

Alzheimer's Disease: An In-depth Look at the Leading Cause of Dementia

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Description

Alzheimer's disease is a progressive neurological disorder that is the most common cause of dementia, affecting millions of people worldwide. Characterized by a gradual decline in cognitive function, Alzheimer's disease impairs memory, thinking, and reasoning abilities, and ultimately impacts daily functioning. Understanding this complex disease involves exploring its symptoms, causes, diagnosis, and current treatment options. Alzheimer's disease typically begins with mild symptoms that progressively worsen over time. Early signs often include difficulty remembering recent events or conversations is a common early symptom. Individuals may repeatedly ask questions or forget where they placed items. Disorientation about time, place, and the identity of familiar people can occur. Individuals may struggle with getting lost in familiar surroundings. Challenges with planning, organizing, or completing tasks that were once routine, such as managing finances or following a recipe, become evident. Trouble finding the right words, repeating themselves, or losing their train of thought during conversations. As the disease advances, symptoms become more severe and can include significant impairment in long-term memory and the inability to recall important personal information. Difficulty with daily activities such as dressing, bathing, and managing personal hygiene. Changes in mood, personality, and behavior, including agitation, aggression, and hallucinations. The exact cause of Alzheimer's disease remains unknown, but research suggests that it is a result of a complex interplay between genetic, environmental, and lifestyle factors. Key features associated with Alzheimer's include abnormal clumps of protein fragments called beta-amyloid accumulate between nerve cells, disrupting communication and leading to cell death. Twisted fibers of a protein called tau accumulate inside nerve cells, contributing to cell dysfunction and death. Genetic mutations are known to increase the risk of Alzheimer's, particularly in familial cases. The presence of the APOE ε4 allele is a significant risk

factor for late-onset Alzheimer's. While age is the most significant risk factor, other factors include a family history of the disease, cardiovascular conditions, and lifestyle factors such as smoking, lack of physical activity, and poor diet. Diagnosing Alzheimer's disease involves a comprehensive assessment, including a detailed medical history, neurological examination, and cognitive testing. While there is no definitive test for Alzheimer's, imaging studies such as magnetic resonance imaging (MRI) or positron emission tomography (PET) can help identify brain changes associated with the disease. A lumbar puncture (spinal tap) may also be performed to analyze cerebrospinal fluid for biomarkers indicative of Alzheimer's. Currently, there is no cure for Alzheimer's disease, but various treatments can help manage symptoms and improve quality of life. These include drugs such as cholinesterase inhibitors (e.g., donepezil, rivastigmine) and NMDA receptor antagonists (e.g., memantine) can help manage symptoms related to memory and cognition. While these medications do not halt disease progression, they may provide temporary relief and improve cognitive function. Cognitive and behavioral therapies can help individuals manage symptoms and maintain cognitive function. Structured routines, memory aids, and social engagement can also play a role in enhancing quality of life. Providing care for individuals with Alzheimer's requires significant emotional and physical support. In conclusion, Alzheimer's disease is a complex and challenging condition with profound effects on individuals and their families. While current treatments can manage symptoms and improve quality of life, continued research and innovation are crucial for advancing our understanding and finding effective solutions for this devastating disease.

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Conflict of Interest

Authors declare that they have no conflict of interest.

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