



Women and Alzheimer's Disease

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Almost two-thirds of Americans living with Alzheimer's are women ([Alzheimer's Association](#)). While women have a longer average lifespan, this does not fully explain the gender discrepancy. In honor of National Women's Health Week May 12-18, here is a closer look at the risk of Alzheimer's disease among women.

Education and cognitive reserve

Looking at a global population, [Gong et al.](#) found a higher incidence of dementia among women than men, even when age and other risk factors were equalized. Along with advancing age, risk factors for dementia include hypertension, obesity, diabetes, depression, hearing loss, smoking, excessive alcohol use, physical inactivity, hearing impairment, low social contact, traumatic brain injury, and air pollution.

A low level of education is also recognized as one of the risk factors for dementia. "Higher educational attainment and mentally stimulating occupations have been shown to be protective against dementia," note Gong and colleagues. These factors can increase cognitive reserve—the brain's ability to preserve cognitive function. In their research, education had the strongest protective effect for men, but it was meaningful for both genders. Gong et al. advocate for providing equal access to education for girls and women worldwide, noting the downstream protective socioeconomic effects of educational attainment over the course of a lifetime.

Beyond education alone, occupational experience may also influence dementia risk.

Researchers publishing in [Neurology](#) found that an occupation characterized by routine tasks and little mental stimulation in mid-life led to a 66% higher risk of mild cognitive impairment and a 37% higher risk of dementia in later years. Their findings underscore the importance of cognitive stimulation over the life course.

Likewise, the [Alzheimer's Association](#) suggests that "work and family patterns" may play a role in Alzheimer's risk. According to research, "Women who participated in the paid labor force between early adulthood and middle age experienced slower memory decline in late life," they point out.

Immune system in women

Gender-related differences in Alzheimer's risk may not be limited to social determinants of health. [Harvard Health](#) points to research indicating that the gender difference is specific to Alzheimer's disease—not to other forms of dementia. They posit that women's bodies may be more prone to depositing amyloid, one brain finding in Alzheimer's disease, "in order to fight off infections in the brain".

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Possibly an evolutionary phenomenon, women have stronger immune systems than men, they say. Thus, “women may end up having more amyloid plaques than men,” they suggest, noting that further research is needed.

Tau tangles in women

“Women are known to have greater levels of tau protein abnormally build up in brain cells over their lives” according to research funded by the [NIH](#). Tau tangles, which interfere with neuronal transmission, are one of the pathologies seen in Alzheimer's, notes the NIH. The researchers investigated an enzyme called USP11 that tells the body not to recycle or remove tau proteins, possibly leading to an unhealthy accumulation. The USP11 enzyme is linked to the X chromosome, and women have two copies of the gene that encodes it, they note. The research demonstrated a correlation between high USP11 levels and presence of tau tangles.

In all, Harvard concludes, “there must be a specific interaction between Alzheimer's disease and gender.”

Reducing the risk of dementia

The complement of risk factors contributing to Alzheimer's and related dementias is extensive, and research is ongoing. Women may have greater risks than men for socioeconomic and biological reasons that are not yet fully understood.

In the meantime, people of either gender can take control of dementia risks through healthy lifestyle habits. “Observational studies show that people who practice healthy behaviors tend to have a lower risk of dementia,” explains the NIH. Their [dementia risk tip sheet](#) outlines steps everyone can take to protect cognitive health.

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