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## Understanding Alzheimer's Disease Xalillillayeva Rayxona Xushnubek qizi

Tibbiyot fakulteti, Davolash ishi ta`lim yo`nalishi 1-kurs DI-25-02-guruh  
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**Annotation:** This article explores Alzheimer's disease as a long-term and progressive disorder that affects the brain and gradually reduces a person's ability to remember, think clearly, and function independently. It explains how Alzheimer's develops over time due to damage to brain cells, leading to difficulties with memory, communication, decision-making, and behavior. The article describes the early warning signs of the disease as well as the later stages, showing how symptoms become more severe as the condition advances. It also discusses the major factors that increase the risk of developing Alzheimer's, including aging, genetic background, and lifestyle habits. In addition, the article highlights the emotional and practical challenges faced by patients, families, and caregivers, emphasizing the need for understanding and support. Finally, it underlines the importance of early detection, medical care, healthy living, and continued scientific research in improving the quality of life for individuals affected by Alzheimer's disease and in working toward better treatments in the future.

**Keywords:** Alzheimer's disease, dementia, memory loss, brain disorder, cognitive decline, neurological disease, aging, caregivers, early diagnosis, research.

**Introduction:** Alzheimer's disease is a progressive and complex neurological disorder that affects millions of people worldwide, making it one of the most challenging health issues of the modern era. It is the leading cause of dementia, a group of brain disorders that gradually impair memory, thinking, reasoning, and the ability to perform everyday tasks. While it most commonly affects older adults, Alzheimer's is not a normal part of aging, and its effects can profoundly disrupt the lives of patients and their families. The disease develops when abnormal protein deposits, such as beta-amyloid plaques and tau tangles, accumulate in the brain. These deposits interfere with the communication between nerve cells, eventually leading to their death and causing the brain to shrink over time. In its early stages, Alzheimer's disease can be difficult to detect because symptoms often resemble typical forgetfulness associated with aging. Individuals may misplace items, forget recent events, or struggle to recall familiar words, which can be mistakenly dismissed as normal lapses in memory. As the disease progresses, cognitive decline becomes more pronounced, affecting problem-solving, decision-making, and even basic daily activities such as eating, dressing, and personal hygiene. Additionally, Alzheimer's often brings emotional and behavioral changes, including mood swings, depression, anxiety, and social withdrawal, which can place an enormous emotional burden on families and caregivers.





Understanding Alzheimer's disease is crucial not only for early detection but also for developing strategies that improve the quality of life for patients and those who care for them. Awareness about the condition encourages early medical intervention, which can help manage symptoms and slow progression, while ongoing research aims to uncover more effective treatments and, ultimately, a cure. Studying Alzheimer's also provides valuable insights into how the human brain functions, how cognitive decline can be prevented, and what steps can be taken to maintain mental health as people age. In an era where the population of older adults is steadily increasing, gaining knowledge about Alzheimer's disease is essential for fostering compassion, preparedness, and practical support for affected individuals and their families.

**Main part:** Alzheimer's disease is a progressive and irreversible neurological disorder that primarily affects the brain's memory and cognitive functions. It is the most common type of dementia, responsible for approximately 60–70% of dementia cases globally. Alzheimer's gradually damages the brain by forming abnormal protein deposits—**beta-amyloid plaques** and **tau tangles**—which disrupt communication between neurons. Over time, this disruption leads to the death of brain cells and shrinkage of brain tissue, particularly in areas responsible for memory, language, reasoning, and decision-making. Unlike temporary memory lapses that occur with normal aging, Alzheimer's progressively impairs a person's ability to perform daily activities and affects behavior, emotions, and personality.

**Early Signs and Symptoms:** The early symptoms of Alzheimer's can be subtle and easily mistaken for normal aging or stress. Early recognition is critical, as it allows for timely intervention and planning. Common initial signs include:

**Memory loss:** Forgetting recently learned information, appointments, or important dates repeatedly.

**Difficulty with tasks:** Struggling to plan, organize, or complete familiar activities, such as managing finances or cooking.

**Language problems:** Finding it difficult to follow or join conversations, misusing words, or losing the thread of ideas.

**Disorientation:** Becoming confused about time, dates, or location, sometimes even in familiar surroundings.

**Misplacing items:** Regularly placing objects in unusual places and being unable to retrace steps.

**Mood and personality changes:** Increased anxiety, irritability, depression, and withdrawal from social activities.

As Alzheimer's progresses, memory loss becomes more severe, and patients may forget family members' names, get lost even in familiar places, or require assistance with basic self-care such as eating, dressing, and bathing. Behavioral





changes, including aggression, hallucinations, or repeated questioning, can also occur, making caregiving increasingly challenging.

**Causes and Risk Factors:** The exact cause of Alzheimer's disease is still not fully understood, but research indicates that it is caused by a combination of genetic, environmental, and lifestyle factors. The following are the main contributors:

**Age:** The most significant risk factor. Most people diagnosed with Alzheimer's are over 65, and risk increases with advancing age.

**Genetics:** Certain genes, particularly **APOE-e4**, increase the likelihood of developing the disease. A family history of Alzheimer's also raises risk.

**Lifestyle factors:** Unhealthy habits, such as a sedentary lifestyle, smoking, excessive alcohol consumption, and poor diet, can contribute.

**Cardiovascular health:** High blood pressure, diabetes, obesity, and heart disease have been linked to higher Alzheimer's risk.

**Brain injuries:** Repeated or severe head trauma can increase vulnerability.

While some risk factors, such as age and genetics, cannot be changed, adopting a healthy lifestyle, staying mentally active, and managing chronic health conditions can reduce the likelihood or delay the onset of the disease.

**Impact on Individuals and Families:** Alzheimer's disease profoundly affects patients, families, and communities. For the individual, it gradually erodes independence, confidence, and the ability to engage in meaningful social and professional activities. Patients may experience frustration, fear, and depression as they realize their cognitive abilities are declining.

Family members and caregivers often bear a heavy emotional and physical burden. Providing daily care can lead to stress, exhaustion, financial strain, and social isolation. Families may need to make significant lifestyle adjustments, including hiring professional caregivers or arranging long-term care. On a societal level, Alzheimer's disease places a growing demand on healthcare systems and social services, increasing medical costs and requiring specialized care facilities.

**Treatment and Management:** Although there is currently no cure for Alzheimer's disease, treatments and interventions can help manage symptoms, slow progression, and improve quality of life:

**Medications:** Drugs such as cholinesterase inhibitors can temporarily improve cognitive symptoms and slow memory decline, while others may help with mood or behavioral changes.

**Lifestyle interventions:** Regular physical activity, mental exercises (puzzles, reading, learning new skills), healthy eating, and sufficient sleep can support brain health.

**Therapies:** Occupational therapy, cognitive therapy, and counseling can help patients maintain independence and cope with emotional challenges.

**Support systems:** Caregiver education, support groups, and community resources provide essential guidance and reduce caregiver stress.





**Research advances:** Experimental treatments, clinical trials, and ongoing studies are exploring ways to prevent Alzheimer's, remove abnormal protein deposits, and slow disease progression.

Effective management requires a combination of medical treatment, lifestyle modification, and emotional support, tailored to the patient's needs.

**Awareness, Prevention, and Research:** Raising awareness about Alzheimer's disease is critical for early diagnosis, intervention, and societal support. Public education programs reduce stigma, encourage patients and families to seek help early, and promote healthy brain practices. Preventive measures, such as maintaining cardiovascular health, staying physically and mentally active, and engaging socially, can lower the risk of developing Alzheimer's.

Research is essential to understanding the complex mechanisms of the disease and discovering effective treatments. Scientists are studying genetic factors, brain imaging techniques, biomarkers, and potential medications to slow or halt disease progression. Early detection through regular health check-ups and cognitive screening is key to improving outcomes for patients.

**Conclusion:** Alzheimer's disease is one of the most challenging neurological disorders of our time, affecting millions of people worldwide and profoundly impacting both patients and their families. It is more than just memory loss; it gradually disrupts cognitive abilities, personality, behavior, and the ability to carry out daily tasks, making long-term care and support essential. While the exact cause of Alzheimer's remains unclear, research has identified key factors such as age, genetics, lifestyle, and overall brain health that influence its development. Although there is currently no cure, early diagnosis, proper medical care, lifestyle adjustments, and emotional support can significantly improve the quality of life for patients and caregivers. Awareness and education about the disease play a vital role in reducing stigma, encouraging early intervention, and fostering understanding in society. Ongoing scientific research continues to explore innovative treatments, preventive measures, and ways to slow disease progression, offering hope for the future.

Ultimately, understanding Alzheimer's disease is not only about recognizing its medical aspects but also about cultivating empathy, compassion, and support for those affected. By combining medical knowledge, community awareness, and continuous research efforts, society can better respond to the challenges posed by Alzheimer's and work toward improving the lives of millions living with this complex and devastating condition.

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