A New Paradigm for Depression in New Mothers

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Psychoneuroimmunology

Stress

Inflammation

Fight-or-flight

Cortisol
• Epinephrine
• Norepinephrine
• Dopamine

Catecholamine

• Hypothalamus
• Pituitary
• Adrenal cortex

HPA Axis

• IL-1β
• IL-6
• TNF-α

Proinflammatory Cytokines

Dayan et al., 2006. Psychosom Med, 68, 838-946

Depression increases the risk for preterm birth

Goldenberg et al., 2008. The Lancet, 372(9606), 75-84

4% for non-depressed women 9.7% for depressed women

Inflammation Identified as a risk factor for preterm birth
IL-6 and TNF-α high in stressed and depressed mothers

Coussons-Read et al. 2005, Psychosom Med, 67, 625-631

IL-6 and TNF-α ripen the cervix

Smuts et al. 2003, Obstet Gyn, 101, 469-479

291 low-income moms

DHA-enriched eggs increased gestation length by 6 days (+2.3 days)

2,586 women in U.S.

Pain at Day 1, Week 1, Week 2
Depression at 2 months postpartum

Breastfeeding help protected mental health for women with moderate or severe pain

Watkins et al. 2011, Ob Gyn, 118(2), 214-221

50% had nipple pain at 5 weeks

52% had sore or cracked nipples at 2 months

McGovern et al. 2006, Ann Fam Med, 4, 159-167; Ansara et al. 2005 J Psychosom Ob Gyn, 26, 115-125

Prospective study of 1,288 women

Severe postpartum pain increased risk of PPD by 3 times

Eisenach et al. 2008, Pain, 140, 87-94
Both depression and trauma compromise sleep quality. Kendall-Tackett, Trauma, Violence & Abuse, 8, 117-126.


Reduced sleep time
Reduced REM latency
Depressed new mothers
Ross et al. 2005, J Psychiatry Neurosci, 30, 247-256

Sleep problems
IL-6, TNF-α
CVD & Metabolic syndrome

479 women Project Viva
Sleep <5 hours at one year
Higher IL-6 at 3 years
Taveras et al., 2011, Metabolism, 60(7), 982-986

Trauma
Adverse childhood experiences increased rates of major depression, systemic inflammation, and metabolic risk factors at age 32

Danese et al. 2009 Arch Ped Adolesc. Med, 163, 1135-1143

Prenatal and Childhood Adversity Collaborative Perinatal Project (1959-1972), 355 offspring (M age=42)

Slopen et al. 2015, Psychoneuroendocrinology, 51, 403-413

Prenatal adversity increased inflammation for the baby in adulthood by 3 times

Slopen et al. 2015, Psychoneuroendocrinology, 51, 403-413

Up to 9% of mothers in the U.S. had birth-related PTSD
46% described their births as traumatic

• Lower maternal stress
• Lower inflammation

Good for both mother and baby

Oxytocin
- Well-being
- Affiliation
- Bonding
- Stress
- Depression & anxiety
- Alienation
- Hostility & strife

Stress
- Short-term lessening of the stress response
- Baby at the Breast
- Lowers Mothers’ Stress


ACTH
Cortisol
Breastfeeding protects babies from the effects of maternal depression.

Depressed-BF moms touched, stroked and looked at babies more.

Breastfeeding >12 months = Better child mental health.

Schwartz et al. 2009, Obstet Gyn, 113, 974-982

Jones et al. 2004, Biol Psychology, 67, 103-124

Oddy et al. 2009, J Pediatrics 156, 568-574
Child Behavior Checklist Scores

<table>
<thead>
<tr>
<th>Age</th>
<th>Never BF</th>
<th>BF 12+ Months</th>
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<tbody>
<tr>
<td>Age 2</td>
<td>16.1</td>
<td>9.6</td>
</tr>
<tr>
<td>Age 5</td>
<td>26.3</td>
<td>16.0</td>
</tr>
<tr>
<td>Age 8</td>
<td>19.4</td>
<td>13.5</td>
</tr>
<tr>
<td>Age 10</td>
<td>15.2</td>
<td>12.6</td>
</tr>
<tr>
<td>Age 14</td>
<td>16.7</td>
<td>10.9</td>
</tr>
</tbody>
</table>

Shorter duration was associated with a fear bias

Neurocritical study revealed that longer duration of exclusive breastfeeding gave infants a “happy bias”

Strathearn et al. 2009, Pediatrics, 123, 483-493

Mothers who breastfed for 4 months were 3.8 times less likely to neglect their children

And 2.6 times less likely to physically abuse them

Puig et al. 2013, Health Psychology, 12(4), 409-417

Secure Attachments Decrease Adult Health Problems

Insecure attachments at 12-18 months associated with inflammation-based illness at age 32
All effective treatments lower inflammation

Exercise  Omega-3s  Bright light
Acupuncture  CBT/MCBT  IPT
St. John's wort  Antidepressants

Students with higher EPA/DHA had a lower inflammatory response to a lab-induced stressor

Maes et al. 2000, Biol Psychi, 47, 910-920

Population study found high Omega-3s related to low IL-1α, IL-1β, IL-6, TNF-α

Ferruchi et al., 2006, J Clin Endo Metabol, 91, 439-446

Study of 116 women in Finland with depression

- ACEs associated with low social support
- High social support associated with low CRP

Runsten 2013 Nordic J Psychiatry: Apr 30

Hyperforin lowers IL-1β, IL-2, IL-6, TNF-α

SSRIs specifically decrease production of pro-inflammatory cytokines


Inflammation is an important contributor to the onset and severity of depression

Breastfeeding attenuates stress and protects maternal mood

www.PraeclarusPress.com
www.UppityScienceChick.com
www.BreastfeedingMadeSimple.com
www.KathleenKendall-Tackett.com