Prolonged breastfeeding may be connected to fewer child behaviour problems

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Breastfeeding for four months or more is associated with fewer behavioural problems in children at age 5, an Oxford University study suggests.

The findings, published in the journal Archives of Disease in Childhood, add to the evidence base on the benefits of breastfeeding.

‘Our results provide even more evidence for the benefits of breastfeeding,’ says Maria Quigley of the National Perinatal Epidemiology Unit at Oxford University, who led the work with Katriina Heikkilä.

‘Mothers who want to breastfeed should be given all the support they need. Many women struggle to breastfeed for as long as they might otherwise like, and many don’t receive the support that might make a difference.

There are a number of well-known health benefits of breastfeeding: for example, breastfed babies have lower rates of infections and mothers have a reduced risk of breast cancer.

A range of other health and child development benefits have also been suggested – such as higher IQ, fewer behavioural problems and lower levels of obesity – but the evidence for these can be inconsistent across different studies.

The researchers from the University of Oxford, along with colleagues from the Institute of Social and Economic Research (University of Essex), University College London and the University of York, set out to investigate associations between the duration of any breastfeeding and child behaviour at age 5 years.

‘We found that children who were breastfed for at least four months were less likely to have behavioural problems at age 5,’ says Maria Quigley of Oxford University.

However, that observation might not have been the direct result of breastfeeding – it could have been down to a number of factors,’ she explains.

‘As a group, mothers who breastfed for four months were very different socially to those who formula fed.

They were more likely to be older, better educated and in a higher socio-economic position, on average.

Having controlled for these and other differences between the groups, we found there was still a 30% lower risk of behaviour problems associated with prolonged breastfeeding.

The team used a nationwide survey of infants born in a 12-month period in 2000–2001 called the Millennium Cohort Study.

This cohort study, for which the data are openly available, involved carrying out home interviews with parents when their children were 9 months old, with further follow-up interviews roughly every two years.

The Oxford researchers included data for over 9,500 mothers and babies born at full term to families of white ethnic background.

They used answers from the initial interview when the children were 9 months old to determine whether mothers had breastfed and how long for.

They combined these data with the results of a standard questionnaire used for identifying children with possible behavioural problems.

This was filled out by a parent (normally the mother) when their child was 5 years old. Children scoring in the top 10% are classified as having an abnormal score.

Abnormal scores in the questionnaire can result from a range of emotional (eg clinginess, anxiety), conduct (eg lying, stealing) or hyperactivity (restlessness) problems.

‘We’re not necessarily talking about tearaway, unmanageable 5-year-old kids,’ says Maria Quigley.

‘It might be unusual anxiousness, restlessness, inability to socialise with other children or play fully in groups.’

The raw figures showed that 16.1% of formula-fed babies (530 out of 3,292 formula-fed babies) had abnormal scores at age 5.

Of the babies breastfed for at least four months, 6.5% had abnormal scores (179 out of 2,741 babies).

However, these two groups of mothers and children are very different across a number of measures, such as mother’s age, education and socio-economic position.

It could be that breastfeeding is serving as a proxy for something else causing the difference in rates of behavioural problems among the children.

So the researchers then adjusted their analysis to account for all these potential factors. Children who were breastfed for at least four months were still about 30% less likely to have behavioural problems at age five.

It is possible to suggest possible causes for the relationship between breastfeeding and reduced likelihood of problem behaviour.

It may be that there is something in the breast milk that leads to improved neurological development and behavioural learning in children.

Or the close physical contact during breastfeeding may lead to more mother-baby interaction and better communication.

Or the reduced illness experienced by babies who are breastfed.

‘We just don’t know whether it is because of the constituents in breast milk which are lacking in formula, or the close interaction with the mum during breastfeeding, or whether it is a knock-on effect of the reduced illness in breastfed babies.

But it does begin to look like we can add fewer behavioural problems as another potential benefit of breastfeeding.

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**Notes for editors**

* The current Department of Health recommendations on feeding infants are:  
  Breast milk is the best form of nutrition for infants  
  Exclusive breastfeeding is recommended for the first six months  
  Six months is the recommended age for the introduction of solid foods  
  Breastfeeding (and/or breast milk substitutes) should continue beyond the first six months, along with appropriate types and amounts of solid foods.  
  <http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4096999.pdf>
* The 2005 Infant Feeding Survey found that 48% of all mothers in the United Kingdom were breastfeeding at six weeks, which dropped to 25% at six months. A similar proportion was found in this study – 29% of mothers of babies from full-term pregnancies said they had breastfed for four months or more.<http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/infant-feeding-survey/infant-feeding-survey-2005>
* The 2005 Infant Feeding Survey reported that nine in ten mothers who gave up breastfeeding within six months said they would have preferred to breastfeed for longer. (Though even among those who succeeded in breastfeeding for at least six months, 40% still said they would have liked to continue for longer.)<http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/infant-feeding-survey/infant-feeding-survey-2005>
* All children sometimes behave inappropriately as they develop and learn. Temper tantrums are one familiar example. But where such behaviour occurs repeatedly, it can affect the child’s development and family life. The Millennium Cohort Study used the Strengths and Difficulties Questionnaire, which has been validated as a reliable instrument for identifying children with problem behaviours in different settings. But it is not used as a diagnostic tool. Individual cases where abnormal scores are seen would normally be followed up to really ascertain problem behaviour.
* The Strengths and Difficulties Questionnaireincludes questions about whether the child is ‘Restless, overactive, cannot stay still for long’ and ‘Shares readily with other children (treats, toys, pencils, etc)’.
* While data was included from over 10,000 mothers and children in the study, just over 500 came from premature babies. Although the same patterns in the data were seen, the results were not as strong and were not statistically significant in this group.
* Mothers and children from non-white and mixed-ethnic groups were not included in the analysis. A significant proportion of mothers in these groups did not complete the questionnaire on child behaviour, making it difficult to know how representative the data would be for these groups. The results can really only be generalised for families from white backgrounds. Twins and triplets were also not included in the study as their behavioural development differs from that of singletons.
* The paper ‘Breastfeeding and child behaviour in the Millennium Cohort Study’ by Katriina Heikkilä and colleagues is to be published in the journal Archives of Disease in Childhood.
* The study was funded by the Department of Health for England, but designed, carried out and analysed independently of the funders.
* **Oxford University’s Medical Sciences Division** is one of the largest biomedical research centres in Europe. It represents almost one-third of Oxford University’s income and expenditure, and two-thirds of its external research income. Oxford’s world-renowned global health programme is a leader in the fight against infectious diseases (such as malaria, HIV/AIDS, tuberculosis and avian flu) and other prevalent diseases (such as cancer, stroke, heart disease and diabetes). Key to its success is a long-standing network of dedicated Wellcome Trust-funded research units in Asia (Thailand, Laos and Vietnam) and Kenya, and work at the MRC Unit in The Gambia. Long-term studies of patients around the world are supported by basic science at Oxford and have led to many exciting developments, including potential vaccines for tuberculosis, malaria and HIV, which are in clinical trial