

# Four Research Findings That Will Change What We Think About Perinatal Depression

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## ABSTRACT

Research by health psychologists is changing what we know about perinatal depression. In this guest editorial, the author examines depression in pregnant and breastfeeding women in light of this recent research and describes four major findings that are influencing how we think about depression in new mothers: inflammation has an etiologic role in depression, a relationship exists between sleep disturbances and depression, breastfeeding protects maternal mental health, and all effective treatments for depression are anti-inflammatory interventions.

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In this issue of *The Journal of Perinatal Education*, new research is presented on postpartum depression and on efforts to improve breastfeeding rates. Both are important topics for childbirth educators. In this guest editorial, I examine depression and breastfeeding in a broader framework. Health psychologists have been changing the paradigm for depression and health. Breastfeeding has a surprising role as well.

Below, I provide a brief introduction to recent findings in health-psychology research. Because this is an editorial and not a literature review, I can only provide a small glimpse. But I invite you to check this research out for yourself. Be prepared. Current research findings are changing the way we think about depression in new mothers.

## INFLAMMATION HAS AN ETIOLOGIC ROLE IN DEPRESSION

Over the past 15 years, researchers have discovered that inflammation is involved in the pathogenesis

of depression. And stress triggers this process. Recent studies constitute an important shift in how we think about depression, and explain why all types of physical and psychological stress can lead to depression (Robles, Glaser, & Kiecolt-Glaser, 2005). As such, inflammation is not simply a risk factor for depression; it is *the* risk factor because it underlies all the others (Kendall-Tackett, 2007, 2010). Inflammation is assessed by measuring plasma levels of proinflammatory cytokines. Proinflammatory cytokines are molecules involved in the immune response and include interleukin-1 $\beta$  (IL-1 $\beta$ ), interleukin-6 (IL-6), and tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ).

So how is inflammation related to perinatal depression? This is where, as they say, the plot thickens. In the last trimester of pregnancy, levels of proinflammatory cytokines rise. From the body's standpoint, this makes sense. Proinflammatory cytokines have two important functions: they fight

 For new research presented in this issue about postpartum depression as well as recommendations for improving breastfeeding rates, see "Self-Efficacy and Postpartum Depression Teaching Behaviors of Hospital-Based Perinatal Nurses" by Logsdon et al. (pp. 10–16) and "Evaluation of a Practice-Development Initiative to Improve Breastfeeding Rates" by Barnes et al. (pp. 17–23).

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infections and heal wounds. As the body prepares for birth, it makes sense that it rallies the “troops.” When the elevation of proinflammatory cytokines is within the normal range, inflammation is protective because it helps prevent infection. But add stress to this normal increase in inflammation, and it can increase depression risk. This elevation also explains why women are actually at higher risk for depression in the last trimester of pregnancy than they are during the postpartum period.

Stress and depression pose another health risk to pregnant women—increased risk of preterm birth (Coussons-Read, Okun, Schmitt, & Giese, 2005). Inflammation is the likely culprit here as well because proinflammatory cytokines also ripen the cervix. Inflammation is associated with preeclampsia and also increases when there is both viral and bacterial infection. Indeed, some researchers believe that abnormally high levels of proinflammatory cytokines may endanger human pregnancies. This research strongly suggests that depression during pregnancy must be addressed.

#### **A RELATIONSHIP EXISTS BETWEEN SLEEP DISTURBANCES AND DEPRESSION**

Sleep disturbances and fatigue are also related to cytokine levels. When proinflammatory cytokine levels are high, fatigue increases. In addition, the body experiences disturbed sleep as a physiological stressor, which increases inflammation. Indeed, sleep and depression have a bidirectional relationship: Sleep disturbance increases depression risk and depression causes sleep problems.

A key sleep-related predictor of postpartum depression is the number of minutes that it takes for mothers to fall asleep. In several recent studies, researchers found that mothers who took longer to fall asleep had a higher risk of depression. A difference of even 5 minutes can be significant (e.g., 20 minutes vs. 25 minutes). Depressed women also have other sleep disturbances that include lower sleep efficiency (total time sleeping vs. total time

in bed), more nighttime awakenings, and total fewer hours of sleep.

#### **BREASTFEEDING PROTECTS MATERNAL MENTAL HEALTH**

The findings about inflammation and sleep disturbances are interesting by themselves. But these findings become more interesting when breastfeeding is added to the equation. A recent review of 49 studies found that breastfeeding protects maternal mental health and lowers risk of depression (Dennis & McQueen, 2009). Breastfeeding helps because it downregulates the stress response. Unfortunately, depressed women are often advised to wean in order to give themselves “a break.” This advice may actually prolong their depression.

Breastfeeding also protects maternal mental health because it improves both sleep quality and quantity. At first glance, that may seem counterintuitive. Since breast milk is lower in fat and protein than formula, we might assume that breastfeeding mothers sleep less than their formula-feeding counterparts. However, recent research reveals the opposite: Exclusively breastfeeding mothers actually get the most sleep (Doan, Gardiner, Gay, & Lee, 2007). In addition, research reveals that breastfeeding mothers take fewer minutes to fall asleep, sleep longer, and feel less fatigued during the day (Kendall-Tackett, Cong, & Hale, 2010). In a recent study, researchers found “not exclusively breastfeeding” was a risk factor for disturbed sleep and postpartum depression (Dorheim, Bondevik, Eberhard-Gran, & Bjorvatn, 2009, p. 847).

There is one important caveat to this research. Breastfeeding protects maternal mental health when it is going well. However, breastfeeding problems increase the risk of depression and need to be addressed promptly.

#### **ALL EFFECTIVE TREATMENTS FOR DEPRESSION ARE ANTI-INFLAMMATORY INTERVENTIONS**

All effective treatments for depression also lower inflammation, which is likely one of the mechanisms for their efficacy. Effective treatments for depression include antidepressants, St. John’s wort, exercise, Omega-3s, cognitive therapy, and even social support. All of these treatments specifically lower levels of proinflammatory cytokines, and the nonpharmacological treatments are often as effective as medications (Kendall-Tackett, 2008; Maes et al., 2009).

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After researchers identified inflammation as the common element in depression, it opened the door to using these modalities in some new and creative ways. For example, when patients are not responding to antidepressants, researchers have added Omega-3s, and even anti-inflammatory Cox-2 inhibitors, to their treatment regimens. Both treatments increase the anti-inflammatory action of the antidepressants and, thereby, increase their efficacy.

In summary, the new health-psychology research indicates that decreasing stress and lowering inflammation are two useful strategies for both prevention and treatment of depression. There are many ways to treat depression, including a number of non-pharmacological methods. And all of them lower inflammation. Since we recognize that depression can lead to serious consequences for both mother and baby, having an array of possible treatments is good news indeed. Current research also indicates that if mothers want to continue breastfeeding, sound medical rationale supports their decision.

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