It's Not Just Milk—It's Relationship

Recent Findings in Neuroscience Show Breastfeeding's Effects Throughout the Lifespan

Share this:

Editorial

In a 2009 article in the *Journal of the American Medical Association*, Shonkoff, Boyce, and McEwen (2009) described how early life experiences set the stage for physical health in later life. They stated that reducing "early toxic stress" was key to preventing disease in adults. Breastfeeding is one important way to decrease early toxic stress. Recent studies have shown that breastfeeding increases babies' physical and mental well-being, and these effects go well beyond the composition of the milk. Maternal responsiveness is key to understanding these long-term effects. When mothers consistently respond to their babies' cues, they set the stage for lifelong resiliency in their offspring. And responsiveness is built into the breastfeeding relationship. We see this reflected in children's mental health. In one study of 2,900 mother–infant pairs, breastfeeding for 1 year was associated with better child mental health at every age point up to age 14 years (Oddy et al., 2009). Longer duration of breastfeeding was associated with better child mental health at every assessment point.

Breastfeeding and Maternal Depression

Maternal depression has a well-documented negative effect on babies and children. It is harmful because it impairs mothers' ability to be responsive to their babies. Depressed mothers tend to disengage from their babies and not respond to their cues. Babies experience this as highly stressful, and there can be lifelong effects from being raised by a chronically depressed mother or father (Field, Diego, & Hernandez-Reif, 2009; Kendall-Tackett, 2002, 2010; Weissman et al., 2006). Edward Tronick's still-face mother experiments are an analog of what happens with maternal depression. You can see the effects of nonresponse in the compelling video below.

These effects are long lasting. A 20-year follow-up of children of depressed parents compared them with a matched group of adult children whose parents had no psychiatric illness. The adult children of depressed parents had three times the rate of major depression, anxiety disorders, and substance abuse compared to adult children of nondepressed parents.

For many years, feeding method was not included in studies of maternal depression. In fact, for years, professionals who specialized in perinatal mental health believed that breastfeeding was a risk factor for postpartum depression. Fortunately, we now have evidence that indicates that exclusively breastfeeding mothers are at lower risk for depression. Indeed, breastfeeding is protective of maternal mental health (Dennis & McQueen, 2009; Groer & Davis, 2006; Kendall-Tackett, Cong, & Hale, 2011).

One reason why breastfeeding lowers depression risk is its impact on sleep. On every parameter of sleep, exclusively breastfeeding mothers fare better than their mixed- or formula-feeding counterparts: total length of sleep, minutes to get to sleep, percentage of slow-wave

Still Face Experiment

https://www.youtube.com/watch?v=Btg9PiT0sZg

Clinical Lactation, 2014, 5(2), http://dx.doi.org/10.1891/2158-0782.5.2.37

sleep, daytime fatigue, and perceived physical health (Blyton, Sullivan, & Edwards, 2002; Doan, Gardiner, Gay, & Lee, 2007; Kendall-Tackett et al., 2011). Our study of 6,410 mothers indicated that exclusively breastfeeding mothers were significantly better on every sleep measure compared to their mixed- and formula-feeding counterparts. Surprisingly, there was no significant difference between the mixed- and formula-feeding mothers (Kendall-Tackett et al., 2011). In other words, exclusive breastfeeding is a different physiological experience than mixed feeding. When mothers supplement, they lose the physiological benefit of breastfeeding on their sleep.

One study also found that breastfeeding protects babies when their mothers are depressed. This study compared four groups of mothers: mothers who were either depressed (breastfeeding or formula feeding) or nondepressed (breastfeeding or formula feeding). The measure was the babies' electroencephalogram (EEG) patterns (abnormal patterns were a symptom of depression in the infants). The babies of depressed, breastfeeding mothers had normal EEG patterns compared to the babies of depressed, formula-feeding mothers (Jones, McFall, & Diego, 2004). In other words, breastfeeding protected the babies from the harmful effects of their mothers' depression. The reason for this finding comes down to maternal responsivity. The researchers discovered that the depressed, breastfeeding mothers did not disengage from their babies. They couldn't. The breastfeeding mothers looked at, touched, and made eye contact with their babies more than the mothers who were not breastfeeding. And that was enough to make a difference.

Intergenerational Cycle of Violence

Mothers with a history of childhood abuse often feel as though they do not have the tools they need to successfully parent their own children. They may wonder whether they will perpetuate the cycle of violence. Impaired sleep can be an important trigger to the intergenerational transmission of abuse. Babies of mothers with depression or posttraumatic stress disorder (PTSD) are more likely to have sleep difficulties, possibly because of mothers' elevated stress hormone levels that the babies were exposed to in utero (Field, Diego, & Hernandez-Reif, 2006; Field et al., 2007). And a recent study found that for women with PTSD and a history of childhood abuse, infant sleep difficulties and maternal depression impaired mother–infant bonding and increased the risk of intergenerational transmission of trauma (Hairston et al., 2011).

That is, of course, unless the mother breastfeeds. In Strathearn, Mamun, Najman, and O'Callaghan's (2009) 15-year longitudinal study of 7,223 Australian mother–infant pairs, breastfeeding substantially lowered the risk of maternal-perpetrated child maltreatment. Nonbreastfeeding mothers were 2.6 times more likely to be physically abusive and 3.8 times more likely to neglect their children compared to breastfeeding mothers.

The results of our recent study may help explain why this is so. In our sample of 6,410 new mothers, 994 women reported previous sexual assault. As predicted, sexual assault had a pervasive, negative effect on mothers' sleep, physical well-being, and mental health. The sexually assaulted mothers' sleep was poor, they were more tired, they were more anxious and angry, and they had more depression. But when we added feeding method to our analyses, we found that breastfeeding attenuated the effects of sexual assault and downregulated the stress response. This effect was only for exclusively breastfeeding women (Kendall-Tackett, Cong, & Hale, 2013). Anger, in particular, was lessened, and this might explain Strathearn and colleagues' (2009) findings cited earlier. Also, lower rates of depression improve maternal responsiveness, which is protective.

Attachment and Long-Term Health

We can also examine the impact of security of mother–infant attachment and its effects on long-term health. In an article written shortly before the end of their lives, attachment pioneers Ainsworth and Bowlby (1991) noted that maternal (or caregiver) responsivity was key to creating a secure attachment in infants. Ainsworth developed the primary measure of attachment in infants: the Strange Situation.

The Strange Situation has been used in thousands of studies all over the world. Secure attachment on this measure is a great predictor of child mental and physical health. And responsiveness is key. When babies are not responded to consistently, they develop insecure attachments, and these have long-term implications for health, as a recent 32-year longitudinal study of 163 people found (Puig, Englund, Simpson, & Collins, 2013). Participants in this study were followed from birth to age 32 years. At 12 to 18 months of age, they were assessed via the Strange Situation. Those with insecure attachments had significantly more inflammation-based illnesses at age 32 years than those who had secure attachments. These findings are likely because of the chronic activation of the inflammatory response system in those with insecure attachments.

The Strange Situation—Mary Ainsworth

https://www.youtube.com/watch?v=QTsewNrHUHU}

In summary, the results from these recent studies demonstrate that breastfeeding has a much larger role to play in maintaining physical and mental health than we have previously believed. It's not just the milk. Because breastfeeding increases maternal responsivity, it makes the day-to-day experience of mothering more tolerable. And it increases the chances that the babies will be securely attached. Breastfeeding is so much more than just a method of feeding. It's a way of caring for a baby that will provide a lifetime's worth of good health because it provides a way for mothers to connect with their babies—even if they did not experience that kind of care themselves.

In short, breastfeeding can make the world a happier and healthier place, one mother and baby at a time.

Kathleen Kendall-Tackett, PhD, IBCLC, RLC, FAPA
Editor-in-Chief

References

Ainsworth, M. D. S., & Bowlby, J. (1991). An ethological approach to personality development. *American Psychologist*, *46*, 333–341.

Blyton, D. M., Sullivan, C. E., & Edwards, N. (2002). Lactation is associated with an increase in slow-wave sleep in women. *Journal of Sleep Research*, *11*(4), 297–303.

Dennis, C. L., & McQueen, K. (2009). The relationship between infant-feeding outcomes and postpartum depression: A qualitative systematic review. *Pediatrics*, *123*, e736–e751.

Doan, T., Gardiner, A., Gay, C. L., & Lee, K. A. (2007). Breastfeeding increases sleep duration of new parents. *Journal of Perinatal & Neonatal Nursing*, *21*(3), 200–206.

Field, T., Diego, M., & Hernandez-Reif, M. (2006). Prenatal depression effects on the fetus and newborn: A review. *Infant Behavior & Development*, *29*, 445–455.

Field, T., Diego, M., & Hernandez-Reif, M. (2009). Infants of depressed mothers are less responsive to faces and voices: A review. *Infant Behavior & Development*, *32*(3), 239–244.

Field, T., Diego, M., Hernandez-Reif, M., Figueiredo, B., Schanberg, S., & Kuhn, C. (2007). Sleep disturbance in depressed pregnant women and their newborns. *Infant Behavior & Development*, *30*, 127–133.

Groer, M. W., & Davis, M. W. (2006). Cytokines, infections, stress, and dysphoric moods in breastfeeders and formula feeders. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, *35*, 599–607.

Hairston, I. S., Waxler, E., Seng, J. S., Fezzey, A. G., Rosenblum, K. L., & Muzik, M. (2011). The role of infant sleep in intergenerational transmission of trauma. *Sleep*, *34*(10), 1373–1383.

Jones, N. A., McFall, B. A., & Diego, M. A. (2004). Patterns of brain electrical activity in infants of depressed mothers who breastfeed and bottle feed: The mediating role of infant temperament. *Biological Psychology*, *67*, 103–124.

Kendall-Tackett, K. A. (2002). Depression in new mothers: Why it matters to the child maltreatment field. *Section on Child Maltreatment Newsletter: Division 37, American Psychological Association*, *6*, 8–9.

Kendall-Tackett, K. A. (2010). *Depression in new mothers: Causes, consequences, and treatment options* (2nd ed.). London, United Kingdom: Routledge.

Kendall-Tackett, K. A., Cong, Z., & Hale, T. W. (2011). The effect of feeding method on sleep duration, maternal well-being, and postpartum depression. *Clinical Lactation*, *2*(2), 22–26.

Kendall-Tackett, K. A., Cong, Z., & Hale, T. W. (2013). Depression, sleep quality, and maternal well-being in postpartum women with a history of sexual assault: A comparison of breastfeeding, mixed-feeding, and formula-feeding mothers. *Breastfeeding Medicine*, *8*(1), 16–22.

Oddy, W. H., Kendall, G. E., Li, J., Jacoby, P., Robinson, M., de Klerk, N. H., . . . Stanley, F. J. (2009). The long-term effects of breastfeeding on child and adolescent mental health: A pregnancy cohort study followed for 14 years. *Journal of Pediatrics*, *156*(4), 568–574.

Puig, J., Englund, M. M., Simpson, J. A., & Collins, W. A. (2013). Predicting adult physical illness from infant attachment: A prospective longitudinal study. *Health Psychology*, *32*(4), 409–417.

Shonkoff, J. P., Boyce, W. T., & McEwen, B. S. (2009). Neuroscience, molecular biology, and the childhood roots of health disparities: Building a new framework for health promotion and disease prevention. *The Journal of the American Medical Association*, *301*(21), 2252–2259. http://dx.doi.org/10.1001/jama.2009.754

Strathearn, L., Mamun, A. A., Najman, J. M., & O'Callaghan, M. J. (2009). Does breastfeeding protect against substantiated child abuse and neglect? A 15-year cohort study. *Pediatrics*, *123*(2), 483–493. http://dx.doi.org/10.1542/peds.2007-3546

Weissman, M. M., Wickramaratne, P., Nomura, Y., Warner, V., Pilowsky, D., & Verdeli, H. (2006). Offspring of depressed parents: 20 years later. *American Journal of Psychiatry*, *163*, 1001–1008.

Kathleen Kendall-Tackett is a health psychologist, International Board Certified Lactation Consultant, and the owner and editor-in-chief of Praeclarus Press, a small press specializing in women's health. Dr. Kendall-Tackett is editor-in-chief of *Clinical Lactation*, fellow of the American Psychological Association (APA) in Health and Trauma Psychology, president of the APA Division of Trauma Psychology, and editor-in-chief-elect of *Psychological Trauma*. Dr. Kendall-Tackett has won several awards for her work including the 2011 John Kennell and Marshall Klaus Award for Excellence in Research from DONA International (with corecipient Tom Hale). She has authored more than 390 articles or chapters and is the author or editor of 24 books on maternal depression, family violence, and breastfeeding, including *Psychology of Trauma 101* (2014) and *The Science of Mother-Infant Sleep* (2013). Her websites are http://www.uppitysciencechick.com, http://www.breastfeedingmadesimple.com, http://www.kathleenkendall-tackett.com, and http://www.praeclaruspress.com.

Childbirth Connection Issues Data Brief on Breastfeeding

National *Listening to Mothers*℠ *III* surveys asked in-depth questions about women's breastfeeding knowledge, experiences, and choices. These nationally representative data are from an initial survey of 2,400 women, age 18–45, who had given birth to a single baby in U.S. hospitals from July 2011 through June 2012, and could participate in English, as well as a follow-up survey of 1,072 of the initial participants carried out several months later. The surveys were conducted by Harris Interactive and funded by the W.K. Kellogg Foundation. Results showed that a gap exists between national standards for hospital breastfeeding support and the hospital practices women experienced after birth. Only about half (49%) of the women breastfed as long as they had wanted and mothers fell far short of American Academy of Pediatrics recommendations for exclusive and any breastfeeding duration. To access the entire data brief see here:

http://transform.childbirthconnection.org/wp-content/uploads/2013/06/LTMIII-DB_breastfeeding.pdf