

# Reproductive history and risk of cognitive impairment in elderly women

November 12 2015

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Researchers led by Professor Jun-Fen Lin at Zhejiang Provincial Center for Disease Control and Prevention have found that reproductive history, an important modifier of estrogen exposure across women's lifetime, is associated with risk of cognitive impairment in postmenopausal women. These findings are published in the *Journal of Alzheimer's Disease*.

Prof. Lin notes that [postmenopausal women](#) carry an [increased risk](#) of developing Alzheimer's Disease (AD) than age-matched men, probably due to the marked reduction of estrogen level that occurs following menopause. Animal and in vitro studies have identified that estrogen has several possible neuroprotective effects on cognitive function. There has been substantial research on the association between reproductive history, as an important modifier of estrogen exposure, and risk of [cognitive impairment](#). However, there are still inconsistencies in some epidemiological and clinical studies. Only a few studies have been conducted in Chinese populations.

Zhejiang Major Public Health Surveillance Program (ZPHS) is a community-based cohort study focusing on aging and health among elderly in Zhejiang, China. Using the baseline data from ZPHS including 4,796 postmenopausal women aged 60 years and older, Zhejiang Provincial Center for Disease Control and Prevention researchers assessed the association between reproductive history and risk of cognitive impairment. Cognitive impairment was evaluated through the application of Mini-Mental State Examination questionnaire (MMSE).

"Endogenous estrogen exposure is highest during a woman's reproductive life. An increasing number of reproductive years, resulting from a younger age at menarche and/or an older age at menopause, indicates a higher lifetime endogenous estrogen exposure," Prof. Lin explains. "We found that a longer reproductive period was associated with significantly better cognitive function."

Moreover, reproductive activity during this time also affects endogenous estrogen exposure. An interesting finding in this study was that full-term pregnancy and incomplete pregnancy have different effects on cognitive function: having more full-term pregnancies and no incomplete pregnancy history are associated with an increased risk of cognitive impairment.

"We observed a statistically significant reduction in risk of cognitive impairment in women who had ever used oral contraceptives, and a similar protective effect was observed in women who had ever used an intrauterine device (IUD), which has received little attention previously in this field. These can also be explained through hormonal mechanisms." adds Prof. Lin.

Prof. Lin concludes, "In this study, we showed that shorter reproductive period, higher number of full-term pregnancies and no incomplete pregnancy history were significantly associated with an increased risk of cognitive impairment, whereas oral contraceptives use and IUD use contributed to the beneficial effect on cognitive function. We think these results are important and are a valuable addition to the previous body of research."

**More information:** Fu-Dong Li et al. Reproductive History and Risk of Cognitive Impairment in Elderly Women: A Cross-Sectional Study in Eastern China, *Journal of Alzheimer's Disease* (2015). [DOI: 10.3233/JAD-150444](https://doi.org/10.3233/JAD-150444)

Provided by IOS Press

Citation: Reproductive history and risk of cognitive impairment in elderly women (2015, November 12) retrieved 15 July 2023 from

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