

# Breastfeeding changes gene activity that may make babies less reactive to stress

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It has long been known that there are many physical and mental health

benefits of breastfeeding for mothers and babies. But can these benefits be due to genetic changes induced by breastfeeding? New research suggests that connection.

The research, published in the September 2018 edition of the *Pediatrics*, was led by Barry M. Lester, Ph.D., director of Women & Infants Hospital's Brown Center for the Study of Children at Risk, a professor of psychiatry and pediatrics at The Warren Alpert Medical School of Brown University, and a member of Care New England Medical Group.

"What we found is that maternal care changes the activity of a gene in their infants that regulates the infant's physiological response to stress, specifically the release of the [hormone cortisol](#)," explained Dr. Lester.

Dr. Lester and his colleagues looked at more than 40 full-term, healthy infants and their mothers, one-half of whom [breastfed](#) for the first five months and one-half of whom did not. They measured the cortisol stress reactivity in infant saliva using a mother-infant interaction procedure and the DNA methylation (changing the activity of the DNA segment without changing its sequence) of an important regulatory region of the [glucocorticoid receptor gene](#) which regulates development, metabolism, and immune response.

"Breastfeeding was associated with decreased DNA methylation and decreased cortisol reactivity in the [infants](#). In other words, there was an epigenetic change in the babies who were breastfed, resulting in reduced stress than those who were not breastfed," said Dr. Lester.

**More information:** Barry M. Lester et al, Epigenetic Programming by Maternal Behavior in the Human Infant, *Pediatrics* (2018). [DOI: 10.1542/peds.2017-1890](#)

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