

## Commentary A SCITECHNOL JOURNAL

# Complexities and Risks in the Aging Brain

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### **Description**

Alzheimer's disease is a progressive neurological disorder that primarily affects memory, thinking, and behavior. It is the most common cause of dementia and accounts for a significant proportion of dementia cases. The course of Alzheimer's disease is commonly described in three stages, with patterns of progressive cognitive impairment. The three stages are described as early or mild, intermediate or moderately severe, and late or severe. The disease is known to target the hippocampus, is associated with memory and is responsible for the first symptoms of memory impairment.

Early detection of Alzheimer's disease is largely due to advances in diagnostic imaging, the discovery of biomarkers (physiologic changes that are characteristic of or indicative of disease) and sensitivity high enough to measure biomarkers to detect them. It is based on the development of the method of several methods have been developed to detect Alzheimer's disease, including a blood test that measures increased protein expression in certain white blood cells and a positron test that detects increased enzyme levels in the cerebrospinal fluid.

A test that analyzes spinal fluid for specific biomarker signatures indicative of Alzheimer's disease has shown promise for early detection of Alzheimer's disease. Fluid for testing is obtained by a lumbar puncture (spinal tap) and the sensitivity of the test is such that it can identify individuals at greatest risk of developing the disease later because they have mild cognitive impairment, and intervention strategies can be put in place to delay its onset.

Preclinical Mild Cognitive Impairment (MCI) and Alzheimer's dementia are the two most important stages for clinical diagnosis.

In order to diagnose Alzheimer's disease at the preclinical stage, it is important to understand that the disease process starts before symptoms become noticeable.

#### Complications and risks caused by Alzheimer's disease

Falls and injuries: Alzheimer's can impair balance, coordination, and judgment, increasing the risk of falls and associated injuries such as fractures, head trauma, and bruises.

**Malnutrition and dehydration:** As the disease progresses, individuals with Alzheimer's may have difficulty with meal planning, preparation, and eating independently, leading to inadequate nutrition and hydration.

Wandering and getting lost: People with Alzheimer's may wander and become disoriented, putting themselves at risk of getting lost, encountering dangerous situations, and experiencing accidents or injuries.

**Medication mismanagement:** Alzheimer's can affect an individual's ability to manage their medications correctly, leading to missed doses, improper dosage, or potential interactions with other drugs.

**Infections:** Individuals with Alzheimer's may have weakened immune systems or difficulties with personal hygiene, making them more susceptible to infections such as urinary tract infections, pneumonia, and skin infections.

**Caregiver burnout:** Alzheimer's can place significant physical, emotional, and financial burdens on caregivers, leading to increased stress, exhaustion, and potential negative impacts on their own health and well-being.

**Increased vulnerability:** People with Alzheimer's may be more vulnerable to financial exploitation, abuse, or neglect if they are unable to understand and protect their own interests.

**Communication challenges:** Alzheimer's can impair language and communication abilities, making it difficult for individuals to express their needs, understand instructions, or engage in social interactions.

**Deterioration of other health conditions:** Alzheimer's disease can complicate the management of other chronic health conditions, such as diabetes, cardiovascular disease, and respiratory disorders, leading to increased health risks.

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