inability to function, lack of attention to hygiene, poor judgement , sexual exhibitionism or promiscuity, withdrawal or seclusion.

➤ **Emotional changes** such as: mood changes, easily distracted, unaware of changes in behaviour

➤ **Language changes** such as: loss of speech, decreased ability to read or write, repeating words others say

➤ **Physical changes** such as: increased muscle rigidity or stiffness, difficulty moving about, lack of coordination, memory loss can also be affected

DEMENTIA WITH LEWY BODIES



A vertical diagram on the left side of the page features five white circles connected by a dark line. Each circle is positioned to the left of a horizontal dark green bar that contains a text description of a symptom. The bars are stacked vertically, and the circles are aligned with the top of each bar.

Changes in alertness, attention and confusion, which may be unpredictable and change from hour to hour or day to day.

Parkinson's disease-type symptoms such as slowed movements, muscle stiffness and tremors.

Visual hallucinations – seeing things that are not really there, e.g. people or animals. These often happen repeatedly and are realistic and well-formed.

Sleep disturbances – acting out dreams or shouting out while sleeping, which can disrupt sleep and potentially cause injury.

Fainting, unsteadiness and falls.

ALZHEIMER'S DISEASE



Alzheimer's is probably the best-known cause of dementia, accounting for about two-thirds of cases in the elderly.



Changes the brain's structure, which leads to the death of brain cells, this disrupts the brain's usual activity.



Shortage of chemicals involved with the transmission of messages with the brain

Develops slowly over several years. It is not always obvious to begin with and symptoms can overlap with other illnesses.

Early signs -difficulties forming new memories, but people may also experience language or spatial awareness difficulties.

TYPICAL EARLY SYMPTOMS OF ALZHEIMER'S MAY INCLUDE:

Memory

Regularly forgetting recent events, names and faces.

Repetition

Becoming increasingly repetitive, e.g. repeating questions after a very short interval.

Misplacing things: Regularly misplacing items or putting them in odd places.

Confusion

Uncertainty about the date or time of day.

Disorientation

People may be unsure of their whereabouts or get lost, particularly in unfamiliar places.

Language: Problems finding the right words.

Mood and behaviour: Some people become low in mood, anxious or irritable. Others may lose self-confidence or show less interest in what's happening around them.

AS THE DISEASE DEVELOPS ALZHEIMER'S DEVELOPS OVER TIME

As the disease develops Alzheimer's develops over time, but the speed of change varies between people.

- Memory and thinking skills: People will find that their ability to remember, think and make decisions worsens.
- Communication and language become more difficult.
- People may have difficulty recognising household objects or familiar faces.
- Day-to-day tasks become harder, for example using a TV remote control, phone or kitchen appliance. People may also have difficulty locating objects in front of them.
- Changes in sleep patterns often occur.
- Behaviour: Some people become sad, depressed or frustrated about the challenges they face. Anxieties are also common and people may seek extra reassurance or become fearful or suspicious.
- Physical changes: People may have problems walking, be unsteady on their feet, find swallowing food more difficult or have seizures.
- Hallucinations and delusions: People may experience hallucinations, where: they see or hear things that aren't there. Others may believe things to be true that haven't actually happened, known as 'delusions'.
- Care: People gradually require more help with daily activities like dressing, eating and using the toilet.

ALZHEIMER'S DISEASE

The Brain and Alzheimer's Disease

Two major structural changes:

1. Neurofibrillary tangles

- Bundles of twisted threads that are the product of collapsed neural structures (contain abnormal forms of *tau* protein)

2. Amyloid plaques

- Dense deposits of deteriorated *amyloid* protein, surrounded by clumps of dead nerve and glial cells

NEUROFIBRILLARY TANGLES

Neurofibrillary tangles are insoluble twisted fibres found inside the brain's cells.

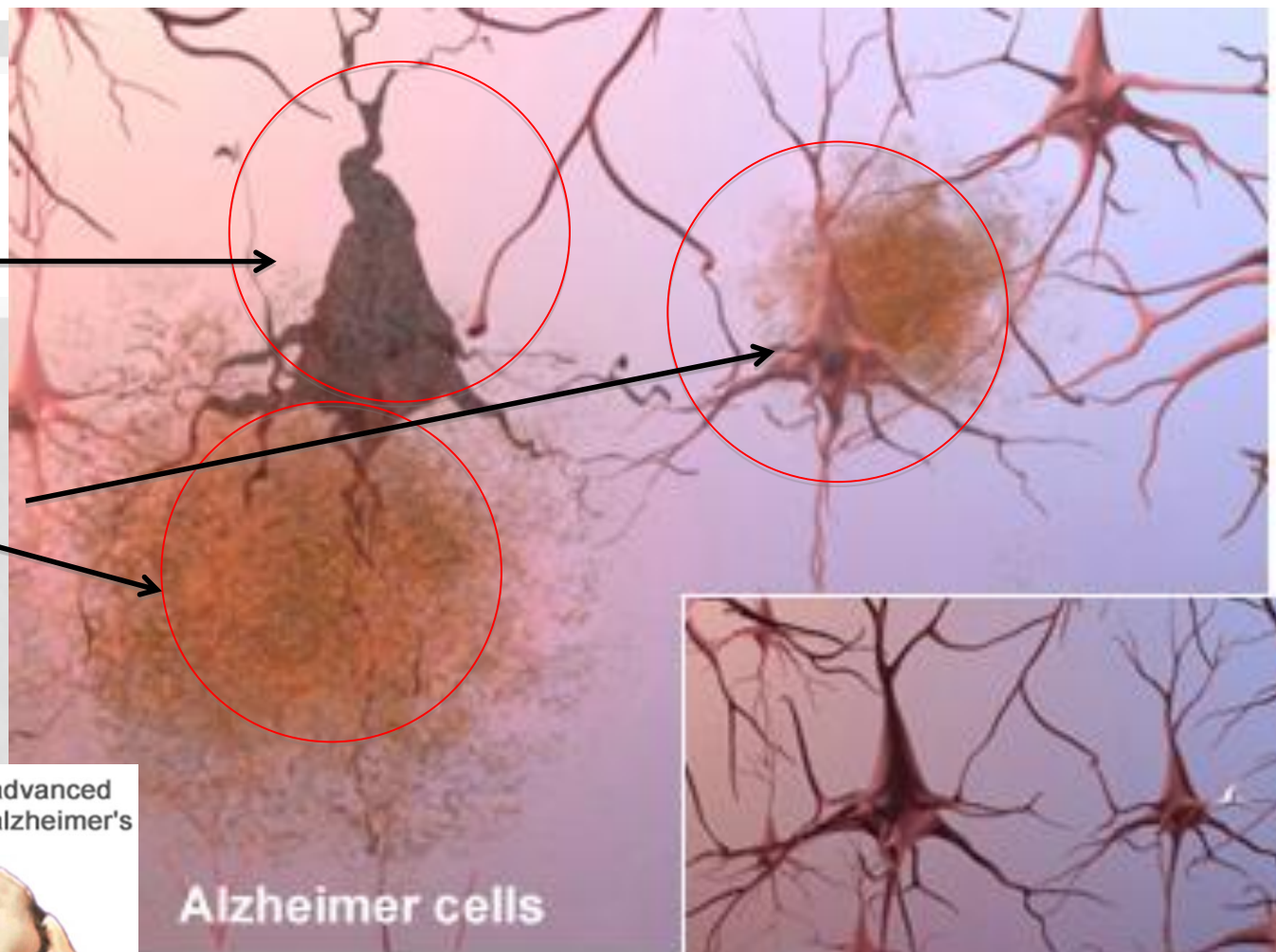
These *tangles* consist primarily of a protein called tau, which forms part of a structure called a microtubule.

The microtubule helps transport nutrients and other important substances from one part of the nerve cell to another.



tangle

plaques

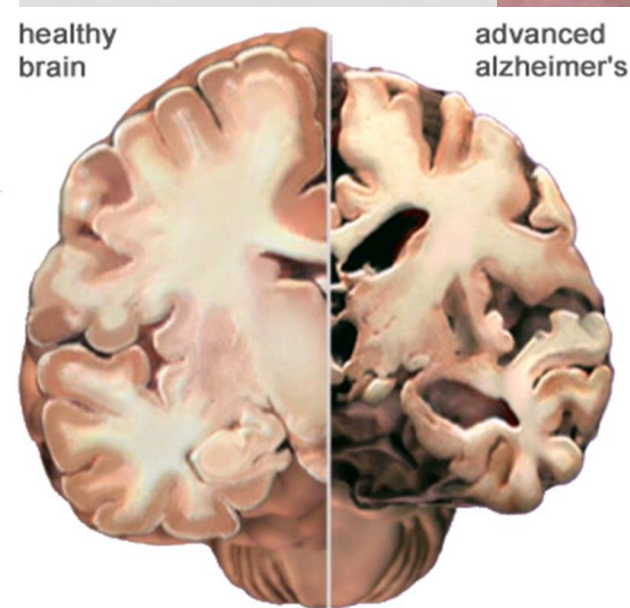


Alzheimer cells

healthy cells

Amyloid is a protein that is normally found throughout the body. The protein divides improperly, creating a form called beta **amyloid** which is toxic to neurons in the brain.

Amyloid plaques are sticky build up which accumulate outside nerve cells or neurons.



- CAUSES - Genes and Alzheimer's disease

- There are two categories of genes that influence whether a person develops a disease:
 - (1) risk genes and
 - (2) deterministic genes
 -
- Researchers have identified hereditary Alzheimer's genes in both categories

CAUSES - GENES AND ALZHEIMER'S DISEASE

The gene with the greatest known influence is called apolipoprotein E (APOE). This gene is found on chromosome 19 and comes in three forms, which by convention are named with the Greek letter epsilon (ϵ): APOE ϵ 2, APOE ϵ 3, APOE ϵ 4.

We all have two copies of the APOE gene, and these may be the same as each other or different.

APOE ϵ 4 is associated with a higher risk of Alzheimer's. About a quarter of the general population inherits one copy of the APOE ϵ 4 gene -increases their risk by up to four times.

About 2 per cent of the population gets a 'double dose' of the APOE ϵ 4 gene - one from each parent. This increases their risk by about 10 times.

THE ALZHEIMER'S GENE- CONTROLLING APOE



IMPACT OF DEMENTIA IN UK

850,000 people in the UK, with numbers set to rise to over 1 million by 2025. This will soar to 2 million by 2051.

225,000 will develop dementia this year, that's one every three minutes.

1 in 6 people over the age of 80 have dementia.

70 per cent of people in care homes have dementia or severe memory problems.

There are over 40,000 people under 65 with dementia in the UK.

Two thirds of the cost of dementia is paid by people with dementia and their families.

Dementia is one of the main causes of disability later in life, ahead of cancer, cardiovascular disease and stroke.

Unpaid carers supporting someone with dementia save the economy £11 billion a year.

There are an estimated 46.8 million people living with dementia and the numbers affected will double every 20 years, rising to 115.4 million in 2050.

Another 7.7 million people will develop dementia around the world every year.

DIAGNOSIS

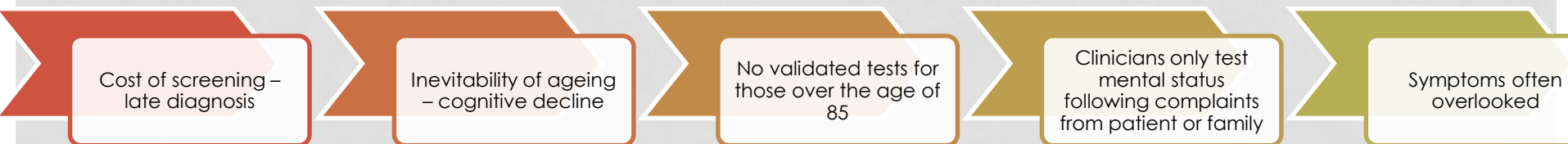
Association between dementia and memory loss

- Although significant, not a salient feature of every dementing disease



Functional decline -- Personal hygiene, bill paying, housecleaning, personality

DIFFICULTIES WITH DIAGNOSIS



ADVANTAGES OF DIAGNOSIS

Provide a diagnostic answer and education for the patient/family

Relieve the fear of an irreversible or progressive disease (depression or stroke)

Treat the underlying disease

Initiate prevention/rehabilitation strategies

Treat cognitive and behavioural symptoms

Plan legal and financial future while patient is still competent

Initiate management strategies that will postpone dependence and institutionalisation

Risk Factors

- Obesity
- High blood pressure
- Head trauma
- High cholesterol
- Being American!
 - Higher rates in
 - Japanese-Americans than Japanese
 - African-Americans than Africans
- Depression
- Lower rates in highly educated
 - Beneficial consequences of learning and memory



Possible Protective Factors

- **Education**

The ability of the brain to change suggests to some that staying mentally active as you age may help to maintain healthy brain synapses. A 2002 study reported an association between frequent participation in cognitively stimulating activities (such as reading, doing crossword puzzles, visiting museums) and a reduced risk for Alzheimer's.

- **Exercise**

Lowers risk of high blood pressure and other risk factors associated with Alzheimer's

- **Alcohol Consumption**

Men who consume one to three drinks of alcohol per day cut their risk of developing the disease by nearly half. Among women, however, the risk was reduced by only 4%. The type of alcohol had no effect on the results. But further study is needed. In the meantime, experts do not recommend drinking alcohol to fend off Alzheimer's disease.

IMPACT ON FAMILY MEMBERS

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181916/>



Family caregivers provide the majority of care for people with dementia (Baumgarten et al, 1997) and experience significantly **higher levels of psychological morbidity**, depression, stress and burden than their counterparts who are not caregivers or who are caring for the physically ill (Brodaty et al, 1990)

IMPACT ON FAMILY MEMBERS

The words 'burden', 'strain' and 'stress' are used interchangeably in research about caregivers (Donaldson, Tarrier and Burns (1997))

'Caregiver burden'

- Physical
- Psychological
- social
- Financial



Factors associated with burden and stress

being female

having a poor relationship with the care recipient

lack of social support

(Pinquart & Sörensen ,2003)

MOUGIAS, POLITIS, MOUGIAS, KOTROTSOU, SKAPINAKIS, DAMIGOS,
AND MAVREAS (2015)

The aim of the present study was to examine the level of burden in Greek caregivers who live in Athens, and its association with patient and caregiver factors. This was a cross-sectional study of 161 primary caregivers of dementia patients living in the community and attending a secondary clinic.

Most patients were suffering from Alzheimer's Dementia (n=101; 62.73%) and had moderate and severe dementia according to the MMSE score (mean MMSE=11.50), with patients being unable to perform 2 basic activities of daily living on average.

Caregivers were involved in their role for 3.6 years on average and the mean weekly caregiving time was more than 70 hours.

Nearly half of the 161 caregiver were highly burden and almost one fourth were depressed. Lower caregiver's age, behavioral symptoms of dementia patients and caregivers' depression were found to be independently associated with caregiver's burden.

WERNER,. MITTELMAN, GOLDSTEIN, AND HEINIK (2011)

The aim of this study was to examine whether family stigma is a predictor of caregiver burden in the case of Alzheimer's disease.

Methods: Structured face-to-face interviews were conducted with 185 adult child caregivers (75% female; mean age = 53 years) for persons with Alzheimer's disease.

Results: relationship between caregiver burden and stigma. The 2 caregiver stigma variables of shame and decreased involvement with caregiving were found to be the major contributing factors.

Implications: Our findings show that caregiver stigma increases caregiver burden in the case of Alzheimer's disease. Using this knowledge, psychosocial interventions should target stigmatic beliefs in order to reduce caregiver burden.

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