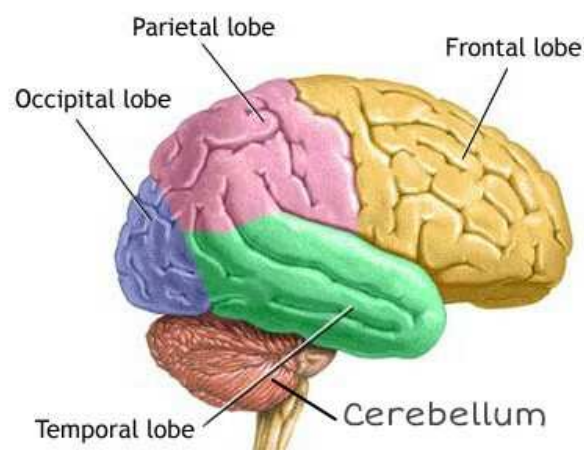


How dementia affects the brain

Our brain consists of approximately 100 billion neurons, or nerve cells. The nerve cells work like a huge office, all working as a team and communicating and passing messages to each other. Every one has to be working to keep this huge office running smoothly.

What happens in the case of someone with dementia is that proteins (plaques & tangles) invade the nerve cells and progressively disrupt the function of “the office”.



The brain is made up of different areas (called ‘lobes’). A lobe simply means part of an organ (for example, earlobe). Each lobe controls different functions. ***Through dementia, a person can have damage to one or multiple parts of the brain.***

Lets look at some of the main lobes, noting what functions they control and what can happen as a result of damage to that part of the brain through dementia:

Temporal Lobes

This part of the brain controls:

Memory; hearing; categorizing objects; verbal memory; speech and language.

Damage to this part of the brain can result in difficulty with:

Capturing new information; understanding spoken words; short-term memory loss; aggressive behaviour; persistent talking.

Point of note:

Expression and understanding are located separately, and a person with dementia may have one affected but not the other. This means that even if that individual cannot express himself or herself clearly to you, they may well still be able to understand what you are saying to or about them.

Occipital Lobes

This part of the brain controls:

Receiving and interpreting visual information; colour and shape recognition; judging distance.

Damage to this part of the brain can result in difficulty with:

Distinguishing colours; hallucinations (seeing things that are not there); visual illusions (seeing things inaccurately); reading and writing.

Point of note:

With damage to the occipital lobes, it is common for the person with dementia to claim that they need new reading glasses. In actual fact, they may not be able to accurately interpret what they see, but the persons own logic tells them it must be their glasses that are at fault.

Cerebellum

This part of the brain controls:

Sensory perception; motor output; co-ordination; balance.

Damage to this part of the brain can result in difficulty with:

Slurred speech (scanning); walking; basic movements (ie sitting down).

Point of note:

Sitting down is a basic everyday function, but it is initiated by a very complex string of commands in the brain. Sometimes a person with damage to this part of the brain may have difficulty sitting down when they are thinking about the actual process, but can still manage it when it is a reaction or a response.

Parietal Lobes

This part of the brain controls:

Touch perception; integration of senses; recognising objects and movement of objects; hand-eye co-ordination; making calculations.

Damage to this part of the brain can result in difficulty with:

Naming objects; locating words for writing; reading; drawing; maths.

Point of note:

The brain is not only divided into different lobes, but into two halves, left and right. In the parietal lobes, the affect of dementia on an individual can differ depending on whether their 'dominant' or 'non-dominant' side has been damaged.

Frontal Lobes

This part of the brain controls:

Intellect; personality; regulating behaviour; reasoning; judgement; planning and organising; expressive language; emotional responses.

Damage to this part of the brain can result in difficulty with:

Inappropriate social behaviour (swearing, urinating in public, taking clothes off, eating non-food products etc); personality change; mood changes; problem solving; interaction with others; repetitive actions (i.e. folding a cloth or picking something up).

Point of note:

The frontal lobes essentially control who we are perceived to be as a person – our personality, responses, and behaviours. Damage to this part of the brain can essentially remove the 'safety-net' that allows us to distinguish between appropriate and inappropriate, leading to disinhibited or inappropriate behaviour over which ***the person with dementia has no control.***

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