



Vaccine for Alzheimer's Disease

Dr. Kiran Bhaskar (an Indian-American scientist at the University of New Mexico) led team has developed an early version vaccine for **Alzheimer's disease**.

- **Vaccine intervention** could rescue **memory impairments** and **prevent neurons** from dying by **reducing tau tangles** in parts of the brain that are critical to **memory and learning**.
- The vaccine uses **virus-like particles (VLP)** that helps mice to develop **antibodies** to get rid of tau tangles in them, which are responsible for breeding symptoms of Alzheimer's in humans also.
- **Tau** is a protein that when it occurs in tangled formations in the brain of Alzheimer patients, disrupts the ability of neurons to communicate with one another in the brain.
- Body's **immune system** is capable of **generating antibodies** that are responsible for eliminating tau tangles.

Alzheimer's

- Alzheimer's disease is a **neurological disorder** which causes brain cells to **degenerate and die**. This leads to **loss of memory**, problems with words in **speaking or writing**, **poor judgment**, changes in **mood and personality**, **confusion with time or place**, etc.
 - At the first stage, these symptoms are mild but they become **more severe with time**.
- Alzheimer's is the most common **cause of dementia** among older adults.
 - Dementia is a group of brain disorders that cause the loss of intellectual and social skills.
- It is caused by the build-up of proteins known as **tangles or plaques** within the brain and is also known as the third type of diabetes.
- **Ageing** is the greatest risk factor for Alzheimer's disease but sometimes symptoms may occur at the age of 30s or so because of rare genetic changes in the people.
- Alzheimer's is an **incurable disease**, as the death of brain cells cannot be reversed.
- **Women** have a **higher risk** of having Alzheimer's disease than men.
 - According to the US Department of Health and Human Services nearly twice as many women have Alzheimer's disease as men.

Fact and Findings

- **India** houses more than **4 million** people suffering from some form of dementia and this number is set to **triple by 2050**.
Worldwide, at least 44 million people are living with dementia, making the disease a global health crisis that must be addressed.
- **Western countries** report a high rate of Alzheimer's, mainly on account of better diagnosis compared to countries like India where it is often ignored as a natural process of ageing.