

Mori 2014

Impact on the Dyadic Relationship with a Late Preterm Delivery

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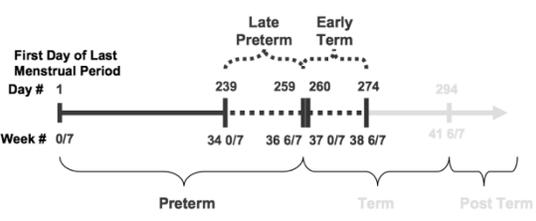
Objectives

- Identify the characteristics of the late preterm infant (LPI)
- Describe maternal factors that can impact the dyadic relationship
- Describe medical and neurodevelopmental factors of late preterm infant that may impact the dyadic relationship
- Apply intervention strategies

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Terminology



Engle & Kominarki, 2008

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Late Preterm Infant

34-36 6/7 weeks gestation

1 of 8 delivered at less than 37 weeks

20% increase from 1990

Mortality rate is 3 x higher than for term infants

Gestational Week	Percent
34 weeks	16
35 weeks	8
36 weeks	5

Lofton, et al, 2010

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Potential factors of early delivery

- Pregnant women >35 years of age
- Multiple births
- Obesity
- Diabetes
- Stress from a variety of sources
- Other medical reasons

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Impact of being a late preterm infant

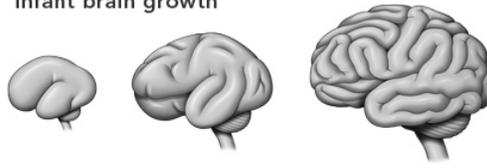
- Temperature instability
- Receive more intravenous infusions
- Respiratory distress (30%)
- Clinically jaundice
- Prolonged hospital stay (30%)
- Hypoglycemic

Hubbard, 2008

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Brain development

Infant brain growth



20 weeks 35 weeks 40 weeks

Kinney, 2006

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Impact on brain development

- 2-5x increase risk of developing significant hyperbilirubinemia
- 24% risk for below-average reading scores in first grade
- 1.3 times more likely to have below average reading competence at all grade levels
- Below average ability in mathematics
- 2x increased risk for special education
- Higher rate of behavioral problems (19-20%)
- 3x increased risk of CP

Hallowell & Spatz, 2012

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Financial Considerations

Less than 9% of live births but 57% of neonatal costs

LPI costs \$1.145 billion annually (2000)

(St. John, et al, 2000)

Term	2.2 days	\$2061
LPI	8.8 days	\$26,054

(McClavin, et al 2009)



www.mumblingmommy.com

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Impact of prenatal stress on the infant

Shortens gestation (Dunkel, Schetter & Glynn 2011)

Changes stress regulation

Produces a larger cortisol response to the stress of a heelstick blood draw (Davis, Glynn, Waffarn & Sandman, 2011)

May continue to be more reactive to challenges they experience (Davis & Thompson, 2014)

More fearful and more reactive to novelty as infants and young children (Blair, Glynn, Sandman, & Davis, 2011)

At risk for affective problems such as depression or anxiety during preadolescence and adolescence (Davis & Sandman, 2012)

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Maternal Competence and Responsiveness

Rubin, 1984; Mercer, 2004

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Maternal role attainment

- ▣ **“Taking-in phase”**
 - ▣ Increase in dependent behavior of the mother
 - ▣ Questions and talks about the delivery
 - ▣ Phase lasts 1-2 days
 - ▣ May be the only phase observed by hospital staff

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Maternal role attainment

- ❑ **"Taking-hold Phase"**
 - ❑ Begins to focus on needs of the infant
 - ❑ Relinquishes pregnant role
 - ❑ Takes on maternal role
 - ❑ Actively learns to care for infant
 - ❑ Experiences a periods of high fatigue and infant demands
 - ❑ Phase lasts 4-5 weeks

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Maternal role attainment

- ❑ **"Letting Go Phase"**
 - ❑ Lets go of perception of infant as extension of herself and views infant as separate
 - ❑ Refocuses on relationship with partner
 - ❑ May return to work
 - ❑ Phase begins in the 5-6th week
- ❑ Rubin, 1984

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Maternal factors

Prenatal depression	Standardized Scales Perceived Stress Scale Spielberger State Anxiety Inventory Parenting Morale Index Experienced abuse Edinburgh Postnatal Depression Scale
Postpartum depression	
Anxiety	
Post traumatic stress	
Worry	
Infant re-hospitalization	

McDonald, et al, 2012

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Parental post-traumatic reactions after premature or traumatic birth

- Experience more stress and depression
- Difficulties with sleep
- Decreased sense of competence
- Difficulty interacting with their infants
- Influence long-term infant growth and development

■ (Holditch-Davis et al, 2007)

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Acute stress disorder

- Form of trauma experienced in the first few weeks to one month after an event
- Forerunner to post traumatic stress disorder (PTSD)
- Parents of infants in the NICU

■ Grosik et al, 2013; Shaw et al, 2006

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Depression

- Post partum fatigue
- Post partum exhaustion
- Post partum blues
- Post partum depression
- Post partum psychosis

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Postpartum Depression

- 7-20% (UK, USA, Australia)
- Untreated PPD lack of:
 - gratification in mothering role
 - ability to connect with infant
 - ability to carry out tasks of caring for new baby
- Higher risk for smoking, alcohol or illicit substance abuse
- Experience current or recent physical, emotional, or sexual abuse
- Increased risk for suicide

(Fitelson et al. 2011)

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Postpartum Depression impact on the infant

- Lower cognitive functioning and adverse emotional development in children (universal)
- Higher risk for behavior problems, anxiety, affective disorders
- Negative infant feeding outcomes; including lower rates of initiation and maintenance of breastfeeding

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Interventions for postpartum depression

- Screen 4-6 weeks after delivery
- Edinburgh Postnatal Depression Scale
 - http://www2.aap.org/sections/scan/practicingsafety/toolkit_resources/module2/epds.pdf Pharmacological treatment
- Psychological and psychosocial treatments
- Nonpharmacologic treatments

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Other interventions for PPD

- Peer and partner support
 - (Fitelson et al 2011)
- Home visiting (Weatherston, 2010)
- Relationship-based approach (Lillas and Turnbull, 2009)

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Traumatic birth experience

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graph TD; myths --> culture; culture --> stress; stress --> resources; resources --> experience; experience --> myths;
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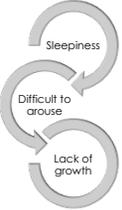
Characteristics of the LPI

- Sleepiness
- Clinical jaundice
- Difficult to gain weight
- Poor eater
- Inability to maintain body temperature

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Sleepiness



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Clinical Jaundice



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Interventions for LPI

- Reflective supervision
- Support parent-infant attachment process
- Parent education
- Infant massage
- Feeding interventions
- Staff education
- Discharge preparation

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Reflective supervision

Internal reflection and meaning-making, and external reflection and goal-directed behavior

- What is my role in this relationship?
- What happened in the parents' past to impact their relationship with the baby?
- How are the parallel processes impacting this relationship?
- What is happening within the infant?



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Reflective practice in the NICU

- Trust in parents
- Mutual clarity
- Hear and represent all voices
- Hypotheses, not truth
- Maintain an appropriate role
- Knowledge, beliefs, biases, meaning
- Inclusive interaction
 - (Lieberman et al, 2000)



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Parent-infant attachment process

Read baby cues for hunger, satiation, fatigue, and over stimulation

Understand their baby's neurodevelopmental strengths and needs

Support parental rest, nutrition, hydration, and emotional needs



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Parent-infant attachment process

- Skin-to-skin or kangaroo care
- Education on iPad and written handouts
- Breastmilk pumping at the bedside



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Dyadic reciprocity

- Mutual eye contact and gaze, reciprocal vocalizations, mutual physical closeness
- Intentional cues regarding hunger
- Stronger, clearer cues around satiation
- Feeding is a mutual regulated process

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Development of the regulation of feeding and emotions

<p>Infant must be able to:</p> <ul style="list-style-type: none">■ Establish clear cues to signal hunger and satiety■ Establish rhythms of sleep - wakefulness, eating - elimination■ Move through states of alertness smoothly & maintain calm alertness	<p>Parent must be able to:</p> <ul style="list-style-type: none">■ Read the child's cues accurately■ Act on the child's cues appropriately■ Support the child's self regulation■ Provide a smooth daily routine
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Infant massage

Study done initially on rats in 1979, ultimately proved:

- Moderate pressure had a tonic effect
- Babies' heart rates slowed down;
- Preemies were able to absorb food and gain weight
- Evidence of an increased release of growth hormone
- Increase in insulin
- Greater bone density
- Greater movement of the GI tract

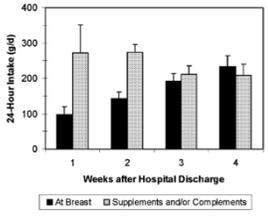


Fields, et al, 2010

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Feeding Interventions

- Milk removal
- Positioning
- Nipple shields
- Prepare for discharge
- 30 minute rule
- Cue based vs volume based

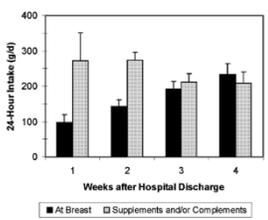


Week	At Breast (g/d)	Supplements and/or Complements (g/d)
1	~100	~280
2	~150	~280
3	~200	~210
4	~230	~210

Hurst, et al 1999

Interventions

- Milk removal
- Positioning
- Nipple shields
- Supplementation
- Bottle feeding
- Prepare for discharge



Week	At Breast (g/d)	Supplements and/or Complements (g/d)
1	~100	~280
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Hurst, et al 1999

Effectiveness of milk removal

Weak suction pressures lead to an inability to maintain adequate suction

Without supplementation can lead to lethargy, dehydration, and jaundice, which leads to poor lactation (Cleaveland 2010)

Consumed 30% of daily intake from breast upon discharge despite adequate supply but by 42 weeks gestation was able to solely breastfeed (Meier, et al 2007)

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Milk removal interventions

Within first 2 weeks:

- Establish mother's milk supply
- Ensure late preterm infant is adequately fed
- Frequent, unrestricted breastfeeding is not recommended for the LPI
- Support at discharge is critical



Meier, et al 2007 & 2013

Breastfeeding positions

Cross cradle

Provides head support so the mother can bring the baby to her breast, not vice-versa

Mother encircles the infant's head and supports the shoulders with her wrist and forearm

Clinician can support the torso, shoulder and head alignment



Meier, et al 2007 & 2013

Breastfeeding positions

Football Hold

Provides head support so the mother can bring the baby to her breast, not vice-versa

Mother encircles the infant's head and supports the shoulders with her wrist and forearm

Clinician can support the torso, should and head alignment



Meier, et al | 2007 & 2013

Nipple shields

Ultra-thin silicone increase rather than decrease milk transfer

Lengthen duration of breastfeeding

Compensate for weak suction pressures

Most LPI should use small (20 mm) to fit the mouth



Meier, et al | 2007 & 2013

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Supplementation

Finger feeding

Cup feeding

Supplemental nursing system

Syringe



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Bottle feeding

- Sidelying
- Upright
- Pacing
- Nipple flow
- Nipple firmness
- Nipple shape



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Staff education

the late preterm infant*



*Late Preterm Infant (LPI) is defined as being 34 - 36.6 weeks gestation

Factors that Impact Breastfeeding	
• Suck/swallow maturity	• Low endurance
• Respiratory distress	• Slow growth
• Clinical jaundice	• Increased sleepiness
• Hypoglycemia	• Lack of hunger cues
	• Maternal risk factors

Tips for Breastfeeding

- Support the mother as she may have prenatal or postpartum depression, anxiety, worry, fear, anger, concerns, and/or her own ongoing medical conditions
- Encourage immediate & extended skin-to-skin opportunities if baby can maintain body temperature
- Encourage initiation of breastfeeding within 1 hour after birth if baby is stable
- Teach parents to read their baby's hunger and satiation cues
- Monitor baby's body temperature by keeping in bed on the baby's head during skin-to-skin breastfeeding and if necessary drape a blanket around the baby
- Monitor milk transfer with frequent monitoring of breastfeeding position, baby's latch, and ease of breast compression
- Breastfeed as long as the baby demonstrates hunger cues. Initial sessions may be brief but still considered successful.
- Depending on the baby's gestational age, weight, feeding competence at the breast, and medical status, encourage breast pumping with a hospital grade, double electric breastpump, 8 times in 24 hours

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Discharge preparation

- Schedule for frequent outpatient feeding/developmental support
- Provide resources for mother/parents to decrease stress
- Family, environmental, and social risk factors identified and addressed
- Talk with parents about their biggest fear
- Help parents to recognize the "noise"
- Teach parents to:
 - Read baby cues for hunger, satiation, fatigue, and over stimulation
 - Understand developmental needs of their LPI infant
 - Received and demonstrate basic baby safety & care skills

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Matrix for managing complex change

● + Skills + Incentives + Resources + Action Plan = Confusion
Vision + ● + Incentives + Resources + Action Plan = Anxiety
Vision + Skills + ● + Resources + Action Plan = Resistance
Vision + Skills + Incentives + ● + Action Plan = Frustration
Vision + Skills + Incentives + Resources + ● = Treadmill
Vision + Skills + Incentives + Resources + Action Plan = CHANGE

"Leadership matrix for managing complex change" by Knosler, T (1991)

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Dakota

- 34.1 weeks gestation
- Unable to maintain her temperature outside of the isolette
- Inconsistent weight gain on breastmilk and so is on fortified breastmilk
- Weak latch when breastfeeding
- Bilirubin levels are creeping up



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Dakota's Mother - Mollie

- 22 year old mother with 1 children, 1 at home & 2 live with their fathers
- Mollie's father and 18 year old half sister live with her
- Inconsistent employment
- Chronic pain and depression
- Goal is to breastfeed & raise Dakota



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Matrix for managing complex change for Dakota & her Mother

Vision +	Skills +	Incentives +	Resources +	Action Plan =	CHANGE
<p>● +</p> <p>Staff: Mother can provide care and nurturing</p> <p>Mother: wants her family to be together</p>	<p>● +</p> <p>Parent education; Practice basic baby skills; Consult with different providers; Videotape & written education</p>	<p>Incentives +</p> <p>Breastfeed & Keep her baby</p>	<p>● +</p> <p>Reflective supervision; Encourage medication/counseling; Skin-to-skin; Pump for breastfeeding; MOD; Infant massage;</p>	<p>● =</p> <p>Create picture schedule for daily activities; Create calendar; Refer to ITP; home visiting, home care</p>	<p>●</p> <p>Confusion, anxiety, frustration, treadmill</p>

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Conclusion

- Discussed the characteristics of the late preterm infant
- Described maternal factors that can impact the dyadic relationship
- Reviewed approaches to intervention for women with postpartum depression
- Applied evidence based intervention strategies

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The beginning



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