



## Gradual Changes in Thinking and Memory Across the Lifespan

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### DESCRIPTION

Cognitive decline refers to a reduction in mental abilities such as memory, attention, language and decision-making. It can occur as part of normal aging, but in some cases it becomes more noticeable and begins to interfere with daily functioning. Understanding how and why these changes happen is important for early recognition, proper care and maintaining quality of life. As individuals grow older, subtle shifts in thinking are common. People may take longer to recall names, process new information or adapt to unfamiliar situations. These mild changes do not usually affect independence. However, when memory problems increase in frequency or severity, they may indicate a more serious condition. Distinguishing between normal aging and abnormal decline requires careful observation of patterns, including the impact on routine tasks, communication and behavior. Several biological processes contribute to cognitive decline. Changes in brain structure, such as shrinkage in certain areas, can affect memory and reasoning. Reduced blood flow and alterations in neurotransmitter activity also play a role. In addition, accumulation of abnormal proteins in brain cells has been linked to more severe forms of decline. These internal changes often develop gradually, sometimes years before noticeable symptoms appear.

Lifestyle factors strongly influence cognitive health. Diet, physical activity, sleep quality and mental engagement all contribute to brain function. Diets rich in fruits, vegetables, whole grains and healthy fats support neural activity and may help slow decline. Regular exercise improves blood circulation to the brain and supports the growth of new neural connections. Mental activities such as reading, problem-solving and social interaction help maintain cognitive performance by keeping neural pathways active. Chronic health conditions can increase the risk of cognitive impairment. Conditions such as diabetes, hypertension and cardiovascular disease affect blood vessels and can reduce oxygen supply to brain tissue. Poorly controlled blood sugar levels may also damage nerves over time. Addressing these conditions through medical care and lifestyle changes can reduce the risk of further decline. Emotional well-being is

another important aspect. Depression, anxiety and prolonged stress can affect concentration and memory. In some cases, symptoms of depression may resemble cognitive impairment, making proper assessment essential. Support from family, friends and healthcare providers can help manage emotional challenges and improve overall mental function.

Environmental and social factors also shape cognitive outcomes. Individuals with limited access to education, healthcare or nutritious food may face higher risks. Social isolation, in particular, has been linked to faster decline. Regular interaction with others provides mental stimulation and emotional support, both of which are important for maintaining cognitive abilities. Early identification of cognitive changes allows for better management. Healthcare professionals often use a combination of medical history, cognitive tests and imaging techniques to assess brain function. Identifying reversible causes, such as vitamin deficiencies or medication side effects, can lead to improvement. In other cases, interventions focus on slowing progression and supporting daily living.

### CONCLUSION

Cognitive decline is a complex process influenced by biological, lifestyle and environmental factors. Recognizing early signs, adopting healthy habits and seeking appropriate care can make a meaningful difference. By promoting awareness and supportive environments, it is possible to improve the lives of individuals experiencing changes in thinking and memory.

### REFERENCES

1. Kruse JA, Martin CS, Hamlin N, Slattery E, Moriarty EM, Horne LK, et al. Changes of creative ability and underlying brain network connectivity throughout the lifespan *Brain Cogn*. 2023;168:105975.
2. Gaudet I, Gagnon SP, Hamel S, Gilbert N, Doulou F, Gagnon C, et al. Neuropsychological and behavioral outcomes in childhood-onset myotonic dystrophy type 1 through lifespan: A scoping review. *Neuromuscul Disord*. 2025;106263.

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3. Garcia-García I, Donica O, Cohen AA, Nusslé SG, Heini A, Nusslé S, et al. Maintaining brain health across the lifespan. *Neurosci Biobehav Rev.* 2023;153:105365.
4. Cho I, Gutches A. How age and culture influence cognition: A lifespan developmental perspective. *Dev Rev.* 2025;75:101169.
5. Rawlings BS, Basu A, Di Bernardo A, Craton W, Edmonds K, Foulkes E, et al. Creative minds, equal ground: No socioeconomic gaps in UK children's divergent and convergent thinking. *Acta Psychol (Amst).* 2025;261:105811.
6. Kroeger D, Vetrivelan R. To sleep or not to sleep-Effects on memory in normal aging and disease. *Aging Brain.* 2023;3:100068.
7. Cheng S, Wang Q, Qiao X, Xu A. Cognitive decline and depression risk in middle-aged and older adults: Longitudinal intermediary roles of executive functions and episodic memory. *Acta Psychol (Amst).* 2025;261:106013.
8. Rivas-Diaz P, Montoliu T, Hidalgo V, Salvador A. Cortisol awakening response and autobiographical memory in healthy older adults: The moderating role of negative reminiscence. *Physiology & Behavior.* 2025:115143.
9. Kang JW, Oga-Omenka C, Tyas SL, Dubin JA, Oremus M. How social isolation and loneliness leave distinct imprints on memory: A thematic analysis informed by descriptive phenomenology. *Arch Gerontol Geriatr.* 2025:106003.
10. Oliver BG, Wang Q, Yarak RA, Hikasem T, Gorrie CA, Yi C, et al. Memory under siege: The cognitive costs of smoking and vaping. *Brain Behav Immun Health.* 2025:101102.