



# The Perinatal Gazette

Newsletter of the Regional Perinatal Center Maria Fareri Children's Hospital at Westchester Medical Center

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## Outcomes of Developmental Care in the NICU

NICU care is a team effort. The care of infants in the NICU requires medical precision, support to families and team collaboration. Preterm infants, and those born at low birth weight are at risk for a number of future developmental impairments. *Bennett F. Low Birth Weight Infants: Perspective: Accomplishments, Risks, and Interventions. Infants and Young Children. 2002; 15(1): vi-ix.* Prolonged NICU hospitalizations secondary to the preterm or low birth weight conditions associated with these infants often decreases the social interactions and stimulation experienced by well newborns. As technological advances continue, medically frail infants continue to have improved survival. The infants may require intense, invasive procedures for medical management which may affect infants physiologically as well as developmentally and behaviorally. Therefore, steps should be taken to reduce infant stress and their perception of pain.

Philosophies on providing social touch in the NICU have changed over time as outcome studies have reported on infant survival and function. Care approaches continue to evolve and changes to NICU handling techniques and intervention continue to be more infant centered. Infant handling is necessary for the medical and routine care of NICU infants. Periods for handling include medical procedures as well as positioning, hygiene, feeding and social touch. Research studies have demonstrated that infant handling may precipitate behavioral distress, hyperactivity, autonomic instability, changes in cortisol levels, hypoxia and heart rate instability.

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## Position Paper-Lamaze For the 21st Century

Today's Lamaze is not the Lamaze of 1960. Over forty years of research and learning from women's experience of normal, natural birth have provided evidence that has gradually but dramatically changed Lamaze from being a method for giving birth to a philosophy that provides the foundation and direction for women as they prepare to give birth and become mothers. "Breathing" is no longer the hallmark of Lamaze. The Lamaze Philosophy of Birth is at the heart of Lamaze education. Today's Lamaze affirms the normalcy of birth, acknowledges women's inherent ability to birth their babies, and explores all the ways that women find strength and comfort during labor and birth.

### **Reframing Pain**

Until recently, pain has been thought of as an unpleasant side effect of labor contractions. In Lamaze classes of the past, women only learned about the factors that influence pain perception and practiced techniques, including relaxation and breathing that helped diminish the perception of pain. As our understanding of normal labor and birth has evolved, we are beginning to have a better appreciation for the important role pain plays in the process of normal labor and birth.

The pain of labor, like most pain, is protective. Responding to pain with movement, including walking, rocking, and position changes, not only helps the baby rotate and descend through the pelvis, but also protects a woman's body during the process. As the cervix stretches and dilates, oxytocin levels increase, and contractions strengthen and become more effective. As pain increases, endorphins are released that help women cope with the demands of the stronger contractions and the descent of the baby. Actively responding to the pain of contractions not only promotes comfort, but promotes the progress of labor. The Lamaze Certified Childbirth Educator encourages women to work actively with labor, finding comfort in response to what they are feeling. Because the pain of labor is not associated with trauma, but is a part of a normal, physiologic process, it is sometimes compared to the pain associated with other challenging physical activities.

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*Cameron E, Raingangar V, Khoori N. Effects of Handling Procedure on Pain Responses of Very Low Birth Weight Infants. Pediatric Physical Therapy. 2007; 19(1): 40-47.* Care providers in the NICU therefore need to be acutely aware of their influence upon infant homeostasis. This awareness and infant centered approach has lead to an approach termed Developmental Care.

Developmental Care is the implementation of individualized care plans based upon the ongoing assessment of the infant's responses to care giving procedures (*Lotas and Walden*). Occupational and Physical therapists can assist with assessment, devising and implementing care plans for positioning, providing developmental stimulation appropriate for the child's abilities, and hand contact. Music therapists may help to provide experiences to assist the child in self regulating. The Developmental Care approach is evidenced by care which is sensitive to changes in the infant's physiologic and behavioral systems. Attempts should be made to minimize stressors to the child that cause caloric expenditure, which may result in decreased weight gain, and a longer length of hospital stay. Developmental Care focuses on the infant's environment and experiences and attempts to minimize stress. Interventions which may impact the Developmental Care of the child include lowering the lights, decreasing noises, and eliminating any non-essential stimulation. Developmental positioning in a prone, side lying or supine position with an emphasis on midline alignment and flexion has been associated with physiological stability in the infant. Infants placed in a nested position can also help to facilitate homeostasis. Care provided in clusters, when possible will allow the infant an opportunity to recover from an intervention allowing for sleep and digestion both essential for promoting growth in the infant.

Several studies have been conducted to look at the effects of Developmental Care on NICU infant outcomes. Wide variations in the delivery of Developmental Care, in addition to the lack of randomized control trials secondary to the individual presentation and course of each infant adds to the challenges in interpreting research which supports such interventions.

What the literature does suggest is that Developmental Care seems to improve the infant's medical outcomes as it has been associated with improved oxygenation, faster weaning from supplemental oxygen, faster progression to bottle feeding, improved weight gain, height and head circumference achievement. Improving these outcomes contributes to the cost effectiveness of such interventions by decreasing the length of stay and consumption of medical resources. Infants evaluated in the literature have also demonstrated improved short and long-term developmental indicators such as vital signs, growth measures and motor performance. Mahoney M, Cohen M. Effectiveness of Developmental Intervention in the Neonatal Intensive Care Unit: Implication for Neonatal Physical Therapy. *Pediatric Physical Therapy. 2005; 17: 194-208.*

In summary, although the current literature is not conclusive, trends in the evidence suggest support for Developmental Care. Clearly more studies, particularly on outcomes are necessary to determine the best, evidence based approach to NICU care.

Susan Ronan PT, DPT, PCS

Maria Fareri Children's Hospital at Westchester Medical Center

ronans@wcmc.com

## SAVE THE DATE

### 6TH ANNUAL HUDSON VALLEY REGIONAL PERINATAL FORUM CONFERENCE

"Improving Perinatal Health:  
Enhancing Families' Access to Care &  
Insurance Coverage"

Thursday • October 25, 2007 • 8 a.m. - 4 p.m.

Marriott Westchester • 670 White Plains Road  
Tarrytown, NY

KEYNOTE SPEAKER: **RICHARD CARMONA, MD, MPH, FACS**  
(17<sup>th</sup> US Surgeon General)

GUEST SPEAKERS: **Deborah Bachrach, JD, Deputy Commissioner,**  
NYS DOH, Office of Health Insurance Programs

**Richard Gottfried, NYS Assemblyman, 64<sup>th</sup> District**

## CONGRATULATIONS!

To

**Dr. Prabhakar Kocherlakota**

The department of Neonatology at St. Luke's Hospital, Newburgh, NY has achieved the highest all around scores for the entire hospital in a hospital based survey of the medical staff's comments/perceptions of the quality of hospital-based program services.

## NY GOVERNOR SIGNS INTO LAW LEGISLATION PROTECTING RIGHTS OF NURSING MOTHERS IN THE WORKPLACE

Governor Eliot Spitzer has signed into law legislation that protects working mothers' ability to continue providing nutrient-rich breast milk to their infants upon return to the workplace.

The legislation requires employers to provide uncompensated time, and make a reasonable effort to provide private space for women to express milk or nurse their children for a period of up to three years following the birth of a child. In addition, it also bars an employer from discriminating against an employee Exercising this right.

"A woman should not be forced to sacrifice her ability to provide for her children economically or nutritionally," said Governor Spitzer. "Employers know the merit of retaining valuable employees, and this modest accommodation allows mothers who chose to breast feed to continue their invaluable contribution to the economy without fearing for their job."

The Assembly and the Senate unanimously approved this legislation.

Continued: Lamaze

Those who push themselves to climb the last hill, cross the finish line, or conquer a challenging dance routine often report feelings of euphoria and increased self-esteem. Researchers have found that women who experience natural birth often describe similar feelings of exaltation and increased self-esteem. Lamaze helps each woman find ways to meet the challenges of birth confidently and purposefully, and to discover her strength in birth.

### **Rethinking Breathing and Relaxation**

Relaxation and focusing on controlled breathing continue to be effective ways of decreasing pain perception, and are fairly simple comfort techniques to learn. But birth is active work, and finding comfort as labor progresses, for most women, requires more than focused attention and releasing tension. In today's Lamaze classes, women learn to respond to their contractions and find comfort in many ways including walking, rocking, position changes, massage, heat/cold therapy, hydrotherapy, slow dancing, and use of birth balls. These active comfort strategies are important because in providing comfort, they also promote the progress of labor. Lamaze educators continue to teach body awareness and tension release, but the goal is not to expect total relaxation during labor. Rather, women are encouraged to be in the moment, not fearful, but actively relaxed, rhythmically working with labor.

### **Retiring the Coach**

Lamaze classes emphasize the importance of continuous emotional and physical support in labor, but the "coach" who takes charge of the birth, calling the plays and instructing the mother, has been retired. Research suggests that when trained in class to take on the role of coach, few men actually do so. More importantly, women know how to give birth; therefore encouragement and support, rather than "coaching," is required. In Lamaze classes, fathers, partners, and family learn how to provide quiet, gentle, encouraging support, and learn basic comfort measures that help most women in labor. They learn that their calm, focused presence is the most important thing women need from them. In addition to support in the hospital, women are encouraged to make plans for support at home in early labor and in the days and weeks at home with the new baby.

### **Reshaping the Birth Environment**

The environment in which birth takes place affects in profound ways how labor progresses, and how women remember their birth. In the last forty years, we have learned a great deal about both what helps and what impedes normal birth. All birth environments should provide women what they need: confidence, the freedom to find comfort in a variety of ways, and continuous emotional and physical support. To be truly supportive, the physical environment should include a place to walk; furniture such as rocking chairs, beanbags, and birth balls that promote upright positions; and access to a warm pool of water.<sup>3</sup> There should be one-to-one continuous nursing support as advocated by the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). Medical interventions, such as electronic fetal monitoring, intravenous fluids, and restrictions on eating, drinking, and movement which interfere with women's ability to actively work with their labors, should be used only when medically indicated. In Lamaze classes women learn how to minimize the possible negative effects of the birth environment and maximize the ways in which they can insure a full range of comfort and support options women need to have a normal birth.

### **Respecting the Mother/Baby Connection**

Lamaze now emphasizes the early newborn period,

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viewing birth and the hours and days immediately after birth as important influences on parenting. Research supports the importance of keeping mothers and babies together from the moment of birth, and the importance of breastfeeding for mother and baby. Women and babies who experience normal birth are primed and ready to greet each other and breastfeed effectively in the first hours after birth. In Lamaze classes women are encouraged to keep their babies close from the moment of birth; to breastfeed their babies, respond to infant cues, and understand the needs and capabilities of the newborn.

### **Conclusion**

Birth does not change, but over time the environment in which birth takes place does change, and our understanding of both the simplicity and the complexity of birth deepens.

The Lamaze Philosophy of Birth, supported by an ever-growing body of research, provides direction for today's Lamaze preparation for birth. Ultimately, the goal of Lamaze classes is that every woman gives birth confidently, free to find comfort in a wide variety of ways, and supported by family and health care professionals who trust that she has within her the ability to give birth. By achieving our goal, Lamaze joins worldwide advocacy efforts to promote, protect, and support normal birth. Lamaze International believes that only when normal birth is again the standard will women have the opportunity of making truly informed choices about the birth of their babies.

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### **Recommended Resources**

- Block, J. (2007). *Pushed – The painful truth about childbirth and modern maternity care*. Cambridge, MA: Da Capo Life Long.
- Lothian, J. & DeVries, C. (2005). *The official Lamaze Guide – Giving birth with confidence*. New York, NY: Meadowbrook Press.
- Nichols, F. & Humenick, S. (2000). *Childbirth education: Practice, research, and theory (second edition)*. Philadelphia, PA: W.B. Saunders.
- Simkin, P., & Ancheta, R. (2005). *The labor progress handbook*. Malden, MA: Blackwell Science.
- Walsh, D. (2007). *Evidence-based care for normal labour and birth*. New York, NY: Routledge.

### Videos:

- *Birth in the squatting position*. (1979).
- *Celebrate birth!* (2000). Boulder, CO: InJoy Videos.
- *Comfort measures for childbirth*. (1995). Seattle, WA: Comfort Measures for Childbirth.
- *Gentle birth choices*. (2005). Rochester, VT: Healing Arts Press.
- *Giving birth and being born*. (1995). Vienna: Austria: Karin Berghammer, Dr. Regine Ahner, and Prof. Dr. Husslein.
- *The timeless way*. (1998) Boulder, CO: InJoy Videos.
- *Tried and true - A collection of labor techniques*. (2000). Boulder, CO: InJoy Videos

### **Breastfeed For Health, LLC**

A source of professional support for nursing mothers

\*Breastfeeding Assessment \* Lactation Consultation \*Report to Healthcare Provider for each Consult \* Referral Forms to aid in Insurance Reimbursement Questions? Call toll free: 1-877-250-BABY (1-877-250-2229) or go to: [www.breastfeed4health.com](http://www.breastfeed4health.com)

## **State Perinatal Database Team & Perinatal Gazette Editorial Board**

Susan Marchwinski, R.N., C., M.S., SPDS Coordinator  
(914) 493-8590 ([marchwinskisa@wcmc.com](mailto:marchwinskisa@wcmc.com))

Donna Dozor, R.N., M.S. Neonatal Data Collection  
(914) 493-8309 ([dozord@wcmc.com](mailto:dozord@wcmc.com))

Clare Nugent, RN Neonatal Data Collection  
(914) 493-8346 ([nugentc@wcmc.com](mailto:nugentc@wcmc.com))

Edmund LaGamma, M.D., Director Newborn Medicine  
(914) 493-8558 ([edmund\\_lagamma@nymc.edu](mailto:edmund_lagamma@nymc.edu))

Chaur-Dong (C.D.) Hsu, M.D., M.P.H. Director OB/GYN  
(914) 593-8987 ([chaur-dong\\_hsu@nymc.edu](mailto:chaur-dong_hsu@nymc.edu))

Heather Brumberg, M.D. M.P.H., Director Neonatal Public Health Programs  
(914) 493-8491 ([heather\\_brumberg@nymc.edu](mailto:heather_brumberg@nymc.edu))

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**The Regional Perinatal Center  
Maria Fareri Children's Hospital  
At Westchester Medical Center  
95 Grasslands Road  
Valhalla, New York 10595**