# DEMENTIA

**WHAT IS DEMENTIA?**

NHS (2020) define dementia as an “ongoing decline of brain functioning”. This is when a person loses the ability to complete normal activities, such as getting dress or eating. Although dementia is very common on the elderly, everyone can be affected at any age.

**WHAT CAUSES DEMENTIA?**

Dementia occurs due to the degeneration of neurons in the brain, neurons are cells that carry messages from the brain and spinal cord in the form of impulses. The degeneration can occur due to several reasons including neurodegenerative disease, such as Alzheimer’s, parkinson, damaged caused by chronic alchoolism, vascular dementia, infections of the brain, tumors inside the brain. Other possible causes for dementia are metabolic disorders, including vitamin b12 deficiency, hypothyroidism, liver disorders and structural brain disorders. (NHS,2020)

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**SYMPTOMS**

- Concentration difficulties
- Memory loss
- Organising and planning
- Communication & language
- Visual perception
- Mood & personality
- Confusion
- Hallucinations

**TYPES OF DEMENTIA**

Alzheimer's disease is the most common type, which is caused by changes in the brain, such as clumps that damage healthy neurons. Symptoms start with memory loss of recent activities, people and places, followed by difficulty of talking or walking, loss of interest in activities and emotional unpredictability. Family history is a major risk factor. (Alzheimer’s Society,2022)

Vascular dementia is caused by large or small strokes on the brain. Risk factors of developing vascular dementia are problems with high blood pressure, high cholesterol, diabetes, or any other problems with blood flow to the brain. Symptoms include confusion, difficulty with concentration and memory, restlessness, agitation and depression.

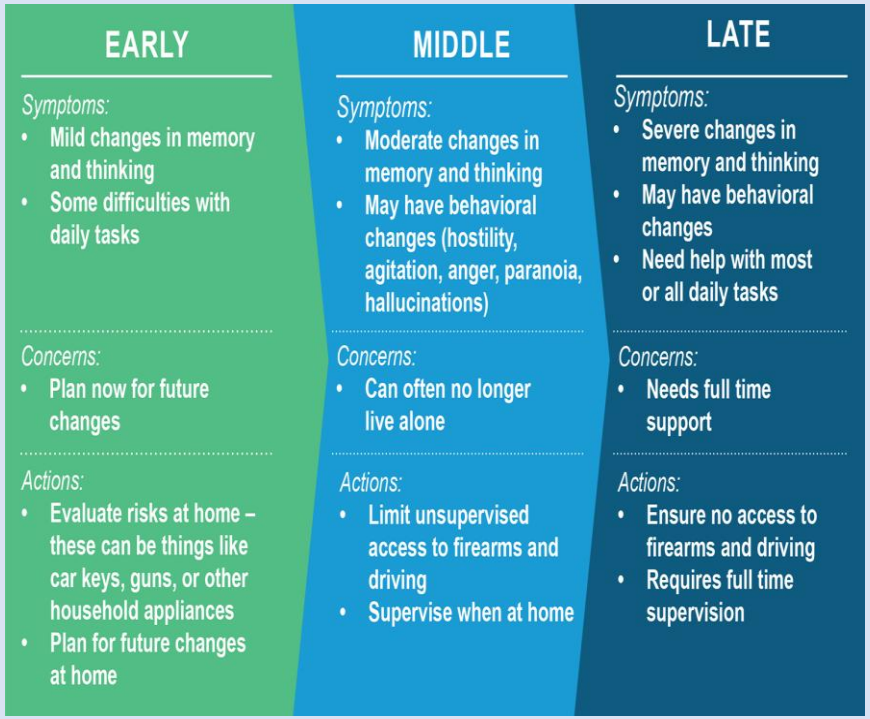
Lewy body dementia is a Parkinson like condition. People may experience hallucinations, movement and balance issues, such as stiffness or trembling, as well as confusion, not distinguish day and night, seeing people or objects that are not there. Lewy body dementia is one the fastest progressive type. (Mayo Clinic,2022)

## STAGES OF DEMENTIA

In the mild stage people start to have small changes in their personality and mild memory loss. People with dementia forget recent activities, things, or names of people, they may also start to lose the ability to plan and organise. At these mild stages is possible for people really close to the person with dementia to not even realise there's true impairment happening. Some specific examples that someone might show in the mild stage include difficulty making a grocery list and then finding those items in the store and might start to lose things more frequently or getting lost while driving.

Moderate stage. In this stage people start to have more memory last, some confusion and more personality changes that start to become more obvious to the people around them. So, some of the things you might notice in this stage include changes in sleep, they might start wondering, might start having difficulty with their hygiene, they might not be able to make it to the toilet on time, start to have some accidents and possibly even some behaviour such as kicking, screaming, hitting or accusing people of stealing or cheating.

In the severe stage is probably easiest stage for everybody to recognise. The person with dementia is essentially no longer able to do any of their daily tasks in this stage, can't use toilet, can't clean themselves or eat on their own, often they can't walk, they are unable to talk or maybe just mumble a couple of sounds or words, they no longer even recognise their family members, some may even stop eating and have difficulty swallowing. Also, the person at this stage may spend most of the day in bed, experience difficulties holding their head up, or lack control of bladder and bowel function. (Mayo Clinic, 2021)




## NEEDS AND REQUIREMENTS

Dementia cannot be cured, but there are some treatments to help reduce the symptoms. Some medication used for Alzheimer's disease are antidepressants, and medicine for challenging behaviour. Another type of treatment is therapy, such as cognitive rehabilitation and stimulation therapy. (NHS,2020)

Vascular dementia on the other hand needs medication to treat high blood pressure, prevent blood clots and lower cholesterol. as well as stop smoking lose weight and reduce alcohol. Treatment for lewy body include dopamine enhancing drugs. (Parkinson’s UK, 2019)

There are fundamental needs in dementia care, such as physical comfort and freedom from pain, safety, esteem - feel good about themselves and be treated with dignity and respect. As well as control over environment, including freedom, independence and choice, occupation and exploration. (James, 2020). The fundamental needs are same as the Human Needs Theory, first founded by Maslow in 1954.

Also, a person with dementia may lose their appetite to eat and drink as the condition progress. Recent studies show that red, blue, or yellow plates are beneficial for people with dementia and are more likely to finish their meal as it is easier for them to see the right colour of the food. (Wilson, 2022)

Specific medication used to treat the symptoms from moderate to mild of Alzheimer's and Lewy bodies are acetylcholinesterase inhibitors, donepezil, rivastigmine and galantamine. Memantine is also another medicine used for Alzheimer's and Lewy bodies. Side effects are temporary, such as dizziness, nausea, headaches, constipation and loss of appetite. It is also important that other health conditions which might affect dementia are diagnosed and treated. (NHS, 2020)

## IS ARTIFICIAL INTELIGENCE AND ASSISTIVE TECHNOLOGY BENEFICIAL FOR DEMENTIA?

The answer is yes, Assistive Technologies can be very useful to people with dementia. Assistive Technology stands for a device or system which help improve people's ability to do something. Approximately 28 million people worldwide suffer from dementia and the number will triple by 2050, resulting in a significant increase in the healthcare needs. The creation and use of Assistive technologies can help to tackle the issues patients, their families and carers might face. Such as smart homes, computational devices, technologies that sense and respond to user's needs, cognitive orthotic, biosensors, advanced integrated sensor system, context aware, data mining, intelligent assistive technologies or artificial intelligence. (Ashok et al., 2009)

The important thing to bear in mind is that there's a variety of them and they should be chosen in accordance with whatever the problem is. They are roughly three types of things that they can help, one is on the lines of reminders. So it could be that they are linked to, for example the medication so that people get voice alerts about their medication, or it could be that they are linked to house appliances where people are getting alerts when they have left the door open, or they have left the gas running.

The second one is on the lines of safety where there's automatic process is that for example turn off ovens when they overheat. The third type of technology concerns people who are especially at risk of wandering, it could be that people can install sensors on their doors so that they find out if the person is suddenly out in the middle of the night, you can have souls that have GPS trackers which they will locate people if they if they've gone wandering in the middle of the night or missing. (Koychev, 2018)

## WHO CAN HELP?

For further information, support and advice you can access the Citizen Advice website on Lets Talk About Dementia - Citizens Advice Gateshead, Alzheimer's Society on Alzheimer's Society (alzheimers.org.uk), Dementia UK on Specialist support to families facing dementia | Dementia UK, NHS on Help and support for people with dementia - NHS (www.nhs.uk), or Age UK on Dementia support services in your area | Age UK.

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