CPD4dentalnurses

YOUR FUTURE IN YOUR HANDS

Dementia and Dental Care

Aims: To give an overview of dementia and the management of dental problems.

Objectives: On completion of this verifiable CPD article the participant will be able to demonstrate, through the completion of a questionnaire, the ability to:

- Be able to define the different types of dementia
- Identify statistics relating to dementia
- Recognise the different types of dementia
- Know the Care Quality Commission expectations for dental practices relating to the care of patients living with dementia.
- Have knowledge of the Faculty of General Dental Practice publication "Dementia Friendly Dentistry"
- Identify some of the potential dental problems and their management in patients with dementia

Introduction

Dementia itself is not a disease but is caused by many different diseases. The term 'dementia' is used to describe the symptoms that are caused by these diseases. Such symptoms include memory loss, confusion, and personality change. Alzheimer's disease is the most common cause, but other dementias include vascular dementia, dementia with lewy bodies and frontotemporal dementia.

In the UK it is estimated that around 944,000 people are living with dementia, and this number is projected to rise to 1.6 million by 2050. 65% of the 944,000 people living with dementia in the UK are women. It is estimated that 1 in 11 people over the age of 65 have dementia in the UK and that one in two of us will be affected by dementia either by caring for someone with the condition, developing it ourselves, or both.

Due to the number of people living with dementia, it is inevitable that dental professionals will be treating patients with dementia. It is therefore important that dental professionals are aware of how to provide dental care for these patients and understand the principles of the Mental Capacity Act and gaining consent for treatment.

This article will describe the changes in the brain and the signs and symptoms of the different types of dementia as well as strategies that can be applied during the treatment of these patients.

The Brain and Dementia

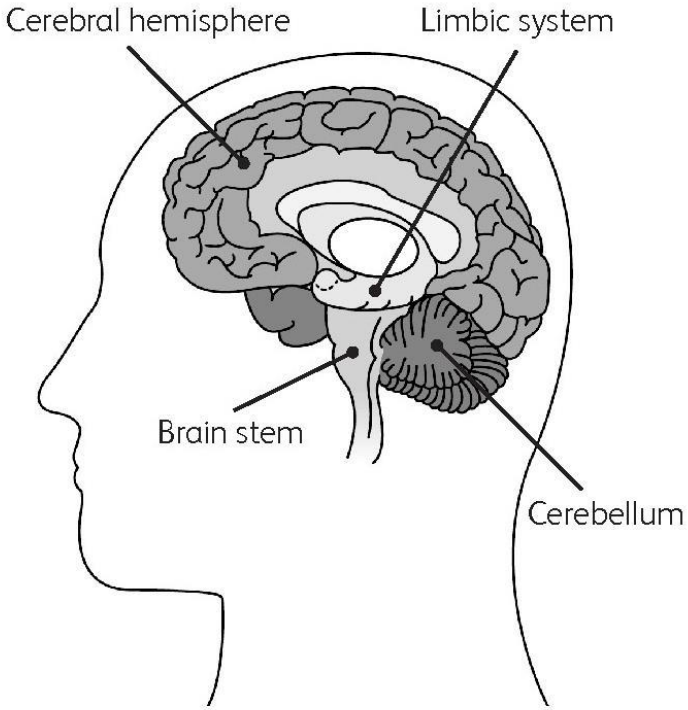
The human brain is incredibly complex. It controls everything our body does, from coordinating our movements and our speech, keeping our heart beating and storing our memories. Dementia occurs when the brain is damaged by disease.

The brain can be divided into different parts:

The brain stem and cerebellum - The brain stem controls basic bodily functions such as heartbeat and breathing and the cerebellum controls balance and posture.

The limbic system - The limbic system links the brain stem and the cerebral hemispheres. It includes structures with key roles in memory (the hippocampus) and emotions (the amygdala).

The cerebral hemispheres - The tissue that makes up three-quarters of the brain is called the cerebrum. It is responsible for consciousness, memory, reasoning, language and social skills.



The cortex of each cerebral hemisphere is divided into lobes and there are four lobes in each hemisphere:

Occipital lobe - Deals with visual information.

Parietal lobes - The parietal lobes are in the upper-rear part of the brain. They mainly handle information from our senses about space, perception, and size.

The left parietal lobe allows us to tell our left from our right side and where a limb is in front of us. For example, it helps us to bring a fork up to our mouth when we eat. Damage to this lobe is common in Alzheimer's disease and can lead to clumsiness (apraxia), for example when putting on clothes. The left parietal lobe also plays an important role in reading, writing and processing numbers.

The right parietal lobe helps us recognise objects as three-dimensional. It also helps us to work out where objects - including moving objects - are in relation to each other, and to ourselves. These abilities are used when we pick an object up. Damage to the parietal lobes can cause someone problems with finding their way around places.

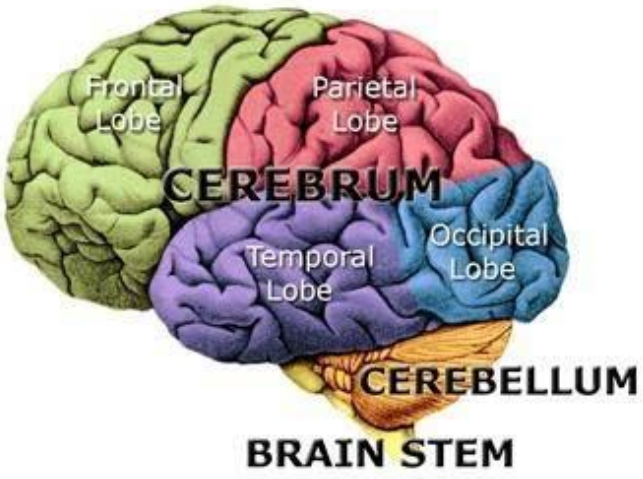
Frontal Lobes

The frontal lobes are large and complex. They have a wide range of functions. Overall, the frontal lobes are a kind of 'management centre'. They deal with solving problems, setting goals, and making decisions, as well as with starting, carrying out and finishing tasks.

The upper parts of the middle surfaces of the frontal lobes are important for our interest and motivation. Damage here can cause someone to become apathetic, lethargic and reluctant to do things. It is important to realise that they are not 'just being lazy'.

The area on the underside of the front of the brain controls our social behaviour. For example, it normally prevents us from saying something inappropriate or acting on impulse.

At the back of the frontal lobes is the motor cortex. This area deals with the planning of movements and the control of certain muscles, such as when we decide to clap our hands, smile, or speak.[2]



The cortex of the cerebral hemisphere is divided into lobes [3]

Memory

Different things we remember - events, faces, facts or skills - are stored and recalled by different types of memory.

Episodic memory is our personal memory of events at a certain time and place. For example: 'I ate eggs for breakfast this morning in my kitchen'. These memories are specific to each of us and can have an emotional aspect.

Semantic memory is our general knowledge about objects, word meanings, facts, and people. For example: 'Eggs have a shell and are laid by hens'

Procedural memory is our memory for skills we have learned. Examples include tying shoelaces, brushing our hair, or riding a bike.

These different types of memory involve different parts of the brain working together. They can be affected by dementia in different ways.

Episodic memory

Our recollection of an event may have several parts: where we were, what we saw or heard, how we felt, for example. These parts are put together to create the memory. When we experience something, information from our senses initially goes into the hippocampus. Over time, it is thought that the hippocampus begins to transfer memories into long-term storage in the cerebral cortex.

The memory is stored in the cortex as a network of nerve cells. Recent memories, which have just entered long-term storage, still need the hippocampus to retrieve them. However, memories from further back (such as a wedding day) that have been thought about more often, become more firmly established in the cortex. Recall of these memories from longer ago seem to need the hippocampus less. Retrieval of an episode may be triggered by just one part of the memory, such as a particular smell or piece of music.

Emotions have a large influence on what we remember. An experience that is highly emotional is more likely to be stored in long-term memory. We are also more likely to recall the emotional aspects of an experience. The amygdala is the centre for emotional memories.

Other forms of memory

The hippocampus is also involved in forming semantic memories. These are then stored as long-term memories in the cerebral cortex.

With procedural memory, we use the frontal lobes to concentrate, allowing us to first learn a skill. But once the skill has been learned it is stored in the basal ganglia (a group of structures between the cerebrum and brain stem), as well as in the motor cortex and cerebellum.[2]

Emotion and behaviour

How we respond to the world around us - how we feel and how we behave - depends on signals passed between the limbic system (dealing with emotions) and the frontal lobes (dealing with rational thoughts).

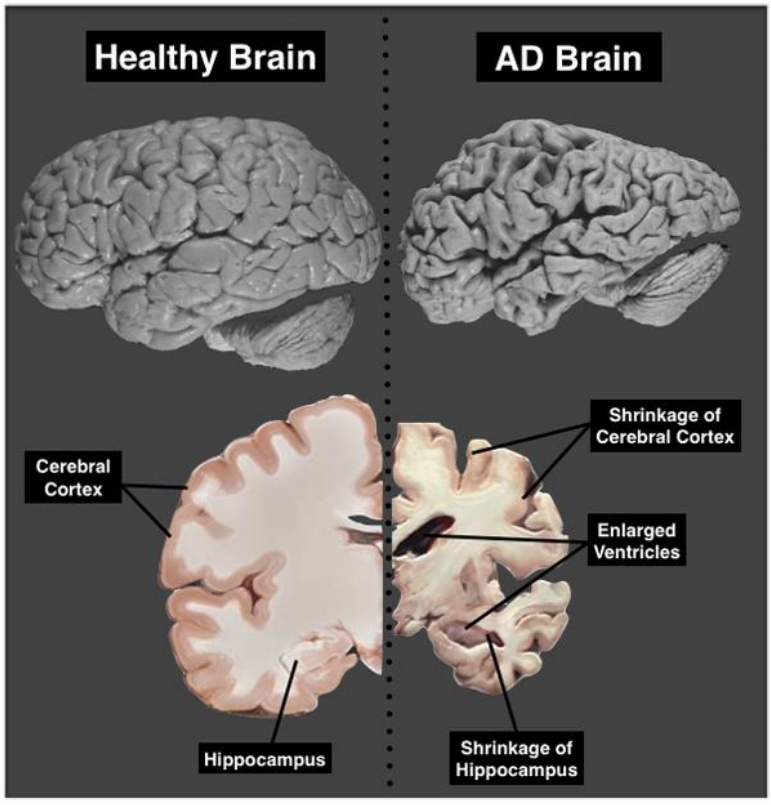
Emotions are generated in the limbic system in response to sensory information. For example, our amygdala responds to danger by generating signals for fear.

Emotions are analysed in the frontal lobes. For example, the frontal lobes allow us to check that something really is a threat - perhaps we misread the situation - and so may stop us from reacting aggressively.

In dementia, different forms of damage to these two emotional centres in the brain can cause someone to become either over-emotional or lacking in feelings.[2]

Types of dementia

Knowing how different types of dementia affect the brain helps explain why someone with dementia might behave in a certain way. The most common types of dementia each start with shrinkage of brain tissue that may be restricted to certain parts of the brain. This means that each type of dementia tends to have particular early symptoms, depending on which part of the brain is affected. Later on, as damage spreads to more areas of the brain, the symptoms across different types of dementia tend to become more similar.[2] The symptoms of some of the different types of dementia are listed below.



Shrinking of the brain tissue in dementia[4]

Alzheimer’s

In Alzheimer's disease, among the areas often damaged first are the hippocampus and its connected structures. This makes it much harder for someone to form new memories or learn new information. A person with Alzheimer's may struggle to remember what they did earlier that day, or what they have just said, meaning they may repeat themselves in conversation.

The hippocampus is needed for retrieval of memories but retrieving those from longer ago may depend on it less. Therefore, someone in the earlier stages of Alzheimer's (with a damaged hippocampus but an intact cortex) may remember a childhood holiday but struggle to remember what they ate for breakfast that morning.

In Alzheimer's disease the amygdala is generally affected later than the hippocampus. So, a person with Alzheimer's will often recall emotional aspects of something even if they don't recall the factual content. They may therefore respond more according to how they feel about a place or person than in a more logical way.

Early signs:

- Regularly forgetting recent events, names, and faces; regularly misplacing items or putting them in odd places.
- Confusion about the time of day; disorientation, especially away from normal surrounding and getting lost.
- Becoming increasingly repetitive.
- Problems finding the right words; mood or behaviour problems such as apathy, irritability or losing confidence.

As Alzheimer's disease damage spreads through the brain, additional areas and lobes become affected. The cortex overall becomes thinner (so memories from longer ago are lost) and the brain gradually shrinks.

Damage to the left hemisphere is linked to problems with semantic memory and language, so someone may struggle to find the right word for something.

Damage to the visual system in the temporal lobes makes recognising familiar faces and objects harder. The person may seem to forget who a familiar person is. However, because the pathways for vision and hearing are separate, they may still know who that person is once they hear them speak. The person with Alzheimer's disease may also respond to someone at an emotional level even if they seem not to recognise them.

If there is damage to the right parietal lobe then the person might have problems with judging distances in three dimensions. Navigating stairs is a common difficulty.

As it progresses:

- Memory and decision making worsens; communication and language becomes more difficult.
- May become sad or depressed. Anxieties and phobias are quite common.

- Problems with sleeping.
- Anger or agitation.
- May become unsteady on feet.
- Gradually require more help with daily activities like dressing, toileting and eating.[2]

Vascular Dementia

This is the most common cause of dementia after Alzheimer's. It is possible to have both vascular and Alzheimer's disease which is often referred to as mixed dementia.

- Becomes slower in thinking.
- Personality change including depression, apathy and more emotional.
- Difficulty walking.
- Frequent urge to urinate.
- There may be a sudden change after an event such as a stroke.[4]

Dementia with Lewy bodies

- Changes in alertness, attention and confusion which may be unpredictable.
- Parkinson's disease type symptoms such as slowed movements, muscle stiffness and tremors.
- Visual hallucinations.
- Sleep disturbances.
- Fainting, unsteadiness, and falls.[4]

Frontotemporal Dementia

This dementia is relatively rare but is the second most common cause of dementia in younger people and usually affects people aged between 30 and 60. Early symptoms depend on which part of the Frontal Lobe is affected first, therefore symptoms can vary but include the following:

- Lack of social awareness- loss of inhibitions; lack of understanding of other people's feelings; lack of interest or concern; making inappropriate jokes.
- Lack of personal awareness (may affect personal hygiene).
- Changes in food preferences- over eating or over drinking.
- May change their humour, sexual behaviour, become violent, develop unusual beliefs, interests, or obsessions.
- Difficulty with simple plans and decisions.
- Difficulty saying or understanding words.
- Difficulty in recognising people or knowing what objects are for.[5]

Dementia and Consent to Treatment

In line with GDC Standards for the Dental Team (principle 3), clinicians must obtain informed consent for any treatment provided. A patient with dementia should be given the opportunity to make, or take part in, decisions about their dental treatment.

The Mental Capacity Act 2005 (MCA) is designed to protect and empower individuals who may lack the mental capacity to make their own decisions about their own care and treatment. It is a law that applies to individuals aged 16 and over.[6] Everyone involved in the care, treatment and support of people aged 16 and over in England and Wales, must comply with the Act when making decisions or acting for that person, when the person lacks capacity to make a particular decision for themselves.

In Scotland, the relevant legislation is the Adults with Incapacity (Scotland) Act 2000 and in Northern Ireland the Mental Capacity Act (2016) came into force on 9th May 2016.

The Act states that a person is not able to make a decision in relation to a particular matter if they are unable to:

- Understand the information relevant to the decision or: Retain the information.
- Use or weigh up the information as part of the process of making the decision.
- Communicate their decision either by using speech, sign language, eye blinking, pointing or any other means including squeezing of hands.

Assessing capacity is governed by the MCA. Capacity is decision specific (i.e. not an ‘all or nothing’ state); patients with ‘impaired’ capacity may be competent to consent for one procedure (i.e. an examination) and not others (i.e. implant surgery), as some decisions are more complex or have a higher level of risk or permanence than others.

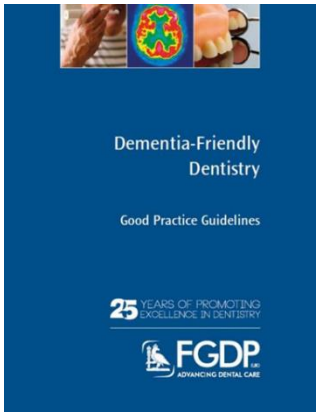
Capacity is also a dynamic process, varying between times, such that patients may be able to give consent at one appointment, but not at another. Therefore, consent is an ongoing, dynamic process and consent forms, and records of such, should always reflect this.[7]

If a person is found to lack the capacity to make a decision, best interest decisions may be made. When making a best interest decision, the MCA sets out a check list of things to consider.

A patient with dementia may have a Lasting Power of Attorney appointed. It is important to realise that next of kin do not automatically have the right to make treatment decisions.

A full article on the Mental capacity Act is available from the website and should also be completed in conjunction with this article.

Treatment of Patients with Dementia



The College of General Dentistry (formally FGDP) has produced guidance on Dementia Friendly Dentistry.[8]

The following is a summary of the recommendations from the FGDP that will assist in ensuring that adequate information is collected:

Medical History

Understand the Patient's medical history.
Update and record history at each patient visit.
Seek patient consent to inform GP of potential symptoms.
Be aware of common drugs used to help dementia patients.
Record drug changes.
Record use of nutritional supplements, if appropriate.
Medical history signed and sated by patient/carer/relative and clinician for each course of treatment.
Identify support and interventions received in relation to dysphagia (swallowing difficulties).

Socio-behavioural History

Establish preferred time of day for appointments.
Establish and accommodate preferred method of communication for appointment and treatment information.
Note presence and/or extent of carer involvement.
Note details of carer and their relationship to patient.
Establish whether the patient should be contacted directly or via a carer, keeping patient confidentiality in mind.
Where mental capacity has been lost, establish whether there is power of attorney in place, or a person whose role it is to make decisions for the patient.

Dental History

Record the ability to chew foods comfortably.
Record swallowing difficulties.
Record previous difficulties with treatment.
Note patient's oral hygiene regimen and whether assistance is required.
Record whether the patient has a dry mouth.
Record where dentures were previously provided but not worn.[8]

The Care Quality Commission

The Care Quality Commission (CQC) Dental mythbuster 40: Caring for people with dementia in dental practice, describes the importance of treating people with dementia with dignity and respect, in accordance with regulation 10: Dignity and Respect.[9]

On inspection, the CQC will "expect providers to consider people with dementia and take reasonable steps to help them receive dental treatment in a kind and compassionate way." It is therefore important that the dental team are trained in dementia awareness and that reasonable adjustments are made. The CQC suggest taking a dementia friendly review of the practice, and further information on this can be accessed through the following link: https://www.cqc.org.uk/guidance-providers/dentists/dental-mythbuster-40-caring-people-dementia.

Dental professionals may need to adjust communication to meet the needs of patients with dementia. The Alzheimer's Society "This is Me" tool may help staff be aware of the patient's needs and can be accessed by clicking on the link. Staff can become a Dementia Friend or have formal dementia training.[9] Further information on this can be found in the further reading section at the end of this article.

Dementia, Oral Health and Treatment

In the dental surgery we should:

- ✓ Be patient.
- ✓ Explain in simple terms. Short sentences that are phrased in a way where a person can give 'yes' and 'no answers, can be effective.
- ✓ Recommend an electric toothbrush or one with an adapted handle if manual dexterity decreases.
- ✓ Advise carers on how they can brush the patient's teeth
- ✓ Give easy to read information.
- ✓ Use visual supports.
- ✓ Arrange an appointment at the best time of the day for the patient.

People with dementia are likely to have a unique set of factors that compromise oral health and increase the risk of dental disease. The CQC states that the patient should have the best current dental practice, guided where the patient is on the dementia pathway.[9]

Patients with dementia may experience some of the following difficulties:

- Manual dexterity may decrease,
- Medications may have a high sugar content or cause dry mouth (xerostomia),
- They may be less able to understand that their teeth need to be kept clean.
- They may not be able to express that they are in pain.
- They may not feel pain so the following may go unnoticed:

    - Lumps and ulcers
    - Poor fitting dentures
    - Decay

Dementia UK have a resource on the importance of maintaining good oral health and this can be accessed through the following link: https://www.dementiauk.org/information-and-support/health-advice/mouth-care/ .

The Association between Gum Disease and Dementia

Research has shown that people with dementia experience significantly poorer gingival health and significantly heavier gingival bleeding than those without the condition.[10] In addition, a small observational study published in March 2016 concluded that gum disease is associated with an increase in cognitive decline in Alzheimer's disease, possibly by mechanisms linked to the body's inflammatory response. However, it is recognised that clinical trials are required to provide more solid evidence.[11]

In 2021, a meta-analysis was carried out to assess the effect of periodontitis on dementia and cognitive impairment. A literature search was carried out and 20 observational studies were included. The meta-analysis concluded that "there was an association between periodontitis and cognitive impairment, and moderate or severe periodontitis was a risk factor for dementia. Additionally, the deterioration of periodontal status was observed among dementia patients." Again, the study recognised the importance of further well-designed studies being necessary to confirm the relationship between periodontal disease and dementia/cognitive impairment.[12]

In 2023 a systematic review was carried out to investigate the association between periodontal disease and cognitive impairment in adults. Six cohort studies, three cross-sectional studies and two case-control studies met the inclusion criteria. The results from the included studies showed that "chronic periodontitis patients with at least eight years of exposure are at higher risk of developing cognitive decline and dementia." Nonetheless, they concluded that "the mechanisms responsible for the association between periodontitis and dementia are still unclear and warrant further investigation."[13]

Whilst it is clear that more evidence is needed in this area, dental professionals are in a position to warn patients of the potential link between periodontal disease and dementia.

Early Stages of Dementia

Patients in the early stages of dementia should be encouraged to carry out their own mouth care for as long as possible, although they may need to be reminded. It is important to establish a daily care routine in the early stages of dementia and the dental professional should give the patient and carer advice on how to prevent tooth decay and gum disease.[11]

Later Stages of Dementia

In the later stages of dementia, the patient may lose the ability to clean their teeth, lose the understanding of why it is important, or just lose interest in doing so. At this stage, carers may need to take over the task. At this stage the dental professional can give the carer general advice about how best to assist in cleaning another person's teeth.[11]

Safeguarding

People with dementia may be at greater risk of abuse and all staff have the responsibility to recognise, respond to, report and record and concerns in line with the practice's safeguarding policy.[9] Safeguarding training is available on the website.

Conclusion

The number of people living with dementia is projected to rise considerably in the coming years. Due to the number of people living with dementia, it is inevitable that dental professionals will be treating patients with dementia. It is therefore important that dental professionals are aware of how to provide dental care for these patients and understand the principles of the Mental Capacity Act and gaining consent for treatment.

Personal Development Plan and Reflective Learning

This CPD is linked to the following GDC Enhanced CPD Development Outcomes:

A. Effective communication with patients, the dental team and others across dentistry, including when obtaining consent, dealing with complaints, and raising concerns when patients are at risk.

C. Maintenance and development of knowledge and skill within your field of practice.

Reflective learning is now a requirement of the GDC Enhanced Professional Development Scheme. As such, you will now be given the option to answer some reflective learning questions before your certificate is generated.

Examples will be provided. Remember that you can also update this at any time from your CPD log. If you take a few moments to write your reflection on completion, you will have fulfilled the Enhanced CPD requirements.

We would like to acknowledge the Alzheimer's Society for allowing us permission to reproduce their information on the brain and Alzheimer's.

Further Reading

Geddis-Regan, A., Kerr, K., Curl, C (2020) impact of dementia on oral health and dental care, part 2: approaching and planning treatment

Fact sheet: Alzheimer's Society: Dental Care and Oral Health

Alzheimer's Society Website

Become a Dementia Friend

Dementia Training Standards Framework

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