

Breastfeeding may reduce Alzheimer's risk

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Breastfeeding. Credit: Anton Nossik via Wikimedia Commons

A new study suggests that mothers who breastfeed run a lower risk of developing Alzheimer's, with longer periods of breastfeeding further reducing the risk.

Mothers who breastfeed their children may have a lower risk of developing Alzheimer's Disease, with longer periods of breastfeeding also lowering the overall risk, a new study suggests.

The report, newly published in the *Journal of Alzheimer's Disease*, suggests that the link may be to do with certain biological effects of breastfeeding. For example, breastfeeding restores insulin tolerance

which is significantly reduced during pregnancy, and Alzheimer's is characterised by insulin resistance in the brain.

Although they used data gathered from a very small group of just 81 British women, the researchers observed a highly significant and consistent correlation between breastfeeding and Alzheimer's risk. They argue that this was so strong that any potential sampling error was unlikely.

At the same time, however, the connection was much less pronounced in women who already had a history of [dementia](#) in their family. The research team hope that the study – which was intended merely as a pilot – will stimulate further research looking at the relationship between female reproductive history and disease risk.

The findings may point towards new directions for fighting the global Alzheimer's epidemic – especially in developing countries where cheap, preventative measures are desperately needed.

More broadly, the study opens up new lines of enquiry in understanding what makes someone susceptible to Alzheimer's in the first place. It may also act as an incentive for women to breastfeed, rather than bottle-feed – something which is already known to have wider health benefits for both mother and child.

Dr Molly Fox, from the Department of Biological Anthropology at the University of Cambridge, who led the study, said: "Alzheimer's is the world's most common [cognitive disorder](#) and it already affects 35.6 million people. In the future, we expect it to spread most in low and middle-income countries. So it is vital that we develop low-cost, large-scale strategies to protect people against this devastating disease."

Previous studies have already established that breastfeeding can reduce a

mother's risk of certain other diseases, and research has also shown that there may be a link between breastfeeding and a woman's general cognitive decline later in life. Until now, however, little has been done to examine the impact of breastfeeding duration on Alzheimer's risk.

Fox and her colleagues – Professor Carlo Berzuini and Professor Leslie Knapp – interviewed 81 British women aged between 70 and 100. These included both women with, and without, Alzheimer's. In addition, the team also spoke to relatives, spouses and carers.

Through these interviews, the researchers collected information about the women's reproductive history, their breastfeeding history, and their dementia status. They also gathered information about other factors that might account for their dementia, for example, a past stroke, or brain tumour.

Dementia status itself was measured using a standard rating scale called the Clinical Dementia Rating (CDR). The researchers also developed a method for estimating the age of Alzheimer's sufferers at the onset of their disease, using the CDR as a basis and taking into account their age and existing, known patterns of Alzheimer's progression. All of this information was then compared with the participants' breastfeeding history.

Despite the small number of participants, the study revealed a number of clear links between breastfeeding and Alzheimer's. These were not affected when the researchers took into account other potential variables such as age, education history, the age when the woman first gave birth, her age at menopause, or her smoking and drinking history.

The researchers observed three main trends:

- Women who breastfed exhibited a reduced Alzheimer's Disease

risk compared with women who did not.

- Longer breastfeeding history was significantly associated with a lower Alzheimer's Risk.
- Women who had a higher ratio of total months pregnant during their life to total months breastfeeding had a higher Alzheimer's risk.

The trends were, however, far less pronounced for women who had a parent or sibling with dementia. In these cases, the impact of breastfeeding on Alzheimer's risk appeared to be significantly lower, compared with women whose families had no history of dementia.

The study argues that there may be a number of biological reasons for the connection between Alzheimer's and breastfeeding, all of which require further investigation.

One theory is that breastfeeding deprives the body of the hormone progesterone, compensating for high levels of progesterone which are produced during pregnancy. Progesterone is known to desensitize the brain's oestrogen receptors, and oestrogen may play a role in protecting the brain against Alzheimer's.

Another possibility is that breastfeeding increases a woman's glucose tolerance by restoring her insulin sensitivity after pregnancy. Pregnancy itself induces a natural state of [insulin resistance](#). This is significant because Alzheimer's is characterised by a resistance to insulin in the brain (and therefore glucose intolerance) to the extent that it is even sometimes referred to as "Type 3 diabetes".

"Women who spent more time pregnant without a compensatory phase of [breastfeeding](#) therefore may have more impaired glucose tolerance, which is consistent with our observation that those women have an increased risk of Alzheimer's disease," Fox added.

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