

Epidurals and reduced postpartum depression: an interview with Dr. Zakowski

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Dr. Mark Zakowski
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Please can you give a brief introduction to postpartum depression and how many women are affected by the condition?

The "maternity blues", which resolve within 10 days of giving birth, occurs in up to 80% of new moms.

A major depressive episode, by Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria, is defined as having at least a 2-week period of persistent depressed mood and/or loss of interest/lack of pleasure in addition to associated symptoms of: appetite changes, significant weight changes, sleep changes, fatigue, feelings of worthlessness/guilt, impaired concentration, psychomotor changes, and/or suicidal ideation.

Up to 12.7% of women have an episode of depression during pregnancy, and 15- 21.9% in the year after giving birth (1).

The best time to screen for postpartum depression is between 2 weeks and 6 months after delivery, and the most commonly used screening test is the Edinburgh Postnatal Depression Scale, which has been validated in many languages, with an approximate sensitivity of over 80% and a specificity above 60%.

Over 25% of women who have postpartum depression have symptoms lasting 7 months or longer. So postpartum depression is a major public health problem!

What are thought to be some of the main causes of postpartum depression?

Many possible causes for postpartum depression have been suggested, including: endocrine (hormonal) changes, psychological stress, nutritional deficiency, genetic predisposition and may be related to a combination of these factors.

Many extreme hormonal changes occur after delivery of the baby and placenta. The levels of female [hormones](#) – estradiol (an estrogen) and progesterone are double or triple normal levels to maintain the pregnancy. The placenta plays a major role in producing hormones that help sustain pregnancy.

Thus, within a couple days after giving birth, these hormone levels plummet. Major changes in the hypothalamic-pituitary axis (HPA) also occur during pregnancy, with elevated cortisol (a stress-related steroid).

The placenta also plays an active role in this endocrine system, producing Cortisol Releasing Hormone (CRH). Women with abnormal CRH responses after delivery are more like to develop postpartum depression.

Pregnancy elevates thyroid-binding proteins and can help create low free (effective) thyroid levels postpartum, which have also been associated with an increased risk of postpartum depression.

The psychological stressors after delivery include: lack of sleep with taking care of a newborn, family-related stress, support system stresses also affect the chances of postpartum depression.

Nutritional deficiency has been suggested as a possible contributing cause of postpartum depression. The vitamins folate and Vitamin B12 are used in the synthesis of neurotransmitters in the brain like serotonin.

The most commonly prescribed anti-depressants (SSRIs) increase the level of serotonin in the brain. Thus, certain nutritional deficiencies may be associated with postpartum depression.

SAMe (S-Adenosyl-L-methionine) is produced from an amino acid found in foods, methionine, and assists in donating a methyl group to compounds and assists in neurotransmitter synthesis. SAMe use has been found to help depression and symptoms of [osteoarthritis](#) in some studies.

Women with a common gene mutation (MTHFR) have an enzyme that does not convert folic acid into the next step (5-MTHF) as effectively as normal and has been associated with increased chance of depression and poor response to antidepressant medications.

Why are the causes not well understood?

Probably because there are many biologic and psychological/social factors that affect the development of postpartum depression. Indeed, your genetic makeup probably influences your susceptibility to the influence of all the factors we already mentioned.

The important point is to be aware of the symptoms and to screen pregnant women during pregnancy as well as at their postpartum follow-up care.

In the UK, two questions are suggested for basic postnatal depression screening according to National Health Service guidelines (2): During the past month, have you often been bothered by feeling down, depressed or hopeless? During the past month, have you often taken little or no pleasure in doing things that would normally make you happy?

A recent study in *Anesthesia & Analgesia* reported an association between epidurals and a decreased risk of postpartum depression. Please can you outline what this study involved and the evidence for the association?

In the recent article by Ding et al conducted in 214 Chinese women, pregnant women in labor chose whether to have epidural for pain relief or no pain relief (3). The women were screened for depression using the Edinburgh Postnatal Depression Screen (EPDS), a widely used tool validated in many languages.

Postpartum depression occurred 6 weeks after delivery in 14% of women who received epidural pain relief during labor and 35% of those who did not, a statistically significant difference ($P < 0.001$).

When tested 3 days after delivery, the EPDS scores trended to be different, but did not achieve statistical significance. However, at 3 days postpartum the Marital Satisfaction Scale score was higher and the Self-rated anxiety scale was lower in women receiving epidurals.

Attending childbirth classes during pregnancy and breast-feeding after delivery were also associated with a reduced chance of postpartum depression.

How were the mothers' mental statuses assessed?

The women were screened for depression using the Edinburgh Postnatal Depression Screen (EPDS), a widely used tool validated in many languages. Their level of anxiety was measured with the Zung Self-Rating Anxiety Scale and quality of marriage with the ENRICH Marital Satisfaction Scale.

Did the researchers find any evidence to suggest that the association they found was causal in nature?

The study was not designed to investigate direct causation, only an association. However, the linkage of pain and depression, even pain and postpartum Post-Traumatic Stress Syndrome (a 1.5-9% incidence) (4), are well known.

How does this study build upon what was previously known?

Prior studies have shown that women with more pain are more likely to have postpartum depression. A study by Hiltunen et al revealed mothers with no pain relief had nearly 3-fold higher risk of depression in the first week compared to the epidural/paracervical group (5). However the statistical significance was lost at 4 months

postpartum, although the trend was present.

A study by Eisenach et al shows women with severe pain postpartum had a 3-fold increased risk for postpartum depression and 2.5 fold increased risk for persistent pain at 8 weeks compared to those with mild postpartum pain (6).

Thus, the recent study by Ding et al continued to add to our knowledge base, showing prospectively that epidural use was associated with decreased incidence of post-partum depression at 6 weeks.

Did this research find any other associations with decreased risks of postpartum depression?

Attending childbirth classes during pregnancy and breast-feeding after delivery were also associated with a reduced chance of postpartum depression. As seen in multiple other studies, a higher depression score right after delivery increases the risk of being depressed later post-partum.

What impact do you think this study will have?

Hopefully women will be less reluctant to have epidural pain relief. Some women feel 'guilty' about needing pain relief. However the widespread use of oxytocin to augment labor, which increases the strength and frequency of contractions, also tends to increase the pain of labor.

Women deserve to have a great childbirth experience and shouldn't need to feel bad about themselves for 'failing' or not being to go 'natural'.

Women have a right to be able to choose having good pain relief. Now pregnant women have a medical reason – avoiding severe pain reduces the chances for postpartum depression. A true win-win for mom, baby and family.

What further research is needed into the risks for postpartum depression?

The links between inflammatory markers, pain, and depression are quite intriguing. As well, inflammatory mediators ([cytokines](#), interleukins) are associated with the onset of labor. Indeed, psychological stress and depressive symptoms are associated with increased circulating inflammatory cytokines and exaggerated inflammatory responses.(7)

Many hormonal changes occur immediately after delivery, and the impact of those hormones on the brain and HPA axis may be helpful. Of course, genetic variations and sensitivity to the hormonal changes play a role as well.

Of course, prevention of post partum depression would be another good area for future research. Some studies have examined the effect of hormonal replacement for 6 month (to make up for the hormonal changes postpartum), vitamin D supplementation to correct low vitamin D levels (which have been associated with post partum depression), alternative treatments such as high intensity light for one hour per day has been shown to help as well.

In a study I helped conduct, women with low vitamin D required more epidural pain medication during labor (8). The role of vitamin D supplementation and pain during labor and postpartum will be examined.

Another study at my institution showed that women with postpartum depression on EPDS at 6 weeks after delivery had lower vitamin D levels during pregnancy. (9) So the causation of low vitamin D and postpartum depression remains to be studied.

Where can readers find more information?

I have a resource guide at www.DrMarkZakowski.com/depression-postpartum-pregnancy

Many governmental and societies offer information as well, such as:

- <http://www.nice.org.uk/guidance/cg45>
- <http://www.panda.org.au/>
- <https://www.evidence.nhs.uk/topic/postnatal-depression>
- <http://www.marchofdimes.org/pregnancy/postpartum-depression.aspx>

About Dr. Mark Zakowski



Mark Zakowski, M.D. is a leading expert on cesarean sections. He has been Chief of Obstetric Anesthesiology for major American hospitals for 25 years, during which time he personally helped more than 24,000 women giving birth, and has been in charge of over 125,527 deliveries.

Dr. Zakowski is committed to helping women improve their birthing experiences with education, choice, and safety. He is a featured national and international speaker on neurologic complications, heart disease in pregnancy, and anesthesia during pregnancy, to name a few.

Dr. Zakowski advocates for women's health within the medical community through his work on numerous committees, including having served on the Board of Directors for the California Society of Anesthesiologists, the national Society of Obstetric Anesthesiology and Perinatology and the Task Force on Preeclampsia CMQCC, developing guidelines for Preeclampsia recognition and management in order to reduce maternal deaths and neonatal morbidity.

Dr. Zakowski wrote a book for pregnant couples, [C-Section: How to Avoid, Prepare for and Recover from Your Cesarean](#) and developed the Safe Baby System for women and their babies. More information is available at www.DrMarkZakowski.com and www.facebook.com/DrMarkZakowski.

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