



Natural Labor Benefits Both Mom & Baby by Dr. Linda Folden Palmer

Natural labor is not simply something for mothers to endure; the process provides key mental and physical benefits for mother and baby. When not interfered with, natural labor helps to protect the fetal brain, prepare his lungs, and build his immune system. When uninterrupted, hormonal interplays provide imprinting and attachment between mother and baby, protect mother's mood, and initiate instinctual parenting behaviors.

Oxytocin and the Mother

Oxytocin is a feel-good, bonding hormone that acts throughout our lives in response to togetherness and especially to skin-to-skin contact. Oxytocin's strongest employ by far is during and immediately after birth. Its release during labor provides the contractions needed to expel the baby. As mother's body feels the vaginal passage of the child, further oxytocin surges are stimulated and much higher levels now remain in the brain.[1]

This exceptionally high brain oxytocin just after birth provides for a powerful imprinting between mother and newborn as they smell each other and gaze into each other's eyes. Remaining quite high in the brain for an hour or more after birth, oxytocin provides mother and baby with feelings of trust, calm, and well being, while also causing a little impairment in memory so they forget some of the discomfort experienced. When not impaired, this hormonal high also sets the stage for successful initiation of breastfeeding. The first nursing attempts then lead to continued oxytocin release. When occurring shortly after birth, this serves to help shrink the uterus, preventing hemorrhage.

This entire oxytocin experience acts in mother's brain to initiate affectionate maternal behaviors,[2,3] helping first attempts at nursing to feel quite natural and teaching mom to want nothing more than to hold her baby and respond to his cries. While brain changes occur during pregnancy and in response to later physical contact, especially nursing, this post-birth window created by natural labor leads to some valuable reorganizing of receptors in mother's oxytocin and stress responding portions of her brain.

High oxytocin in the female brain has also been shown to promote preference for whatever male is present during its surges,[4] (one good reason for dad to hang around after the birth).

Interrupting the Body's Plan

Pitocin is an imitation oxytocin used to induce or enhance labor. This synthetic agent does not cross **mother's** blood-brain-barrier and hence artificially induced mothers miss out on a large part of oxytocin's bonding, calming, mood elevating and amnesic benefits. If anesthesia is used during labor, there is no maternal oxytocin response to the vaginal passage, hence the mother misses the rest of her opportunity for the beneficial brain effects, and her maternal behaviors are not naturally switched on.[5] Cesarean section without labor fails to produce any of this extraordinary oxytocin experience, while labor before C-section provides a portion.

When a baby is born highly drugged, he is less able to partake from the oxytocin-provided benefits of calming, bonding, and drive to breastfeed.

Preventing mothers from these potent oxytocin surges in their brains can lead to increased risks of postpartum depression and poor bonding.[6-9] It has been found that the oxytocin levels secreted during nursing remain low for at least two days following a C-section, with a notable increase in mother's anxiety level and decrease in her breastfeeding success.[10,11]

Many other hormonal interplays occur during labor, and most are affected by interventions in the natural process. Endorphins, the body's own natural pain reducers, increase steadily throughout natural labor, however, use of Pitocin prevents their increase.[12] Maternal stress during labor, generally caused by a lack of continual, compassionate maternal support, causes heightened release of stress hormones. This alters mother's stress handling for some time and raises inflammatory factors associated with the development of postpartum depression.[13]

Protecting the Baby

Mother's oxytocin crosses the placenta into the fetal brain during labor, silencing the brain so the child is less stressed by the birth process. In addition, the brain is made to be less vulnerable to damage from periods of reduced oxygen or blood sugar. Even if Pitocin can enter the fetal brain as well, any natural regulation of appropriate levels would be absent. It is known that excess uterine stimulation typically seen with Pitocin use creates dangerous episodes of oxygen depletion in the fetal brain. Maternal protection of the fetal brain is not bestowed by Cesarean delivery without labor.[14,15] Mother's body also supplies very important sugar to baby's brain during labor. This provision is often impaired, however, when mothers are restricted from food and liquid intake during the birth process.

Baby receives certain antibodies from mother during the last term weeks in the womb but the majority of this transfer occurs during labor.[16] The lack of antibody transfer may be one factor in the reality that infants born via low-risk elective cesareans have a tripled death rate in the first month of life, versus vaginal births,[17] though the lower success in breastfeeding after Cesarean is likely a larger factor.

The hormonal changes of natural labor help to quickly clear fluids from the fetal lungs through a process of absorbing fluids out of the lungs, along with some mechanical clearing from the contractions themselves. When labor is artificially induced, infants suffer from breathing distress more than twice as often as with spontaneous labor.[18] In Cesarean section without labor, an infant is 4 times as likely to suffer respiratory distress.[19-20] This impact on the lungs is evidently long lasting as babies born via C-section are shown to suffer from allergies twice as often as those delivered vaginally.[21]

Striving for the Healthiest Outcome

All is not lost if the birth process does not go entirely as planned, yet birth choices affect a momentous first chance for attachment and breastfeeding success. Natural delivery determines a major cornerstone in preventing infant illness, while boosting mother's parenting satisfaction. A child is born seeded with specific potential (nature), yet parenting choices (nurture) will greatly influence whether these latent abilities will come to fruition.

1. K.M. Kendrick et al., "Cerebrospinal fluid and plasma concentrations of oxytocin and vasopressin during parturition and vaginocervical stimulation in the sheep," *Brain Res Bull* 26, no. 5 (May 1991): 803-7.
2. G. González –Mariscal et al., "Importance of mother/young contact at parturition and across lactation for the expression of maternal behavior in rabbits," *Dev Psychobiol* 32, no. 2 (Mar 1998): 101-11.
3. J.A. Russell et al., "Brain preparations for maternity--adaptive changes in behavioral and neuroendocrine systems during pregnancy and lactation, an overview," *Prog Brain Res* (2001): 133-38.
4. T.R. Insel and T.J. Hulihan, "A gender-specific mechanism for pair bonding: oxytocin and partner preference formation in monogamous voles," *Behav Neurosci* 109, no. 4 (Aug 1995): 782-9.
5. F. Lévy et al., "Intracerebral oxytocin is important for the onset of maternal behavior in inexperienced ewes delivered under peridural anesthesia," *Behav Neurosci* 106, no. 2 (Apr 1992): 427-32.
6. J.E. Swain et al., "Maternal brain response to own baby-cry is affected by cesarean section delivery," *J Child Psychol Psychiatry* 49, no. 10 (Oct 2008): 1042-52.
7. H.J. Rowe-Murray and J.R. Fisher, "Operative intervention in delivery is associated with compromised early mother-infant interaction," *BJOG* 108, no. 10 (Oct 2001): 1068-75.
8. K.D. Scott et al., "The obstetrical and postpartum benefits of continuous support during childbirth," *J Womens Health Gend Based Med* 8, no. 10 (Dec 1999): 1257-64.
9. I.D. Neumann, "Stimuli and consequences of dendritic release of oxytocin within the brain," *Biochem Soc Trans* 35, Pt. 5 (Nov 2007): 1252-7.
10. E. Nissen et al., "Different patterns of oxytocin, prolactin but not cortisol release during breastfeeding in women delivered by caesarean section or by the vaginal route," *Early Hum Dev* (Sweden) 45, nos. 1-2 (Jul 1996): 103-18.

11. E. Nissen et al., "Oxytocin, prolactin, milk production and their relationship with personality traits in women after vaginal delivery or Cesarean section," *J Psychosom Obstet Gynaecol* (Sweden) 19, no. 1 (Mar 1998): 49–58.
12. A.R. Genazzani et al., "Lack of beta-endorphin plasma level rise in oxytocin-induced labor," *Gynecol Obstet Invest* 19, no. 3 (1985):130-4.
13. K. Kendall-Tackett, "A new paradigm for depression in new mothers: the central role of inflammation and how breastfeeding and anti-inflammatory treatments protect maternal mental health," *Int Breastfeed J* 2 (Mar 30, 2007): 6.
14. R. Tyzio et al., "Maternal oxytocin triggers a transient inhibitory switch in GABA signaling in the fetal brain during delivery," *Science* 314, no. 5806 (Dec 2006): 1788-92.
15. R. Khazipov et al., "Effects of oxytocin on GABA signalling in the foetal brain during delivery," *Prog Brain Res* 170 (2008): 243-57.
16. S. Agrawal et al., "Comparative study of immunoglobulin G and immunoglobulin M among neonates in caesarean section and vaginal delivery," *J Indian Med Assoc* 94, no. 2 (Feb 1996): 43–4.
17. M.F. MacDorman, "Infant and neonatal mortality for primary cesarean and vaginal births to women with 'no indicated risk,' United States, 1998-2001 birth cohorts," *Birth* 33, no. 3 (Sep 2006): 175-82.
18. J. Lee et al., "Evidence to support that spontaneous preterm labor is adaptive in nature: neonatal RDS is more common in "indicated" than in "spontaneous" preterm birth," *J Perinat Med* 37, no. 1 (2009): 53-8.
19. A. Ramachandrappa and L. Jain, "Elective cesarean section: its impact on neonatal respiratory outcome," *Clin Perinatol* 35, no. 2 (Jun 2008)::373-93, vii.
20. S. Farchi et al., "Neonatal respiratory morbidity and mode of delivery in a population-based study of low-risk pregnancies," *Acta Obstet Gynecol Scand* 88, no. 6 (2009): 729-32.
21. M. Pistiner et al., "Birth by cesarean section, allergic rhinitis, and allergic sensitization among children with a parental history of atopy," *J Allergy Clin Immunol* 122, no. 2 (Aug 2008): 274-9.