

Early exclusive breastfeeding associated with longer telomeres in Latino preschoolers

July 21 2016, by Suzanne Leigh



Image: Wikipedia.

Infants who are exclusively breastfed early in life are more likely by age 4 or 5 to have longer telomeres, the protective bits of DNA that cap the ends of chromosomes in cells. In older adults, shorter telomeres are associated with a greater likelihood of developing conditions of aging, such as heart disease, diabetes and some cancers.

Telomeres, which are measured in <u>white blood cells</u>, generally become shorter with age, when the cell can no longer regenerate through cell division. But there is evidence that a significant amount of telomere shortening occurs during early childhood.



In their study of Latino children, published July 20, 2016, in the *American Journal of Clinical Nutrition*, UCSF scientists tracked the feeding habits of the offspring of 121 Latina mothers at two hospitals: UCSF Medical Center and Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center. The mothers were generally low-income, with almost all participating in the Special Supplemental Food Program for Women, Infants and Children (WIC), and the majority were foreign born and Spanish speaking.

The researchers, led by Janet Wojcicki, PhD, associate professor of pediatrics and epidemiology at UCSF Benioff Children's Hospital San Francisco, found that breastfeeding at 4 to 6 weeks of age—and to a lesser extent, any breastfeeding—was associated with longer telomeres when children were evaluated at age 4 or 5.

Average <u>telomere length</u> in exclusively breastfed children was between 350 and 450 DNA base pairs – or approximately 5 percent – longer than in the other children.

"Being exclusively breastfed early may have lifelong benefits for health, and there are too few women who are exclusively breastfeeding," Wojcicki said.

Only 38 percent of mothers in the study were exclusively breastfeeding their babies at 4 to 6 weeks of age, contrary to the American Academy of Pediatrics' recommendation that women exclusively feed their infants breast milk for the first six months and continue breastfeeding until at least one year, while introducing solid foods.

Earlier studies have found that breastfeeding plays a role in shaping the infant immune system and the gut microbiome, and that it may be somewhat protective against obesity.



Wojcicki said that to her knowledge this is the first study of the association of breastfeeding and diet with telomere shortness early in life.

Exposures to oxidative stress and inflammation are associated with faster telomere shortening in adults. The protective effect of breastfeeding against inflammation might help explain the association between exclusive early <u>breastfeeding</u> and longer telomeres during preschool years, the researchers speculated. It is not clear how telomere length might mediate health effects.

Previous studies in adults found that certain foods, such as cereal fiber and diets abundant in fruit and vegetables, are not only more likely to protect against obesity, but also are associated with longer telomere length.

Additionally, the study found that approximately 42 percent of children tested were consuming soda by age 3, and 10 percent of 3-year-olds drank soda four or more times weekly. These children showed a much faster rate of telomere shortening than the <u>children</u> who drank less or no soda.

The study was funded by the National Institutes of Health, the Hellman Health Foundation, the Robert Wood Johnson Health and Society Scholars Program, the NASPGHAN Foundation and the UCSF Clinical and Translational Science Institute.

Provided by University of California, San Francisco

Citation: Early exclusive breastfeeding associated with longer telomeres in Latino preschoolers (2016, July 21) retrieved 6 May 2024 from <u>https://medicalxpress.com/news/2016-07-early-exclusive-breastfeeding-longer-telomeres.html</u>



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